Fanless Embedded Computers

ARK IoT-driven Service Innovations

- Modular Hardware & Software
- Ultra Rugged Computers
- WISE-PaaS/EdgeSense & Cloud
- Application Case Studies

ADVANTECH

Enabling an Intelligent Planet

intel IoT Solutions Alliance Premier

ARK.advantech.com

ARK IoT-driven Service Innovations

Fully Modular Hardware & Software for AIoT Applications

Advantech ARK fanless embedded systems are designed to provide rapid configurable modular design for industrial embedded IoT applications. They provide more than just I/O customization services, but also a selection of innovative software packages including Advantech WISE-PaaS, cloud services, and AI analytics suite. You can choose from a flexible range of hardware/software modules directly from Advantech AOnline and WISE-PaaS Marketplace, without concern for long development time, additional NRE, and high unit cost. The mission of ARK IoT-driven services is to help you rapidly implement your IoT applications with maximum benefits.

Plug & Play Modular Expansion Accelerates Integration

- iDoor technology enables differentiated I/O port configurations and provides flexible selections for diverse applications
- ARK Plus expands the I/O by attaching additional layers to the base of the ARK system to accommodate more MIOe add-on boards and removable hard disks
- Diverse power modules provide wide voltage support for 12~24V or 9-36V$_{DC}$

Industrial I/O with Isolation Protection

- I/O isolation protects systems and electronic equipment for improved factory automation
- iDoor modules with opto-isolation prevent equipment signal and power transmission lines from being subjected to voltage surges induced by electrostatic discharge, uneven power supply or signal disruption

Seamless Communication with RF Certified

- Complete solutions from hardware to software, provide a reliable connection to sensors, machines, cloud computing centers, and any devices with networking capability
- MiniPCIe or M.2 interface for wireless communication module installation
- FCC and CE RF certification ensures seamless WiFi communication

More...
iRetail
In-Vehicle
Digital Signage
More...
Analytics Services
Computer Vision SDK
Deep Learning Inference
aws
Azure
arm PELION
ADVANTECH
WISE-PaaS
IoT Edge Intelligence
Ruggedized
Compact & Slim
ARK Plus
I/O Expansion
iDoor
Quality Certified
WISE-PaaS/VideoCMS
WISE-PaaS/ EdgeSense
WISE-PaaS/SignageCMS
WISE-PaaS/ EnSaaS
WebAccess/SCADA

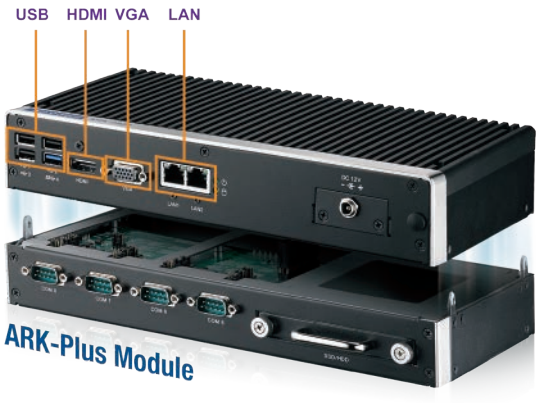
Product Series

Newly Designed for Modular Systems

Ultra Small

ARK-1000 Series

Palm Size - 133.8 (W) x 43.1(H) x 94.2(D) mm
Green - Ultra low power consumption, minimum 10 Watts
Wide Temperature - -30 ~ 70°C operating support
Multi Storage - 2.5" HDD/SSD or mSATA
Expansion - MiniPCIe/M.2 + SIM for wireless communication
Mounting Solution - Wall, VESA and DIN-Rail kits



Compact Extendible

ARK-2000 series

Compact Size - 265(W) x 69(H) x 133(D) mm
Platform - Intel® Atom® to Intel® Core™ i
Wide Temperature - -20~70°C operating support
Wide Range Power - 12V or 12~24V or 9~36V
Rugged Design - 3Grms vibration/ 30G shock
Complete Storage Options - 2.5" HDD/SSD, mSATA
Expansion - MiniPCIe/M.2 + SIM for wireless communication, module, and iDoor module compatible

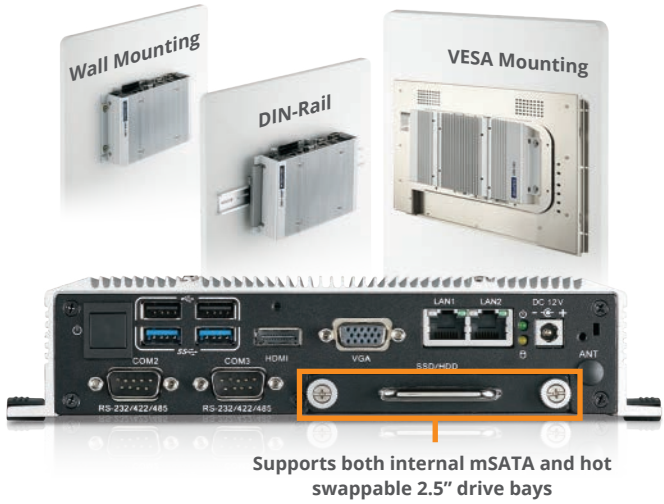
High Performance/Multi Expansions

ARK-3500 series

Extreme High Performance - Intel® Core™ i3/i5/i7
Wide Operating Temperature - 10~60°C w/ SSD
Wide Range Power - 12VDC or 9-36VDC design
Rich Storage - 2.5" removable HDD/SSD, mSATA and NVMe
Rich Expansion - PCI, PCIex1/x4/x8/x16, miniPCIe, M.2, display module

Slim & Mountable
ARK-1500 series

Ultra Slim - 223(W) x 46.6(H) x 133(D) mm
Platform - Intel® Celeron® to Intel® Core™ i
Easy Backup - One removable 2.5" drive bay
Multiple Display - VGA, HDMI or optional LVDS
Expansion - MiniPCIe for storage or wireless modules
Mounting Solution - Wall, VESA and DIN-Rail kits



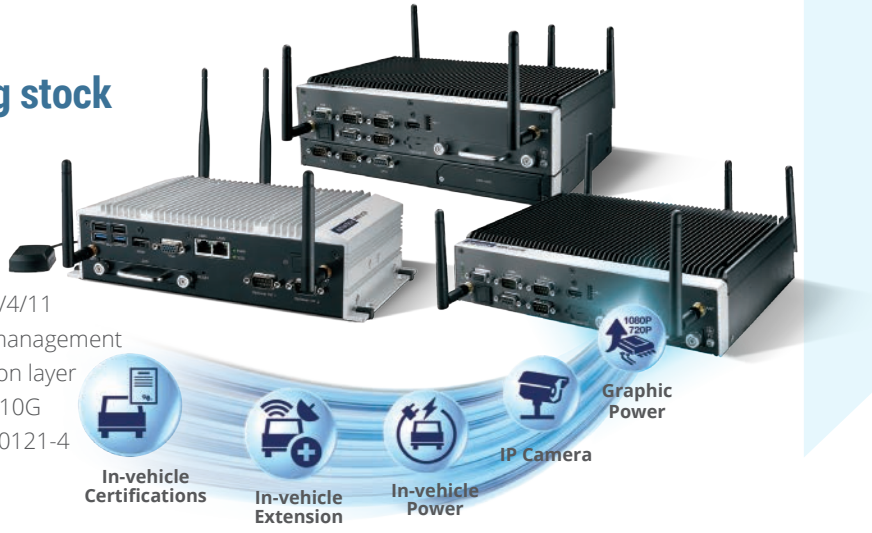
Supports both internal mSATA and hot swappable 2.5" drive bays

High Value
ARK-6300 Series

Compact Size - 200(W) x 64(H) x 200(D)mm
Platform - Intel® Atom® to Celeron® series
Dual display - VGA + DisplayPort
Maximize I/O - Up to 8 x USB and 6 x COM
Storage - 1 x 3.5" HDD or 1 x 2.5" HDD, 1 x mSATA
Expansion - Up to 2 x MiniPCIe slots, iDoor module compatible

Surveillance/ In-vehicle/ Rolling stock
ARK-S, ARK-V, and ARK-R Series

Rugged, Mobile NVR Solutions
Video Capability - D1, 720p to 1080p 240fps
Secured I/O - Isolated COM, GPIO and DC input
Diverse Communications - GPS, 3xMIMO WiFi, LTE Cat3/4/11
Wide Power Range - 9~36VDC with intelligent ignition management
Flexible Expansion - mPICe/M.2 slots and 2nd extension layer
Rugged Design - IEC 60721-3-5, IEC 61373, MIL-STD 810G
Certifications - E - Mark, EN50155, EN50121-3-2, EN50121-4



Ultra Rugged Embedded Computers

Empowering In-Vehicle, Railway, and Harsh Environment Applications

WISE-PaaS/ EdgeSense

Edge Intelligence and Sensor Integration

- Location-based remote vehicle diagnostics
- Predictive analytics & vehicle security services
- Vehicle power ignition management & PoE individual control
- Cloud connection for data monitoring

In-Vehicle

Wide Power Range
Diverse Communications

Harsh Environments

Wide-Temp Designs
Anti-Vibration Designs

Rolling Stock

Secure I/O
Certifications

ARK-2250V

- Certified for E-Mark, ISO7637-2, IEC 60721-3-5 5M3
- Diverse wireless communication via dual 802.11 ac and LTE Cat.6
- Intelligent on/off system management

WISE-Agent

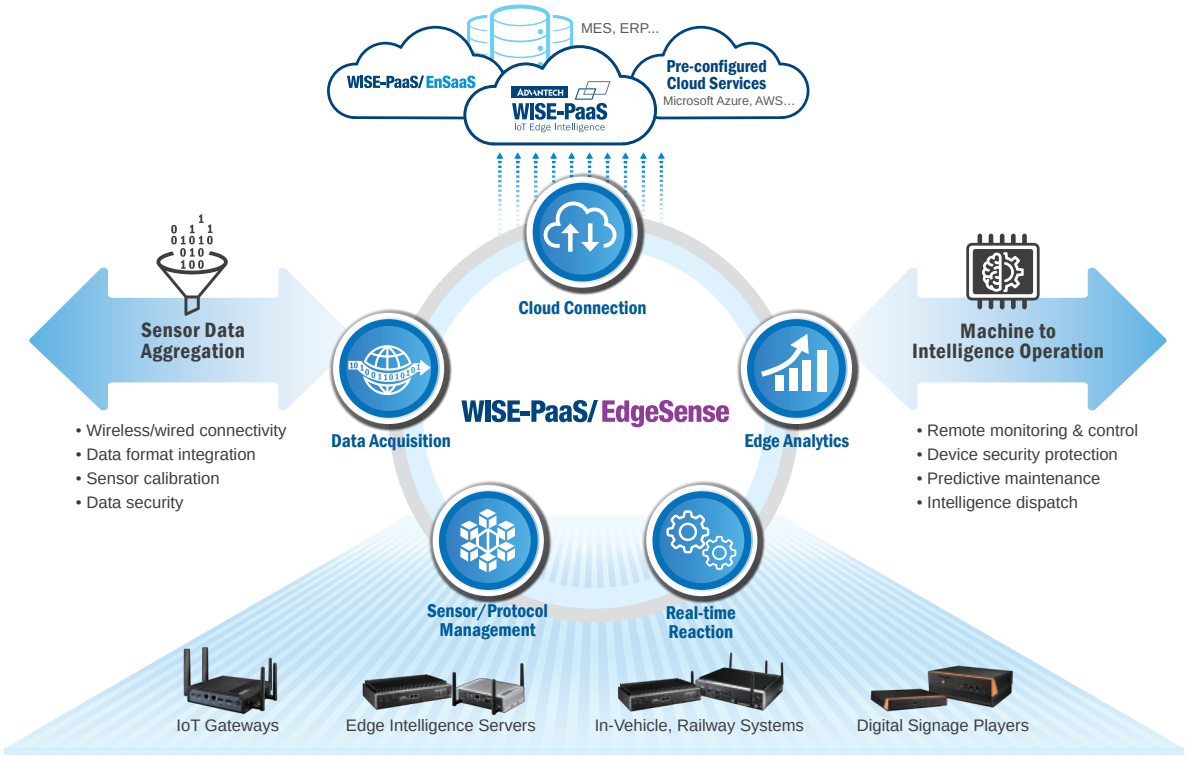
- MIL-STD-810G anti-vibration/ shock proof
- TPM 2.0/ECC memory support
- 6th Gen Intel® Core™ i7-6422EQ

WISE-Agent

- EN50155, EN50121 certified railway system
- Extreme - 40~70°C operating temperature
- Solid connection by M12/ threaded connectors

Enabling IoT Sensing, Edge Intelligence, and Cloud Integration

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



WISE-PaaS/EdgeSense Software

WISE-Agent

- Open and standard framework
- Default plugin offering for standard protocols
- Software SDK for legacy support

WISE-PaaS/RMM

- Remote devices/ groups/ map view management
- Data acquisition from devices and equipment
- Quick data visualization

WISE-PaaS/OTA

- Centralized remote application and firmware updates
- Download and deploy scheduling for planned upgrades
- Support rollbacks

WISE-PaaS/Security

- Centralized security management
- Flexible security modules
- Threat prevention on potential malware in real-time

WISE-PaaS Application and Cloud Software

WebAccess/SCADA

- 100% web-based architecture
- Open database connectivity
- Networking capability
- Supports many protocols

WebAccess/HMI

- Smart screen management
- Project-based management for multiple applications
- Software support for a range of machines

WISE-PaaS/ VideoSense

- Collects sensor data and performs video analytics
- Data visualization via centralized management
- Video technology application modules

WISE-PaaS/ EnSaaS

- Connect, monitor, and manage millions of IoT assets
- Managed SQL, NoSQL, and time-series databases
- Visualization dashboard for deriving actionable insights

Application Case Studies

Robotic Manufacturing for Automobiles

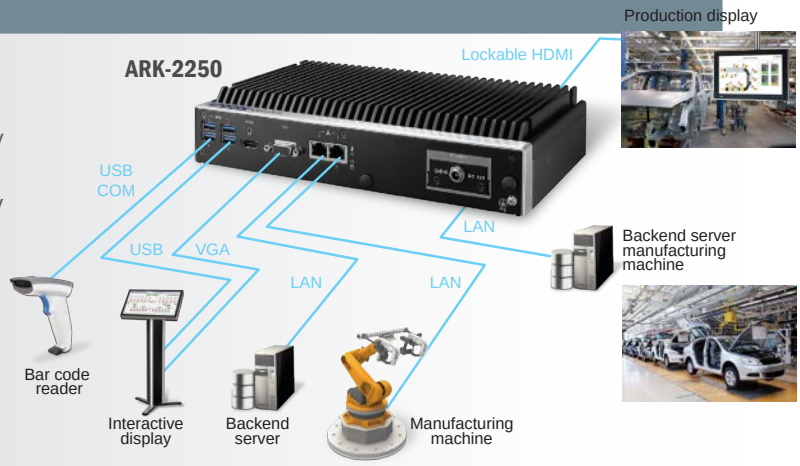
Application Requirement

Managing automated production lines is a complex operation. A production planning system with precise, computer-controlled processes was necessary to implement high quality, high throughput, flexible production, and seamless integrated processes.

Winning Factors

ARK-2250

- Reliable fanless/wide-voltage/wide-temperature/ lockable cables designs.
- 3rd party VGA/HDMI options for versatile display output.
- High computing performance and rich I/O supports data collection and analysis rquirements.
- Pre-installed WISE-PaaS/EdgeSense software to enable easy connection and fast deployment.



Facial Recognition Improves Security

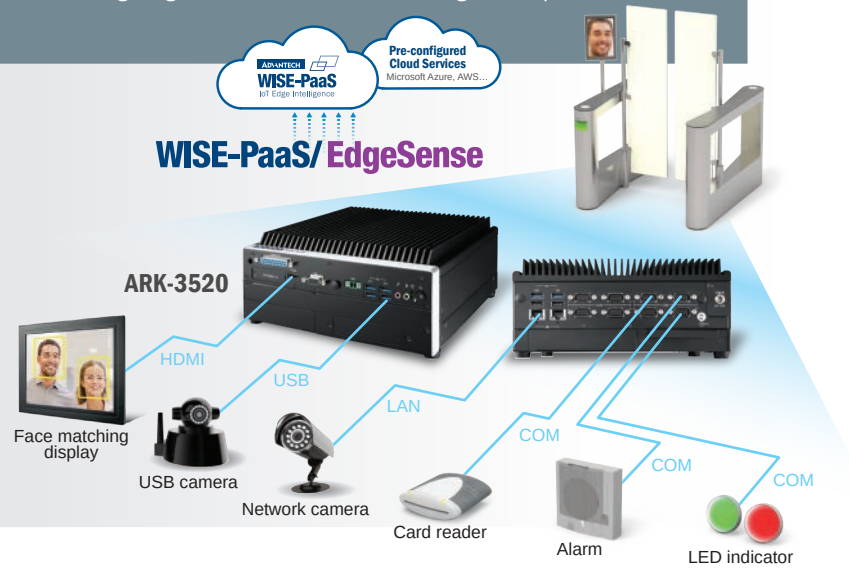
Application Requirement

To best ensure the smooth flow of foot traffic, our customer needed a system capable of instantly capturing real-time images and performing recognition and verification within a very short period of time. They required a high performance computing platform with superior network connections linking all gates to a centralized management platform.

Winning Factors

ARK-3520

- High computing power and memory for cutting-edge facial recognition applications.
- Multiple I/O support delivers flexibility and expandability.
- Small footprint for limited-space installations in ticket gates.
- Pre-installed IoT software for easy deployment of remote monitoring functions.
- Optionally purchased security software platform provides comprehensive data and system protection.



Self Loan KIOSKs Smarten up Libraries

Application Requirement

Today, many librarians have been freed up from time-consuming repetitive workloads because an increasing number of libraries that are leveraging cutting-edge technology to smarten up their loans/returns processes and collection management. Now, library staff have more time and autonomy to devote themselves to higher value library services for their patrons.

Winning Factors

ARK-1124

- Library automation and intelligence functions reduce manual workload and provide patron convenience through a simplified and efficient borrow/return process.
- Small footprint computer with flexible I/O and unique module expansion design.
- IoT and cloud functions with platform-ready software support shorten development periods, allowing faster time to market.

Efficient Marine Communication

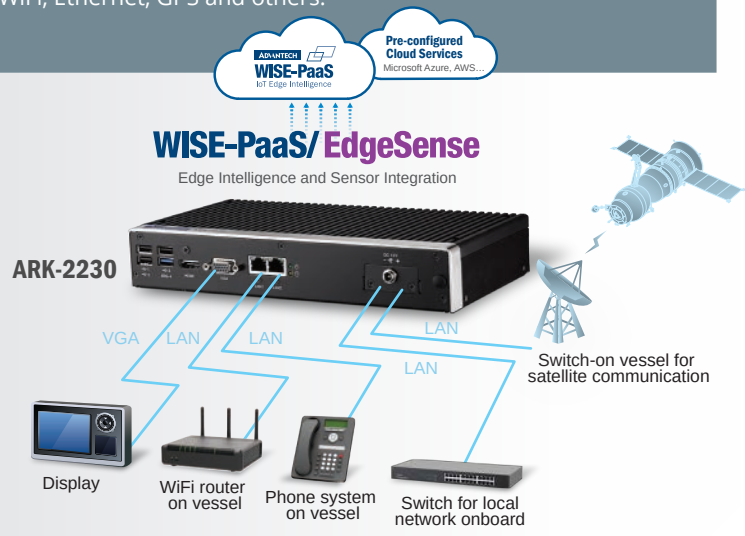
Application Requirement

Highly turbulent environmental conditions and extreme temperature changes onboard vessels at sea were key concerns for our customer - a vessel communication solutions provider. Multiple interfaces were needed to accommodate the needs of different communication devices including SATCOM, WiFi, Ethernet, GPS and others.

Winning Factors

ARK-2230

- Reliable DC jack designs ensure uggedness for vessel applications.
- Flexible add-on iDoor modules to augment LAN port support.
- Improve vessel fleet management with faster marine communications combining satellite, WiFi and LAN systems.
- Platform-ready software – WISE-PaaS/EdgeSense for developing and integrating remote monitoring and control for faster time-to-market.



Application Case Studies

Smart Ticketing and Fleet Management

Application Requirement

In meeting their plans for expansion, our customer required a total solutions package addressing not just on-board ticketing, but also an intelligent fleet management system capable of providing superior customer services, ensuring bus safety, and improving operational efficiency.

Winning Factors

ARK-2250V

- High computing power and memory support for fleet tracking and ticketing systems.
- On-board GPS/GNSS module for location detection, enabling map-based fleet tracking.
- Detects fleet movement and deviations from pre-set criteria, including route divergence, speeding, idling, and schedule delays.
- Pre-installed IoT software platform enables fast and easy connection for superior remote monitoring functionality.

Passenger Information & Entertainment Systems

Application Requirement

Public transportation - trains, metros, coaches - is essential to modern economies. For service providers, this means passengers are constantly seeking to improve both the efficiency and quality of their travel experience. Our passenger information and entertainment systems provide undisrupted wireless internet access, allowing customers to enjoy online content and location-based information along their journey.

Winning Factors

ARK-2250R

- EN50155, EN50121, IEC61373 certified.
- Up to 8ch x 1080p @30fps IP camera connection for video surveillance.
- Supports dual LTE Cat6 300/50Mbps bandwidth.
- Supports dual 3MIMO WiFi as hot spot point.
- Ultra wide operating temp from -40~70°C.

Wind Farm Remote Monitoring and Control

Application Requirement

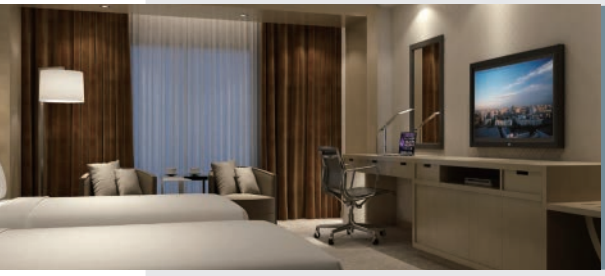
Our customer hoped to have a data center to integrate all wind farms to establish a centralized remote monitoring control network to oversee the environmental and operational status and to implement statistical analyses on power output and equipment availability, power curtailment rates, power costs, and prices during different working hours.

Winning Factors

EIS-D210

- HQ control room remotely collects and analyzes data.
- Remote monitoring control system provides HQ with operational status of all facilities.
- Preventive maintenance programs reduce maintenance costs and help avoid unexpected shutdowns.
- Complete integration of existing equipment and new devices, allowing increased monitoring expansion of the system in short time.

Intelligent Hotel Centralized Management



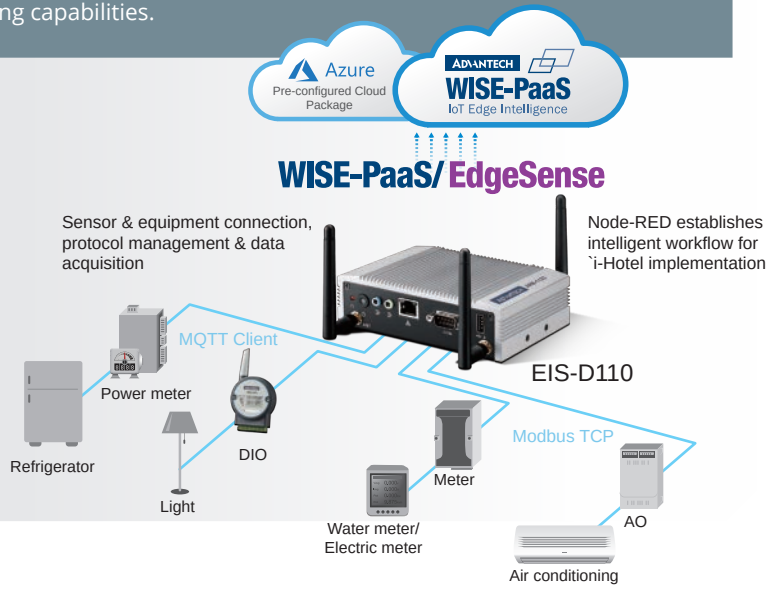
Application Requirement

Our customer required the deployment of sensors around critical hotel facilities, including water, power and gas supply equipment, air- conditioners, dehumidifiers and door locks. EIS were also needed to collect sensory data and upload it to the cloud via a local network. Our powerful IoT platform provided connectivity and edge computing capabilities.

Winning Factors

EIS-D110

- Protocol compatibility connects all types of hotel devices and sensors.
- Pre-integrated Azure Cloud services quickly complete IoT-to-cloud integration.
- Pre-installed IBM Node-RED flow editor easily develops service modules with a convenient graphic flow compiler.
- The WISE-PaaS software package provides a rich bundle of RESTful APIs for SI to quickly develop all kinds of apps capable of runnning on mobile devices.



Edge Intelligence & Edge Cloud

Package Offerings

NEW NEW

Model Name	EIS-S230 Edge Cloud Solution	EIS-D620 RISC-based	EIS-D210 LPWAN Connectivity	EIS-D150 High Performance	EIS-D110 LPWAN Connectivity
CPU	Intel® Xeon® E3-1275 V6 / 6th Gen. Core™ i7-6700	Rockchip RK3399	Intel® Celeron® N3350	Intel® 6th Gen Core™ i5 6300U	Intel® Celeron® J1900
RAM/Storage	32G/Optional	2GB/ 16GB eMMC	4GB/ 64GB SSD	4GB /64GB SSD	4GB /64GB SSD
OS	Ubuntu	Debian	Win 10 IoT Enterprise	WES7E Win 10 IoT Enterprise	WES7E Win 10 IoT Enterprise
I/O Interface	HDMIx1, GbEx4, RS-232/422/485 x4 USB 3.0 x8	HDMI x2, GbEx2 RS-232 x1, USB 3.0x1, USB2.0x1	VGA x1, GbE x2, RS232/422/485 x2, USB 3.0 x4 ,iDoor	HDMI x1, VGA x1, GbE x2, RS232/422/485x4, iDoor	HDMI x2, GbE x2, RS232/422/485x1
Wireless Networking	Optional				IEEE 802.11 a/b/g/n Bluetooth 4.0 HS
Dimensions (W x H x D)	156.5 x 205 x 230 mm	135 x 130 x 29 mm	133 x 46.4 x 94.2 mm	260 x 54 x 140.2 mm	133.8 x 43.1 x 94.2 mm
Software Package	**DeviceOn/iEdge** IoT Device Operation Management • Device Management • Monitoring & Control • Update Management **Platform Management** • Docker, Kubernetes • RabbitMQ, MongoDB • PostgreSQL,Grafana	**DeviceOn/iEdge** IoT Device Operation Management • Device Management • Monitoring & Control • Update Management **WebAccess/SCADA** Smart SCADA • Dashboard Editor Viewer • Widget Library & Widget Builder • Cross Browser & Device Viewing (for EIS-D210, 150, 120, 110)			
Development Tools	Kubernetes Development Kit	Node-RED Data Flow Logic Designer & Dashboard Builder Protocol Plug-in SDK & Configuration Tools			
Ordering Information	EIS-S230-U20S501	EIS-D620-D1DE121	EIS-D210W-E1DS641 (Win 10)	EIS-D150-W1DS641 (WES7E)	EISD110W1SS641-BT0 (WES7E)
				EIS-D150-E1DS641 (Win 10)	EISD110W1SS141-BT0 (WES7E/128G SSD)
					EISD110E1SS641-BT0 (Win 10)

Quick Starter Kit

EIS-DK10

- Complete IoT connection solutions: includes a ready-to-run edge system, IoT software platform service (DeviceON/iEdge), wireless I/O module, and sensor
- Pre-configured Microsoft Azure service (1 month free trial)
- Pre-integrated software tool includes DeviceON/iEdge for data visualization and Node Red flow template for easy development
- Pre-configured system: Intel® Celeron® J1900 and WES7E with 4GB memory and 64 GB SSD

Ordering Information: EISDK-ARK1123-BT0 (WES7E)

Fanless Embedded Computers

Ultra Small Series

Model Name		ARK-10	ARK-11
Processor System	CPU	Intel Celeron Processor J1900 Quad Core SoC	Intel Celeron N3350 Dual Core SoC
	Frequency	2.0 GHz (Up to 2.41 GHz turbo burst)	1.1GHz, turbo burst up to 2.4 GHz
	Core Number	4	2
	BIOS	AMI EFI 64 Mbit	AMI EFI 128 Mbit
	Chipset	-	-
Memory	Technology	DDR3L 1333MHz	DDR3L 1866 MHz
	Max. Capacity	8GB (2 GB Memory Built In)	8GB, (4GB Memory Built In)
	Socket	1 x 204-pin SO-DIMM	2 x 204-pin SO-DIMM
Display	Graphic Engine	DirecX11.1, OCL 11.1 and OGL 3.2	DirectX 12.0, OpenGL 4.3, OpenCL 2.0
	VGA	1 x VGA, up to 1920 x 1200 at 60Hz	-
	DDI (HDMI/DVI/DisplayPort)	-	HDMI1: 3840 x 2160 @ 30Hz HDMI2: 3840 x 2160 @ 30Hz
	Multiple Display	-	Dual HDMI Display
Expansion Interface	Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe
	M.2	-	1 x M.2 2230 E key
	SIM Socket	-	1
	ARK Plus	-	-
	iDoor	-	-
Ethernet	Controller	GbE1: Intel i210-IT GbE GbE2: Intel i210-IT GbE	GbE1: Intel i210 GbE2: Intel i210
	Speed	10/100/1000 Mbps	10/100/1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio
	CODEC	Realtek ALC888S	Realtek ALC888S
	Connector	2 (Line-in, Line out)	2 (Line out/Mic in)
WatchDog Timer		Yes	Yes
Storage	SATA	1 x 500GB 2.5" 24x7 SATA HDD Built In	1 x 2.5" 64GB SATAIII SSD built in
	mSATA	1x Half size mSATA	1 x Full-size mSATA (shared with miniPCIe slot)
I/O	USB3.0	1	4
	USB2.0	2	-
	GPIO	-	8-bit Programmable DIO (Optional)
	COM Port	2 (2 x RS232/ 422/ 485)	2 (2 x RS232/ 422/ 485, COM2 with 5V/12V)
Power	Power Type	ATX	ATX
	Power Supply Voltage	12 VDC	12 ~ 28 VDC
	Connector	Lockable DC Jack	3-pin phoenix head
	Power Consumption (Idle)	5.64W	6.4W
	Power Consumption (Full Load)	14.04W	18.1W
	Power Adaptor	AC to DC, DC12V/3A, 36W	Lockable AC to DC DC 24V 2.5A 60W (Optional)
Environment	Operating Temperature (air flow 0.7 m/sec)	0 ~ 50 °C	With extend temperature peripherals: -30 ~ 70 °C
	Non-operating Temperature	-40~ 85 °C and 95% @ 40 °C Non-Condensing	-40~ 85 °C and 95% @ 40 °C Non-Condensing
	Vibration Resistance	0.5Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	With SSD: 3 Gms
	Shock Protection	10G, IEC 60068-2-27, half sine, 11 ms duration	With SSD: 30 G
Physical Characteristics	Dimensions (W x H x D)	133.8 x 43.1 x 94.2 mm	53.5 x 158 x 114 mm
	Weight	1.2 kg (2.65 lb)	1.25 kg (2.75lb)
	Mounting	Wall/VESA/DIN-rail mounting	DIN-rail mounting (Default) Wall mounting (Optional)
Operating System	Microsoft Windows	Yes (WES7, Windows 7, WE8S, Windows 8)	Windows 10 built in
	Linux	Yes (by Project)	Yes (by Project)
APIs	WISE-PaaS/DeviceOn	Yes	Yes
	SUSI API	Yes	Yes
	Other	McAfee, Acronis	McAfee, Acronis
Certification	EMC	CE/FCC Class B, BSMI	CE/FCC Class B, CCC, BSMI
	Safety Certifications	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI

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

Model Name		ARK-1123L	ARK-1123C	ARK-1123H
Processor System	CPU	Intel® Atom DC E3825	Intel® Atom DC E3825	Intel® Celeron QC J1900
	Frequency	1.33 GHz	1.33 GHz	2.0 GHz
	Core Number	2	2	4
	BIOS	AMI EFI 64 Mbit	AMI EFI 64 Mbit	AMI EFI 64 Mbit
	Chipset	Intel® Atom DC E3825	Intel® Atom DC E3825	Intel® Celeron QC J1900
Memory	Technology	DDR3L 1066MHz	DDR3L 1066MHz	DDR3L 1333MHz
	Max. Capacity	8GB	8GB	8GB
	Socket	1 x 204-pin SODIMM	1 x 204-pin SODIMM	1 x 204-pin SODIMM
Display	Graphic Engine	DirectX11.1, OCL 11.1 and OGL 3.2	DirectX11.1, OCL 11.1 and OGL 3.2	DirectX11.1, OCL 11.1 and OGL 3.2
	VGA	Up to 1920 x 1200	Up to 1920 x 1200	-
	DDI (HDMI/DVI/ DisplayPort)	-	-	2 x lockable HDMI, 1920 x 1080
	Multiple Display	-	-	-
Expansion Interface	Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe
	SIM Socket	-	-	-
	ARK Plus	-	-	-
	iDoor	-	-	-
Ethernet	Controller	GbE 1 : Intel i210 Supports Wake On LAN	GbE 1 : Intel i210 GbE 2 : Intel i210 All support Wake On LAN	GbE 1 : Intel i210 GbE 2 : Intel i210 All support Wake On LAN
	Speed	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio	HD Audio
	CODEC	Realtek ACL888S	Realtek ACL888S	Realtek ACL888S
	Connector	2 (Line-in, Line out)	2 (Line-in, Line out)	2 (Line-in, Line out)
WatchDog Timer		Yes	Yes	Yes
Storage	SATA	1 x 2.5" SATA HDD bay	1 x 2.5" SATA drive bay	1 x 2.5" SATA drive bay
	mSATA	1 x Half-Size mSATA	1 x Half-Size mSATA	1 x Half-Size mSATA
I/O	USB3.0	1	1	1
	USB2.0	1	2	2
	GPIO	8-bit Programmable DIO	-	-
	COM Port	2 (1 x RS-232, 1 x RS-232/422/485)	2 (2 x RS-232/422/485)	1 (1 x RS-232/422/485)
Power	Power Type	ATX	ATX	ATX
	Power Supply Voltage	12 V_{DC}, ± 10%	12 V_{DC}, ± 10%	12 V_{DC}, ± 10%
	Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
	Power Consumption (Idle)	5.28W	5.28W	5.64W
	Power Consumption (Full Load)	8.16W	8.16W	14.04W
	Power Adaptor	Lockable AC to DC, DC12 V/3 A, 36 W	Lockable AC to DC, DC12 V/3 A, 36 W	Lockable AC to DC, DC12 V/3 A, 36 W
Environment	Operating Temperature (air flow 0.7 m/sec)	With extend temperature peripherals: -30~70 °C With standard temperature peripherals: 0 ~ 40 °C	With extend temperature peripherals: -30~70 °C With standard temperature peripherals: 0 ~ 40 °C	With extend temperature peripherals: -20 ~ 60 °C With standard temperature peripherals: 0 ~ 40 °C
	Non-operating Temperature	-40 ~ 85 °C and 40 °C @ 95% RH Non-Condensing	-40 ~ 85 °C and 40 °C @ 95% RH Non-Condensing	-40 ~ 85 °C and 40 °C @ 95% RH Non-Condensing
	Vibration Resistance	With mSATA/SSD : 3 Grms	With mSATA/SSD : 3 Grms	With mSATA/SSD : 3 Grms
	Shock Protection	With mSATA/SSD: 30G	With mSATA/SSD: 30G	With mSATA/SSD: 30G
Physical Characteristics	Dimensions (W x H x D)	133.8 x 43.1 x 94.2 mm	133.8 x 43.1 x 94.2 mm	133.8 x 43.1 x 94.2 mm
	Weight	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)
	Mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting
Operating System	Microsoft Windows	Yes (WES7, Windows 7, WE8S, Windows 8 and Windows 10 (32-bit support by project))	Yes (WES7, Windows 7, WE8S, Windows 8, Windows 10 (32-bit support by project))	Yes (WES7, Windows 7, WE8S, Windows 8 and Windows 10 (32-bit support by project))
	Linux	Yes (Ubuntu 14.04 LTS x64)	Yes (Ubuntu 14.04 LTS x64)	Yes (Ubuntu 14.04 LTS x64)
APIs	WISE-PaaS/DeviceOn	Yes	Yes	Yes
	SUSI API	Yes	Yes	Yes
	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
Certification	EMC	CE/FCC Class A, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI
	Safety Certifications	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI

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

Fanless Embedded Computers

NEW

Model Name		ARK-1124C	ARK-1124U	ARK-1124H	ARK-1220L	ARK-1220F
Processor System	CPU	Intel Celeron N3350 Dual Core SoC	Intel Celeron N3350 Dual Core SoC	Intel Atom E3940 Quad Core Soc	Intel Atom E3940 Quad Core Soc	Intel Atom E3940 Quad Core Soc
	Frequency	1.1 GHz, turbo burst 2.4 GHz	1.1GHz, turbo burst 2.4 GHz	1.6 GHz, turbo burst 1.8 GHz	1.6 GHz, turbo burst 1.8 GHz	1.6 GHz, turbo burst 1.8 GHz
	Core Number	2	2	4	4	4
	BIOS	AMI EFI 128 Mbit	AMI EFI 128 Mbit	AMI EFI 128 Mbit	AMI EFI 128 Mbit	AMI EFI 128 Mbit
	Chipset	-	-	-	-	-
Memory	Technology	DDR3L 1866 MHZ	DDR3L 1866 MHz	DDR3L 1866 MHz	DDR3L 1866 Mhz	DDR3L 1866 MHz
	Max. Capacity	8GB	8GB	8GB	8GB	8GB
	Socket	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM	2 x 204-pin SO-DIMM	2 x 204-pin SO-DIMM
Display	Graphic Engine	DirectX 12.0, OpenGL 4.3, OpenCL 2.0	DirectX 12.0, OpenGL 4.3, OpenCL 2.0	DirectX 12.0, OpenGL 4.3, OpenCL 2.0	DirectX 12.0, OpenGL 4.3, OpenCL 2.0	DirectX 12.0, OpenGL 4.3, OpenCL 2.0
	VGA	1 x VGA Up to 2048 x 1280	1 x VGA Up to 2048 x 1280	-	-	Up to 1920 x 1200 at 60 Hz
	DDI (HDMI/DVI/DisplayPort)	-	-	HDMI1: 3840 x 2160 @ 30Hz HDMI2: 3840 x 2160 @ 30Hz	HDMI1: 3840 x 2160 @ 30Hz HDMI2: 3840 x 2160 @ 30Hz	Up to HDMI 1.4 3840 x 2160 at 30Hz
	Multiple Display	-	-	Dual HDMI Display	Dual HDMI Display	Dual , VGA + HDMI
Expansion Interface	Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe
	M.2	-	1 x M.2 2230 E key	1 x M.2 2230 E key	1 x M.2 2230 E key	1 x M.2 2230 E key
	SIM Socket	-	1	1	1	1 (nano)
	ARK Plus	AMO-1101	AOM-1101	AMO-1101	-	-
	iDoor	Yes	Yes	Yes	-	-
Ethernet	Controller	GbE: Intel i210	GbE1: Intel i210 GbE2: Intel i210	GbE1: Intel i210 GbE2: Intel i210	GbE1: Intel i210 GbE2: Intel i210	GbE1: Intel i210-IT GbE2: Intel i210-IT
	Speed	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio	HD Audio
	CODEC	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S	Realtek AC888S
	Connector	2 (Line in, line out)	2 (Line in, line out)	2 (Line in, line out)	2 (Line out/Mic in)	1 (Line out, Mic in)
WatchDog Timer		Yes	Yes	Yes	Yes	Yes
TPM		-	Yes, Infineon SLB9665XQ2.0	Yes, Infineon SLB9665XQ2.0	Optional, Infineon SLB9665XQ2.0. TPN with MOQ 30pcs	Yes, Infineon SLB9665XQ2.0
Storage	SATA	1 x 2.5" SATAIII HDD bay	1 x 2.5" SATAIII HDD bay	1 x 2.5" SATAIII HDD bay	1 x 2.5" SATAIII HDD bay	1 x 2.5" SATAIII HDD bay
	mSATA	1x Half size mSATA	-	1x Half size mSATA	1 x Full-size mSATA (share with miniPCIe slot)	1 x Full-size mSATA (shared with miniPCIe slot)
I/O	USB3.0	2	4	4	4	4
	USB2.0	0	0	0	-	1 external, 1 internal
	GPIO	-	-	-	8-bit Programmable DIO (Optional)	8-bit Programmable DIO
	COM Port	4 (4 x RS232/ 422/ 485)	2 (2 x RS232/ 422/ 485)	1 (1 x RS232/ 422/ 485)	2 (2 x RS232/ 422/ 485, COM2 with 5V/12V)	2 (1 x 2.5K VDC isolated RS232/ 422/ 485, 1 x 2.5K VDC isolated RS422/ 485)
Power	Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX	AT/ATX
	Power Supply Voltage	12 V_{DC} (Option 12-24 V_{DC})	12 V_{DC} (Option 12-24 V_{DC})	12 V_{DC} (Option 12-24 V_{DC})	12 ~ 28 V_{DC}	12 ~ 28 V_{DC}
	Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	3-pin phoenix head	3-pin phoenix head
	Power Consumption (Idle)	4.53W	5W	6.02W	7.6W	TBC
	Power Consumption (Full Load)	9.8W	15.7W	15.7W	19W	TBC
	Power Adaptor	AC to DC, DC12V/3A, 36W	AC to DC, DC12V/5A, 60W	AC to DC, DC12V/5A, 60W	Lockable AC to DC DC 24V 2.5A 60W (Optional)	Lockable AC to DC DC 24V 2.5A 60W (Optional)
Environment	Operating Temperature (air flow 0.7 m/sec)	With extend temperature peripherals: -20 ~ 60 °C With standard temperature peripherals: 0 ~ 40 °C	With extend temperature peripherals: -20 ~ 60 °C With standard temperature peripherals: 0 ~ 40 °C	With extend temperature peripherals: -20 ~ 60 °C With standard temperature peripherals: 0 ~ 40 °C	With extend temperature peripherals: -30 ~ 70 °C With standard temperature peripherals: 0 ~ 40 °C	With extend temperature peripherals: -30 ~ 60 °C With standard temperature peripherals: 0 ~ 40 °C
	Non-operating Temperature	-40~ 85 °C and 95% @ 40 °C Non-Condensing	-40~ 85 °C and 95% @ 40 °C Non-Condensing	-40~ 85 °C and 95% @ 40 °C Non-Condensing	-40 ~ 85 °C and 95% @ 40 °C Non-Condensing	-40 ~ 85 °C and 95% @ 40 °C Non-Condensing
	Vibration Resistance	With SSD: 3 Grms	With SSD: 3 Grms	With SSD: 3 Grms	With SSD: 3 Grms	With SSD: 3 Gms
	Shock Protection	With SSD: 30 G	With SSD: 30 G	With SSD: 30 G	With SSD: 30 G	With SSD: 30 G
Physical Characteristics	Dimensions (W x H x D)	133 x 46.4 x 94.2 mm	133 x 46.4 x 94.2 mm	133 x 46.4 x 94.2 mm	53.5 x 158 x 114 mm	60 x 158 x 114 mm
	Weight	1.1 kg (2.42lb)	1.1 kg (2.42lb)	1.1 kg (2.42lb)	1.25 kg (2.75lb)	1.5 kg (3.30lb)
	Mounting	Wall/VESA/DIN-rail mounting (Optional)	Wall/VESA/DIN-rail mounting (Optional)	Wall/VESA/DIN-rail mounting (Optional)	DIN-rail mounting (Default) Wall mounting (Optional)	DIN-rail mounting (Default) Wall mounting (Optional)
Operating System	Microsoft Windows	Yes (Windows 10)	Yes (Windows 10)	Yes (Windows 10)	Yes (Windows 10)	Yes (Windows 10)
	Linux	Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (by Project)
APIs	WISE-PaaS/DeviceOn	Yes	Yes	Yes	Yes	Yes
	SUSI API	Yes	Yes	Yes	Yes	Yes
	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
Certification	EMC	CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI	Heavy industry cert., CE, FCC, Class B, BSMI
	Safety Certifications	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	UL, CB, CCC, BSMI

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

Slim & Mountable Series

Multiple I/O Series

NEW

Model Name		ARK-1550	ARK-1551	ARK-2121L	ARK-2121F
Processor System	CPU	Intel® Celeron 2980U Intel® Core i5 4300U	Intel Core i5-8365UE Celeron 4305UE	Intel Celeron QC J1900	Intel Celeron QC J1900
	Frequency	1.6 GHz / 1.9 GHz	1.6 GHz(up to 4.1 GHz)/2.0 GHz	2.0 GHz, turbo boost to 2.4GHz	2.0 GHz, turbo boost to 2.4GHz
	Core Number	2	4/2	4	4
	BIOS	AMI EFI 128 Mbit	AMI UEFI 256 Mbit	AMI EFI 64Mbit	AMI EFI 64Mbit
	Chipset	Intel® Celeron 2980U Intel® Core i5 4300U	-	-	-
Memory	Technology	DDR3L 1333/1600 MHz	DDR4 2400 MHz	DDR3L 1333MHz	DDR3L 1333MHz
	Max. Capacity	8GB	32GB	8GB	8GB
	Socket	1 x 204-pin SO-DIMM	2 x 260-pin SO-DIMM	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM
Display	Graphic Engine	DirectX11.1, OpenGL 4.0, and OpenCL 1.2	OpenGL 4.5, DirectX 11.3/12, OpenCL 2.1	DirectX 11.1, OCL 1.2 and OGL 3.2	DirectX 11.1, OCL 1.2 and OGL 3.2
	VGA	Up to 1920 x 1200	Up to 1920 x 1080 at 60Hz	Up to 2048 x 1152	Up to 2048 x 1152
	LCD (TTL/LVDS/eDP)	LVDS up to 1920 x 1200 (optional)	-	-	-
	DDI (HDMI/DVI/DisplayPort)	Lockable HDMI, up to 4096 x 2304 @24Hz	HDMI: 1.4b 4096x2160 at 30Hz	HDMI: 1.4a, 1080P@60Hz	HDMI: 1.4a, 1080P@60Hz optional 2nd HDMI Optional DVI-D
	Multiple Display	Dual	Dual , VGA + HDMI	Dual	Dual
Expansion Interface	Mini PCIe	1 x Full-size Mini PCIe w/ SIM	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe with SIM	2 x Full-size Mini PCIe (1 with SIM holder)
	M.2	-	1 x M.2 2230 E key	-	-
	SIM Socket	1	1 (nano)	1	1
	ARK Plus	-	-	-	-
	iDoor	-	-	Yes	-
Ethernet	Controller	GbE 1: Intel i218 GbE 2: Intel i210 All support Wake On LAN	GbE1: Intel i210 GbE2: Intel i219	GbE1: Intel i210 GbE2: Intel i210 All support wake on LAN	GbE1: Intel i210 GbE2: Intel i210 GbE3: Intel i210(optional) GbE4: i210(EMIO-100E, optional) All support wake on LAN
	Speed	10/ 100/ 1000 Mbps	10/100/1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio
	CODEC	Realtek ALC888S	Realtek ALC892	Realtek ALC888S	Realtek ALC888S
	Connector	3 (Line-in, Line-out, Mic-in)	1 (Line out or MIC in)	3 (Line-in, Line out, Mic-in)	3 (Line-in, Line out, Mic-in)
WatchDog Timer		Yes	Yes	Yes	Yes
Storage	SATA	1 x Swappable 2.5" SATA HDD bay	1 x Swappable 2.5" SATA HDD bay	1 x 2.5" SATA HDD bay	1 x 2.5" SATA HDD bay
	mSATA	1 x Full-size mSATA (share with miniPCIe slot)	1 x Full-size mSATA (shared with miniPCIe slot)	1	1
I/O	USB3.0	2	4 (USB 3.1 Gen 2)	1	1
	USB2.0	2	-	3	5 external, 1 internal
	GPIO	8-bit Programmable DIO	8-bit Programmable DIO	-	4ch digital input and 4ch digital output with 3kV isolation
	COM Port	3 (1 x RS-232, 2 x RS-232/422/485)	4 (4 x RS232/ 422/ 485)	4 (2 x RS232, 2 x RS232/ 422/ 485)	6 (6 x RS232/ 422/ 485)
Power	Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX
	Power Supply Voltage	12 V_{DC}, ± 10%	12 ~ 24 VDC	9 ~ 36 V_{DC}	9 ~ 36 V_{DC}
	Connector	DC jack with power adaptor locker	3-pin phoenix head	2-pin phoenix head	2-pin phoenix head
	Power Consumption (Idle : CPU/Memory only)	5.64W (2980U) / 10.56W (4300U)	13.87W (8365UE) / 8.93W (4305UE)	7.3W	8.4W
	Power Consumption (Full Load: CPU/Memory only)	15.12W (2980U) / 28.2W (4300U)	47.12W (8365UE) / 24.7W (4305UE)	13.3W	16.2W
	Power Adaptor	AC to DC, DC 12V/5A 60W (optional)	AC to DC, DC 19V/90W or 24V/120W (optional)	Lockable AC to DC, DC19 V/3.42 A, 65 W (Optional)	Lockable AC to DC, DC19 V/3.42 A, 65 W (Optional)
Environment	Operating Temperature (air flow 0.7 m/sec)	With extend temperature peripherals: -20 ~ 55 °C With standard temperature peripherals: 0 ~ 40 °C	With extend temperature peripherals: -20 ~ 55 °C With standard temperature peripherals: 0 ~ 40 °C	With extend temperature peripherals: -20 ~ 70 °C With HDD: 0 ~ 45 °C	With extend temperature peripherals: -20 ~ 70 °C With HDD: 0 ~ 45 °C
	Non-operating Temperature	-40 ~ 85 °C and 40 °C @ 95% RH Non-Condensing	-40 ~ 85 °C and 40 °C @ 95% RH Non-Condensing	-40~ 85 °C and 40 °C @ 95% RH Non-Condensing	-40~ 85 °C and 40 °C @ 95% RH Non-Condensing
	Vibration Resistance	With mSATA/SSD: 3 Grms	With SSD: 3 Gms	With SSD: 3 Grms	With SSD: 3 Grms
	Shock Protection	With mSATA/SSD: 30G	With SSD: 30 G	With SSD: 30 G	With SSD: 30 G
Physical Characteristics	Dimensions (W x H x D)	223 x 46.6 x 133.0 mm	195 x 55 x 140 mm	264.5 x 68.4 x 133.0 mm	264.5 x 68.4 x 133.0 mm
	Weight	1.9 kg (4.18 lbs)	1.9 kg (4.18 lbs)	2.3 kg (5.07 lb)	2.3 kg (5.07 lb)
	Mounting	Desk/Wall/VESA/DIN-Rail mounting	Wall mounting (Default) VESA mounting (Optional) DIN-rail mounting (Optional)	Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting
Operating System	Microsoft Windows	Yes (Windows 10, Windows 8, Windows 7, WES8, WES7)	Yes (Windows 10)	Yes (WES7E, WES7P, Win10) 32-bit support by project	Yes (WES7E, WES8E, WES7P, Win10) 32-bit support by project
	Linux	Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (by Project)
APIs	WISE-PaaS/DeviceOn	Yes	Yes	Yes	Yes
	SUSI API	-	Yes	Yes	Yes
	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
Certification	EMC	CE/FCC Class A, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI
	Safety Certifications	CB, UL, CCC, BSMI, KC	UL, CB, CCC, BSMI	CB, UL, CCC, BSMI, KC	CB, UL, CCC, BSMI, KC

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

Fanless Embedded Computers

Multiple I/O Series

Model Name		ARK-2230L	ARK-2232L	ARK-2250L
Processor System	CPU	Intel J1900	Intel® Atom E3940	Intel i7-6600U Intel i5-6300U (by project) Intel i3-6100U
	Frequency	2.0GHz	1.6 GHz, turbo burst 1.8GHz	2.6/2.4/2.3GHz
	Core Number	4	4	2/2/2
	BIOS	AMI EFI 64Mbit	AMI EFI 64 Mbit	AMI EFI 128 Mbit
	Chipset	-	-	-
Memory	Technology	DDR3L 1333MHz	DDR3L 1866MHz	DDR4 2133MHz
	Max. Capacity	8GB	8GB	16GB
	Socket	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM	1 x 260-pin SO-DIMM
Display	Graphic Engine	DirectX 11.1, OCL 1.2 and OGL 3.2	DirectX 12.0, OpenGL 4.3, OpenCL 2.0	DirectX 11.3, OpenGL 4.4, and OpenCL 2.1
	VGA	Up to 2048 x 1152	up to 1920x1200	Up to 1920 x 1200
	DDI (HDMI/DVI/DisplayPort)	HDMI 1.4a for HD video playback, 1080P at 60Hz	HDMI 1.4b for HD video playback, up to 3840 x 2160 @ 30Hz	HDMI 1.4a for HD video playback, 4096 x 2160 @ 24Hz
	Multiple Display	Dual	Dual	VGA+HDMI (Option triple display)
Expansion Interface	Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe	2 x Full-size Mini PCIe
	M.2	-	1x M.2 2230 E Key	-
	SIM Socket	1	1	1
	ARK Plus	AMO-2000 series	AMO-2000 series	AMO-2000 series
	iDoor	Yes	Yes	Yes
Ethernet	Controller	GbE1: Intel i210 GbE2: Intel i210	GbE 1: Intel i210 GbE 2: Intel i210	GbE1: Intel i219 GbE2: Intel i210
	Speed	10/100/1000 Mbps	10/ 100/ 1000 Mbps	10/100/1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio	HD Audio
	CODEC	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S
	Connector	3 (Line-in, Line out, Mic-in)	2 (Line out, Mic-in)	2 (Line-out, Mic-in)
WatchDog Timer		Yes	Yes	Yes
Storage	SATA	1 x 2.5" SATA HDD bay	1 x 2.5" SATA drive bay	1 x 2.5" SATA HDD bay
	mSATA	1 x Full size mSATA	1 x Full size mSATA	1x Full size mSATA
I/O	USB3.0	1	2	4
	USB2.0	4	4	2
	GPIO	1 x 8 bit DIO	1 x 8 bit DIO	1 x 8 bit DIO
	COM Port	4 (2 x RS232, 2 x RS232/ 422/ 485)	4 (2 x RS232, 2 x RS232/ 422/ 485)	4 (4 x RS232/ 422/ 485)
Power	Power Type	AT/ATX	AT/ATX	AT/ATX
	Power Supply Voltage	12 V_{DC} (Option 9-36 V_{DC})	12 V_{DC} (Option 9-36V)	12 V_{DC} (Option 9-36 V_{DC})
	Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack
	Power Consumption (Idle: CPU/Memory only)	7.3W	7.79W	7.96W/ 7.8W/ 6.92W
	Power Consumption (Full Load: CPU/Memory only)	13.3W	17.48W	43.28W/ 42.8W/ 41.72W
	Power Adaptor	AC to DC, DC12V/5A, 60W (Optional)	AC to DC, DV12V/5A, 60W (Optional)	AC to DC, DC12V/5A, 60W (Optional)
Environment	Operating Temperature (air flow 0.7 m/sec)	-20 ~ 60 °C	-20 ~ 60° C	-20 ~ 60 °C
	Non-operating Temperature	-40~ 85 °C and 95% @ 40 °C Non-Condensing	-40 ~ 85 °C and 40 °C @ 95% RH Non-Condensing	-40~ 85 °C and 95% @ 40 °C Non-Condensing
	Vibration Resistance	With SSD: 3 Grms	With SSD: 3 Grms	With SSD: 3 Grms
	Shock Protection	With SSD: 30 G	With SSD: 30 G	With SSD: 30 G
Physical Characteristics	Dimensions (W x H x D)	260 x 44 x 140.2 mm	260 x 44 x 140.2 mm	260 x 54 x 140.2 mm
	Weight	2.3 kg (5.07lb)	2.9kg (6.39 lbs)	2.3 kg (5.07lb)
	Mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/Wall/VESA/DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting
Operating System	Microsoft Windows	Yes (Windows 10, WES7)	Yes (Windows 10)	Yes (Windows 10, Windows 8.1)
	Linux	Yes (by Project)	Yes (by Project)	Yes (by Project)
APIs	WISE-PaaS/DeviceOn	Yes	Yes	Yes
	SUSI API	Yes	Yes	Yes
	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
Certification	EMC	CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI
	Safety Certifications	CB, UL, CCC, BSMI, KC	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI

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

Multi Expansion Series

Model Name		ARK-3520L	ARK-3520P
Processor System	CPU	6th gen' Intel I7-6820EQ/I5-6440EQ/I3-6100E	6th gen' Intel I7-6820EQ/I5-6440EQ/I3-6100E
	Frequency	2.8/2.7/2.7GHz	2.8/2.7/2.7GHz
	Core Number	4/4/2	4/4/2
	BIOS	AMI EFI 128 Mbit	AMI EFI 128 Mbit
	Chipset	Intel QM170	Intel QM170
Memory	Technology	DDR4 2133MHz	DDR4 2133MHz
	Max. Capacity	32GB	32GB
	Socket	2 x 260-pin SODIMM	2 x 260-pin SODIMM
Display	VGA	1920 x 1200	1920 x 1200
	DDI (HDMI/DVI/DisplayPort)	HDMI 1.4b for HD video playback, 3840 x 2160@30Hz 2nd HDMI :1920 x 1080 (Optional) DVI-D: 4096 x 2160 @ 24Hz (Optional) DP: 4096 x 2304 @ 60Hz (Optional)	HDMI: 1.4b for HD video playback, 3840 x 2160 @ 30Hz 2nd HDMI :1920 x 1080 (Optional) DVI-D: 4096 x 2160 @ 24Hz (Optional) DP: 4096 x 2304 @ 60Hz (Optional)
	Multiple Display	Triple / Dual VGA + HDMI + optional 3rd display	Triple / Dual VGA + HDMI + optional 3rd display
Expansion Interface	Mini PCIe	2 x Full-size Mini PCIe (1 share with mSATA)	2 x Full-size Mini PCIe (1 shared with mSATA)
	M.2	1x M.2 2230 E Key	1x M.2 2230 E Key
	SIM socket	1 x SIM socket	1 x SIM socket
	PCIe	-	2 x PCIe x 4 (Optional)
	PCI	-	2 x PCI (Default)
	PCIe + PCI	2 x PCI + 1 x PCIe x 4 (Optional)	-
	ARK Plus	Yes	-
	i Door	Yes	Yes
Ethernet	Controller	GbE1: Intel I219-LM GbE2: Intel I-210IT	GbE1: Intel I219-LM GbE2: Intel I-210IT
	Speed	10/100/1000 Mbps	10/100/1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio
	CODEC	Realtek ALC888	Realtek ALC888
	Connector	2 (Line out, Mic-in)	2 (Line out, Mic-in)
WatchDog Timer		Yes	Yes
Storage	SATA	1 x 2.5" SATAIII HDD bay	2 x 2.5" SATAIII HDD bay
	mSATA	1 (shared with mini-PCIe)	1 (shared with mini-PCIe)
I/O	USB 3.0	6	6
	USB2.0	2	2
	GPIO	1 x 16 bit DIO	1 x 16 bit DIO
	COM Port	8 (4 x RS232, 4 x RS232/422/485)	8 (4 x RS232, 4 x RS232/422/485)
Power	Power Type	AT/ATX	AT/ATX
	Power Supply Voltage	12 V_{DC} (optional 9 ~ 36 V_{DC})	9 ~ 36 V_{DC}
	Connector	Lockable DC jack	4-pin terminal block
	Power Consumption (Idle : CPU/Memory only)	11.4W	11.4W
	Power Consumption (Full Load : CPU/Memory only)	68.4W/ 46.5W/ 42.75W	68.4W/ 46.5W/ 42.75W
	Power Adaptor	Lockable AC to DC DC 12V 150W (Optional)	Lockable AC to DC DC 19V 150W (Optional)
Environment	Operating Temperature (air flow 0.7 m/sec)	With extend temp peripherals: -20 ~ 60 °C With HDD: 0 ~ 40 °C	With extend temp peripherals: -20 ~ 60 °C With HDD: 0 ~ 40 °C
	Non-operating Temperature	-40~ 85 °C and 95% @ 40 °C Non-Condensing	-40~ 85 °C and 95% @ 40 °C Non-Condensing
	Vibration Resistance	With SSD: 3 Grms	With SSD: 3 Grms
	Shock Protection	With SSD: 30 G	With SSD: 30 G
Physical Characteristics	Dimensions (W x H x D)	220 x 101 x 233 mm	220 x 101 x 233 mm
	Weight	4.8 kg (10.58 lb)	4.4 kg (9.7 lb)
	Mounting	Desk/Wall mounting	Desk/Wall mounting
Operating System	Microsoft Windows	Yes (Windows 8.1,Windows 7, Windows 10)	Yes (Windows 8.1,Windows 7, Windows10)
	Linux	Yes (by Project)	Yes (by Project)
APIs	WISE-PaaS/DeviceOn	Yes	Yes
	SUSI API	Yes	Yes
	Other	McAfee, Acronis	McAfee, Acronis
Certification	EMC	CE/FCC Class B, CCC, BSMI	CE/FCC Class A/CCC/BSMI
	Safety Certifications	CB, UL, CCC, BSMI	LVD, CCC, BSMI, KC

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

Fanless Embedded Computers

NEW

Model Name		ARK-3530L	ARK-3530F	ARK-3531
Processor System	CPU	Intel® Xeon E3-1235L V5/6th Gen i7-6700/7th Gen i7-7700/i5-7500/i3-7101E LGA1151 Processor	Intel® Xeon E3-1235L V5/6th Gen i7-6700/7th Gen i7-7700/i5-7500/i3-7101E LGA1151 Processor	Intel 9th Gen i9-9900T/i7-9700TE/ i5-9500TE/i3-9100TE/G4900T LGA1151 Processor
	Frequency	2.0GHz/3.4GHz/3.6GHz/3.4GHz/3.9GHz	2.0GHz/3.4GHz/3.6GHz/3.4GHz/3.9GHz	2.1GHz-4.4GHz/ 1.8GHz-3.8GHz/ 2.2GHz-3.6GHz/ 2.2GHz-3.2GHz/2.9GHz
	Core Number	4/4/4/4/2	4/4/4/4/2	8/8/6/4/2
	BIOS	AMI EFI 128 Mbit	AMI EFI 128 Mbit	AMI EFI 128Mbit
	Chipset	C236	C236	H370
Memory	Technology	DDR4 2133MHz (Supports ECC/non-ECC)	DDR4 2133MHz (Supports ECC/non-ECC)	DDR4 2666 MHz
	Max. Capacity	32GB	32GB	64GB
	Socket	2 x 204-pin SO-DIMM	2 x 204-pin SO-DIMM	2 x 260-pin SO-DIMM
Display	Chipset	Intel® HD Graphics 630	Intel® HD Graphics 630	Intel® UHD Graphics 630
	Graphic Engine	DirectX 12.0, OpenGL 4.4	DirectX 12.0, OpenGL 4.4	DirectX 12.0, OpenGL 4.4
	VGA	up to 1920x1200	up to 1920x1200	2048x1280@60Hz
	DDI (HDMI/DVI/DisplayPort)	HDMI 2.0 for HD video playback, 3840 x 2160 at 30Hz 2nd HDMI :1920 x 1080 (Optional) DVI-D: 4096 x 2160 @ 24Hz (Optional) DP: 4096 x 2304 @ 60Hz (Optional)	HDMI 2.0 for HD video playback, 3840 x 2160 at 30Hz 2nd HDMI :1920 x 1080 (Optional) DVI-D: 4096 x 2160 @ 24Hz (Optional) DP: 4096 x 2304 @ 60Hz (Optional)	HDMI 1.4 for HD video playback, 3840 x 2160 at 30Hz
	Multiple Display	Triple (by optional 3rd display port)	Triple (by optional 3rd display port)	Dual
Expansion Interface	Mini PCIe	2 x Full-size Mini PCIe	2 x Full-size Mini PCIe	1 x Full-size MiniPCIe
	M.2	1x M.2 2230 E Key	1x M.2 2230 E Key	1 x M.2 2230 E Key
	SIM socket	1	1	1
	PCIe	-	2 PCIex8 (By Option)	-
	PCI	-	2 PCI (Default)	-
	PCIe + PCI	-	-	-
	i Door	Yes	Yes	-
Ethernet	Controller	GbE 1: Intel i219 GbE 2: Intel i210	GbE 1: Intel i219 GbE 2/3/4: Intel i210	GbE 1: Intel i219 GbE 2: Intel i210 GbE 3/4(Optional) : Intel i210
	Speed	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio	HD Audio
	CODEC	Realtek ALC888	Realtek ALC888	Realtek ALC888
	Connector	2 (Line out, Mic-in)	2 (Line out, Mic-in)	1 (Line-out/Mic-in by switch)
WatchDog Timer		Yes	Yes	Yes
Storage	SATA	2 x 2.5" SATA drive bay (Max 4 by Project)	2 x 2.5" SATA drive bay (Max 4 by Project)	2 x 2.5" SATA drive bay
	mSATA	2 x Full Size mSATA (Share with mini-PCIe slots)	2 x Full Size mSATA (Share with mini-PCIe slots)	1 x Full-size mSATA (Share with mini-PCIe slots)
I/O	USB3.1/3.2	-	-	2 x 3.1 Gen2
	USB 3.0	8	8	6
	USB2.0	-	-	-
	GPIO	16-bit by Option	16-bit by Option	16bit
	COM Port	4 (4 x RS-232/422/485)	4 (4 x RS-232/422/485)	8 (4 x RS-232, 4 x RS-232/422/485)
Power	Power Type	AT/ATX	AT/ATX	AT/ATX
	Power Supply Voltage	12 V_{DC} (Option 9-36V)	9-36 V_{DC}	9-36 V_{DC}
	Connector	Lockable DC Jack	4-pin terminal block	4-pin terminal block
	Power Consumption (Idle: CPU/Memory only)	25.68W	25.68W	16.8W
	Power Consumption (Full Load: CPU/Memory only)	88.92W	88.92W	34.8W
	Power Adaptor	AC to DC, DC12V 150W (Optional)	AC to DC, DC19V 150W (Optional)	AC to DC, DC19V 150W (Optional)
Environment	Operating Temperature (air flow 0.7 m/sec)	-20 ~ 60° C (Supports up to 6th Gen 65W/7th Gen 51W Processor) -20 ~ 40° C (Supports up to 65W processor)	-20 ~ 60° C (Supports up to 6th Gen 65W/7th Gen 51W Processor) -20 ~ 40° C (Supports up to 65W processor)	35W Processor with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow
	Non-operating Temperature	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing	-40 ~ 85° C and 40° C @ 95% RH Non-Condensing	-40~ 85 °C and 95% @ 40 °C Non-Condensing
	Vibration Resistance	With SSD : 3 Grms	With SSD : 3 Grms	With SSD: 3 Grms
	Shock Protection	With SSD : 30 G	With SSD : 30 G	With SSD: 30 G
Physical Characteristics	Dimensions (W x H x D)	105 x 205 x 230 mm	156.5 x 205 x 230 mm	200 x 75 x 215 mm
	Weight	5.1kg (11.24lb)	5.87kg (12.94lb)	3.2Kg
	Mounting	Desk mounting	Desk mounting	Desk mounting
Operating System	Microsoft Windows	Yes (Windows 10)	Yes (Windows 10)	Yes (Windows 10)
	Linux	Yes (by Project)	Yes (by Project)	Yes (by project)
APIs	WISE-DeviceOn	Yes	Yes	Yes
	SUSI API	Yes	Yes	Yes
	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Aronis
Certification	EMC	CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC ClassB, CCC, BSMI
	Safety Certifications	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI

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

Model Name		ARK-3532B	ARK-3532C	ARK-3532D	ARK-6322
Processor System	CPU	Intel® 10th Gen. Xeon® W and Core™ i3/i5/i7/i9 processor	Intel® 10th Gen. Xeon® W and Core™ i3/i5/i7/i9 processor	Intel® 10th Gen. Xeon® W and Core™ i3/i5/i7/i9 processor	Intel Celeron J1900 SoC
	Frequency	2.0~4.6GHz/3.0~5.1GHz/3.0~4.8GHz/ 3.2~4.3GHz/3.2~3.8GHz/3.2GHz	2.0~4.6GHz/3.0~5.1GHz/3.0~4.8GHz/ 3.2~4.3GHz/3.2~3.8GHz/3.2GHz	2.0~4.6GHz/3.0~5.1GHz/3.0~4.8GHz/ 3.2~4.3GHz/3.2~3.8GHz/3.2GHz	2.0 GHz, Turbo Boost up to 2.41GHz
	Core Number	10/10/8/6/4/2	10/10/8/6/4/2	10/10/8/6/4/2	4
	BIOS	AMI EFI 256Mbit	AMI EFI 256Mbit	AMI EFI 256Mbit	AMI 16Mbit SPI
	Chipset	W480E	W480E	W480E	-
Memory	Technology	DDR4 2933 MHz	DDR4 2933 MHz	DDR4 2933 MHz	DDR3L 1333MHz
	Max.Capacity	64 GB	64 GB	64 GB	8GB (4GB per SODIMM)
	Socket	2 x 260-pin SO-DIMM	2 x 260-pin SO-DIMM	2 x 260-pin SO-DIMM	2 x 204-pin SODOIMM
Display	Chipset	Intel® UHD Graphics 630	Intel® UHD Graphics 630	Intel® UHD Graphics 630	-
	Graphic Engine	DirectX 12, OpenGL 4.5	DirectX 12, OpenGL 4.5	DirectX 12, OpenGL 4.5	-
	VGA	1920x1200@ 60Hz	1920x1200@ 60Hz	1920x1200@ 60Hz	Up to 2048 x 1280
	DDI	1 HDMI port, HDMI 1.4 for HD video playback, 4096x2160@30Hz	1 HDMI port, HDMI 1.4 for HD video playback, 4096x2160@30Hz	1 HDMI port, HDMI 1.4 for HD video playback, 4096x2160@30Hz	DisplayPort: up to 2560 x 1600 @ 60Hz
	Multiple Display	Triple Display :VGA+HDMI + 3rd display module	Triple Display :VGA+HDMI + 3rd display module	Triple Display :VGA+HDMI + 3rd display module	Dual
Expansion Interface	Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe	1 x Full-size Mini PCIe 1 x Half-size Mini PCIe
	M.2	1 x E key for WiFi	1 x E key for WiFi	1 x E key for WiFi	-
	SIM socket	1	1	1	1 x SIM socket
	PCIe	1 Slot PCIex4 + 1 Slot PCIex16			-
	PCI	-	-	-	-
	PCIe+PCI	-	1 Slot PCIex4 + 2 Slot PCI	1 Slot PCIex4 + 2 Slot PCI + 1 Slot PCIex16	-
	iDoor	-	-	-	Yes
Ethernet	Controller	GbE 1: Intel i219 GbE 2: Intel i210 GbE 3/4(Optional) : Intel i210	GbE 1: Intel i219 GbE 2: Intel i210 GbE 3/4(Optional) : Intel i210	GbE 1: Intel i219 GbE 2: Intel i210 GbE 3/4(Optional) : Intel i210	GbE1: RTL8111E GbE2: RTL8111E
	Speed	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
Audio	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio
	CODEC	Realtek ALC888S	Realtek ALC888S	Realtek ALC888S	Realtek ALC892
	Connector	1 (Line-out/Mic-in by switch)	1 (Line-out/Mic-in by switch)	1 (Line-out/Mic-in by switch)	1 (Line-out or Mic-in)
Watch Dog Timer		255-level timer interval, setup by software	255-level timer interval, setup by software	255-level timer interval, setup by software	Yes
TPM		TPM 2.0 (by optional AMO-I029)	TPM 2.0 (by optional AMO-I029)	TPM 2.0 (by optional AMO-I029)	-
I/O	SATA	2 x 2.5" SATA drive bay (Max 4 by Project)	2 x 2.5" SATA drive bay (Max 4 by Project)	2 x 2.5" SATA drive bay (Max 4 by Project)	1 x 2.5" or 3.5" SATA HDD bay
	mSATA	1 x mSATA socket (Share with Mini PCIe)	1 x mSATA socket (Share with Mini PCIe)	1 x mSATA socket (Share with Mini PCIe)	1 x Full-size mSATA (shared with mini-PCIe slot)
	USB3.1/3.2	4 x USB 3.2 (Gen2,10G)	4 x USB 3.2 (Gen2,10G)	4 x USB 3.2 (Gen2,10G)	-
	USB3.0	4	4	4	1
	USB 2.0	-	-	-	7
	GPIO	16bit	16bit	16bit	-
	COM Port	6(4 x RS-232/422/485, 2 x RS-232)	6(4 x RS-232/422/485, 2 x RS-232)	6(4 x RS-232/422/485, 2 x RS-232)	5 x RS232, 1 x RS232/422/485
Power	Power Type	AT/ATX	AT/ATX	AT/ATX	AT/ATX
	Power Supply Voltage	9-36VDC	9-36VDC	9-36VDC	12 VDC, ± 10%
	Connector	4-pin terminal block	4-pin terminal block	4-pin terminal block	-
	Power Consumption (Idle:CPU/Memory only)	26.4W	26.4W	26.4W	15.7W
	Power Consumption (Full Load:CPU/Memory only)	57.6W	57.6W	57.6W	24.7W
	Power Adapter	AC to DC, 230W (Optional)	AC to DC, 230W (Optional)	AC to DC, 230W (Optional)	AC to DC, DC12V/5A, 60 W (Optional)
Environment	Operating Temperature (air flow 0.7 m/sec)	Up to 65W processor with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow	Up to 65W processor with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow	Up to 65W processor with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow	With 2.5" HDD : 0~45 °C With 3.5" HDD : 0~40 °C With extended temp peripherals : 0~50 °C
	Non-operating Temperature	-40~ 85 °C and 95% @ 40 °C Non-Condensing	-40~ 85 °C and 95% @ 40 °C Non-Condensing	-40~ 85 °C and 95% @ 40 °C Non-Condensing	-40~ 85 °C and 40 °C @ 95% RH Non-Condensing
	Vibration Resistance	With SSD: 3 Grms	With SSD: 3 Grms	With SSD: 3 Grms	With HDD: 0.5 Grms
	Shock Protection	With SSD: 30 G	With SSD: 30 G	With SSD: 30 G	With HDD: 10 G
Physical Characteristics	Dimensions (W x H x D)	156 x 204 x 230 mm	156 x 204 x 230 mm	197.2 x 205 x 230 mm	200 x 64 x 200 mm
	Weight	5.705Kg	5.705Kg	6.41Kg	2.0 kg (4.4lb)
	Mounting	Desk mounting	Desk mounting	Desk mounting	VESA/Wall mounting (Optional)
Operating System	Microsoft Windows	Yes (Windows 10)	Yes (Windows 10)	Yes (Windows 10)	Yes (Windows 10, Windows 8, Windows 7, WES8, WES7)
	Linux	Yes (by project)	Yes (by project)	Yes (by project)	Yes (by Project)
APIs	WISE-DeviceOn	Yes	Yes	Yes	Yes
	SUSI API	Yes	Yes	Yes	-
	Other	McAfee, Aronis	McAfee, Aronis	McAfee, Aronis	McAfee, Acronis
Certification	EMC	CE/FCC ClassB, CCC, BSMI	CE/FCC ClassB, CCC, BSMI	CE/FCC ClassB, CCC, BSMI	CE/FCC Class A/CCC/BSMI
	Safety Certifications	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI

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

Intelligent Transportation Systems

Application		Outdoor NVR			In-Vehicle
Model Name		ARK-2121S	ARK-2151S	ARK-2250S	ARK-2121V
Processor System	CPU	Intel Atom E3845	4th Gen Intel® Core i5 4300U	6th Gen Intel Core i5-6442EQ/i7-6822EQ	Intel Atom E3825/E3845
	Frequency	1.91 GHz	1.9 GHz	1.9GHz/2.0GHz	1.33 GHz / 1.91 GHz
	Core Number	4	2	4	2/4
	BIOS	AMI EFI 64 Mbit	AMI EFI 128 Mbit	AMI UEFI 128Mbit	AMI EFI 64 Mbit
	Chipset	SoC	SoC	QM170	SoC
Memory	Technology	DDR3L 1333 MHz	DDR3L 1600 MHz	DDR4 2133MHz	DDR3L 1066/1333 MHz
	Max. Capacity	8 GB	8 GB	32 GB	8 GB
	Socket	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM	2 x 260-pin SODIMM	1 x 204-pin SODIMM
Display	VGA	1 (up to 1600 x 1200)	1 (up to 1920 x 1200)	-	1 (up to 1600 x 1200)
	DDI (HDMI/DVI/ DisplayPort)	1 x lockable HDMI, up to 1080P	1 x lockable HDMI, up to 4K at 24 Hz	2 x lockable HDMI, up to 1080P	1 x lockable HDMI, up to 1080P
	Multiple Display	Dual	Dual	Dual	Dual
Expansion Interface	MiniPCIe / M.2	1 x Full-size Mini PCIe 1 x Full-size Mini PCIe 2 x Full-size Mini PCIe w/SIM holders	1 x Half-size Mini PCIe 1 x Full-size Mini PCIe 2 x Full-size Mini PCIe w/SIM holders	1x M.2 (2230 E Key) 2 x Full-size Mini PCIe w/SIM holders	1 x Full-size Mini PCIe 1 x Full-size Mini PCIe 2 x Full-size Mini PCIe w/SIM holders
	SIM socket	2	2	2 (accessible)	2
Other	PoE	4 x 10/100 Mbps PoE	4 x 10/100 Mbps PoE	Optional extended modules 4/8 GbE PoE (M12 D/X-coded)	4 x 10/100 Mbps PoE (E3845)
	CANBus	-	-	optional	optional
Ethernet	Controller	GbE 1: Intel I210-IT GbE 2: Intel I210-IT	GbE 1: Intel I218 GbE 2: Intel I210-IT	GbE 1: Intel i219 GbE 2: Intel i210	GbE 1: Intel I210-IT GbE 2: Intel I210-IT
Audio	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio
	Connector	3 (Line-in, Line-out, Mic-in)	3 (Line-in, Line-out, Mic-in)	3 (Line-in, Line-out, Mic-in)	3 (Line-in, Line-out, Mic-in)
	3G Voice			-	1 x Line-out, 1 x Mic-in
WatchDog Timer		Yes	Yes	Yes	Yes
Storage	SATA	1 x 2.5" removable drive bay	1 x 2.5" removable drive bay	1 x 2.5" removable drive bay Optional 2nd 2.5" drive bay in extended modules	1 x 2.5" removable drive bay
	mSATA	1 x Full-size mSATA	1 x Full-size mSATA	1 x Full-size mSATA	1 x Full-size mSATA
I/O	USB 3.0	1	2	3	1
	USB 2.0	3	2	-	3
	GPIO	6 x DI & 2 x DO with isolation	6 x DI & 2 x DO with isolation	4x DI & 4x DO with isolation	6 x DI & 2 x DO with isolation
	COM Port	2 x (RS-232/422/485)	2 x (RS-232/422/485)	3 x RS-232/422/485	2 x isolated RS-232/422/485 2 x RS-232/422/485 (E3825) 2 x RS-232/422/485 (E3845)
	LAN	2 x RJ45	2 x RJ45	2 x RJ45	2 x RJ45
Power	Power Supply Voltage	9 ~ 36 V_{DC} w/ isolation	9 ~ 36 V_{DC} w/ isolation	12 ~ 24 V_{DC} w/ isolation	12/24 V_{DC} w/power ignition management
	Connector	3-pin Phoenix	3-pin Phoenix	5-pin Phoenix	3-pin Phoenix
	Power Adaptor	AC to DC, 19 V_{DC}, 120W	AC to DC, 19 V_{DC}, 120W	AC to DC, 24Vdc, 150W	AC to DC, 19 V_{DC}, 120W
	Regulation	-	-	-	ISO 7637-2 lev.4
Environment	Operating Temperature (air flow 0.7 m/sec)	-30 ~ 60 °C	-20 ~ 60 °C	-20 ~ 70 °C	-30 ~ 70 °C (E3825) -30 ~ 60 °C (E3845)
	Vibration Resistance	3 Grms	3 Grms	MIL-STD 810G, NEMA TS2	IEC 60721-3-5 Class 5M3
	Shock Protection	30 G	30 G	MIL-STD 810G, NEMA TS2	IEC 60721-3-5 Class 5M3
Physical Characteristics	Dimensions (W x H x D)	264.5 x 69.2 x 133.0 mm	264.5 x 75.1 x 133.0 mm	260 x 73 x 160.2 mm (260 x 99.6 x 160.2 mm with 2nd stack)	264.5 x 69.2 x 133.0 mm
Operating System	Microsoft Windows	Yes (Win7, 10)	Yes (Win7, 10)	Yes (Win7, 10)	Yes (Win7, 10)
	Linux	Yes (by Project)	Yes (by Project)	Yes (by Project)	Yes (by Project)
APIs	WISE-DeviceOn	Yes	Yes	Yes	Yes
Certification	EMC	CE/FCC Class A, CCC, BSMI	CE/FCC Class A, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC Class A, CCC, BSMI
	Safety Certifications	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	UL, CCC, BSMI, CB, E-Mark

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

Application		In-Vehicle		Rolling Stock	
Model Name		ARK-2151V	ARK-2250V	ARK-2231R	ARK-2250R
Processor System	CPU	4th Gen Intel Celeron 2980U/ Core i5-4300U	6th Gen Intel Core i5-6442EQ/i7-6822EQ	Intel Atom E3845	6th Gen Intel Core i5-6442EQ/i7-6822EQ
	Frequency	1.6 GHz / 1.9 GHz	1.9GHz/2.0GHz	1.91GHz	1.9GHz/2.0GHz
	Core Number	2	4	4	4
	BIOS	AMI EFI 128 Mbit	AMI UEFI 128 Mbit	AMI EFI 64-bit	AMI UEFI 128 Mbit
	Chipset	SoC	QM170	SoC	QM170
Memory	Technology	DDR3L 1333/1600 MHz	DDR4 2133MHz	DDR3L 1333	DDR4 2133MHz
	Max. Capacity	8 GB	32G	8G	32G
	Socket	1 x 204-pin SODIMM	2 x 260-pin SODIMM	1 x 204-pin SODIMM	2 x 260-pin SODIMM
Display	VGA	1 (up to 1920 x 1200)	1 (up to 1920 x 1200)	1 (up to 2560 x 1600)	-
	DDI (HDMI/DVI/ DisplayPort)	1 x lockable HDMI, up to 4K at 24 Hz	1 x lockable HDMI, up to 1080P	1 x lockable HDMI, up to 1080P	2 x lockable HDMI, up to 1080P
	Multiple Display	Dual	Dual	Dual	Dual
Expansion Interface	MiniPCIe / M.2	1 x Half-size Mini PCIe 1 x Full-size Mini PCIe 2 x Full-size Mini PCIe w/SIM holders	1x M.2 (2230 E Key) 2 x Full-size Mini PCIe w/SIM holders	1 x Full-size Mini PCIe 1 x Full-size Mini PCIe 1 x Full-size Mini PCIe w/SIM holder	1x M.2 (2230 E Key) 2 x Full-size Mini PCIe w/SIM holders
	SIM socket	2	2 (accessible)	1 (accessible)	2 (accessible)
Other	PoE	4 x 10/100 Mbps PoE (4300U)	Optional extended modules 4/8 GbE PoE (M12 D/X-coded)	Optional extended modules 4/8 GbE PoE (M12 D/X-coded)	Optional extended modules 4/8 GbE PoE (M12 D/X-coded)
	CANBus	optional	optional	optional	optional
Ethernet	Controller	GbE 1: Intel I218 GbE 2: Intel I210-IT	GbE 1: Intel i219 GbE 2: Intel i210	GbE 1: Intel I210-IT GbE 2: Intel I210-IT	GbE 1: Intel i219 GbE 2: Intel i210
Audio	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio
	Connector	3 (Line-in, Line-out, Mic-in)	3 (Line-in, Line-out, Mic-in)	DB9 (Line-in, Line-out, Mic-in)	DB9 (Line-in, Line-out, Mic-in)
	3G Voice	1 x Line-out, 1 x Mic-in	-	-	-
WatchDog Timer		Yes	Yes	Yes	Yes
Storage	SATA	1 x 2.5" removable drive bay	1 x 2.5" removable drive bay Optional 2nd 2.5" drive bay in extended modules	1 x 2.5" removable drive bay Optional 2nd 2.5" drive bay in extended modules	1 x 2.5" removable drive bay Optional 2nd 2.5" drive bay in extended modules
	mSATA	1 x Full-size mSATA	1 x Full-size mSATA	1 x Full-size mSATA	1 x Full-size mSATA
I/O	USB 3.0	2	3	1 (Water-proof)	1 (Type A female)
	USB 2.0	2	-	2 (M12 A-Coded)	2 (M12 A-Coded)
	GPIO	6 x DI & 2 x DO with isolation	4 x DI & 4 x DO with isolation	1 x 8bit DIO	1 x 8bit DIO
	COM Port	2 x isolated RS-232/422/485 2 x RS-232/422/485 (2980U) 2 x RS-232/422/485 (4300U)	3 x RS-232/422/485	2 x RS-232/422/485	2 x RS-232/422/485
	LAN	2 x RJ45	2 x RJ45	2 x M12 X-code	2 x M12 X-code
Power	Power Supply Voltage	12/24 V_{DC} w/power ignition management	12/24 V_{DC} w/power ignition management	24 V_{DC} (48 V_{DC}, 72 V_{DC}, 110 V_{DC} optional)	24 V_{DC} (48 V_{DC}, 72 V_{DC}, 110 V_{DC} optional)
	Connector	3-pin Phoenix	5-pin Phoenix	M12 A-coded	M12 A-coded
	Power Adaptor	AC to DC, 19 V_{DC}, 120W	AC to DC, 24Vdc, 150W	AC to DC, 24Vdc, 180W	AC to DC, 24Vdc, 180W
	Regulation	ISO 7637-2 lev.4	ISO 7637-2 Lev.4	EN50155 S2&C1	EN50155 S2&C1
Environment	Operating Temperature (air flow 0.7 m/sec)	-20 ~ 60 °C	-20 ~ 70 °C	-40 ~ 70 °C (EN50155 TX)	-40 ~ 70 °C (EN50155 TX)
	Vibration Resistance	IEC 60721-3-5 Class 5M3	IEC 60721-3-5 Class 5M3, MIL-STD 810G	IEC61373 Category1, Class B	IEC61373 Category1, Class B
	Shock Protection	IEC 60721-3-5 Class 5M3	IEC 60721-3-5 Class 5M3, MIL-STD 810G	IEC61373 Category1, Class B	IEC61373 Category1, Class B
Physical Characteristics	Dimensions (W x H x D)	264.5 x 75.1 x 133.0 mm	260 x 73 x 160.2mm 260 x 99.6 x 160.2mm with extension module	260 x 57 x 160.2mm 260 x 83.6 x 160.2mm with extension module	260 x 73 x 160.2mm 260 x 99.6 x 160.2mm with extension module
Operating System	Microsoft Windows	Yes (Win7, 10)	Yes (Win7, 10)	Yes (Win7, 10)	Yes (Win7, 10)
	Linux	Yes (by Project)	Yes (by Project)	Yes (By project)	Yes (By project)
APIs	WISE-PaaS/DeviceOn	Yes	Yes	Yes	Yes
Certification	EMC	CE/FCC Class A, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC, CCC, BSMI, EN50121-3-2	CE/FCC, CCC, BSMI, EN50121-3-2, EN50121-4
	Safety Certifications	UL, CCC, BSMI, CB, E-Mark	CB, UL, CCC, BSMI, E-Mark	UL, CCC, BSMI, CB, EN50155	UL, CCC, BSMI, CB, EN50155

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

DeviceOn / iEdge

Enabling Edge-to-Intelligence and Optimized Management

Features

- Easy cross-platform integration, multiple-equipment protocol integration, and SDK support
- Equipment status monitoring and management to optimize operational efficiency
- Auto-alerts, history data tracking, and reaction rule engine for preventative equipment maintenance
- Supports Azure, AWS, and K8s Microservice structure for quick cloud integration

Introduction

DeviceOn/iEdge (Edge-to-Intelligence) is an industrial app that enables effective equipment management for optimized productivity. It provides equipment connectivity with standard industrial protocol support (Modbus, OPC-UA, ODBC…etc.), an easy and user-friendly interface for equipment status monitoring and management, a reaction rule engine, and abnormality notification functions for real-time equipment reaction and preventative maintenance.

Feature Details

Equipment Connectivity

- Support multiple sensors (temperature / humidity / PM2.5 / voltage / current)
- Field equipment standard protocol support, including Modbus, OPC UA, and other PLC base protocols (by project)
- Integrated WebAccess/SCADA: over 400+ driver support for major PLCs, PACs, I/O modules, CNCs, network switches and computer platforms
- Plug-in editor supports Modbus and OPC UA tag editing from cloud-to-edge
- Provide SDK to connect proprietary communication protocols

Data Visualization

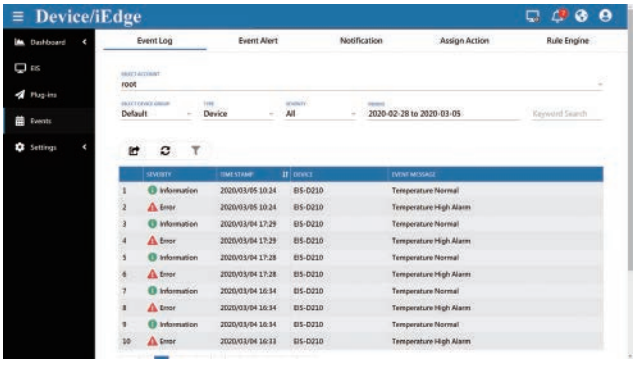
DeviceOn.E2I's built-in Grafana Dashboard supports multiple types of data sources and integrates auto-generated dashboard functionality. DeviceOn.E2I provides overall data monitoring and historical data tracking. The edge standalone dashboard provides real time data monitoring without connecting to server.

Database Integration and Transfer

- Edge Computing Database: for resumed data uploading and data calculation usage
- Cloud Database: supports database transfer by using E2I API
- Database Fetch: fetches MSSQL or exported file (txt/csv) to cloud

Edge Intelligence

- **Data Preprocessing**
  Data Flow: in addition to providing diversified node development and integration from the Node-RED Library website, Advantech develops E2I nodes for rapid integration
  Edge Data Calculation: through simple A + B = C operation, important data is stored in the cloud to avoid wasting network bandwidth and database capacity. This process takes advantage of powerful edge calculations to significantly reduce server workload.
- **Abnormality Notifications**
  Abnormality notification support list includes web event notification and queries, timely email notification, messenger notification (LINE / WeChat/What's App) and customized event notification (users define corresponding error codes and event levels)
- **Reaction Rule Engine**
  If monitoring status over the threshold on the edge side, DeviceOn.E2I takes action to prevent equipment damage



Event Notification

All product specifications are subject to change without notice.
Last updated: 16-Jun-2020

Software Specifications

		DeviceOn/iEdge
Equipment Connectivity	Support Protocol Plug-in	▪ OPC-UA Client plug-in ▪ Modbus plug-in ▪ ODBC plug-in* ▪ WebAccess/SCADA plug-in* *Only support Windows platform.
	Plug-in Editor (Server/Edge)	Support OPC-UA /Modbus plug-in
	Plug-in Deploy (Server)	Support OPC-UA /Modbus plug-in
	Max. Device Connections	1000 (Standalone), Unlimited (Cloud deployment)
	Max. Message Handling	3000m/s, < 1KB, Unlimited (Cloud deployment)
Data Security	McAfee Whitelist Protection	✓
	Acronis One-Click Restore	✓
	SSL Encryption	✓
Event Notifications	Messenger	LINE/WeChat/What's App
	E-mail	SMTP/POP3
	SMS	ClickatelI
	Web	Online Notification
Data Visualization	Grafana Dashboard	Server/Edge
	One Key Generator	✓

Minimum Requirements

Web Console

Web browser that supports HTML5+CSS3+Javascript

- Microsoft Edge
- Google Chrome : 9.0+
- Firefox: 15.0+
- Safari: 5.1+

Note:
Cookies must be enabled. Accept Cookies per session must be enabled (Accept all Cookies or only accept Cookies from this server)
Browser must support HTTPS (SSL)

Server (Standalone Installation)

EIS-S230 (Data Service Server)

- All functions are fully qualified by Advantech and offer the best solution for compatibility and stability.
- Support for K8s (Linux) and a standalone installation (Windows) environment meets different development demands.

Other Hardware Minimum Requirements

- Intel Core i5 2.3 Ghz CPU or above
- 4 GB RAM
- 25 GB root partition for the system
- 100 GB data storage partition for documents and indexing

Operating System

- Windows Server 2012/2012 R2 64-bit (recommended and fully tested)
- Windows Server 2016/2019 Standard 64-bit (recommended and fully tested)

Agent

Hardware

All EIS Series products

- RISC platform: EIS-D620
- Entry Level: EIS-D110/EIS-D210
- Mainstream: EIS-D150
- No EIS products support by project

Operating System

- Windows 10 64-bit
- Ubuntu 16.04/18.04
- Debian (RISC platform)

Order Information

Free Bundle License (For all EIS series products)

Perpetual License (via Marketplace)

- 32WSWPE2IMK0A1 (10 devices)

Perpetual License

- 32WSWPE2I010A1 (10 devices)
- 32WSWPE2I100A1 (100 devices)

EIS-S230

Edge Cloud Solution with Scalable Data Service Platform

Features

- Integrated hardware plus software for back-end data service and light private cloud
- Pre-configured system: Intel Xeon, Ubuntu OS with 32GB RAM/ 512GB mSATA SSD
- Open and Standard structure: kubernetes Built-in, Multiple DB Connections, On-demand Microservices
- Integrated IoT Software: Private Cloud Deployment, Platform Management, Application Integration
- Application integration: DeviceOn/iEdge, Grafana, Prometheus, Kubeapps, Kubernetes Dashboard
- Sustainable Management: Condition Monitor, Load Balance, Self-Healing
- DeviceOn/iEdge inside for IoT Device Operation Management

Introduction

For accelerating IoT application landing, Advantech provide Edge cloud solution EIS-S230 for our customer to build a stable and reliable back-end data service or light private cloud. EIS-S230 is a all-in-one solution for user.It builded in Intel Xeon CPU to offer extreme computing power for data service. Moreover, EIS-S230 is integrated Kubernates to support micro-service, and build-in complete back-end software components, includes RabbitMQ for IoT Hub, mongoDB and PostgreSQL for database, Grafana for data visualization and Prometheus for Back-end management. EIS-S230 also provide dynamically scale out function, user can extend the resources if necessary.It help customer create IoT applications more easily and flexibly. Speed up the time to market.

Software Stack

Platform Management

Database Management

- A powerful, open source object-relational database system.
- MongoDB is a document database, which means it stores data in JSON-like documents.

Backend Management

- Deployment, scaling, and management of containerized applications.
- Ceph stores data as objects within logical storage pools. The algorithm enables the Ceph Storage Cluster to scale, rebalance, and recover dynamically.

Message Broker

- Lightweight and easy to deploy on premises and in the cloud. It supports multiple messaging protocols

Operation Management

DeviceOn/iEdge

Device Management

- Automatic device registration
- One-key to dashboard
- Device security

Monitoring & Control

- Real-time operations
- Power on/off
- Remote control

Update Management

- Batch provisioning
- Firmware updates
- Software updates

Applications Development

Data Visualization

- Grafana allows you to query, visualize, alert on and understand your metrics.
- Prometheus is an open-source software application used for event monitoring and alerting.

Applications Management

- Web-based UI for deploying and managing applications in Kubernetes clusters.
- Stateless, highly scalable server side application that stores and lets you distribute Docker images.
- A Chart Repository server written in Go. It provides an API for uploading charts.

Machine Learning

- Making deployments of machine learning (ML) workflows on Kubernetes Device Management

All product specifications are subject to change without notice.

Server Function List

Manage & Monitor	Comprehensive management & monitoring Web console
High Availability	Supports highly available deployment
Scalability	Horizontal/Vertical scaling via clustering with server architecture and kubernetes' features
Lightweight and Easy to Deploy	Microservices architecture to deploy and run applications easily
Role-Based Access Control	Fine-grained authorization and authentication
Load Balancing	Balancing workload and network traffic
Health Check & Self-Heal	Check health status of services and heal them in need

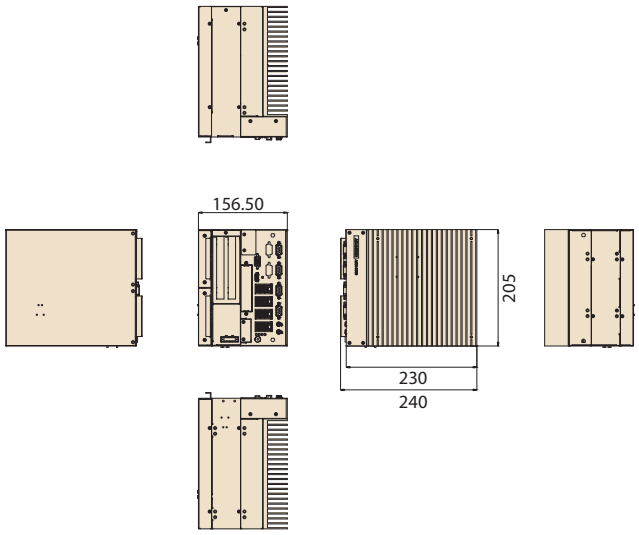
**Support depends on device type, OS and account permission.

System Specifications

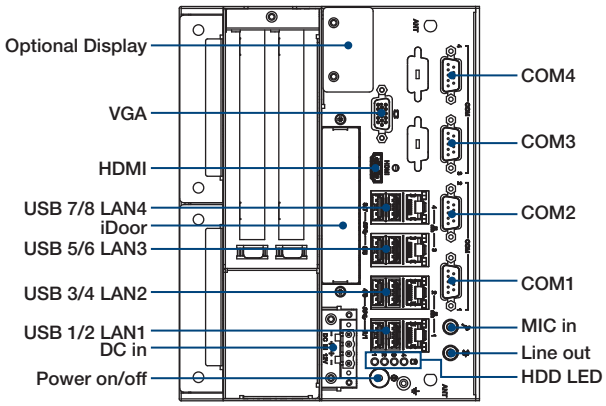
Model Name		EIS-S230			
Processor System	CPU	E3-1235L V5	i7-7700/i7-6700	i5-7500/i5-6500	i3-7101E
	Frequency	2.0GHz	3.6GHz/3.4GHz	3.4GHz/3.2GHz	3.9GHz
	L3 Cache	8MB	8MB	6MB	3MB
	TDP	25W	65W	65W	54W
	Chipset	C236			
	BIOS	AMI EFI 128Mbit			
Memory	Technology	DDR4 2133 MHz			
	Max. Capacity	32 GB			
	Socket	2 x 260-pin SO-DIMM			
Graphics	Chipset	Intel® HD Graphics 630			
	Graphic Engine	Direct x 12, OpenGL 4.4 HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG and VP8. HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8 and VP9			
	VGA	1920x1200@ 60Hz			
	HDMI	1 HDMI port, HDMI 2.0 for HD video playback, 3840x2160@30Hz			
	Optional 3rd Display module	DVI-D / DP / HDMI Display Port			
	Triple Display	VGA+HDMI + 3rd display module			
Ethernet	LAN1	10/100/1000 Mbps Intel I219-LM GbE, support Wake On Lan			
	LAN2, 3, 4	10/100/1000 Mbps Intel I210 GbE, support Wake On Lan			
Audio	Interface	Realtek ALC888S, High Definition Audio, Line-out, Mic-in			
Others	Watch dog Timer	255-level timer interval, setup by software			
	TPM	TPM 2.0			
I/O Interface	Serial Port	4 x RS-232/422/485 port with auto flow control; COM 1 support 5V/12V power supply (by jumper)			
	USB	8 x USB 3.0 ports			
	P/S2	1 Port support by cable and bracket (Optional)			
	Optional I/O	16bit DIO or 2 x RS-232 ports			
Expansions	Mini PCIe	2 x Full-size Mini PCIe (2 x support mSATA, 1 x support SIM holder)			
	M.2	1 x E key for WiFi			
	i Door	1 set (Optional)			
	Add-on Card Slot	Maximum card size 110mm (H) x 180mm (L) Suggest maximum power consumption 10W for each slot 2 Slots PCIex8 (Default) 2 Slots PCI (Support by project) 1 Slots PCIex16 (Support by project)			
Storage	HDD	2 x 2.5" SATAIII HDD Bay with Max Height 15mm (support Intel SW RAID (Up to 4 x 2.5" SATAIII HDD bays by optional 2*AMK-A0028E)			
	mSATA	2 x mSATA socket (Share with Mini PCIe)			
Software Support	Microsoft Windows	Windows 10 (Windows 7 for 6th Gen CPU only)			
	Linux	Ubuntu (Others By Project Support)			
Power Requirements	Power Type	AT/ATX			
	Power Input Voltage	9-36V			
	Power Adapter	AC to DC, 150W (Optional)			
Power Consumption (CPU/Memory Only)	Typical	25.68W			
	Max.	88.92W			
Mechanical	Construction	Aluminum housing			
	Mounting	Desk mounting			
	Dimensions (W x H x D)	156.5 x 205 x 230 mm (6.16" x 8.07" x 9.06")			
	Weight	5.87Kg			
Environment	Operating Temperature	25W/35W/65W(only 6th Gen) Processor with extended temp peripherals: -20 ~ 60 °C with 0.7m/s air flow Under 73W processor with HDD: 0 ~ 40 °C with 0.7m/s air flow			
	Storage Temperature	-40 ~ 85 °C			
	Relative Humidity	95% @ 40 °C (non-condensing)			
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.			
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration			
	EMC	CE/FCC Class B, CCC, BSMI			
	Safety	CB, UL, CCC, BSMI			

Dimensions

Unit: mm



Front Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part Number	CPU	Memory	Storage	OS	Display	GbE	USB 3.0	Serial	Audio	Power Input	Expansion	Operating Temperature*
EIS-S230-U20S501	Intel® Xeon® E3-1275 V6	32GB	512GB SSD	Ubuntu	1 x VGA 1 x HDMI	4	8	4	LINE out	9-36V	2 x PCIE	0 ~ 40 °C
EIS-S230-0000001	Optional	Optional	Optional	Optional	1 x VGA 1 x HDMI	4	8	4	LINE out	9-36V	2 x PCIE	-20 ~ 60 °C

* If industrial grade memory and SSD selected.

Packing List

Item	Description
1	EIS-S230-U20S501
2	Data Service Server software packages
3	AC to DC power adapter, DC 24V 220W
4	Accessory Package

Optional Items

Part Number	Description
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable 3-pin 183cm, PSE type
1700019146	3-pin power cord (CCC)
96ND1TB-ST-SG5KA	Seagate ST1000VT001 1TB HDD
SQF-S25V4-1T-SBC	SQF 2.5" SSD 1TB SSD

* MUST select two pieces of HDD/SSD as data storage.

EIS-D620

RISC-based Edge Intelligence Server

Features

- Integrated hardware plus software to build up edge-to-cloud applications
- Pre-configured system: Rockchip RK3399, Debian with 2GB/ 16GB eMMC
- DeviceOn/iEdge inside for IoT Device Operation Management
- Comprehensive developer tools and documents: Node-RED data flow logic designer, dashboard builder, protocol plug-in SDK & configuration tools

Introduction

To fulfill customer requirements in equipment connectivity, protocol conversion and data visualization applications, Advantech offers the EIS-D620 Edge Intelligence Server, which is equipped with a Rockchip RK3399 focussed on transmitting IoT data to the cloud. Supporting field protocols (MQTT/OPC/Modbus) for sensor/device data acquisition, EIS-D620 can be used with Advantech's IoT SDK for data integration. Furthermore, EIS-D620 comes pre-integrated with Advantech's DeviceOn/iEdge software solution, allowing users to incorporate sensor data aggregation, edge analytics, and cloud applications for fast and easy real-time operational intelligence. Also, the build-in WISE-PaaS/DeviceOn software provides remote access functions, like KVM and powercycle, and device management functions, like condition monitoring and auto-alert. EIS-D620 provides a range of connectivity options with excellent data handling and networking connection capabilities for various IoT applications.

Solution Block Diagram

IoT Connectivity

Industrial Protocol Connectivity
Provides standard protocols(Modbus/ OPC/ MQTT) for sensor and devices data collection.

Edge IoT Application Development
Open Plug-in SDK and sample code for sensor and data collection and conversion.

I/O and Sensor Compatiblity
Integration tested with Advantech M2.COM, ADAM and WISE-4000 series.

Edge Intelligence

Edge Dashboard
Real time equipment dashboard on the edge site.

Edge Data Pre-processing
Provide edge data mix calculation to save server workload

Logic Rule Engine
Pre-integrated Data Flow Logic Designer Node-RED for flow control

Operation Management

Device Management
- Automatic device registration
- One-key to dashboard
- Device security

Monitoring & Control
- Real-time operations
- Power on/off
- Remote control

Update Management
- Batch provisioning
- Firmware updates
- Software updates

All product specifications are subject to change without notice.

Cloud Integration

Microsoft Azure Cloud Services

Pre-configured with Azure Kubernetes services to quickly integrate with other cloud modules and shorten development effort.

Microsoft Azure

Cloud Connectivity

Azure IoT Edge / Plug and play certification and AWS Greengrass certification

Azure aws

Edge Cloud

Edge Cloud (EIS-S230) provides a scalable data management platform with Kubernetes open standard environment

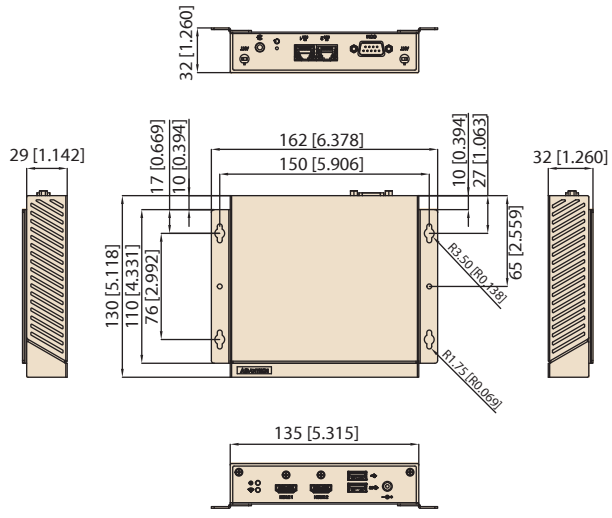
IoT Development Tools

Node-RED Utility	Pre- integrated logic edit tool Node-RED
Data Collection	Receive Data to Agent and transfer to WISE-PaaS/RMM server
Data Conversion	Conversion data protocol to MQTT with JSON format
Plug-in SDK	Agent and protocol conversion plug-in SDK for developer
Remote Update (OTA)	Software(Advantech & 3rd party) update
Light Analytic	Statistics and graphical representation of historical data
Dashboard Builder	Customizable dashboard to display sensor data with text, spark line, gauge, etc. types of widgets

**Support depends on device type, OS and account permission.

Dimensions

Unit: mm [inch]



Edge System Specifications

Model Name	EIS-D620
Processor	Dual-core ARM Cortex-A72 processor + Quad-core ARM Cortex-A53 processor
Storage	1 x 16GB eMMC on board; 1 x SD card Slot (for expansion)
RAM	2GB on-board LP-DDR3L-1066
OS	Debian
Protocol	Modbus, OPC-UA
Display	HDMI x 2
I/O	USB 3.0 x 1, USB 2.0 x 1, GBE LAN x 2, Serial port x 1
Power Input	12V DC-in (AT mode)
Dimension	135 x 130 x 29 mm
Environment Temperature	0 ~ 60 °C (32 ~ 104 °F)

Ordering Information

Part Number	CPU	Memory	Storage	OS	Display	GbE	USB 3.0	Serial	Audio	Power Input	Micro SD	Operating Temperature*
EIS-D620-D1DE121	Rockchip RK3399	2 GB	16GB eMMC	Debian	2 x HDMI	2	1	1	LINE out	12 V_{DC}	1	0 ~ 60 °C (32 ~ 104 °F)

Packing List

Item	Description
1	EIS-D620
2	WISE-PaaS software packages
3	12V Power adapter
4	Accessory Package

Optional Items

Part Number	Description
1700001524	3-pin power cord (US)
170203183C	3-pin power cord (EU)
170203180A	3-pin power cord (UK)
1700008921	3-pin power cord with PSE (Japan)
1700019146	3-pin power cord (CCC)

EIS-D150

High-Performance Edge Intelligence Server (EIS)

Features

- Integrated hardware and software aids edge-to-cloud application development
- Preconfigured system: High-performance computing powered by 6th Generation Intel® Core™ U-series i5, WES7E/Win 10 with 4 GB RAM, 64 GB SSD
- Pre-integrated software package: WISE-DeviceOn, WebAccess/SCADA and iEdge for equipment connectivity
- Preconfigured Microsoft Azure service: Device management package/data intelligence package (optional)
- Comprehensive developer tools and documents: Node-RED dataflow logic designer, dashboard builder, protocol plug-in SDK, and configuration tools

Introduction

Advantech's EIS-D150 high-performance EIS is a software/hardware integrated solution offering high computing power for IoT and cloud applications. The unit enables data preprocessing in addition to logic and flow control at the edge of networks. The EIS-D150 comes with a ready-to-run system (6th Generation Intel® Core™ U-series i5 platform with WES7E/ WIN10 IoT Enterprise) and WISE-PaaS software. It includes the IoT applications WISE-DeviceON, WebAccess/SCADA and iEdge for equipment connectivity. Furthermore, it gives the flexibility to add other software from the WISE-PaaS marketplace. For IoT developers, the EIS-D150 provides WISE-Agent and a protocol plugin SDK for IoT data collection and conversion, as well as a built-in Node-RED for smart data processing and logic flow design. It comes with preconfigured Azure packages from the WISE-PaaS Marketplace for easy and fast cloud connectivity. The EIS-D150 offers a complete solution for IoT data collection and intelligence creation from end devices and edge networks to the cloud. Its high computing power can assist with efficiently managing various types of devices, equipment, and sensors. With this unit, you can accelerate IoT implementation and enable IoT connectivity, data manageability, and analytics in the edge of your network.

Solution Block Diagram

IoT Connectivity

Industrial Protocol Connectivity
Provides standard protocols(Modbus/ OPC/ MQTT) for sensor and devices data collection.

Edge IoT Application Development
Open Plug-in SDK and sample code for sensor and data collection and conversion.

I/O and Sensor Compatiblity
Integration tested with Advantech M2.COM, ADAM and WISE-4000 series.

Edge Intelligence

Edge Dashboard
Real time equipment dashboard on the edge site.

Edge Data Pre-processing
Provide edge data mix calculation to save server workload

Logic Rule Engine
Pre-integrated Data Flow Logic Designer Node-RED for flow control

Operation Management

Device Management
- Automatic device registration
- One-key to dashboard
- Device security

Monitoring & Control
- Real-time operations
- Power on/off
- Remote control

Update Management
- Batch provisioning
- Firmware updates
- Software updates

All product specifications are subject to change without notice.
Last updated: 8-Sep-2020

Cloud Integration

Microsoft Azure Cloud Services

Pre-configured with Azure Kubernetes services to quickly integrate with other cloud modules and shorten development effort.

Microsoft Azure

Cloud Connectivity

Azure IoT Edge / Plug and play certification and AWS Greengrass certification

Azure aws

Edge Cloud

Edge Cloud (EIS-S230) provides a scalable data management platform with Kubernetes open standard environment

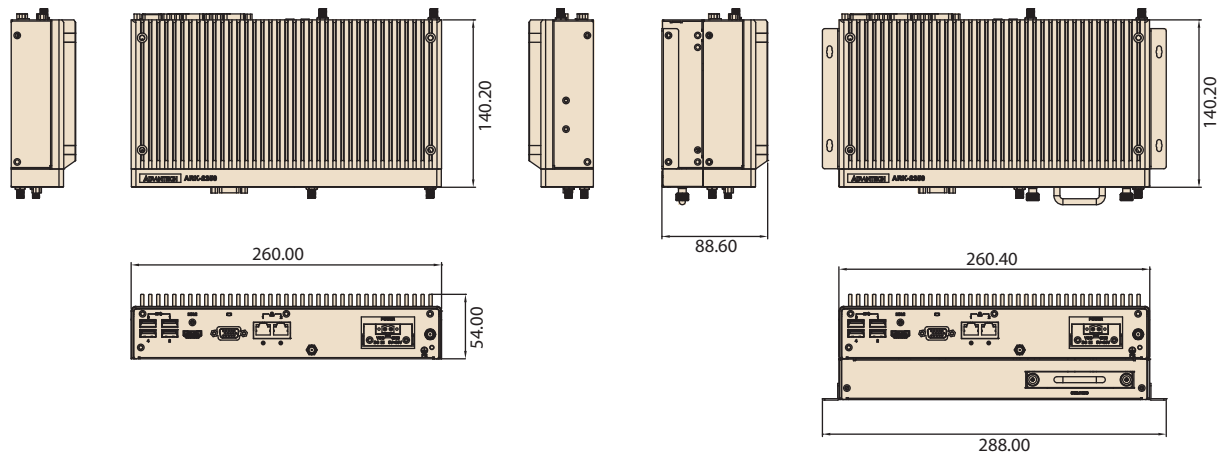
IoT Development Tools

Node-RED Utility	Pre-integrated logic editing tool Node-RED
Data Collection	Receive data from agents and transfer the data to a WISE-PaaS/RMM server
Data Conversion	Convert data protocol to MQTT with JSON format
Plug-in SDK	Agent and protocol conversion plug-in SDK for developers
GUI Protocol Config Tool (for Modbus)	Modbus GUI provided for quick configuration
Backup and System Recovery	Acronis hot backup/recovery/ hot-key recovery
Security	McAfee whitelist protection
Remote Update (OTA)	Software (Advantech and 3rd party) updates
Zero Downtime	Preserve edge data when connections are lost and recover the data once the connections have been restored
Light Analytics	Statistical and graphical representation of historical data
Dashboard Builder	Customizable dashboard with widgets for displaying sensor data in the format of text, sparklines, gauges, and so on

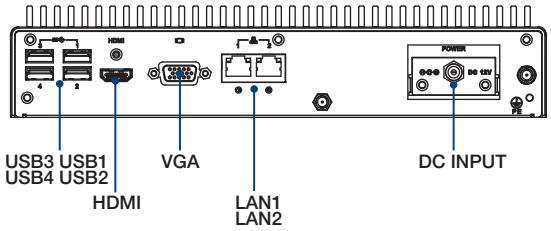
**Support depends on device type, OS and account permission.

Dimensions

Unit: mm

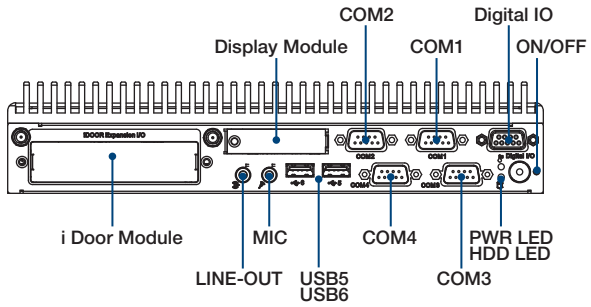


Front Panel External I/O Mechanical Layout/Drawing



*Power Input module by option

Rear Panel External I/O Mechanical Layout/Drawing



Specifications

Processor System	CPU	Intel Core i5 6300U (Support by T-PN)
	Base Frequency	2.4 GHz (Dual-Core)
	L3 Cache	3MB
	BIOS	AMI UEFI 128 Mbit
Memory	Technology	DDR4 2133 MHz
	Max. Capacity	16 GB
	Socket	1 x 260-pin SO-DIMM
Graphics	Controller	Intel HD Graphics 520
	Graphic Engine	DirectX 11.3, OpenGL 4.4, and OpenCL 2.1 Full AVC/VC1/MPEG2 HW Decode
	VGA	Up to 1920 x 1200 @ 60Hz (No hotplug support)
	HDMI	HDMI 1.4a for HD video playback, 4096 x 2160 @ 24Hz
	Dual Display	Yes, VGA + HDMI
	Opional display Module	HDMI, DP
	Triple Display	VGA+HDMI+Optional display module
Ethernet	LAN1	10/100/1000 Mbps Intel i219 GbE, support Wake On Lan
	LAN2	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out, Mic-in
TPM		TPM 2.0
IO Interface	Serial Ports	4 x RS-232/422/485 port with auto flow control
	USB Interface	4 x USB 3.0, 2 x USB 2.0
	DIO	8 bit
Other	Watchdog timer	255 levels timer interval, setup by software
Expansion	Mini PCIe	2 x full size Mini PCIe with (CN14 with SIM holder)
	iDoor	1 set (option)
Storage	HDD	Supports one SATA 2.5" HDD Bay (Compatible with 12.5mm height HDD) (Max. Data Transfer Rate 300 MB/s)
	SSD	1 x full size mSATA socket (CN15, shared with mPCIe)
Software Support	Microsoft Windows	Windows 10, Windows 8.1, WES7, Windows 7
	Linux	Support by project
Power Requirement	Power Type	ATX
	Power Input Voltage	$12V_{DC}$ (9-36V as option)
	Minimum Power Input	12 V, 5 A
	Power Adapter	AC to DC, DC12V/5A, 60W (Option)
Power Consumption	Typical	7.8 Watt
	Max.	42.8 Watt
Mechanical	Construction	Aluminum housing
	Mounting	Din-Rail mounting, Desk/wall-mounting, VESA mounting
	Dimensions (W x H x D)	260 x 54 x 140.2 mm (10.24" x 2.13" x 5.52")
	Weight	2.3 kg (5.07 lb)
Environment	Operating Temperature	With extended temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F) with 0.7m/s air flow With 2.5-inch hard disk 0 ~ 45 °C (32 ~ 113 °F) with 0.7m/s air flow
	Storage Temperature	- 40 ~ 85 °C (-40 ~ 185 °F)
	Relative Humidity	95% @ 40 °C (non-condensing)
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration
	EMC	CE/FCC Class B, CCC, BSMI
	Safety Certifications	UL, CCC, BSMI

Ordering Information

Part Number	CPU	Memory	Storage	OS	VGA	HDMI	GbE	USB 2.0	USB 3.0	RS-232/ 422/485	DIO	Audio	Full-size MiniPCIe	Power Input	mSATA	Operating Temperature*
EIS-D150-W1DS641	Intel® Core™ i5 6300U SoC	4 GB	64G 2.5" SATAIII SSD	WES7E	1	1	2	2	4	4	1, 8bit	Line out, mic in	2, 1 with SIM holder	12 V_{DC}	1	-20 ~ 60° C
EIS-D150-E1DS641	Intel® Core™ i5 6300U SoC	4 GB	64G 2.5" SATAIII SSD	Win 10	1	1	2	2	4	4	1, 8bit	Line out, mic in	2, 1 with SIM holder	12 V_{DC}	1	-20 ~ 60° C
EIS-D1505-01D0002	Intel® Core™ i5 6300U SoC	Option	Option	Win 10	1	1	2	2	4	4	1, 8bit	Line out, mic in	2, 1 with SIM holder	12 V_{DC}	1	-20 ~ 60° C

* If industrial-grade memory and SSD are selected

Packing List

Item	Description
1	EIS-D150 edge computer
2	WISE-PaaS software packages

Optional Items

Part Number	Description
96PSA-A60W12W6	AC-to-DC adapter, DC 12 V/5 A 60 W
1700001524	Power cable 3-pin 180 cm, USA type
170203183C	Power cable 3-pin 180 cm, Europe type
170203180A	Power cable 3-pin 180 cm, UK type
1700008921	Power cable 3-pin PSE Mark 183 cm
AMK-V019E	VESA mount kits
AMK-R005E	DIN rail mount kits

EIS-D210

Wireless Connectivity Edge Intelligence Server

Features

- Integrated hardware plus software to build up edge-to-cloud applications
- Pre-configured system: Intel® Celeron® N3350/E3940 SoC, Win 10 Ent with 4GB Memory, 64 GB SSD and wireless networking
- Pre-integrated software package: WISE-DeviceOn, WebAccess/SCADA and iEdge for equipment connectivity
- Pre-configured Microsoft Azure service: Device Management Package/ Data Intelligence Package (Optional)
- Pre-configured AWS service: Connect & Collect Package (Optional)
- Comprehensive developer tools and documents: Node-RED data flow logic designer, dashboard builder, protocol plug-in SDK & configuration tools

Introduction

To fulfill customer requirements in equipment connectivity, data visualization, and predictive maintenance applications, Advantech offers the EIS-D210 Edge Intelligence Server, which is equipped with an Intel® Celeron® Processor N3350 and comes integrated with AWS Greengrass and Microsoft Azure IoT Edge, thus ensuring that IoT devices can respond quickly to local events, interact with local resources, operate with intermittent connections, and minimize the cost of transmitting IoT data to the cloud. In addition to supporting field protocols (MQTT/OPC/Modbus) for sensor/device data acquisition, the EIS-D210 can be used with the Advantech IoT SDK for wireless sensor (Wi-Fi, Bluetooth, LoRa) data integration. Furthermore, the EIS-D210 comes pre-integrated with Advantech's DeviceOn/iEdge software solution, allowing users to incorporate sensor data aggregation, edge analytics, and cloud applications for fast and easy real-time operational intelligence. EIS-D210 provides a range of connectivity options with excellent data handling and networking connection capabilities for various IoT applications.

Solution Block Diagram

IoT Connectivity

Industrial Protocol Connectivity
Provides standard protocols(Modbus/ OPC/ MQTT) for sensor and devices data collection.

Edge IoT Application Development
Open Plug-in SDK and sample code for sensor and data collection and conversion.

I/O and Sensor Compatiblity
Integration tested with Advantech M2.COM, ADAM and WISE-4000 series.

Edge Intelligence

Edge Dashboard
Real time equipment dashboard on the edge site.

Edge Data Pre-processing
Provide edge data mix calculation to save server workload

Logic Rule Engine
Pre-integrated Data Flow Logic Designer Node-RED for flow control

Operation Management

Device Management
- Automatic device registration
- One-key to dashboard
- Device security

Monitoring & Control
- Real-time operations
- Power on/off
- Remote control

Update Management
- Batch provisioning
- Firmware updates
- Software updates

All product specifications are subject to change without notice.

Cloud Integration

Microsoft Azure Cloud Services

Pre-configured with Azure Kubernetes services to quickly integrate with other cloud modules and shorten development effort.

Microsoft Azure

Cloud Connectivity

Azure IoT Edge / Plug and play certification and AWS Greengrass certification

Azure aws

Edge Cloud

Edge Cloud (EIS-S230) provides a scalable data management platform with Kubernetes open standard environment

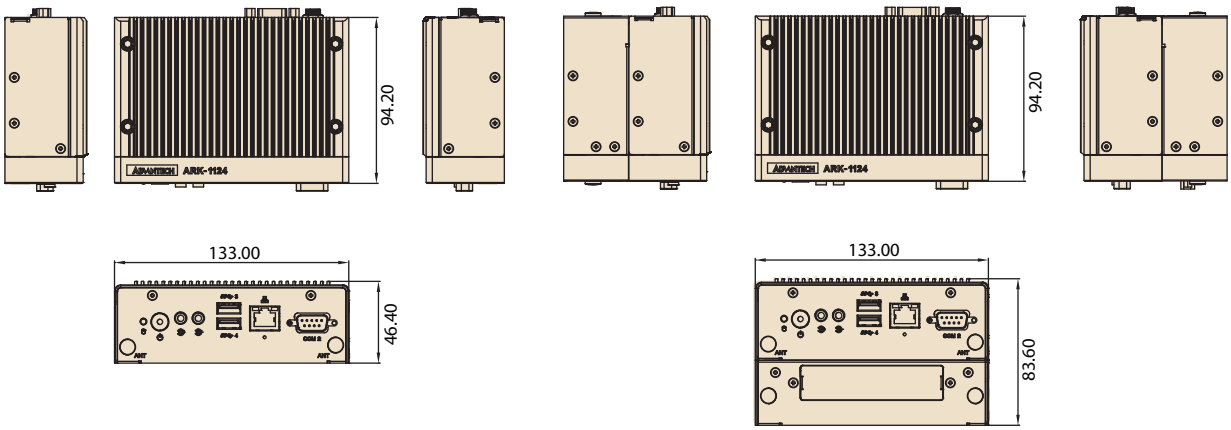
IoT Development Tools

Node-RED Utility	Pre- integrated logic edit tool Node-RED
Data Collection	Receive Data to Agent and transfer to WISE-PaaS/RMM server
Data Conversion	Conversion data protocol to MQTT with JSON format
Plug-in SDK	Agent and protocol conversion plug-in SDK for developer
GUI Protocol Config Tool (for Modbus)	Provide Modbus GUI for quick configuration
Back-up and System Recovery	Acronis Hot back-up/ Recovery/ Hot-Key recovery
Security	McAfee white list protection
Remote Update (OTA)	Software(Advantech & 3rd party) update
Zero Downtime	Reserve edge data when lost connection and recover it when the connection is back
Light Analytic	Statistics and graphical representation of historical data
Dashboard Builder	Customizable dashboard to display sensor data with text, spark line, gauge, etc. types of widgets

**Support depends on device type, OS and account permission.

Dimensions

Unit: mm



Specifications

Processor System	CPU	Intel® Celeron® N3350 Dual Core SoC
	Frequency	1.1GHz, turbo burst 2.4 GHz
	L2 Cache	2 MB
	BIOS	AMI EFI 64 bit
Memory	Technology	DDR3L 1866 MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	Intel® HD Graphics 500
	Graphic Engine	4K Codec Decode& Encode for H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG
	VGA	Up to 2048 x 1280 @ 60Hz
Ethernet	LAN1	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan
	LAN2	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out,,Line-in
IO Interface	Serial Ports	2 x RS-232/422/485 port with auto flow control
	USB Interface	4 x USB 3.0
Other	Watchdog timer	255 levels timer interval, setup by software
	TPM	Infineon SLB9665XQ 2.0
Expansion	Mini PCIe	1 x full-size mPCIe for WLAN/WWAN with SIM holder
	M.2	1 x M.2 E-key for WIFI (by CTOS or T-PN)
	iDoor	1, optional (2nd layer)
Storage	HDD/SSD	Supports 1 x SATA III Drive Bay (Compatible with 9.5mm height)
Software Support	Microsoft Windows	Win 10 IoT Enterprise LTSB
	Linux	Support by project
Power Requirement	Power Type	AT/ATX
	Power Input Voltage	$12V_{DC}$ (Optional 12~24V power module)
	Minimum Power Input	12 V, 5 A
	Power Adapter	AC to DC, DC12 V/5 A, 60 W with lockable DC Jack
Power Consumption	Typical	5W
	Max.	15.73W
Mechanical	Construction	Aluminum housing
	Mounting	DIN-Rail/Wall/VESA Mounting Kits (Optional)
	Dimensions (W x H x D)	133 x 46.4 x 94.2mm (5.24" x 1.83" x 3.71")
	Weight	0.7 Kg (1.55lb)
Environment	Operating Temperature	With extended temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F) with 0.7m/s air flow With 2.5-inch hard disk 0 ~ 40 °C (32 ~ 104 °F) with 0.7m/s air flow
	Storage Temperature	- 40 ~ 85 °C (-40 ~ 185 °F)
	Relative Humidity	95% @ 40 °C (non-condensing)
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis With HDD: 0.5Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration With HDD: 10G, IEC 60068-2-27, half sine, 11 ms duration
	EMC	CE/FCC Class B, CCC, BSMI
	Safety Certifications	UL, CB, CCC, BSMI

Ordering Information

Part Number	CPU	Memory	Storage	OS	Display	GbE	USB 3.0	RS-232/ 422/485	Audio	RF Controller	Power Input	mSATA	Operating Temperature*
EIS-D210W-E1DS641	Intel N3350 Dual Core SoC	4 GB	64G 2.5" SATAIII SSD	Win 10 Ent	1 x VGA	2	4	2	Line in Line out	Atheros QCA6174A	12 V_{DC}	1	-20 ~ 60° C
EIS-D210-01D0002	Intel N3350 Dual Core SoC	Option	Option	Option	1 x VGA	2	4	2	Line in Line out	Option	12 V_{DC}	1	-20 ~ 60° C

* If industrial grade memory and SSD selected.

Packing List

Item	Description
1	EIS-D210 Edge Computer
2	WISE-PaaS software packages
3	12V/60W AC to DC Adaptor
4	Accessory Package

Optional Items

Part Number	Description
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable 3-pin 183cm, PSE type

EIS-D110

Entry Level Edge Intelligence Server

Features

- Integrated hardware plus software to build up edge-to-cloud applications
- Pre-configured system: Intel® Celeron® J1900 SoC, WES7E with 4GB Memory, 64/128 GB SSD and wireless networking
- Pre-integrated WISE-PaaS Software Package: WISE-PaaS/RMM, WISEPaaS/OTA, WISE-PaaS/Security, WebAccess/SCADA, WebAccess/IMM and WebAccess/HMI
- Pre-configured Microsoft Azure service: Device Management Package/ Data Intelligence Package (Optional)
- Comprehensive developer tools and documents: Node-RED data flow logic designer, dashboard builder, protocol plug-in SDK & configuration tools

Introduction

EIS-D110, entry level Edge Intelligence Server (EIS) is software and hardware integrated solution for IoT and cloud applications. EIS-D110 offers a ready-to-run system (Intel® Celeron® J1900 platform with WES7E) and WISE-PaaS software package, included IoT foundational block WISE-PaaS/RMM, WISEPaaS/OTA, WISE-PaaS/Security and vertical application WebAccess/SCADA, WebAccess/IMM, WebAccess/HMI. User can find more software package in Advantech WISE-PaaS Marketplace. For IoT developers, EIS-D110 provides WISE-Agent and protocol plug-in SDK for IoT data collection and conversion, and built-in Node-RED for smart data processing and logic flow design. It also provides pre-configured Azure packages on WISE-PaaS Marketplace for easy and quickly cloud connection. EIS-D110 offers a complete solution for IoT data collection and intelligence creation from end device, edge network, to the cloud. with it, you can build and land IoT Application with new innovation and easy integration solution.

Solution Block Diagram

WISE-PaaS
Built-in

WISE-PaaS/RMM

Remote Monitoring and Management

Open & standard IoT device remote monitoring and management platform

WISE-PaaS/OTA

Remote Software Update

Remote software update, includes 3rd party software

(Integration version in WISE-PaaS/RMM)

WISE-PaaS/Security

Centralize Security Management

Centralize devices, data protection and remote back-up and recovery solution

(Integration version in WISE-PaaS/RMM)

WebAccess/IMM

Interactive Multimedia

Centralized content editor and dispatch management for interactive multimedia player

WebAccess/SCADA

Smart SCADA

Data collection and graphical interfaces for supervisory management

(Limited version with 16 point access ability)

WebAccess/HMI

Human Machine Interface

A stand-alone, machine-level HMI to a distributed visualization solution

(Limited version with 16 point access ability)

WISE-Agent
IoT Connectivity

Edge IoT Application Development

Open Plug-in SDK and sample code for sensor and data collection and conversion.

Data Format Integration

Supports ODBC plug-in for database and file type(CSV, MDB) data integration.

Industrial Protocol Connectivity

Provides standard protocols(Modbus/ OPC/ MQTT) for sensor and devices data collection.

I/O and Sensor Compatiblity

Integration tested with Advantech M2.COM, ADAM and WISE-4000 series.

All product specifications are subject to change without notice.

Last updated: 25-Sep-2018

Node-RED

Data Manageability

RESTful API
GET PUT POST DELETE
250+

Easy Application Development
Overall 250+ RESTful APIs are provided for application developer to access related functionality and IoT data of WISE-PaaS software.

Node-RED

Smart Data Processing
Pre-integrated Data Flow Logic Designer Node-RED for data processing and flow control (Sample code included).

ZDT
RE-DEPLOYMENT

Zero Downtime
Data cache storage for secured data transfer, retain data when connection is lost; forward it after connection is reestablished.

Pre-configured Azure Service

Option

Power BI Embedded

Data Reporting
Pre-Configuration with DB and data, 720 hours Power BI usage embedded

Virtual Machine

System Deployment
4 Core A3 VM for up to 100 devices connection

Web APPs

Web Services Center
Use your existing skills to code in your favorite language

Databases

Big Data Storage
1T storage with 99.99% reliability

Device Management Package
Virtual Machine + WISE-PaaS/RMM 100 device connections and management ability
40 WISE-Points/ Month

Data Intelligence Package
Virtual Machine Power BI Embedded + Databases Web APPs
60 WISE-Points/ Month

Get your service on WISE-PaaS Marketplace
Microsoft® Azure Services are available using WISE-Point digital currency, which applies in the WISE-PaaS Marketplace. http://wise-paas.advantech.com/marketplace/

IoT Development Tools

Node-RED Utility	Pre- integrated logic edit tool Node-RED
Data Collection	Receive Data to Agent and transfer to WISE-PaaS/RMM server
Data Conversion	Conversion data protocol to MQTT with JSON format
Plug-in SDK	Agent and protocol conversion plug-in SDK for developer
GUI Protocol Config Tool (for Modbus)	Provide Modbus GUI for quick configuration
Back-up and System Recovery	Acronis Hot back-up/ Recovery/ Hot-Key recovery
Security	McAfee white list protection
Remote Update (OTA)	Software(Advantech & 3rd party) update
Zero Downtime	Reserve edge data when lost connection and recover it when the connection is back
Light Analytic	Statistics and graphical representation of historical data
Dashboard Builder	Customizable dashboard to display sensor data with text, spark line, gauge, etc. types of widgets

**Support depends on device type, OS and account permission.

Edge System Specifications

Processor	Intel® Celeron® J1900 Quad Core 2.0GHz SoC
Memory	4GB bundled
Integrated O/S	WES7E
Operating Temperature	-20 ~ 60° C with industrial grade RAM/SSD
I/O Interface	HDMIx2, GbEx2, RS232/422/485x1, USB 3.0x1, USB 2.0 x2, Line-in, Line-out
Power Input	12VDC in
Wireless Networking	Atheros AR9462 WIFI module bundled (w/ RF certification)
Storage	64/128GB 2.5" SATA III SSD bundled
Dimensions	133.8 x 43.1 x 94.2 mm (5.27" x 1.7" x 3.71")

Ordering Information

Part Number	CPU	Memory	Storage	OS	HDMI	GbE	USB 2.0	USB 3.0	RS-232/ 422/485	Audio	RF module	Power Input	mSATA	Operating Temperature*
EISD110W1SS641-BTO	Intel Celeron J1900 SoC	4 GB	64G 2.5" SATAIII SSD	WES7E	2	2	2	1	1	Line in Line out	Atheros AR9462	12 V_{DC}	1	-20 ~ 60° C
EISD110W1SS141-BTO	Intel Celeron J1900 SoC	4 GB	128G 2.5" SATAIII SSD	WES7E	2	2	2	1	1	Line in Line out	Atheros AR9462	12 V_{DC}	1	-20 ~ 60° C
EISD110E1SS641-BTO	Intel Celeron J1900 SoC	4 GB	64G 2.5" SATAIII SSD	Win 10 Ent	2	2	2	1	1	Line in Line out	Atheros AR9462	12 V_{DC}	1	-20 ~ 60° C

* If industrial grade memory and SSD selected.

Packing List

Item	Description
1	EIS-D110 Edge Computer
2	WISE-PaaS software packages
3	12V/36W AC to DC Adaptor
4	Accessory Package (2 x Wi-Fi Antenna)

Optional Items

Part Number	Description
1700001524	Power Cable 3-pin 180cm, USA type
170203183C	Power Cable 3-pin 180cm, Europe type
170203180A	Power Cable 3-pin 180cm, UK type
1700008921	Power Cable 3-pin PSE Mark 183cm

ARK-10

Intel® Celeron Quad Core J1900 Quad Core SoC with Dual GbE and Dual COM Fanless Box PC

Features

- Intel® Celeron J1900 Quad Core 2.0 GHz SoC
- 2G DDR3L Memory & 500G 2.5" 24x7 SATA HDD Built In
- 2 x GbE for Multiple Internet Transmission
- 2 x RS-232/422/485 (BIOS selection)
- 1 x Full-Size MiniPCIe (ex. WLAN or WWAN module)
- Optional VESA / DIN Rail / Wall Mounting kits
- Threaded DC jack design
- Supports SUSIAccess and Embedded Software APIs

Windows Embedded WISE-PaaS/RMM

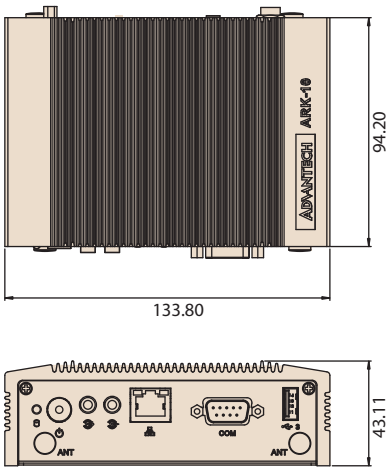
Specifications

		ARK-10-U0A2E
Processor System	CPU	Intel® Celeron Processor J1900 Quad Core SoC
	Frequency	2.0 GHz (Up to 2.41 GHz w/ burst frequency enabled)
	L2 Cache	2 MB
	BIOS	AMI EFI 64 Mbit (Default BIOS is supported for 64-bit OS installation, BIOS for 32-bit OS is supported by project)
Memory	Technology	DDR3L 1333 MHz
	Socket	1 x 204-pin SO-DIMM, 2 GB Memory Built In
Graphics	Chipset	Intel® Atom SoC integrated
	Graphic Engine	DirectX* 11.1, OGL 3.0, OCL 1.1, OGL ES 2.0 Encode: H264, MPEG2/4, VC1, WMV9 Decode: H264, MPEG2
	VGA	1 x VGA, support up to 1920 x 1200 at 60Hz
Audio	Main System	ALC-888S, High Definition Audio. Line-out & Line-in
Ethernet	LAN #1	10/100/1000 Mbps Intel I210 GbE, support Wake on LAN
	LAN #2	10/100/1000 Mbps Intel I210 GbE, support Wake on LAN
I/O Interface	Serial Ports	2 x RS-232/422/485 (BIOS selectable)
	USB Interface	2 x USB 2.0 & 1 x USB3.0
Other	Watchdog timer	255-level timer interval, setup by software
Expansion	Mini PCIe	1 x Full-size Mini PCIe, support WLAN or WWAN module
Storage	2.5" Drive Bay	1 x 500GB 2.5" 24x7 SATA HDD Built In
	mSATA	1x half-size mSATA (Suggest to assembly by CTOS or T-Part due to complex installation)
Software Support	Microsoft Windows	WES7, Windows 7, WE8S, Windows 8 (32-bit support by project)
	Linux	Support (by Project)
Power Requirement	Power Input Voltage	Single 12 V_{DC}
	Power Adapter	AC to DC, DC12 V/3 A, 36 W with threaded design
Mechanical	Construction	Aluminum housing
	Mounting	VESA/DIN Rail/Wall Mounting Kits (Optional)
	Dimensions (W x H x D)	133.8 x 43.1 x 94.2 mm (5.27" x 1.7" x 3.71")
Environment	Operating Temperature	0 ~ 50° C with 0.7m/s air flow
	Storage Temperature	-40 ~ 85 °C (-40~185 °F)
	Relative Humidity	95% @ 40 °C (non-condensing)
	Vibration During Operation	0.5Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock During Operation	10G, IEC 60068-2-27, half sine, 11 ms duration
Regulation	EMC	CE/FCC Class A, CCC, BSMI
	Safety	UL, CCC, BSMI, CB

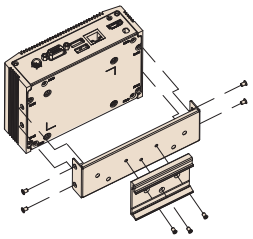
All product specifications are subject to change without notice.

Dimensions

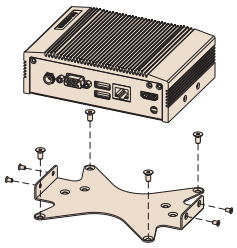
Unit: mm



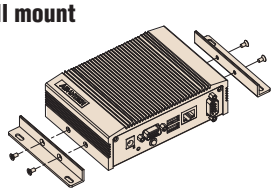
DIN Rail



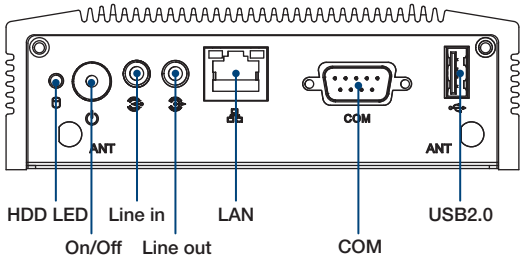
VESA mount



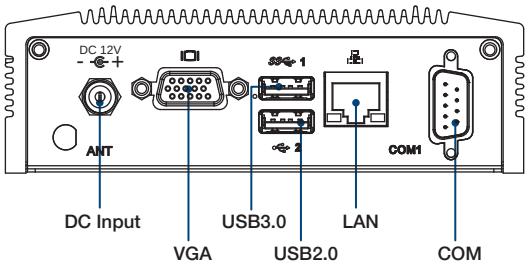
Wall mount



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part Number	CPU	RAM	VGA	GbE	USB 2.0	USB 3.0	RS-232/ 422/485	Audio	MiniPCIe	2.5" HDD bay	mSATA	Operating Temperature
ARK-10-U0A2E	Intel Atom J1900 QC	2GB Built In	1	2	2	1	2	Line in Line out	1 Full-size	1 x 500G 2.5" 24x7 HDD Built In	1 (H/S)	0 ~ 50 °C

Packing List

Part Number	Description
-	1 x ARK-10 Unit
-	1 x User Manual (Simplified Chinese)
-	1 x AC to DC adapter DC 12V/3A 36W

Embedded OS (Only available for T-Parts OEM, and CTOS service)

Part Number	Description
2070013062	WES7E 64-bit with EN/JP/TC/SC (OS size around 11G)
2070013368	WE8S 64-bit with EN/JP/TC/SC (OS size around 13G)

* Default BIOS is supported for 64-bit OS installation, BIOS for 32-bit OS is supported by project.

Optional Items

Part Number	Description
1700001524	Power Cable 3-pin 180cm, USA type
170203183C	Power Cable 3-pin 180cm, Europe type
170203180A	Power Cable 3-pin 180cm, UK type
1700008921	Power Cable 3-pin PSE Mark 183cm
AMK-V003E	ARK-112X series VESA mounting kit
AMK-R001E	ARK-112X series DIN-rail mounting kit
AMK-W001E	ARK-112X series Wall mounting kit

ARK-11

Intel Celeron N3350 DC SoC with 4K Dual HDMI/Dual LAN/M.2 DIN-Rail Fanless Box PC

WISE-DeviceOn SUSI API

Features

- Intel Celeron N3350 Dual Core 1.1 GHz
- DIN-Rail system with essential I/O ports on front-side bezel
- I-Grade 4G DDR3L memory and 64G SSD built-in
- Windows 10 IoT Enterprise built-in
- 60W adaptor bundled in the accessory box
- Dual HDMI display up to 4K resolution
- 1 x full-size mPCIe with SIM holder and 1 x M.2 2230 for WIFI
- 12V ~ 28V wide range power input
- -30 ~ 70 °C extended operating temperature
- Advantech WISE-DeviceOn support

Specifications

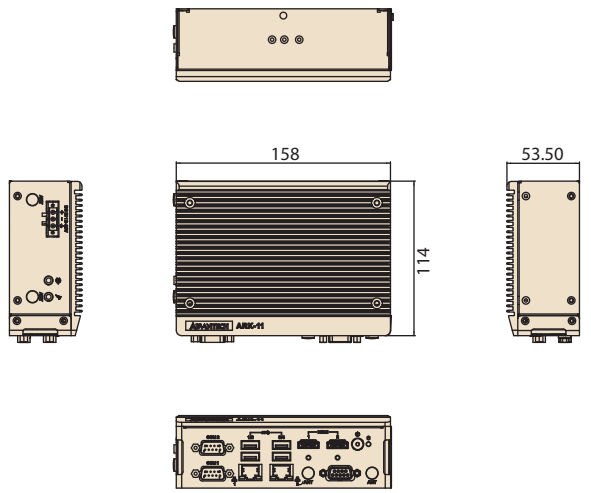
Model Name		ARK-11-S1A2
Processor System	CPU	Intel Celeron N3350 Dual Core SoC
	Frequency	1.1 GHz, turbo burst up to 2.4 GHz
	Core Number	2
	BIOS	AMI EFI 64 Mbit
Memory	Technology	DDR3L 1866 Mhz
	Max capacity	8GB, 1 x 4GB memory (-40 ~ 85 °C) built-in
	Socket	2 x 204-pin SO-DIMM
Graphics	Chipset	Intel HD Graphics 500, CPU integrated
	Graphic Engine	Gen9 Low Power; 18 Execution Units Media Codec Supported: H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG 3D HW Acceleration: OpenGL 4.4, DirectX* 12, OpenCL* 2.0
	HDMI	HDMI1 : 3840 x 2160 @ 30Hz HDMI2 : 3840 x 2160 @ 30Hz
	Dual Display	HDMI1 + HDMI2
Ethernet	LAN1	10/100/1000 Mbps Intel i210GbE, support Wake On LAN
	LAN2	10/100/1000 Mbps Intel i210GbE, support Wake On LAN
Audio	Interface	Realtek ALC888S, High Defination Audio, Mic-in, Line-out
I/O Interface	Seriel Ports	2 x RS-232/422/485 with auto flow control, COM2 with 5V/12V power supply
	USB Ports	4 x USB 3.0
	GPIO	8-bit Programmable DIO (Optional)
Expansion	Mini PCIe	1 x Full-size mPCIe with SIM holder
	M.2	1 x M.2 2230 E key for WIFI module
Storage	SSD/HDD	1 x 2.5" 64G MLC SSD (-40~85°C) built-in
	mSATA	1 x Full-size mSATA (*share with mPCIe slot)
Other	WatchDog Timer	255 levels timer interval, setup by software
Software Support	Microsoft Windows	Windows 10 IoT Enterprise built-in
	Linux	Support by project
Power Requirement	Power Type	ATX/AT
	Power Input Voltage	12 ~ 28 V_{DC}
	Power Adaptor	AC to DC, 24V/2.5A 60W adaptor built-in
Power Consumption	Typical	6.4W
	Max.	18.1W
Mechanical	Construction	Aluminum housing
	Mounting	DIN-rail/Wall Mount
	Dimensions (W x H x D)	53.5 x 158 x 114 mm (2.11" x 6.22" x 4.49")
	Weight	1.2 kg (2.65lb)
Environment	Operating Temperature	With extended temp. peripherals: -30 ~ 70 °C (-22 ~ 158 °F) with 0.7 m/s air flow With 2.5 inch hard disk: 0 ~ 40 °C (32 ~ 104 °F) with 0.7 m/s air flow
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185°F)
	Relative Humidity	95% @ 40 °C (non-condensing)
	Vibration during Operation	With SSD: 3 Grms, IEC60068-2-64, random, 5~500 Hz, 1hr/axis
	Shock during Operation	With SSD: 30 G, IEC-60068-2-27, half sine, 11 ms duration
	EMC	CE/FCC Class B, CCC, BSMI
	Safety	UL, CB, CCC and BSMI

All product specifications are subject to change without notice.

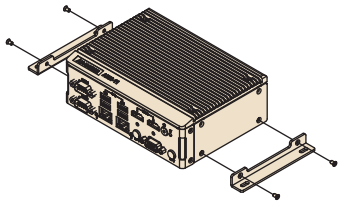
Last updated: 10-Aug-2020

Dimensions

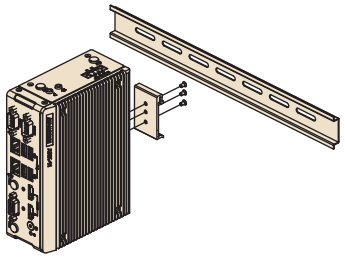
Unit: mm



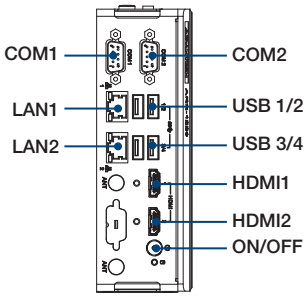
Wall Mount



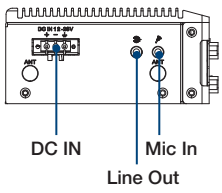
DIN Rail



Front Panel External I/O Mechanical Layout/Drawing



Top Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	RAM	HDMI	GbE	USB 3.0	RS-232/ 422/485	Audio	Full-size MiniPCIe	SIM	M.2	2.5" SATA III HDD Bay	mSATA	Power Input	Operating Temp.
ARK-11-S1A2	Intel Celeron N3350 1.1 GHz SoC	4GB built-in	2	2	4	2	Mic-in, Line-out	1	1	1	64GB SSD built-in	1 (shared w/ mPCIe)	12~28 V_{DC}	-30 ~ 70 °C

Packing List

Part Number	Description
-	1 x ARK-1220L Unit
-	1 x User Manual (Simplified Chinese)
-	Wrench for top cover
1960015198T011	1 x DIN-rail bracket
1652004519	1 x 3-pin terminal block
96PSA-A60W24T2	24V/2.5A 60W adaptor

Embedded OS

Part Number	Description
20706WX9ES0001	Win10 IoT Ent 2019 LTSC 64bit, English (14.7GB)

Optional Items

Part Number	Description
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable 3-pin 183cm, PSE type
1700023855-01	1M lockable HDMI cable
1700023856-01	3M lockable HDMI cable
1700019967	GPIO cable, F Cable 2*5P-2.0/D-SUB 9P(F) 15CM
AMK-W003	ARK-1220L wall mount kit

ARK-1123L

Intel® Atom™ E3825 SoC with Dual COM and GPIO Palm-Size Fanless Box PC

Features

- Intel® Atom™ Processor E3825 Dual Core 1.33 GHz SoC
- 1 x 2.5" SATA HDD/SSD Bay
- 1 x GbE & 1 x VGA & 1 x GPIO
- 1 x RS-232 & 1 x RS-232/422/485
- 1 x Full-Size MiniPCIe (ex. WLAN or WWAN module)
- 1 x Half Size MiniPCIe (ex. mSATA)
- Optional VESA / DIN Rail / Wall Mounting kits
- Threaded DC jack design
- Supports WISE-DeviceOn and Embedded Software APIs

Specifications

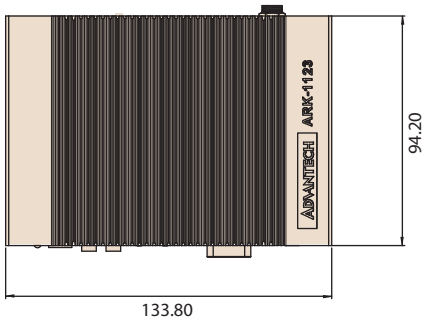
		ARK-1123L-S3A2E
Processor System	CPU	Intel® Atom™ E3825 Dual Core SoC
	Frequency	1.33 GHz
	L2 Cache	1 MB
	BIOS	AMI EFI 64 Mbit (Default BIOS is supported for 64-bit OS installation, BIOS for 32-bit OS is supported by project)
Memory	Technology	DDR3L 1066MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	Intel® Atom™ SoC integrated
	Graphic Engine	DirectX* 11.1, OGL 3.0, OCL 1.1, OGL ES 2.0 support Encode: H264, MPEG2/4, VC1, WMV9 Decode: H264, MPEG2
	VGA	1 x VGA, support up to 1920 x 1200 at 60Hz
Audio	Main System	ALC-888S, High Definition Audio. Line-out & Line-in
Ethernet	LAN #1	10/100/1000 Mbps Intel I210 GbE, support Wake on LAN
I/O Interface	Serial Ports	1 x RS-232 & 1 x RS-232/422/485 (BIOS selectable)
	USB Interface	1 x USB 2.0 & 1 x USB3.0
Other	Watchdog timer	255-level timer interval, setup by software
	GPIO	8 bit GPIO
Expansion	Mini PCIe	1 x Full-size Mini PCIe, support WLAN or WWAN module
Storage	2.5" Drive Bay	1 x 2.5" SATA HDD Bay (Max Height 9.5mm)
	mSATA	1 x Half-size mSATA
Software Support	Microsoft Windows	WES7, Windows 7, WE8S, Windows 8 and Windows 10
	Linux	Support (by Project)
Power Requirement	Power Input Voltage	12 V_{DC}
	Power Adapter	AC to DC, DC12 V/3 A, 36 W with threaded design
Power Consumption	Typical	5.28W
	Max.	8.16W
Mechanical	Construction	Aluminum housing
	Mounting	VESA/DIN Rail/Wall Mounting Kits (Optional)
	Dimensions (W x H x D)	133.8 x 43.1 x 94.2 mm (5.27" x 1.7" x 3.71")
	Weight	0.8kg
Environment	Operating Temperature	With extended temperature SSD/mSATA/RAM : -30 ~ 70° C with 0.7m/s air flow With standard temperature HDD/SSD/mSATA/RAM peripherals:0 ~ 40° C with 0.7m/s air flow
	Storage Temperature	-40 ~ 85° C (-40~185° F)
	Relative Humidity	95% @ 40° C (non-condensing)
	Vibration During Operation	With mSATA/SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis With HDD: 0.5Grms, IEC 60068-2-64, random, 5~500Hz, 3 axes, 1hr/axis
	Shock During Operation	With mSATA/SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration With HDD: 10G, IEC 60068-2-27, half sine, 11 ms duration
Regulation	EMC	CE/FCC Class A, CCC, BSMI
	Safety	UL, CCC, BSMI, CB

All product specifications are subject to change without notice.

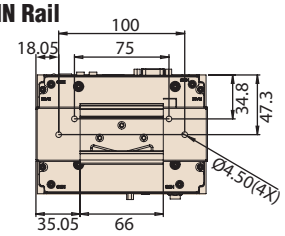
Last updated: 16-Jun-2020

Dimensions

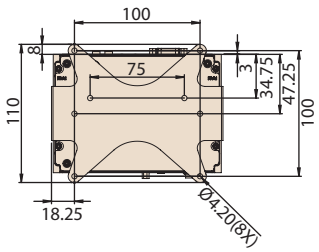
Unit: mm



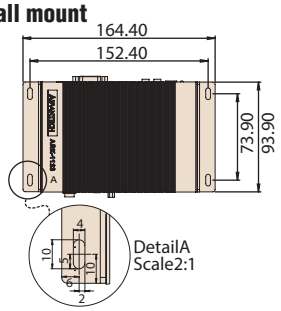
DIN Rail



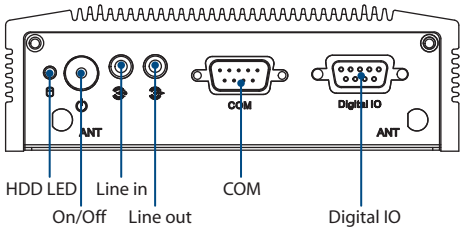
VESA mount



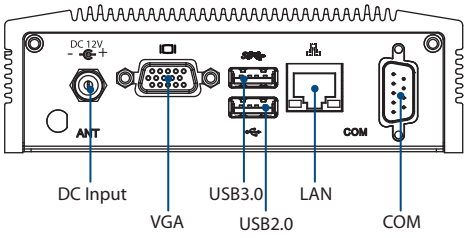
Wall mount



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part Number	Intel CPU	RAM	VGA	GbE	USB 2.0	USB 3.0	RS-232	RS-232/ 422/485	GPIO	Audio	MiniPCIe	2.5" HDD bay	mSATA	Operating Temperature
ARK-1123L-S3A2E	Intel Atom E3825	Up to 8GB	1	1	1	1	1	1	1	Line in Line out	1 Full size	1	1 (H/S)	-30 ~ 70° C

Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-1123L Unit
-	1 x User Manual (Simplified Chinese)
96PSA-A36W12W7	1 x AC to DC adapter DC 12V/3A 36W, -20 ~ 60° C

Embedded OS (Only available for T-Parts OEM, and CTOS service)

Part Number	Description
2070013031	WES7E 64-bit with EN/JP/TC/SC (OS size around 11G)
2070013369	WE8S 64-bit with EN/JP/TC/SC (OS size around 13G)
20706WX9ES0090	img W10 19EL ARK-1123L 64b 1809 ENU (OS size around 16.5GB)

Optional Items

Part Number	Description
1700001524	Power Cable 3-pin 180cm, USA type
170203183C	Power Cable 3-pin 180cm, Europe type
170203180A	Power Cable 3-pin 180cm, UK type
1700008921	Power Cable 3-pin PSE Mark 183cm
AMK-V003E	ARK-112X series VESA mounting kit
AMK-R001E	ARK-112X series DIN-rail mounting kit
AMK-W001E	ARK-112X series Wall mounting kit

ARK-1123C

Intel® Atom™ E3825 SoC with Dual GbE and Dual COM Fanless Box PC

Features

- Intel® Atom™ E3825 Dual Core 1.33 GHz SoC
- 1 x 2.5" SATA HDD/SSD Bay & 1 x VGA
- 2 x GbE for Multiple Internet Transmission
- 2 x RS-232/422/485 (BIOS selection)
- 1 x Full-Size MiniPCIe (ex. WLAN or WWAN module)
- 1 x Half-size mSATA
- Optional VESA / DIN Rail / Wall Mounting kits
- Threaded DC jack design
- Supports WISE-DeviceOn and Embedded Software APIs

Specifications

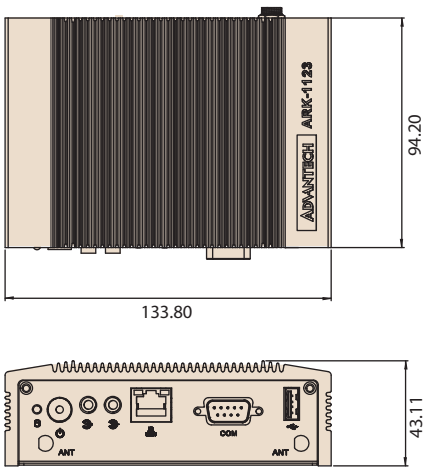
		ARK-1123C-S3A2E
Processor System	CPU	Intel® Atom™ Processor E3825 Dual Core SoC
	Frequency	1.33 GHz
	L2 Cache	1 MB
	BIOS	AMI EFI 64 Mbit (Default BIOS is supported for 64-bit OS installation, BIOS for 32-bit OS is supported by project)
Memory	Technology	DDR3L 1066MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	Intel® Atom™ SoC integrated
	Graphic Engine	DirectX* 11.1, OGL 3.0, OCL 1.1, OGL ES 2.0 Encode: H264, MPEG2/4, VC1, WMV9 Decode: H264, MPEG2
	VGA	1 x VGA, support up to 1920 x 1200 at 60Hz
Audio	Main System	ALC-888S, High Definition Audio. Line-out & Line-in
Ethernet	LAN #1	10/100/1000 Mbps Intel I210 GbE, support Wake on LAN
	LAN #2	10/100/1000 Mbps Intel I210 GbE, support Wake on LAN
I/O Interface	Serial Ports	2 x RS-232/422/485 (BIOS selectable)
	USB Interface	2 x USB 2.0 & 1 x USB3.0
Other	Watchdog timer	255-level timer interval, setup by software
Expansion	Mini PCIe	1 x Full-size Mini PCIe, support WLAN or WWAN module
Storage	2.5" Drive Bay	1 x 2.5" SATA HDD Bay (Max Height 9.5mm)
	mSATA	1 x Half-size mSATA (Suggest to assembly by CTOS or T-Part due to complex installation)
Software Support	Microsoft Windows	WES7, Windows 7, WE8S, Windows 8, Windows 10
	Linux	Support (by Project)
Power Requirement	Power Input Voltage	12 V_{DC}
	Power Adapter	AC to DC, DC12 V/3 A, 36 W with threaded design
Power Consumption	Typical	5.28W
	Max.	8.16W
Mechanical	Construction	Aluminum housing
	Mounting	VESA/DIN Rail/Wall Mounting Kits (Optional)
	Dimensions (W x H x D)	133.8 x 43.1 x 94.2 mm (5.27" x 1.7" x 3.71")
	Weight	0.8 kg
Environment	Operating Temperature	With extended temperature SSD/mSATA/RAM: -30 ~ 70° C with 0.7m/s air flow With standard temperature HDD/SSD/mSATA/RAM peripherals:0 ~ 40° C with 0.7m/s air flow
	Storage Temperature	-40 ~ 85° C (-40~185° F)
	Relative Humidity	95% @ 40° C (non-condensing)
	Vibration During Operation	With mSATA/SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis With HDD: 0.5Grms, IEC 60068-2-64, random, 5~500Hz, 3 axes, 1hr/axis
	Shock During Operation	With mSATA/SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration With HDD: 10G, IEC 60068-2-27, half sine, 11 ms duration
Regulation	EMC	CE/FCC Class B, CCC, BSMI
	Safety	UL, CCC, BSMI, CB

All product specifications are subject to change without notice.

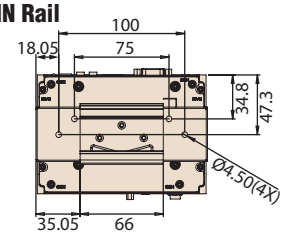
Last updated: 16-Jun-2020

Dimensions

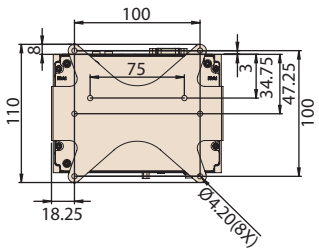
Unit: mm



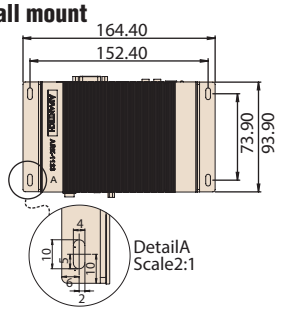
DIN Rail



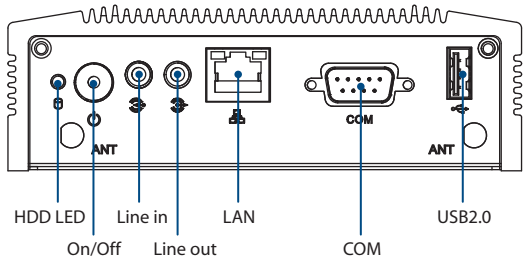
VESA mount



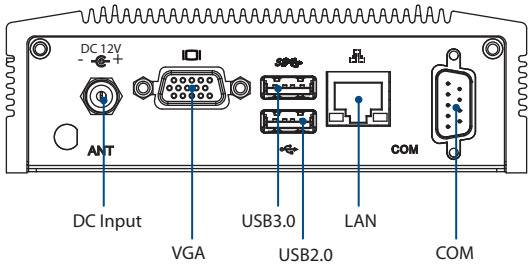
Wall mount



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part Number	CPU	RAM	VGA	GbE	USB 2.0	USB 3.0	RS-232/ 422/485	Audio	MiniPCIe	2.5" HDD bay	mSATA	Operating Temperature
ARK-1123C-S3A2E	Intel Atom E3825	Up to 8GB	1	2	2	1	2	Line in Line out	1 Full size	1	1 (H/S)	-30 ~ 70° C

Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-1123C Unit
-	1 x User Manual (Simplified Chinese)
96PSA-A36W12W7	1 x AC to DC adapter DC 12V/3A 36W, -20 ~ 60° C

Embedded OS (Only available for T-Parts OEM, and CTOS service)

Part Number	Description
2070013032	WES7E 64-bit with EN/JP/TC/SC (OS size around 11G)
2070013370	WE8S 64-bit with EN/JP/TC/SC (OS size around 13G)
2070013712	WES7E 32-bit with EN/JP/TC/SC
20706WX9ES0089	img W10 19EL ARK-1123C 64b 1809 ENU (OS size around 15.5GB)

Optional Items

Part Number	Description
1700001524	Power Cable 3-pin 180cm, USA type
170203183C	Power Cable 3-pin 180cm, Europe type
170203180A	Power Cable 3-pin 180cm, UK type
1700008921	Power Cable 3-pin PSE Mark 183cm
AMK-V003E	ARK-112X series VESA mounting kit
AMK-R001E	ARK-112X series DIN-rail mounting kit
AMK-W001E	ARK-112X series Wall mounting kit

ARK-1123H

Intel® Celeron® Quad Core J1900 SoC with Dual HDMI/GbE IoT Fanless BOX PC

Features

- Intel® Celeron® J1900 Quad Core 2.0 GHz SoC
- 1 x 2.5" SATA HDD/SSD Bay
- 2 x GbE for Multiple Internet Transmission
- 2 x Independent HDMI
- 1 x RS-232/422/485 (BIOS selection)
- 1 x Full-Size MiniPCIe (ex. WLAN or WWAN module)
- 1 x Half Size mSATA
- Optional VESA / DIN Rail / Wall Mounting kits
- Threaded DC jack design
- Supports WISE-DeviceOn and Embedded Software APIs
- Support WIFI 802.11 a/b/g/n bundled for IoT Gateway

WISE-DeviceOn

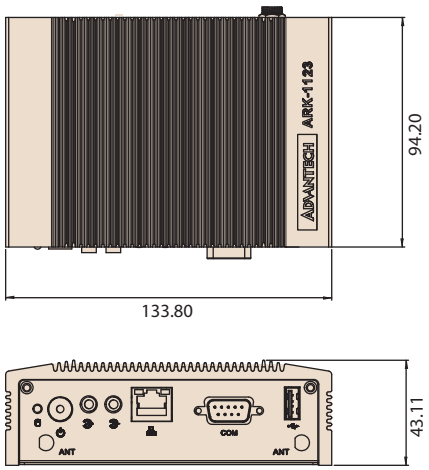
Specifications

		ARK-1123H-U0A2E
Processor System	CPU	Intel® Celeron® Processor J1900 Quad Core 2.0 GHz SoC
	Frequency	2.0 GHz (Up to 2.41 GHz w/ burst frequency enabled)
	L2 Cache	2 MB
	BIOS	AMI EFI 64 Mbit (Default BIOS is supported for 64-bit OS installation, BIOS for 32-bit OS is supported by project)
Memory	Technology	DDR3L 1333MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	Intel® Atom SoC integrated
	Graphic Engine	DirectX* 11.1, OGL 3.0, OCL 1.1, OGL ES 2.0 Encode: H264, MPEG2/4, VC1, WMV9 Decode: H264, MPEG2
	HDMI	2 x Lockable HDMI connector, support up to 1920 x 1080 at 60Hz (2nd HDMI w/o audio function by Intel limitation)
Audio	Main System	ALC-888S, High Definition Audio. Line-out & Line-in
Ethernet	LAN #1	10/100/1000 Mbps Intel I210 GbE, support Wake on LAN
	LAN #2	10/100/1000 Mbps Intel I210 GbE, support Wake on LAN
I/O Interface	Serial Ports	1 x RS-232/422/485 (BIOS selectable)
	USB Interface	2 x USB 2.0 & 1 x USB3.0
Other	Watchdog timer	255-level timer interval, setup by software
Expansion	Mini PCIe	1 x Full-size Mini PCIe, support WLAN or WWAN module
Storage	2.5" Drive Bay	1 x 2.5" SATA HDD Bay (Max Height 9.5mm)
	mSATA	1 x Half-size mPCIe (Suggest to assembly by CTOS or T-Part due to complex installation)
Software Support	Microsoft Windows	WES7, Windows 7, WE8S, Windows 8 and Windows 10
	Linux	Support (by Project)
Power Requirement	Power Input Voltage	12 V_{DC}
	Power Adapter	AC to DC, DC12 V/3 A, 36 W with threaded design
Power Consumption	Typical	5.64W
	Max.	14.04W
Mechanical	Construction	Aluminum housing
	Mounting	VESA/DIN Rail/Wall Mounting Kits (Optional)
	Dimensions (W x H x D)	133.8 x 43.1 x 94.2 mm (5.27" x 1.7" x 3.71")
	Weight	0.8kg
Environment	Operating Temperature	With extended temperature SSD/mSATA/RAM : -20 ~ 60° C with 0.7m/s air flow With standard temperature HDD/SSD/mSATA/RAM peripherals:0 ~ 40° C with 0.7m/s air flow
	Storage Temperature	-40 ~ 85° C (-40~185° F)
	Relative Humidity	95% @ 40° C (non-condensing)
	Vibration During Operation	With mSATA/SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis With HDD: 0.5Grms, IEC 60068-2-64, random, 5~500Hz, 3 axes, 1hr/axis
	Shock During Operation	With mSATA/SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration With HDD: 10G, IEC 60068-2-27, half sine, 11 ms duration
Regulation	EMC	CE/FCC Class B, CCC, BSMI
	Safety	UL, CCC, BSMI, CB

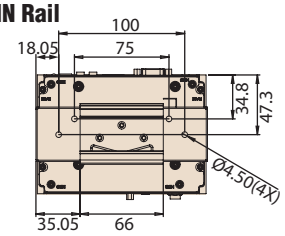
All product specifications are subject to change without notice.

Last updated: 16-Jun-2020

Dimensions

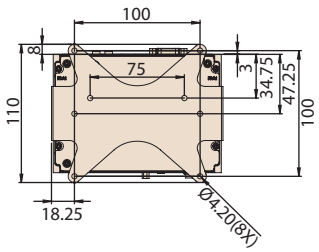


DIN Rail

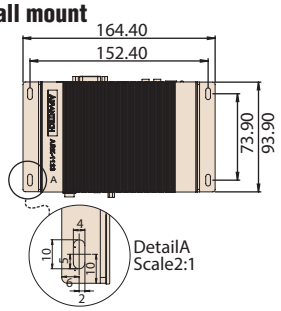


Unit: mm

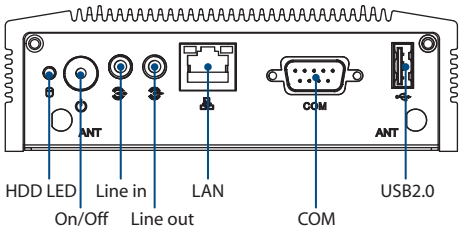
VESA mount



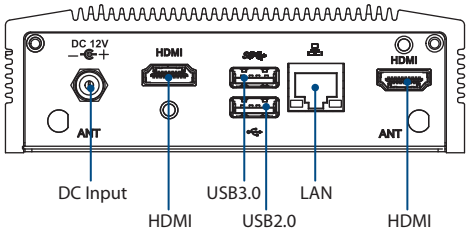
Wall mount



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part Number	CPU	RAM	HDMI	GbE	USB 2.0	USB 3.0	RS-232/ 422/485	Audio	MiniPCIe	2.5" HDD bay	mSATA	Operating Temperature
ARK-1123H-U0A2E	Intel Celeron J1900	Up to 8GB	2	2	2	1	1	Line in Line out	1 Full size	1	1 (H/S)	-20 ~ 60° C

Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-1123H Unit
-	1 x User Manual (Simplified Chinese)
96PSA-A36W12W7	1 x AC to DC adapter DC 12V/3A 36W, -20 ~ 60° C

Embedded OS (Only available for T-Parts OEM, and CTOS service)

Part Number	Description
2070013033	WES7E 64-bit with EN/JP/TC/SC (OS size around 11G)
2070013371	WE8S 64-bit with EN/JP/TC/SC (OS size around 13G)
20706WX9ES0088	img W10 19EL ARK-1123H 64b 1809 ENU (OS size around 16.5GB)
2070014334	Win10 IoT Core_x32 V10.1.10586.0 EN
2070014369	IDP-WR3.1_x64 V1.0.1 EN

Optional Items

Part Number	Description
1700001524	Power Cable 3-pin 180cm, USA type
170203183C	Power Cable 3-pin 180cm, Europe type
170203180A	Power Cable 3-pin 180cm, UK type
1700008921	Power Cable 3-pin PSE Mark 183cm
AMK-V003E	ARK-112X series VESA mounting kit
AMK-R001E	ARK-112X series DIN-rail mounting kit
AMK-W001E	ARK-112X series Wall mounting kit
1700023855-01	1M lockable HDMI cable
1700023856-01	3M lockable HDMI cable
AMO-WIFI08E	WIFI802.11a/b/g/n, Atheros AR9462,2T2R

ARK-1124C

Intel Celeron N3350 DC SoC With Four Serial Ports Modular Fanless Box PC

Features

- Intel Celeron N3350 Dual Core SoC
- VGA Display, 4 x RS-232/422/485, 2 x USB3.0
- 1 x full-size miniPCIe for communication module
- 1 x 2.5" SATA III SSD/HDD and 1 x half-size mSATA
- -20 ~ 60 °C extended operating temperature
- 12V lockable DC jack power input
- Optional 12~24V power module (Dual Layer)
- Advantech iDoor module compatible (Dual Layer)
- Advantech WISE-PaaS/RMM support

Windows Embedded WISE-PaaS/RMM

Specifications

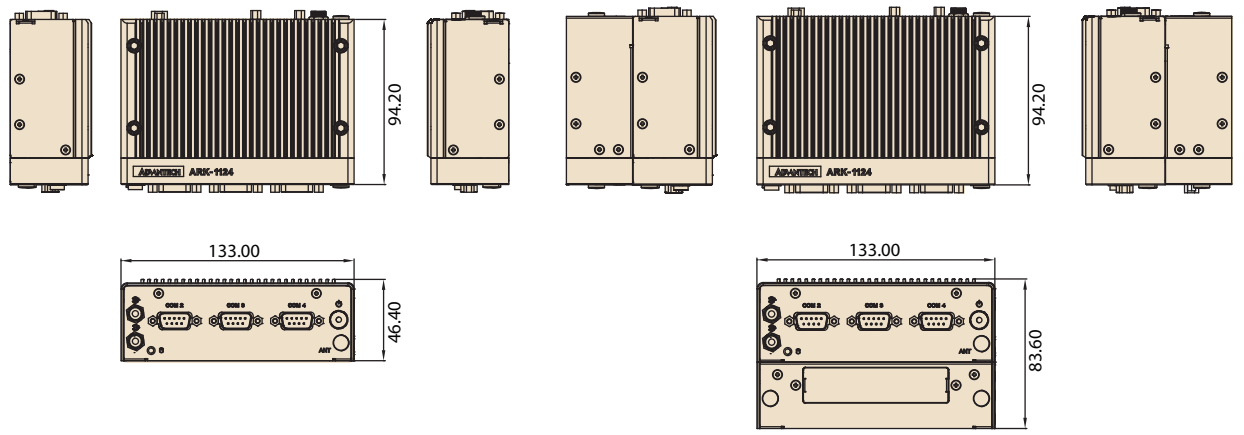
		ARK-1124C-S1A2
Processor System	CPU	Intel® Celeron® N3350 Dual Core SoC
	Frequency	1.1 GHz, turbo burst 2.4 GHz
	L2 Cache	2 MB
	BIOS	AMI EFI 64 bit
Memory	Technology	DDR3L 1866 MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	Intel® HD Graphics 500
	Graphic Engine	4K Codec Decode& Encode for H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG
	VGA	Up to 2048 x 1280 @ 60Hz
Ethernet	LAN	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out,,Line-in
IO Interface	Serial Ports	4 x RS-232/422/485 port with auto flow control
	USB Interface	2 x USB 3.0
Other	Watchdog timer	255 levels timer interval, setup by software
Expansion	Mini PCIe	1 x full-size mPCIe for WLAN/WWAN
	iDoor	1, optional (2nd layer)
Storage	SSD/HDD	Supports 1 x 2.5" SATA III Drive Bay (Compatible with 9.5mm height)
	mSATA	1x Half-size mSATA (by CTOS or T-PN)
Software Support	Microsoft Windows	Win 10 IoT Enterprise LTSB
	Linux	Support by project
Power Requirement	Power Type	AT/ATX
	Power Input Voltage	$12V_{DC}$ (Optional 12~24V power module)
	Minimum Power Input	12 V, 3 A
	Power Adapter	AC to DC, DC12 V/3 A, 36 W with lockable DC Jack
Power Consumption	Typical	5.5W
	Max.	18.8W
Mechanical	Construction	Aluminum housing
	Mounting	DIN-Rail/Wall/VESA Mounting Kits (Optional)
	Dimensions (W x H x D)	133 x 46.4 x 94.2mm (5.24" x 1.83" x 3.71")
	Weight	0.7 Kg (1.55lb)
Environment	Operating Temperature	With extended temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F) with 0.7m/s air flow With 2.5-inch hard disk 0 ~ 40 °C (32 ~ 104 °F) with 0.7m/s air flow
	Storage Temperature	- 40 ~ 85 °C (-40 ~ 185 °F)
	Relative Humidity	95% @ 40 °C (non-condensing)
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis. With HDD: 0.5Grms, IEC 60068-2-64, random, 5~500Hz, 1hr/axis
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration With HDD: 10G, IEC 60068-2-27, half sine, 11 ms duration
	EMC	CE/FCC Class B, CCC, BSMI
	Safety Certifications	UL, CB, CCC, BSMI

All product specifications are subject to change without notice.

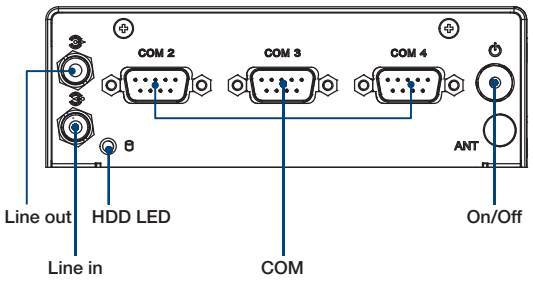
Last updated: 6-Apr-2020

Dimensions

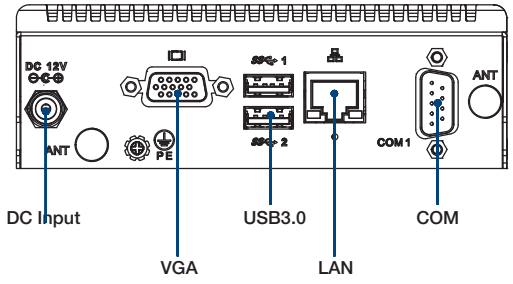
Unit: mm



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	RAM	VGA	GbE	USB 3.0	RS-232/ 422/485	Audio	Full-size MiniPCIe	mSATA	2.5" SATA III HDD Bay	Power Input	Operating Temp.
ARK-1124C-S1A2	Intel Celeron N3350 1.1 GHz SoC	Up to 8GB	1	1	2	4	Lin-out, Line-in	1	1 (H/S)	1	12 V_{DC}	-20 ~ 60 °C

Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-1124C Unit
-	1 x User Manual (Simplified Chinese)
96PSA-A36W12W7	A/D 100-240V 36W 12V C6 LOCKABLE DC PLUG
-	LAN clip
-	Wrench for top cover

Optional Embedded OS

Part Number	Description
20706WX9ES0061	Win10 IoT Ent LTSC 2019 64bit ENG

Optional Item for Default SKU

Part Number	Description
1700001524	Power Cable 3-pin 180cm, USA type
170203183C	Power Cable 3-pin 180cm, Europe type
170203180A	Power Cable 3-pin 180cm, UK type
1700008921	Power Cable 3-pin 180cm, PSE type
AMK-W001E	ARK-112X series Wall mounting kit
AMK-V003E	ARK-112X series VESA mounting kit
AMK-R001E	ARK-112X series DIN-rail mounting kit

ARK Plus Extended Modules

ARK-1124 Dual Layer Expansion Option Items

Expansion Kit Selection

AMO-1101 and iDoor

AMO-1101 and AMO-P011

Ordering Information

Optional ARK Plus Mechanical Kit

P/N	Description
AMO-1101	Mechanical kit for 2nd layer expansion

Optional iDoor Expansion

Part Number	Description
MOS-2230-Z1201E	CANBus module, 2-Ch, USB Interface
MOS-2220-X1101E	Parallel LPT module, 1-Ch, USB Interface
MOS-2110Z-1201E	USB module, 2-Ch, PCIe Interface
MOS-2120-Z1101E	Giga LAN Ethernet module, 1-Ch, PCIe Interface
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCIe Interface
MOS-1110Y-0101E	Isolated 16 DI/8 DO, 1-Ch, DB37, PCIe Interface
MOS-2220-Z1101E	High Speed COM module, 1-Ch, USB Interface
MOS-1120Y-0202E	Isolated RS-232, 2-Ch, DB9, PCIe I/F
MOS-1121Y-0202E	Isolated RS-422/485, 2-Ch, DB9, PCIe I/F
MOS-1120Y-1402E	Non-Isolated RS-232, 4-Ch, DB37, PCIe I/F
MOS-1121Y-1402E	Non-Isolated RS-422/485, 4-Ch, DB37, PCIe I/F
MOS-2120-Z1201	Dual Intel I210 GbE LAN, 2-Ch, PCIe I/F

Optional 12-24V DC Power module

Part Number	Description
AMO-P011	12-24V DC input power module Operating temp. -20~60 °C
96PSA-A60W12P2-1	AC to DC ADP, 12V/5A 60W (for AMO-P011)
1702002600	Power cord 3-pin 183cm, USA type (for AMO-P011)
1702002605	Power cord 3-pin 183cm, EU type (for AMO-P011)
1702031801	Power cord 3-pin 183cm, UK type (for AMO-P011)
1700000237	Power cord 3-pin 183cm, PSE type (for AMO-P011)

* For iDoor module expansion, please order AMO-1101 and iDoor P/N
* For Wide range power module expansion, please order AMO-1101 and AMO-P011
* For iDoor and wide range power module expansion, please order AMO-1101, iDoor P/N and AMO-P011
* Dual layer mounting kit is same as single layer

ARK-1124U

Intel Celeron N3350 DC SoC With Dual LAN/ Four USB 3.0/M.2/TPM IoT Gateway Modular Fanless Box PC

Features

- Intel Celeron N3350 Dual Core SoC
- VGA Display/2x RS-232/422/485/4x USB 3.0
- 1 x Full-size miniPCIe with SIM holder for communication module
- 1 x M.2 E-key for WIFI module
- -20 ~ 60 °C extended operating temperature
- TPM 2.0 default built-in
- 12V lockable DC jack power input
- Optional 12~24V power module (Dual Layer)
- Advantech iDoor module compatible (Dual Layer)
- Advantech WISE-PaaS/RMM support

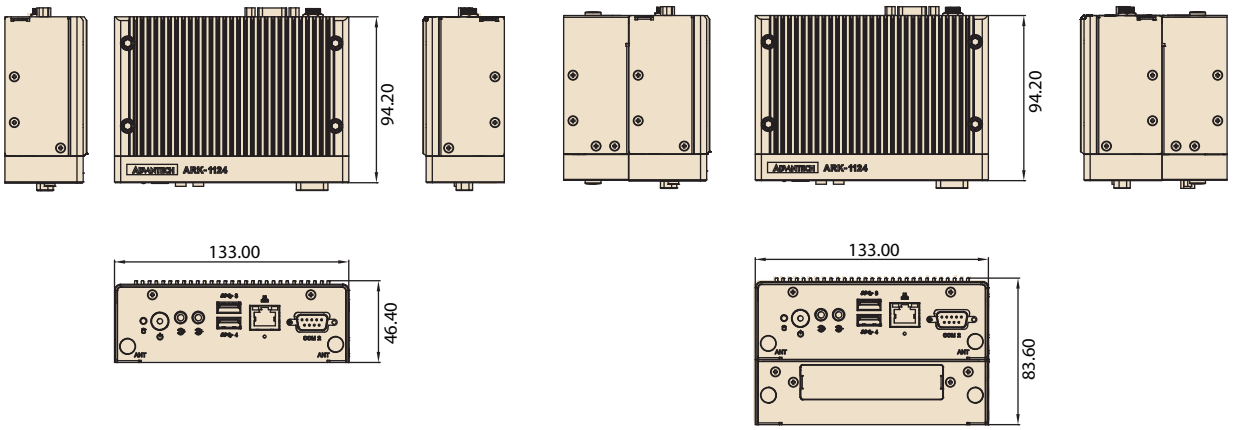
Specifications

		ARK-1124U-S1A2
Processor System	CPU	Intel® Celeron® N3350 Dual Core SoC
	Frequency	1.1GHz, turbo burst 2.4 GHz
	L2 Cache	2 MB
	BIOS	AMI EFI 64 bit
Memory	Technology	DDR3L 1866 MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	Intel® HD Graphics 500
	Graphic Engine	4K Codec Decode& Encode for H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG
	VGA	Up to 2048 x 1280 @ 60Hz
Ethernet	LAN1	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan
	LAN2	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out,,Line-in
IO Interface	Serial Ports	2 x RS-232/422/485 port with auto flow control
	USB Interface	4 x USB 3.0
Other	Watchdog timer	255 levels timer interval, setup by software
	TPM	Infineon SLB9665XQ 2.0
Expansion	Mini PCIe	1 x full-size mPCIe for WLAN/WWAN with SIM holder
	M.2	1 x M.2 E-key for WIFI (by CTOS or T-PN)
	iDoor	1, optional (2nd layer)
Storage	HDD/SSD	Supports 1 x SATA III Drive Bay (Compatible with 9.5mm height)
Software Support	Microsoft Windows	Win 10 IoT Enterprise LTSB
	Linux	Support by project
Power Requirement	Power Type	AT/ATX
	Power Input Voltage	$12V_{DC}$ (Optional 12~24V power module)
	Minimum Power Input	12 V, 5 A
	Power Adapter	AC to DC, DC12 V/5 A, 60 W with lockable DC Jack
Power Consumption	Typical	5W
	Max.	33.7W
Mechanical	Construction	Aluminum housing
	Mounting	DIN-Rail/Wall/VESA Mounting Kits (Optional)
	Dimensions (W x H x D)	133 x 46.4 x 94.2mm (5.24" x 1.83" x 3.71")
	Weight	0.7 Kg (1.55lb)
Environment	Operating Temperature	With extended temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F) with 0.7m/s air flow With 2.5-inch hard disk 0 ~ 40 °C (32 ~ 104 °F) with 0.7m/s air flow
	Storage Temperature	- 40 ~ 85 °C (-40 ~ 185 °F)
	Relative Humidity	95% @ 40 °C (non-condensing)
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis With HDD: 0.5Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration With HDD: 10G, IEC 60068-2-27, half sine, 11 ms duration
	EMC	CE/FCC Class B, CCC, BSMI
	Safety Certifications	UL, CB, CCC, BSMI

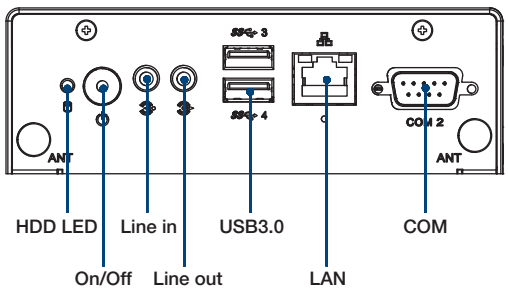
All product specifications are subject to change without notice.

Dimensions

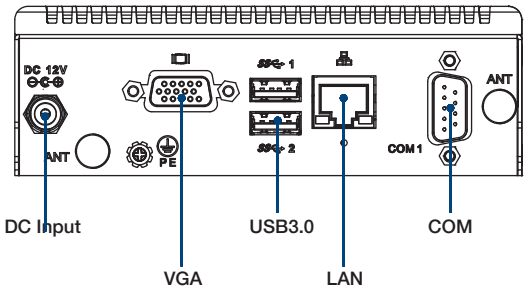
Unit: mm



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	RAM	VGA	GbE	USB 3.0	RS-232/ 422/485	Audio	Full-size MiniPCIe	SIM	M.2	2.5" SATA III HDD Bay	Power Input	Operating Temp.
ARK-1124U-S1A2	Intel Celeron N3350 1.1 GHz Soc	Up to 8GB	1	2	4	2	Lin-out, Line-in	1	1	1	1	12 V_{DC}	-20 ~ 60 °C

Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-1124U Unit
-	1 x User Manual (Simplified Chinese)
96PSA-A60W12W6	1 x A/D 100-240V 60W 12V C14 LOCKABLE DC PLUG
-	LAN clip
-	Wrench for top cover

Optional Embedded OS

Part Number	Description
20706WX9ES0062	Win10 IoT Ent LTSC 2019 64bit, ENG

Optional Item for Default SKU

Part Number	Description
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable 3-pin 183cm, PSE type
AMK-W001E	ARK-112X series Wall mounting kit
AMK-V003E	ARK-112X series VESA mounting kit
AMK-R001E	ARK-112X series DIN-rail mounting kit
AMO-WIFI10	802.11 a/b/g/n/ac,QCA6174A,2T2R,w/BT4.1,M.2 2230 E Key

ARK Plus Extended Modules

ARK-1124 Dual Layer Expansion Option Items

Expansion Kit Selection

AMO-1101 and iDoor

AMO-1101 and AMO-P011

Ordering Information

Optional ARK Plus Mechanical Kit

P/N	Description
AMO-1101	Mechanical kit for 2nd layer expansion

Optional iDoor Expansion

Part Number	Description
MOS-2230-Z1201E	CANBus module, 2-Ch, USB Interface
MOS-2220-X1101E	Parallel LPT module, 1-Ch, USB Interface
MOS-2110Z-1201E	USB module, 2-Ch, PCIe Interface
MOS-2120-Z1101E	Giga LAN Ethernet module, 1-Ch, PCIe Interface
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCIe Interface
MOS-1110Y-0101E	Isolated 16 DI/8 DO, 1-Ch, DB37, PCIe Interface
MOS-2220-Z1101E	High Speed COM module, 1-Ch, USB Interface
MOS-1120Y-0202E	Isolated RS-232, 2-Ch, DB9, PCIe I/F
MOS-1121Y-0202E	Isolated RS-422/485, 2-Ch, DB9, PCIe I/F
MOS-1120Y-1402E	Non-Isolated RS-232, 4-Ch, DB37, PCIe I/F
MOS-1121Y-1402E	Non-Isolated RS-422/485, 4-Ch, DB37, PCIe I/F
MOS-2120-Z1201	Dual Intel I210 GbE LAN, 2-Ch, PCIe I/F

Optional 12-24V DC Power module

Part Number	Description
AMO-P011	12-24V DC input power module Operating temp. -20~60 °C
96PSA-A60W12P2-1	AC to DC ADP, 12V/5A 60W (for AMO-P011)
1702002600	Power cord 3-pin 183cm, USA type
1702002605	Power cord 3-pin 183cm, EU type
1702031801	Power cord 3-pin 183cm, UK type
1700000237	Power cable 3-pin 183cm, PSE type

* For iDoor module expansion, please order AMO-1101 and iDoor P/N
* For Wide range power module expansion, please order AMO-1101 and AMO-P011
* For iDoor and wide range power module expansion, please order AMO-1101, iDoor P/N and AMO-P011
* Dual layer mounting kit is same as single layer

ARK-1124H

Intel Atom™ E3940 QC SoC With Dual HDMI/ Dual LAN/ Four USB Modular Fanless Box PC

Features

- Intel Atom E3940 Quad Core SoC
- Dual HDMI independent display support 4K2K resolution
- 1 x Full-size miniPCIe with SIM holder for communication module
- 1 x M.2 2230 E Key for WIFI module
- 1 x 2.5" SATA III SSD/HDD and 1 x mSATA
- TPM built in for well security
- -20 ~ 60 °C extended operating temperature
- 12V lockable DC jack power input
- Optional 12~24V power module (Dual Layer)
- Advantech iDoor module compatible (Dual Layer)
- Advantech WISE-PaaS/RMM support

Windows Embedded WISE-PaaS/RMM

Specifications

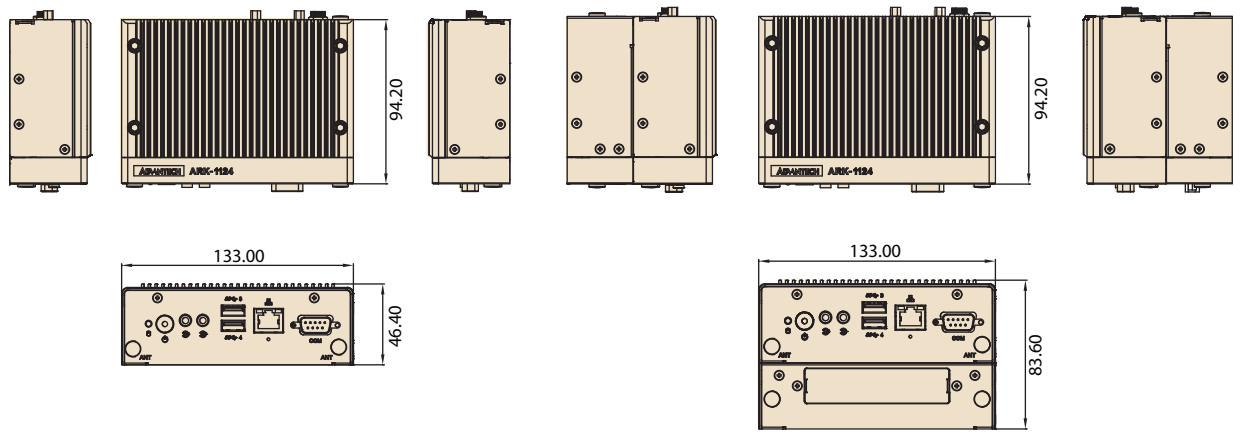
		ARK-1124H-S6A2
Processor System	CPU	Intel Atom™ E3940 Quad Core Soc
	Frequency	1.6 GHz, turbo burst 1.8 GHz
	L2 Cache	2 MB
	BIOS	AMI EFI 64 bit
Memory	Technology	DDR3L 1866 MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	Intel® HD Graphics 500
	Graphic Engine	4K Codec Decode& Encode for H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG
	HDMI	HDMI 1.4b 3840 x 2160 @ 30Hz
	Dual Display	Yes, HDMI + HDMI, dual display support 4K resolution
Ethernet	LAN1	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan
	LAN2	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out,,Line-in
IO Interface	Serial Ports	1 x RS-232/422/485 port with auto flow control
	USB Interface	4 x USB 3.0
Other	Watchdog timer	255 levels timer interval, setup by software
Expansion	Mini PCIe	1 x full-size mPCIe for WLAN/WWAN with nano SIM holder
	M.2	1 x M.2 2230 E-key for WIFI
	iDoor	1, optional (2nd layer)
Storage	SSD/HDD	Supports 1 x 2.5" SATA III Drive Bay (Compatible with 9.5mm height)
	mSATA	1 x Half-size mSATA (by CTOS or T-PN)
Software Support	Microsoft Windows	Win 10 IoT Enterprise LTSB
	Linux	Support by project
Power Requirement	Power Type	AT/ATX
	Power Input Voltage	$12V_{DC}$ (Optional 12~24V power module)
	Minimum Power Input	12 V, 5 A
	Power Adapter	AC to DC, DC12 V/5 A, 60 W with lockable DC Jack
Power Consumption	Typical	6.02W
	Max.	33.7W
Mechanical	Construction	Aluminum housing
	Mounting	DIN-Rail/Wall/VESA Mounting Kits (Optional)
	Dimensions (W x H x D)	133 x 46.4 x 94.2mm (5.24" x 1.83" x 3.71")
	Weight	0.7 Kg (1.55lb)
Environment	Operating Temperature	With extended temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F) with 0.7m/s air flow With 2.5-inch hard disk 0 ~ 40 °C (32 ~ 104 °F) with 0.7m/s air flow
	Storage Temperature	- 40 ~ 85 °C (-40 ~ 185 °F)
	Relative Humidity	95% @ 40 °C (non-condensing)
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis. With HDD: 0.5Grms, IEC 60068-2-64, random, 5~500Hz, 3 axes, 1hr/axis
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration With HDD: 10G, IEC 60068-2-27, half sine, 11 ms duration
	EMC	CE/FCC Class B, CCC, BSMI
	Safety Certifications	UL CB, CCC and BSMI

All product specifications are subject to change without notice.

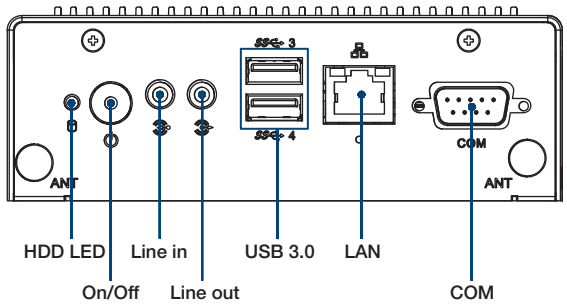
Last updated: 6-Apr-2020

Dimensions

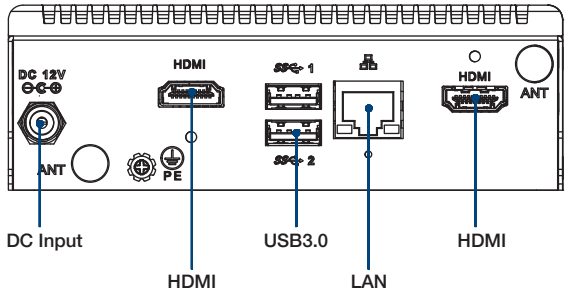
Unit: mm



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	RAM	HDMI	GbE	USB 3.0	RS-232/ 422/485	Audio	Full-size MiniPCIe	SIM	M.2	2.5" SATA III HDD Bay	Power Input	Operating Temp.
ARK-1124H-S6A2	Intel Atom E3940 1.6 GHz SoC	Up to 8GB	2	2	4	1	Lin-out, Line-in	1	1	1	1	12 V_{DC}	-20 ~ 60 °C

Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-1124H Unit
-	1 x User Manual (Simplified Chinese)
96PSA-A60W12W6	A/D 100-240V 60W 12V C14 LOCKABLE DC PLUG
-	LAN clip
-	Wrench for top cover

Optional Embedded OS

Part Number	Description
20706WX9ES0057	Win10 IoT LTSC 2019 64bit ENG for ARK-1124H

Optional Item for Default SKU

Part Number	Description
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable 3-pin 183cm, PSE type
AMK-W001E	ARK-112X series Wall mounting kit
AMK-V003E	ARK-112X series VESA mounting kit
AMK-R001E	ARK-112X series DIN-rail mounting kit
1700023855-01	1M lockable HDMI cable
1700023856-01	3M lockable HDMI cable

ARK Plus Extended Modules

ARK-1124 Dual Layer Expansion Option Items

Expansion Kit Selection

AMO-1101 and iDoor

AMO-1101 and AMO-P011

Ordering Information

Optional ARK Plus Mechanical Kit

P/N	Description
AMO-1101	Mechanical kit for 2nd layer expansion

Optional iDoor Expansion

Part Number	Description
MOS-2230-Z1201E	CANBus module, 2-Ch, USB Interface
MOS-2220-X1101E	Parallel LPT module, 1-Ch, USB Interface
MOS-2110Z-1201E	USB module, 2-Ch, PCIe Interface
MOS-2120-Z1101E	Giga LAN Ethernet module, 1-Ch, PCIe Interface
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCIe Interface
MOS-1110Y-0101E	Isolated 16 DI/8 DO, 1-Ch, DB37, PCIe Interface
MOS-2220-Z1101E	High Speed COM module, 1-Ch, USB Interface
MOS-1120Y-0202E	Isolated RS-232, 2-Ch, DB9, PCIe I/F
MOS-1121Y-0202E	Isolated RS-422/485, 2-Ch, DB9, PCIe I/F
MOS-1120Y-1402E	Non-Isolated RS-232, 4-Ch, DB37, PCIe I/F
MOS-1121Y-1402E	Non-Isolated RS-422/485, 4-Ch, DB37, PCIe I/F
MOS-2120-Z1201	Dual Intel I210 GbE LAN, 2-Ch, PCIe I/F

Optional 12-24V DC Power module

Part Number	Description
AMO-P011	12-24V DC input power module Operating temp. -20~60 °C
96PSA-A60W12P2-1	AC to DC ADP, 12V/5A 60W (for AMO-P011)
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable 3-pin 183cm, PSE type

* For iDoor module expansion, please order AMO-1101 and iDoor P/N
* For Wide range power module expansion, please order AMO-1101 and AMO-P011
* For iDoor and wide range power module expansion, please order AMO-1101, iDoor P/N and AMO-P011.

ARK-1220L A2

Intel® Atom™ E3940 QC SoC with 4K Dual HDMI/Dual LAN/M.2 DIN-Rail Fanless Box PC

Features

- Intel® Atom™ E3940 Quad Core SoC turbo burst up to 1.8 GHz
- DIN-Rail system with essential I/O ports on front-side bezel
- 2 x Intel GbE and 4 x USB 3.0
- Dual HDMI display up to 4K resolution
- 1 x full-size mPCIe with SIM holder and 1 x M.2 2230 for WIFI
- 1 x 2.5" SATA III SSD and 1 x full-size mSATA
- 12V ~ 28V wide range power input
- -30 ~ 70 °C extended operating temperature
- Advantech WISE-DeviceOn support

WISE-DeviceOn SUSI API

Specifications

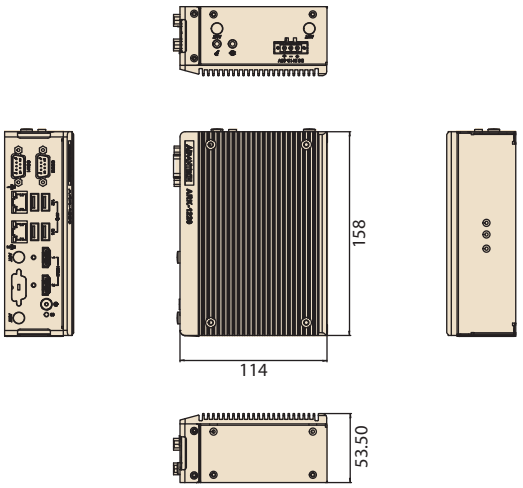
Model Name		ARK-1220L-S6A2
Processor System	CPU	Intel® Atom™ E3940 Quad Core SoC
	Frequency	1.6 GHz, turbo burst up to 1.8 GHz
	Core Number	4
	BIOS	AMI EFI 64 Mbit
Memory	Technology	DDR3L 1866 Mhz
	Max capacity	8GB
	Socket	2 x 204-pin SO-DIMM, 2 x 4GB or 1 x 8GB memory
Graphics	Chipset	Intel HD Graphics 500, CPU integrated
	Graphic Engine	Gen9 Low Power; 18 Execution Units Media Codec Supported: H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG 3D HW Acceleration: OpenGL 4.4, DirectX* 12, OpenCL* 2.0
	HDMI	HDMI1 : 3840 x 2160 @ 30Hz HDMI2 : 3840 x 2160 @ 30Hz
	Dual Display	HDMI1 + HDMI2
Ethernet	LAN1	10/100/1000 Mbps Intel i210GbE, support Wake On LAN
	LAN2	10/100/1000 Mbps Intel i210GbE, support Wake On LAN
Audio	Interface	Realtek ALC888S, High Defination Audio, Mic-in, Line-out
I/O Interface	Seriel Ports	2 x RS-232/422/485 with auto flow control, COM2 with 5V/12V power supply
	USB Ports	4 x USB 3.0
	GPIO	8-bit Programmable DIO (Optional)
Expansion	Mini PCIe	1 x Full-size mPCIe with SIM holder
	M.2	1 x M.2 2230 E key for WIFI module
Storage	SSD/HDD	1 x 2.5" SATAIII Drive bay (compatible with 15mm height)
	mSATA	1 x Full-size mSATA (*share with mPCIe slot)
Other	WatchDog Timer	255 levels timer interval, setup by software
	TPM	SLB9665XQ2.0 FW5.62 (Support by project)
Software Support	Microsoft Windows	Windows 10 Enterprice
	Linux	Support by project
Power Requirement	Power Type	ATX/AT
	Power Input Voltage	12 ~ 28 V_{DC}
	Power Adaptor	AC to DC, 60W (Optional)
Power Consumption	Typical	7.6W
	Max.	19W
Mechanical	Construction	Aluminum housing
	Mounting	DIN-rail/Wall Mount
	Dimensions (W x H x D)	53.5 x 158 x 114 mm (2.11" x 6.22" x 4.49")
	Weight	0.9kg (1.98lb)
Environment	Operating Temperature	With extended temp. peripherals: -30 ~ 70 °C (-22 ~ 158 °F) with 0.7 m/s air flow With 2.5 inch hard disk: 0 ~ 40 °C (32 ~ 104 °F) with 0.7 m/s air flow
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185°F)
	Relative Humidity	95% @ 40 °C (non-condensing)
	Vibration during Operation	With SSD: 3 Grms, IEC60068-2-64, random, 5~500 Hz, 1hr/axis
	Shock during Operation	With SSD: 30 G, IEC-60068-2-27, half sine, 11 ms duration
	EMC	CE/FCC Class B, CCC, BSMI
	Safety	UL, CB, CCC and BSMI

All product specifications are subject to change without notice.

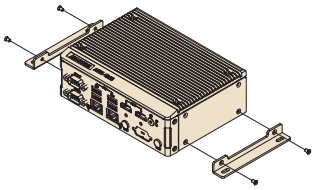
Last updated: 22-Sep-2020

Dimensions

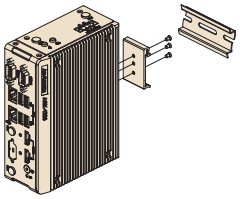
Unit: mm



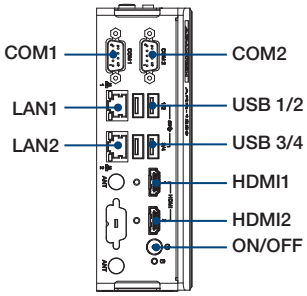
Wall Mount



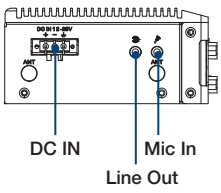
DIN Rail



Front Panel External I/O Mechanical Layout/Drawing



Top Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	RAM	HDMI	GbE	USB 3.0	RS-232/ 422/485	Audio	Full-size MiniPCIe	SIM	M.2	2.5" SATA III HDD Bay	mSATA	Power Input	Operating Temp.
ARK-1220L-S6A2	Intel Atom E3940 1.6 GHz SoC	Up to 8GB	2	2	4	2	Mic-in, Line-out	1	1	1	1	1 (shared w/ mPCIe)	12~28 V_{DC}	-30 ~ 70 °C

Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-1220L Unit
-	1 x User Manual (Simplified Chinese)
-	Wrench for top cover
1960015198T011	1x DIN-rail bracket
1652004519	1x 3-pin terminal block

Embedded OS

Part Number	Description
20706WX9ES0108	Win10 IoT Ent 2019 LTSC 64bit, English (14.7GB)

Optional Items

Part Number	Description
96PSA-A60W24T2-3	AC to DC Adaptor, 24V/2.5A 60W
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable 3-pin 183cm, PSE type
1700023855-01	1M lockable HDMI cable
1700023856-01	3M lockable HDMI cable
1700019967	GPIO cable, F Cable 2*5P-2.0/D-SUB 9P(F) 15CM
AMK-W003	ARK-1220L wall mount kit

ARK-1220F

Intel Atom E3940 QC SoC with isolated GbE and COM ports DIN-Rail Fanless Box PC

Features

- Intel Atom E3940 Quad Core SoC turbo burst up to 1.8 GHz
- DIN-Rail system with essential I/O ports on front-side bezel
- 2 x Isolated Intel GbE with protection to 2.5K V_{DC}
- 2 x Isolated COM with protection to 2.5K V_{DC}
- Isolated 8 bit GPIO (4DI/4DO) with with protection to 2.5K V_{DC}
- 4 x USB 3.0 and 1 x USB 2.0
- Dual independent displays with one 4K HDMI and one VGA
- 1 x full-size mPCIe with nano SIM holder and 1 x M.2 2230 for WIFI
- mSATA and 1 x 2.5" SATA storage device
- 12V ~ 28V wide range power input
- -30 ~ 60 °C extended operating temperature
- Advantech DeviceOn support

Windows Embedded **WISE-DeviceOn** **SUSI API**

Specifications

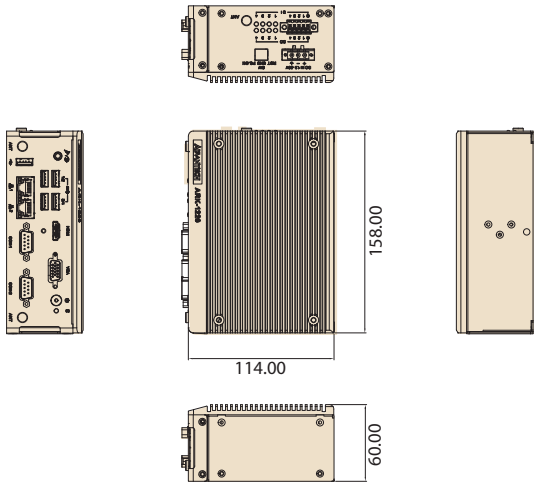
Model Name		ARK-1220F-S6A1
Processor System	CPU	Intel Atom E3940 Quad Core SoC
	Frequency	1.6 GHz, turbo burst up to 1.8 GHz
	Core Number	4
	BIOS	AMI EFI 128 Mbit
Memory	Technology	DDR3L 1866 Mhz
	Max capacity	8GB
	Socket	2 x 204-pin SO-DIMM, 2 x 4GB or 1 x 8GB memory
Graphics	Chipset	Intel HD Graphics 500, CPU integrated
	Graphic Engine	Gen9 Low Power; 18 Execution Units Media Codec Supported: H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG 3D HW Acceleration: OpenGL 4.4, DirectX* 12, OpenCL* 2.0
	HDMI	Up to 3840 x 2160 @ 30Hz
	VGA	Up to 1920 x 1200 @ 60 Hz
	Dual Display	HDMI + VGA
Ethernet	LAN1	10/100/1000 Mbps Intel i210-IT GbE, support Wake On LAN
	LAN2	10/100/1000 Mbps Intel i210-IT GbE, support Wake On LAN
Audio	Interface	Realtek ALC888S, High Defination Audio, Mic-in, Line-out
I/O Interface	Seriel Ports	1 x 2.5K V_{DC} Isolated RS232/RS422/RS485 1 x 2.5K V_{DC} Isolated RS422/RS485 (default RS485 for both ports)
	USB Ports	4 x USD3.0, 1 x USB2.0
	GPIO	8-bit Programmable DIO
Expansion	Mini PCIe	1 x Full-size mPCIe with nano SIM holder
	M.2	1 x M.2 2230 E key for WIFI module
Storage	SSD/HDD	1 x 2.5" SATAIII Drive bay (compatible with 15mm height)
	mSATA	1 x Full-size mSATA (*share with mPCIe slot)
Other	WatchDog Timer	255 levels timer interval, setup by software
	TPM	SLB9665XQ2.0 FW5.62
Software Support	Microsoft Windows	Windows 10 Enterprice
	Linux	Support by project
Power Requirement	Power Type	ATX/AT
	Power Input Voltage	12 ~ 28 V_{DC}
	Power Adaptor	AC to DC, 60W (Optional)
Power Consumption	Typical	7.6W
	Max.	19W
Mechanical	Construction	Aluminum housing
	Mounting	DIN-rail/Wall Mount
	Dimensions (W x H x D)	60 x 158 x 114 mm (2.34" x 6.22" x 4.49")
	Weight	1.5 kg (3.3lb)
Environment	Operating Temperature	With extended temp. peripherals: -30 ~ 60 °C (-22 ~ 140 °F) with 0.7 m/s air flow
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185°F)
	Relative Humidity	95% @ 40 °C (non-condensing)
	Vibration during Operation	With SSD: 3 Grms, IEC60068-2-64, random, 5~500 Hz, 1hr/axis
	Shock during Operation	With SSD: 30 G, IEC-60068-2-27, half sine, 11 ms duration
	EMC	Heavy industrial certificates, CE/FCC Class B
	Safety	UL, CB, CCC and BSMI

All product specifications are subject to change without notice.

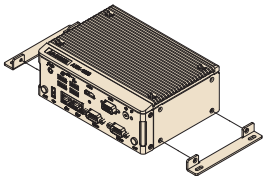
Last updated: 25-Jun-2020

Dimensions

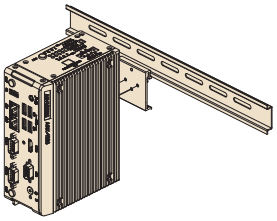
Unit: mm



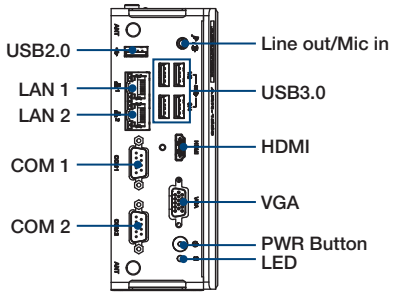
Wall Mount



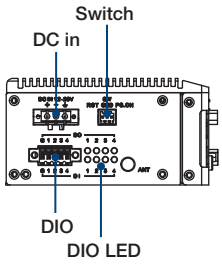
DIN Rail



Front Panel External I/O Mechanical Layout/Drawing



Top Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	RAM	HDMI	VGA	GbE	USB 3.0	USB 2.0	RS-232/ 422/485	Audio	Full-size MiniPCIe	SIM	M.2	2.5" SATA III HDD Bay	mSATA	Power Input	Operating Temp.
ARK-1220F-S6A1	Intel Atom E3940 1.6 GHz SoC	Up to 8GB	1	1	2	4	1	2	Mic-in, Line-out	1	1	1	1	1 (shared w/ mPCIe)	12~28 V_{DC}	-30 ~ 60 °C

Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-1220L Unit
-	1 x User Manual (Simplified Chinese)
-	Wrench for top cover
1960015198T011	1x DIN-rail bracket
1652004519	1x 3-pin plug-in block for power in
1652007619-01	1 x 10-pin plug-in block for DIO
1652008227-01	1 x 3-pin terminal block for switch

Optional Items

Part Number	Description
96PSA-A60W24T2-3	AC to DC Adaptor, 24V/2.5A 60W
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable 3-pin 183cm, PSE type
1700023855-01	1M lockable HDMI cable
1700023856-01	3M lockable HDMI cable
AMK-W004	ARK-1220F wall mount kit

Embedded OS

Part Number	Description
	Win10 IoT Ent 2019 LTSC 64bit, English

ARK-1550

Intel® 4th Generation Core i5 4300U/ Celeron 2980U SoC Slim and Panel Mountable Fanless Box PC

Features

- Intel® Dual Core Celeron 2980U 1.6 GHz / Core i5 4300U 1.9 GHz SoC
- One Swappable 2.5" SATA HDD Bay and mSATA slot
- Triple Independent Displays by VGA + HDMI + LVDS (LVDS option)
- Optional VESA / DIN Rail Mounting kits
- Supports 2 x Intel GbE and 1 x GPIO
- Built-in 1 x full size MiniPCIe
- Lockable DC jack design
- Supports SUSIAccess and WISE-PaaS software pack
- Support Intel Turbo Boost Technology 2.0 in Core i5 4300U

Windows Embedded **WISE-DeviceOn** **SUSI API**

Specifications

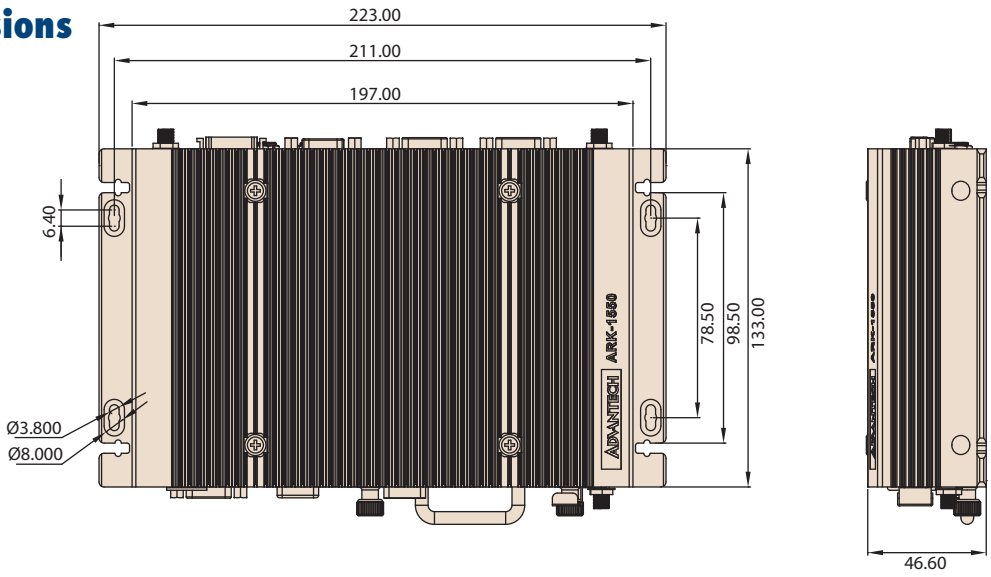
		ARK-1550-S6A1E	ARK-1550-S9A1E
Processor System	CPU	Intel Celeron 2980U Dual Core	Intel i5-4300U Dual Core
	Frequency	1.6 GHz	1.9 GHz (Up to 2.9 GHz w/ Turbo Boost 2.0 enabled)
	L3 Cache	2 MB	3 MB
	BIOS	AMI EFI 128 Mbit	
Memory	Technology	DDR3L 1333 MHz	DDR3L 1600 MHz
	Max. Capacity	8 GB	
	Socket	1 x 204-pin SO-DIMM	
Graphics	Chipset	Intel HD Graphics	Intel GT2-4400 Graphics
	Graphic Engine	DirectX11.1, OpenGL 4.0, and OpenCL 1.2 Full AVC/VC1/MPEG2 HW Decode	
	VGA	Up to 1920 x 1200 at 60 Hz	
	HDMI	Lockable HDMI connector, up to 4096 x 2304 at 24 Hz (Lockable HDMI cable optional)	
	LVDS (Option)	Dual channel 24-bit LVDS, max resolution up to 1920 x 1200 with 60Hz (Support by T-Part or CTOS)	
Audio	Main System	Realtek ALC888S, High Definition Audio (HD), Line-in, Line out, Mic-in	
Ethernet	LAN #1	10/100/1000 Mbps Intel I218 GbE, support Wake on LAN	
	LAN #2	10/100/1000 Mbps Intel I210 GbE, support Wake on LAN	
I/O Interface	Serial Ports	1 x RS-232 & 2 x RS-232/422/485 (BIOS selectable)	
	USB Interface	2 x USB 2.0 & 2 x USB3.0	
	GPIO	8 bit GPIO	
Other	Watchdog timer	255-level timer interval, setup by software	
Expansion	Mini PCIe	1 x Full-size Mini PCIe, support mSATA storage or WWAN module	
Storage	2.5" Drive Bay	1 x Swappable 2.5" SATA drive bay (Max Height 9.5 mm)	
	mSATA	Laverage MiniPCIe #1 slot	
Software Support	Microsoft Windows	Windows 10, Windows 8, Windows 7, WES8, WES7	
	Linux	Support (by Project)	
Power Requirement	Power Type	ATX/AT	
	Power Input Voltage	12 V_{DC}	
	Minimum Power Input	12V, 5A	
	Power Adaptor	AD to DC, DC 12V/5A, 60W (Optional)	
Power Consumption	Typical	5.64W	10.56W
	Max.	15.12W	28.2W
Mechanical	Construction	Aluminum housing	
	Mounting	Desk/Wall Mounting (Standard), VESA & DIN-Rail Mounting Kit (Optional)	
	Dimensions (W x H x D)	223 x 46.6 x 133.0 mm (8.69" x 1.81" x 5.18")	
Environment	Operating Temperature	With extended temperature SSD/mSATA/RAM :-20 ~ 55° C with 0.7m/s air flow With standard temperature HDD/SSD/mSATA/RAM peripherals:0 ~ 40° C with 0.7m/s air flow	
	Storage Temperature	-40 ~ 85° C (-40 ~ 185° F)	
	Relative Humidity	95% @ 40° C (non-condensing)	
	Vibration During Operation	With mSATA/SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
	Shock During Operation	With mSATA/SSD: 30G, IEC 60068-2-27, half sine, 11 ms duration	
Regulation	EMC	CE/FCC Class A, CCC, BSMI	
	Safety	UL, CCC, BSMI, CB	

All product specifications are subject to change without notice.

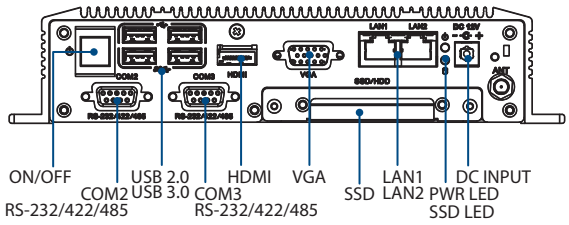
Last updated: 18-Sep-2020

Dimensions

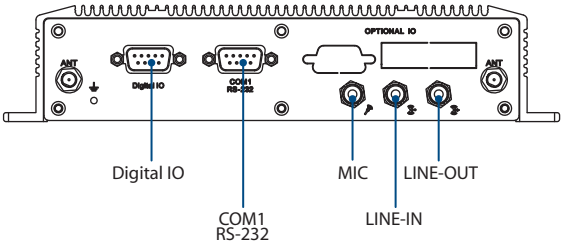
Unit: mm



Front Panel External I/O



Rear Panel External I/O



Ordering Information

Part Number	Intel CPU	RAM	VGA	HDMI	GbE	USB 2.0	USB 3.0	GPIO	RS-232	RS-232/ 422/485	Audio	MiniPCIe	2.5" HDD bay	mSATA	Operating Temperature
ARK-1550-S6A1E	Intel Celeron 2980U 1.6GHz	Up to 8GB	1	1	2	2	2	1	1	2	Line in Line out Mic in	1 Full size w/SIM	1	1	-20 ~ 55° C
ARK-1550-S9A1E	Intel Core i5 4300U 1.9GHz														

Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-1550 Unit
-	1 x User Manual (Simplified Chinese)
-	1 x Power bracket

Embedded OS

Part Number	Description
2070012825	WES7E 64bit with EN/JP/TC/SC (OS size around 11G)
2070012882	WE8S 64bit with EN/JP/TC/SC (OS size around 13G)
20706WX6VS0024	Win10 IoT Ent 64bit Eng 1709 LTSB EN (OS size around 11.4GB)

Optional Items

Part Number	Description
96PSA-A60W12R1-3	AC-to-DC Adapter, DC 12V/5A 60W, with DC Jack Plug
96PSA-A84W12V1-3	AC-to-DC Adapter, DC 12V/7A 84W, with DC Jack Plug
1702002600	Power cable 3-pin 183 cm, USA type
1702002605	Power cable 3-pin 183 cm, Europe type
1702031801	Power cable 3-pin 183 cm, UK type
1700000237	Power cable 3-pin 183 cm, PSE type
AMK-V004E	VESA mounting kit
AMK-R004E	DIN-rail mounting kit
AMO-I014E	LVDS Module w/ cables. (Support by T-Part or CTOS)
1700023855-01	1M lockable HDMI cable
1700023856-01	3M lockable HDMI cable

ARK-1551

Intel® 8th Generation Core™ i5/Celeron Slim Fanless Computer

Features

- 8th Gen Intel® Core™ i5/Celeron
- Dual DDR4 2400MHz SO-DIMM memory up to 32G
- 1 x swappable 2.5" SATA HDD drive bay and 1 x mSATA slot, supports Intel software RAID 0/1
- 4 x USB 3.1 Gen 2, 2 x Intel GbE LAN, 4 x RS-232/422/485, 8 bit GPIO
- 4K2K HDMI and VGA dual independent displays
- 1 x full-size mPCIe with SIM holder and 1 x M.2 2230 E Key
- Support Advantech SQF PCIex2 NVMe storage
- 12V - 24V @ -10%/+20% wide range power input
- Advantech DeviceOn built-in for easy manageability

Windows Embedded WISE-PaaS/DeviceOn SUSI API

Specifications

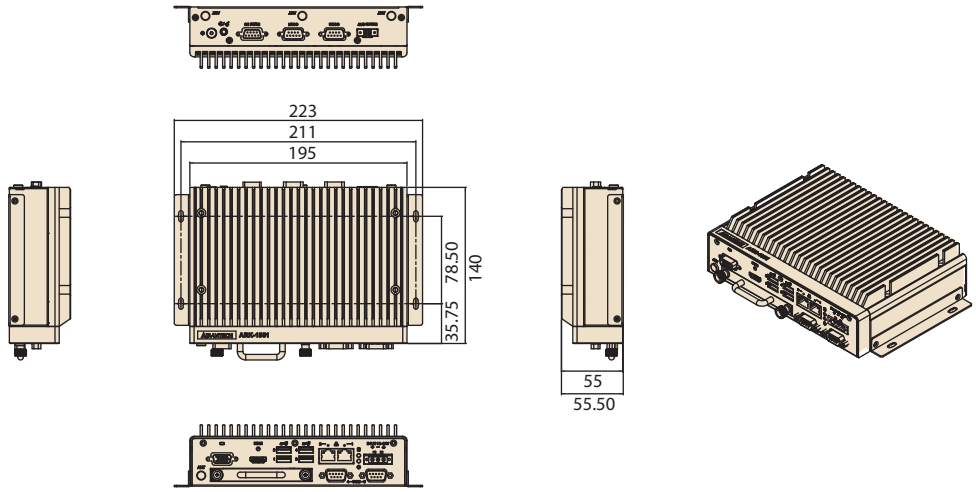
Model Name		ARK-1551-S6A1	ARK-1551-U0A1
Processor System	CPU	Intel® Core i5-8365UE	Celeron 4305UE
	Frequency	1.6 GHz, turbo burst up to 4.1 GHz	2.0 GHz
	Core Number	4	2
	L3 Cache	6MB	2MB
	BIOS	AMI UEFI 256Mbit	
Memory	Technology	DDR4 2400MHz	
	Max capacity	32GB, each memory slot support up to 16GB	
	Socket	2 x 260-pin SO-DIMM	
Graphics	Chipset	Intel UHD Graphics 620	Intel HD Graphics 610
	Graphic Engine	Gen9 Low Power; 24 (UHD 620) /12(UHD 610) Execution Units Media Codec Supported: H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC 3D HW Acceleration: OpenGL 4.5, DirectX* 11.3/12, OpenCL* 2.1	
	Display Interface	HDMI: 1 x HDMI 1.4b, 4096 x 2160@30Hz VGA: 1 x VGA, 1920 x 1080@ 60Hz DP: 1 x DP 1.2, 4096 x 2304 @ 60Hz (*co-lay with VGA, by project support with MOQ = 30)	
	Dual Display	HDMI + VGA (Default) ; HDMI + DP (By project support, MOQ 30)	
Ethernet	LAN1	10/100/1000 Mbps Intel i210GbE, support Wake On LAN	
	LAN2	10/100/1000 Mbps Intel i219GbE, support Wake On LAN	
Audio	Interface	Realtek ALC892, High Defination Audio, Mic-in or Line-out	
I/O Interface	Seriel Ports	4 x RS-232/422/485 support from 50 bps to 921.6 kbps, with auto flow control. COM3 with 5V/12V power, by jumper setting	
	USB Ports	4 x USB 3.1 Gen2, Type A connector	
	GPIO	8-bit programmable DIO	
Expansion	Mini PCIe	1 x full-size mPCIe with 1x nano SIM holder (PCIe x2, USB 2.0x1, UIM, SATA x1)	
	M.2	1 x M.2 2230 E key for WiFi module (PCIe x2, USB 2.0x1)	
Storage	SSD/HDD	1 x Swappable 2.5" SATAIII drive bay (compatible with 7mm height)	
	mSATA	1 x full-size mSATA (share with mPCIe slot)	
	PCIe	Support 2x Advantech SQF PCIex2 NVMe storage (1 x M.2 2230 E Key + 1 x mPCIe)	
Other	WatchDog Timer	255 levels timer interval, setup by software	
	TPM	SLB9665XQ2.0	(Support by project)
	Case Open	Support	
Software Support	Microsoft Windows	Windows 10 Enterprise	
	Linux	Support by project	
Power Requirement	Power Type	ATX/AT	
	Power Input Voltage	12 ~ 24 V_{DC} @ -10%/+20%	
	Power Adaptor	Celeron 4305UE: AC to DC, 90W (Optional) i5-8365UE: AC to DC, 90W for 0 ~ 40 °C (Optional) AC to DC, 120W for -20 ~ 55 °C (Optional)	
Power Consumption	Typical	13.87 Watt	8.93 Watt
	Max.	47.12Watt	24.7 Watt
Mechanical	Construction	Aluminum housing	
	Mounting	Wall Mounting (Default); VESA & DIN-Rail Mounting (Optional)	
	Dimensions (W x H x D)	195 x 55 x 140 mm (7.68" x 2.16" x 5.52")	
	Weight	Net Weight: 1.9KG; Gross Weight: 2.6KG	
Environment	Operating Temperature	With extended temp. peripherals: -20 ~ 55 °C (-4 ~ 131 °F) with 0.7 m/s air flow With 2.5 inch hard disk: 0 ~ 40 °C (32 ~ 104 °F) with 0.7 m/s air flow	
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185°F)	
	Relative Humidity	95% @ 40 °C (non-condensing)	
	Vibration during Operation	With SSD: 3 Grms, IEC60068-2-64, random, 5~500 Hz, 1hr/axis	
	Shock during Operation	With SSD: 30 G, IEC-60068-2-27, half sine, 11 ms duration	
	EMC	CE/FCC Class B, CCC, BSMI	
	Safety	UL, CB, CCC and BSMI	

All product specifications are subject to change without notice.

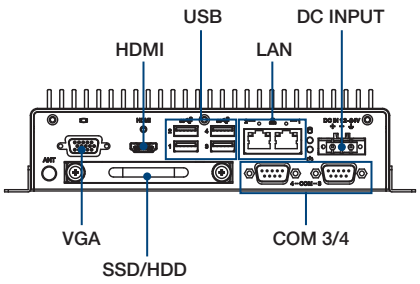
Last updated: 31-Jul-2020

Dimensions

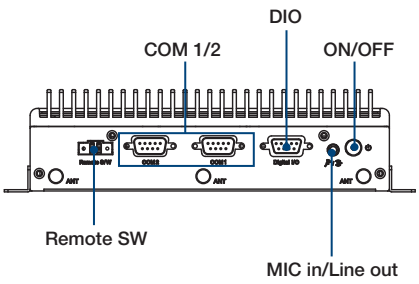
Unit: mm



Front Panel External I/O View



Rear Panel External I/O View



Ordering Information

Part No.	CPU	RAM	Display	GbE	USB 3.1 Gen 2	RS-232/ 422/485	Audio	Full-size MiniPCIe	SIM	M.2	2.5" SATA III HDD Bay	mSATA	Power Input	Operating Temp.
ARK-1551-S6A1	Intel® Core i5-8365UE Q/C SoC	Up to 32GB**	HDMI x 1 VGA x 1	2	4	4	Mic-in or Line-out	1	1	1	1 x swappable HDD Bay**	1 (shared w/ mPCIe)**	12~24 V_{DC}	-20 ~ 55 °C*
ARK-1551-U0A1	Celeron 4305UE D/C SoC	Up to 32GB**	HDMI x 1 VGA x 1	2	4	4	Min-in or Line-out	1	1	1	1 x swappable HDD Bay**	1 (shared w/ mPCIe)**	12~24 V_{DC}	-20 ~ 55 °C*

*CPU condition: Turbo boost on with 0.7 air flow
** Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-1551 unit
-	1 x user manual (Simplified Chinese)
-	1 x wrench for top cover
-	1 x 3-pin terminal block
-	1 x 2-pin terminal block for remote power switch
-	WISE-PaaS/DeviceOn Package
-	2 x LAN Clip
-	1 x wall mount kit

Embedded OS

Part Number	Description
20706WX9VS0089	Win10 IoT Ent 2019 Value LTSC 64bit, English

Optional Items

Part Number	Description
XARK-ADP-90MDH	AC to DC adaptor , 19V/90W
96PSA-A120W24T2-3	AC to DC adaptor, 24V/120W
1700001524	Power Cable 3-pin 180cm, USA type (for XARK-ADP-90MDH)
170203183C	Power Cable 3-pin 180cm, Europe type (forXARK-ADP-90MDH)
170203180A	Power Cable 3-pin 180cm, UK type (for XARK-ADP-90MDH)
1700008921	Power Cable 3-pin PSE Mark 183cm (for XARK-ADP-90MDH)
1702002600	Power cable 3-pin 183cm, USA type (for 96PSA-A120W24T2-3)
1702002605	Power cable 3-pin 183cm, EU type (for 96PSA-A120W24T2-3)
1702031801	Power cable 3-pin 183cm, UK type (for 96PSA-A120W24T2-3)
1700000237	Power cable 3-pin 183cm, PSE type (for 96PSA-A120W24T2-3)
1700023855-01	1M lockable HDMI cable
1700023856-01	3M lockable HDMI cable
AMK-V019E	VESA mounting kit
AMK-R005E	DIN-rail mounting kit

ARK-2121L A2

Intel® Celeron® Quad Core J1900 SoC with Multiple I/Os Fanless Box PC

Features

- Intel® Celeron® J1900 Quad Core 2.0 GHz SoC with Turbo boost support
- VGA and HDMI dual independent display
- 9 ~ 36 V_{DC} wide range power input
- -20 ~ 70° C extend temperature operating
- Mini PCIe expansion with SIM holder for communication module
- mSATA and 1 x 2.5" SATA storage device
- Advantech iDoor module compatible
- Advantech EMIO miniPCIe module compatible with all-in-one ordering

Specifications

		ARK-2121L-U0A2E
Processor System	CPU	Intel Celeron Processor J1900 Quad Core SoC
	Frequency	2.0 GHz, turbo boost up to 2.42 GHz
	L2 Cache	2 MB
	BIOS	AMI EFI
Memory	Technology	DDR3L 1333 MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	Intel Celeron J1900 SoC integrated, 7th Gen. Intel Graphic core
	Graphic Engine	DirectX 11.1, OCL 1.2, OGL 3.2 Encode: H.264, MPEG2/4, VC1, WMV9 Decode: H.264, MPEG2
	VGA	Up to 2048 x 1152 @ 60Hz
	HDMI	HDMI 1.4a for HD video playback, 1080P at 60Hz
	DisplayPort*	Up to 2048 x 1152 at 60Hz(by project only)
	Dual Display	Yes, VGA + HDMI
Ethernet	LAN1	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan
	LAN2	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out,Mic-in,Line-in
IO Interface	Serial Ports	2 x RS-232 ports, 2 x RS-232/422/485 port with auto flow control
	USB Interface	1 x USB 3.0, 3 x USB 2.0
Other	Watchdog timer	255 levels timer interval, setup by software
Expansion	Mini PCIe	1 x full size Mini PCIe with SIM holder
Storage	HDD	Supports one SATA 2.5" HDD Bay (Compatible with 12.5mm height HDD) (Max. Data Transfer Rate 300 MB/s)
	SSD	1 x full size mSATA socket, with USB signal co-lay
Software Support	Microsoft Windows	WES8, Windows 8, WES7, Windows 7
	Linux	Support by project
Power Requirement	Power Type	ATX
	Power Input Voltage	9 ~ 36 V_{DC}
	Minimum Power Input	12 V, 1.5 A
	Power Adapter	AC to DC, DC19 V/3.42 A, 65 W (Optional)
Power Consumption	Typical	7.3W
	Max.	13.3W
Mechanical	Construction	Aluminum housing
	Mounting	Din-Rail mounting, Desk/wall-mounting, VESA mounting
	Dimensions (W x H x D)	264.5 x 68.4 x 133.0 mm (10.41" x 2.69" x 5.24")
	Weight	2.3 kg (5.07 lb)
Environment	Operating Temperature	With extended temperature peripherals: -20 ~ 70° C (-4 ~ 158° F) with 0.7m/s air flow With 2.5-inch hard disk 0 ~ 45° C (32 ~ 112° F) with 0.7m/s air flow
	Storage Temperature	-40 ~ 85° C (-40 ~ 185° F)
	Relative Humidity	95% @ 40° C (non-condensing)
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration
	EMC	CE/FCC Class A, CCC, BSMI
	Safety Certifications	UL, CB, CCC, BSMI

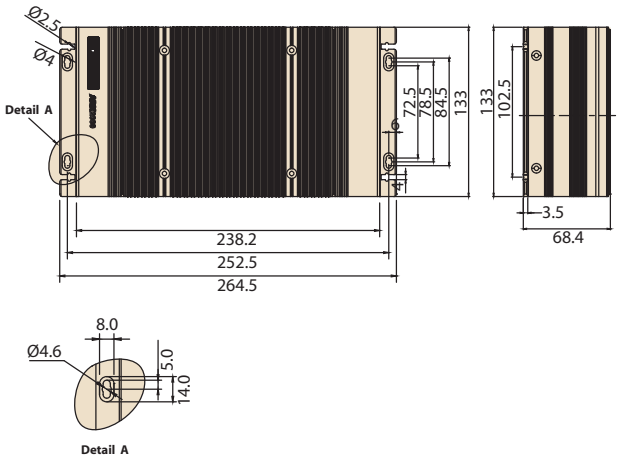
* DisplayPort is supported by project only.

All product specifications are subject to change without notice.

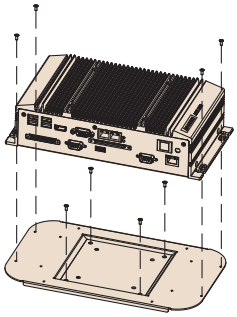
Last updated: 6-Oct-2020

Dimensions

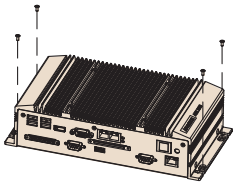
Unit: mm



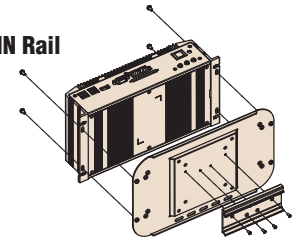
VESA mount



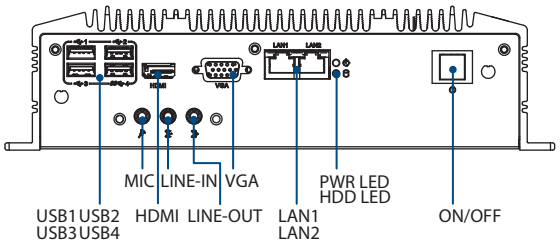
Wall mount



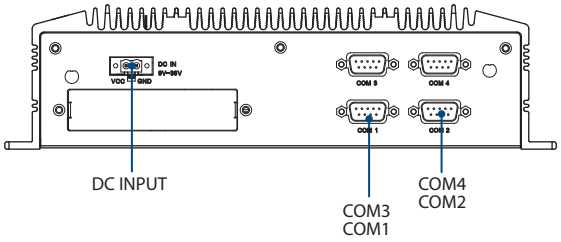
DIN Rail



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	VGA	HDMI/ DP*	GbE	USB 2.0	USB 3.0	RS-232	RS-232/ 422/485	Audio	Full-size MiniPCIe	SIM	mSATA	2.5" SATA II HDD Bay	Power Input	Operating Temp.
ARK-2121L-U0A2E	Intel Celeron J1900 2.0GHz	Yes	Yes	2	3	1	2	2	Lin-out, Line-in, MIC	1	1	1	1	9 ~ 36 V_{DC}	-20 ~ 70° C

Note: Memory, storage and operating system bundled by request.
*DP is support by project only.

Packing List

Part Number	Description
-	1 x ARK-2121 Unit
-	1 x User Manual (Simplified Chinese)
-	1 x China RoHS
1700009001	1x 2-pin Phoenix to DC-Jack power cable

Embedded OS

Part Number	Description
20706WE7ES0024	WES7E ARK-2121L 64b ASIA 4 MUI
20706WE7PS0023	WES7P ARK-2121L 64b 10 MUI
20706WX9ES0110	W10 19EL ARK-2121L 64b 1809 ENU

Note: Default BIOS is for 64bit OS support only. 32bit OS will need to update BIOS.

Optional Items

Part Number	Description
96PSA-A65W19P2-1	AC-to-DC Adapter, DC 19V/3.42A 65W, 0 ~ 40° C for Home and Office Use
1700001524	Power cable 3-pin 183cm, USA type
170203183C	Power cable 3-pin 183cm, EU type
170203180A	Power cable 3-pin 183cm, UK type
AMK-V019E	VESA mounting kit
AMK-R005E	DIN-rail mounting kit

Optional MOS modules

Part Number	Description
MOS-2230-Z1201E	CANBus module, 2-Ch, USB I/F
MOS-2220-X1101E	Parallel LPT module, 1-Ch, USB I/F.
MOS-2220-Z1101E	High Speed Serial COM module, 1-Ch, USB I/F.
MOS-2120-Z1101E	Giga LAN Ethernet module, 1-Ch, PCIe I/F.
MOS-1120Y-0202E	Isolated RS-232, 2-Ch, DB9, PCIe I/F
MOS-1121Y-0202E	Isolated RS-422/485, 2-Ch, DB9, PCIe I/F
MOS-1120Y-1402E	Non-Isolated RS-232, DB37, 4-Ch, PCIe I/F
MOS-1121Y-1402E	Non-Isolated RS-422/485, DB37, 4-Ch, PCIe I/F
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCIe I/F
MOS-1110Y-0101E	Isolated 16 DI/8 DO, 1-Ch, DB37, PCIe I/F
MOS-2110Z-1201E	USB module, 2-Ch, PCIe I/F
MOS-2120-Z1201	GigaLAN Ethernet module, mPCIe, RJ45 2-Ch, PCIe I/F

ARK-2121F A2

Intel® Celeron® Quad Core J1900 SoC with Multiple I/Os Fanless Box PC

Features

- Intel® Celeron® J1900 Quad Core 2.0 GHz SoC with Turbo boost support
- VGA and HDMI dual independent display
- 6 x COM, 6 x USB, isolated DIO
- 9 ~ 36 V_{DC} wide range power input
- -20 ~ 70° C extend temperature operating
- Mini PCIe expansion with SIM holder for communication module
- mSATA and 1 x 2.5" SATA storage device
- Optional DVI/2nd HDMI/4x GbE by project support
- Internal USB for security dongle

Specifications

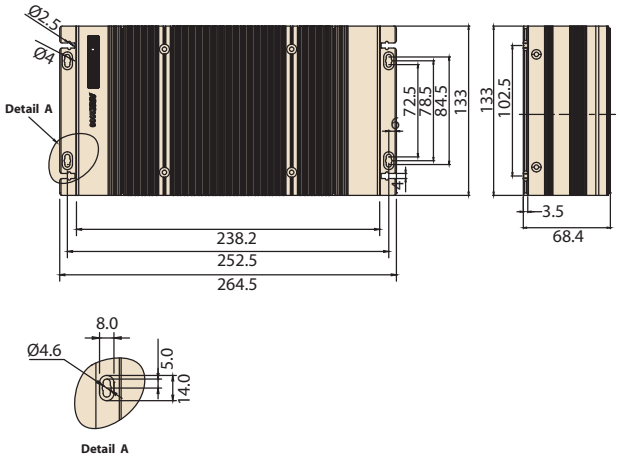
		ARK-2121F-U0A2E
Processor System	CPU	Intel Celeron Processor J1900 Quad Core SoC
	Frequency	2.0 GHz, turbo boost up to 2.42 GHz
	L2 Cache	2 MB
	BIOS	AMI EFI
Memory	Technology	DDR3L 1333 MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	Intel Celeron J1900 SoC integrated, 7th Gen. Intel Graphic core
	Graphic Engine	DirectX 11.1, OCL 1.2, OGL 3.2 Encode: H.264, MPEG2/4, VC1, WMV9 Decode: H.264, MPEG2
	VGA	Up to 2048 x 1152 @ 60Hz
	HDMI	1 HDMI port (default), HDMI 1.4a for HD video playback, 1080P at 60Hz (2nd HDMI support by project only)
	DisplayPort*	Up to 2560 x 1600 at 60Hz (by Project only)
	DVI-D	Up to 1920 x 1200 at 60Hz (by Project only)
	Dual Display	Yes, VGA + HDMI
Ethernet	LAN1/LAN2	10/100/1000Mbps Intel i210 GbE, support Wake On LAN, optional LAN3/LAN4 support by project
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out,Mic-in,Line-in
IO Interface	Serial Ports	6 x RS-232/422/485 with auto flow control
	USB Interface	1 x USB 3.0, 5 x USB 2.0, 1 x internal USB 2.0 for security dongle
	PS/2	Yes (by project only)
Other	Watchdog timer	255 levels timer interval, setup by software
	Digital I/O	4ch digital input and 4ch digital output with 3kV isolation
Expansion	Mini PCIe	2 x full size Mini PCIe (1 with SIM holder)
Storage	HDD	Supports one SATA 2.5" HDD Bay (Compatible with 12.5mm height HDD) (Max. Data Transfer Rate 600 MB/s)
	mSATA	1 x full size mSATA socket, with USB signal co-lay
Software Support	Microsoft Windows	WES8, Windows 8, WES7, Windows 7
	Linux	Support by project
Power Requirement	Power Type	ATX
	Power Input Voltage	9 ~ 36 V_{DC}
	Minimum Power Input	12 V, 1.5 A
	Power Adapter	AC to DC, DC19 V/3.42 A, 65 W (Optional)
Power Consumption	Typical	8.4W
	Max.	16.2W
Mechanical	Construction	Aluminum housing
	Mounting	Din-Rail mounting, Desk/wall-mounting, VESA mounting
	Dimensions (W x H x D)	264.5 x 68.4 x 133.0 mm (10.41" x 2.69" x 5.24")
	Weight	2.3 kg (5.07 lb)
Environment	Operating Temperature	With extended temperature peripherals: -20 ~ 70° C (-4 ~ 158° F) with 0.7m/s air flow With 2.5-inch hard disk 0 ~ 45° C (32 ~ 112° F) with 0.7m/s air flow
	Storage Temperature	- 40 ~ 85° C (-40 ~ 185° F)
	Relative Humidity	95% @ 40° C (non-condensing)
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration
	EMC	CE/FCC Class A, CCC, BSMI
	Safety Certifications	UL, CB, CCC, BSMI

* DisplayPort is supported by project only.

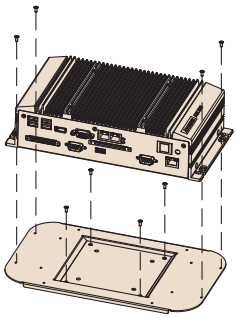
All product specifications are subject to change without notice

Dimensions

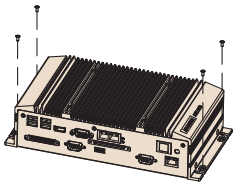
Unit: mm



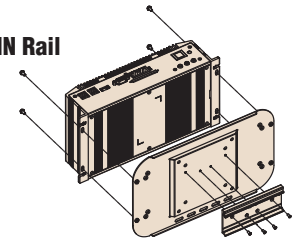
VESA mount



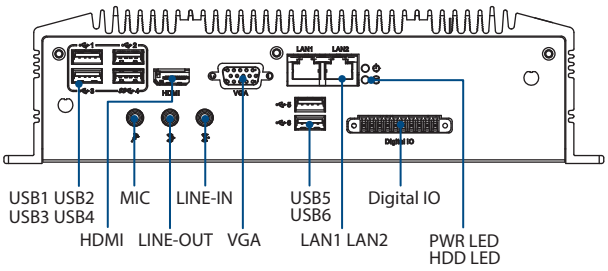
Wall mount



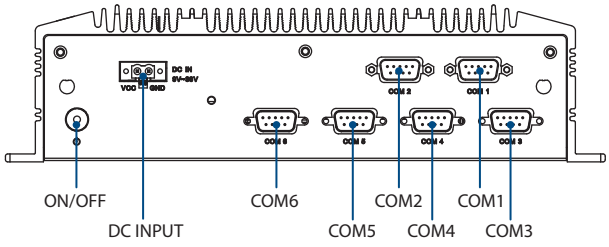
DIN Rail



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	VGA	HDMI/DP*	GbE	USB 2.0	USB 3.0	RS-232/ 422/485	Audio	Full-size MiniPCIe	SIM	mSATA	2.5" SATA II HDD Bay	Power Input	Operating Temp.
ARK-2121F-U0A2E	Intel Celeron J1900 2.0GHz	Yes	Yes	2	5	1	6	Lin-out, Line-in, MIC	2	1	1	1	9 ~ 36 V_{DC}	-20 ~ 70° C

Note: Memory, storage and operating system bundled by request.
*DP is support by project only.

Packing List

Part Number	Description
-	1 x ARK-2121 Unit
-	1 x User Manual (Simplified Chinese)
-	1 x China RoHS
1700009001	1x 2-pin Phoenix to DC-Jack power cable
1960069484N000	2 x LAN clip

Embedded OS

Part Number	Description
20706WE7ES0020	WES7E ARK-2121F 64b 1709 ASIA 4 MUI
2070013716	WES8E 64bit ENG/JP/TC/SC
20706WE7PS0020	WES7P ARK-2121F 64b 1709 10 MUI
20706WX9ES0027	W10 19EL ARK-2121F 64b 1809 ENU

Optional Items

Part Number	Description
96PSA-A65W19P2-2	AC-to-DC Adapter, DC 19V/3.42A 65W, 0 ~ 40° C for Home and Office Use
1700001524	Power cable 3-pin 183cm, USA type
170203183C	Power cable 3-pin 183cm, EU type
170203180A	Power cable 3-pin 183cm, UK type
AMK-V019E	VESA mounting kit
AMK-R005E	DIN-rail mounting kit
1652003235	10pin DIO Plug in block

ARK-2230L A2

Intel® Celeron® Quad Core J1900 SoC Modular Fanless Box PC

*Dual Layer model is ARK-2230 with ARK Plus module

Features

- Intel® Celeron® J1900 Quad Core 2.0 GHz SoC
- VGA and HDMI dual independent display
- 12V lockable DC jack power input
- 9-36V power module compatible with all-in-one ordering
- -20 ~ 60 °C extend temperature operating
- Mini PCIe expansion with SIM holder for communication module
- mSATA and 1 x 2.5" SATA storage device
- Advantech iDoor module compatible
- Advantech EMIO miniPCIe module compatible with all-in-one ordering
- Advantech MIOe module compatible with all in one ordering (2 Layers)

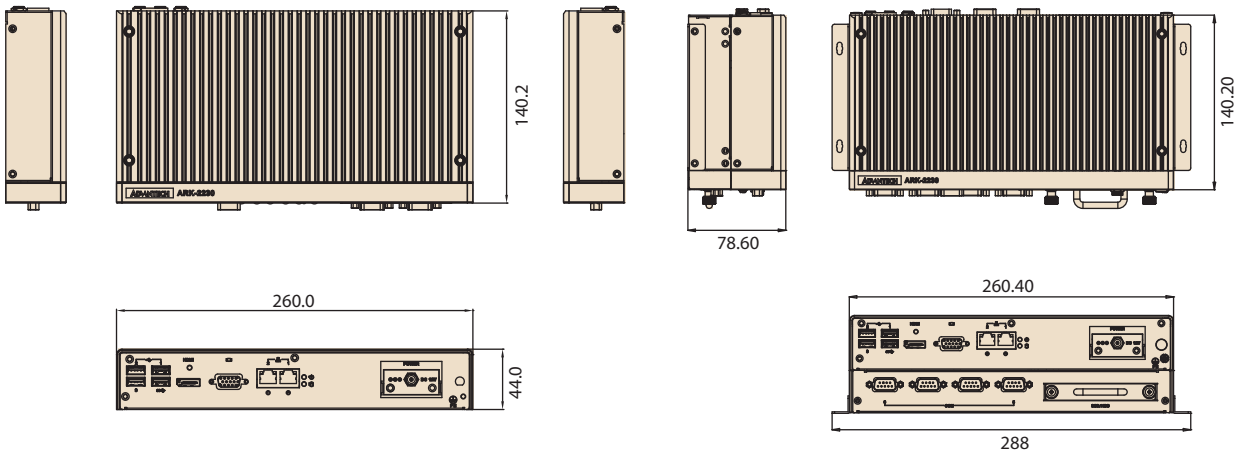
Specifications

		ARK-2230L-U0A2E
Processor System	CPU	Intel Celeron Processor J1900 Quad Core SoC
	Frequency	2.0 GHz
	L2 Cache	2 MB
	BIOS	AMI EFI
Memory	Technology	DDR3L 1333 MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	Intel Celeron J1900 SoC integrated, 7th Gen. Intel Graphic core
	Graphic Engine	DirectX 11.1, OCL 1.2, OGL 3.2 Encode: H.264, MPEG2/4, VC1, WMV9 Decode: H.264, MPEG2
	VGA	Up to 2048 x 1152 @ 60Hz
	HDMI	HDMI 1.4a for HD video playback, 1080P at 60Hz
	Dual Display	Yes, VGA + HDMI
Ethernet	LAN1	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan
	LAN2	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out,Mic-in,Line-in
IO Interface	Serial Ports	2 x RS-232 ports, 2 x RS-232/422/485 port with auto flow control
	Digital I/O	8bit programmable general purpose input/output
	USB Interface	1 x USB 3.0, 4 x USB 2.0
Other	Watchdog timer	255 levels timer interval, setup by software
Expansion	Mini PCIe	1 x full size Mini PCIe with SIM holder
Storage	HDD	Supports one SATA 2.5" HDD Bay (Compatible with 12.5mm height HDD) (Max. Data Transfer Rate 300 MB/s)
	SSD	1 x full size mSATA socket, with USB signal co-lay
Software Support	Microsoft Windows	Windows 10, WES8, Windows 8, WES7, Windows 7
	Linux	Support by project
Power Requirement	Power Type	ATX
	Power Input Voltage	$12V_{DC}$ (9-36V as option)
	Minimum Power Input	12 V, 1.5 A
	Power Adapter	AC to DC, DC12V/5A, 60W (Optional)
Power Consumption	Typical	7.3W
	Max.	13.3W
Mechanical	Construction	Aluminum housing
	Mounting	Din-Rail mounting, Desk/wall-mounting, VESA mounting
	Dimensions (W x H x D)	260 x 44 x 140.2 mm (10.24" x 1.73" x 5.52")
	Weight	2.3 kg (5.07 lb)
Environment	Operating Temperature	With extended temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F) with 0.7m/s air flow With 2.5-inch hard disk 0 ~ 40 °C (32 ~ 104 °F) with 0.7m/s air flow
	Storage Temperature	- 40 ~ 85 °C (-40 ~ 185 °F)
	Relative Humidity	95% @ 40 °C (non-condensing)
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration
	EMC	CE/FCC Class B, CCC, BSMI
	Safety Certifications	UL, CCC, BSMI

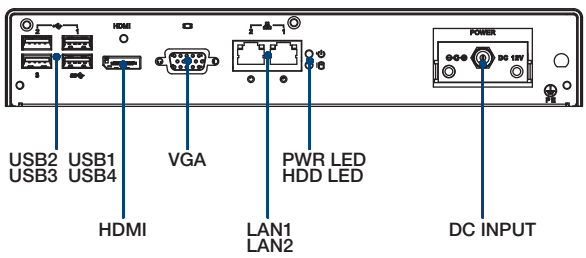
All product specifications are subject to change without notice.

Dimensions

Unit: mm

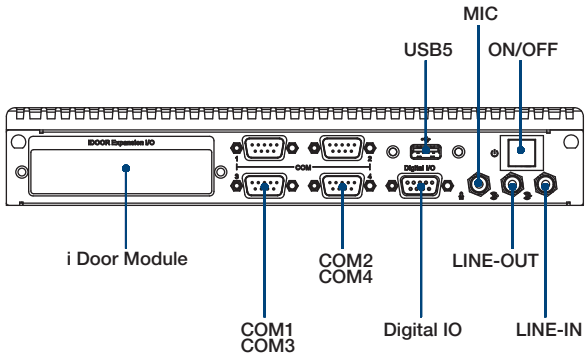


Front Panel External I/O Mechanical Layout/Drawing



*Power Input module by option

Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	VGA	HDMI	GbE	USB 2.0	USB 3.0	RS-232	RS-232/ 422/485	Audio	Full-size MiniPCIe	SIM	mSATA	2.5" SATA II HDD Bay	Power Input	Operating Temp.
ARK-2230L-U0A2E	Intel Celeron J1900 2.0GHz	Yes	Yes	2	4	1	2	2	Lin-out, Line-in, MIC	1	1	1	1	12 V_{DC}	-20 ~ 60 °C

Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
ARK-2230L-U0A2E	1 x ARK-2230L Unit
2006K22310	1 x User Manual (Simplified Chinese)
2026K22300	1 x China RoHS
1960071555N001	Wall mounting kit

ARK-2230 Default SKU Option Items

Optional Embedded OS

Part Number	Description
2070013990	WES7E 64bit ENG/T-CH/S-CH/JP
2070015119	WES7P 64bit ENG/T-CH/S-CH/JP
2070014896	Win10Ent 64bit ENG

Note: Default BIOS is for 32bit OS support only. 64bit OS will need to update BIOS (1420050223)

Optional Item for Default SKU

Part Number	Description
96PSA-A60W12W7-3	AC-to-DC Adapter, DC12V/5A 60W
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
AMK-R005E	DIN Rail mount kits
AMK-V019E	VESA mount kits

ARK-2230 Single Layer Expansion Option Items

Optional MOS modules for iDoor Expansion

Part Number	Description
MOS-2230-Z1201E	CANBus module, 2-Ch, USB Interface
MOS-2220-X1101E	Parallel LPT module, 1-Ch, USB Interface
MOS-2110Z-1201E	USB module, 2-Ch, PCIe Interface
MOS-2120-Z1101E	Giga LAN Ethernet module, 1-Ch, PCIe Interface
MOS-1120Y-0202E	Isolated RS-232, 2-Ch, DB9, PCIe Interface
MOS-1121Y-0202E	Isolated RS-422/485, 2-Ch, DB9, PCIe Interface
MOS-1120Y-1402E	Non-Isolated RS-232, DB37, 4-Ch, PCIe Interface
MOS-1121Y-1402E	Non-Isolated RS-422/485, DB37, 4-Ch, PCIe Interface
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCIe Interface
MOS-1110Y-0101E	Isolated 16 DI/8 DO, 1-Ch, DB37, PCIe Interface
MOS-2120-Z1201	GigaLAN Ethernet module, mPCIe, RJ45 2-Ch, PCIe I/F

*Please noted ARK-2230L can support only 1 iDoor for single layer.

Optional 9-36V DC Power module

Part Number	Description
MIOE-PWR2-00A1E	9-36V DC input power module
96PSA-A65W19P2-1	AC-to-DC Adapter, DC19V/3.42A 65W (for MIOe-PWR2)
1700001524	Power cable 3-pin 183cm, USA type (for MIOe-PWR2)
170203183C	Power cable 3-pin 183cm, EU type (for MIOe-PWR2)
170203180A	Power cable 3-pin 183cm, UK type (for MIOe-PWR2)

ARK-2230 Dual Layer Expansion Option Items

Optional modules for ARK Plus Expansion

Part Number	Description
AMO-2201E (2nd Layer)	4 x RS232/422/485 + removable 2.5" drive
AMO-2202E (2nd Layer)	4 x 10/100/1000Base T(X) PoE
AMO-2203E (2nd Layer)	2-Port isolated CAN-Bus
AMO-2204E (2nd Layer)	3-port GbE + iDoor (2nd iDoor support USB I/F only)

ARK Plus Extended Modules

AMO-2201E

4 x RS232/422/485 + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
Ports	4 x RS232/422/485 (set up by jumper)
Others	Removable 2.5" drive bay
Mechanical	
Dimension	260 x 34.6 x 140.2 mm (10.24" x 1.36" x 5.52")
Environment	
Operating Temp.	0 ~ 40 °C

Ordering Information

P/N	Description
AMO-2201E	4 x RS232/422/485 + removable 2.5" drive bay

*** For Win 8.1/Win10, please update BIOS with Advantech part number 1420048117**

AMO-2202E (AMO-I018)

4 x 10/100/1000Base T(X) PoE

Specifications

General	
Bus interface	MIOe
Ports	4 x RJ45 10/100/1000 Mbps PoE ports
Power consumption	Typical 15W, Max: 60W
Compatibility	IEEE 802.3, IEEE 802.3u, IEEE802.3ab, IEEE802.3x,IEEE802.3af Powered Device (PD) auto detection and classification Supports IEEE 802.3u Auto-Negotiation
Power	
Input	12 V_{DC} power input 4 pin phoenix power (Change System Power input Cable)
Output PoE Power	15W at 48 V_{DC} per PoE port
Mechanical	
Dimension	260 x 34.6 x 140.2 mm (10.24" x 1.36" x 5.52")
Environment	
Operating Temp.	0 ~ 40 °C

Ordering Information

P/N	Description
AMO-2202E	4 x 10/100/1000Base T(X) PoE

AMO-2203E

2-Port isolated CAN-Bus

Specifications

General	
Bus interface	MIOe
Ports	2 x DB9 isolated CAN-Bus
Communications	
Signal Support	CAN_H, CAN_L
Protocol	CAN 2.0 A/B
Data Transfer Rate	Programmable up to 1Mbps
CAN Frequency	16MHz
Protection	
Isolation Protection	2,500 V_{DC}
Mechanical	
Dimension	260 x 34.6 x 140.2 mm (10.24" x 1.36" x 5.52")
Environment	
Operating Temp.	0 ~ 40 °C

Ordering Information

P/N	Description
AMO-2203E	2-Port isolated CAN-Bus

AMO-2204E

3-Port GbE + iDoor

Specifications

General	
Bus interface	MIOe
Ports	3 x RJ45 10/100/1000 Mbps ports
Chipset	Intel 82583V Gigabit Ethernet Controller
Other	1 x iDoor
Mechanical	
Dimension	260 x 34.6 x 140.2 mm (10.24" x 1.36" x 5.52")
Environment	
Operating Temp.	0 ~ 40 °C

Ordering Information

P/N	Description
AMO-2204E	3-Port GbE + iDoor

ARK-2232L A2

Intel® Atom® E3940 SoC Modular Fanless Box PC

*Dual Layer model is ARK-2232 with ARK Plus module

Features

- Intel® Atom® E3940 Quad Core SoC
- Dual independent displays with one 4K HDMI and one VGA
- 12V lockable DC jack power input
- 9-36V power module compatible with all-in-one ordering
- -20 ~ 60 °C extend operating temperature
- Mini PCIe expansion with SIM holder for communication module
- M.2 NGFF 2230 E Key for WiFi communication module
- mSATA and 1 x 2.5" SATA storage device
- Advantech iDoor module compatible
- Advantech EMIO miniPCIe module compatible with all-in-one ordering
- Advantech MIOe module compatible with all-in-one ordering (2 Layers)

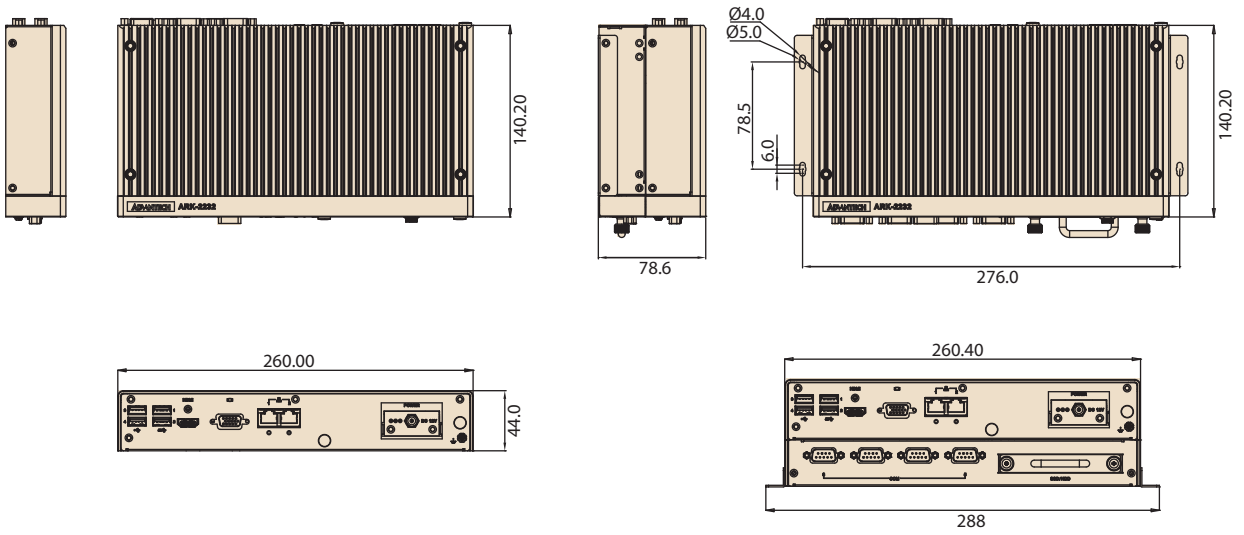
Specifications

		ARK-2232L-S6A2
Processor System	CPU	Intel Atom E3940 Quad Core SoC
	Frequency	1.6 GHz, turbo burst 1.8 GHz
	L2 Cache	2MB
	BIOS	AMI EFI 64-bit
Memory	Technology	DDR3L 1866 MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	Intel HD Graphics 500
	Graphic Engine	4K Codec Decode& Encode for H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG
	VGA	Up to 1920 x 1200 @ 60Hz
	HDMI	HDMI 1.4b for HD video playback, 3840 x 2160 at 30Hz
	Dual Display	Yes, VGA + HDMI
Ethernet	LAN1	10/100/1000 Mbps Intel i210-IT GbE, supports Wake On LAN
	LAN2	10/100/1000 Mbps Intel i210-IT GbE, supports Wake On LAN
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out, Mic-in
IO Interface	Serial Ports	2 x RS-232 ports, 2 x RS-232/422/485 port with auto flow control
	Digital I/O	8-bit programmable general purpose input/output
	USB Interface	2 x USB 3.0, 4 x USB 2.0
	TPM	TPM 2.0 power by Infineon SLB9665TT2.0 (by project support)
Other	Watchdog timer	255 levels timer interval, setup by software
Expansion	Mini PCIe	1 x full size Mini PCIe with SIM holder (PCIex1, USB 2.0, UIM, SATA III)
	M.2	1 x M.2 2230 E Key (PCIex1, UBS 2.0)
Storage	HDD	Supports one SATA 2.5" HDD Bay (Compatible with 12.5mm height HDD) (Max. Data Transfer Rate 300 MB/s)
	mSATA	1 x full size mSATA socket (share with miniPCIe)
Software Support	Microsoft Windows	Windows 10
	Linux	Support by project
Power Requirements	Power Type	AT/ATX
	Power Input Voltage	$12V_{DC}$ (9-36V as option)
	Minimum Power Input	12 V, 5 A
	Power Adapter	AC to DC, DC12V/5A, 60W (Optional)
Power Consumption (CPU/Memory only)	Typical	7.79W
	Max.	17.48W
Mechanical	Construction	Aluminum housing
	Mounting	Desk/Wall-mounting (Default), Din-Rail mounting (Optional kit), VESA mounting (Optional kit)
	Dimensions (W x H x D)	260 x 44 x 140.2 mm (10.24" x 1.73" x 5.52")
	Weight	Net Weight: 1.9kg (4.19 lbs); Gross Weight: 2.9kg (6.39 lbs)
Environment	Operating Temperature	With extended temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F) with 0.7m/s air flow With 2.5-inch hard disk 0 ~ 40 °C (32 ~ 104 °F) with 0.7m/s air flow
	Storage Temperature	- 40 ~ 85 °C (-40 ~ 185 °F)
	Relative Humidity	95% @ 40 °C (non-condensing)
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration
	EMC	CE/FCC Class B, CCC, BSMI
	Safety Certifications	UL, CB, CCC, BSMI

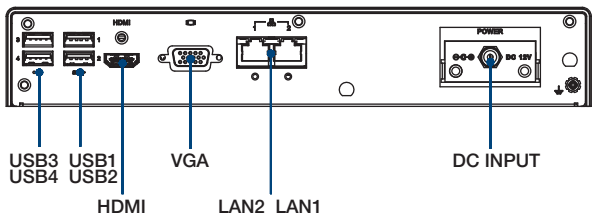
All product specifications are subject to change without notice.

Dimensions

Unit: mm

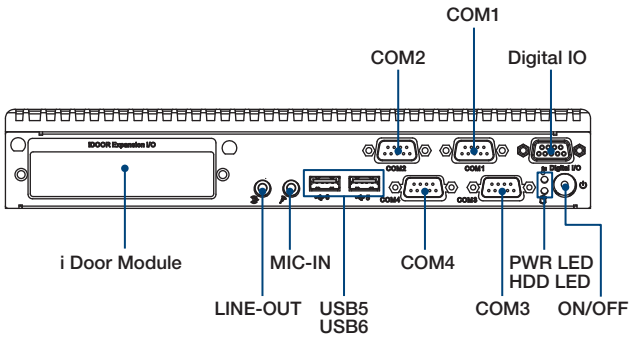


Front Panel External I/O Mechanical Layout/Drawing



*Power Input module by option

Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	VGA	HDMI	GbE	USB 2.0	USB 3.0	RS-232	RS-232/422/485	Audio	Full-size MinePCIe	M.2	SIM	mSATA	2.5" SATA III HDD Bay	Power Input	Operating Temp.
ARK-2232L-S6A2	Intel Atom E3940 1.6 GHz SoC	Yes	Yes	2	4	2	2	2	Lin-out, MIC-IN	1	1	1	1	1	12 V_{DC}	-20 ~ 60 °C

Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-2232L Unit
-	1 x User Manual (Simplified Chinese)
-	1 x China RoHS
-	Wall mounting kit

ARK-2232 Default SKU Option Items

Optional Embedded OS

Part Number	Description
20706WX9ES0096	W10 19EL ARK-2232L 64b 1809 ENU

Optional Item for Default SKU

Part Number	Description
96PSA-A60W12W7-3	AC-to-DC Adapter, DC12V/5A 60W
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
AMK-R005E	DIN Rail mount kits
AMK-V019E	VESA mount kits

ARK-2232 Single Layer Expansion Option Items

Optional MOS Modules for iDoor Expansion

Part Number	Description
MOS-2220-X1101E	Parallel LPT module, 1-Ch, USB Interface
MOS-2110Z-1201E	USB module, 2-Ch, PCIe Interface
MOS-2120-Z1101E	Giga LAN Ethernet module, 1-Ch, PCIe Interface
MOS-1120Y-0202E	Isolated RS-232, 2-Ch, DB9, PCIe Interface
MOS-1121Y-0202E	Isolated RS-422/485, 2-Ch, DB9, PCIe Interface
MOS-1120Y-1402E	Non-Isolated RS-232, DB37 to 4-ch DB9, PCIe Interface
MOS-1121Y-1402E	Non-Isolated RS-422/485, DB37 to 4-ch DB9, PCIe Interface
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCIe Interface
MOS-1110Y-0101E	Isolated 16 DI/8 DO, 1-Ch, DB37, PCIe Interface
MOS-2120-Z1201	Dual Intel I210 GbE LAN iDoor, 2-Ch, PCIe Interface
MOS-2230-Z1201E	CANBus module, 2-Ch, USB Interface

*ARK-2232L can support only one iDoor.

Optional 9-36V DC Power Module

Part Number	Description
MIOE-PWR2-00A1E	9-36V DC input power module
96PSA-A65W19P2-1	AC-to-DC Adapter, DC19V/3.42A 65W (for MIOe-PWR2)
1700001524	Power cable 3-pin 183cm, USA type (for MIOe-PWR2)
170203183C	Power cable 3-pin 183cm, EU type (for MIOe-PWR2)
170203180A	Power cable 3-pin 183cm, UK type (for MIOe-PWR2)

ARK-2232 Dual Layer Expansion Option Items

Optional Modules for ARK Plus Expansion

Part Number	Description
AMO-2201E (2nd Layer)	4 x RS232/422/485 + removable 2.5" drive
AMO-2202E (2nd Layer)	4x10/100/1000Base T(X) PoE
AMO-2203E (2nd Layer)	2-Port isolated CAN-Bus
AMO-2204E (2nd Layer)	3-port GbE + iDoor

ARK Plus Extended Modules

AMO-2201E

4 x RS232/422/485 + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
Ports	4 x RS232/422/485 (set up by jumper)
Others	Removable 2.5" drive bay
Mechanical	
Dimension	260 x 34.6 x 140.2 mm (10.24" x 1.36" x 5.52")
Environment	
Operating Temp.	0 ~ 40 °C

Ordering Information

P/N	Description
AMO-2201E	4 x RS232/422/485 + removable 2.5" drive bay

AMO-2202E (AMO-I018)

4 x 10/100/1000Base T(X) PoE

Specifications

General	
Bus interface	MIOe
Ports	4 x RJ45 10/100/1000 Mbps PoE ports
Power consumption	Typical 15W, Max: 60W
Compatibility	IEEE 802.3, IEEE 802.3u, IEEE802.3ab, IEEE802.3x,IEEE802.3af Powered Device (PD) auto detection and classification Supports IEEE 802.3u Auto-Negotiation
Power	
Input	12 V_{DC} power input 4 pin phoenix power (Change System Power input Cable)
Output PoE Power	15W at 48 V_{DC} per PoE port
Mechanical	
Dimension	260 x 34.6 x 140.2 mm (10.24" x 1.36" x 5.52")
Environment	
Operating Temp.	0 ~ 40 °C

Ordering Information

P/N	Description
AMO-2202E	4 x 10/100/1000Base T(X) PoE

AMO-2203E

2-Port isolated CAN-Bus

Specifications

General	
Bus interface	MIOe
Ports	2 x DB9 isolated CAN-Bus
Communications	
Signal Support	CAN_H, CAN_L
Protocol	CAN 2.0 A/B
Data Transfer Rate	Programmable up to 1Mbps
CAN Frequency	16MHz
Protection	
Isolation Protection	2,500 V_{DC}
Mechanical	
Dimension	260 x 34.6 x 140.2 mm (10.24" x 1.36" x 5.52")
Environment	
Operating Temp.	0 ~ 40 °C

Ordering Information

P/N	Description
AMO-2203E	2-Port isolated CAN-Bus

AMO-2204E

3-Port GbE + iDoor

Specifications

General	
Bus interface	MIOe
Ports	3 x RJ45 10/100/1000 Mbps ports
Chipset	Intel 82583V Gigabit Ethernet Controller
Other	1 x iDoor
Mechanical	
Dimension	260 x 34.6 x 140.2 mm (10.24" x 1.36" x 5.52")
Environment	
Operating Temp.	0 ~ 40 °C

Ordering Information

P/N	Description
AMO-2204E	3-Port GbE + iDoor

*ARK-2232 supports one iDoor only.

ARK-2250L A2

Intel 6th/7th Generation Core™ i3/i5/i7 Modular Fanless Box PC

Features

- Intel 6th/7th Gen Intel® Core™ U-series (i3/i5/i7)
- VGA and HDMI dual display, option 3rd display for triple display
- 12V lockable DC jack power input
- 9-36V optional power module compatible with all-in-one ordering
- -20 ~ 60 °C extend temperature operating
- 2 x full size mPCIe expansion for WIFI/Cellular communication module
- 1 x full size mSATA and 1 x 2.5" SATA storage device
- Advantech iDoor module compatible
- Advantech ARK Plus module support by dual layer configurations

Specifications

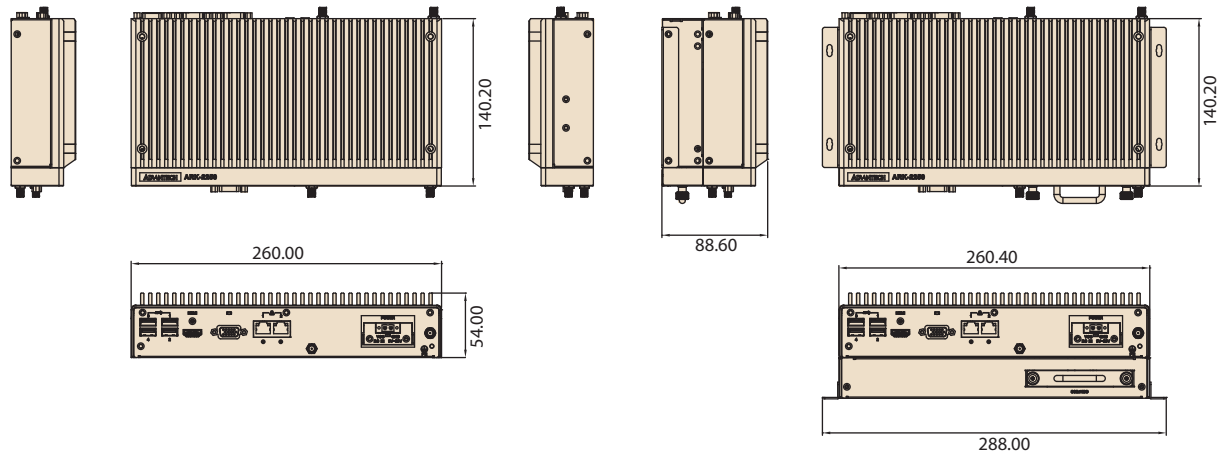
Processor System	CPU	Intel Core i7 6600U	Intel Core i3 6100U	Intel Core i7 7600U	Intel Core i3 7100U
	Base Frequency	2.6 GHz (Dual Core)	2.3 GHz (Dual Core)	2.8G (Dual Core)	2.4G (Dual Core)
	L3 Cache	4MB	3MB	4MB	3MB
	BIOS	AMI UEFI 128 Mbit			
Memory	Technology	DDR4 2133 MHz			
	Max. Capacity	16 GB			
	Socket	1 x 260-pin SO-DIMM			
Graphics	Controller	Intel HD Graphics 520			
	Graphic Engine	DirectX 11.3, OpenGL 4.4, and OpenCL 2.1 Full AVC/VC1/MPEG2 HW Decode			
	VGA	Up to 1920 x 1200 @ 60Hz (No hotplug support)			
	HDMI	HDMI 1.4a for HD video playback, 4096 x 2160 @ 24Hz			
	Dual Display	Yes, VGA + HDMI			
	Opional display Module	HDMI, DP			
	Triple Display	VGA+HDMI+Optional display module			
Ethernet	LAN1	10/100/1000 Mbps Intel i219 GbE, support Wake On Lan			
	LAN2	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan			
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out, Mic-in			
IO Interface	Serial Ports	4 x RS-232/422/485 port with auto flow control			
	USB Interface	4 x USB 3.0, 2 x USB 2.0			
	DIO	8 bit			
Other	Watchdog timer	255 levels timer interval, setup by software			
Expansion	Mini PCIe	2 x full size Mini PCIe with (CN14 with SIM holder)			
	iDoor	1 set (option)			
Storage	HDD	Supports one SATA 2.5" HDD Bay (Compatible with 12.5mm height HDD) (Max. Data Transfer Rate 300 MB/s)			
	SSD	1 x full size mSATA socket (CN15, shared with mPCIe)			
Software Support	Microsoft Windows	Windows 10, Windows 8.1, WES7, Windows 7			
	Linux	Support by project			
Power Requirement	Power Type	ATX			
	Power Input Voltage	$12V_{DC}$ (9-36V as option)			
	Minimum Power Input	12 V, 5 A			
	Power Adapter	AC to DC, DC12V/5A, 60W (Option)			
Power Consumption	Typical	7.96 Watt	6.92 Watt		
	Max.	43.28 Watt	41.72 Watt		
Mechanical	Construction	Aluminum housing			
	Mounting	Din-Rail mounting, Desk/wall-mounting, VESA mounting			
	Dimensions (W x H x D)	260 x 54 x 140.2 mm (10.24" x 2.13" x 5.52")			
	Weight	2.3 kg (5.07 lb)			
Environment	Operating Temperature	With extended temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F) with 0.7m/s air flow With 2.5-inch hard disk 0 ~ 40 °C (32 ~ 104 °F) with 0.7m/s air flow			
	Storage Temperature	- 40 ~ 85 °C (-40 ~ 185 °F)			
	Relative Humidity	95% @ 40 °C (non-condensing)			
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.			
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration			
	EMC	CE/FCC Class B, CCC, BSMI			
	Safety Certifications	UL, CCC, BSMI			

All product specifications are subject to change without notice.

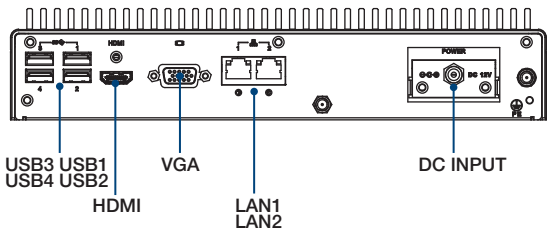
Last updated: 16-Oct-2020

Dimensions

Unit: mm

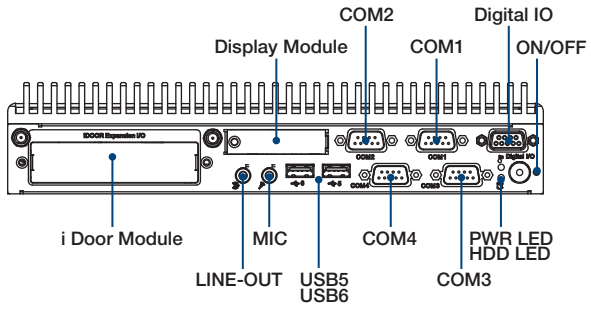


Front Panel External I/O Mechanical Layout/Drawing



*Power Input module by option

Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	VGA	HDMI	GbE	USB 2.0	USB 3.0	RS-232/ 422/485	DIO	Audio	Full-size MiniPCIe	SIM	mSATA	2.5" SATA II HDD Bay	Power Input	Operating Temp.
ARK-2250L-U6A2	Intel Core i7-6600U	Yes	Yes	2	2	4	4	1	Lin-out, Mic-in	2	1	1	1	12 V_{DC}	-20 ~ 60 °C
ARK-2250L-U3A2	Intel Core i3-6100U	Yes	Yes	2	2	4	4	1	Lin-out, Mic-in	2	1	1	1	12 V_{DC}	-20 ~ 60 °C
ARK-2250L-U8A2	Intel Core i7-7600U	Yes	Yes	2	2	4	4	1	Lin-out, Mic-in	2	1	1	1	12 V_{DC}	-20 ~ 60 °C
ARK-2250L-U4A2	Intel Core i3-7100U	Yes	Yes	2	2	4	4	1	Lin-out, Mic-in	2	1	1	1	12 V_{DC}	-20 ~ 60 °C

Note: Memory, storage and operating system bundled by request.
* i5-6300U/i5-7300U are supported by T-P/N with MOQ 30 pcs.

Packing List

Part Number	Description
-	1 x ARK-2250L Unit
-	1 x User Manual (Simplified Chinese)
-	1 x China RoHS
-	2 x Wall mounting bracket
-	2 x LAN Clip

ARK-2250 Expansion Option Items

Optional Embedded OS

Part Number	Description
20706WE7PM0023	WES7P 64bit 10MUI
2070014959	Win Emb 8.1_64bit US/DE/ES/FR/JP/KR/LT/RU/CN/TW
20706WX9HS0092	WIN10 IoT 2019 64bit_EN for ARK-2250L-U6A2
20706WX9VS0096	WIN10 IoT 2019 64bit_EN for ARK-2250L-U3A2

Note: Default BIOS is for 64bit OS support only. 32bit OS will need to update BIOS

Optional Item for Default SKU

Part Number	Description
96PSA-A60W12W7-3	AC-to-DC Adapter, DC12V/5A 60W
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
AMK-V019E	VESA mount kits
AMK-R005E	DIN Rail mount kits

Optional MOS modules for iDoor Expansion

Part Number	Description
MOS-2230-Z1201E	CANBus module, 2-Ch, USB Interface
MOS-2220-X1101E	Parallel LPT module, 1-Ch, USB Interface
MOS-2110Z-1201E	USB module, 2-Ch, PCIe Interface
MOS-2120-Z1101E	Giga LAN Ethernet module, 1-Ch, PCIe Interface
MOS-1120Y-0202E	Isolated RS-232, 2-Ch, DB9, PCIe Interface
MOS-1121Y-0202E	Isolated RS-422/485, 2-Ch, DB9, PCIe Interface
MOS-1120Y-1402E	Non-Isolated RS-232, DB37, 4-Ch, PCIe Interface
MOS-1121Y-1402E	Non-Isolated RS-422/485, DB37, 4-Ch, PCIe Interface
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCIe Interface
MOS-1110Y-0101E	Isolated 16 DI/8 DO, 1-Ch, DB37, PCIe Interface
MOS-2120-Z1201	GigaLAN Ethernet module, mPCIe, RJ45 2-Ch, PCIe I/F

* When configuring with MOS-2120-Z1201, please update BIOS with Advantech part number 1420048565.

Optional 9-36V DC Power module

Part Number	Description
MIOE-PWR2-00A1E	9-36V DC input power module
96PSA-A65W19P2-1	AC-to-DC Adapter, DC19V/3.42A 65W (for MIOe-PWR2)
1700001524	Power cable 3-pin 183cm, USA type (for MIOe-PWR2)
170203183C	Power cable 3-pin 183cm, EU type (for MIOe-PWR2)
170203180A	Power cable 3-pin 183cm, UK type (for MIOe-PWR2)

Optional Display Module

Part Number	Description
AMO-D002E	DP module
AMO-D003E	HDMI module

ARK-2250 Dual Layer Expansion Option Items

Optional modules for ARK Plus Expansion

Part Number	Description
AMO-2201E (2nd Layer)	4 x RS232/422/485 + removable 2.5" drive
AMO-2202E (2nd Layer)	4-port PoE with $12V_{DC}$/10A 120W adapter
AMO-2203E (2nd Layer)	2-Port isolated CAN-Bus
AMO-2204E (2nd Layer)	3-port GbE + iDoor (2nd iDoor support USB I/F only)

ARK Plus Extended Modules

AMO-2201E

4 x RS232/422/485 + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
Ports	4 x RS232/422/485 (set up by jumper)
Others	Removable 2.5" drive bay
Mechanical	
Dimension	260 x 34.6 x 140.2 mm (10.24" x 1.36" x 5.52")
Environment	
Operating Temp	0 ~ 40 °C

Ordering Information

P/N	Description
AMO-2201E	4 x RS232/422/485 + removable 2.5" drive bay

AMO-2202E

4 x 10/100/1000Base T(X) PoE

Specifications

General	
Bus interface	MIOe
Ports	4 x RJ45 10/100/1000 Mbps PoE ports
Power consumption	Each port 15W, Max 60W
Compatibility	IEEE 802.3, IEEE 802.3u, IEEE802.3ab, IEEE802.3x,IEEE802.3af Powered Device (PD) auto detection and classification Supports IEEE 802.3u Auto-Negotiation
Power	
Input	12 V_{DC} power input (Change System Power input Cable)
Output PoE Power	15W at 48 V_{DC} per PoE port
Mechanical	
Dimension	260 x 34.6 x 140.2 mm (10.24" x 1.36" x 5.52")
Environment	
Operating Temp	0 ~ 40 °C

Ordering Information

P/N	Description
AMO-2202E	4 x 10/100/1000Base T(X) PoE

AMO-2203E

2-Port isolated CAN-Bus

Specifications

General	
Bus interface	MIOe
Ports	2 x DB9 isolated CAN-Bus
Communications	
Signal Support	CAN_H, CAN_L
Protocol	CAN 2.0 A/B
Data Transfer Rate	Programmable up to 1Mbps
CAN Frequency	16MHz
Protection	
Isolation Protection	2,500 V_{DC}
Mechanical	
Dimension	260 x 34.6 x 140.2 mm (10.24" x 1.36" x 5.52")
Environment	
Operating Temp	0 ~ 40 °C

Ordering Information

P/N	Description
AMO-2203E	2-Port isolated CAN-Bus

AMO-2204E

3-Port GbE + iDoor

Specifications

General	
Bus interface	MIOe
Ports	3 x RJ45 10/100/1000 Mbps ports
Chipset	Intel 82583V Gigabit Ethernet Controller
Other	1 x iDoor
Mechanical	
Dimension	260 x 34.6 x 140.2 mm (10.24" x 1.36" x 5.52")
Environment	
Operating Temp	0 ~ 40 °C

Ordering Information

P/N	Description
AMO-2204E	3-Port GbE + iDoor

* 2nd iDoor supported. Please refer to "Optional MOS modules for iDoor Expansion

ARK-3520L

6th Gen. Intel® Core™ i3/ i5/ i7 Modular Expansion Fanless Box PC

Features

- 6th Gen. Intel® Core™ i3/i5/i7 mobile processor (BGA)
- Triple independent display: VGA + HDMI + Optional Display
- DDR4 SO-DIMM memory support up to 32 GB
- Option 9-36V power module compatible with all-in-one ordering
- Optional modular design for 2.5" hard drive bays : internal /removable (support up to 2 sets)
- Advantech iDoor module compatible
- Advantech EMIO miniPCIe module compatible with all-in-one ordering
- Advantech ARK Plus AMO-3xxx series module compatible

Specifications

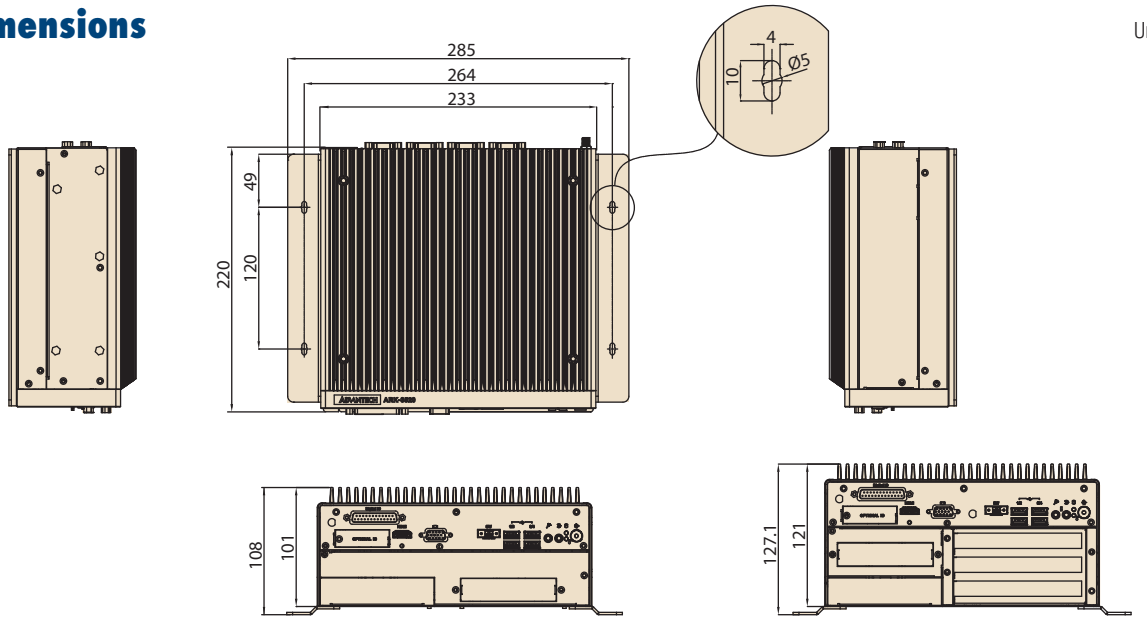
Processor System	CPU	Intel Core i7-6820EQ	Intel Core i5-6440EQ	Intel Core i3-6100E (support by T-P/N)
	Frequency	2.8 GHz (Quad Core)	2.7 GHz (Quad Core)	2.7 GHz (Dual Core)
	L3 Cache	8 MB	6 MB	3 MB
	Watts	45W	45W	35W
	System Chipset	Intel QM170		
	BIOS	AMI EFI 128Mbit		
Memory	Technology	DDR4 2133 MHz		
	Max. Capacity	32 GB		
	Socket	2 x 260-pin SO-DIMM		
Graphics	Chipset	Intel QM170 Integrated GFX Gen 9		
	Graphic Engine	Direct x 12, OpenGL 4.4 HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG and VP8. HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8 and VP9		
	VGA	1920x1200@ 60Hz		
	HDMI	1 HDMI port, HDMI 1.4b for HD video playback, 3840x2160@30Hz		
	Optional 3rd Display module	DP / HDMI Display Port		
	Triple Display	VGA+HDMI + 3rd display module		
Ethernet	LAN1	10/100/1000 Mbps Intel I219-LM GbE, support Wake On Lan		
	LAN2	10/100/1000 Mbps Intel I210 GbE, support Wake On Lan		
Audio	Interface	Realtek ALC888S, High Definition Audio, Line-out, Mic-in		
Others	Watch dog Timer	255-level timer interval, setup by software		
	TPM	TPM 2.0 (Optional by project support)		
I/O Interface	Serial Port	4 x RS-232 ports, 4 x RS-232/422/485 port with auto flow control; COM 1,2 support 5V/12V power supply (by jumper)		
	USB	6 x USB 3.0 ports; 2 x USB 2.0 ports		
	DIO	16 bit DIO		
	P/S2	1 Port support by cable and bracket (Optional)		
	Parallel Port	D-sub 25pin connector (Optional)		
Expansions	Mini PCIe	2 x Full-size Mini PCIe (1 x support mSATA, 1 x support SIM holder)		
	M.2	1 x E key for WiFi		
	i Door	1 set (Optional)		
	ARK Plus	AMO-3501E 3 Slot Riser Card for 2x PCI+1xPCIx4		
Storage	HDD	1 x 2.5" SATAIII HDD Bay with Max Height 15mm, (1 internal 2.5" HDD Bay with one optional removable HDD Bay)		
	mSATA	1 x mSATA socket (Share 1 Mini PCIe)		
Software Support	Microsoft Windows	Windows 10, Windows 8.1, Windows 7		
	Linux	By Project Support		
Power Requirements	Power Type	AT/ATX		
	Power Input Voltage	12V (9-36V as optional)		
	Power Adapter	AC to DC, 150W (Optional)		
Power Consumption	Typical	11.4W		
	Max.	68.4W	46.5W	42.75W
Mechanical	Construction	Aluminum housing		
	Mounting	Desk/wall-mounting		
	Dimensions (W x H x D)	220 x 101 x 233 mm (8.66" x 3.98" x 9.17")		
	Weight	4.8 kg (10.58 lb)		
Environment	Operating Temperature	with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow with HDD: 0 ~ 40° C with 0.7m/s air flow		
	Storage Temperature	-40 ~ 85° C		
	Relative Humidity	95% @ 40° C (non-condensing)		
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.		
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration		
	EMC	CE/FCC Class B, CCC, BSMI		
	Safety	CB, UL, CCC, BSMI		

All product specifications are subject to change without notice.

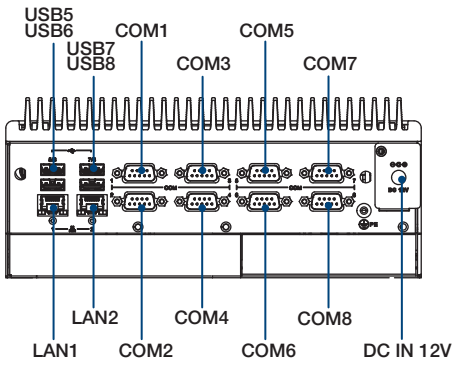
Last updated: 21-Mar-2019

Dimensions

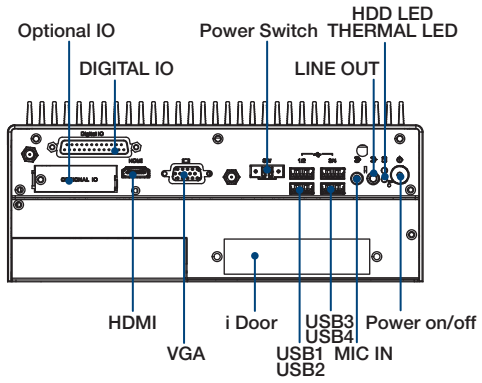
Unit: mm



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	DDR4	VGA	HDMI	Option 3rd display module	RS-232/ 422/485	RS-232	USB 3.0	USB 2.0	MiniPCIe	SIM	DC input	Expansion
ARK-3520L-U8A1E	i7-6820EQ	up to 32G	1	1	1	4	4	6	2	2	1	12V	Optional
ARK-3520L-U7A1E	i5-6440EQ	up to 32G	1	1	1	4	4	6	2	2	1	12V	Optional

Note: Memory, storage and operating system bundled by request.

* ARK-3520L i3-6100E support by T-PN with MOQ 30pcs

Packing List

Part Number	Description
-	ARK-3520 Unit
-	User Manual (Simplified Chinese)
-	China RoHS
-	2pin power switch terminal block
1960075470N031	2 x mounting bracket

Embedded OS

Part Number	Description
2070014628	WES7E 64bit EN/JP/TC/SC
2070014627	WE8.1 64bit IndustryPro EN/JP/TC/SC
2070014899	Win10 Ent X64 (High End) for i7-6820EQ
2070014898	Win10 Ent X64 (Value) for i5-6440EQ

ARK-3520 Default SKU Option Items

Optional Item for Default SKU

Part Number	Description
XARK-DPS-150AB-15	AC-to-DC Adapter, DC12V 150W
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable, 3-Pin 183cm, PSE type

Optional MOS modules for iDoor Expansion

Part Number	Description
MOS-2230-Z1201E	CANBus module, 2-Ch, USB I/F
MOS-2220-X1101E	Parallel LPT module, 1-Ch, USB I/F.
MOS-2220-Z1101E	High Speed Com USB module, 2-Ch, PCIe I/F
MOS-2120-Z1101E	Giga LAN Ethernet module, 1-Ch, PCIe I/F.
MOS-1120Y-0201E	Isolated RS-232, 2-Ch, DB9, PCIe I/F
MOS-1121Y-0201E	Isolated RS-422/485, 2-Ch, DB9, PCIe I/F
MOS-1120Y-1401E	Non-Isolated RS-232, DB37, 4-Ch, PCIe I/F
MOS-1121Y-1401E	Non-Isolated RS-422/485, DB37, 4-Ch, PCIe I/F
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCIe I/F
MOS-1110Y-0101E	Isolated 16 DI/8 DO, 1-Ch, DB37, PCIe I/F
MOS-2110Z-1201E	USB module, 2-Ch, PCIe I/F

*Please noted ARK-3520 can support only 1 iDoor.

Optional 9-36V DC Power Module

Part Number	Description
AMO-P010E	9-36V DC input power module for ARK-3520
96PSA-A150W19P4-1	AC-to-DC Adapter, DC19V 150W, 0 ~ 40° C (for AMO-P010E)
96PSA-A220W24P4-1	AC to DC adapter, DC 24V 220W, -20 ~ 60° C (For AMO-P010E)
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type

ARK-3520L Optional HDD expansion Kit (Support up to 2 sets)

Part Number	Description
AMK-A0022E	1 x internal HDD Kit (Max Height 15mm)
AMK-A0023E	1 x removable HDD Kit (Max Height 15mm)

Optional Display Module

Part Number	Description
AMO-D002E	DP module
AMO-D003E	HDMI module

ARK Plus Extended Modules

AMO-3501E

3 Slots Riser Card Expansion Module: 2 x PCI +1x PCIex4

Specifications

General	
Add on card support	3 Slot for 2xPCI+1xPCIex4 Max Card size: 110 mm(H) x 180 mm (L) Max Power consumption: 10W for each slot
HDD/SSD	NA
Mechanical	
System Dimension	220 x 121 x 230 mm

Ordering Information

P/N	Description
AMO-3501E	3 Slot Riser Card (2xPCI+1xPCIex4)

AMO-3502E

2 Slots Riser Card Expansion Module: 2 x PCI

Specifications

General	
Add on card support	2 Slot for 2xPCI Max Card size: 110 mm(H) x 180 mm (L) Max Power consumption: 10W for each slot
HDD/SSD	NA
Mechanical	
System Dimension	220 x 101 x 230 mm

Ordering Information

P/N	Description
AMO-3502E	2 Slot Riser Card (2xPCI)

AMO-3503E

2 Slots Riser Card Expansion Module: 2 x PCIex4

Specifications

General	
Add on card support	2 Slot for 2xPCIex4 Max Card size: 110 mm(H) x 180 mm (L) Max Power consumption: 10W for each slot
HDD/SSD	NA
Mechanical	
System Dimension	220 x 101 x 230 mm

Ordering Information

P/N	Description
AMO-3503E	2 Slot Riser Card (2xPCIex4)

ARK-3520P

6th Gen. Intel® Core™ i3/ i5/ i7 with Expansion slots and wide range power Fanless Box PC

Features

- Intel® Core™ i3/i5/i7 processor (BGA)
- Triple independent display: VGA + HDMI + Option Display
- DDR4 SO-DIMM memory up to 32 GB
- Flexible Expansion via PCI/PCIex4
- 9-36V wide range Power input
- Versatile I/Os including 6 x high speed USB 3.0 and 8 x COM ports
- 2 Removable 2.5" HDD drive bay
- Advantech iDoor module compatible

Windows Embedded WISE-PaaS/RMM iManager CE FCC RoHS

Specifications

Processor System	CPU	Intel Core i7-6820EQ	Intel Core i5-6440EQ	Intel Core i3-6100E (support by T-P/N)
	Frequency	2.8 GHz (Quad Core)	2.7 GHz (Quad Core)	2.7 GHz (Dual Core)
	L3 Cache	8 MB	6 MB	3 MB
	Watts	45W	45W	35W
	System Chipset	Intel QM170		
	BIOS	AMI EFI 128Mbit		
Memory	Technology	DDR4 2133 MHz		
	Max. Capacity	32 GB		
	Socket	2 x 260-pin SO-DIMM		
Graphics	Chipset	Intel QM170 Integrated GFX Gen 9		
	Graphic Engine	Direct x 12, OpenGL 4.4 HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG and VP8. HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8 and VP9		
	VGA	1920x1200@ 60Hz		
	HDMI	1 HDMI port, HDMI 1.4b for HD video playback, 3840x2160@30Hz		
	Optional 3rd Display module	DP		
	Triple Display	VGA+HDMI + 3rd display module		
Ethernet	LAN1	10/100/1000 Mbps Intel I219-LM GbE, support Wake On Lan		
	LAN2	10/100/1000 Mbps Intel I210 GbE, support Wake On Lan		
Audio	Interface	Realtek ALC888S, High Definition Audio, Line-out, Mic-in		
Others	Watch dog Timer	255-level timer interval, setup by software		
	TPM	TPM 2.0 (Optional by project support)		
I/O Interface	Serial Port	4 x RS-232 ports, 4 x RS-232/422/485 port with auto flow control; COM 1,2 support 5V/12V power supply (by jumper)		
	USB	6 x USB 3.0 ports; 2 x USB 2.0 ports		
	DIO	16 bit DIO		
	P/S2	1 Port support by cable and bracket (Optional)		
	Parallel Port	D-sub 25pin connector (Optional)		
Expansions	Mini PCIe	2 x Full-size Mini PCIe (1 x support mSATA, 1 x support SIM holder)		
	M.2	1 x E key for WiFi		
	i Door	1 set (Optional)		
	Add-on Card Slot	2 Slots PCI (Default) Maximum card size: 110 mm (H) x 180 mm(L) 2 Slots PCIe x 4 (Optional) Maximum card size: 110 mm (H) x 180 mm(L) Suggest maximum power consumption 10W for each slot		
Storage	HDD	Two removable 2.5" SATA HDD Bays with maximum device height 15mm, SATA III, Gen 3, Support SATA RAID 0, 1		
	mSATA	1x mSATA socket (Share 1 Mini PCIe)		
Software Support	Microsoft Windows	Windows 10, Windows 8.1, Windows 7		
	Linux	By Project Support		
Power Requirements	Power Type	AT/ATX		
	Power Input Voltage	9 ~ 36 V_{DC}		
	Power Adapter	AC to DC, 150W (Optional)		
Power Consumption	Typical	11.4W		
	Max.	68.4W	46.5W	42.75W
Mechanical	Construction	Aluminum housing		
	Mounting	Desk/wall-mounting		
	Dimensions (W x H x D)	220 x 101 x 233 mm (8.66" x 3.98" x 9.17")		
	Weight	4.4 kg (9.7 lb)		
Environment	Operating Temperature	with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow with HDD: 0 ~ 40° C with 0.7m/s air flow		
	Storage Temperature	-40 ~ 85° C		
	Relative Humidity	95% @ 40° C (non-condensing)		
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.		
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration		
	EMC	CE/FCC Class A, CCC, BSMI		
	Safety	LVD, CCC, BSMI		

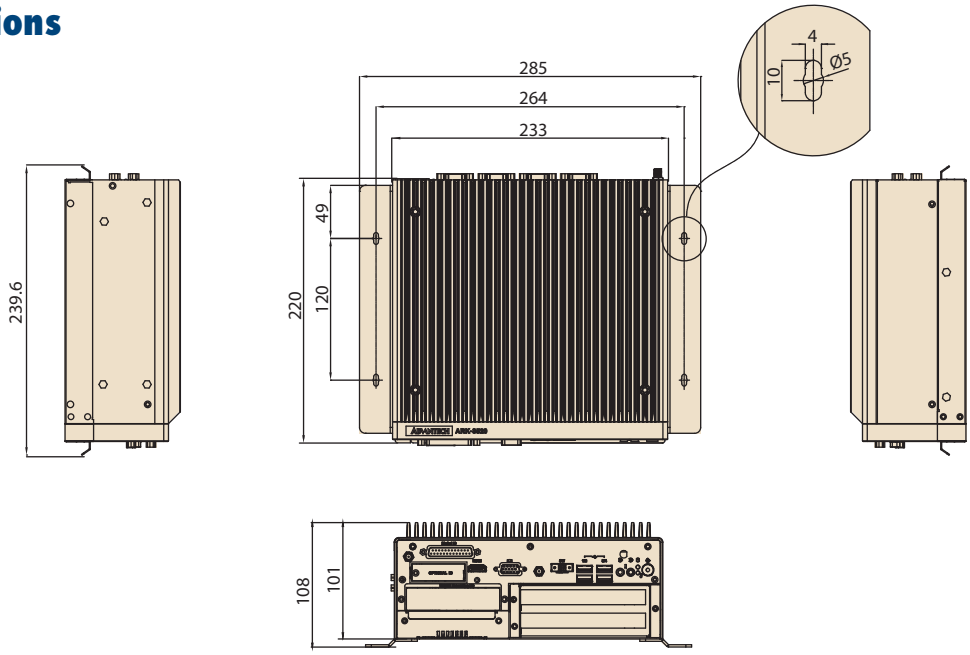
* By Project Support

All product specifications are subject to change without notice.

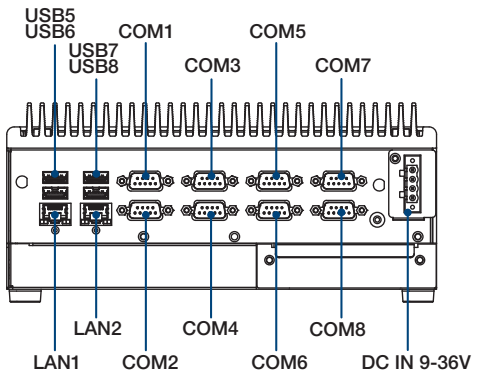
Last updated: 4-Aug-2020

Dimensions

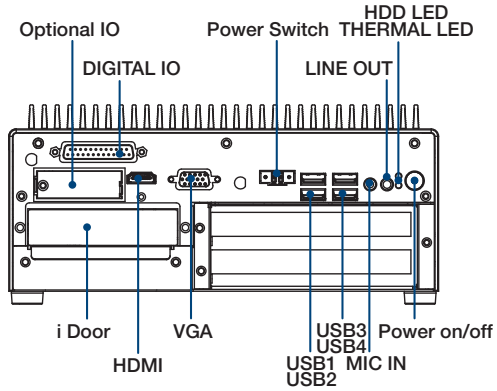
Unit: mm



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	DDR4	VGA	HDMI	Option 3rd display module	RS-232/ 422/485	RS-232	USB 3.0	USB 2.0	MiniPCIe	SIM	DC input	Expansion
ARK-3520P-U8A1E	i7-6820EQ	up to 32G	1	1	1	4	4	6	2	2	1	9 ~ 36 V	2 x PCI
ARK-3520P-U7A1E	i5-6440EQ	up to 32G	1	1	1	4	4	6	2	2	1	9 ~ 36 V	2 x PCI

Note: Memory, storage and operating system bundled by request.

* ARK-3520P i3-6100E support by T-PN with MOQ 30pcs

Packing List

Part Number	Description
-	ARK-3520 Unit
-	User Manual (Simplified Chinese)
-	China RoHS
1652003234	4 pin DC in terminal block
-	2 pin power switch terminal block
1960075470N031	2 x mounting bracket

Embedded OS

Part Number	Description
2070014628	WES7E 64bit EN/JP/TC/SC
2070014627	WE8.1 64bit IndustryPro EN/JP/TC/SC
2070014899	Win10 Ent X64 (High End) for i7-6820EQ
2070014898	Win10 Ent X64 (Value) for i5-6440EQ

ARK-3520 Default SKU Option Items

Optional Item for Default SKU

Part Number	Description
96PSA-A150W19P4-1	AC-to-DC Adapter, DC19V 150W, 0 ~ 40° C for Home and Office Use
96PSA-A220W24P4-1	AC to DC Adapter, DC 24V 220W, -20 ~ 60° C
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable, 3-Pin 183cm, PSE type

Optional MOS modules for iDoor Expansion

Part Number	Description
MOS-2230-Z1201E	CANBus module, 2-Ch, USB I/F
MOS-2220-X1101E	Parallel LPT module, 1-Ch, USB I/F.
MOS-2220-Z1101E	High Speed Serial COM module, 1-ch, USB I/F
MOS-2120-Z1101E	Giga LAN Ethernet module, 1-Ch, PCIe I/F.
MOS-1120Y-0201E	Isolated RS-232, 2-Ch, DB9, PCIe I/F
MOS-1121Y-0201E	Isolated RS-422/485, 2-Ch, DB9, PCIe I/F
MOS-1120Y-1401E	Non-Isolated RS-232, DB37, 4-Ch, PCIe I/F
MOS-1121Y-1401E	Non-Isolated RS-422/485, DB37, 4-Ch, PCIe I/F
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCIe I/F
MOS-1110Y-0101E	Isolated 16 DI/8 DO, 1-Ch, DB37, PCIe I/F
MOS-2110Z-1201E	USB module, 2-Ch, PCIe I/F

*Please noted ARK-3520 can support only 1 iDoor.

Optional Display Module

Part Number	Description
AMO-D002E	DP module

Optional Riser Expansion

Part Number	Description
AMO-R022E	2 x PCIe x 4

ARK-3530L

Intel®Xeon® E3 / Core™ i3/i5/i7 LGA1151 Modular Expansion Fanless Box PC

Features

- Support Intel® Xeon® / 6th & 7th Gen. Core™ i3/i5/i7 processor
- Triple independent display: VGA + HDMI + Optional Display
- DDR4 SO-DIMM memory support up to 32 GB
- Option 9-36V power module compatible with all-in-one ordering
- Optional modular design for 2.5" hard drive bays: internal /removable (support up to 4 sets)
- Advantech iDoor module compatible
- Advantech EMIO miniPCIe module compatible with all-in-one ordering
- Advantech ARK Plus AMO-3xxx series module compatible

WISE-PaaS/DeviceOn SUSI API

Specifications

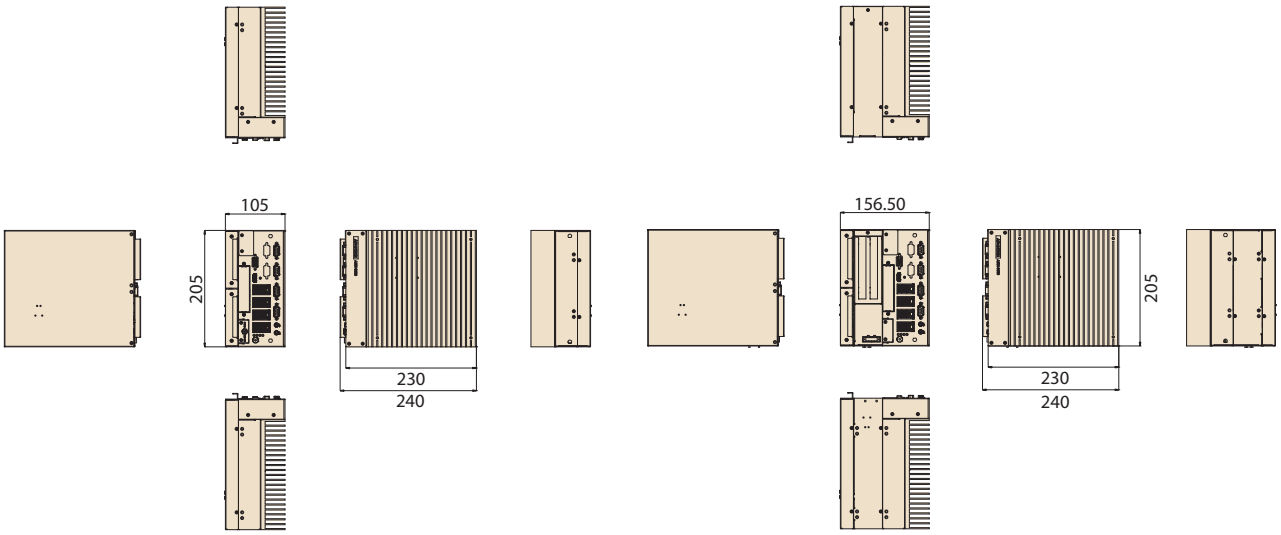
Processor System	CPU	E3-1235L V5	i7-7700/i7-6700	i5-7500/i5-6500	i3-7101E
	Frequency	2.0GHz	3.6GHz/3.4GHz	3.4GHz/3.2GHz	3.9GHz
	L3 Cache	8MB	8MB	6MB	3MB
	TDP	25W	65W	65W	54W
	Chipset	C236			
	BIOS	AMI EFI 128Mbit			
Memory	Technology	DDR4 2133 MHz			
	Max. Capacity	32 GB			
	Socket	2 x 260-pin SO-DIMM			
Graphics	Chipset	Intel® HD Graphics 630			
	Graphic Engine	Direct x 12, OpenGL 4.4 HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG and VP8. HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8 and VP9			
	VGA	1920x1200@ 60Hz			
	HDMI	1 HDMI port, HDMI 2.0 for HD video playback, 3840x2160@30Hz			
	Optional 3rd Display module	DVI-D / DP / HDMI Display Port			
	Triple Display	VGA+HDMI + 3rd display module			
Ethernet	LAN1	10/100/1000 Mbps Intel I219-LM GbE, support Wake On Lan			
	LAN2	10/100/1000 Mbps Intel I210 GbE, support Wake On Lan			
Audio	Interface	Realtek ALC888S, High Definition Audio, Line-out, Mic-in			
Others	Watch dog Timer	255-level timer interval, setup by software			
	TPM	TPM 2.0 (Optional by project support)			
I/O Interface	Serial Port	4 x RS-232/422/485 port with auto flow control; COM 1 support 5V/12V power supply (by jumper)			
	USB	8 x USB 3.0 ports			
	P/S2	1 Port support by cable and bracket (Optional)			
	Optional I/O	16bit DIO or 2 x RS-232 ports			
Expansions	Mini PCIe	2 x Full-size Mini PCIe (2 x support mSATA, 1 x support SIM holder)			
	M.2	1 x E key for WiFi			
	i Door	1 set (Optional)			
	ARK Plus	AMO-3505E 2 slot Riser card for 2 x PCI, AMO-3506E 2 slot Riser card for 2 x PCIex8			
Storage	HDD	2 x 2.5" SATAIII HDD Bay with Max Height 15mm (support Intel SW RAID up to 4 x 2.5" SATAIII HDD bays by optional 2*AMK-A0028E)			
	mSATA	2 x mSATA socket (Share with Mini PCIe)			
Software Support	Microsoft Windows	Windows 10 (Windows 7 for 6th Gen CPU only)			
	Linux	By Project Support			
Power Requirements	Power Type	AT/ATX			
	Power Input Voltage	12V (9-36V as optional)			
	Power Adapter	AC to DC, 150W (Optional)			
Power Consumption (CPU/Memory Only)	Typical	25.68W			
	Max.	88.92W			
Mechanical	Construction	Aluminum housing			
	Mounting	Desk mounting			
	Dimensions (W x H x D)	105 x 205 x 230 mm (4.13" x 8.07" x 9.06")			
	Weight	5.1Kg			
Environment	Operating Temperature	25W/35W/65W(only 6th Gen) Processor with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow Under 73W processor with HDD: 0 ~ 40° C with 0.7m/s air flow			
	Storage Temperature	-40 ~ 85° C			
	Relative Humidity	95% @ 40° C (non-condensing)			
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.			
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration			
	EMC	CE/FCC Class B, CCC, BSMI			
	Safety	CB, UL, CCC, BSMI			

All product specifications are subject to change without notice.

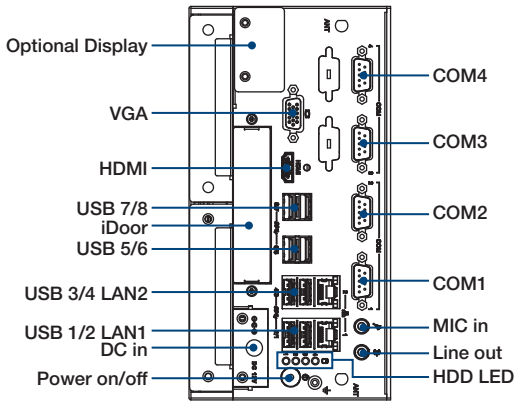
Last updated: 14-Jan-2020

Dimensions

Unit: mm



Front Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	DDR4	GbE	VGA	HDMI	Option 3rd display module	RS-232/422/485	USB 3.0	MiniPCIe	SIM	M.2	DC Input	Expansion
ARK-3530L-00A1	LGA1151 Socket Type	Up to 32GB	2	1	1	1	4	8	2	1	1	12V	Optional

Note: CPU/Memory/Storage and operating system bundled by request.

Packing List

Part Number	Description
-	ARK-3530L Unit
-	User Manual (Simplified Chinese)
-	China RoHS
-	Desk mounting kit

Embedded OS

Part Number	Description
20706WX9HS0023	WIN10 IoT LTSC 64bit for Xeon and Core i7
20706WX9VS0026	WIN10 IoT LTSC 64bit for Core i3/i5 and Celeron

ARK-3530 Default SKU Option Items

Optional Item for Default SKU

Part Number	Description
XARK-DPS-150AB-15	AC-to-DC Adapter, DC12V 150W
96PSA-A150W12W7	AC-to-DC Adapter, DC12V 150W
1700028547-01	16bit DIO Cable
1700028548-01	COM5/6 Cable
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable, 3-Pin 183cm, PSE type

Optional MOS modules for iDoor Expansion

Part Number	Description
MOS-2230-Z1201E	CANBus module, 2-Ch, USB I/F
MOS-2220-X1101E	Parallel LPT module, 1-Ch, USB I/F.
MOS-2220-Z1101E	High Speed Com USB module, 2-Ch, PCIe I/F
MOS-2120-Z1101E	Giga LAN Ethernet module, 1-Ch, PCIe I/F.
MOS-1120Y-0202E	Isolated RS-232, 2-Ch, DB9, PCIe I/F
MOS-1121Y-0202E	Isolated RS-422/485, 2-Ch, DB9, PCIe I/F
MOS-1120Y-1402E	Non-Isolated RS-232, DB37, 4-Ch, PCIe I/F
MOS-1121Y-1402E	Non-Isolated RS-422/485, DB37, 4-Ch, PCIe I/F
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCIe I/F
MOS-1110Y-0101E	Isolated 16 DI/8 DO, 1-Ch, DB37, PCIe I/F
MOS-2110Z-1201E	USB module, 2-Ch, PCIe I/F
MOS-2120-Z1201	Dual Intel I210 GbE LAN iDoor, 2-Ch, PCIe I/F

*Please noted ARK-3530L can support only 1 iDoor.

Optional 9-36V DC Power Module

Part Number	Description
AMO-P010E	9-36V DC input power module for ARK-3530L
96PSA-A150W19P4-1	AC-to-DC Adapter, DC19V 150W, 0 ~ 40° C (for AMO-P010E)
96PSA-A220W24P4-1	AC to DC adapter, DC 24V 220W, -20 ~ 60° C (For AMO-P010E)
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type

ARK-3530L Optional HDD expansion Kit (Support up to 2 sets)

Part Number	Description
AMK-A0028E	1 x internal HDD Kit (Max Height 15mm)

* Choose either AMO-P010E or AMK-A0028E

Optional Display Module

Part Number	Description
AMO-D001E	DVI-D module
AMO-D002E	DP module
AMO-D003E	HDMI module

ARK Plus Extended Modules

AMO-3505E

2 Slots Riser Card Expansion Module: 2 x PCI

Specifications

General	
Add on card support	2 Slot for 2xPCI Max Card size: 110 mm(H) x 180 mm (L) Max Power consumption: 10W for each slot
HDD/SSD	NA
Mechanical	
System Dimension	155 x 205 x 230 mm

Ordering Information

P/N	Description
AMO-3505E	2 Slot Riser Card (2xPCI)

AMO-3506E

2 Slots Riser Card Expansion Module: 2 x PCIex8

Specifications

General	
Add on card support	2 Slot for 2 x PCIex8 Max Card size: 110 mm(H) x 180 mm (L) Max Power consumption: 10W for each slot
HDD/SSD	NA
Mechanical	
System Dimension	155 x 205 x 230 mm

Ordering Information

P/N	Description
AMO-3506E	2 Slot Riser Card (2 x PCIex8)

ARK-3530F

Intel®Xeon® E3 / Core™ i3/i5/i7 LGA1151 Modular Expansion Fanless Box PC

Features

- Support Intel® Xeon® / 6th & 7th Gen. Core™ i3/i5/i7 processor
- Triple independent display: VGA + HDMI + Optional Display
- DDR4 SO-DIMM memory support up to 32 GB
- 9-36V power module compatible with all-in-one ordering
- Optional modular design for 2.5" hard drive bays: internal /removable (support up to 4 sets)
- Advantech iDoor module compatible
- Advantech EMIO miniPCIe module compatible with all-in-one ordering

Windows Embedded WISE-PaaS/DeviceOn SUSI API

Specifications

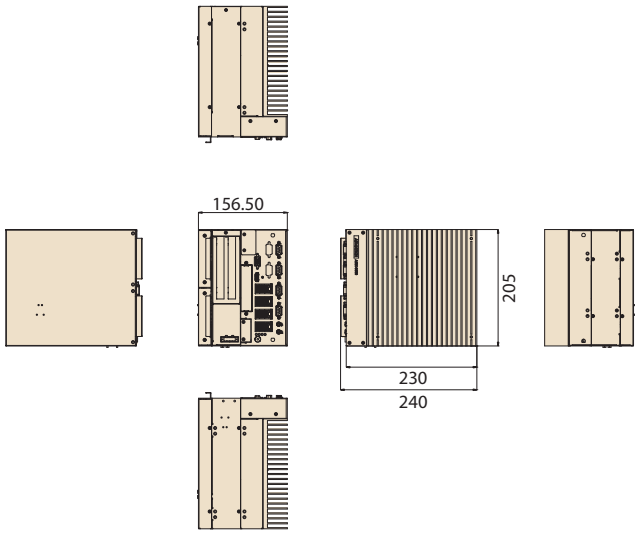
Processor System	CPU	E3-1235L V5	i7-7700/i7-6700	i5-7500/i5-6500	i3-7101E
	Frequency	2.0GHz	3.6GHz/3.4GHz	3.4GHz/3.2GHz	3.9GHz
	L3 Cache	8MB	8MB	6MB	3MB
	TDP	25W	65W	65W	54W
	Chipset	C236			
	BIOS	AMI EFI 128Mbit			
Memory	Technology	DDR4 2133 MHz			
	Max. Capacity	32 GB			
	Socket	2 x 260-pin SO-DIMM			
Graphics	Chipset	Intel® HD Graphics 630			
	Graphic Engine	Direct x 12, OpenGL 4.4 HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG and VP8. HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8 and VP9			
	VGA	1920x1200@ 60Hz			
	HDMI	1 HDMI port, HDMI 2.0 for HD video playback, 3840x2160@30Hz			
	Optional 3rd Display module	DVI-D / DP / HDMI Display Port			
	Triple Display	VGA+HDMI + 3rd display module			
Ethernet	LAN1	10/100/1000 Mbps Intel I219-LM GbE, support Wake On Lan			
	LAN2, 3, 4	10/100/1000 Mbps Intel I210 GbE, support Wake On Lan			
Audio	Interface	Realtek ALC888S, High Definition Audio, Line-out, Mic-in			
Others	Watch dog Timer	255-level timer interval, setup by software			
	TPM	TPM 2.0 (Optional by project support)			
I/O Interface	Serial Port	4 x RS-232/422/485 port with auto flow control; COM 1 support 5V/12V power supply (by jumper)			
	USB	8 x USB 3.0 ports			
	P/S2	1 Port support by cable and bracket (Optional)			
	Optional I/O	16bit DIO or 2 x RS-232 ports			
Expansions	Mini PCIe	2 x Full-size Mini PCIe (2 x support mSATA, 1 x support SIM holder)			
	M.2	1 x E key for WiFi			
	i Door	1 set (Optional)			
	Add-on Card Slot	Maximum card size 110mm (H) x 180mm (L) Suggest maximum power consumption 10W for each slot 2 Slots PCI (Default) 2 Slots PCIex8 (Option AMO-R026) 1 Slots PCIex16 (Support by project)			
Storage	HDD	2 x 2.5" SATAIII HDD Bay with Max Height 15mm (support Intel SW RAID (Up to 4 x 2.5" SATAIII HDD bays by optional 2*AMK-A0028E)			
	mSATA	2 x mSATA socket (Share with Mini PCIe)			
Software Support	Microsoft Windows	Windows 10 (Windows 7 for 6th Gen CPU only)			
	Linux	By Project Support			
Power Requirements	Power Type	AT/ATX			
	Power Input Voltage	9-36V			
	Power Adapter	AC to DC, 150W (Optional)			
Power Consumption (CPU/Memory Only)	Typical	25.68W			
	Max.	88.92W			
Mechanical	Construction	Aluminum housing			
	Mounting	Desk mounting			
	Dimensions (W x H x D)	156.5 x 205 x 230 mm (6.16" x 8.07" x 9.06")			
	Weight	5.87Kg			
Environment	Operating Temperature	25W/35W/65W(only 6th Gen) Processor with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow Under 73W processor with HDD: 0 ~ 40° C with 0.7m/s air flow			
	Storage Temperature	-40 ~ 85° C			
	Relative Humidity	95% @ 40° C (non-condensing)			
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.			
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration			
	EMC	CE/FCC Class B, CCC, BSMI			
	Safety	CB, UL, CCC, BSMI			

All product specifications are subject to change without notice.

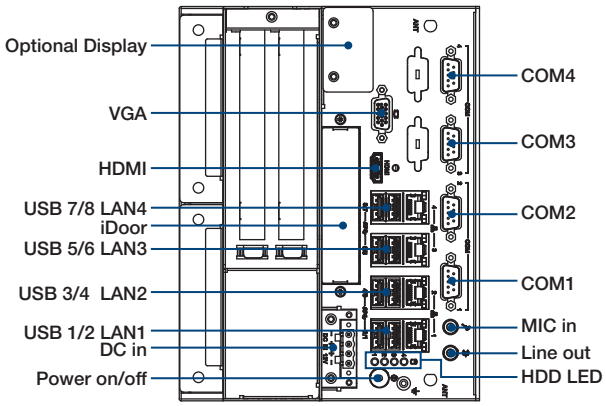
Last updated: 3-Jan-2020

Dimensions

Unit: mm



Front Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	DDR4	Gbe	VGA	HDMI	Option 3rd display module	RS-232/422/485	USB 3.0	MiniPCIe	SIM	M.2	DC Input	Expansion
ARK-3530F-00A1	LGA1151 Socket Type	Up to 32GB	4	1	1	1	4	8	2	1	1	9-36V	2 x PCI

Note: CPU/Memory/Storage and operating system bundled by request.

Packing List

Part Number	Description
-	ARK-3530F Unit
-	User Manual (Simplified Chinese)
-	China RoHS
-	Desk mounting kit

Embedded OS

Part Number	Description
20706WX9HS0023	WIN10 IoT LTSC 64bit for Xeon and Core i7
20706WX9VS0026	WIN10 IoT LTSC 64bit for Core i3/i5 and Celeron

ARK-3530 Default SKU Option Items

Optional Item for Default SKU

Part Number	Description
96PSA-A150W19P4-1	AC-to-DC Adapter, DC19V 150W, 0 ~ 40 °C
96PSA-A220W24P4-1	AC to DC adapter, DC 24V 220W, -20 ~ 60 °C
1700028547-01	16bit DIO Cable
1700028548-01	COM5/6 Cable
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable, 3-Pin 183cm, PSE type

Optional MOS modules for iDoor Expansion

Part Number	Description
MOS-2230-Z1201E	CANBus module, 2-Ch, USB I/F
MOS-2220-X1101E	Parallel LPT module, 1-Ch, USB I/F.
MOS-2220-Z1101E	High Speed Com USB module, 2-Ch, PCIe I/F
MOS-2120-Z1101E	Giga LAN Ethernet module, 1-Ch, PCIe I/F.
MOS-1120Y-0202E	Isolated RS-232, 2-Ch, DB9, PCIe I/F
MOS-1121Y-0202E	Isolated RS-422/485, 2-Ch, DB9, PCIe I/F
MOS-1120Y-1402E	Non-Isolated RS-232, DB37, 4-Ch, PCIe I/F
MOS-1121Y-1402E	Non-Isolated RS-422/485, DB37, 4-Ch, PCIe I/F
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCIe I/F
MOS-1110Y-0101E	Isolated 16 DI/8 DO, 1-Ch, DB37, PCIe I/F
MOS-2110Z-1201E	USB module, 2-Ch, PCIe I/F
MOS-2120-Z1201	Dual Intel I210 GbE LAN iDoor, 2-Ch, PCIe I/F

*Please noted ARK-3530F can support only 1 iDoor.

ARK-3530F Optional HDD expansion Kit (Support up to 2 sets)

Part Number	Description
AMK-A0028E	1 x internal HDD Kit (Max Height 15mm)

Optional Display Module

Part Number	Description
AMO-D001E	DVI-D module
AMO-D002E	DP module
AMO-D003E	HDMI module

Optional Riser Expansion

Part Number	Description
AMO-R026	2 x PCIex8

ARK-3531

Intel® 9th Gen / Core™ i3/i5/i7/i9 LGA1151 Fanless Box PC

Features

- Supports Intel® 9th Gen Core™ i3/i5/i7/i9 35W processor
- Dual display: VGA + HDMI
- DDR4 SO-DIMM memory support up to 64 GB
- 9-36V wide range power input
- Versatile I/Os including 2 x USB 3.1, 6 x USB 3.0 and 8 x COM ports
- Support 2 internal 2.5" Hard Drive bays (Intel SW RAID 0/1)
- SUSI API, WISE-DeviceOn, McAfee, Acronis bundled
- IP40 rating

Windows Embedded **WISE-DeviceOn** **SUSI API**

Specifications

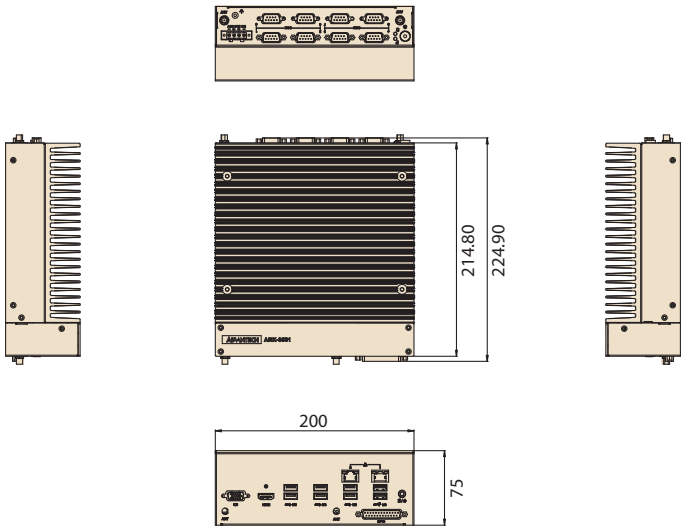
Processor System	CPU	i9-9900T	i7-9700TE	i5-9500TE	i3-9100TE	G4900T
	Frequency	2.1GHz-4.4GHz	1.8GHz-3.8GHz	2.2GHz-3.6GHz	2.2GHz-3.2GHz	2.9GHz
	L3 Cache	16MB	12MB	9MB	6MB	2MB
	Core	8	8	6	4	2
	TDP	35W				
	Chipset	H370 (Q370 support by TPN)				
	BIOS	AMI EFI 128Mbit				
Memory	Technology	DDR4 2666 MHz				
	Max. Capacity	64 GB				
	Socket	2 x 260-pin SO-DIMM				
Graphics	Chipset	Intel® UHD Graphics 630				
	Graphic Engine	Direct x 12, OpenGL 4.4 HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG and VP8. HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8 and VP9				
	VGA	2048x1280@ 60Hz				
	HDMI	1 HDMI port, HDMI 1.4 for HD video playback, 3840x2160@30Hz				
	Flexible Display (by TPN project)	HDMI+HDMI, VGA+DP, HDMI+DP				
Ethernet	LAN1	10/100/1000 Mbps Intel I219-LM GbE, support Wake On Lan				
	LAN2	10/100/1000 Mbps Intel I210GbE, support wake on lan				
	LAN3/LAN4 (by TPN project)	10/100/1000 Mbps Intel I210GbE, support wake on lan				
Audio	Interface	Realtek ALC888S, High Definition Audio, Line-out/Mic-in (switch)				
Others	Watch dog Timer	255-level timer interval, setup by software				
	TPM	Onboard TPM 2.0				
I/O Interface	Serial Port	4 x RS-232, 4 x RS-232/422/485 port with auto flow control; COM 1 support 5V/12V power supply (by jumper)				
	USB	2 x USB 3.1 Gen2 (5V/1.8A), 6 x USB 3.0 (5V/0.9A)				
	GPIO	16bit DIO				
Expansions	Mini PCIe	1 x Full-size MiniPCIe (support mSATA, support SIM holder, Optional AMO-I026 to supports m.2 B+M key 2280)				
	M.2	1 x E key 2230 for WiFi				
Storage	HDD	2 x 2.5" SATAIII HDD Bay with Max Height 9.5mm (Supports Intel SW RAID 0/1)				
	mSATA	1 x mSATA socket (Share with Mini PCIe)				
Software Support	Microsoft Windows	Windows 10				
	Linux	By Project Support				
Power Requirements	Power Type	AT/ATX				
	Power Input Voltage	9-36V				
	Power Adapter	AC to DC, 150W (Optional)				
Power Consumption (CPU/Memory Only)	Typical	16.8W				
	Max.	34.8W				
Mechanical	Construction	Aluminum housing				
	Mounting	Desk mounting				
	Dimensions (W x H x D)	200 x 75 x 215 mm				
	Weight	3.2Kg				
Environment	Operating Temperature	35W Processor with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow				
	Storage Temperature	-40 ~ 85° C				
	Relative Humidity	95% @ 40° C (non-condensing)				
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.				
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration				
	EMC	CE/FCC Class B, CCC, BSMI				
	Safety	CB(62368), UL(62368), CCC, BSMI				

All product specifications are subject to change without notice.

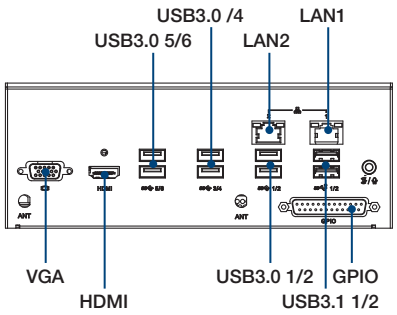
Last updated: 28-Aug-2020

Dimensions

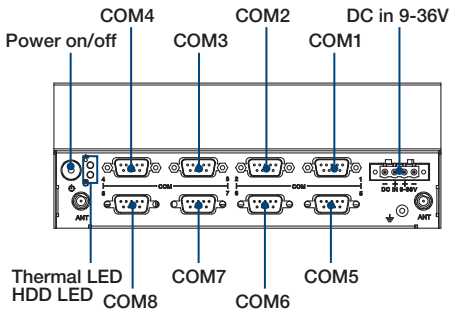
Unit: mm



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	DDR4	GbE	VGA	HDMI	RS-232	RS-232/422/485	USB 3.1	USB 3.0	MiniPCIe	SIM	M.2 E key	DC Input
ARK-3531-00A1	LGA1151 Socket Type	Up to 64GB	2	1	1	4	4	2	6	1	1	1	9-36V

Note: CPU/Memory/Storage and operating system bundled by request.

Packing List

Part Number	Description
ARK-3531-00A1	ARK-3531 Unit
2006K35310	User Manual (Simplified Chinese)
202KAKMC00	China RoHS
1960093556N001	Wall mount kit
36WSWPDOBUND11	WISE-DeviceOn
36WSWPDOBD0211	McAfee Application Control Lite/Acronis Backup 11.7 for Windows PC

Embedded OS

Part Number	Description
20706WX9HS0090	WIN10 IOT 1809 64bit for i7/i9
20706WX9VS0094	WIN10 IOT 1809 64bit for Celeron/Pentium/i3/i5

ARK-3531 Option Items

Part Number	Description
96PSA-A150W19P4-3	AC-to-DC Adapter, DC19V 150W, 0 ~ 40° C
96PSA-A230W24P4-3	AC to DC adapter, DC 24V 230W, -20 ~ 60° C
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type

ARK-3531 Optional Expansion kit

Part Number	Description
AMO-I026A	Expansion M.2 B key 2280 kit for USB module
AMO-I026B	Expansion M.2 B Key 2280 kit for PCIe/SATA module
AMO-I026C	Expansion M.2 M Key 2280 kit for PCIe/SATA module

ARK-3532B

Intel® 10th Gen Xeon® W / Core™ i LGA1200 Expansion Fanless Box PC

Features

- Support Intel® 10th Gen. Xeon® W and Core™ i3/i5/i7/i9 processor
- Triple independent display: VGA + HDMI + Optional Display
- DDR4 SO-DIMM ECC/non-ECC memory support up to 64 GB
- 9-36V_{DC} wide range power input
- Up to 4sets 2.5" hard drive bays, support Intel® SW RAID
- Support 4GbE, 8USB, 6COM, 16bit DIO, TPM2.0
- SUSI API, WISE-DeviceOn, McAfee and Acronis bundled
- 2 x Independent USB 3.0 with lockable design

WISE-DeviceOn SUSI API

Specifications

Processor System	CPU	W-1290TE	i9-10900E	i7-10700E	i5-10500E	i3-10100E	G5900E
	Frequency	2.0~4.6GHz	3.0~5.1GHz	3.0~4.8GHz	3.2~4.3GHz	3.2~3.8GHz	3.2GHz
	L3 Cache	20MB	20MB	16MB	12MB	6MB	2MB
	Cores	10	10	8	6	4	2
	TDP	35W	65W	65W	65W	65W	65W
	Chipset	W480E					
	BIOS	AMI EFI 256Mbit					
Memory	Technology	DDR4 2933 MHz					
	Max. Capacity	64 GB					
	Socket	2 x 260-pin SO-DIMM					
Graphics	Chipset	Intel® UHD Graphics 630					
	Graphic Engine	DirectX 12, OpenGL 4.5 HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG and VP8. HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8 and VP9					
	VGA	1920x1200@ 60Hz					
	HDMI	1 HDMI port, HDMI 1.4 for HD video playback, 4096x2160@30Hz					
	Optional 3rd Display module	DVI-D / DP / HDMI Display Port					
	Triple Display	VGA+HDMI + 3rd display module					
Ethernet	LAN1	10/100/1000 Mbps Intel I219-LM GbE, support Wake On Lan					
	LAN2, 3, 4	10/100/1000 Mbps Intel I210 GbE, support Wake On Lan					
Audio	Interface	Realtek ALC888S, High Definition Audio, Line-out/Mic-in (switch)					
Others	Watch dog Timer	255-level timer interval, setup by software					
	TPM	TPM 2.0 (by optional AMO-I029)					
I/O Interface	Serial Port	4 x RS-232/422/485 port with auto flow control, 2 x RS-232; COM 1 support 5V/12V power supply (by jumper)					
	USB	4 x USB 3.2 (Gen2,10G),2 x USB 3.0, 2 x Independent USB 3.0					
	GPIO	16bit GPIO					
Expansions	Mini PCIe	1 x Full-size Mini PCIe (1 x support mSATA, 1 x support SIM holder)					
	M.2	1 x E key for WiFi					
	Add-on Card Slot	1 Slot PCIex4 + 1 Slot PCIex16 (If card power power consumption over 30W for add-on cards, please bundled with AMO-3508 kit for power and thermal solutions)					
Storage	HDD	2 x 2.5" SATAIII 15mm height HDD bay support Intel SW RAID (Up to 4 x 2.5" SATAIII HDD bays by optional AMK-A0035)					
	mSATA	1 x mSATA socket (Share with Mini PCIe)					
Software Support	Microsoft Windows	Windows 10					
	Linux	By Project Support					
Power Requirements	Power Type	AT/ATX					
	Power Input Voltage	9-36V					
	Power Adapter	AC to DC, 230W (Optional)					
Power Consumption (CPU/Memory Only)	Typical	TBD					
	Max.	TBD					
Mechanical	Construction	Aluminum housing					
	Mounting	Desk mounting					
	Dimensions (W x H x D)	156 x 204 x 230 mm					
	Weight	5.705Kg					
Environment	Operating Temperature	Up to 65W processor with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow with HDD: 0 ~ 40° C with 0.7m/s air flow					
	Storage Temperature	-40 ~ 85° C					
	Relative Humidity	95% @ 40° C (non-condensing)					
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.					
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration					
	EMC	CE/FCC Class B, CCC, BSMI					
	Safety	CB, UL, CCC, BSMI					

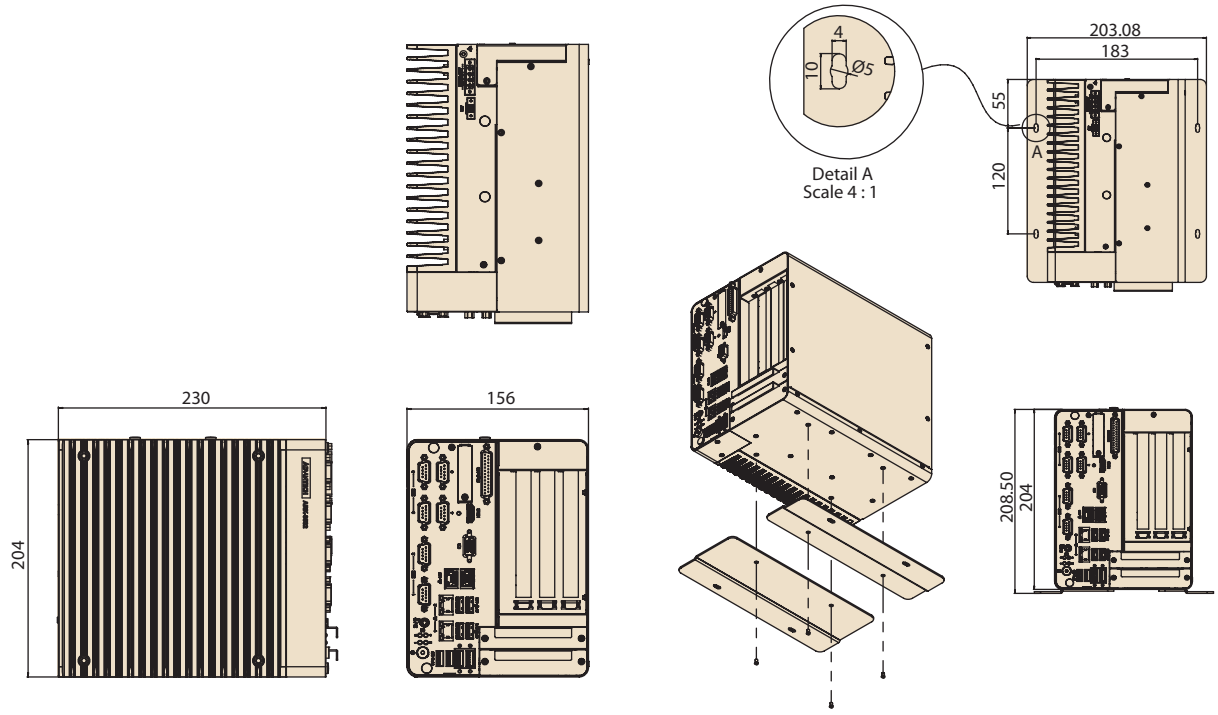
All product specifications are subject to change without notice.

Last updated: 16-Oct-2020

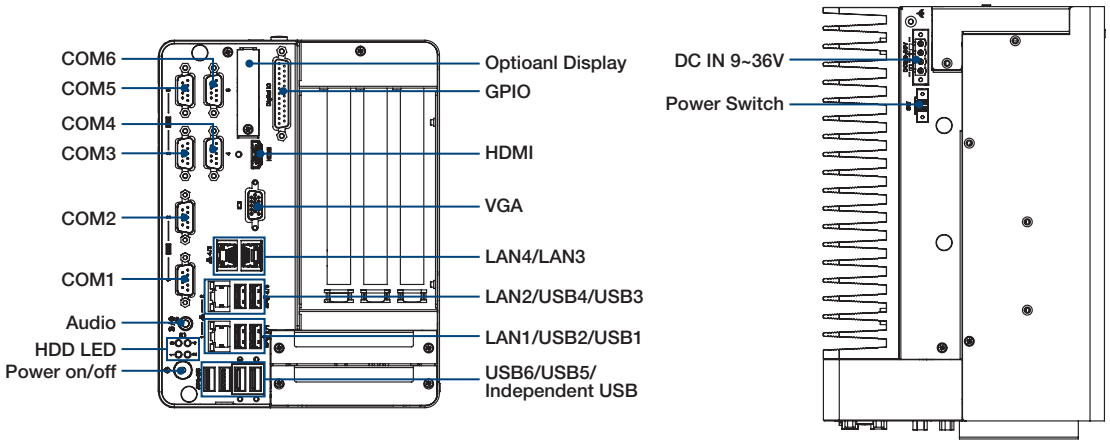
Dimensions

Unit: mm

Wallmount



External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	DDR4	Gbe	VGA	HDMI	Option 3rd display module	RS-232	RS-232/422/485	USB	MiniPCIe	SIM	M.2	DC Input	Expansion
ARK-3532B-00A1	LGA1200 Socket Type	Up to 64GB	4	1	1	1	2	4	8	1	1	1	9-36V	PCIex4 + PCIex16

Note: CPU/Memory/Storage and operating system bundled by request.

Packing List

Part Number	Description
-	ARK-3532B Unit
-	User Manual (Simplified Chinese)
-	China RoHS
-	Desk mounting kit
36WSWPDOBUND11	WISE-DeviceOn
36WSWPDOBD0211	McAfee Application Control Lite/Acronis Backup 11.7 for Windows PC

Embedded OS

Part Number	Description
TBD	

ARK-3532B Optional Expansion Kit for add-on Cards

Part Number	Description
AMO-3508	Fan, Bracket, Cable, Adapter kit for add-on cards

*Please add this kit once the add-on card power consumption over than 30Watts

ARK-3532B Default SKU Option Items

Optional Item for Default SKU

Part Number	Description
96PSA-A230W24P4-3	AC to DC adapter, DC 24V 230W, -20 ~ 60 °C
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable, 3-Pin 183cm, PSE type

ARK-3532B Optional HDD expansion Kit

Part Number	Description
AMK-A0035	2 x internal HDD bays kit (Max Height 15mm)

Optional Display Module

Part Number	Description
AMO-D001E	DVI-D module
AMO-D002E	DP module
AMO-D003E	HDMI module

Optional TPM Module

Part Number	Description
AMO-I029	TPM 2.0 Infineon SLB9670V2.0

ARK-3532C

Intel® 10th Gen Xeon® W / Core™ i LGA1200 Expansion Fanless Box PC

Features

- Support Intel® 10th Gen. Xeon® W and Core™ i3/i5/i7/i9 processor
- Triple independent display: VGA + HDMI + Optional Display
- DDR4 SO-DIMM ECC/non-ECC memory support up to 64 GB
- 9-36V_{DC} wide range power input
- Up to 4sets 2.5" hard drive bays, support Intel® SW RAID
- Support 4GbE, 8USB, 6COM, 16bit DIO, TPM2.0
- SUSI API, WISE-DeviceOn, McAfee and Acronis bundled
- 2 x Independent USB 3.0 with lockable design

WISE-DeviceOn SUSI API

Specifications

Processor System	CPU	W-1290TE	i9-10900E	i7-10700E	i5-10500E	i3-10100E	G5900E
	Frequency	2.0~4.6GHz	3.0~5.1GHz	3.0~4.8GHz	3.2~4.3GHz	3.2~3.8GHz	3.2GHz
	L3 Cache	20MB	20MB	16MB	12MB	6MB	2MB
	Cores	10	10	8	6	4	2
	TDP	35W	65W	65W	65W	65W	65W
	Chipset	W480E					
	BIOS	AMI EFI 256Mbit					
Memory	Technology	DDR4 2933 MHz					
	Max. Capacity	64 GB					
	Socket	2 x 260-pin SO-DIMM					
Graphics	Chipset	Intel® UHD Graphics 630					
	Graphic Engine	DirectX 12, OpenGL 4.5 HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG and VP8. HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8 and VP9					
	VGA	1920x1200@ 60Hz					
	HDMI	1 HDMI port, HDMI 1.4 for HD video playback, 4096x2160@30Hz					
	Optional 3rd Display module	DVI-D / DP / HDMI Display Port					
	Triple Display	VGA+HDMI + 3rd display module					
Ethernet	LAN1	10/100/1000 Mbps Intel I219-LM GbE, support Wake On Lan					
	LAN2, 3, 4	10/100/1000 Mbps Intel I210 GbE, support Wake On Lan					
Audio	Interface	Realtek ALC888S, High Definition Audio, Line-out/Mic-in (switch)					
Others	Watch dog Timer	255-level timer interval, setup by software					
	TPM	TPM 2.0 (by optional AMO-I029)					
I/O Interface	Serial Port	4 x RS-232/422/485 port with auto flow control, 2 x RS-232; COM 1 support 5V/12V power supply (by jumper)					
	USB	4 x USB 3.2 (Gen2,10G),2 x USB 3.0, 2 x Independent USB 3.0					
	GPIO	16bit GPIO					
Expansions	Mini PCIe	1 x Full-size Mini PCIe (1 x support mSATA, 1 x support SIM holder)					
	M.2	1 x E key for WiFi					
	Add-on Card Slot	1 Slot PCIex4 + 2 Slot PCI (If card power power consumption over 30W for add-on cards, please bundled with AMO-3508 kit for power and thermal solutions)					
Storage	HDD	2 x 2.5" SATAIII 15mm height HDD bay support Intel SW RAID (Up to 4 x 2.5" SATAIII HDD bays by optional AMK-A0035)					
	mSATA	1 x mSATA socket (Share with Mini PCIe)					
Software Support	Microsoft Windows	Windows 10					
	Linux	By Project Support					
Power Requirements	Power Type	AT/ATX					
	Power Input Voltage	9-36V					
	Power Adapter	AC to DC, 230W (Optional)					
Power Consumption (CPU/Memory Only)	Typical	TBD					
	Max.	TBD					
Mechanical	Construction	Aluminum housing					
	Mounting	Desk mounting					
	Dimensions (W x H x D)	156 x 204 x 230 mm					
	Weight	5.705Kg					
Environment	Operating Temperature	Up to 65W processor with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow with HDD: 0 ~ 40° C with 0.7m/s air flow					
	Storage Temperature	-40 ~ 85° C					
	Relative Humidity	95% @ 40° C (non-condensing)					
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.					
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration					
	EMC	CE/FCC Class B, CCC, BSMI					
	Safety	CB, UL, CCC, BSMI					

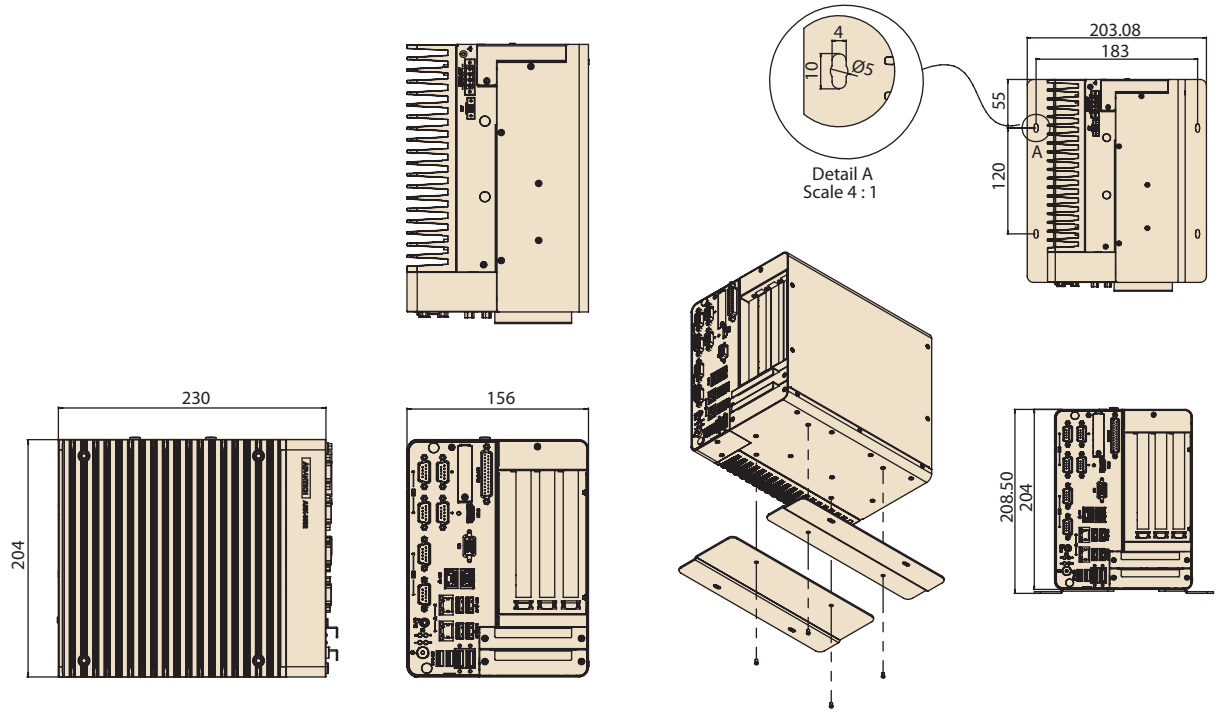
All product specifications are subject to change without notice.

Last updated: 16-Oct-2020

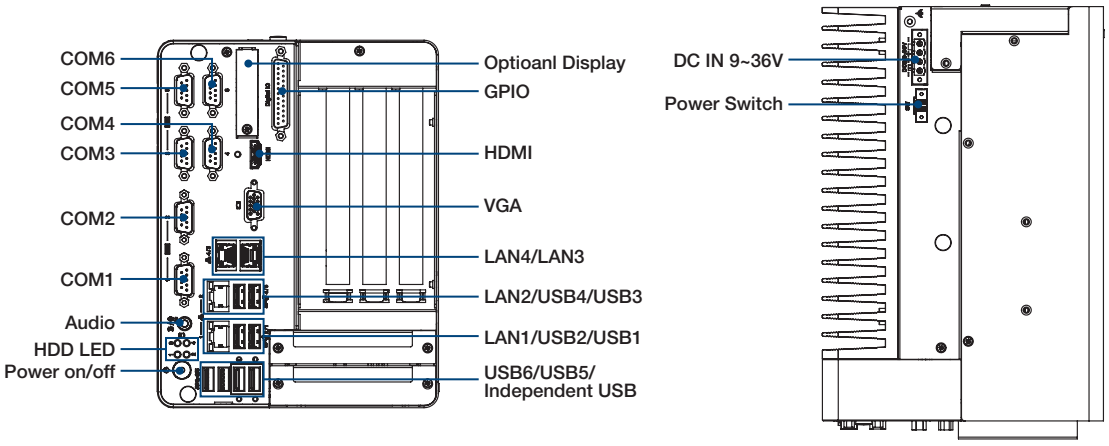
Dimensions

Unit: mm

Wallmount



External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	DDR4	Gbe	VGA	HDMI	Option 3rd display module	RS-232	RS-232/422/485	USB	MiniPCIe	SIM	M.2	DC Input	Expansion
ARK-3532C-00A1	LGA1200 Socket Type	Up to 64GB	4	1	1	1	2	4	8	1	1	1	9-36V	PCIx4 + 2PCI

Note: CPU/Memory/Storage and operating system bundled by request.

Packing List

Part Number	Description
-	ARK-3532C Unit
-	User Manual (Simplified Chinese)
-	China RoHS
-	Desk mounting kit
36WSWPDOBUND11	WISE-DeviceOn
36WSWPDOBD0211	McAfee Application Control Lite/Acronis Backup 11.7 for Windows PC

Embedded OS

Part Number	Description
TBD	

ARK-3532C Optional Expansion Kit for add-on Cards

Part Number	Description
AMO-3508	Fan, Bracket, Cable, Adapter kit for add-on cards

*Please add this kit once the add-on card power consumption over than 30Watts

ARK-3532C Default SKU Option Items

Optional Item for Default SKU

Part Number	Description
96PSA-A230W24P4-3	AC to DC adapter, DC 24V 230W, -20 ~ 60 °C
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable, 3-Pin 183cm, PSE type

ARK-3532C Optional HDD expansion Kit

Part Number	Description
AMK-A0035	2 x internal HDD bays kit (Max Height 15mm)

Optional Display Module

Part Number	Description
AMO-D001E	DVI-D module
AMO-D002E	DP module
AMO-D003E	HDMI module

Optional TPM Module

Part Number	Description
AMO-I029	TPM 2.0 Infineon SLB9670V2.0

ARK-3532D

Intel® 10th Gen Xeon® W / Core™ i LGA1200 Expansion Fanless Box PC

Features

- Support Intel® 10th Gen. Xeon® W and Core™ i3/i5/i7/i9 processor
- Triple independent display: VGA + HDMI + Optional Display
- DDR4 SO-DIMM ECC/non-ECC memory support up to 64 GB
- 9-36V_{DC} wide range power input
- Up to 4sets 2.5" hard drive bays, support Intel® SW RAID
- Support 4GbE, 8USB, 6COM, 16bit DIO, TPM2.0
- SUSI API, WISE-DeviceOn, McAfee and Acronis bundled
- 2 x Independent USB 3.0 with lockable design

WISE-DeviceOn SUSI API

Specifications

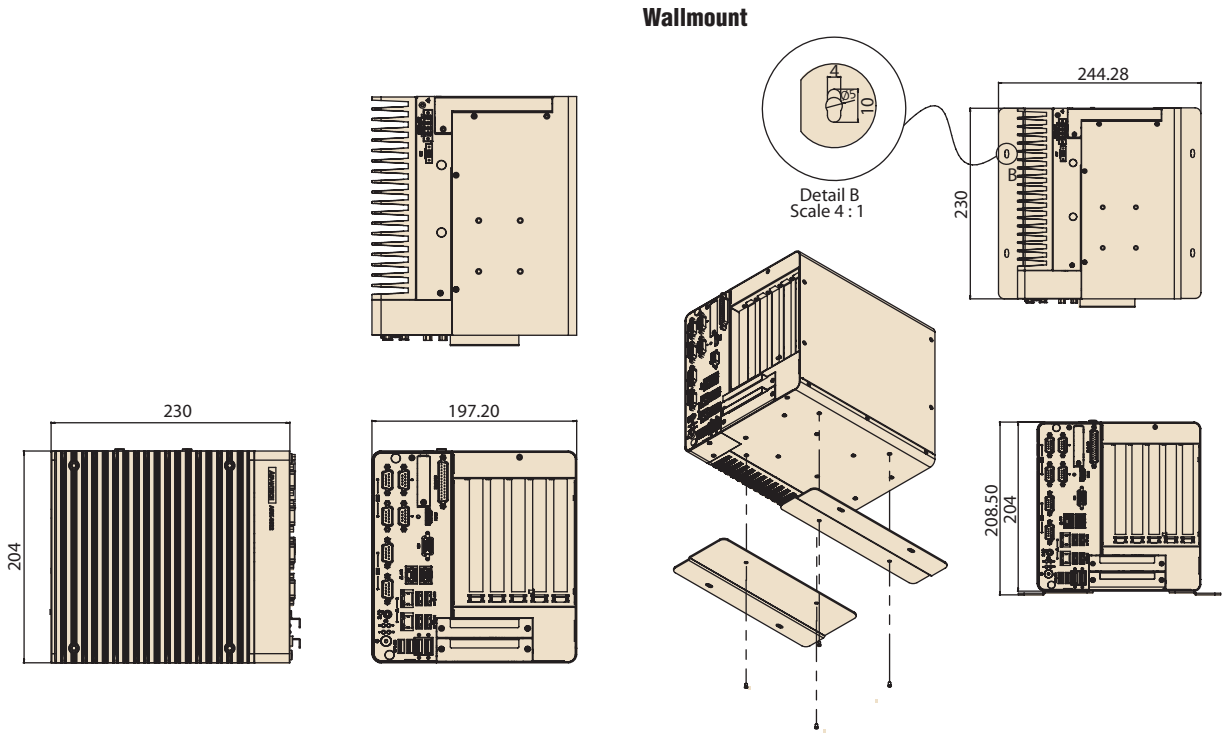
Processor System	CPU	W-1290TE	i9-10900E	i7-10700E	i5-10500E	i3-10100E	G5900E
	Frequency	2.0~4.6GHz	3.0~5.1GHz	3.0~4.8GHz	3.2~4.3GHz	3.2~3.8GHz	3.2GHz
	L3 Cache	20MB	20MB	16MB	12MB	6MB	2MB
	Cores	10	10	8	6	4	2
	TDP	35W	65W	65W	65W	65W	65W
	Chipset	W480E					
	BIOS	AMI EFI 256Mbit					
Memory	Technology	DDR4 2933 MHz					
	Max. Capacity	64 GB					
	Socket	2 x 260-pin SO-DIMM					
Graphics	Chipset	Intel® UHD Graphics 630					
	Graphic Engine	DirectX 12, OpenGL 4.5 HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG and VP8. HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8 and VP9					
	VGA	1920x1200@ 60Hz					
	HDMI	1 HDMI port, HDMI 1.4 for HD video playback, 4096x2160@30Hz					
	Optional 3rd Display module	DVI-D / DP / HDMI Display Port					
	Triple Display	VGA+HDMI + 3rd display module					
Ethernet	LAN1	10/100/1000 Mbps Intel I219-LM GbE, support Wake On Lan					
	LAN2, 3, 4	10/100/1000 Mbps Intel I210 GbE, support Wake On Lan					
Audio	Interface	Realtek ALC888S, High Definition Audio, Line-out/Mic-in (switch)					
Others	Watch dog Timer	255-level timer interval, setup by software					
	TPM	TPM 2.0 (by optional AMO-I029)					
I/O Interface	Serial Port	4 x RS-232/422/485 port with auto flow control, 2 x RS-232; COM 1 support 5V/12V power supply (by jumper)					
	USB	4 x USB 3.2 (Gen2,10G),2 x USB 3.0, 2 x Independent USB 3.0					
	GPIO	16bit GPIO					
Expansions	Mini PCIe	1 x Full-size Mini PCIe (1 x support mSATA, 1 x support SIM holder)					
	M.2	1 x E key for WiFi					
	Add-on Card Slot	1 Slot PCIex4 + 2 Slot PCI + 1 Slot PCIex16 (If card power power consumption over 30W for add-on cards, please bundled with AMO-3508 kit for power and thermal solutions)					
Storage	HDD	2 x 2.5" SATAIII 15mm height HDD bay support Intel SW RAID (Up to 4 x 2.5" SATAIII HDD bays by optional AMK-A0035)					
	mSATA	1 x mSATA socket (Share with Mini PCIe)					
Software Support	Microsoft Windows	Windows 10					
	Linux	By Project Support					
Power Requirements	Power Type	AT/ATX					
	Power Input Voltage	9-36V					
	Power Adapter	AC to DC, 230W (Optional)					
Power Consumption (CPU/Memory Only)	Typical	TBD					
	Max.	TBD					
Mechanical	Construction	Aluminum housing					
	Mounting	Desk mounting					
	Dimensions (W x H x D)	197.2 x 205 x 230 mm					
	Weight	6.41Kg					
Environment	Operating Temperature	Up to 65W processor with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow with HDD: 0 ~ 40° C with 0.7m/s air flow					
	Storage Temperature	-40 ~ 85° C					
	Relative Humidity	95% @ 40° C (non-condensing)					
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.					
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration					
	EMC	CE/FCC Class B, CCC, BSMI					
	Safety	CB, UL, CCC, BSMI					

All product specifications are subject to change without notice.

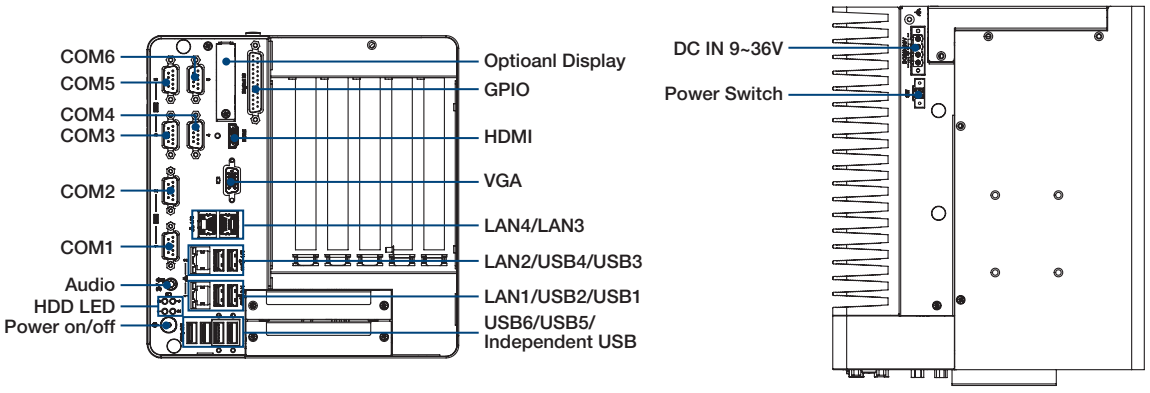
Last updated: 16-Oct-2020

Dimensions

Unit: mm



External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	DDR4	Gbe	VGA	HDMI	Option 3rd display module	RS-232	RS-232/422/485	USB	MiniPCIe	SIM	M.2	DC Input	Expansion
ARK-3532D-00A1	LGA1200 Socket Type	Up to 64GB	4	1	1	1	2	4	8	1	1	1	9-36V	PCIex4 + 2PCI + PCIe x 16

Note: CPU/Memory/Storage and operating system bundled by request.

Packing List

Part Number	Description
-	ARK-3532D Unit
-	User Manual (Simplified Chinese)
-	China RoHS
-	Desk mounting kit
36WSWPDOBUND11	WISE-DeviceOn
36WSWPDOBD0211	McAfee Application Control Lite/Acronis Backup 11.7 for Windows PC

Embedded OS

Part Number	Description
TBD	

ARK-3532D Optional Expansion Kit for add-on Cards

Part Number	Description
AMO-3508	Fan, Bracket, Cable, Adapter kit for add-on cards

*Please add this kit once the add-on card power consumption over than 30Watts

ARK-3532D Default SKU Option Items

Optional Item for Default SKU

Part Number	Description
96PSA-A230W24P4-3	AC to DC adapter, DC 24V 230W, -20 ~ 60 °C
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable, 3-Pin 183cm, PSE type

ARK-3532D Optional HDD expansion Kit

Part Number	Description
AMK-A0035	2 x internal HDD bays kit (Max Height 15mm)

Optional Display Module

Part Number	Description
AMO-D001E	DVI-D module
AMO-D002E	DP module
AMO-D003E	HDMI module

Optional TPM Module

Part Number	Description
AMO-I029	TPM 2.0 Infineon SLB9670V2.0

ARK-6322

Intel Celeron Quad Core J1900 SoC with 6 COM and 8 USB Fanless Box PC

Features

- Intel Celeron Quad Core J1900 2.0GHz SoC
- DDR3L 1333 MHz SO-DIMM memory support up to 8GB
- Dual display : VGA + DisplayPort
- Support 1 x 3.5" or 2.5" SATA HDD Bay and mSATA
- Multiple I/O: 1 x USB 3.0, 7 x USB 2.0, 2 x LAN and 6 x COM
- Support 1 x Full-size and 1 x half-size MiniPCIe
- Lockable DC jack design
- Optional iDoor Modules
- Optional VESA / Wall Mounting kits
- Supports SUSIAccess and Embedded Software APIs

Specifications

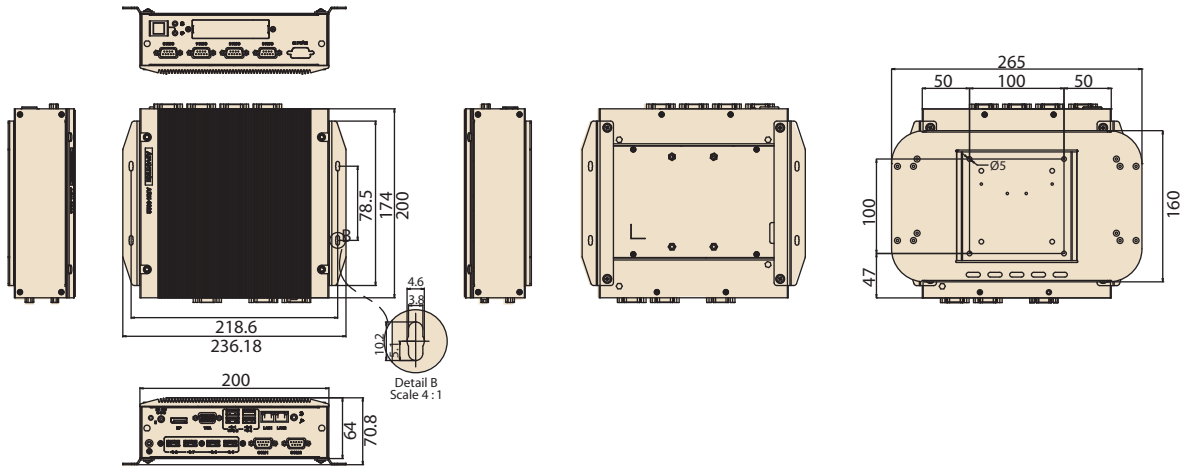
Processor System	CPU	Intel Celeron Processor J1900 Quad Core
	Max. Speed	2.0 GHz, Turbo Boost up to 2.41GHz
	L2 Cache	2 MB
	BIOS	AMI 16 Mbit SPI (Default BIOS is supported for 64-bit OS installation, BIOS for 32-bit OS is supported by project)
Memory	Technology	Dual channel DDR3L 1333MHz SDRAM
	Max. Capacity	8 GB, 4 GB per SO-DIMM
	Socket	2 x 204-pin SO-DIMM
Graphics	Controller	Intel Gen 7 Graphics Engines and media encode/decode engine; GPU Frequency: 688 MHz
	VRAM	Shared system memory up to 224 MB SDRAM
	VGA	Supports up to 2048 x 1280
	Display port	Supports resolution up to 2560 x 1600
	Dual Display	VGA+DP
Ethernet	LAN1	10/100/1000 Mbps Realtek 8111E GbE
	LAN2	10/100/1000 Mbps Realtek 8111E GbE
Audio	Interface	Realtek ALC892, High Definition Audio, Line-out or Mic-in
I/O Interface	Serial Port	5 x RS-232 ports, 1 x RS-232/422/485 with auto flow control (COM3)
	USB	1 x USB 3.0 port and 7 x USB 2.0 ports
Other	Watchdog timer	255-level timer interval, setup by software
	Digital I/O	8-bit programmable (Reserved)
Expansion	Mini PCIe1	1 x Full-size Mini PCIe, supports mSATA module and WWAN module
	Mini PCIe2	1 x Half-size Mini PCIe, supports WLAN module
Storage	HDD	1 x SATA HDD Bay for 2.5" or 3.5" device with maximum height 26.1mm
	Solid State Disk	1 x mSATA share with mini-PCIe slot
Software Support	Microsoft Windows	Windows 10, Windows 8 , Windows 7, WES8, WES7
	Linux	Support (by project)
Power Requirements	Power Type	ATX mode
	Power Input Votage	12 V_{DC}, ± 10%
	Power Adapter	AC to DC, DC12V / 5A, 60W (Optional)
Power Consumption	Typical	15.7 W
	Maximum	24.7 W
Mechanical	Construction	Aluminum housing
	Mounting	Wall mounting kit (optional), VESA mounting kit (optional)
	Dimensions (W x H x D)	200 x 64 x 200 mm
	Weight	2.0 kg
Environment	Operating Temperature	With extended temperature peripherals/SSD: 0 ~ 50° C (32 ~ 122° F) with 0.7 m/s air flow With 3.5-inch hard disk 0 ~ 40° C (32 ~ 104° F) with 0.7 m/s air flow; With 2.5-inch hard disk 0 ~ 45° C (32 ~ 112° F) with 0.7 m/s air flow
	Storage temperature	-40 ~ 85° C (-40 ~ 185° F)
	Relative Humidity	95% @ 40° C (non-condensing)
	Vibration During Operation	With HDD: 0.5 Grms, IEC 60068-2-64, random, 5~500Hz, 3 axes, 1hr/axis
	Shock During Operation	With HDD: 10 G, IEC 60068-2-27, half sine, 11 ms duration
	EMC	CE/FCC Class A, CCC, BSMI
	Safety	CB, UL, CCC, BSMI

All product specifications are subject to change without notice.

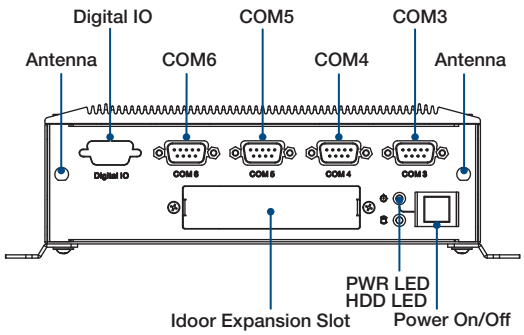
Last updated: 27-Apr-2020

Dimensions

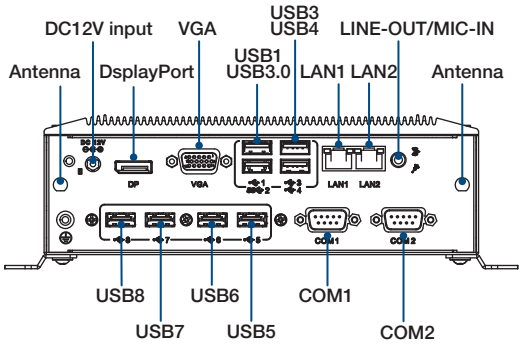
Unit: mm



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	DDR3	VGA	DP	RS-232/422/485	RS-232	USB 3.0	USB 2.0	MiniPCIe*	HDD Bay	GPIO**	DC input
ARK-6322-Q0A2E	Intel Celeron J1900 2.0GHz	Up to 8 GB	1	1	1	5	1	7	2	1 x 3.5" or 2.5"	1	12V
ARK63221901-T	Intel Celeron J1900 2.0GHz	Up to 8 GB	1	1	1	5	1	7	2	1 x 3.5" or 2.5"	1	12V

*Full-size Mini PCIe co-lay with mSATA.
** Reserved 8-bits DIO
Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
1960065854N001	1x bracket for idoor module
-	1x Power bracket
2006632201	1x User Manual (Simplified Chinese)
202KAKMC00	1x China RoHS for ARK-6322
2190000902	1x CARDBOARD-WARRANTY REV. A2

Embedded OS

Part Number	Description
2070013367	WE8S V6.5.2 EN/SC/TC/JP
2070013550	WES7E V5.6.8 EN/SC/TC/JP
20706WX9ES0058	Win 10 IoT Ent 64bit 1809 LTSC EN (OS Size: around 12.4GB)

Note: Default BIOS is for 64bit OS support only. For 32bit OS, please update BIOS. (P/N:1420036912)

Optional Items

Part Number	Description
96PSA-A60W12R1-1	AC-to-DC Adapter, DC 12V/5A 60W, with DC Jack Plug, 0 ~ 40° C for Home and Office Use
1702002600	Power cable 3-pin 183 cm, USA type
1702002605	Power cable 3-pin 183 cm, Europe type
1702031801	Power cable 3-pin 183 cm, UK type
1700000237	Power cable 3-pin 183 cm, PSE type
AMK-V008E	VESA mounting kit
AMK-W002E	Wall mounting kit
1700024047-01	F Cable 2*5P-2.0/D-SUB 9P(F) 15CM, GPIO cable
MOS-2230-Z1201E	CANBus module, 2-Ch, USB I/F.
MOS-2220-X1101E	Parallel LPT module, 1-Ch, USB I/F.
MOS-2220-Z1101E	High Speed Serial COM module, 1-Ch, USB I/F.
MOS-2120-Z1101E	Giga LAN Ethernet module, 1-Ch, PCIe I/F.
MOS-2120-Z1201	Dual Intel I210 GbE LAN iDoor, 2-Ch, PCIe I/F
MOS-2110Z-1201E	USB module, 2-Ch, PCIe I/F
MOS-1120Y-0202E	Isolated RS-232, 2-Ch, DB9, PCIe I/F
MOS-1121Y-0202E	Isolated RS-422/485, 2-Ch, DB9, PCIe I/F
MOS-1120Y-1402E	Non-Isolated RS-232, DB37, 4-Ch, PCIe I/F
MOS-1121Y-1402E	Non-Isolated RS-422/485, DB37, 4-Ch, PCIe I/F
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCIe I/F
MOS-1110Y-0101E	Isolated 16 DI/8 DO, 1-Ch, DB37, PCIe I/F

ARK-2121S

Outdoor NVR w/4 PoE Ports
Intel® Atom E3845 SoC Fanless Box PC

Features

- Intel® Atom E3845 Quad Core 1.91 GHz SoC
- 4 PoE Ports to Support Mainstream IP Cameras
- 3KV isolation for 6 x Di & 2 x Do
- Diversity Communication Abilities, ex. WWAN, WLAN
- 9 ~ 36 V_{DC}* Wide Power Input w/isolation
- 1 x Removable 2.5" drive bay
- Supports iManager, SUSIAccess and Embedded Software APIs
- Up to -40 ~ 70° C wide temperature support (by project)

Specifications

		ARK-2121S-S9A2E
Processor System	CPU	Intel Atom E3845 QC SoC
	Frequency	1.91 GHz
	L2 Cache	2 MB
	BIOS	AMI EFI 64 Mbit
Memory	Technology	DDR3L 1333 MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	Intel Gen7 Graphics
	Graphic Engine	DirectX11, OpenGL3.2, OpenCL1.1 Full HW acceleration, decode: H.264, MPEG2/4, VC-1, WMV9. Encode: H.264, MPEG2
	VGA	Up to 2560 x 1600 @ 60Hz
	HDMI	Lockable HDMI connector, up to 1080p
Audio	Main System	Realtek ALC888S, High Definition Audio (HD), Line-in, Line out, Mic-in
Ethernet	LAN #1	10/100/1000 Mbps Intel I210-IT GbE, support Wake on LAN
	LAN #2	10/100/1000 Mbps Intel I210-IT GbE, support Wake on LAN
I/O Interface	Power over Ethernet, PoE	4 x 10/100 Mbps - 4ports full-load, IEEE802.3af Class 2 (7Watt) - 2ports full-load, IEEE802.3af Class 3 (15.4Watt)
	Serial Ports	2 x non-isolated RS-232/422/485 with auto flow control
	GPIO	6 x DI & 2 x DO w/ 3KV isolation Input Voltage: 0 to 30 V_{DC}, Output Current: Max. 500 mA per channel On-state Voltage: 24 V_{DC} nominal, open collector to 30 V_{DC}
	USB	3 x USB 2.0 & 1 x USB3.0
Other	Watchdog timer	255-level timer interval, setup by software
Expansion	Mini PCIe #1	Full-size Mini PCIe (USB, SATA interface)
	Mini PCIe #2	Full-size Mini PCIe, w/SIM holder (PCIe, USB interface)
	Mini PCIe #3/4	2 x Full-size Mini PCIe w/SIM holders (USB interface)
Storage	2.5" Drive Bay	1 x removable 2.5" drive bay (Max 9.5mm height)
	mSATA	Laverage MiniPCIe #1 slot
Software Support	Microsoft Windows	Win7, Win10
	Linux	Support by project
Power Requirement	Power Type	ATX/AT
	Power Input Voltage*	9 ~ 36 V_{DC} w/ isolation
	Power Consumption	16W (Typical), 66W (Max)
	Isolation	1.5KV Isolated
Mechanical	Construction	Aluminum housing, Silver
	Mounting	Din-Rail mounting, Desk/wall-mounting, VESA mounting
	Dimensions (W x H x D)	264.5 x 69.2 x 133.0 mm (10.41" x 2.72" x 5.24")
Environment	Operating Temperature	With extended temperature peripherals: -30 ~ 60° C with 0.7m/s air flow (standard), -40 ~ 70° C with 0.7m/s air flow (by project) With standard temperature peripherals: 0 ~ 45° C with 0.7m/s air flow
	Storage Temperature	-40 ~ 85° C (-40~185° F)
	Relative Humidity	95% @ 40° C (non-condensing)
	Vibration During Operation	With mSATA/SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock During Operation	With mSATA/SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration
Regulation	EMC	CE/FCC Class A, CCC, BSMI
	Safety	CB, UL, CCC, BSMI

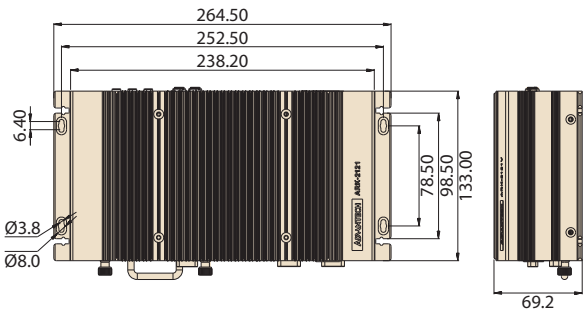
* Power Input Constraint at low voltage: 9~10.9V.

All product specifications are subject to change without notice.

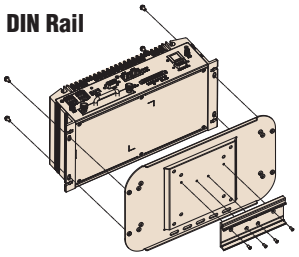
Last updated: 12-Jun-2020

Dimensions

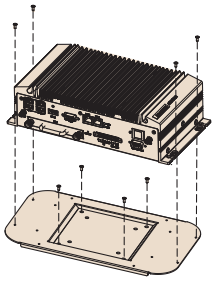
Unit: mm



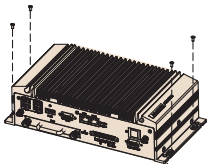
DIN Rail



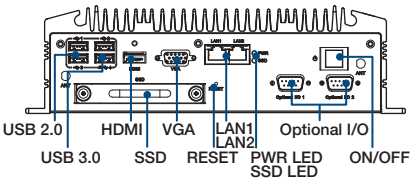
VESA mount



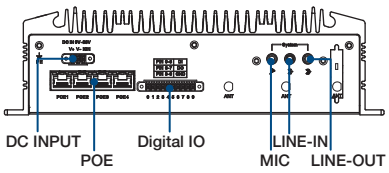
Wall mount



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part Number	Intel CPU	RAM	2.5" Drive	mSATA	Display	GbE	PoE	USB	DIO	RS-232/422/485	MiniPCIe	SIM Holder	Power Input	Operating Temperature
ARK-2121S-S9A2E	Intel Atom E3845 QC 1.91 GHz	Up to 8GB	1	1	1 x HDMI 1 x VGA	2	4	3 x USB2.0 1 x USB3.0	6Di 2Do	2	4 x Full Size	2	9 ~ 36 V_{DC}	-30 ~ 60° C

Packing List

Part Number	Description
-	1 x ARK-2121 Unit
-	1 x Driver/Utility CD/Manual
-	1 x User Manual (Simplified Chinese)
1652000049	3-pole phoenix power block 3.81mm
1652003235	10-Pin DIO plug in block

Optional Items

Part Number	Description
96PSA-A120W19T2-3	AC-to-DC Adapter
1702002600	Power Cable 3-pin 180cm, USA type
1702002605-02	Power Cable 3-pin 183cm, Europe type
1700018704	Power Cable 3-pin 183cm, UK type
AMK-V004E	VESA mounting kit
AMK-R004E	DIN-rail mounting kit

Embedded OS

Part Number	Description
20706WE7ES0013	ARK-2121V-S9A2E WES7 OS image
20706WX6ES0002	ARK-2121V Win10 IoT Enterprise OS image (US, 64bit)

*Default BIOS is supported for 64-bit OS installation, BIOS 32-bit OS is supported by project

ARK-2151S

Outdoor Full HD NVR w/4 PoE Ports 4th Gen. Intel Core i5 4300U SoC Fanless Box PC

Features

- Intel® Core i5-4300U Dual Core 1.9 GHz SoC
- 4 PoE Ports to Support Mainstream IP Cameras
- Diversity Communication Abilities, ex. WWAN, WLAN
- 3KV isolation for 6 x Di & 2 x Do
- 9 ~ 36 V_{DC}* Wide Power Input w/isolation
- 1 x Removable 2.5" drive bay
- Supports iManager, SUSIAccess and Embedded Software APIs

Specifications

		ARK-2151S-S9A1E
Processor System	CPU	Intel i5-4300U
	Frequency	1.9 GHz
	L3 Cache	3 MB
	BIOS	AMI EFI 128 Mbit
Memory	Technology	DDR3L 1600 MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	GT2-4400 Graphics
	Graphic Engine	DirectX11.1, OpenGL 4.0, and OpenCL 1.2 Full AVC/VC1/MPEG2 HW Decode
	VGA	Up to 1920 x 1200 with 60 Hz, 154 MHz pixel clock rate
	HDMI	Lockable HDMI connector, up to 4K at 24 Hz
Audio	Main System	Realtek ALC888S, High Definition Audio (HD), Line-in, Line out, Mic-in
Ethernet	LAN #1	10/100/1000 Mbps Intel I218 GbE, support Wake on LAN
	LAN #2	10/100/1000 Mbps Intel Intel I210-IT, support Wake on LAN
I/O Interface	Power over Ethernet, PoE	4 x 10/100 Mbps - 4ports full-load, IEEE802.3af Class 2 (7Watt) - 2ports full-load, IEEE802.3af Class 3 (15.4Watt)
	Serial Ports	2 x RS-232/422/485 ports (support auto flow control, BIOS selectable)
	USB Interface	2 x USB 2.0 & 2 x USB3.0
	GPIO	6 x DI & 2 x DO w/ 3KV isolation Input Voltage: 0 to 30 V_{DC}, Output Current: Max. 500 mA per channel On-state Voltage: 24 V_{DC} nominal, open collector to 30 V_{DC}
Other	Watchdog timer	255-level timer interval, setup by software
Expansion	Mini PCIe #1	Full-size Mini PCIe, support mSATA
	Mini PCIe #2	Half-size Mini PCIe, support WLAN module
	Mini PCIe #3/4	2 x Full-size Mini PCIe w/SIM holders, support WWAN module. (USB interface)
Storage	2.5" Drive Bay	1 x removable 2.5" drive bay (Max 9.5mm height)
	mSATA	Laverage MiniPCIe #1 slot
Software Support	Microsoft Windows	WES8, WES7, Windows 8, Windows 7
	Linux	Support by project
Power Requirement	Power Type	ATX/AT
	Power Input Voltage*	9 ~ 36 V_{DC} w/ isolation
	Isolation	1.5 KV Isolated
Mechanical	Construction	Aluminum housing, Silver
	Mounting	Din-Rail mounting, Desk/wall-mounting, VESA mounting
	Dimensions (W x H x D)	264.5 x 75.1 x 133.0 mm (10.41" x 2.96" x 5.24")
Environment	Operating Temperature	With extended temperature peripherals:-20 ~ 60° C with 0.7m/s air flow With standard temperature peripherals:0 ~ 45° C with 0.7m/s air flow
	Storage Temperature	-40 ~ 85° C (-40~185° F)
	Relative Humidity	95% @ 40° C (non-condensing)
	Vibration During Operation	With mSATA/SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock During Operation	With mSATA/SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration
Regulation	EMC	CE/FCC Class A, CCC, BSMI
	Safety	CB, UL, CCC, BSMI

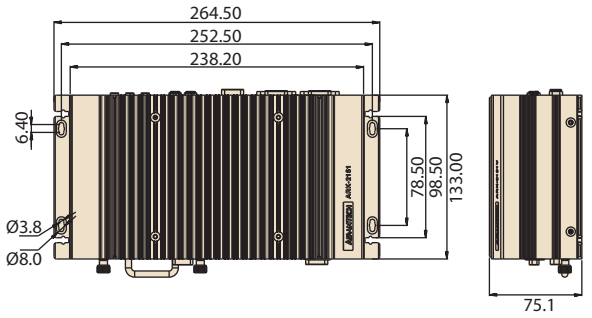
* Power Input Constraint at low voltage: 9~10.9V

All product specifications are subject to change without notice

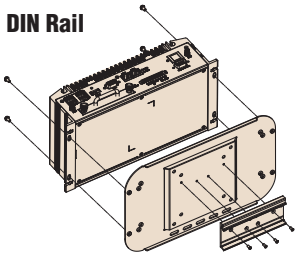
Last updated: 30-Mar-2017

Dimensions

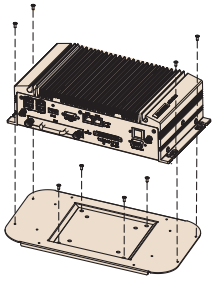
Unit: mm



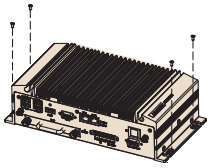
DIN Rail



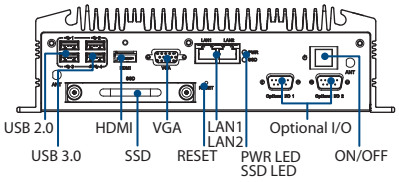
VESA mount



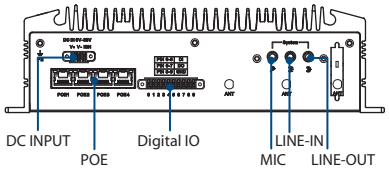
Wall mount



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part Number	Intel CPU	RAM	2.5" Drive	mSATA	Display	GbE	PoE	USB	DIO	RS-232/422/485	MiniPCIe	SIM Holder	Power Input	Operating Temperature
ARK-2151S-S9A1E	Intel i5-4300U DC 1.9 GHz	Up to 8GB	1	1	1 x HDMI 1 x VGA	2	4	2 x USB2.0 2 x USB3.0	6Di 2Do	2	3 x Full Size 1 x Half Size	2	9 ~ 36 V_{DC}	-20 ~ 60° C

Packing List

Part Number	Description
-	1 x ARK-2151 Unit
-	1 x Driver/Utility CD/Manual
-	1 x User Manual (Simplified Chinese)
1652000049	3-pole phoenix power block 3.81mm
1652003235	10-Pin DIO plug in block

Optional Items

Part Number	Description
96PSA-A120W19T2	AC-to-DC Adapter
1702002600	Power Cable 3-pin 180cm, USA type
1702002605-02	Power Cable 3-pin 183cm, Europe type
1700018704	Power Cable 3-pin 183cm, UK type
AMK-V004E	VESA mounting kit
AMK-R004E	DIN-rail mounting kit

Embedded OS

Part Number	Description
2070013568	WES7 E OS image
2070013600	WE8S OS image
2070014995	Win10 IoT Enterprise OS image (US, 64bit)

*Default BIOS is supported for 64-bit OS installation, BIOS 32-bit OS is supported by project

ARK-2250S

6th Gen Intel Core i7-6822EQ QC/i5-6442EQ QC Rugged FullHD NVR

Features

- Intel i7-6822EQ QC/ Intel i5-6442EQ QC SoC
- Support TPM2.0
- Extreme graphic performance, support up to 1080p 120fps video encode&decode
- Stackable extension design, option extension kit for applications
- Isolated 12 ~ 24V_{DC} wide-range power input
- Diversity communication extensible, ex. WLAN, WWAN
- Anti-vibration & shock proof, certified by MIL-STD-810G
- NEMA TS2-certified, -34 ~ 74 °C
- Certified for general standard, CE, FCC, CB, UL, CCC and BSMI
- Built-in Advantech remote management software WISE-PaaS/RMM

Specifications

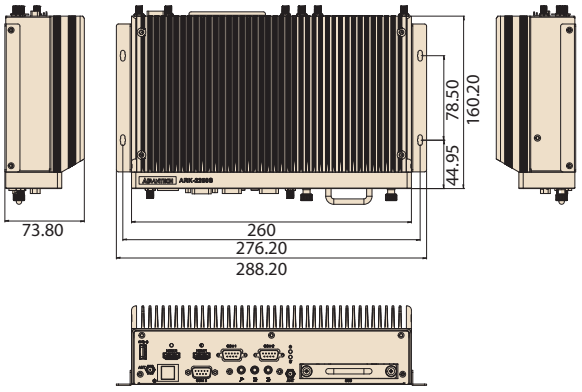
		ARK-2250S-U0A1E	ARK-2250S-S9A1E
Processor System	CPU	Intel i7-6822EQ QC SoC	Intel i5-6442EQ QC SoC
	Frequency	2.0GHz	1.9GHz
	Cache	8 MB	6 MB
	BIOS	AMI EFI	
Memory	Technology	DDR4 2133MHz	
	Max. Capacity	32G	
	Socket	2 x 260-pin SO-DIMM	
Graphics	Chipset	QM170	
	Graphic Engine	DirectX 11.3, OGL 4.4, OCL 2.1 Encode: H.264, MPEG2/4, VC1, WMV9 Decode: H.264, MPEG2 HEVC: H.265	
	HDMI	HDMI 1.4a for HD video playback, 1080P at 60Hz	
	Dual Display	Dual HDMI	
Ethernet	LAN1	10/100/1000 Mbps Intel i219 GbE, support Wake On Lan	
	LAN2	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan	
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out,Mic-in,Line-in	
IO Interface	Serial Ports	3 x RS-232/422/485 port with auto flow control	
	USB Interface	3 x USB3.0 Type A	
	GPIO	4 x DI & 4 x DO w/ 1.5KV isolation, Input Voltage: 0 to 30 V_{DC}, Output Current: Max. 500 mA per channel, On-state Voltage: 24 V_{DC} nominal, open collector to 30 V_{DC}	
	CANBus	Optional	
Other	Watchdog timer	255 levels timer interval, setup by software	
Expansion	Mini PCIe	#1, Full-size Mini PCIe (SATA/PCIe/USB) w/external SIM socket #2, Full-size Mini PCIe (PCIe/USB) w/external SIM socket #3, M.2 2230 E key	
Storage	SSD/HDD	1 x 2.5" SATA drive bay	
	mSATA	1 x full size mSATA socket (Mini PCIe #1)	
Software Support	Microsoft Windows	Win7, WES7, Win8, WSE8, Win10	
	Linux	Support by project	
Power Requirement	Power Type	ATX	
	Power Input Voltage	12~24V_{DC} w/isolation	
	Isolation	1.5 KV	
Power Consumption	Typical	22W	
	Max.	45W	
Mechanical	Construction	Aluminum housing	
	Mounting	Wall mounting kit	
	Dimensions (W x H x D)	260 x 73 x 160.2mm	
	Weight	3.2 Kg	
Environment	Operating Temperature	With extended temperature peripherals: -20 ~ 70 °C with 0.7m/s air flow	
	Storage Temperature	- 40 ~ 85 °C (-40 ~ 185 °F)	
	Relative Humidity	95% @ 40 °C (non-condensing)	
	Vibration During Operation	MIL-STD-810G, Method 514.6	
	Shock During Operation	MIL-STD-810G, Method 516.6	
	EMC	CE, FCC Class B, CCC, BSMI	
	Transportation	NEMA TS2-2016 Environmental	
	Safety	UL, CCC, BSMI, CB	

All product specifications are subject to change without notice.

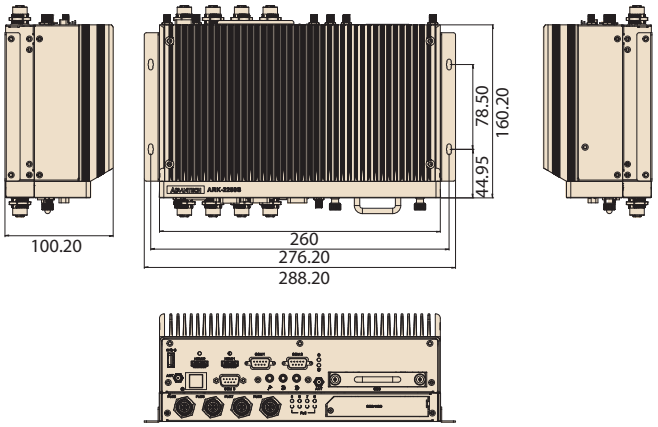
Dimensions

Unit: mm

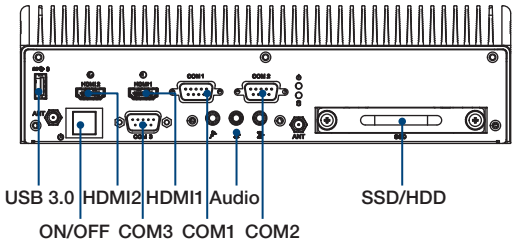
ARK-2250S



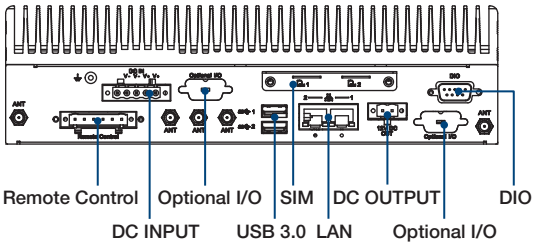
ARK-2250S+AMK-R100E



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	HDMI	GbE	USB 3.0	DIO	RS-232/422/485	Audio	MiniPCIe	M.2	SIM	2.5" SATA Drive Bay	Operating Temp.
ARK-2250S-U0A1E	Intel Core i7-6822EQ QC	2	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	2	1	2	1	-20 ~ 70 °C
ARK-2250S-U0A1EPOE*	Intel Core i7-6822EQ QC	2	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	2	1	2	1	-20 ~ 70 °C
ARK-2250S-S9A1E	Intel Core i5-6442EQ QC	2	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	2	1	2	1	-20 ~ 70 °C
ARK-2250S-S9A1EPOE*	Intel Core i5-6442EQ QC	2	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	2	1	2	1	-20 ~ 70 °C

* : This P/N is for AMK-R100E / AMK-R101E / AMK-R104E / AMK-R105E application
Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-2250S Unit
1652001524	1 x Terminal Block 6P 5mm
1652000177	1 x Terminal Block 5P 5mm
1960071555N011	2 x Wall Mounting Brackets

Optional Embedded OS

Part Number	Description
20706WX6HS0008	Win10 IoT Ent LTSB 2016 MultiLang 64bit (ARK-2250S-U0A1E)
20706WX9HS0025	Win10 IoT Ent LTSC 2019 MultiLang 64bit (ARK-2250S-U0A1E)
20706WX6VS0014	Win10 IoT Ent LTSB 2016 MultiLang 64bit (ARK-2250S-S9A1E)
20706WX9VS0028	Win10 IoT Ent LTSC 2019 MultiLang 64bit (ARK-2250S-S9A1E)
20706WE7ES0004	WES7E 64bit ASIA 4 MUI

Note: Default BIOS is for 64bit OS support only. 32bit OS will need to update BIOS

Optional Item for Default SKU

Part Number	Description
96PSA-A150W24T2	AC-to-DC Adapter, DC24V/150W
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type

ARK-R Extended Modules

ARK-2250S+AMK-R100E

Extra 8 x GbE PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	8 x 10/100/1000Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 160.2

Build by T-P/N

P/N	Description
AMK-R100E	8 x GbE PoE M12 X-coded, 1 x removable 2.5" drive bay

ARK-2250S+AMK-R101E

Extra 4 x GbE PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	4 x 10/100/1000Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 160.2

Build by T-P/N

P/N	Description
AMK-R101E	4 x GbE PoE M12 X-coded, 1 x removable 2.5" drive bay

ARK-2250S+AMK-R104E

Extra 8 x 10/100 Mbps PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	8 x 10/100 Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5” drive bay
Mechanical	
Dimension	260 x 26.5 x 140

Build by T-P/N

P/N	Description
AMK-R104E	8 x 10/100 Mbps PoE M12 D-Coded, 1 x removable 2.5" drive bay

ARK-2250S+AMK-R105E

Extra 4 x 10/100 Mbps PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	4 x 10/100 Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5” drive bay
Mechanical	
Dimension	260 x 26.5 x 140

Build by T-P/N

P/N	Description
AMK-R105E	4 x 10/100 Mbps PoE M12 D-Coded, 1 x removable 2.5" drive bay

Note: When installing PoE extension modules with ARK-2250 series, please check ordering information or contact us for details.

ARK-2121V

In-Vehicle NVR w/4 PoE Ports Intel® Atom E3825 / Atom E3845 SoC Fanless Box PC

Features

- Intel® Atom E3825 Dual Core 1.33 GHz & E3845 Quad Core 1.91 GHz SoC
- 4 PoE Ports to Support Mainstream IP Cameras
- Isolated COM ports and DIO
- Diversity Communication Abilities, ex. WWAN, WLAN
- Intelligent Vehicle Power Ignition
- 11 ~ 36 V_{DC}* Wide Power Input w/isolation
- 1 x Removable 2.5" drive bay
- Supports iManager, SUSIAccess and Embedded Software APIs
- Up to -40 ~ 70 °C wide temperature support (by project)

Specifications

		ARK-2121V-S9A2E	ARK-2121V-S3A2E
Processor System	CPU	Intel Atom E3845 QC SoC	Intel Atom E3825 DC SoC
	Frequency	1.91 GHz	1.33 GHz
	L2 Cache	2 MB	1 MB
	BIOS	AMI EFI 64 Mbit	
Memory	Technology	DDR3L 1333 MHz	DDR3L 1066 MHz
	Max. Capacity	8 GB	
	Socket	1 x 204-pin SO-DIMM	
Graphics	Chipset	Intel Gen7 Graphics	
	Graphic Engine	DirectX11, OpenGL3.2, OpenCL1.1 Full HW acceleration, decode: H.264, MPEG2/4, VC-1, WMV9. Encode: H.264, MPEG2	
	VGA	Up to 2560 x 1600 @ 60Hz	
	HDMI	Lockable HDMI connector, up to 1080p	
Audio	Main System	Realtek ALC888S, High Definition Audio (HD), Line-in, Line out, Mic-in	
Ethernet	LAN #1	10/100/1000 Mbps Intel I210-IT GbE, support Wake on LAN	
	LAN #2	10/100/1000 Mbps Intel I210-IT GbE, support Wake on LAN	
I/O Interface	Power over Ethernet, PoE	4 x 10/100 Mbps - 4ports full-load, IEEE802.3af Class 2 (7Watt) - 2ports full-load, IEEE802.3af Class 3 (15.4Watt)	N/A
	Serial Ports	2x non-isolated RS-232/422/485 with auto flow control	2x isolated RS-232/422/485 with auto flow control (3KV isolation) 2x non-isolated RS-232/422/485 with auto flow control
	CANBus	Option, 2ch CANBus 2.0A/B (1xCOM will be replaced)	
	GPIO	6 x DI & 2 x DO w/ 3KV isolation Input Voltage: 0 to 30 V_{DC}, Output Current: Max. 500 mA per channel On-state Voltage: 24 V_{DC} nominal, open collector to 30 V_{DC}	
	USB	3 x USB 2.0 & 1 x USB3.0	
Other	Watchdog timer	255-level timer interval, setup by software	
Expansion	Mini PCIe #1	Full-size Mini PCIe (USB, SATA interface)	
	Mini PCIe #2	Full-size Mini PCIe w/SIM holder (PCIe, USB interface)	
	Mini PCIe #3/4	2 x Full-size Mini PCIe w/SIM holders (USB interface)	
Storage	2.5" Drive Bay	1 x removable 2.5" drive bay (Standard 9.5mm height, 15mm height support by project)	
	mSATA	Laverage MiniPCIe #1 slot	
Software Support	Microsoft Windows	Win7, Win10	
	Linux	Support by project	
Power Requirement	Power Type	ATX/AT	
	Power Input Voltage*	11 ~ 36 V_{DC} w/isolation	
	Vehicle Power Ignition	Selectable boot-up & shut-down voltage, on/off delay time	
	Power Consumption	16W (Typical), 66W (Max)	16W (Typical), 36W (Max)
	Isolation	1.5KV Isolated	
Mechanical	Construction	Aluminum housing, Silver	
	Mounting	Din-Rail mounting, Desk/wall-mounting, VESA mounting	
	Dimensions (W x H x D)	264.5 x 69.2 x 133.0 mm	
Environment	Operating Temperature	With extended temperature peripherals: -40 ~ 70 °C with 0.7m/s air flow (standard) With standard temperature peripherals: 0 ~ 45 °C with 0.7m/s air flow	With extended temperature peripherals: -40 ~ 70 °C with 0.7m/s air flow (standard) With standard temperature peripherals: 0 ~ 45 °C with 0.7m/s air flow
	Storage Temperature	-40 ~ 85 °C (-40~185 °F)	
	Relative Humidity	95% @ 40 °C (non-condensing)	
	Vibration/Shock	With mSATA/SSD: IEC 60721-3-5 Class 5M3	
Regulation	EMC	CE/FCC Class A, CCC, BSMI	
	Safety	UL, CCC, BSMI, E-Mark (E13)	
	In-Vehicle Power	ISO7637-2 Lev.4	

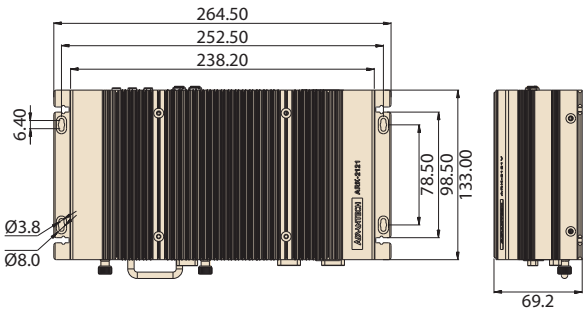
* Power Input Constraint at low voltage: 9~10.9V.

All product specifications are subject to change without notice.

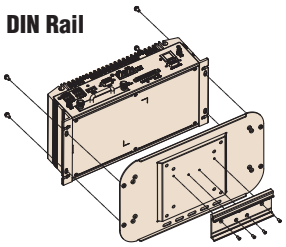
Last updated: 20-Feb-2020

Dimensions

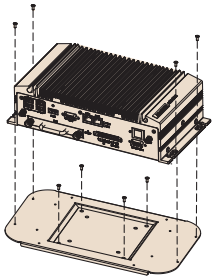
Unit: mm



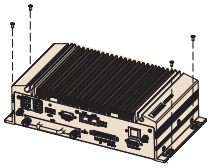
DIN Rail



VESA mount

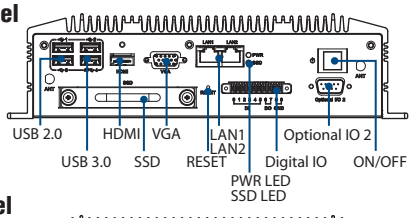


Wall mount

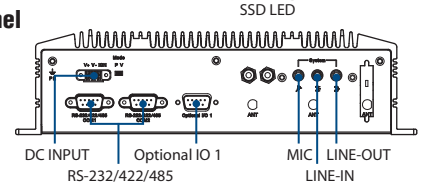


ARK-2121V-S3A2E External I/O Mechanical Layout/Drawing

Front Panel

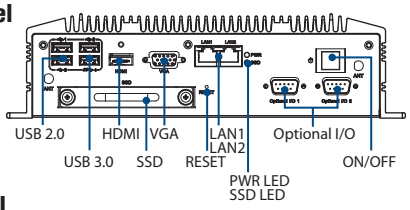


Rear Panel

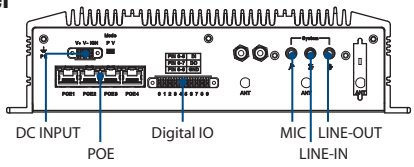


ARK-2121V-S9A2E External I/O Mechanical Layout/Drawing

Front Panel



Rear Panel



Ordering Information

Part Number	Intel CPU	RAM	2.5" Drive	mSATA	Display	GbE	PoE	USB	DIO	RS-232/422/485	MiniPCIe	SIM Holder	Power Input	Operating Temperature
ARK-2121V-S3A2E	Intel Atom E3825 DC 1.33 GHz	Up to 8GB	1	1	1 x HDMI 1 x VGA	2	N/A	3 x USB2.0 1 x USB3.0	6Di 2Do	4	4 x Full Size	3	11 ~ 36 V_{DC}	-40 ~ +70 °C
ARK-2121V-S9A2E	Intel Atom E3845 QC 1.91 GHz						4			2				-40 ~ +70 °C

Packing List

Part Number	Description
-	1 x ARK-2121 Unit
-	1 x Driver/Utility CD/Manual
-	1 x User Manual (Simplified Chinese)
1652000049	3-pole phoenix power block 3.81mm
1652003235	10-Pin DIO plug in block

Optional Items

Part Number	Description
96PSA-A120W19T2	AC-to-DC Adapter
1702002600	Power Cable 3-pin 180cm, USA type
1702002605-02	Power Cable 3-pin 183cm, Europe type
1700018704	Power Cable 3-pin 183cm, UK type
AMK-V004E	VESA mounting kit
AMK-R004E	DIN-rail mounting kit

Embedded OS

Part Number	Description
2070013555	ARK-2121V-S3A2E WES7 OS image
20706WE7ES0013	ARK-2121V-S9A2E WES7 OS image
20706WX6ES0002	ARK-2121V Win10 IoT Enterprise OS image (US, 64bit)

*Default BIOS is supported for 64-bit OS installation, BIOS 32-bit OS is supported by project

ARK-2151V

In-Vehicle Full HD NVR w/4 PoE Ports 4th Gen. Intel® Core i5 4300U / Celeron 2980U SoC Fanless Box PC

Features

- Intel® Celeron 2980U 1.6GHz / Core i5-4300U 1.9 GHz SoC
- 4 PoE Ports to Support Mainstream IP Cameras
- Diversity Communication Abilities, ex. WWAN, WLAN
- Built-in GPS and G-Sensor for GIS application
- Intelligent Vehicle Power Ignition
- 9 ~ 36 V_{DC}* Wide Power Input w/isolation
- 1 x Removable 2.5" drive bay
- Supports iManager, SUSIAccess and Embedded Software APIs

Specifications

		ARK-2151V-S6A1E	ARK-2151V-S9A1E
Processor System	CPU	Intel Celeron 2980U Dual Core	Intel i5-4300U Dual Core
	Frequency	1.6 GHz	1.9 GHz
	L3 Cache	2 MB	3 MB
	BIOS	AMI EFI 128 Mbit	
Memory	Technology	DDR3L 1333 MHz	DDR3L 1600 MHz
	Max. Capacity	8 GB	
	Socket	1 x 204-pin SO-DIMM	
Graphics	Chipset	HD Graphics	GT2-4400 Graphics
	Graphic Engine	DirectX11.1, OpenGL 4.0, and OpenCL 1.2 Full AVC/VC1/MPEG2 HW Decode	
	VGA	Up to 1920 x 1200 with 60 Hz, 154 MHz pixel clock rate	
	HDMI	Lockable HDMI connector, up to 4K at 24 Hz	
Audio	Main System	Realtek ALC888S, High Definition Audio (HD), Line-in, Line out, Mic-in	
Ethernet	LAN #1	10/100/1000 Mbps Intel I218 GbE, support Wake on LAN	
	LAN #2	10/100/1000 Mbps Intel I210-IT, support Wake on LAN	
I/O Interface	Power over Ethernet, PoE	N/A	4 x 10/100 Mbps - 4ports full-load, IEEE802.3af Class 2 (7Watt) - 2ports full-load, IEEE802.3af Class 3 (15.4Watt)
	Serial Ports	2x isolated RS-232/422/485 with auto flow control (3KV isolation) 2x non-isolated RS-232/422/485 with auto flow control	2x non-isolated RS-232/422/485 with auto flow control
	CANBus	Option, 2ch CANBus 2.0A/B (1xCOM will be replaced)	
	USB Interface	2 x USB 2.0 & 2 x USB3.0	
	GPIO	6 x DI & 2 x DO w/ 3KV isolation Input Voltage: 0 to 30 V_{DC}, Output Current: Max. 500 mA per channel On-state Voltage: 24 V_{DC} nominal, open collector to 30 V_{DC}	
Other	GPS	On board standalone GPS, support GPS, GLONASS and QZSS signals	
	G-Sensor	On board high resolution G-Sensor, up to 13-bit resolution at ±16g	
	Watchdog timer	255-level timer interval, setup by software	
Expansion	Mini PCIe #1	Full-size Mini PCIe w/SIM holder (PCIe, USB, SATA interface)	
	Mini PCIe #2	Half-size Mini PCIe (PCIe interface)	
	Mini PCIe #3/4	2 x Full-size Mini PCIe w/SIM holders (USB interface)	
Storage	2.5" Drive Bay	1 x removable 2.5" drive bay (Standard 9.5mm height, 15mm height support by project)	
	mSATA	Laverage MiniPCIe #1 slot	
Software Support	Microsoft Windows	WES8, WES7, Windows 8, Windows 7	
	Linux	Support by project	
Power Requirement	Power Type	ATX/AT	
	Power Input Voltage*	9 ~ 36 V_{DC} w/isolation	
	Vehicle Power Ignition	Selectable boot-up & shut-down voltage, on/off delay time	
	Power Consumption	26W (Typical), 46W (Max)	26W (Typical), 76W (Max)
	Isolation	1.5 KV Isolated	
Mechanical	Construction	Aluminum housing, Silver	
	Mounting	Din-Rail mounting, Desk/wall-mounting, VESA mounting	
	Dimensions (W x H x D)	264.5 x 75.1 x 133.0 mm (10.41" x 2.96" x 5.24")	
Environment	Operating Temperature	With extended temperature peripherals:-20 ~ 60° C with 0.7m/s air flow With standard temperature peripherals:0 ~ 45° C with 0.7m/s air flow	
	Storage Temperature	-40 ~ 85° C (-40~185° F)	
	Relative Humidity	95% @ 40° C (non-condensing)	
	Vibration/Shock	With mSATA/SSD: IEC 60721-3-5 Class 5M3	
Regulation	EMC	CE/FCC Class A, CCC, BSMI	
	Safety	UL, CCC, BSMI, E-Mark (E13)	
	In-Vehicle Power	ISO7637-2 Lev.4	

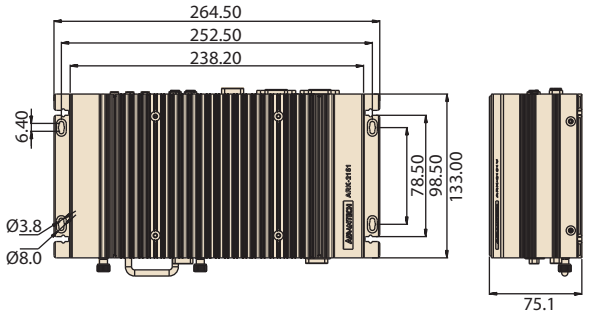
* Power Input Constraint at low voltage: 9~10.9V.

All product specifications are subject to change without notice.

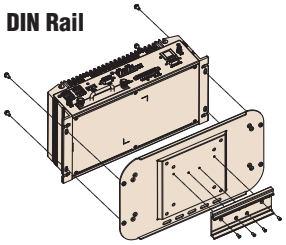
Last updated: 3-Jul-2017

Dimensions

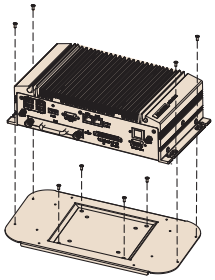
Unit: mm



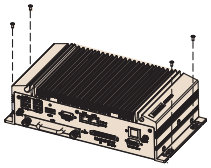
DIN Rail



VESA mount

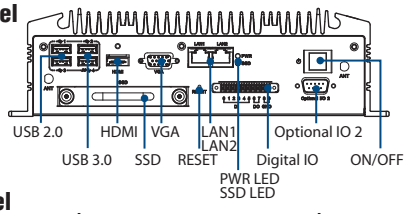


Wall mount

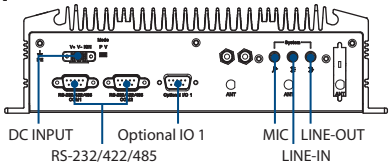


ARK-2151V-S6A1E External I/O Mechanical Layout/Drawing

Front Panel

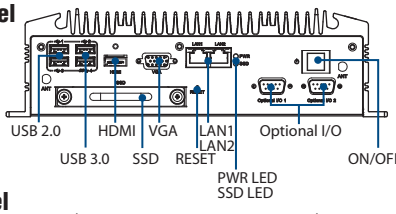


Rear Panel

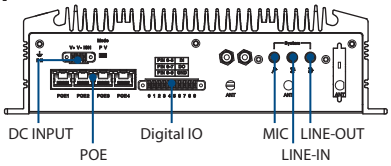


ARK-2151V-S9A1E External I/O Mechanical Layout/Drawing

Front Panel



Rear Panel



Ordering Information

Part Number	Intel CPU	RAM	2.5" Drive	mSATA	Display	GbE	PoE	USB	DIO	COM	MiniPCIe	SIM Holder	Power Input	Operating Temperature
ARK-2151V-S6A1E	Intel Celeron 2980U 1.6 GHz	Up to 8GB	1	1	1 x HDMI 1 x VGA	2	N/A	2 x USB2.0 2 x USB3.0	6Di 2Do	4	3 x Full Size 1 x Half Size	3	9 ~ 36 V_{DC}	-20 ~ 60° C
ARK-2151V-S9A1E	Intel i5-4300U 1.9 GHz						4			2				

Packing List

Part Number	Description
-	1 x ARK-2151 Unit
-	1 x Driver/Utility CD/Manual
-	1 x User Manual (Simplified Chinese)
1652000049	3-pole phoenix power block 3.81mm
1750001782	1 x GPS antenna Active with 5M SMA cable
1652003235	10-Pin DIO plug in block

Optional Items

Part Number	Description
96PSA-A120W19T2	AC-to-DC Adapter
1702002600	Power Cable 3-pin 180cm, USA type
1702002605-02	Power Cable 3-pin 183cm, Europe type
1700018704	Power Cable 3-pin 183cm, UK type
AMK-V004E	VESA mounting kit
AMK-R004E	DIN-rail mounting kit

Embedded OS

Part Number	Description
2070013560	ARK-2151V-S6A1E WES7 E OS image
2070013568	ARK-2151V-S9A1E WES7 E OS image
2070013599	ARK-2151V-S6A1E WE8S OS image
2070013600	ARK-2151V-S9A1E WE8S OS image
2070014978	ARK-2151V WES7 P OS image (10MUI, 64bit)
2070014995	ARK-2151V Win10 IoT Enterprise OS image (US, 64bit)

*Default BIOS is supported for 64-bit OS installation, BIOS 32-bit OS is supported by project

ARK-2250V

6th Gen Intel Core i7-6822EQ QC/i5-6442EQ QC In-vehicle Fanless System

Features

- Intel i7-6822EQ QC/ Intel i5-6442EQ QC SoC
- Support TPM2.0
- Stackable extension design, option extension kit for applications
- Support 12/24V_{DC} vehicle power input with E-Mark certification
- Built-in Vehicle Power Ignition Management
- Diversity Communication Extensible, ex. WLAN, WWAN
- Certified for EMARK, ISO7637-2, IEC 60721-3-5 5M3, MIL-STD-810G
- Built-in Advantech remote management software WISE-PaaS/RMM

Specifications

		ARK-2250V-U0A1E	ARK-2250V-S9A1E
Processor System	CPU	Intel i7-6822EQ QC SoC	Intel i5-6442EQ QC SoC
	Frequency	2.0GHz	1.9GHz
	Cache	8 MB	6 MB
	BIOS	AMI EFI	
Memory	Technology	DDR4 2133MHz	
	Max. Capacity	32G	
	Socket	2 x 260-pin SO-DIMM	
Graphics	Chipset	QM170	
	Graphic Engine	DirectX 11.3, OGL 4.4, OCL 2.1 Encode: H.264, MPEG2/4, VC1, WMV9 Decode: H.264, MPEG2 EHVC: H.265	
	VGA	Up to 1920 x 1200 @ 60Hz	
	HDMI	HDMI 1.4a for HD video playback, 1080P at 60Hz	
	Dual Display	VGA + HDMI (Std.) or Dual HDMI (by project)	
Ethernet	LAN1	10/100/1000 Mbps Intel i219 GbE, support Wake On Lan	
	LAN2	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan	
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out,Mic-in,Line-in	
IO Interface	Serial Ports	3 x RS-232/422/485 port with auto flow control	
	USB Interface	3 x USB3.0 Type A	
	GPIO	4 x DI & 4 x DO w/ 1.5KV isolation, Input Voltage: 0 to 30 V_{DC}, Output Current: Max. 500 mA per channel, On-state Voltage: 24 V_{DC} nominal, open collector to 30 V_{DC}	
	VDC Output	12V_{DC}/1.5A	
Other	Watchdog timer	255 levels timer interval, setup by software	
	TPM	TPM2.0 (Infineon SLB9665)	
Expansion	Mini PCIe	#1, Full-size Mini PCIe(SATA/PCIe/USB) w/external SIM socket #2, Full-size Mini PCIe(PCIe/USB) w/external SIM socket #3, M.2 2230 E key	
Storage	SSD/HDD	1 x 2.5" SATA drive bay	
	mSATA	1 x full size mSATA socket (Mini PCIe #1)	
Software Support	Microsoft Windows	Win7, WES7, Win10, Win10 IoT	
	Linux	Support by project	
Power Requirement	Power Type	ATX	
	Power Input Voltage	12/24V_{DC} with E-Mark certification	
	Vehicle Power Ignition	Selectable boot-up & shut-down voltage, on/off delay time	
	Isolation	1.5 KV	
Power Consumption	Typical	22W	
	Max.	45W	
Mechanical	Construction	Aluminum housing	
	Mounting	Wall mounting kit	
	Dimensions (W x H x D)	260 x 73 x 160.2mm	
	Weight	3.2 Kg	
Environment	Operating Temperature	With extended temperature peripherals: -20 ~ 70° C with 0.7m/s air flow	
	Storage Temperature	- 40 ~ 85 °C (-40 ~ 185 °F)	
	Relative Humidity	95% @ 40 °C (non-condensing)	
	Vibration During Operation	IEC 60721-3-5 5M3, MIL-STD-810G Method 514.6	
	Shock During Operation	IEC 60721-3-5 5M3, MIL-STD-810G Method 516.6	
	EMC	CE, FCC Class B, CCC, BSMI	
	Safety Certifications	UL, CCC, BSMI, CB, EMARK	

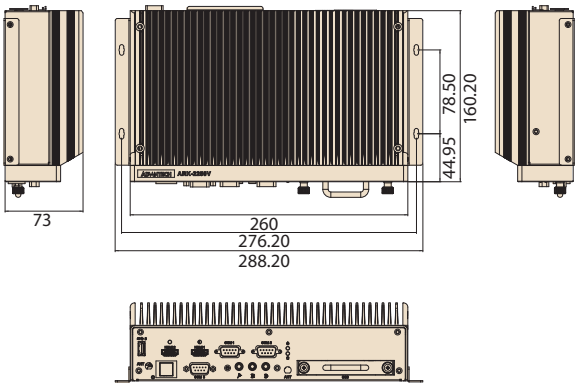
All product specifications are subject to change without notice.

Last updated: 15-Jan-2020

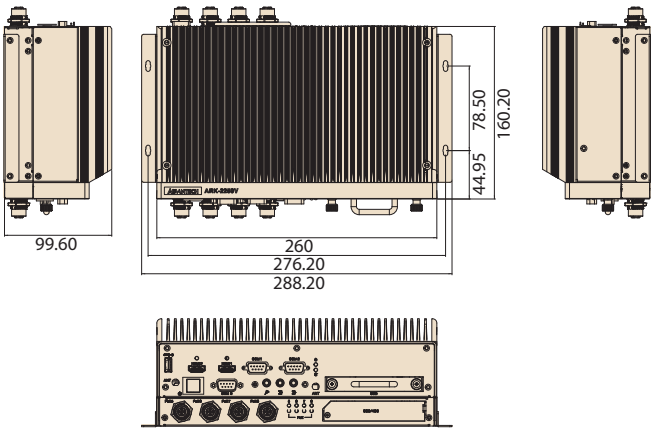
Dimensions

Unit: mm

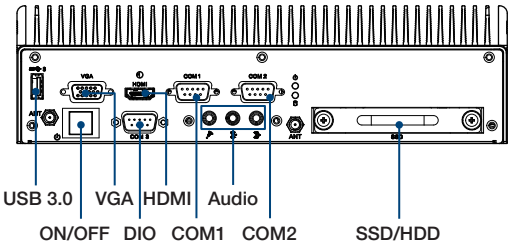
ARK-2250V



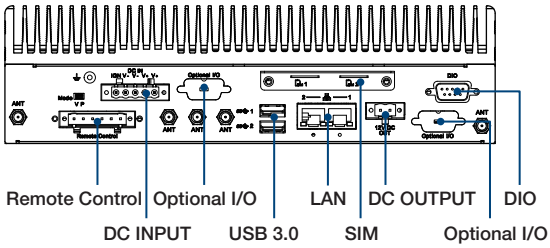
ARK-2250V+AMK-R100E



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	VGA	HDMI	GbE	USB 3.0	DIO	RS-232/422/485	Audio	2.5" SATA Drive Bay	Operating Temp.
ARK-2250V-U0A1E	Intel Core i7-6822EQ QC	1	1	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-U0A1EPOE*	Intel Core i7-6822EQ QC	1	1	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-U0A2E	Intel Core i7-6822EQ QC	0	2	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-U0A2EPOE*	Intel Core i7-6822EQ QC	0	2	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-S9A1E	Intel Core i5-6442EQ QC	1	1	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-S9A1EPOE*	Intel Core i5-6442EQ QC	1	1	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-S9A2E	Intel Core i5-6442EQ QC	0	2	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-S9A2EPOE*	Intel Core i5-6442EQ QC	0	2	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C

* : This P/N is for AMK-R100E / AMK-R101E / AMK-R104E / AMK-R105E application
Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-2250V Unit
1960071555N011	2 x Wall Mounting Brackets
1652001524	1 x Terminal Block 6P 5mm
1652000177	1 x Terminal Block 5P 5mm
1652000099	1 x Terminal Block 2P 5mm

Optional Embedded OS

Part Number	Description
20706WX6HS0008	Win10 IoT Ent LTSB 2016 MultiLang 64bit (ARK-2250V-U0A1E)
20706WX9HS0025	Win10 IoT Ent LTSC 2019 MultiLang 64bit (ARK-2250V-U0A1E)
20706WX6VS0014	Win10 IoT Ent LTSB 2016 MultiLang 64bit (ARK-2250V-S9A1E)
20706WX9VS0028	Win10 IoT Ent LTSC 2019 MultiLang 64bit (ARK-2250V-S9A1E)
20706WE7ES0004	WES7E 64bit ASIA 4 MUI

Note: Default BIOS is for 64bit OS support only. 32bit OS will need to update BIOS

Optional Item for Default SKU

Part Number	Description
96PSA-A150W24T2	AC-to-DC Adapter, DC24V/150W
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type

ARK-R Extended Modules

ARK-2250V+AMK-R100E

Extra 8 x GbE PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	8 x 10/100/1000Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 160.2
Environment	
Operating temperature	-40~ 55 °C, EN50155 T2
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R100E	8 x GbE PoE M12 X-coded, 1 x removable 2.5" drive bay

ARK-2250V+AMK-R101E

Extra 4 x GbE PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	4 x 10/100/1000Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 160.2
Environment	
Operating temperature	-40~ 55 °C, EN50155 T2
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R101E	4 x GbE PoE M12 X-coded, 1 x removable 2.5" drive bay

ARK-2250V+AMK-R104E

Extra 8 x 10/100 Mbps PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	8 x 10/100 Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 140
Environment	
Operating temperature	-40~ 55 °C, EN50155 T2
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R104E	8 x 10/100 Mbps PoE M12 D-Coded, 1 x removable 2.5" drive bay

ARK-2250V+AMK-R105E

Extra 4 x 10/100 Mbps PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	4 x 10/100 Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 140
Environment	
Operating temperature	-40~ 55 °C, EN50155 T2
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R105E	4 x 10/100 Mbps PoE M12 D-Coded, 1 x removable 2.5" drive bay

Note: When installing PoE extension modules with ARK-2250 series, please check ordering information or contact us for details.

ARK-2231R

EN50155 Intel® Atom E3845 SoC Rolling Stock Fanless System

Features

- Intel® E3845 Quad Core 1.91 GHz SoC
- Stackable extension design, option extension kit for applications
- DC 24V EN50155 S2/C1 compliant, DC 48/72/110V by project
- -40 ~ 70 °C wide temperature support with EN50155 TX compliant
- Solid connection for LAN/USB/Audio/COM and power input
- Anti-vibration/shock proof, IEC61373 Category1, ClassB
- Built-in Advantech remote management software WISE-PaaS/RMM

Specifications

		ARK-2231R-S9A2E
Processor System	CPU	Intel® E3845 Quad Core
	Frequency	1.91 GHz
	L2 Cache	2 MB
	BIOS	AMI EFI
Memory	Technology	DDR3L 1333 MHz
	Max. Capacity	8 GB
	Socket	1 x 204-pin SO-DIMM
Graphics	Chipset	Intel® Gen7 Graphics
	Graphic Engine	DirectX 11.1, OCL 1.2, OGL 3.2 Encode: H.264, MPEG2/4, VC1, WMV9 Decode: H.264, MPEG2
	VGA	Up to 2560 x 1600 @ 60Hz
	HDMI	HDMI 1.4a for HD video playback, 1080P at 60Hz
	Dual Display	Yes, VGA + HDMI
Ethernet	LAN1	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan, M12 X-Coded
	LAN2	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan, M12 X-Coded
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out,Mic-in,Line-in
IO Interface	Serial Ports	2 x RS-232/422/485 port with auto flow control
	USB Interface	1 x USB2.0/3.0 Water-proof, 1 x USB2.0 M12 A-Coded, 1 x USB2.0 Type A
	GPIO	8bit Programable DI/DO
Other	Watchdog timer	255 levels timer interval, setup by software
Expansion	Mini PCIe	1 x Full-size Mini PCIe (SATA/PCIe/USB) 1 x Full-size Mini PCIe (PCIe/USB) 1 x Full-size Mini PCIe (USB) w/Accessible SIM socket
Storage	SSD/HDD	1 x 2.5" SATA drive bay
	mSATA	1 x full size mSATA socket
Software Support	Microsoft Windows	Win7, Win10
	Linux	Support by project
Power Requirement	Power Type	ATX
	Power Input Voltage	DC 24V - StandardDC 48/72/110V - by project
	Regulation	EN50155 S2/C1 Compliant
	Power Adapter	24V/ 150W (Option)
Power Consumption	Typical	18W
	Max.	45W
Mechanical	Construction	Aluminum housing
	Mounting	Wall / VESA / DIN-Rail Kit options
	Dimensions (W x H x D)	260 x 57 x 160.2 mm
	Weight	2.3 kg (5.07 lb)
Environment	Operating Temperature	With extended temperature peripherals: -40 ~ 70 °C EN50155 TX
	Storage Temperature	- 40 ~ 85 °C (-40 ~ 185 °F)
	Relative Humidity	95% @ 40 °C (non-condensing)
	Vibration During Operation	IEC61373 Category1, Class B
	Shock During Operation	IEC61373 Category1, Class B
	EMC	CE/FCC Class B, CCC, BSMI, EN50155
	Safety Certifications	UL, CCC, BSMI, CB, EN50155

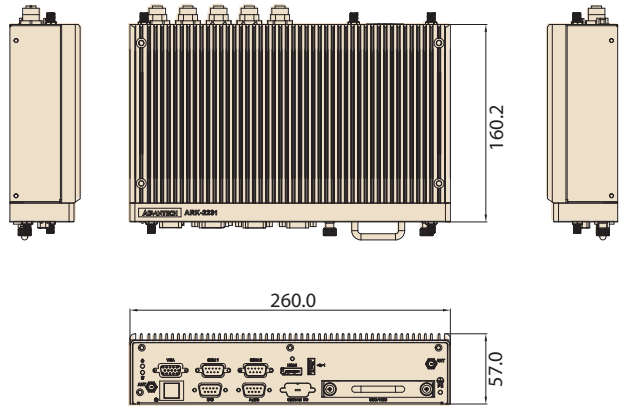
All product specifications are subject to change without notice.

Last updated: 12-Jun-2020

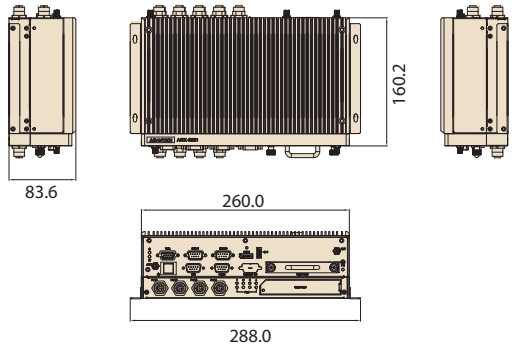
Dimensions

Unit: mm

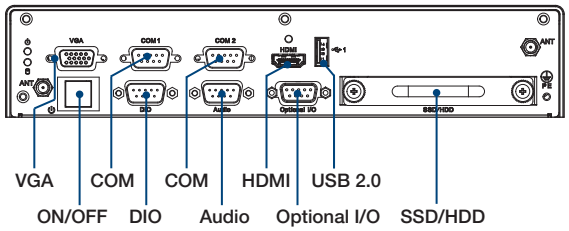
ARK-2231R



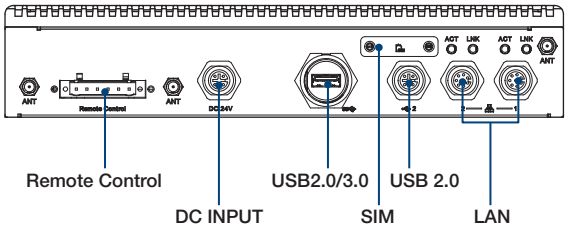
ARK-2231R+AMK-R100E



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	RAM	Display	GbE	USB 2.0	USB 2.0/ 3.0	DIO	RS-232/ 422/485	Audio	Full-size MiniPCIe	SIM	mSATA	2.5" SATA II Drive Bay	Power Input	Operating Temp.
ARK-2231R-S9A2E	Intel® Atom E3845 DC 1.91GHz	Up to 8G	1 x HDMI 1 x VGA	2	2	1	8 bit	2	Lin-out, Line-in, MIC	3	1	1	1	24 V_{DC}	-40 ~ 70 °C
ARK-2231R-S9A2EPOE*	Intel® Atom E3845 DC 1.91GHz	Up to 8G	1 x HDMI 1 x VGA	2	2	1	8 bit	2	Lin-out, Line-in, MIC	3	1	1	1	24 V_{DC}	-40 ~ 70 °C

* : This P/N is for AMK-R100E / AMK-R101E / AMK-R104E / AMK-R105E application
Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
ARK-2231R-S9A1E	1 x ARK-2231R Unit
-	1 x User Manual (Simplified Chinese)
-	1 x China RoHS
1960071555N011	2 x Wall mounting brackets for ARK-2231R
1652001524	1 x Terminal Block 6P 5.00mm

Optional Item for Default SKU

Part Number	Description
XARK-FSP180-AAAN3	AC-to-DC Adapter, DC24V/150W
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
AMK-C002E	M12 A-coded to USB type A female cable, 10cm
AMK-C005E	M12 X-coded to RJ-45 female cable, 10cm

Optional Embedded OS

Part Number	Description
2070015162	ARK-2231R WES7E OS image
20706WX9ES0048	ARK-2231R W10 19EL image

Note: Default BIOS is for 64bit OS support only. 32bit OS will need to update BIOS

ARK-R Extended Modules

ARK-2231R+AMK-R100E

Extra 8 x GbE PoE + removable 2.5" drive bay

Specifications

General	
PoE	8 x 10/100/1000Base T(X) PoE+, 802.3at compliant, Total: 60W
PoE Connector	M12 X-coded, 8PIN
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 160.2
Environment	
Operating temperature	-40 ~ 70 °C, EN50155 TX
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R100E	8 x GbE PoE M12 X-coded, 1 x removable 2.5" drive bay

ARK-2231R+AMK-R101E

Extra 4 x GbE PoE + removable 2.5" drive bay

Specifications

General	
PoE	4 x 10/100/1000Base T(X) PoE+, 802.3at compliant, Total: 60W
PoE Connector	M12 X-coded, 8PIN
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 160.2
Environment	
Operating temperature	-40 ~ 70 °C, EN50155 TX
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R101E	4 x GbE PoE M12 X-coded, 1 x removable 2.5" drive bay

ARK-2231R+AMK-R104E

Extra 8 x 10/100 Mbps PoE + removable 2.5" drive bay

Specifications

General	
PoE	8 x 10/100 Base T(X) PoE+, 802.3at compliant, Total: 60W
PoE Connector	M12 D-coded, 4PIN
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 140
Environment	
Operating temperature	-40 ~ 70 °C, EN50155 TX
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R104E	8 x 10/100 Mbps PoE M12 D-Coded, 1 x removable 2.5" drive bay

ARK-2231R+AMK-R105E

Extra 4 x 10/100 Mbps PoE + removable 2.5" drive bay

Specifications

General	
PoE	4 x 10/100 Base T(X) PoE+, 802.3at compliant, Total: 60W
PoE Connector	M12 D-coded, 4PIN
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 140
Environment	
Operating temperature	-40 ~ 70 °C, EN50155 TX
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R105E	4 x 10/100 Mbps PoE M12 D-Coded, 1 x removable 2.5" drive bay

Note: When installing PoE extension modules with ARK-2231R, please check ordering information or contact us for details.

ARK-2250R

6th Gen Intel Core i7-6822EQ QC/i5-6442EQ QC Rolling Stock Fanless System

Features

- Intel i7-6822EQ QC/ Intel i5-6442EQ QC SoC
- Support TPM2.0
- Stackable extension design, option extension kit for applications
- DC 24V EN50155 S2/C1 compliant, DC 48/72/110V options
- Supports intelligent boot-up & shutdown timing management
- -40 ~ 70 °C wide temperature support with EN50155 TX compliant
- Railway EMC comply with EN50121-3-2, EN50121-4
- Solid connection for LAN/USB/Audio/COM and power input
- Anti-vibration/shock proof, IEC 61373 Category1, ClassB
- Built-in Advantech remote management software WISE-PaaS/RMM

Specifications

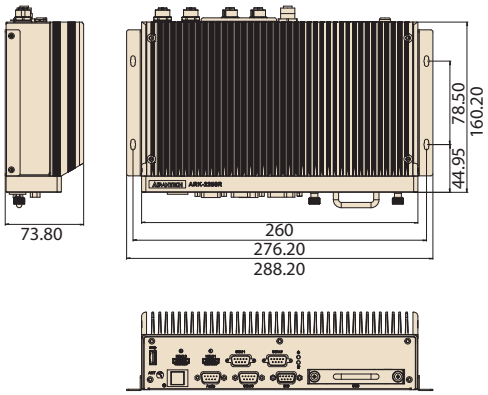
		ARK-2250R-U0A1E	ARK-2250R-S9A1E
Processor System	CPU	Intel i7-6822EQ QC SoC	Intel i5-6442EQ QC SoC
	Frequency	2.0GHz	1.9GHz
	Cache	8 MB	6 MB
	BIOS	AMI EFI	
Memory	Technology	DDR4 2133MHz	
	Max. Capacity	32G	
	Socket	2 x 260-pin SO-DIMM	
Graphics	Chipset	QM170	
	Graphic Engine	DirectX 11.3, OGL 4.4, OCL 2.1 Encode: H.264, MPEG2/4, VC1, WMV9 Decode: H.264, MPEG2 EHVC: H.265	
	VGA	Up to 1920 x 1200 @ 60Hz	
	HDMI	HDMI 1.4a for HD video playback, 1080P at 60Hz	
	Dual Display	Dual HDMI (Std.) or VGA + HDMI (by project)	
Ethernet	LAN1	10/100/1000 Mbps Intel i219 GbE, support Wake On Lan, M12 X-Coded	
	LAN2	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan, M12 X-Coded	
Audio	Interface	Realtek ALC888S, High Definition Audio. Line-out,Mic-in,Line-in	
IO Interface	Serial Ports	3 x RS-232/422/485 port with auto flow control	
	USB Interface	2 x USB2.0 A-Coded, 1x USB3.0 Type A	
	GPIO	8bit Programable DI/DO	
Other	Watchdog timer	255 levels timer interval, setup by software	
	TPM	TPM2.0 (Infineon SLB9665)	
Expansion	Mini PCIe	#1, Full-size Mini PCIe (SATA/PCIe/USB) w/external SIM socket #2, Full-size Mini PCIe (PCIe/USB) w/external SIM socket #3, M.2 2230 E key	
Storage	SSD/HDD	1 x 2.5" SATA drive bay	
	mSATA	1 x full size mSATA socket (Mini PCIe #1)	
Software Support	Microsoft Windows	Win7, WES7, Win8, WSE8, Win10	
	Linux	Support by project	
Power Requirement	Power Type	ATX	
	Power Input Voltage	DC 24V - StandardDC 48/72/110V - Options	
	Regulation	EN50155 S2/C1 Compliant	
	Intelligent Ignition Management	Selectable boot-up & shut-down timer	
	Connector	M12 A-Coded (5Pin)	
	Power Adapter	24V/ 180W (Option)	
Power Consumption	Typical	22W	
	Max.	55W	
Mechanical	Construction	Aluminum housing	
	Mounting	Wall mounting kit	
	Dimensions (W x H x D)	260 x 73 x 160.2mm	
	Weight	3.2 Kg	
Environment	Operating Temperature	With extended temperature peripherals: -40 ~ 70 °C EN50155 TX	
	Storage Temperature	- 40 ~ 85 °C (-40 ~ 185 °F)	
	Relative Humidity	95% @ 40 °C (non-condensing)	
	Vibration During Operation	IEC61373 Category1, Class B	
	Shock During Operation	IEC61373 Category1, Class B	
	EMC	CE/FCC Class B, CCC, BSMI, EN50121-3-2, EN50121-4	
	Safety Certifications	UL, CCC, BSMI, CB, EN50155	

All product specifications are subject to change without notice.

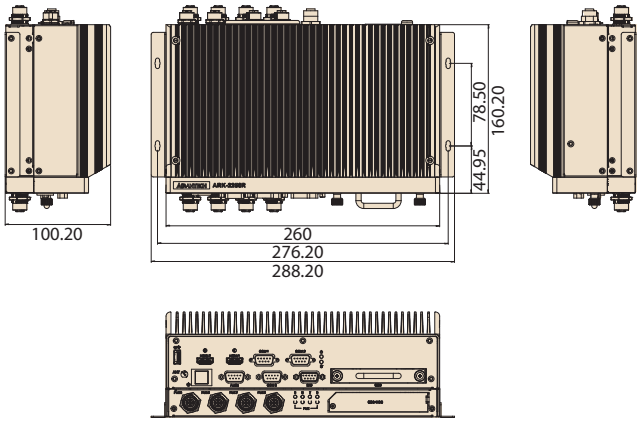
Dimensions

Unit: mm

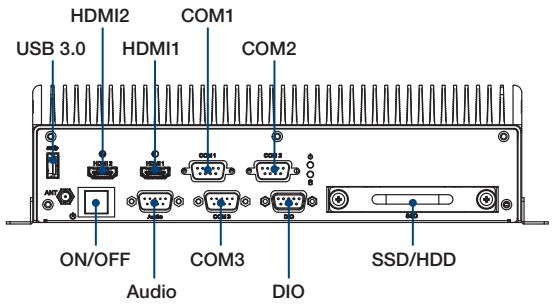
ARK-2250R



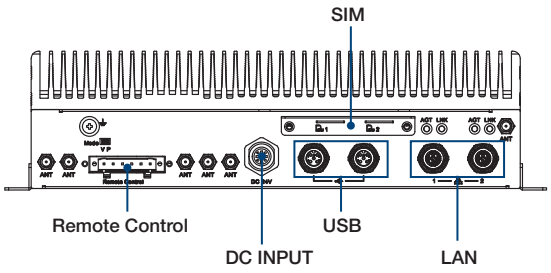
ARK-2250R+AMK-R100E



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	VGA	HDMI	GbE	USB 2.0	USB 3.0	DIO	RS-232/ 422/485	Audio	MiniPCIe	M.2	SIM	2.5" SATA Drive Bay	Operating Temp.
ARK-2250R-U0A1E	Intel Core i7-6822EQ QC	0	2	2	2	1	8 bit	3	Lin-out, Line-in, MIC	2	1	2	1	-40 ~ 70 °C
ARK-2250R-U0A1EPOE*	Intel Core i7-6822EQ QC	0	2	2	2	1	8 bit	3	Lin-out, Line-in, MIC	2	1	2	1	-40 ~ 70 °C
ARK-2250R-S9A1E	Intel Core i5-6442EQ QC	0	2	2	2	1	8 bit	3	Lin-out, Line-in, MIC	2	1	2	1	-40 ~ 70 °C
ARK-2250R-S9A1EPOE*	Intel Core i5-6442EQ QC	0	2	2	2	1	8 bit	3	Lin-out, Line-in, MIC	2	1	2	1	-40 ~ 70 °C

* : This P/N is for AMK-R100E / AMK-R101E / AMK-R104E / AMK-R105E application
Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-2250R Unit
1960071555N011	2 x Wall Mounting Brackets
1652001524	1 x Terminal Block 6P 5.00mm
1652000177	1 x Terminal Block 5P 5mm

Optional Embedded OS

Part Number	Description
20706WX6HS0010	Win10 IoT Ent LTSB 2016 MultLang 64bit (ARK-2250R-U0A1E)
20706WX6VS0017	Win10 IoT Ent LTSB 2016 MultLang 64bit (ARK-2250R-S9A1E)
20706WE7ES0011	WES7E 64bit ASIA 4 MUI

Note: Default BIOS is for 64bit OS support only. 32bit OS will need to update BIOS

Optional Item for Default SKU

Part Number	Description
XARK-FSP180-AAAN2	AC-to-DC Adapter, DC24V/180W
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type

ARK-R Extended Modules

ARK-2250R+AMK-R100E

Extra 8 x GbE PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	8 x 10/100/1000Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 160.2
Environment	
Operating temperature	-40 ~ 70 °C, EN50155 TX
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R100E	8 x GbE PoE M12 X-coded, 1 x removable 2.5" drive bay

ARK-2250R+AMK-R101E

Extra 4 x GbE PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	4 x 10/100/1000Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 160.2
Environment	
Operating temperature	-40 ~ 70 °C, EN50155 TX
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R101E	4 x GbE PoE M12 X-coded, 1 x removable 2.5" drive bay

ARK-2250R+AMK-R104E

Extra 8 x 10/100 Mbps PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	8 x 10/100 Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 140
Environment	
Operating temperature	-40 ~ 70 °C, EN50155 TX
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R104E	8 x 10/100 Mbps PoE M12 D-Coded, 1 x removable 2.5" drive bay

ARK-2250R+AMK-R105E

Extra 4 x 10/100 Mbps PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	4 x 10/100 Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 140
Environment	
Operating temperature	-40 ~ 70 °C, EN50155 TX
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R105E	4 x 10/100 Mbps PoE M12 D-Coded, 1 x removable 2.5" drive bay

Note: When installing PoE extension modules with ARK-2250 series, please check ordering information or contact us for details.