

Intelligent Edge Computers

Enabling Versatile Future-proof Applications

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- / Product Selection Guide

DeviceOn/iEdge



WISE-DeviceOn



EDGE
COMPUTING



DeviceOn/Kiosk*



ADVANTECH

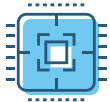
Enabling an Intelligent Planet

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Empowered Edge Computing

A report by Gartner indicates that the edge market — including hardware, software, and services — will grow to US \$450 billion by 2025. Edge computing use cases are highly diverse, and drive demands for technology ecosystems as well as integration, implementation, and operations. Advantech's ARK intelligent edge computers are software and hardware integrated solutions that support multiple I/O connectivity and diverse expandability. This enables AI analytics, wireless connectivity, peripheral devices, and domain-focused software. These features also empower equipment connectivity and AIoT applications — such as factory automation, self-service kiosks, and computer vision.



Application Featured Design

- Motion/vision/frame grabber cards
- Industrial cameras



Wireless Connectivity

- 5G, LTE, Wi-Fi, BT, and GPS
- Certified Wi-Fi kit available (selected models)



AI Analytics Built-in

- Supports NVIDIA GPU cards
- Supports Intel® Movidius™ VPU

Edge Computers

Performance



ARK-3000 Series

- High performance multifunction capabilities
- Intel® software RAID
- Flexible PCI/PCIe expansion

Stackable



ARK-2000 Series

- Medium-to-high performance solution
- Versatile I/Os
- Supports iDoor/ARK Plus modules and 100+ configurations

DIN-rail



ARK-1200 Din-rail Series

- Front-side I/O for in cabinet installation
- Wide range DC power input

Compact



ARK-1100 Series

- Palm-sized design
- Low power consumption
- Wi-Fi kit supported (selected models)



WISE-DeviceOn

Connected devices, software monitoring and control



DeviceOn/iEdge

Industrial protocols and data integration



DeviceOn/Kiosk+

Remote kiosk management



AI model deployment and performance optimization





Factory Automation

Factory automation, including process control and quality assurance, has improved manufacturing efficiency and effectiveness while increasing the complexity of management. Accordingly, connectivity between different manufacturing equipment — such as between an assembly robot controller and an image capture solutions — is crucial. Advantech provides edge computing solutions that connect manufacturing devices and processes, making automation in industrial environments easier and smarter.



Industrial and Reliable Design

Provides stable operation via voltage input, wide operating temperature, anti-shock capabilities, and IP rated enclosure



Enhanced Operational Efficiency

Preloaded with DeviceOn/iEdge enabling edge-to-cloud data integration and visualization



Diverse I/O and Expansion

Diverse interfaces and expansion capabilities support connection to different devices and add-on cards

Edge Computing Solutions



ARK-1220F

- DIN-rail system with essential I/O
- Isolated GbE, COM, and GPIO



ARK-1551

- 8th Gen Intel® U-series Core™ i5/Celeron®
- Swappable HDD bay and Intel® software RAID 0/1 support



ARK-3532

- 10th Gen Intel® Xeon®/Core™ i LGA1200 processors
- Diverse I/O and multiple expansions



DeviceOn/iEdge



Effective Manufacturing Equipment Management and Data Integration

Data collection and integration

- Supports Modbus, OPC-UA, and other PLC-based protocols

Edge intelligence and notifications

- Real-time equipment monitoring and management via OTA/KVM tools
- Reaction rule engine and abnormal event notifications

Data visualization

- Equipment status overview
- Auto-generate dashboard for local operators



Equipment Connectivity

Building IoT applications necessitates equipment connectivity. Diverse field equipment uses different communication protocols to transmit device data. Advantech provides industrial computers that improve equipment connectivity — including compact IoT gateways and high-performance servers. Our solutions feature rugged, modular designs, and come with WISE-DeviceOn for real-time remote monitoring, and management capabilities.



Multiple Network Interfaces

Provides mPCIe, M.2 E/B key with SIM socket for wireless network integration. RF certified for selected models



Quick Connections

Supports popular equipment and data acquisition interfaces and protocols



Edge to Cloud Service Ready

Performs instant remote device management and data visualization using WISE/DeviceOn with optional Azure service

Edge Computing Solutions



ARK-1124U

- Dual LAN, M.2 E key, mPCIe with SIM for communication network
- Wi-Fi RED certified



ARK-1220L

- Supports operation in harsh-usage environments
- AI inferencing add-on options available



ARK-2250L

- Core™ i7 computing in compact form factor
- iDoor expansion for device connections



WISE-DeviceOn



Enabling Equipment Connectivity and Efficient Operation

Device monitoring and diagnostics

- Hardware and software monitoring
- Remote trouble shooting
- Backup/recovery and protection
- Notifications and alerts

Data acquisition and visualization

- Real-time and historic device data
- Built-in WISE-PaaS/dashboard

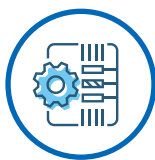
Remote updates and maintenance

- Software, firmware and configuration updates
- BIOS updates



Self-service Kiosks

AI and IoT technology advancements are making kiosk machines smarter, more multi-functional, and capable of delivering myriad services in smart city applications. Managing kiosks located in different places is challenging. Users must handle device control, monitoring, and error management as well as software and firmware updates. This often results in high maintenance costs. Advantech provides hardware and software integrated edge solutions that help customers build applications quickly and reduce time-to-market.



Easy Management

Kiosk+ helps remotely and securely manage and monitor kiosks in different places



Diverse I/O Connectivity

Support 24+ connections with diverse devices — including LCD displays, barcode scanners, and cameras



Reliable 24/7 Operation

Designed with industrial grade reliability and wide-range power input

Edge Computing Solutions



ARK-1551

- 8th Gen Intel® ULV series Core® i5/Celeron
- Up to 14+ versatile I/O connections
- Wide range power input (DC 12 ~ 24V)



ARK-2232L

- Intel Atom® E3940 Quad Core™ SoC
- 14+ I/O connections : LAN/COM/USB, etc.
- Supports iDoor and ARK-Plus expansion



ARK-3531

- 9th Gen Intel® i3/i5/i7/i9
- 22+ I/O connections: LAN/COM/USB, etc.
- Wide range power input (DC 9 ~36V)



DeviceOn/Kiosk+



Manage Connected Kiosks

Zero-touch Onboarding

- Batch provisioning and configuration
- Supports OTA software and firmware updates

Secure remote management

- Real-time status monitoring with the map view and quick action control
- McAfee whitelist and Acronis recovery integrated

Peripheral control and screen settings

- LCD display, barcode scanner, thermal printer, and touchscreen
- Remote control and driver update



AI Visual Analytics

Using high-resolution cameras in manufacturing product inspection requires a machine vision system. This system can easily detect objects that are too small to be seen by the human eye while providing highly efficient, consistent identification. AI modeling defect detection enables users to collect, analyze, and summarize defective product information at each stage of the production process. This reduces the creation of defective products, and improves production line yield. Advantech provides high performance edge computers that help customers enable AI inference in edge devices.



Diverse, Flexible Expansion

Designed for machine vision market, and features multiple expansion slots for installing motion controller and GPU cards



AI Inference Optimization

Integrated Edge AI Suite for quick AI model deployment and optimization



Enhanced Production Efficiency using AI Inference

Enhances inspection analysis by providing AI inference capabilities using high performance graphic engines or additional GPU cards

Edge Computing Solutions



ARK-3532

- 10th Gen Intel® Xeon®/Core™ i LGA1200 processors
- 2 x/3 x/4 x PCI/PCIe/PClex16 slots



ARK-3530

- 6th and 7th Gen Intel® Xeon®/Core™ i LGA1151 processors
- One PClex16 slot (optional)



ARK-1551

- 8th Gen Intel® ULV series Core™ i5/ Celeron
- Up to 14+ versatile I/O connections
- Intel® UHD 620 graphics



Accelerate AI Deployment and Development

Optimized for multiple edge devices

- Supports NVIDIA GPU acceleration
- Supports Intel CPU and VPU acceleration

100+ Pre-trained models

- Rapid object detection (YOLOv3)
- Facial recognition
- Human pose estimation

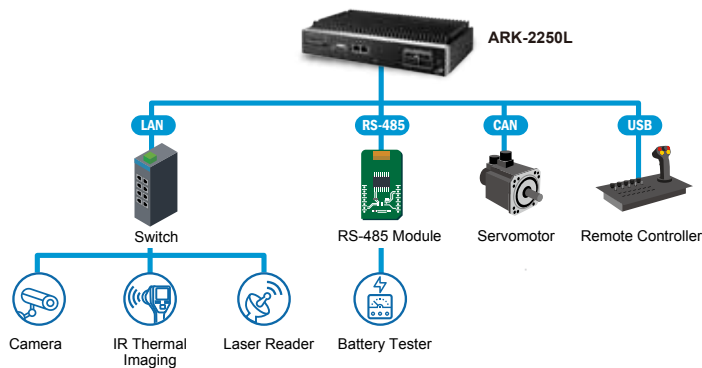
Deployment wizard

- Quick start tutorial
- Supports various deep learning frameworks
- CPU/VPU/GPU/Memory monitoring

Power Substation Inspection Robot



The increasing number of unmanned power substations located in different sites is increasing demands for inspection robots. In this application, Advantech's ARK-2250L was used as the brain of a battery-powered inspection robot equipped with a high-resolution CCD camera, a thermal infrared imager, and a laser reader for 24/7 remote monitoring. Inspection and location data was transferred using 5G, 4G, and Wi-Fi wireless channels to a central control center. This reduced downtime and enabled preventative maintenance.



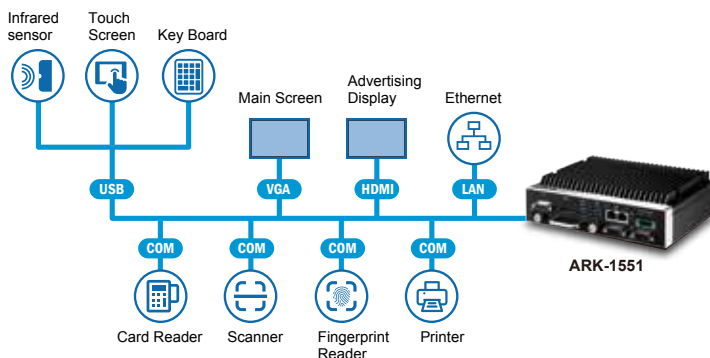
Key Features

- High-performance Intel® processor capable of processing large volumes of data at high speeds
- Multiple I/O support diverse sensor and device integration
- Wide operating temperature support (-20 ~ 60 °C/-4 ~ 140 °F) and fanless design

Airport Self Check-in Kiosks



The design process for airport self-service check-in kiosks is complex and multi-faceted. These kiosks' components typically comprise a controller PC, LCD panel, camera, cellular modem, barcode scanner, and uninterruptable power supply among other, essential peripherals. ARK-1551 was chosen due to its flexible I/O expansion that supports high bandwidth peripheral devices. In addition, its slim design fits easily into server cabinets.

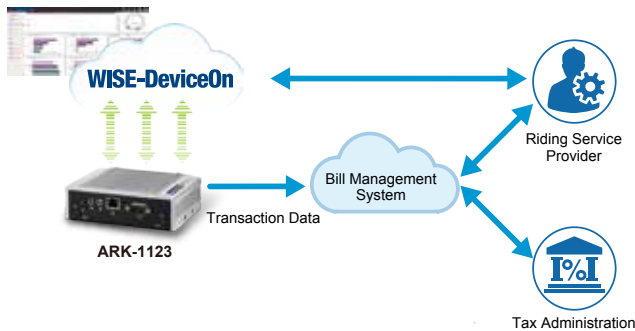


Key Features

- Compact size system with versatile I/O ports for device connection
- Great Core™ i performance for computing
- Stable and reliable fanless system without noise and dust issues

eFiscalization System for Riding Service

Our end customer is a leading ride service provider who were seeking an e-fiscalization system capable of installation within their fleet partners' cars. This system needed to collect transaction details in real-time in response to local financial regulation. Advantech ARK-1123 provides a software and hardware integrated platform that allows seamless on boarding, provisioning, and OTA functions. The ARK-1123 automatically connects to the network following activation. The integrated device will automatically find the DeviceOn services used on Microsoft Azure cloud, and install the latest software. In addition, administrators can monitor the operating status of each ARK-1123 and optimize operational efficiency.

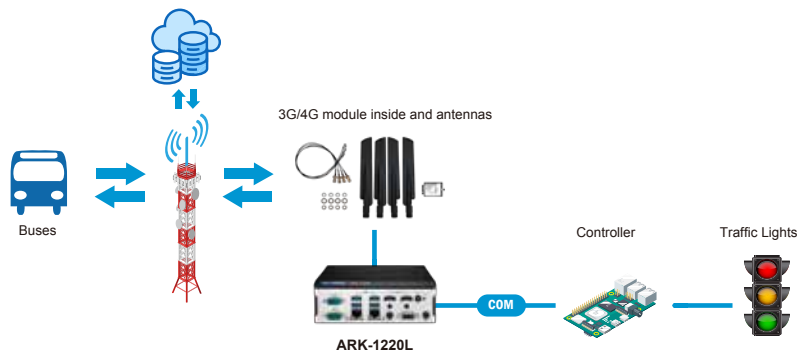


Key Features

- Excellent computing performance for real-time data collection and transmission
- Pre-installed DeviceOn software for onboarding, provisioning and OTA functions
- Compact design, industrial grade quality, and low power consumption capabilities for in vehicle applications

Urban Traffic Light Controller

Urban traffic signal controls can have a significant impact on vehicle activity, creating movement and capacity conflicts. Regulating traffic flow, improving congestion, and reducing emissions necessitates an accurate traffic light control system. To this end, this application used Advantech's ARK-1220L because its ultra-small form factor fits into the limited spaces available near traffic lights and intersections. Likewise, it features a ruggedized robust IP rated design, is shock/vibration resistant, and supports operation in the wide temperature ranges presented by outdoor application environments.



Key Features

- Small in size with essential I/O ports to connect to various devices
- Supports wireless module for data transmission
- Robust, IP4x rated design and with advanced shock/vibration resistance

Intelligent Edge Computers

Compact Series



Model Name		ARK-1123L	ARK-1123C	ARK-1123H	ARK-1124C
CPU	CPU	Intel® Atom® DC E3825	Intel® Atom® DC E3825	Intel® Celeron® QC J1900	Intel® Celeron® DC N3350
	Frequency	1.33 GHz	1.33 GHz	2.0GHz	1.1GHz, turbo burst 2.4 GHz
	Core Number 4/4	2	2	4	2
	BIOS	AMI EFI 64 Mbit	AMI EFI 64 Mbit	AMI EFI 64 Mbit	AMI EFI 64 bit
	Chipset	-	-	-	-
Memory	Technology	DDR3L 1066 MHz	DDR3L 1066 MHz	DDR3L 1333 MHz	DDR3L 1866 MHz
	Max. Capacity	8GB	8GB	8GB	8GB
	Socket	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM
Display	Chipset	Intel® Atom® SoC integrated	Intel® Atom® SoC integrated	Intel® Atom® SoC integrated	Intel® HD Graphics 500
	Graphic Engine	DirectX® 11.1, OGL 3.0, OCL 1.1, OGL ES 2.0 ; Encode: H264, MPEG2/4, VC1, WMV9 ; Decode: H264, MPEG2	DirectX® 11.1, OGL 3.0, OCL 1.1, OGL ES 2.0 ; Encode: H264, MPEG2/4, VC1, WMV9 ; Decode: H264, MPEG2	DirectX® 11.1, OGL 3.0, OCL 1.1, OGL ES 2.0 ; Encode: H264, MPEG2/4, VC1, WMV9 ; Decode: H264, MPEG2	4K Codec Decode & Encode for H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG
	VGA	1 x VGA, support up to 1920x1200	1 x VGA, support up to 1920x1200	-	1 x VGA, support up to 2048 x 1280 @ 60Hz
	DDI	-	-	2 x HDMI, up to 1920x1080@60Hz	-
	Multiple Display	-	-	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
	M.2	-	-	-	-
	SIM socket	-	-	-	-
	PCIe	-	-	-	-
	PCI	-	-	-	-
	PCIe + PCI	-	-	-	-
	i Door	-	-	-	Yes
Ethernet	Controller	GbE 1 : Intel i210	GbE 1 : Intel i210 ; GbE 2 : Intel i210	GbE 1 : Intel i210 ; GbE 2 : Intel i210	GbE 1 : Intel i210
	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	ALC-888S-VD2-GR	ALC-888S-VD2-GR	ALC-888S-VD2-GR	ALC-888S-VD2-GR
	Connector	Line-in, Line out	Line-in, Line out	Line-in, Line out	Line-in, Line-out
WatchDog Timer	WatchDog Timer	Yes	Yes	Yes	Yes
Storage	SATA	1 x 2.5" SATA drive bay(Max 9.5mm height only)	1 x 2.5" SATA drive bay (Max 9.5mm height only)	1 x 2.5" SATA drive bay (Max 9.5mm height only)	1 x 2.5" SATA drive bay (Max 9.5mm height only)
	mSATA	1 x Half-Size mSATA	1 x Half-Size mSATA	1 x Half-Size mSATA	1 x Half-Size mSATA
I/O	USB3.1/3.2	-	-	-	-
	USB 3.0	1	1	1	2
	USB2.0	1	2	2	-
	GPIO	8-bit Programmable DIO	-	-	-
	COM Port	1 x RS-232, 1 x RS-232/422/485	2 x RS-232/422/485	1 x RS-232/422/485	4 x RS-232/422/485
Power	Power Type	ATX	ATX	ATX	ATX
	Power Supply Voltage	12 VDC, ± 10%	12 VDC, ± 10%	12 VDC, ± 10%	Default: 12 VDC, ± 10% ; Optional: 12 VDC - 24VDC by power module
	Connector	Lockable DC Jack	Lockable DC Jack	Lockable DC Jack	Default: Lockable DC Jack ; Optional: 2-Pin phenix connector via power module AMO-P011
	Power Consumption (Idle: CPU/Memory only)	5.28W	5.28W	5.64W	5.5W
	Power Consumption (Full Load: CPU/Memory only)	8.16W	8.16W	14.04W	9.8W
Power Adaptor	Lockable AC to DC, DC12 V/3 A, 36 W	Lockable AC to DC, DC12 V/3 A, 36 W	Lockable AC to DC, DC12 V/3 A, 36 W	Lockable AC to DC, DC12 V/3 A, 36 W	
Environment	Operating Temperature(air flow 0.7 m/sec)	With extend temperature peripherals: -30 ~ 70 °C (-22 ~ 158 °F); with standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)	With extend temperature peripherals: -30 ~ 70 °C (-22 ~ 158 °F); with standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)	With extend temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F); with standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)	With extend temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F); with standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)
	Non-operating Temperature	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing
	Vibration Resistance	With mSATA/SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis ; With HDD: 0.5Grms, random, 5~500Hz, 3 axes, 1hr/axis	With mSATA/SSD: 3 Grms, IEC, random, 5 ~ 500 Hz, 1 hr/axis ; With HDD: 0.5Grms, random, 5~500Hz, 3 axes, 1hr/axis	With mSATA/SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis ; With HDD: 0.5Grms, random, 5~500Hz, 3 axes, 1hr/axis	With mSATA/SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis ; With HDD: 0.5Grms, random, 5~500Hz, 3 axes, 1hr/axis
Shock Protection	With mSATA/SSD: 30 G, half sine, 11 ms duration ; With HDD: 10G, half sine, 11 ms duration	With mSATA/SSD: 30 G, half sine, 11 ms duration ; With HDD: 10G, half sine, 11 ms duration	With mSATA/SSD: 30 G, half sine, 11 ms duration ; With HDD: 10G, half sine, 11 ms duration	With mSATA/SSD: 30 G, half sine, 11 ms duration ; With HDD: 10G, half sine, 11 ms duration	
Physical Characteristics	Dimensions (W x H x D mm)	133.8 x 43.1 x 94.2 mm (5.27 x 1.70 x 3.71 in)	133.8 x 43.1 x 94.2 mm (5.27 x 1.70 x 3.71 in)	133.8 x 43.1 x 94.2 mm (5.27 x 1.70 x 3.71 in)	Single Layer: 133 x 46.4 x 94.2 mm (5.23 x 1.82 x 3.7 in); Dual Layer: 133 x 83.6 x 94.2 mm (5.23 x 3.29 x 3.70 in)
	Weight	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)	1.2 kg (2.65 lb)	0.7 Kg (1.55lb)
	Mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting
Operating System	Microsoft Windows	Yes (Windows 7, Windows 8, Windows 10)	Yes (Windows 7, Windows 8, Windows 10)	Yes (Windows 7, Windows 8, Windows 10)	Yes (Windows 10 64bit)
	Linux	Yes (by project inquiry)	Yes (by project inquiry)	Yes (by project inquiry)	Yes (by project inquiry)
Software	DeviceOn	WISE-DeviceOn	WISE-DeviceOn	WISE-DeviceOn	WISE-DeviceOn
	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
	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 B, CCC, BSMI	CE/FCC Class B, CCC, BSMI
	Safety Certifications	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI

Intelligent Edge Computers



ARK-1124U	ARK-1124H	ARK-1220L	ARK-1220F	ARK-1551
Intel® Celeron® DC N3350	Intel® Atom® QC E3940	Intel® Atom® QC E3940	Intel® Atom® QC E3940	Intel® Celeron® 4305UE/ Intel® Core™ i3-8145UE/Intel® i5-8365UE
1.1GHz, turbo burst 2.4 GHz	1.6GHz, turbo burst 1.8 GHz	1.6GHz, turbo burst 1.8 GHz	1.6GHz, turbo burst 1.8 GHz	2.0GHz/2.1 GHz, turbo burst up to 3.9 GHz 1.6 GHz, turbo up to 4.1 GHz
2	4	4	4	2/2/4
AMI EFI 64 bit	AMI EFI 64 bit	AMI EFI 64 bit	AMI EFI 128 bit	AMI UEF1 256Mbit
-	-	-	-	Intel® Celeron 4305UE/Intel® i5-8365UE
DDR3L 1866 Mhz	DDR3L 1866 Mhz	DDR3L 1600 MHz	DDR3L 1600 MHz	DDR4 2400MHz
8GB	8GB	8GB	8GB	32GB
1 x 204-pin SO-DIMM	1 x 204-pin SO-DIMM	2 x 204-pin SO-DIMM	2 x 204-pin SO-DIMM	2 x 260-pin SO-DIMM, Each SO-DIMM up to 16GB
Intel® HD Graphics 500	Intel® HD Graphics 500	Intel® HD Graphics 500	Intel® HD Graphics 500	Intel® UHD Graphics 610/ Intel® UHD Graphics 620
4K Codec Decode & Encode for H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG	4K Codec Decode & Encode for H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG	4K Codec Decode & Encode for H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG	4K Codec Decode & Encode for H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG	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
1 x VGA, support up to 2048 x 1280 @ 60Hz	-	-	1 (up to 1920 x 1200)	1 , up to 1920 x 1080@ 60Hz
-	2 x Lockable HDMI, support up to 3840 x 2160 @ 30Hz	2 x Lockable HDMI, support up to 3840 x 2160 @ 30Hz	1 x Lockable HDMI, support up to 3840 x 2160 @ 30Hz	1 x lockable HDMI 1.4b, 4096 x 2160@30Hz ; 1 x DP 1.2, 4096 x 2304 @ 60Hz (co-lay with VGA, by project support with MOQ = 30)
-	Dual	Dual	Dual	Dual (VGA+HDMI)
1 x Full-size MiniPCIe w/ SIM	1 x Full-size MiniPCIe w/ SIM	1 x Full-size MiniPCIe w/ SIM	1 x Full-size MiniPCIe w/ nano SIM	1 x Full-size MiniPCIe w/ nano SIM
1 x 2230 E key for Wi-Fi	1 x 2230 E key for Wi-Fi	1 x 2230 E key for Wi-Fi	1 x 2230 E key for Wi-Fi	1 x 2230 E key for Wi-Fi
1 (standard size)	1 (micro SIM)	1 (standard size)	1 (nano SIM)	1 (Nano SIM)
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
Yes	Yes	-	-	-
GbE 1 : Intel i210 ; GbE 2 : Intel i210	GbE 1 : Intel i210 ; GbE 2 : Intel i210	GbE 1 : Intel i210 ; GbE 2 : Intel i210	GbE 1 : Intel i210, GbE 2 : Intel i210-T	GbE 1 : Intel i210, GbE 2 : Intel i219
10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps
HD Audio	HD Audio	HD Audio	HD Audio	HD Audio
ALC-888S-VD2-GR	ALC-888S-VD2-GR	ALC-888S-VD2-GR	ALC-888S-VD2-GR	Realtek ALC892
Line-in, Line-out	Line-in, Line-out	Mic-in, Line-out	Line out or Mic-in	Line out or Mic-in
Yes	Yes	Yes	Yes	Yes
1 x 2.5" SATA drive bay(Max 9.5mm height only)	1 x 2.5" SATA drive bay(Max 9.5mm height only)	1 x 2.5" SATA drive bay(Max15mm height)	1 x 2.5" SATA drive bay (Max15mm height)	1 x removable 2.5" SATA drive bay (Max 7mm height only)
-	1 x Half-Size mSATA	1 x Full-size mSATA (shared w/ mCPLe)	1 x Full-size mSATA (shared w/ mCPLe)	1 x Full-size mSATA (shared w/ mCPLe)
4	4	4	4	4
-	-	-	1 (plus one more internal)	-
-	-	Reserved. 8-bit Programmable DIO	8-bit Programmable DIO	8-bit Programmable DIO
2 x RS-232/422/485	1 x RS-232/422/485	2 x RS-232/422/485 COM2 with 5V/12V power	1 x RS-232/422/485, 1 x RS-422/485	4 x RS-232/422/485
ATX	ATX	ATX	ATX (Default)/ AT	ATX (Default)/ AT
Default: 12 VDC, ± 10% ; Optional: 12 VDC - 24VDC by power module	Default: 12 VDC, ± 10% ; Optional: 12 VDC - 24VDC by power module	12 ~ 28 VDC	12 ~ 28 VDC	12V~24VDC @-10% / +20%
Default: Lockable DC Jack ; Optional: 2-Pin phenix connector via power module AMO-P011	Default: Lockable DC Jack ; Optional: 2-Pin phenix connector via power module AMO-P011	3-pin terminal block	3-pin terminal block	3-pin terminal block
5W	6.02W	7.6W	8.93W	8.93 Watt (Celeron®)/13.31Watt(Core™ i3) 13.87 Watt (Core™ i5)
15.7W	15.7W	19W	18.36W	24.7 Watt (Celeron®)/48.1(Core™ i3) 47.12Watt (Core™ i5)
Lockable AC to DC, DC12 V/5 A, 60 W	Lockable AC to DC, DC12 V/5 A, 60 W	Lockable AC to DC, DC24 V/2.5 A, 60 W (Optional)	Lockable AC to DC, DC24 V/2.5 A, 60 W (Optional)	Core™ i3, Celeron®: AC to DC, 90W (Optional) Core™ i5: AC to DC, 90W for 0 ~ 40 °C (Optional) AC to DC, 120W for -20 ~ 55 °C (Optional)
With extend temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F); with standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)	With extend temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F); with standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)	With extend temperature peripherals: -30 ~ 70 °C (-22 ~ 158 °F); with standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)	With extend temperature peripherals: -30 ~ 60 °C (-22 ~ 140 °F); with standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)	With extend temperature peripherals: -20 ~ 55 °C (-4 ~ 131 °F) ; With standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F) -40 ~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing
-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing
With mSATA/SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis ; With HDD: 0.5Grms, random, 5~500Hz, 3 axes, 1hr/axis	With mSATA/SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis ; With HDD: 0.5Grms, random, 5~500Hz, 3 axes, 1hr/axis	With mSATA/SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis ; With HDD: 0.5Grms, random, 5~500Hz, 3 axes, 1hr/axis	With mSATA/SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis ; With HDD: 0.5Grms, random, 5~500Hz, 3 axes, 1hr/axis	With mSATA/SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis
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	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	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	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	With mSATA/SSD:30 G, half sine, 11 ms duration
Single Layer: 133 x 46.4 x 94.2 mm (5.23 x 1.82 x 3.7 in); Dual Layer: 133 x 83.6 x 94.2 mm (5.23 x 3.29 x 3.7 in)	Single Layer: 133 x 46.4 x 94.2 mm (5.23 x 1.82 x 3.7 in); Dual Layer: 133 x 83.6 x 94.2 mm (5.23 x 3.29 x 3.7 in)	114 x 158 x 53.5 mm (4.49 x 6.22 x 2.11 in)	IEC 60068-2-27, half sine, 11 ms duration 114 x 158 x 60 mm (4.49 x 6.22 x 2.34 in)	195 x 55 x 140 mm (7.68 x 2.16 x 5.52 in)
0.7 Kg (1.55 lb)	0.7 Kg (1.55 lb)	1.2 Kg (2.65 lb)	1.5 Kg (3.3 lb)	1.9 kg (4.18 lbs)
Optional DIN Rail/ VESA/ Wall mounting	Optional DIN Rail/ VESA/ Wall mounting	DIN Rail Mounting (standard) Optional Wall mounting	DIN Rail Mounting (standard) Optional Wall mounting	Wall Mounting (Standard) / VESA & DIN-Rail Mounting Kit (Optional)
Yes (Windows 10 64bit)	Yes (Windows 10 64bit)	Yes (Windows 10 64bit)	Yes (Windows 10 64bit)	Yes (Windows 10 64bit)
Yes (by project inquiry)	Yes (by project inquiry)	Yes (by project inquiry)	Yes (by project inquiry)	Yes (by project inquire)
WISE-DeviceOn	WISE-DeviceOn	WISE-DeviceOn, DeviceOn/Edge	WISE-DeviceOn, DeviceOn/Edge	WISE-DeviceOn
McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC Class B, CCC, BSMI	CE/FCC Class B (Heavy industrial), CCC, BSMI	CE/FCC Class B, CCC, BSMI
CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI

Intelligent Edge Computers

Modular Series



Model Name		ARK-2121L	ARK-2121F	ARK-2230L
CPU	CPU	Intel® Celeron® J1900 SoC	Intel® Celeron® J1900 SoC	Intel® Celeron® J1900 SoC
	Frequency	2.0 GHz, turbo boost up to 2.42GHz	2.0 GHz, turbo boost up to 2.42GHz	2.0 GHz, turbo boost up to 2.42GHz
	Core Number	4	4	4
	BIOS	AMI 64Mbit	AMI 64Mbit	AMI 64Mbit
	Chipset	-	-	-
Memory	Technology	DDR3L 1333 MHz	DDR3L 1333 MHz	DDR3L 1333 MHz
	Max. Capacity	8GB	8GB	8GB
	Socket	1 x 204pin SODIMM	1 x 204pin SODIMM	1 x 204pin SODIMM
Display	Chipset	Intel Celeron J1900 SoC integrated, 7th Gen. Intel Graphic core	Intel Celeron J1900 SoC integrated, 7th Gen. Intel Graphic core	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	DirectX 11.1, OCL 1.2, OGL 3.2 Encode: H.264, MPEG2/4, VC1, WMV9; Decode: H.264, MPEG2	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	Up to 2048 x 1152 @ 60Hz	Up to 2048 x 1152 @ 60Hz
	DDI	HDMI: 1920 x 1080 @ 60Hz	HDMI: 1920 x 1080 @ 60Hz; Optional: HDMI and DVI	HDMI: 1920 x 1080 @ 60Hz
	Multiple Display	Dual	Dual / Triple (Option)	Dual
Expansion Interface	Mini PCIe	1 x full size Mini PCIe (With SIM holder)	2 x full size Mini PCIe (One with SIM holder)	1 x full size miniPCIe (With SIM holder)
	M.2	-	-	-
	SIM socket	1	1	1
	PCIe	-	-	-
	PCI	-	-	-
	PCIe + PCI	-	-	-
	i Door	Supported	-	Supported
Ethernet	Controller	GbE1: Intel i210 GbE2: Intel i210	GbE1: Intel i210; GbE2: Intel i210; GbE3: Intel i210(by project); GbE4: Intel i210(by project)	GbE1: Intel i210 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	Line-in, Line out, Mic-in	Line-in, Line out, Mic-in	Line-in, Line out, Mic-in
WatchDog Timer	WatchDog Timer	Yes	Yes	Yes
Storage	SATA	1 x 2.5" SATAII HDD bay (Max up to 12.5mm in height)	1 x 2.5" SATAII HDD bay (Max up to 12.5mm in height)	1 x 2.5" SATAII HDD bay (Max up to 12.5mm in height)
	mSATA	1 x Full-size mSATA with USB signal co-lay	1 x Full-size mSATA with USB signal co-lay	1 x Full-size mSATA with USB signal co-lay
I/O	USB3.1/3.2	-	-	-
	USB 3.0	1	1	1
	USB2.0	3	5	4
	GPIO	-	8-bit Programmable DIO	8-bit Programmable DIO
	COM Port	2 x RS232, 2 x RS232/ 422/ 485	6 x RS232/ 422/ 485	2 x RS232, 2 x RS232/ 422/ 485
Power	Power Type	ATX	ATX	ATX
	Power Supply Voltage	9~36VDC	9~36VDC	Default: 12 VDC, ± 10% ; Optional : 9-36V DC
	Connector	2-pin phoenix head	2-pin phoenix head	Default: Lockable DC Jack ; Optional:2-pin phoenix head (MIOE-PWR2-00A1E)
	Power Consumption (Idle: CPU/ Memory only)	7.3W (CPU/Memory only)	8.4W (CPU/Memory only)	7.3W (CPU/Memory only)
	Power Consumption (Full Load: CPU/ Memory only)	13.3W (CPU/Memory only)	16.2W (CPU/Memory only)	13.3W (CPU/Memory only)
Power Adaptor	Lockable AC to DC, DC19V/3.42A 65W (Optional)	Lockable AC to DC, DC19V/3.42A, 65W (Optional)	Lockable AC to DC, DC12V/5A, 60W (Optional)	
Environment	Operating Temperature (air flow 0.7 m/sec)	With extend temperature peripherals: -20 ~ 70 °C (-4 ~ 158 °F) . With standard temperature peripherals: 0 ~ 45 °C (32 ~ 113 °F)	With extend temperature peripherals: -20 ~ 70 °C (-4 ~ 158 °F) . With standard temperature peripherals: 0 ~ 45 °C (32 ~ 113 °F)	With extend temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F) . With standard temperature peripherals: 0 ~ 45 °C (32 ~ 113 °F)
	Non-operating Temperature	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing
	Vibration Resistance	With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.	With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.	With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.
	Shock Protection	With SSD: 30 G, half sine, 11 ms duration	With SSD: 30 G, half sine, 11 ms duration	With SSD: 30 G, half sine, 11 ms duration
Physical Characteristics	Dimensions (W x H x D mm)	264.5 x 68.4 x 133.0 mm (10.41 x 2.69 x 5.24 in)	264.5 x 68.4 x 133.0 mm (10.41 x 2.69 x 5.24 in)	260 x 44 x 140.2 mm (10.24 x 1.73 x 5.52 in)
	Weight	2.3 kg (5.07 lb)	2.3 kg (5.07 lb)	2.3 kg (5.07 lb)
	Mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting
Operating System	Microsoft Windows	Windows 7, Windows 8, Windows 10	Windows 7, Windows 8, Windows 10	Windows 7, Windows 10
	Linux	Yes	Yes	Yes
Software	DeviceOn	WISE-DeviceOn	WISE-DeviceOn	WISE-DeviceOn
	Other	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
Certification	EMC	CE/FCC class A, CCC, BSMI	CE/FCC class A, CCC, BSMI	CE/FCC class B, CCC, BSMI
	Safety Certifications	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI

Entry, Multi-I/O Series

Extreme Series

Preliminary



ARK-2232L	ARK-2250L	ARK-6322	ARK-7060
Intel® Atom® E3940	Core™ i7-6600U/i3-6100U (i5-6300U by project) Core™ i7-7600U/i3-7100U (i5-7300U by project)	Intel® Celeron® J1900 SoC	Intel® Gen 2 Xeon® D SoC
1.6 GHz, turbo boost up to 1.8GHz	2.6GHz / 2.3GHz; 2.8GHz / 2.4GHz	2.0 GHz	by Processor
4	2	4	2-10
AMI 64Mbit	AMI UEFI 128Mbit	AMI 16Mbit SPI	AMI EFI 512Mbit
-	-	-	-
DDR3L 1866 MHz	DDR4 2133 MHz	DDR3L 1333MHz	DDR4 2666MHz
8GB	16GB	8GB	128GB
1 x 204pin SODIMM	1 x 260-pin SODIMM	2 x 204pin SODIMM	4 x 260-pin SODIMM
Intel HD Graphics 500	Intel HD Graphics 520; Intel HD Graphics 620	Intel Gen 7 Graphics Engines and media encode/ decode engine; GPU Frequency: 688 MHz	-
2D: Direct2D*, DirectWrite ; 3D: D3D11.3,DXGI1.3, DirectX* 11.1, OGL ES 2.0 ; Media Codec: H.264, MPEG2, VC-1, WMV9, H.265/HEVC, VP8, JPEG/ MJPEG	DirectX 11.3, OpenGL 4.4, and OpenCL 2.1 Full AVC/VC1/MPEG2 HW Decode	DirectX* 11.1, OGL 3.0, OCL 1.1, OGL ES 2.0 ; Encode: H264, MPEG2/4, VC1, WMV9 Decode: H264, MPEG2	-
Up to 1920 x 1200 @ 60Hz	Up to 1920 x 1200 @ 60Hz	Up to 2048 x 1280	1
HDMI: 3840 x 2160 @ 30Hz	HDMI: 4096 x 2160 @24Hz ; Optional: DP and HDMI	DisplayPort : DP++1.2, resolution up to 2560 x 1600 x 24bpp @ 60Hz	-
Dual	Dual / Triple (Option)	Dual	-
1 x full size miniPCIe (With SIM holder)	2 x full size miniPCIe (One with SIM holder, one support mSATA)	1 x full-size mini PCIe ; 1 x half-size mini PCIe	-
1, 2230 E key for WIFI	-	-	1 x B Key, 1 x E key
1	1	1	1
-	-	-	1 x PCIe4, 1 x PCIe16
-	-	-	1
-	-	-	-
Supported	Supported	Supported	-
GbE1: Intel i210 GbE2: Intel i210	GbE1 : Intel i219 GbE2 : Intel i210	GbE1: Realtek 8119i GbE2: Realtek 8119i	GbE 1/2: Intel I210 GbE GbE3/4: Intel X550-AT2 (optional)
10/ 100/ 1000 Mbps	10/ 100/ 1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps 10Gbps (Optional)
HD Audio	HD Audio	HD Audio	-
Realtek ALC888S	Realtek ALC888S	Realtek ALC888S	-
Line out, Mic-in	Line-out, Mic-in	Line-out, Mic-in	-
Yes	Yes	Yes	Yes
1 x 2.5" SATAII HDD bay (Max up to 12.5mm in height)	1 x 2.5" SATAIII HDD bay (Max 12.5mm in height)	1 x 2.5" OR 3.5" SATA HDD bay (Max 26.1mm height only)	4 x 2.5" SATAIII HDD bays (Max 15mm in height)
1 x Full-size mSATA share with miniPCIe	1 x Full-size mSATA share with miniPCIe	1 (Share with full-size mini-PCIe)	-
-	-	-	-
2	4	1	4
4	2	7	-
8-bit Programmable DIO	8-bit Programmable DIO	8- bit DIO (Optional)	-
2 x RS232, 2 x RS232/ 422/ 485	4 x RS232/ 422/ 485	5 x RS-232 ; 1 x RS232/422/485	4 x RS-232/422/485
ATX/AT	ATX	ATX	AT/ATX
Default: 12 VDC, ± 10% ; Optional : 9-36V DC	Default: 12 VDC, ± 10% ; Optional : 9-36V DC	12 VDC, ± 10%	100-240V AC
Default: Lockable DC Jack ; Optional:2-pin phoenix head (MIOE-PWR2-00A1E)	Default: Lockable DC Jack ; Optional:2-pin phoenix head (MIOE-PWR2-00A1E)	DC Jack	C13
7.79W (CPU/Memory only)	6.92W (i3-6100U) / 7.96W (i7-6600U); 14.04W (i7-7600U)	15.7W	TBD
17.48W (CPU/Memory only)	41.72W (i3-6100U) / 43.28W(i7-6600U); 27.72W (i7-7600U)	24.7W	TBD
Lockable AC to DC, DC12V/5A, 60W (Optional)	Lockable AC to DC, DC12V/5A, 60W (Optional)	AC to DC, DC12V/5A, 60 W (Optional)	850W Power Supply
With extend temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F) . With standard temperature peripherals: 0 ~ 45 °C (32 ~ 113 °F)	With extend temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F) . With standard temperature peripherals: 0 ~ 45 °C (32 ~ 113 °F)	0 ~ 40 °C (32 ~ 104 °F) with 3.5" HDD ; 0 ~ 45 °C (32 ~ 113 °F) with 2.5" HDD. 0 ~ 50 °C (32 ~ 122 °F) with SSD/mSATA	With extended temp peripherals: -10 ~ 50 °C (14 ~ 122 °F) with 0.7m/s air flow
-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing
With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.	With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.	With HDD: 0.5 Grms, random, 5 ~ 500 Hz, 1 Oct/ min, 1 hr/axis	With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.
With SSD: 30 G, half sine, 11 ms duration	With SSD: 30 G, half sine, 11 ms duration	With HDD: 10 G, half sine, 11 ms duration	With SSD: 30 G, half sine, 11 ms duration
260 x 44 x 140.2 mm (10.24 x 1.73 x 5.52 in)	260 x 54 x 140.2 mm(10.24 x 2.13 x 5.52 in)	200 x 64 x 200 mm (7.87 x 2.51 x 7.67 in)	230 x 205 x 390 mm (9.05 x 8.07 x 15.35 in)
1.9 kg (4.19 lb)	2.3 kg (5.07 lb)	2.0 kg (4.41 lb)	TBD
Desk/ Wall/ VESA/ DIN-Rail mounting	Desk/ Wall/ VESA/ DIN-Rail mounting	Wall Mounting/VESA mounting (optional)	Desk
Windows 10	Windows 7, Windows 8.1, Windows 10	Windows 10	Windows 10/Server 2019
Yes	Yes	Yes	Yes (by project inquire)
WISE-DeviceOn	WISE-DeviceOn	WISE-DeviceOn	WISE-DeviceOn, DeviceOn/Edge
McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
CE/FCC class B, CCC, BSMI	CE/FCC class B, CCC, BSMI	CE/FCC class A, CCC, BSMI	CE/FCC class B, CCC, BSMI
CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMII

Intelligent Edge Computers

Performance Series



Model Name		ARK-3520P	ARK-3520L	ARK-3530L	ARK-3530F
CPU	CPU	6 th gen, Intel® Core™, i7-6820EQ, i5-6440EQ	6 th gen, Intel® Core™, i7-6820EQ, i5-6440EQ	6 th /7 th gen, Intel® Desktop Xeon E3/ Core™ i series (Support up to 65W)	6 th /7 th gen, Intel® Desktop Xeon E3/ Core™ i series (Support up to 65W)
	Frequency	2.8 GHz/2.7 GHz	2.8 GHz/2.7 GHz	by Processor	by Processor
	Core Number	4/4	4/4	by Processor	by Processor
	BIOS	AMI EFI 128Mbit	AMI EFI 128Mbit	AMI EFI 128Mbit	AMI EFI 128Mbit
	Chipset	Intel QM170	Intel QM170	Intel C236	Intel C236
Memory	Technology	DDR4 2133 MHz	DDR4 2133 MHz	DDR4 2133 MHz	DDR4 2133 MHz
	Max. Capacity	32GB	32GB	32GB	32GB
	Socket	2x 260-pin SODIMM	2x 260-pin SODIMM	2x 260-pin SODIMM	2x 260-pin SODIMM
Display	Chipset	Intel® QM170 Integrated GFX Gen 9	Intel® QM170 Integrated GFX Gen 9	Intel® C236 Integrated GFX Gen 9	Intel® C236 Integrated GFX Gen 9
	Graphic Engine	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	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	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	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	1920x1200@ 60Hz	1920x1200@ 60Hz	1920x1200@ 60Hz
	DDI	1 HDMI port, HDMI 1.4b for HD video playback, 3840x2160@30Hz; 3rd Display Module by Optional	1 HDMI port, HDMI 1.4b for HD video playback, 3840x2160@30Hz ; 3rd Display Module by Optional	1 HDMI port, HDMI 2.0 for HD video playback, 3840x2160@30Hz ; 3rd Display Module by Optional	1 HDMI port, HDMI 2.0 for HD video playback, 3840x2160@30Hz ; 3rd Display Module by Optional
	Multiple Display	Triple/Dual	Triple/Dual	Triple/Dual	Triple/Dual
Expansion Interface	Mini PCIe	2 x Full-size Mini PCIe (Supports mSATA)	2 x Full-size Mini PCIe (Supports mSATA)	2 x Full-size Mini PCIe (Supports mSATA)	2 x Full-size Mini PCIe (Supports mSATA)
	M.2	1	1	1	1
	SIM socket	1	1	1	1
	PCIe	Optional 2 slots PCIe4x4(AMO-R022E)	-	-	Optional 2 slots PCIe4x4(AMO-R026)
	PCI	2 PCI slots	-	-	2 PCI slots
	PCIe + PCI	-	-	-	-
	i Door	Supported	Supported	Supported	Supported
Ethernet	Controller	GbE1: Intel I219-LM GbE2 : Intel I-210	GbE1: Intel I219-LM GbE2 : Intel I-210	GbE1: Intel I219-LM GbE2 : Intel I-210	GbE1: Intel I219-LM GbE2/3/4 : Intel I-210
	Speed	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps
Audio	Audio Interface	HD Audio	HD Audio	HD Audio	HD Audio
	CODEC	ALC888S	ALC888S	ALC888S	ALC888S
	Connector	Line out, Mic in	Line out, Mic in	Line out, Mic in	Line out, Mic in
WatchDog Timer	WatchDog Timer	Yes	Yes	Yes	Yes
Storage	SATA	2 x 2.5" SATAIII HDD bay (Max 15 mm height)(SATA III, support Max. Data Transfer Rate 600 MB/s, Support RAID 0, 1)	1 x 2.5" SATAIII HDD bay (Max 15 mm height)(SATA III, support Max. Data Transfer Rate 600 MB/s, Support RAID 0, 1)	2 x (Optional up to 4) x 2.5" SATAIII HDD bay (Max 15 mm height)(SATA III, support Max. Data Transfer Rate 600 MB/s, Support RAID 0, 1, 5, 10)	2 x (Optional up to 4) x 2.5" SATAIII HDD bay (Max 15 mm height)(SATA III, support Max. Data Transfer Rate 600 MB/s, Support RAID 0, 1, 5, 10)
	mSATA	1 (Share with full-size mini-PCIe)	1 (Share with full-size mini-PCIe)	2(Share with full-size mini-PCIe)	2 (Share with full-size mini-PCIe)
I/O	USB3.1/3.2	-	-	-	-
	USB 3.0	6	6	8	8
	USB2.0	2	2	-	-
	GPIO	16-bit	16-bit	16-bit (optional)	16-bit (optional)
	COM Port	4 x RS232, 4 x RS232/422/485	4 x RS232, 4 x RS232/422/485	4 x RS232/422/485, 2 x RS232 (optional)	4 x RS232/422/485, 2 x RS232 (optional)
Power	Power Type	ATX	ATX	ATX	ATX
	Power Supply Voltage	9-36VDC	12 VDC, ± 10%	12 VDC, ± 10%	9-36VDC
	Connector	4pin phoenix head	Lockable DC jack	Lockable DC jack (4pin phoenix head with AMO-P010E)	4pin phoenix head
	Power Consumption (Idle: CPU/ Memory only)	11.4W	11.4W	25.68W	25.68W
	Power Consumption (Full Load: CPU/ Memory only)	68.4W	68.4W	88.92W	88.92W
Environment	Power Adaptor	150W (optional)	150W (optional)	150W (optional)	150W (optional)
	Operating Temperature(air flow 0.7 m/sec)	With SSD and extend temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F); With HDD and standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)	With SSD and extend temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F); With HDD and standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)	With SSD and extend temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F); With HDD and standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)	With SSD and extend temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F); With HDD and standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)
	Non-operating Temperature	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing
	Vibration Resistance	With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis. ; With HDD: 0.3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.	With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis. ; With HDD: 0.3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.	With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.	With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.
	Shock Protection	With SSD: 30 G, half sine, 11 ms duration With HDD: 20 G, half sine, 11 ms duration	With SSD: 30 G, half sine, 11 ms duration With HDD: 20 G, half sine, 11 ms duration	With SSD: 30 G, half sine, 11 ms duration	With SSD: 30 G, half sine, 11 ms duration
Physical Characteristics	Dimensions (W x H x D mm)	220 x 101 x 233 mm (8.66 x 3.98 x 9.17 in)	220 x 101 x 233 mm (8.66 x 3.98 x 9.17 in)	105 x 205 x 230 mm (4.13 x 8.07 x 9.06 in)	156.5 x 205 x 230 mm (6.16 x 8.07 x 9.06 in)
	Weight	4.4 kg (9.7 lb)	4.4 kg (9.7 lb)	5.3 kg (11.6 lb)	5.87 kg (12.9 lb)
	Mounting	Desk	Desk	Desk	Desk
Operating System	Microsoft Windows	Windows 7, Windows 10	Windows 7, Windows 10	Windows 7, Windows 10	Windows 7, Windows 10
	Linux	Yes (by project inquiry)	Yes (by project inquiry)	Yes (by project inquiry)	Yes (by project inquiry)
Software	DeviceOn	WISE-DeviceOn	WISE-DeviceOn	WISE-DeviceOn	WISE-DeviceOn
	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 B, CCC, BSMI	CE/FCC class B, CCC, BSMI
	Safety Certifications	CE LVD, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI



ARK-3531	ARK-3532B	ARK-3532C	ARK-3532D
8 th /9 th gen, Intel® Desktop Core™ i series (35W)	Intel® 10 th Gen. Xeon® W and Core™ i3/i5/i7/i9 processor	Intel® 10 th Gen. Xeon® W and Core™ i3/i5/i7/i9 processor	Intel® 10 th Gen. Xeon® W and Core™ i3/i5/i7/i9 processor
by Processor	by Processor	by Processor	by Processor
by Processor	by Processor	by Processor	by Processor
AMI EFI 128Mbit	AMI EFI 256Mbit	AMI EFI 256Mbit	AMI EFI 256Mbit
Intel H370	Intel W480E	Intel W480E	Intel W480E
DDR4 2666 MHz	DDR4 2933 MHz	DDR4 2933 MHz	DDR4 2933 MHz
64GB	64GB	64GB	64GB
2 x 260-pin SODIMM	2 x 260-pin SODIMM	2 x 260-pin SODIMM	2 x 260-pin SODIMM
Intel® UHD Graphics 630	Intel® UHD Graphics 630	Intel® UHD Graphics 630	Intel® UHD Graphics 630
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	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	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	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
2048x1280@60Hz	1920x1200@ 60Hz	1920x1200@ 60Hz	1920x1200@ 60Hz
HDMI 1.4 for HD video playback, 3840 x 2160 at 30Hz	1 HDMI port, HDMI 1.4 for HD video playback, 4096x2160@30Hz ; 3rd Display Module by Optional	1 HDMI port, HDMI 1.4 for HD video playback, 4096x2160@30Hz ; 3rd Display Module by Optional	1 HDMI port, HDMI 1.4 for HD video playback, 4096x2160@30Hz ; 3rd Display Module by Optional
Dual	Triple (Option) / Dual	Triple (Option) / Dual	Triple (Option) / Dual
1 x Full-size Mini PCIe (Supports mSATA), (M.2 B/M Key support by AMO-I026)	1 x Full-size Mini PCIe (1 x support mSATA, 1 x support SIM holder) #1	1 x Full-size Mini PCIe (1 x support mSATA, 1 x support SIM holder) #1	1 x Full-size Mini PCIe (1 x support mSATA, 1 x support SIM holder) #1
1 (E key)	1 (E key)	1 (E key)	1 (E key)
1	1	1	1
-	1 slot PCIe*4, 1 slot PCIe*16	1 slot PCIe*4,	-
-	-	2 Slot PCI	-
-	-	-	1 slot PCIe*4, 1 slot PCIe*16, 2 Slot PCI
-	-	-	-
GbE1: Intel I219-LM ; GbE2/3/4 : Intel I-210IT(3rd/4th LAN by project support)	GbE1: Intel I219-LM GbE ; GbE2/3/ 4: Intel I210 GbE	GbE1: Intel I219-LM GbE ; GbE2/3/ 4: Intel I210 GbE	GbE1: Intel I219-LM GbE ; GbE2/3/ 4: Intel I210 GbE
10/100/1000Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
HD Audio ALC888S	HD Audio ALC888S	HD Audio ALC888S	HD Audio ALC888S
Line-out/Mic-in (switch)	Line-out/Mic-in (switch)	Line-out/Mic-in (switch)	Line-out/Mic-in (switch)
Yes	Yes	Yes	Yes
2 x 2.5" SATAIII HDD bay (Max 9.5 mm height) (SATA III, support Max. Data Transfer Rate 600 MB/s, Support RAID 0, 1)	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)	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)	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)
1 (Share with full-size mini-PCIe)	1 x mSATA socket (Share with Mini PCIe)	1 x mSATA socket (Share with Mini PCIe)	1 x mSATA socket (Share with Mini PCIe)
2	4	4	4
6	4	4	4
-	-	-	-
16-bit	16-bit	16-bit	16-bit
4 x RS232; 4 x RS232/422/485	4 x RS-232/422/485; 2 x RS-232	4 x RS-232/422/485; 2 x RS-232	4 x RS-232/422/485; 2 x RS-232
ATX	AT/ATX	AT/ATX	AT/ATX
9-36VDC	9-36VDC	9-36VDC	9-36VDC
4pin phoenix head	4pin phoenix head	4pin phoenix head	4pin phoenix head
16.8W	30W	30W	30W
34.8W	64.8W	64.8W	64.8W
150W (optional)	230W (Optional)	230W (Optional)	230W (Optional)
With SSD and extend temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F); With HDD and standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)	Up to 65W processor with extended temp peripherals: -20 ~ 60° C (-4 ~ 140 °F) with 0.7m/s air flow with HDD: 0 ~ 40 °C (32 ~ 104 °F) with 0.7m/s air flow	Up to 65W processor with extended temp peripherals: -20 ~ 60° C (-4 ~ 140 °F) with 0.7m/s air flow with HDD: 0 ~ 40 °C (32 ~ 104 °F) with 0.7m/s air flow	Up to 65W processor with extended temp peripherals: -20 ~ 60° C (-4 ~ 140 °F) with 0.7m/s air flow with HDD: 0 ~ 40 °C (32 ~ 104 °F) with 0.7m/s air flow
-40 ~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40 ~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40 ~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing	-40 ~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH Non-Condensing
With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.	With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.	With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.	With SSD: 3 Grms, random, 5 ~ 500 Hz, 1 hr/axis.
With SSD: 30 G, half sine, 11 ms duration	With SSD: 30 G, half sine, 11 ms duration	With SSD: 30 G, half sine, 11 ms duration	With SSD: 30 G, half sine, 11 ms duration
200 x 75 x 215 mm (7.87 x 2.95 x 8.46 in)	156 x 204 x 230 mm (6.14 x 8.03 x 9.05 in)	156 x 204 x 230 mm (6.14 x 8.03 x 9.05 in)	197.2 x 204 x 230 mm (7.76 x 8.03 x 9.06 in)
3.2 kg/7.05	5.7 kg/ 1.5 lb	5.7 kg/ 1.5 lb	6.41 kg/14.1 lb
Desk	Desk	Desk	Desk
Windows 10	Windows 10	Windows 10	Windows 10
Yes (by project inquiry)	Yes (by project inquiry)	Yes (by project inquiry)	Yes (by project inquiry)
WISE-DeviceOn, DeviceOn/Kiosk+	WISE-DeviceOn, DeviceOn/iEdge	WISE-DeviceOn, DeviceOn/iEdge	WISE-DeviceOn, DeviceOn/iEdge
McAfee, Acronis	McAfee, Acronis	McAfee, Acronis	McAfee, Acronis
CE/FCC class B, CCC, BSMI	CE/FCC class B, CCC, BSMI	CE/FCC class B, CCC, BSMI	CE/FCC class B, CCC, BSMI
CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI	CB, UL, CCC, BSMI

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