

# Advantech Intelligent Modular IPC

- Form Factor, From Fanless to Fan-based
- Performance, From Atom™ to Core™ i
- From General Purposes to Definite Machine Vision Application

✓ Compact Size, Expandability & Modularization, Comprehensive Portfolio

- ✓ ARK
- ✓ AiMC
- ✓ AIIS

Production Automation

Visual Inspection

Process Control

Packing Automation

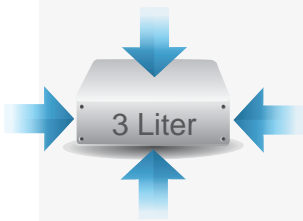


**ADVANTECH**

*Enabling an Intelligent Planet*

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# Key Features of Advantech Modular IPC



## Compact Size

### Features:

- Volume reduced, less than 50% of standard 4U system
- Occupies less than an A4 sheet of paper

### Benefits:

- Small, space saving footprint
- Easier cable routing



## Expandability & Modularization

### Features:

- PCI/ PCIe expansion systems
- Stacked configuration for customization

### Benefits:

- Cost-effective way to increase capacity and scalability
- Simplify installation time and process



## Comprehensive Portfolio

### Features:

- Fanless/ Fan-based systems to choose from
- Machine Vision Dedicated Systems

### Benefits:

- Meet all demands in reliability and performance
- 5 years warranty; 7 years longevity



## Security & Remote Management

### Features:

- Recovery powered by **Acronis** protected by **McAfee**
- Hardware status monitoring and control by **susiAccess**

### Benefits:

- Live system backup, whitelist protection
- Remote KVM, Power On/Off, system diagnosis and alerts

### Fanless Compact Systems



Quiet & Reliable

### Fan-based Compact Systems

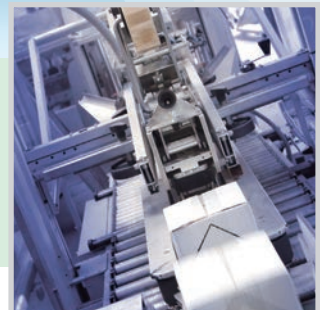


High Performance

### Machine Vision Systems



4-CH PoE& USB 3.0 Camera Interface



# ARK Series

## Solder Paste Inspection Elevates Production Process

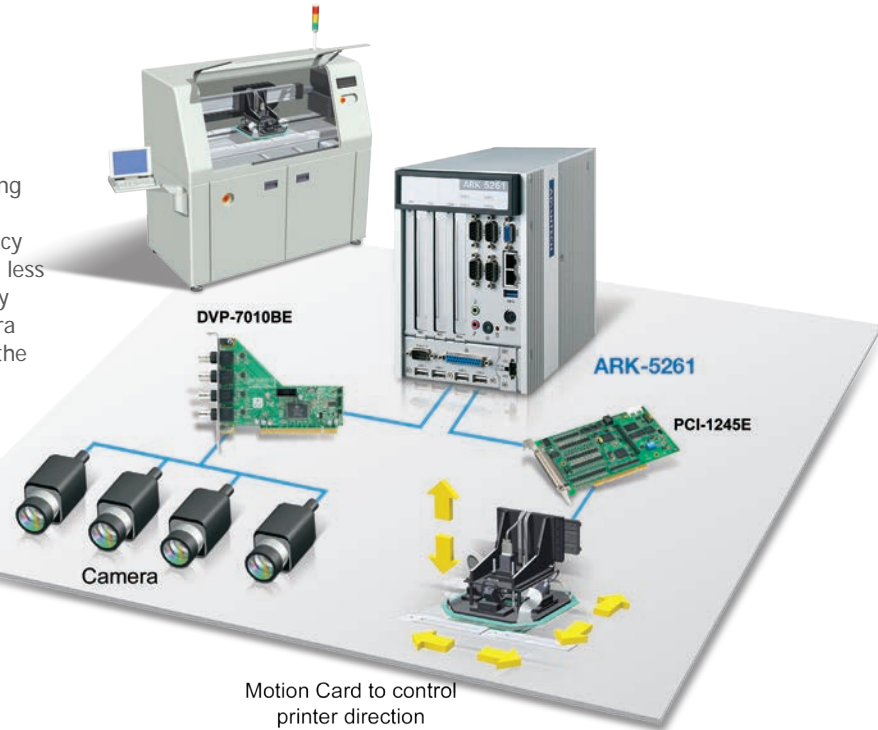
### ARK-5261

#### Case Overview

In the SMT (Surface Mount Technology) equipment race, manufacturers seek to introduce ever new functions and better-performing equipment, and SPI (Solder Paste Inspection) is a key function in the M/B SMT manufacturing process. In order for solder paste to be spread accurately on the PCB, SPI must be implemented with a high-accuracy motion control card so that paste can be painted on areas less than 1x1 mm in area. At the same time, to simultaneously monitor the thickness of the paste coating areas, a camera and a frame grabber card monitor the process, reducing the cost of labor inspection.

#### Case Requirement

- Fanless, reliable systems, Intel® Celeron™ J1900 Processor up to 2.41GHz
- The expansion capabilities of PCI-Express and PCI are paramount to implement axial control and camera inspection.
- The equipment space is limited, so compact size is a must.



## Auto Glass Cutting Machine

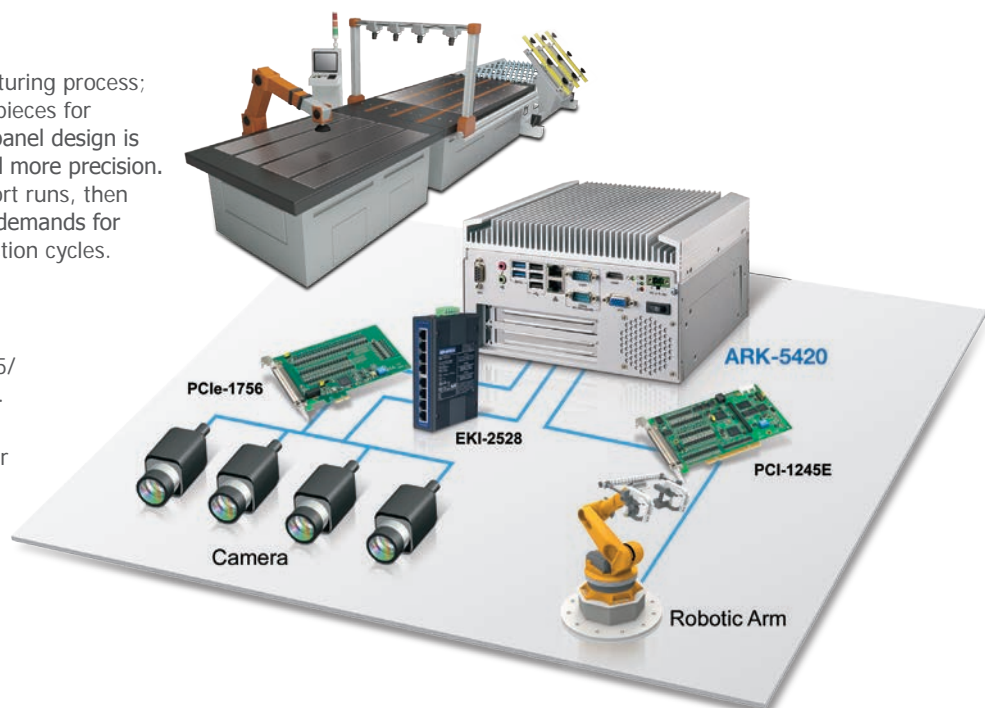
### ARK-5420

#### Case Overview

Glass cutting is part of the LED panel manufacturing process; large plates of glass are laser cut into smaller pieces for different sizes of panels. The market trend in panel design is toward slim sizes. These cuts require more and more precision. In addition, production lines must often do short runs, then shift set up to a different size. Add to this the demands for ever increasing output rate and shorter production cycles.

#### Case Requirement

- Fanless, high performance, Intel® Core™ i5/ Celeron box PC is a must for this application.
- LAN card and LAN switch with CCD camera.
- Visual capture and detection compatibility for the inspection process.
- I/O card to control the robotic arm.





# AiMC Series

## Automatic Optical Inspection Ensure Label Accuracy

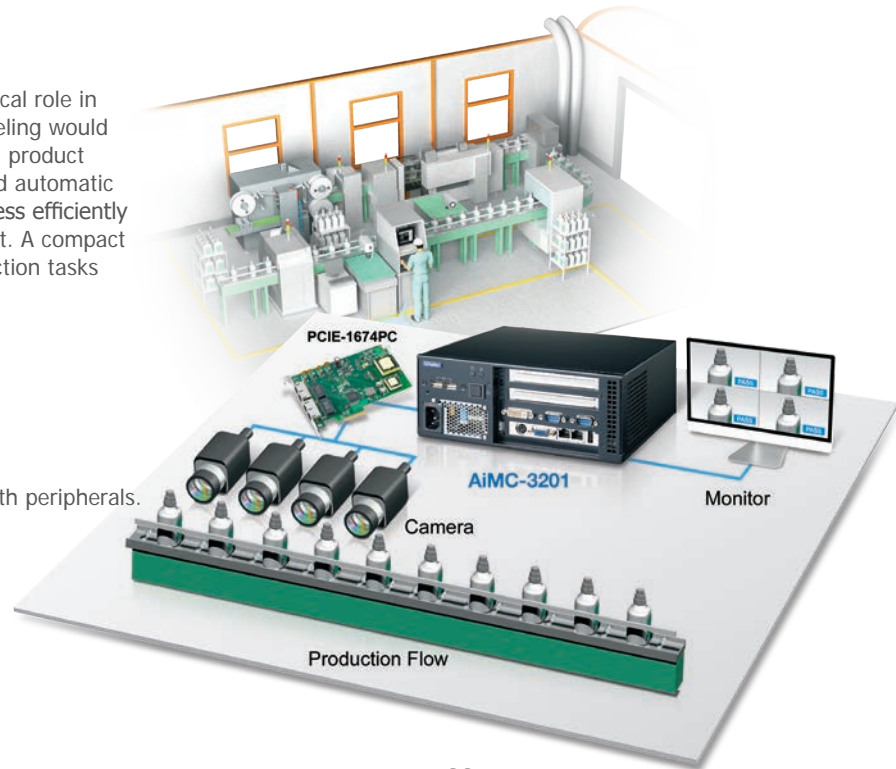
### AiMC-3201

#### Case Overview

Accurate labeling has been playing more and more critical role in today's packaging process among all industries. Mislabeling would pose threat to customers' health, safety and associated product recalls and law suits. Currently, the advent of IPC based automatic inspection system aims at speeding up inspection process efficiently and pursuing more reliable quality control with less cost. A compact and high performance system to accomplish daily inspection tasks can resolve the issue in the field.

#### Case Requirement

- A platform with 2 expansion slots
- It includes a high speed PCIe for frame grabber
- Compact size is preferred for built-in system
- The system shall be fully validated and integrated with peripherals.



## Automatic Wafer/LED Defect Inspection Improves Efficiency

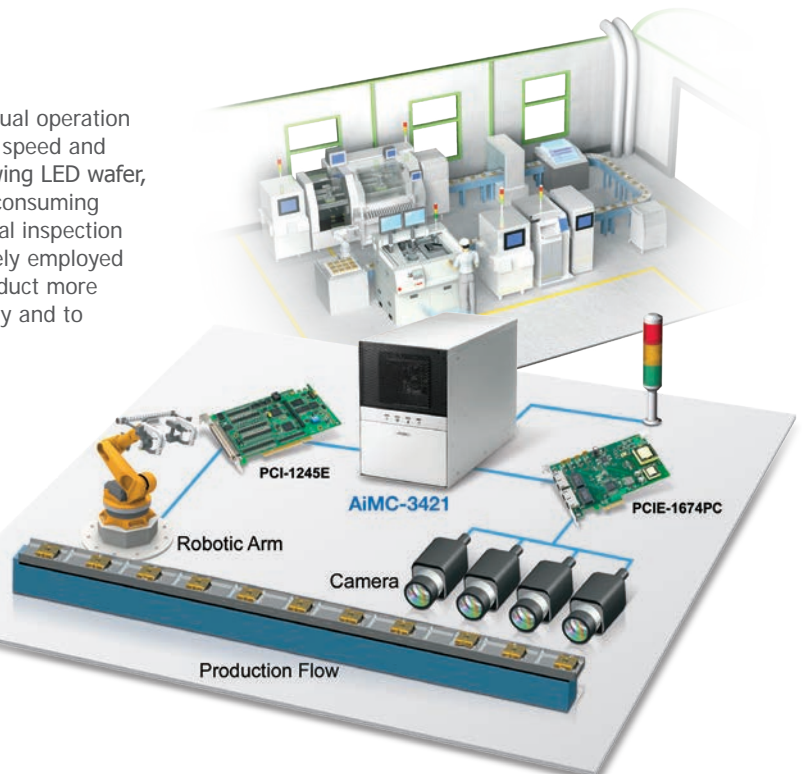
### AiMC-3421

#### Case Overview

When it comes to tiny components, human visual and manual operation more than often fail to meet the trade's high standards for speed and precision. Over one hundred grain-sized dies on a post-sawing LED wafer, using human inspection to detect defects is not only time-consuming but cannot avoid misjudgment. Nowadays, automatic optical inspection systems accompanied with robotic applications are massively employed by hi-tech manufactures for wafer defect inspection to conduct more reliable operations, to reduce extra costs, to improve quality and to enhance competitiveness.

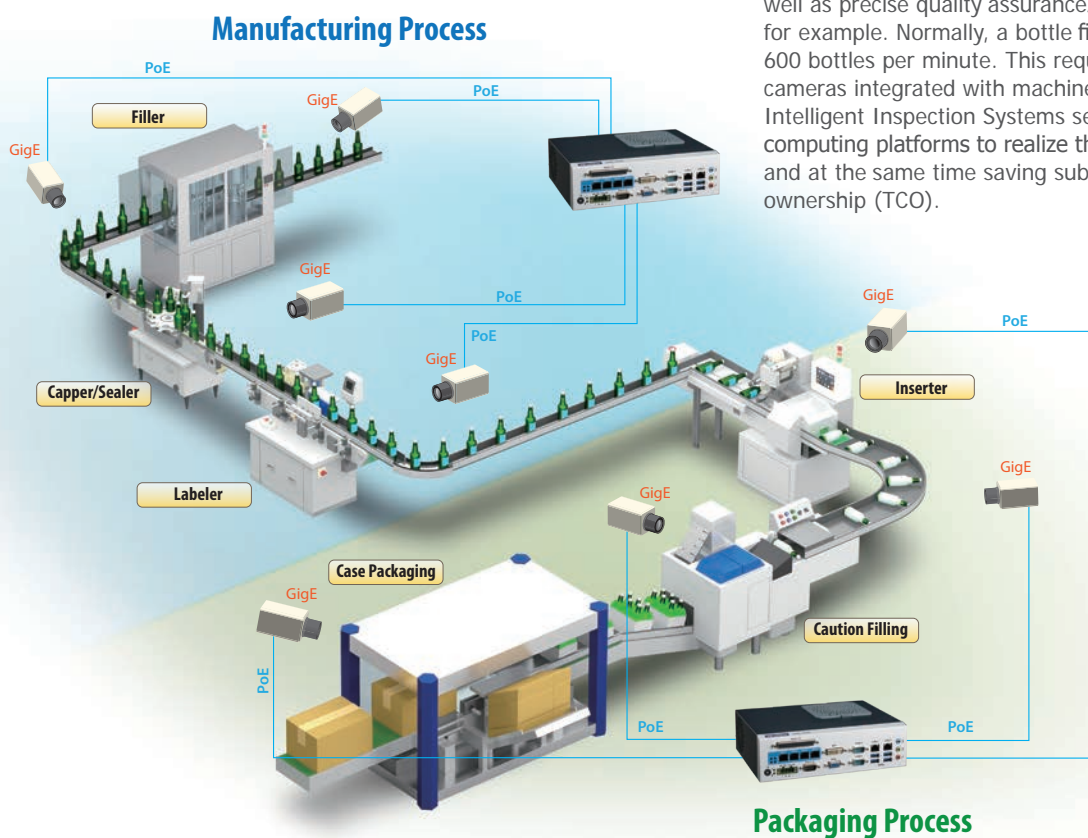
#### Case Requirement

- A platform with more than 2 expansion slots in addition to motion/ vision card
- Compact size is preferred for built-in system
- Higher speed interface
- The system shall be fully validated with compatibility and safety image inspection software.



# The Implementation of Machine Vision

Machine vision is widely implemented in the food and beverage industry because of the requirements for mass production as well as precise quality assurance/ control. Take beer manufacture for example. Normally, a bottle filler on a beer line processes 600 bottles per minute. This requires an array of high-frame-rate cameras integrated with machine vision. Accordingly, Advantech Intelligent Inspection Systems serve as reliable and speedy computing platforms to realize this machine vision application, and at the same time saving substantially on total cost of ownership (TCO).



## Design



Internal USB Lock

Easy-access Fan Filter

Tool-free Maintenance

Portrait Wall Mount

Wall Mount

DIN Rail Mount

## Vision Camera Interface

	GigE Vision (PoE)	USB 3.0 Vision
Bandwidth	1Gb/s	5Gb/s
Max. Cable Length	100m	3m
Cable Type	CAT5e or CAT6 Cables	USB 3.0 A Plug to Micro-B Plug Cables
Max. Power	15.4w	4.5w

# AIIS Series

## The Vision System for Tire Tread Inspection

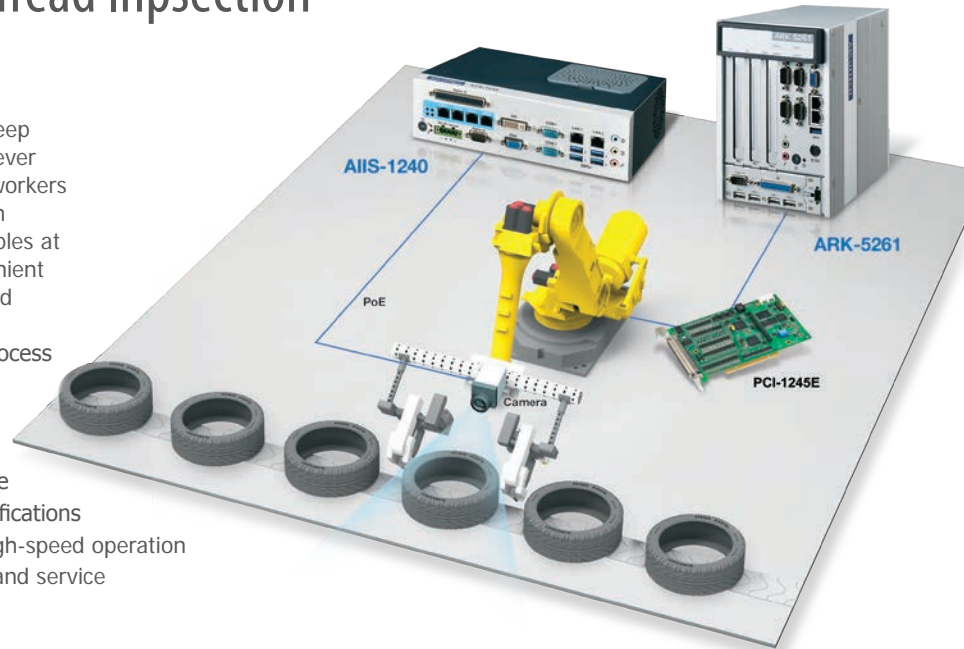
### AIIS-1240

#### Case Overview

As production costs and time to market pressure keep increasing, manufacturers are compelled to adopt ever more automated equipment to replace traditional workers and manual processes. Automated visual inspection equipment is one of the most widely applied examples at present. Our customer needed a simple and convenient way to develop inspection equipment for high speed production that would help manufacturers improve efficiency. Tire tread failure/limitation inspection process ensures product quality and safety.

#### Case Requirement

- A platform with sufficient computing performance
- Adequate external interfaces with common specifications
- High reliability and long-term durability under high-speed operation
- Longevity support, including multi-year support and service



## The Vision System for Packaging Inspection

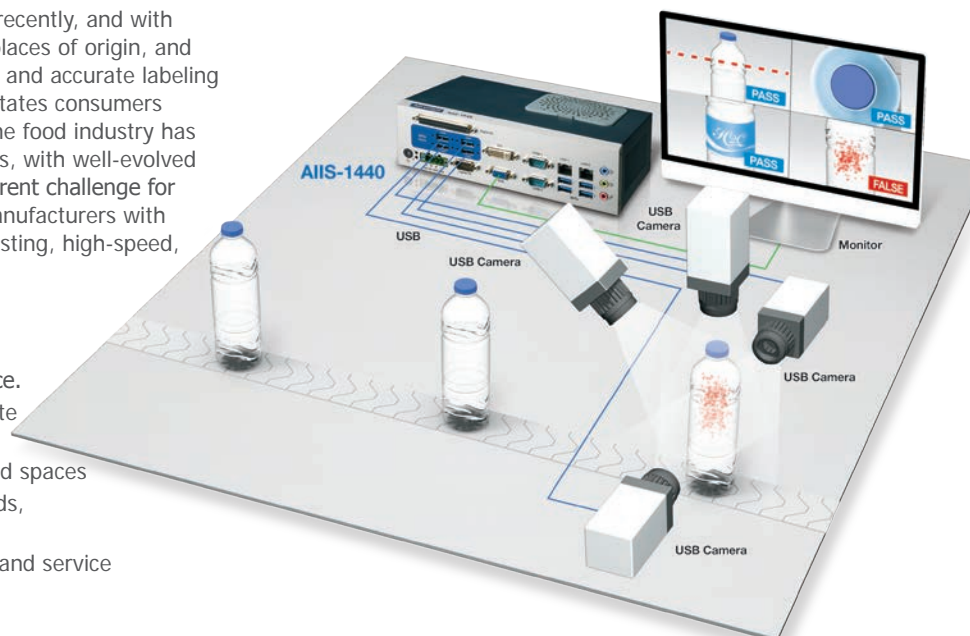
### AIIS-1440

#### Case Overview

Awareness of food safety has been mushrooming recently, and with consumers paying more attention to ingredients, places of origin, and other details when they purchase foodstuffs. Clear and accurate labeling applied to beverage/ foods during processing facilitates consumers make informed choices and consumer behavior. The food industry has implemented automated production for many years, with well-evolved procedures for filling, labeling, and shipping. A current challenge for System Integrators involves helping assist food manufacturers with the rapid checking of trademarks and labels on existing, high-speed, automated production lines.

#### Case Requirement

- A platform with sufficient computing performance.
- Common interfaces to easily and quickly integrate industrial cameras
- The system must be compact, suitable for limited spaces
- High reliability and durability for extended periods, under high-speed operation
- Longevity support, including multi-year support and service





# Selection Guide



Model Name		AiMC-3201	AiMC-3421	ARK-5261	ARK-5420	AIIS-1240	AIIS-1440
Form Factor		Compact	Compact	Compact	Compact	Compact	Compact
Processor System	Chipset	H81	H81	-	HM76	H61	H61
	CPU	Intel® core i7/ i5/ i3 LGA1150 Max. 3.2 GHz	Intel® core i7/ i5/ i3 LGA1150 Max. 3.2 GHz	Intel® Baytrail Celeron J1900 Max. 2.41GHz	Intel® core i7/i5/Celeron Max. 2.7 GHz	Intel® core i7/ i5/ i3 LGA1155 Max. 3.4 GHz	Intel® core i7/i5/i3 LGA1155 Max. 3.4 GHz
	Core	Max. 4	Max. 4	Max. 4	Max. 2	Max. 4	Max. 4
	Cache	Max. 8 MB	Max. 8 MB	Max. 2 MB	Max. 4MB	Max. 8 MB	Max. 8 MB
	Memory	DDR3 1033/1333/1600 MHz Max. 16 GB	DDR3 1033/1333/1600 MHz Max. 16 GB	DDR3L-1333 MHz Max.8GB	On-board 4Gb Memory + 1x DDR3 1333/1600MHz Max. 12GB	DDR3 1066/1333 MHz Max. 16 GB	DDR3 1-66/1333 MHz Max. 16GB
Graphic	Controller	Intel® HD Graphics	Intel® HD Graphics	Intel® HD Graphics	Intel® HD Graphics	Intel® HD Graphics	Intel® HD Graphics
	VRAM	Shared system memory is subject to OS	Shared system memory is subject to OS	Shared System Memory up to 224 MB SDRAM	Shared system memory is subject to OS	Shared system memory is subject to OS	Shared system memory is subject to OS
Expansion	PCIE x16	1*	1	-	-	-	-
	PCIE x8	-	-	-	-	-	-
	PCIE x4	1	-	-	1xPCIEx4	-	-
	PCIE x1	-	1	1xPCIEx1	-	-	-
	PCI	-	2	2xPCI or 3xPCI*	1xPCI	-	-
HDD Bay	3.5"	-	1 Internal	-	-	-	-
	2.5"	2 Internal	-	2 swappable HDD tray	1xSwappable HDD tray	1 Internal	1 internal
Ethernet	Interface	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps
	Controller	LAN1: Intel I217V LAN2: Intel I211AT	LAN1: Intel I217V; LAN2: Intel I211AT	LAN1: Intel i211 LAN2: Intel i211	"LAN1: Intel I210-AT LAN2: Intel I210-AT"	LAN1: Intel 82579V; LAN2: Intel 82583V	LAN1: Intel 82579V; LAN2: Intel 82583V
PoE	Interface	-	-	-	-	10/100/1000 Mbps	-
	Controller	-	-	-	-	CH1~4: Intel i210	-
Front I/O	Display	VGA+DVI	-	VGA	VGA+HDMI	VGA+DVI	VGA+DVI
	LAN	2	-	2	2	2	2
	USB	3 USB2.0	2 USB2.0	1 x USB3.0/5 x USB2.0	2xUSB3.0/3xUSB2.0	4 USB3.0	8 USB 3.0
	COM	2 RS-232	-	4 RS-232/422/485 or 4x RS-422/485 isolatoin	2 RS-232/422/485	2 RS-232/422/485	2 RS-232/422/485
	PS/2	1	-	1	-	-	-
	Audio	-	-	2 (Line-Out, Mic-in)	2 (Line-Out, Mic-in)	3 (Mic-in, Line-out, Line-in)	3 (Mic-in, Line-out, Line-in)
Rear I/O	Display	-	VGA	-	-	-	-
	LAN	-	2	-	-	-	-
	USB	-	1 USB2.0	-	-	4 US2.0	4 USB 2.0
	COM	-	2 RS-232	-	-	4 RS-232	4 RS-232
	PS/2	-	1	-	-	-	-
	Audio	-	-	-	-	-	-
Watchdog timer	Output	System reset	System reset	System reset	System reset	System reset	System reset
	Interval	Programmable 1 ~ 255 sec/min	Programmable 1 ~ 255 sec/min	Programmable 1~255 sec/min	Programmable 1~255 sec/min	Programmable 1 ~ 255 sec/min	Programmable 1~255 sec/min
Power Supply	Output Wattage	250W	250W	-	-	-	-
	Input Range	AC 100 ~ 240 V	AC 100 ~ 240 V	DC 9~30V	DC 9~36V	DC 19~24V	DC 19~24V
Cooling	System Fan	2 (6 cm / 27.7 CFM, each)	1 (9 cm / 53 CFM)	FanLess	FanLess	1 (6 cm / 27.7 CFM)	1 (6 cm / 27.7 CFM)
	Air Filter	Yes	Yes	-	-	Yes	Yes
Physical Characteristics	Dimensions (W x H x D)	232 x 90 x 232 mm (9.1" x 3.5" x 9.1")	150 x 222 x 270 mm (5.9" x 8.7" x 10.6")	137 x 189 x 221 mm (5.39" x 7.44" x 8.70")	253 x 129 x 240 mm (9.96"x5.07"x9.44")	232 x 70 x 175 mm (9.06" x 2.76" x 6.89")	232 x 70 x 175 mm (9.06" x 2.76" x 6.89")
	Weight	4.5 kg (9.9 lb)	5 kg (11 lb)	4.2 kg (9.24 lbs)	4.5kg (9.92 lbs)	2.5 kg (5.5 lb)	2.5 kg (5.5lb)

\* ARK-5261 has 2 SKU. One is 2xPCI+ 1xPCIEx1 and the other is 3xPCI+ 1xmini-PCIe

## Regional Service & Customization Centers

<b>China</b>	Kunshan 86-512-5777-5666	<b>Taiwan</b>	Taipei 886-2-2792-7818	<b>Netherlands</b>	Eindhoven 31-40-267-7000	<b>Poland</b>	Warsaw 48-22-33-23-740/41	<b>USA/ Canada</b>	Milpitas, CA 1-408-519-3898
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## Worldwide Offices

### Greater China

<b>China</b>	<b>Toll Free</b> 800-810-0345
Beijing	86-10-6298-4346
Shanghai	86-21-3632-1616
Shenzhen	86-755-8212-4222
Chengdu	86-28-8545-0198
Hong Kong	852-2720-5118
<b>Taiwan</b>	<b>Toll Free</b> 0800-777-111
Neihu	886-2-2792-7818
Xindian	886-2-2218-4567
Taichung	886-4-2378-6250
Kaohsiung	886-7-229-3600

### Asia Pacific

<b>Japan</b>	<b>Toll Free</b> 0800-500-1055
Tokyo	81-3-6802-1021
Osaka	81-6-6267-1887
<b>Korea</b>	<b>Toll Free</b> 080-363-9494
Seoul	82-2-3663-9494
<b>Singapore</b>	Singapore 65-6442-1000
<b>Malaysia</b>	<b>Toll Free</b> 1800-88-1809
Kuala Lumpur	60-3-7725-4188
Penang	60-4-537-9188
<b>Indonesia</b>	Jakarta 62-21-769-0525
<b>Thailand</b>	Bangkok 66-2-248-3140
<b>India</b>	<b>Toll Free</b> 1800-425-5070
Bangalore	91-80-2545-0206
<b>Australia</b>	<b>Toll Free</b> 1300-308-531
Melbourne	61-3-9797-0100
Sydney	61-2-9476-9300

### Europe

<b>Toll Free</b> 00800-2426-8080	
<b>Germany</b>	
München	49-89-12599-0
Hilden / D'dorf	49-2103-97-885-0
<b>France</b>	
Paris	33-1-4119-4666
<b>Italy</b>	
Milano	39-02-9544-961
<b>Benelux &amp; Nordics</b>	
Breda	31-76-5233-100
<b>UK</b>	
Reading	44-0118-929-4540
<b>Poland</b>	
Warsaw	48-22-33-23-740/41
<b>Russia</b>	
<b>Toll Free</b> 8-800-555-01-50	
Moscow	7-495-232-1692

### Americas

<b>North America</b>	<b>Toll Free</b> 1-888-576-9668
Cincinnati	1-513-742-8895
Milpitas	1-408-519-3898
Irvine	1-949-420-2500
<b>South America</b>	<b>Toll Free</b> 1-800-467-2415
Mexico	52-55-6275-2777
<b>Brazil</b>	<b>Toll Free</b> 0800-770-5355
Saude-São Paulo	55-11-5592-5355

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