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.

**Empowered Edge Computing**

Edge Computers

**Performance**

ARK-3000 Series
- High performance multifunction capabilities
- Intel® software RAID
- Flexible PCI/PCIe expansion

ARK-2000 Series
- Medium-to-high performance solution
- Versatile I/Os
- Supports iDoor/ARK Plus modules and 100+ configurations

**Stackable**

ARK-1200 Din-rail Series
- Front-side I/O for in cabinet installation
- Wide range DC power input

**DIN-rail**

ARK-1100 Series
- Palm-sized design
- Low power consumption
- Wi-Fi kit supported (selected models)

**Compact**

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™ VPUs
WISE-DeviceOn
Connected devices, software monitoring and control

DeviceOn/iEdge
Industrial protocols and data integration

DeviceOn/Kiosk+
Remote kiosk management

EdgeAI Suite
AI model deployment and performance optimization
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

**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
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.

### 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.

### Edge Computing Solutions

**ARK-1124U**
- Dual LAN, M.2 E key, mPCIe with SIM socket for wireless network integration.
- 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.

### 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.

### Built-in

**WISE-DeviceOn**

- 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
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

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**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)

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**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
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.

**Edge Computing Solutions**

- **ARK-3532**
  - 10th Gen Intel® Xeon®/Core™ i LGA1200 processors
  - 2 x/3 x/4 x PCI/PCIe/PCIex16 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
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

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**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
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 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
## Compact Series

### Intel® Celeron® DC N3350

- **Controlled**
  - GBE 1: Intel i210
  - GBE 2: Intel i210
- **Speed**
  - 10/100 1000 Mbps
- **Audio Interface**
  - HD Audio
- **COEDEC**
  - ALL-866-202-GR
- **Connector**
  - Line-in, Line-out
  - Line-in, Line-out
- **WatchDog Timer**
  - Yes
- **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)
- **Power Consumption**
  - 5.28W
- **Power Adapter**
  - Lockable AC to DC, DC12 V/3 A, 36 W
- **Dimensions**
  - 133.6 x 83.1 x 19.6 mm
- **Weight**
  - 1.5 kg (3.31 lbs)
- **Mounting**
  - Optional DIN Rail, VESA Wall mount
- **Operating System**
  - Yes (Windows 7, 8, 8.1, 10)
- **Certification**
  - CE/FCC Class A, B, CSMI, BSMI

### Intel® Atom® QC E3940

- **Controlled**
  - GBE 1: Intel i210
  - GBE 2: Intel i210
- **Speed**
  - 10/100 1000 Mbps
- **Audio Interface**
  - HD Audio
- **COEDEC**
  - ALL-866-202-GR
- **Connector**
  - Line-in, Line-out
- **WatchDog Timer**
  - Yes
- **SATA**
  - 1 x 2.5" SATA drive bay (Max 9.5mm height only)
- **Power Consumption**
  - 5.28W
- **Power Adapter**
  - Lockable AC to DC, DC12 V/3 A, 36 W
- **Dimensions**
  - 133.6 x 83.1 x 19.6 mm
- **Weight**
  - 1.5 kg (3.31 lbs)
- **Mounting**
  - Optional DIN Rail, VESA Wall mount
- **Operating System**
  - Yes (Windows 7, 8, 8.1, 10)
- **Certification**
  - CE/FCC Class A, B, CSMI, BSMI

### Intel® Celeron® 4305UE

- **Controlled**
  - GBE 1: Intel i210
  - GBE 2: Intel i210
- **Speed**
  - 10/100 1000 Mbps
- **Audio Interface**
  - HD Audio
- **COEDEC**
  - ALL-866-202-GR
- **Connector**
  - Line-in, Line-out
- **WatchDog Timer**
  - Yes
- **SATA**
  - 1 x 2.5" SATA drive bay (Max 9.5mm height only)
- **Power Consumption**
  - 5.28W
- **Power Adapter**
  - Lockable AC to DC, DC12 V/3 A, 36 W
- **Dimensions**
  - 133.6 x 83.1 x 19.6 mm
- **Weight**
  - 1.5 kg (3.31 lbs)
- **Mounting**
  - Optional DIN Rail, VESA Wall mount
- **Operating System**
  - Yes (Windows 7, 8, 8.1, 10)
- **Certification**
  - CE/FCC Class A, B, CSMI, BSMI

### Intel® Celeron 4305UE Intel® i5-8365UE

- **Controlled**
  - GBE 1: Intel i210
  - GBE 2: Intel i210
- **Speed**
  - 10/100 1000 Mbps
- **Audio Interface**
  - HD Audio
- **COEDEC**
  - ALL-866-202-GR
- **Connector**
  - Line-in, Line-out
- **WatchDog Timer**
  - Yes
- **SATA**
  - 1 x 2.5" SATA drive bay (Max 9.5mm height only)
- **Power Consumption**
  - 5.28W
- **Power Adapter**
  - Lockable AC to DC, DC12 V/3 A, 36 W
- **Dimensions**
  - 133.6 x 83.1 x 19.6 mm
- **Weight**
  - 1.5 kg (3.31 lbs)
- **Mounting**
  - Optional DIN Rail, VESA Wall mount
- **Operating System**
  - Yes (Windows 7, 8, 8.1, 10)
- **Certification**
  - CE/FCC Class A, B, CSMI, BSMI
<table>
<thead>
<tr>
<th>ARK-1124U</th>
<th>ARK-1124H</th>
<th>ARK-1220L</th>
<th>ARK-1220F</th>
<th>ARK-1551</th>
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<tr>
<td>Intel® Celeron® DC N3350</td>
<td>Intel® Atom® QC E3940</td>
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<td>1.6GHz, turbo burst 1.8 GHz</td>
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<td>1 x 204-pin SO-DIMM</td>
<td>2 x 204-pin SO-DIMM</td>
<td>2 x 204-pin SO-DIMM</td>
<td>2 x 260-pin SO-DIMM, Each SO-DIMM up to 16GB</td>
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<td>4x USB3.0/3.2, 1 x Lockable HDMI, support up to 3840 x 2160 x 30Hz</td>
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<td>1 x Full-size MiniPCIe w/ SIM</td>
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<td>1 x Full-size MicroPCIE w/ nano SIM</td>
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<td>Intel® UHD Graphics 610</td>
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<td>Intel® Atom® QC E3940</td>
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<td>Intel® Celeron® 4303E/Intel® Celeron® 3358E/Intel® Celeron® 3355E</td>
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<td>AMD® E3825</td>
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<td>Core® i7, Core® i5, Core® i3, Celeron®: AC to DC, 120W for -20 ~ 55 °C (Optional)</td>
<td>Core® i7, Core® i5, Core® i3, Celeron®: AC to DC, 120W for -20 ~ 55 °C (Optional)</td>
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<td>Core® i7, Core® i5, Core® i3, Celeron®: AC to DC, 120W for -20 ~ 55 °C (Optional)</td>
<td>Core® i7, Core® i5, Core® i3, Celeron®: AC to DC, 120W for -20 ~ 55 °C (Optional)</td>
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<td>-40~ 85 °C (-40 ~ 185 °F)</td>
<td>-40~ 85 °C (-40 ~ 185 °F)</td>
<td>-40~ 85 °C (-40 ~ 185 °F)</td>
<td>-40~ 85 °C (-40 ~ 185 °F)</td>
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<tr>
<td>195 x 155 x 44 mm (7.68 x 6.1 x 1.73 in)</td>
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**Intelligent Edge Computers**

**Product Selection Guide**
## Intelligent Edge Computers

### Modular Series

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<thead>
<tr>
<th>Model Name</th>
<th>ARK-2121L</th>
<th>ARK-2121F</th>
<th>ARK-2230L</th>
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</thead>
<tbody>
<tr>
<td><strong>CPU</strong></td>
<td>Intel® Celeron® J1900 SoC</td>
<td>Intel® Celeron® J1900 SoC</td>
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<td>2.0 GHz, turbo boost up to 2.42GHz</td>
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<td>AMI 64Bit</td>
<td>AMI 64Bit</td>
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<td>DDR3L 1333 MHz</td>
<td>DDR3L 1333 MHz</td>
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<tr>
<td>Max. Capacity</td>
<td>8GB</td>
<td>8GB</td>
<td>8GB</td>
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<tr>
<td>Socket</td>
<td>1 x 204pin SODIMM</td>
<td>1 x 204pin SODIMM</td>
<td>1 x 204pin SODIMM</td>
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<td>VGA</td>
<td>Up to 2048 x 1152 @ 60Hz</td>
<td>Up to 2048 x 1152 @ 60Hz</td>
<td>Up to 2048 x 1152 @ 60Hz</td>
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<td>DD1</td>
<td>HDMI: 1920 x 1080 @ 60Hz</td>
<td>Optional: HDMI and DVI</td>
<td>HDMI: 1920 x 1080 @ 60Hz</td>
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<td>Multiple Display</td>
<td>Dual</td>
<td>Dual / Triple (Option)</td>
<td>Dual</td>
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<td><strong>Expansion Interface</strong></td>
<td>1 x full size Mini PCIe (With SIM holder)</td>
<td>2 x full size Mini PCIe (With SIM holder)</td>
<td>1 x full size Mini PCIe (With SIM holder)</td>
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<tr>
<td>M.2</td>
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<td>SIM socket</td>
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<tr>
<td>PCIe + PCI</td>
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<td>i Door</td>
<td>Supported</td>
<td>Supported</td>
<td>Supported</td>
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<td>GbE1: Intel i210</td>
<td>GbE1: Intel i210</td>
<td>GbE1: Intel i210</td>
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<td>Controller</td>
<td>GbE2: Intel i210</td>
<td>GbE2: Intel i210</td>
<td>GbE2: Intel i210</td>
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<td>Speed</td>
<td>10/100/1000 Mbps</td>
<td>10/100/1000 Mbps</td>
<td>10/100/1000 Mbps</td>
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<tr>
<td><strong>Audio</strong></td>
<td>HD Audio</td>
<td>HD Audio</td>
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<td><strong>Codec</strong></td>
<td>Realtek ALC888</td>
<td>Realtek ALC888</td>
<td>Realtek ALC888</td>
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<tr>
<td><strong>Connector</strong></td>
<td>Line-in, Line out, Mic-in</td>
<td>Line-in, Line out, Mic-in</td>
<td>Line-in, Line out, Mic-in</td>
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<tr>
<td><strong>WatchDog Timer</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>1 x 2.5&quot; SATAIII HDD bay (Max up to 12.5mm in height)</td>
<td>1 x 2.5&quot; SATAIII HDD bay (Max up to 12.5mm in height)</td>
<td>1 x 2.5&quot; SATAIII HDD bay (Max up to 12.5mm in height)</td>
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<tr>
<td>mSATA</td>
<td>1 x Full-size mSATA with USB signal co-layer</td>
<td>1 x Full-size mSATA with USB signal co-layer</td>
<td>1 x Full-size mSATA with USB signal co-layer</td>
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<td><strong>I/O</strong></td>
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<td>-</td>
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<td>USB 3.0</td>
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<td>USB 2.0</td>
<td>3</td>
<td>1</td>
<td>4</td>
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<tr>
<td><strong>GPIO</strong></td>
<td>8-bit Programmable DIO</td>
<td>8-bit Programmable DIO</td>
<td>8-bit Programmable DIO</td>
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<tr>
<td><strong>COM Port</strong></td>
<td>2 x RS232, 2 x RS232/422/485</td>
<td>6 x RS232/422/485</td>
<td>2 x RS232, 2 x RS232/422/485</td>
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<tr>
<td><strong>Power</strong></td>
<td>ATX</td>
<td>ATX</td>
<td>ATX</td>
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<tr>
<td><strong>Power Supply Voltage</strong></td>
<td>9~36VDC</td>
<td>9~36VDC</td>
<td>Default: 12V, ±10%; Optional: 9-36V DC</td>
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<td>Connector</td>
<td>2-pin phoenix head</td>
<td>2-pin phoenix head</td>
<td>Default: Lockable DC Jack; Optional: 2-pin phoenix head (MIOE-PWR2-00A1E)</td>
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<tr>
<td><strong>Power Consumption (Idle: CPU/ Memory only)</strong></td>
<td>7.5W (CPU/Memory only)</td>
<td>8.4W (CPU/Memory only)</td>
<td>7.9W (CPU/Memory only)</td>
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<tr>
<td><strong>Power Consumption (Full Load: CPU/ Memory only)</strong></td>
<td>13.3W (CPU/Memory only)</td>
<td>16.2W (CPU/Memory only)</td>
<td>13.3W (CPU/Memory only)</td>
</tr>
<tr>
<td><strong>Power Adapter</strong></td>
<td>Lockable AC to DC, DC19V/3.42A 65W (Optional)</td>
<td>Lockable AC to DC, DC19V/3.42A 65W (Optional)</td>
<td>Lockable AC to DC, DC19V/3.42A 65W (Optional)</td>
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<tr>
<td><strong>Environment</strong></td>
<td>Operating Temperature (air flow 0.7 m/sec)</td>
<td>With standard temperature peripherals: -20 ~ 70 °C (4 ~ 140 °F)</td>
<td>With standard temperature peripherals: -20 ~ 70 °C (4 ~ 140 °F)</td>
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<tr>
<td><strong>Physical Characteristics</strong></td>
<td>Weight</td>
<td>2.3 kg (5.07 lb)</td>
<td>2.3 kg (5.07 lb)</td>
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<tr>
<td><strong>Operating System</strong></td>
<td>Microsoft Windows</td>
<td>Windows 7, Windows 8, Windows 10</td>
<td>Windows 7, Windows 8, Windows 10</td>
</tr>
<tr>
<td>System</td>
<td>Linux</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Certification</td>
<td>E/ECOC class A, CCC, BSMI</td>
<td>E/ECOC class A, CCC, BSMI</td>
<td>E/ECOC class A, CCC, BSMI</td>
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<tr>
<td>Safety Certifications</td>
<td>CB, UL, CCC, BSMI</td>
<td>CB, UL, CCC, BSMI</td>
<td>CB, UL, CCC, BSMI</td>
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</tbody>
</table>
### ARK-2232L
- **Software Device**:
  - WISE-DeviceOn
- **Operating System**:
  - DeviceOn/iEdge

### ARK-2250L
- **Software Device**:
  - WISE-DeviceOn
- **Operating System**:
  - DeviceOn/iEdge

### ARK-6322
- **Software Device**:
  - WISE-DeviceOn
- **Operating System**:
  - DeviceOn/iEdge

### ARK-7060
- **Software Device**:
  - DeviceOn
- **Operating System**:
  - DeviceOn

### Entry, Multi-I/O Series
<table>
<thead>
<tr>
<th>Model</th>
<th>CPU</th>
<th>Memory</th>
<th>GPU</th>
<th>Graphics Core</th>
<th>Decode Engine</th>
<th>DirectX*</th>
<th>OpenGL</th>
<th>OCL</th>
<th>OGL ES 2.0</th>
<th>GPU Frequency</th>
<th>GPU Frequency</th>
<th>Decoding Engine</th>
<th>Operating System</th>
<th>DAC</th>
<th>Codec</th>
<th>Interfaces</th>
<th>Power Supply</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARK-2232L</td>
<td>Intel Atom™ E3840</td>
<td>DDR3L 1866 MHz</td>
<td>Intel® Celeron® J1900 SoC</td>
<td>Realtek ALC888S</td>
<td>Full AVC/VC1/MPEG2 HW Decode</td>
<td>DirectX 11.1, OpenGL 4.4, and OpenGL 2.1</td>
<td>DirectX 11.1, OGL 3.0, OCL 1.1, OGL ES 2.0</td>
<td>H.264, MPEG2, VC1, WMV9</td>
<td>2.0 GHz, turbo boost up to 2.42GHz</td>
<td>65W (Optional)</td>
<td>CB, UL, CCC, BSMI</td>
<td>Windows 10</td>
<td>Realtek</td>
<td>2 x RS232, 2 x RS232/422/485</td>
<td>1.9 kg (4.19 lb)</td>
<td></td>
<td></td>
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<tr>
<td>ARK-2250L</td>
<td>Core™ (7-8600U/13-6100U) (5-8600U by project)</td>
<td>DDR3L 1866 MHz</td>
<td>Intel® Celeron® J1900 SoC</td>
<td>Realtek ALC888S</td>
<td>Full AVC/VC1/MPEG2 HW Decode</td>
<td>DirectX 11.1, OpenGL 4.4, and OpenGL 2.1</td>
<td>DirectX 11.1, OGL 3.0, OCL 1.1, OGL ES 2.0</td>
<td>H.264, MPEG2, VC1, WMV9</td>
<td>2.0 GHz, turbo boost up to 2.42GHz</td>
<td>65W (Optional)</td>
<td>CB, UL, CCC, BSMI</td>
<td>Windows 10</td>
<td>Realtek</td>
<td>2 x RS232, 2 x RS232/422/485</td>
<td>2.3 kg (5.07 lb)</td>
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<tr>
<td>ARK-6322</td>
<td>Core™ (7-8600U/13-6100U) (5-8600U by project)</td>
<td>DDR3L 1866 MHz</td>
<td>Intel® Celeron® J1900 SoC</td>
<td>Realtek ALC888S</td>
<td>Full AVC/VC1/MPEG2 HW Decode</td>
<td>DirectX 11.1, OpenGL 4.4, and OpenGL 2.1</td>
<td>DirectX 11.1, OGL 3.0, OCL 1.1, OGL ES 2.0</td>
<td>H.264, MPEG2, VC1, WMV9</td>
<td>2.0 GHz, turbo boost up to 2.42GHz</td>
<td>65W (Optional)</td>
<td>CB, UL, CCC, BSMI</td>
<td>Windows 10</td>
<td>Realtek</td>
<td>2 x RS232, 2 x RS232/422/485</td>
<td>2.0 kg (4.41 lb)</td>
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<tr>
<td>ARK-7060</td>
<td>Core™ (7-8600U/13-6100U) (5-8600U by project)</td>
<td>DDR3L 1866 MHz</td>
<td>Intel® Celeron® J1900 SoC</td>
<td>Realtek ALC888S</td>
<td>Full AVC/VC1/MPEG2 HW Decode</td>
<td>DirectX 11.1, OpenGL 4.4, and OpenGL 2.1</td>
<td>DirectX 11.1, OGL 3.0, OCL 1.1, OGL ES 2.0</td>
<td>H.264, MPEG2, VC1, WMV9</td>
<td>2.0 GHz, turbo boost up to 2.42GHz</td>
<td>65W (Optional)</td>
<td>CB, UL, CCC, BSMI</td>
<td>Windows 10</td>
<td>Realtek</td>
<td>2 x RS232, 2 x RS232/422/485</td>
<td>TBD</td>
<td></td>
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</tr>
</tbody>
</table>

**Certifications**:
- Safety: CE, FCC class B, CCC, BSMI
- Other: McAfee, Acronis

**Power Supply**:
- BSMII
- CB, UL, CCC, BSMI
- Windows 10
- Windows 10 Server 2019

**Physical Environment**:
- Power: 100-240VAC
- Temperature: 0 ~ 45 °C (32 ~ 113 °F)
- Humidity: 20 ~ 80% RH non-condensing

**I/O**:
- COM Port: 2 x RS232, 2 x RS232/422/485
- GPIO: 8-bit Programmable DIO
- USB: 3.0 x 1, 2230 E key for WIFI
- SATA: 1 x full-size miniPCIe (With SIM holder)
- SSD: 1 x 2.5" OR 3.5" SATA HDD bay
- DisplayPort: 1 x DP, 1 x HDMI, 1 x DVI

**Power Adaptor**:
- Lockable AC to DC, DC19V/3.42A, 65W (Optional)

**Hold Down Timer**:
- WatchDog Timer

**Video**:
- HDMI: 1920 x 1080 @ 60Hz
- VGA: Up to 2048 x 1152 @ 60Hz
- DVI: Optional: HDMI and DVI
- DisplayPort: 4096 x 2160 @ 24Hz; Optional: DP and HDMI

**Memory**:
- DDR3L 1866 MHz
- DDR4 2666 MHz

**CPU**:
- Intel® Celeron® J1900 SoC
- AMD A8-6410 X2 1.2 GHz
- AMD E1-6015 1.45 GHz
- AMD E2 6110 1.6 GHz
- AMD E1-6010 1.05 GHz

**Weight**:
- ARK-2232L: 1.9 kg (4.19 lb)
- ARK-2250L: 2.3 kg (5.07 lb)
- ARK-6322: 2.0 kg (4.41 lb)
- ARK-7060: TBD

**Product Selection**:
- Entry, Multi-I/O Series
- Extreme Series

**Preliminary**
- Windows 10
- Windows 10 Server

**Environmental**
- Operating Temperature: 0 ~ 45 °C (32 ~ 113 °F)
- Storage Temperature: -40 ~ 85 °C (-40 ~ 185 °F) and 40 °C (104 °F) @ 95% RH non-condensing

**Dimensions**
- ARK-2232L: 264.5 x 68.4 x 133.0 mm (10.41 x 2.69 x 5.24 in)
- ARK-2250L: 264.5 x 68.4 x 133.0 mm (10.41 x 2.69 x 5.24 in)
- ARK-6322: 260 x 44 x 140.2 mm (10.24 x 1.73 x 5.52 in)
- ARK-7060: TBD

**Supply Voltage**
- ATX: 5V (3A), 12V (16A), 24V (16A)

**RAM**
- DDR3L 1866 MHz
- DDR4 2666 MHz

**BIOS**
- AMI 64Mbit

**Display**
- HDMI: 1920 x 1080 @ 60Hz
- VGA: Up to 2048 x 1152 @ 60Hz
- DVI: Optional: HDMI and DVI

**Ethernet**
- GbE1: Intel i210
- GbE2: Intel i210
- GbE3: Intel X550-AT2 (optional)
- GbE4: Realtek 8119i

**Audio**
- HD Audio

**GPIO**
- 8-bit Programmable DIO
- 8-bit DIO (Optional)

**Mounting Options**
- Desk/ Wall/ VESA/ DIN-Rail mounting

**LinkedIn**
- @ DeviceOn

**Website**
- DeviceOn.com

**Contact**
- DeviceOn™, 5000 Commerce Parkway, Suite 200, Alpharetta, GA 30004, USA
- Phone: (770) 954-8000
- Fax: (770) 954-8015
- Email: info@DeviceOn.com
- Website: DeviceOn.com

**Product Selection Guide**
- Entry, Multi-I/O Series
- Extreme Series

**Certification**
- Software Device:
  - WISE-DeviceOn
  - DeviceOn/iEdge

**Interfaces**
- COM Port: 2 x RS232, 2 x RS232/422/485
- GPIO: 8-bit Programmable DIO
- USB: 3.0 x 1, 2230 E key for WIFI

**Power Supply**
- 850W Power Supply

**License**
- By project inquiry

**Weight**
- 1.9 kg (4.19 lb)
- 2.3 kg (5.07 lb)
- 2.0 kg (4.41 lb)
- TBD

**Mounting**
- Desk Mounting/VESA mounting (optional)
- Wall Mounting/VESA mounting (optional)

**Windows**
- Windows 10
- Windows 7, Windows 8.1, Windows 10
- Windows 10

**Heat Dissipation**
- With standard temperature peripherals: 0 ~ 45 °C (32 ~ 113 °F)
- With extended temperature peripherals: -20 ~ 60 °C (4 ~ 140 °F)
## Intelligent Edge Computers

### Performance Series

<table>
<thead>
<tr>
<th>Model Name</th>
<th>ARK-3520P</th>
<th>ARK-3520L</th>
<th>ARK-3530L</th>
<th>ARK-3530F</th>
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</thead>
<tbody>
<tr>
<td><strong>CPU</strong></td>
<td>Intel® 6th gen, Intel® Core™ i7-8809G, 8×4G</td>
<td>Intel® 6th gen, Intel® Core™ i7-8809G, 8×4G</td>
<td>Intel® 6th gen, Intel® Desktop Aeon E3/Core™ i7-8809G (Series up to 65W)</td>
<td>Intel® 6th gen, Intel® Desktop Aeon E3/Core™ i7-8809G (Series up to 65W)</td>
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<tr>
<td>Frequency</td>
<td>2.8 GHz/2.7 GHz</td>
<td>2.8 GHz/2.7 GHz</td>
<td>by Processor</td>
<td>by Processor</td>
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<tr>
<td>Core Number</td>
<td>4/4</td>
<td>4/4</td>
<td>by Processor</td>
<td>by Processor</td>
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<td>AMI EFI 128Mbit</td>
<td>AMI EFI 128Mbit</td>
<td>AMI EFI 128Mbit</td>
<td>AMI EFI 128Mbit</td>
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<td>Chipset</td>
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<td>Intel® QM170</td>
<td>Intel® C236</td>
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<td>Socket</td>
<td>2x 260-pin SODIMM</td>
<td>2x 260-pin SODIMM</td>
<td>2x 260-pin SODIMM</td>
<td>2x 260-pin SODIMM</td>
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<tr>
<td><strong>Display</strong></td>
<td>Intel® KBL IR integrated GFX Gen 8</td>
<td>Intel® KBL IR integrated GFX Gen 8</td>
<td>Intel® KBL IR integrated GFX Gen 8</td>
<td>Intel® KBL IR integrated GFX Gen 8</td>
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<tr>
<td>VGA</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>DVI</td>
<td>1 x HDMI port, HDMI 1.4a to 4k HD video playback 3840x2160/30Hz; 3rd Display Module by Optional</td>
<td>1 x HDMI port, HDMI 1.4a to 4k HD video playback 3840x2160/30Hz; 3rd Display Module by Optional</td>
<td>1 x HDMI port, HDMI 2.0a to 4k HD video playback 3840x2160/30Hz; 3rd Display Module by Optional</td>
<td>1 x HDMI port, HDMI 2.0a to 4k HD video playback 3840x2160/30Hz; 3rd Display Module by Optional</td>
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<tr>
<td><strong>Expansion Interface</strong></td>
<td>Multiple Display</td>
<td>Triple/Dual</td>
<td>Triple/Dual</td>
<td>Triple/Dual</td>
</tr>
<tr>
<td>Mini PCIe</td>
<td>2 x Full-size Mini PCIe (Supports mSATA)</td>
<td>2 x Full-size Mini PCIe (Supports mSATA)</td>
<td>2 x Full-size Mini PCIe (Supports mSATA)</td>
<td>2 x Full-size Mini PCIe (Supports mSATA)</td>
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<td>PCIe + PCI</td>
<td>2 PCIe slots</td>
<td>2 PCIe slots</td>
<td>2 PCIe slots</td>
<td>2 PCIe slots</td>
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<td>iDoor</td>
<td>Supported</td>
<td>Supported</td>
<td>Supported</td>
<td>Supported</td>
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<tr>
<td><strong>Ethernet</strong></td>
<td>Ethernet Controller</td>
<td>Ethernet Controller</td>
<td>Ethernet Controller</td>
<td>Ethernet Controller</td>
</tr>
<tr>
<td>Control Port</td>
<td>Intel® i219-LM</td>
<td>Intel® i219-LM</td>
<td>Intel® i219-LM</td>
<td>Intel® i219-LM</td>
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<td>1Gbps (Max 1000 Mbps)</td>
<td>1Gbps (Max 1000 Mbps)</td>
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<td>HD Audio</td>
<td>HD Audio</td>
<td>HD Audio</td>
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<tr>
<td>CODEC</td>
<td>ALC888S</td>
<td>ALC888S</td>
<td>ALC888S</td>
<td>ALC888S</td>
</tr>
<tr>
<td>Connectors</td>
<td>Line out, Mic in</td>
<td>Line out, Mic in</td>
<td>Line out, Mic in</td>
<td>Line out, Mic in</td>
</tr>
<tr>
<td><strong>WatchDog Timer</strong></td>
<td>WatchDog Timer</td>
<td>WatchDog Timer</td>
<td>WatchDog Timer</td>
<td>WatchDog Timer</td>
</tr>
<tr>
<td>Storage</td>
<td>SATA</td>
<td>2 x 2.5&quot; SATAIII HDD (Max 15 mm height) (SATA III, support Max. Data Transfer Rate 600 MB/s, Support RAID 0, 1)</td>
<td>2 x (Optional up to 4) x 2.5&quot; SATAIII HDD (Max 15 mm height) (SATA III, support Max. Data Transfer Rate 600 MB/s, Support RAID 0, 1, 5, 10)</td>
<td>2 x (Optional up to 4) x 2.5&quot; SATAIII HDD (Max 15 mm height) (SATA III, support Max. Data Transfer Rate 600 MB/s, Support RAID 0, 1, 5, 10)</td>
</tr>
<tr>
<td>mSATA</td>
<td>1 (Share with full-size mini-PCIe)</td>
<td>1 (Share with full-size mini-PCIe)</td>
<td>2 (Share with full-size mini-PCIe)</td>
<td>2 (Share with full-size mini-PCIe)</td>
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<tr>
<td><strong>I/O</strong></td>
<td>USB3.1/3.2</td>
<td>4 x RS232/4 x RS232/424/485</td>
<td>4 x RS232/424/424/485</td>
<td>4 x RS232/424/424/485</td>
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<tr>
<td>USB 3.0</td>
<td>6</td>
<td>8</td>
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<td>USB2.0</td>
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<td>GPIO</td>
<td>16-pin</td>
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<td>16-pin</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>Power Type</td>
<td>ATX</td>
<td>ATX</td>
<td>ATX</td>
</tr>
<tr>
<td>Power Supply Voltage</td>
<td>9-36VDC</td>
<td>12 VDC, 10%</td>
<td>12 VDC, 10%</td>
<td>36VDC</td>
</tr>
<tr>
<td>Power Connector</td>
<td>4-pin female head</td>
<td>Lockable DC jack</td>
<td>Lockable DC jack (4-pin female head with AMO-PO19E)</td>
<td>4-pin female head</td>
</tr>
<tr>
<td>Power Consumption (w/o CPU/ Memory only)</td>
<td>11.4W</td>
<td>11.4W</td>
<td>25.68W</td>
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<td>Power Consumption (Full Load: CPU/ Memory only)</td>
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<td>68.4W</td>
<td>88.92W</td>
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<tr>
<td>Power Adapter</td>
<td>150W (optional)</td>
<td>150W (optional)</td>
<td>150W (optional)</td>
<td>150W (optional)</td>
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<tr>
<td><strong>Operating Environment</strong></td>
<td>Operating Temperature (air flow 0.7 m/s)</td>
<td>Up to 65W processor with extended temp peripherals: 20 ~ 60 °C (4 ~ 140 °F); With HDD and standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)</td>
<td>Up to 65W processor with extended temp peripherals: 20 ~ 60 °C (4 ~ 140 °F); With HDD and standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)</td>
<td>Up to 65W processor with extended temp peripherals: 20 ~ 60 °C (4 ~ 140 °F); With HDD and standard temperature peripherals: 0 ~ 40 °C (32 ~ 104 °F)</td>
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<tr>
<td>Non-operating Temperature</td>
<td>-40 ~ 85 °C (104 °F)</td>
<td>-40 ~ 85 °C (104 °F)</td>
<td>-40 ~ 85 °C (104 °F)</td>
<td>-40 ~ 85 °C (104 °F)</td>
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<tr>
<td>Vibration Resistance</td>
<td>With SSD: 3 G, random, 5 ~ 500 Hz, 1 g, 10%, With HDD: 1.5 G, random, 5 ~ 500 Hz, 1 g, 10%, With SSD: 3 G, random, 5 ~ 500 Hz, 1 g, 10%</td>
<td>With SSD: 3 G, random, 5 ~ 500 Hz, 1 g, 10%</td>
<td>With SSD: 3 G, random, 5 ~ 500 Hz, 1 g, 10%</td>
<td>With SSD: 3 G, random, 5 ~ 500 Hz, 1 g, 10%</td>
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<tr>
<td>Shock Protection</td>
<td>With SSD: 30 G, half sine, 11 ms duration</td>
<td>With SSD: 30 G, half sine, 11 ms duration</td>
<td>With SSD: 30 G, half sine, 11 ms duration</td>
<td>With SSD: 30 G, half sine, 11 ms duration</td>
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<tr>
<td>Physical Characteristics</td>
<td>Dimensions (W x H x D mm)</td>
<td>220 x 101 x 233 mm</td>
<td>220 x 101 x 233 mm</td>
<td>215 x 205 x 230 mm</td>
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<tr>
<td>Weight</td>
<td>4.4 kg (9.7 lb)</td>
<td>4.4 kg (9.7 lb)</td>
<td>5.3 kg (11.6 lb)</td>
<td>5.87 kg (12.9 lb)</td>
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<td>Mounting</td>
<td>Desk</td>
<td>Desk</td>
<td>Desk</td>
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<tr>
<td>Linux</td>
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<td>Yes (by project inquiry)</td>
<td>Yes (by project inquiry)</td>
<td>Yes (by project inquiry)</td>
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<td>Software</td>
<td>DeviceOn</td>
<td>WISE-DeviceOn</td>
<td>WISE-DeviceOn</td>
<td>WISE-DeviceOn</td>
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<td>Other</td>
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<td>ARK-3532B</td>
<td>ARK-3532C</td>
<td>ARK-3532D</td>
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<tr>
<td>Processor</td>
<td>8th/10th gen, Intel® Desktop Core™ i series (35W)</td>
<td>10th Gen. Intel® Desktop Core™ i series</td>
<td>8th/10th gen, Intel® Desktop Core™ i series (35W)</td>
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<tr>
<td>Memory (GB)</td>
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<td>Storage</td>
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<td>64GB</td>
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<tr>
<td>Expansion</td>
<td>2 x 260-pin SO-DIMM</td>
<td>2 x 260-pin SO-DIMM</td>
<td>2 x 260-pin SO-DIMM</td>
<td>2 x 260-pin SO-DIMM</td>
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<tr>
<td>CPU</td>
<td>Intel® 10th Gen. Intel® Core™ i series</td>
<td>Intel® 10th Gen. Intel® Core™ i series</td>
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<td>Graphics Engine</td>
<td>AMD Radeon™</td>
<td>AMD Radeon™</td>
<td>AMD Radeon™</td>
<td>AMD Radeon™</td>
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<tr>
<td>Connectivity</td>
<td>2 x 2.5&quot; SATAIII 6Gbps, 2 x 2.5&quot; SATAIII 6Gbps</td>
<td>2 x 2.5&quot; SATAIII 6Gbps, 2 x 2.5&quot; SATAIII 6Gbps</td>
<td>2 x 2.5&quot; SATAIII 6Gbps, 2 x 2.5&quot; SATAIII 6Gbps</td>
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<tr>
<td>Display</td>
<td>1 x 256-bit Mini PCIe (1 x support mSATA), 1 x support SIM holder</td>
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<td>Display Module by Optional</td>
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<tr>
<td>Power</td>
<td>34.8W</td>
<td>64.8W</td>
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<tr>
<td>Environment</td>
<td>-20 ~ 50°C (-4 ~ 122°F) with 0.7m/s air flow</td>
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**AMD RYZEN PRO 4000 Series: AMD RYZEN PRO 4000 Series**

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<tbody>
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<td>Processor</td>
<td>AMD Ryzen™ 7 PRO 4750G</td>
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<td>Memory (GB)</td>
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## Worldwide Offices

### Asia Pacific

**Taiwan**
- Toll Free: 886-2-7732-3399
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- Turkey-Bursa: 90-224-413-3134