

# IoT Gateway Starter Kit

**NEW**



## Features

- Pre-configured system: Intel Celeron J1900 SoC and WES7E with 4GB Memory and 500 GB HDD
- WISE-PaaS/RMM Pro version IoT device remote monitoring and management software for data management, device monitoring/control and security (Intel® Security McAfee)
- Two models are certified by Microsoft Azure and WISE-PaaS/RMM ready on Microsoft Azure Marketplace to enable big data analytics services
- Comprehensive developer tools and documents: gateway & security SDK, 100+ RESTful APIs, Node-RED Logic Editor
- Provides 3 hours of online consulting services with your exclusive account to submit, manage, and track service status
- IoT News, Software Design Tools (VIP, and Software Upgrade (VIP)



## Introduction

Advantech IoT Gateway Starter Kit created in collaboration with Intel® and Microsoft®. This kit will jumpstart your IoT innovation with a reliable platform and open gateway technologies. The whole package includes a ready-to-run system (Intel® Celeron® J1900 platform & Windows 7 Embedded), IoT software platform service (WISE-PaaS), development kit and technical support service, and Azure service certification and integration. With it, you can take your IoT innovation to market faster and create new business value.

## Gateway System Specifications



|                       | ARK-1123H (Ultra Small)  | ARK-2121L (Multiple I/O)   |
|-----------------------|--|--|
| Processor             | Intel® Celeron® J1900 Quad Core 2.0GHz SoC                               | Intel® Celeron® J1900 Quad Core 2.0GHz SoC   |
| Memory                | 4GB bundled  | 4GB bundled  |
| Integrated O/S        | WES7E  | WES7E  |
| Operating Temperature | -20~60C with industrial grade RAM/SSD                                    | -20~70C with industrial grade RAM/SSD  |
| I/O Interface         | HDMIx2, GbEx2, RS232/422/485x1, USB 3.0x1, USB 2.0 x2, Line-in, Line-out | VGA, HDMI, GbEx2, RS232x2, RS232/422/485x2, USB 3.0x1, USB 2.0 x3, Line-in, Line-out, MIC-in |
| Power Input           | 12VDC in   | 9~36VDC in   |
| Wireless Networking   | 1 x full size miniPCIe for optional WiFi module                          | 1 x full size miniPCIe for optional WiFi module  |
| Storage               | 500GB 2.5" SATA HDD bundled  | 500GB 2.5" SATA HDD bundled  |
| Dimensions            | 133.8 x 43.1 x 94.2 mm (5.27" x 1.7" x 3.71")                            | 264.5 x 69.2 x 133.0 mm (10.41" x 2.72" x 5.24")   |

## WISE-PaaS/RMM Software Specifications

|                                      |   |
|--------------------------------------|---|
| Management                           | Device/ Gateway/Sensor states management  |
| Map View                             | Support Google and Baidu.   |
| HW Status Monitoring & Rule Setting  | CPU/system temperature, fan speed, voltage, CPU/memory usage, system information, HDD monitoring, depending on HW capability (Advantech product Only) |
| SW Process Monitoring & Rule Setting | Based on OS process manager.  |
| Data Auto Report                     | Actual data storage amount is subject to HDD capacity   |
| Dashboard Builder                    | Support text, spark line, Gauge, pointer... etc. type of widget   |
| Hierarchical Server                  | 2 levels of sub-server supported<br>No sub-server amount limitation at each layer   |
| Server Redundancy                    | Supports at most 2 redundant servers  |
| Remote control**                     | Remote KVM/ Terminal Mode/ Intel AMT Integration/ Screenshot  |
| Remote On/Off **                     | Remote On/Off/Power On/Off Scheduling /Hibernate/   |
| System Protection**                  | McAfee White List Protection  |
| System Recovery**                    | Acronis Backup/Recover/ Schedule/ Hot-Key Recovery  |
| Notification Center                  | Event Log / Email Notification / SMS Notification   |
| Management Interface                 | Account,Role management/ Mobile Mode / Web-Based Console  |
| Web Service API                      | RESTful API   |
| WISE Agent SDK                       | Agent and handler sample code   |

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

## Gateway Software Packages

### IoT Data & Gateway Management

|                                 |   |
|---------------------------------|---|
| <b>Data Management</b>          | Provide data acquisition and protocol unification with standard MQTT to cloud for data analytic and prediction. |
| <b>Remote Control</b>           | Remote control connected gateway system and I/O with dashboard console and RESTful APIs.                        |
| <b>Gateway Monitoring</b>       | Inspects the condition of connected devices and software through dashboard and system management console.       |
| <b>Application Intelligence</b> | 100+ RESTful APIs for IoT application development with advanced Application Logic Designer (Node RED).          |

**WISE-PaaS/RMM**

### Enable Data Analytic Services

|                         |   |
|-------------------------|---|
| <b>Virtual Machines</b> | Access WISE-PaaS/RMM configured to run in Azure Marketplace. Deploy with confidence knowing that each solution has been vetted through Microsoft Azure.                                     |
| <b>Machine Learning</b> | Bring your own data and leverage a variety of machine learning services such as forecasting, product recommendations for predict maintenance.   |
| <b>Power BI</b>         | Azure and PowerBI provide a complete set of services for data analytics from data processing through visualization.   |
| <b>Event Hubs</b>       | Cloud-scale telemetry ingestion from websites, apps, and devices.<br>Microsoft Azure official site provides free trial for customer to sign up and get \$200 to spend on all Azure services |

**Microsoft Azure**

### Software Development Kit

|   |   |
|---|---|
| <b>Gateway SDK</b> <ul style="list-style-type: none"> <li>12+ WISE Agent Handler</li> <li>Development Tools</li> <li>Technical White Paper</li> <li>Developer Training Guide</li> </ul> | <b>Gateway Security</b> <ul style="list-style-type: none"> <li>OpenSSL</li> <li>Microsoft BitLocker</li> <li>Advantech Security ID (iManager)</li> <li>Intel® McAfee Security Support</li> </ul>      |
| <b>Application Logic</b> <ul style="list-style-type: none"> <li>RESTful APIs Packages</li> <li>Node RED Application Logic Editor</li> </ul>   | <b>Board Level SDK</b> <ul style="list-style-type: none"> <li>Yocto Linux BSP (x86/ARM)</li> <li>Win10 IoT Core BSP</li> <li>Library: Alljoyn, IoTivity, MQTT</li> <li>SUSI API, SQL Lite,</li> </ul> |

### Technical Support Service

|                          |  |
|--------------------------|--|
| <b>Online Consulting</b> | Provides 3 hours of online consulting service. Online technical support system is ready to serve 24/7. You can use your exclusive account to submit, manage, and track issues.                   |
| <b>Online Forum</b>      | When you join the IoT Developer forum, you will receive the latest versions of software resources and video training courses. <a href="http://iotforum.advantech.com">iotforum.advantech.com</a> |



Discussion



Resource Download



FAQs

## Ordering Information

| Part Number      | CPU                     | Memory | Storage               | OS    | HDMI | GbE | USB 2.0 | USB 3.0 | RS-232/422/485 | Audio                    | MiniPCIe    | Power Input            | mSATA | Operating Temperature* |
|------------------|-------------------------|--------|-----------------------|-------|------|-----|---------|---------|----------------|--------------------------|-------------|------------------------|-------|------------------------|
| IG-ARK1123-H431A | Intel Celeron J1900 SoC | 4 GB   | 500GB 2.5" SATAII HDD | WES7E | 2    | 2   | 2       | 1       | 1              | Line in<br>Line out      | 1 Full size | 12 V <sub>DC</sub>     | 1     | -20 ~ 60° C            |
| IG-ARK2121-L431A | Intel Celeron J1900 SoC | 4 GB   | 500GB 2.5" SATAII HDD | WES7E | 1    | 2   | 3       | 1       | 2              | Lin-out,<br>Line-in, MIC | 1 Full size | 9 ~ 36 V <sub>DC</sub> | 1     | -20 ~ 70° C            |

\* If select industrial grade memory and SSD.

## Packing List

| Part Number            | Description  |
|------------------------|--|
| ARK-1123H or ARK-2121L | IoT Gateway with WES7E, 4GB DDR3 Memory, 500GB HDD |
| 1757004096-01          | 100-240V 36W 12V ADAPTER for ARK-1123H             |
| 96PSA-A65W19P2-2       | 100-240V 65W 19V ADAPTER for ARK-2121L             |
| 32EMRMP31A             | WISE-PaaS/RMM pro version /1 agent built in        |
| 32EMRMP313             | 3hrs consulting service                            |
| -                      | IoT Developer Forum VIP Access                     |

## Optional Items

| Part Number | Description   |
|-------------|---|
| 1700001524  | Power Cable 3-pin 180cm, USA type (For power adapter 96PSA-A36W12W6-1)    |
| 170203183C  | Power Cable 3-pin 180cm, Europe type (For power adapter 96PSA-A36W12W6-1) |
| 170203180A  | Power Cable 3-pin 180cm, UK type (For power adapter 96PSA-A36W12W6-1)     |
| 1700008921  | Power Cable 3-pin PSE Mark 183cm (For power adapter 96PSA-A36W12W6-1)     |
| AMK-V003E   | VESA mounting kit for ARK-1123  |
| AMK-V004E   | VESA mounting kit for ARK-2121  |
| AMK-R001E   | DIN-rail mounting kit for ARK-1123  |
| AMK-R004E   | DIN-rail mounting kit for ARK-2121  |
| AMK-W001E   | Wall mounting kit for ARK-1123  |
| EKI-1221-BE | 1-port Modbus Gateway   |
| EKI-1222-BE | 2-port Modbus Gateway   |
| EKI-1224-BE | 4-port Modbus Gateway   |
| EKI-1361-AE | 1-port RS-232/422/485 to 802.11b/g/n WLAN Serial Device Server            |
| EKI-1362-AE | 2-port RS-232/422/485 to 802.11b/g/n WLAN Serial Device Server            |
| EKI-1521-BE | 1-port RS-232/422/485 Serial Device Server                                |
| EKI-1522-BE | 2-port RS-232/422/485 Serial Device Server                                |
| EKI-1524-BE | 4-port RS-232/422/485 Serial Device Server                                |