

# ARK-2230L A2

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



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



### Features

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

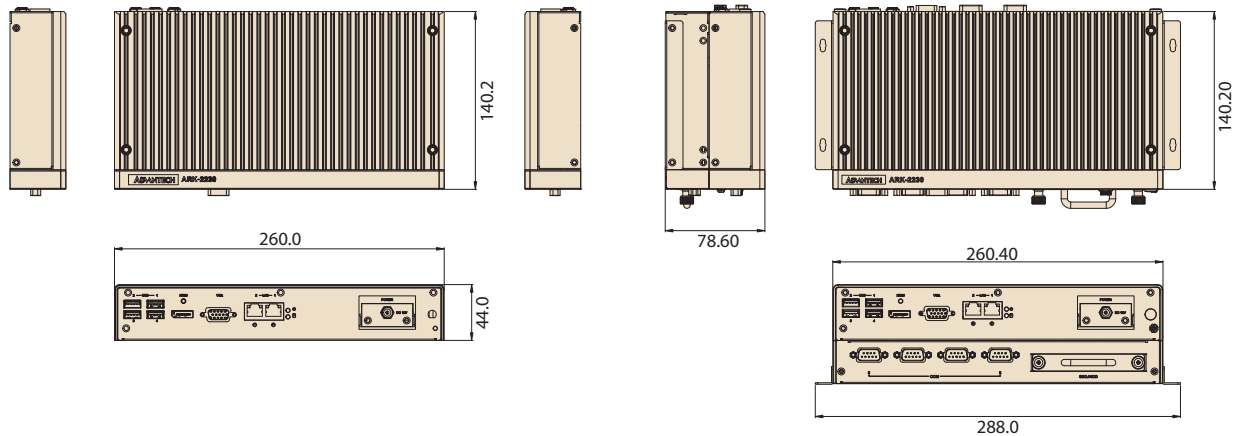
### Specifications

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

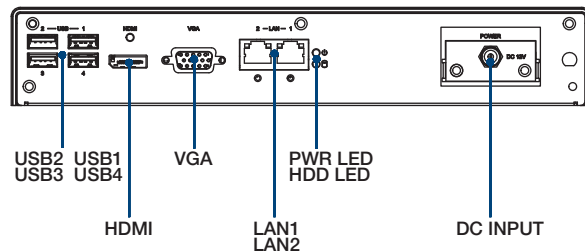
#1 SIM holder is the hardware interface for wireless communication integration only. System level RF certification is not available.

## Dimensions

Unit: mm

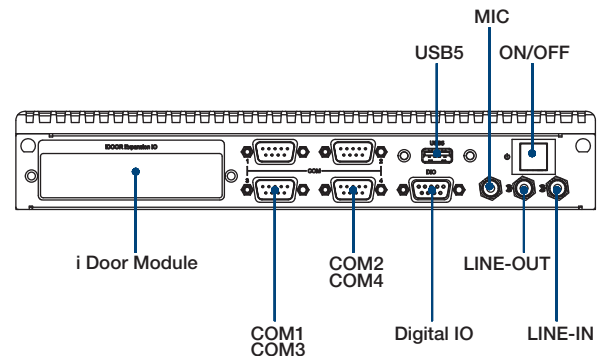


## Front Panel External I/O Mechanical Layout/Drawing



\*Power Input module by option

## Rear Panel External I/O Mechanical Layout/Drawing



## Ordering Information

| Part No.        | CPU                        | VGA | HDMI | GbE | USB 2.0 | USB 3.0 | RS-232 | RS-232/422/485 | Audio                 | Full-size MiniPCle | SIM | mSATA | 2.5" SATA II HDD Bay | Power Input        | Operating Temp. |
|-----------------|----------------------------|-----|------|-----|---------|---------|--------|----------------|-----------------------|--------------------|-----|-------|----------------------|--------------------|-----------------|
| ARK-2230L-U0A2E | Intel Celeron J1900 2.0GHz | Yes | Yes  | 2   | 4       | 1       | 2      | 2              | Lin-out, Line-in, MIC | 1                  | 1   | 1     | 1                    | 12 V <sub>DC</sub> | -20 ~ 60 °C     |
| ARK-2230L-U0A3  | Intel Celeron J1900 2.0GHz | Yes | Yes  | 2   | 4       | 1       | 2      | 2              | N/A                   | 1                  | 1   | 1     | 1                    | 12 V <sub>DC</sub> | -20 ~ 60 °C     |

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

## Packing List

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

## ARK-2230 Default SKU Option Items

### Optional Embedded OS

| Part Number    | Description                  |
|----------------|------------------------------|
| 2070013990     | WES7E 64bit ENG/T-CH/S-CH/JP |
| 2070015119     | WES7P 64bit ENG/T-CH/S-CH/JP |
| 20706WX9ES0095 | Win10Ent 64bit ENG           |

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

### Optional Item for Default SKU

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

## ARK-2230 Single Layer Expansion Option Items

### Optional MOS modules for iDoor Expansion

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

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

### Optional 9-36V DC Power module

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

## ARK-2230 Dual Layer Expansion Option Items

### Optional modules for ARK Plus Expansion

| Part Number                       | Description                              |
|-----------------------------------|--|
| AMO-2201E (2 <sup>nd</sup> Layer) | 4 x RS232/422/485 + removable 2.5" drive |
| AMO-2202E (2 <sup>nd</sup> Layer) | 4 x 10/100/1000Base T(X) PoE             |
| AMO-2203E (2 <sup>nd</sup> Layer) | 2-Port isolated CAN-Bus                  |

# ARK Plus Extended Modules

## AMO-2201E

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



### Specifications

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

### Ordering Information

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

- \* For Win 8.1/Win10, please update BIOS with Advantech part number 1420048117
- \* ARK-2230L has only one SATA connector and cannot support a second SSD/HDD in the drive bay of AMO-2201E.

## AMO-2202E (AMO-I018)

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



### Specifications

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

### Ordering Information

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

## AMO-2203E

2-Port isolated CAN-Bus



### Specifications

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

### Ordering Information

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