

ARK-2250L A4

Intel 6th/7th Generation Core™ i3/i5/i7 Modular Fanless Box PC



Features

- Intel 6th/7th Gen Intel® Core™ U-series (i3/i5/i7)
- VGA and HDMI dual display, option 3rd display for triple display
- 12V lockable DC jack power input
- 9-36V optional power module compatible with all-in-one ordering
- 20 ~ 60 °C extend temperature operating
- 2 x full size mPCIe expansion for WIFI/Cellular communication module
- 1 x full size mSATA and 1 x 2.5" SATA storage device
- Advantech iDoor module compatible
- Advantech ARK Plus module support by dual layer configurations



WISE-DeviceOn SUSI API



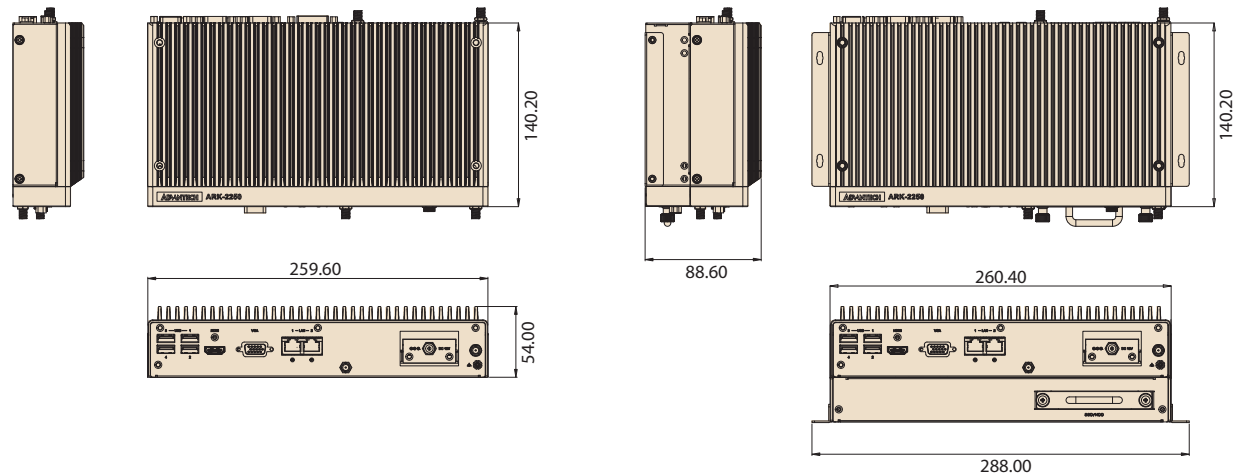
Specifications

| | | | | | |
|-----------------------|----------------------------|---|---------------------|---------------------|---------------------|
| Processor System | CPU | Intel Core i7 6600U | Intel Core i3 6100U | Intel Core i7 7600U | Intel Core i3 7100U |
| | Base Frequency | 2.6 GHz (Dual Core) | 2.3 GHz (Dual Core) | 2.8G (Dual Core) | 2.4G (Dual Core) |
| | L3 Cache | 4MB | 3MB | 4MB | 3MB |
| | BIOS | AMI UEFI 128 Mbit | | | |
| Memory | Technology | DDR4 2133 MHz | | | |
| | Max. Capacity | 16 GB | | | |
| | Socket | 1 x 260-pin SO-DIMM | | | |
| Graphics | Controller | Intel HD Graphics 520 | | | |
| | Graphic Engine | DirectX 11.3, OpenGL 4.4, and OpenCL 2.1 Full AVC/VC1/MPEG2 HW Decode | | | |
| | VGA | Up to 1920 x 1200 @ 60Hz (No hotplug support) | | | |
| | HDMI | HDMI 1.4a for HD video playback, 4096 x 2160 @ 24Hz | | | |
| | Dual Display | Yes, VGA + HDMI | | | |
| | Optional display Module | HDMI, DP | | | |
| | Triple Display | VGA+HDMI+Optional display module | | | |
| Ethernet | LAN1 | 10/100/1000 Mbps Intel i219 GbE, support Wake On Lan | | | |
| | LAN2 | 10/100/1000 Mbps Intel i210 GbE, support Wake On Lan | | | |
| Audio | Interface | Realtek ALC888S, High Definition Audio. Line-out, Mic-in | | | |
| IO Interface | Serial Ports | 4 x RS-232/422/485 port with auto flow control | | | |
| | USB Interface | 4 x USB 3.0, 2 x USB 2.0 | | | |
| | DIO | 8 bit | | | |
| Other | Watchdog timer | 255 levels timer interval, setup by software | | | |
| Expansion | Mini PCIe | 2 x full size Mini PCIe (CN14 with SIM holder) #1 | | | |
| | iDoor | 1 set (option) | | | |
| 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 (CN15, shared with mPCIe) | | | |
| Software Support | Microsoft Windows | Windows 10, Windows 8.1, WES7, Windows 7 | | | |
| | Linux | Support by project | | | |
| Power Requirement | Power Type | ATX | | | |
| | Power Input Voltage | 12V _{DC} (9-36V as option) | | | |
| | Minimum Power Input | 12 V, 5 A | | | |
| | Power Adapter | AC to DC, DC12V/5A, 60W (Option) | | | |
| Power Consumption | Typical | 7.96 Watt | 6.92 Watt | | |
| | Max. | 43.28 Watt | 41.72 Watt | | |
| Mechanical | Construction | Aluminum housing | | | |
| | Mounting | Din-Rail mounting, Desk/wall-mounting, VESA mounting | | | |
| | Dimensions (W x H x D) | 260 x 54 x 140.2 mm (10.24" x 2.13" 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 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 | | | | |

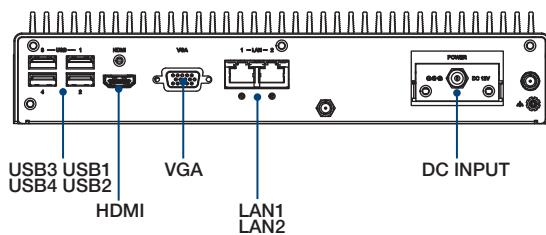
#1 SIM holder is the hardware interfaces for wireless communication integration only. System level RF certification is not available.

Dimensions

Unit: mm

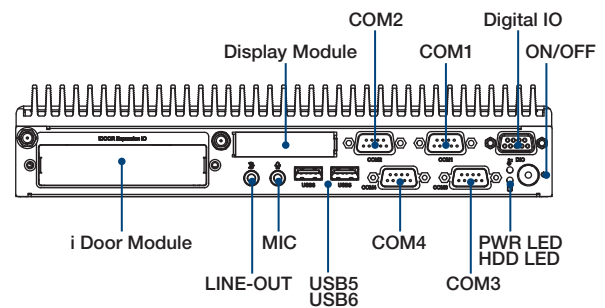


Front Panel External I/O Mechanical Layout/Drawing



*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-232/422/485 | DIO | Audio | Full-size MiniPCle | SIM | mSATA | 2.5" SATA II HDD Bay | Power Input | Operating Temp. |
|----------------|---------------------|-----|------|-----|---------|---------|----------------|-----|-----------------|--------------------|-----|-------|----------------------|--------------------|-----------------|
| ARK-2250L-U6A4 | Intel Core i7-6600U | Yes | Yes | 2 | 2 | 4 | 4 | 1 | Lin-out, Mic-in | 2 | 1 | 1 | 1 | 12 V _{DC} | -20 ~ 60 °C |
| ARK-2250L-U3A4 | Intel Core i3-6100U | Yes | Yes | 2 | 2 | 4 | 4 | 1 | Lin-out, Mic-in | 2 | 1 | 1 | 1 | 12 V _{DC} | -20 ~ 60 °C |
| ARK-2250L-U8A4 | Intel Core i7-7600U | Yes | Yes | 2 | 2 | 4 | 4 | 1 | Lin-out, Mic-in | 2 | 1 | 1 | 1 | 12 V _{DC} | -20 ~ 60 °C |
| ARK-2250L-U4A4 | Intel Core i3-7100U | Yes | Yes | 2 | 2 | 4 | 4 | 1 | Lin-out, Mic-in | 2 | 1 | 1 | 1 | 12 V _{DC} | -20 ~ 60 °C |

Note: Memory, storage and operating system bundled by request.
 * i5-6300U/i5-7300U are supported by T-P/N with MOQ 30 pcs.

Packing List

| Part Number | Description |
|-------------|--------------------------------------|
| - | 1 x ARK-2250L Unit |
| - | 1 x User Manual (Simplified Chinese) |
| - | 1 x China RoHS |
| - | 2 x Wall mounting bracket |
| - | 2 x LAN Clip |

ARK-2250 Expansion Option Items

Optional Embedded OS

| Part Number | Description |
|----------------|--|
| 20706WE7PM0023 | WES7P 64bit 10MU1 (only for ARK-2250L-U6A2 and ARK-2250L-U3A2) |
| 2070014959 | Win Emb 8.1_64bit US/DE/ES/FR/JP/KR/LT/RU/CN/TW (only for ARK-2250L-U6A2 and ARK-2250L-U3A2) |
| 20706WX9HS0092 | WIN10 IoT 2019 64bit_EN for ARK-2250L-U6A2 |
| 20706WX9VS0096 | WIN10 IoT 2019 64bit_EN for ARK-2250L-U3A2 |
| 20706WX9HS0117 | WIN10 IoT 64bit_EN for ARK-2250L-U8A2 |
| 20706WX9VS0121 | WIN10 IoT 64bit_EN for ARK-2250L-U4A2 |

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

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-V019E | VESA mount kits |
| AMK-R005E | DIN Rail mount kits |

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 |

* When configuring with MOS-2120-Z1201, please update BIOS with Advantech part number 1420053152.

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) |

Optional Display Module

| Part Number | Description |
|-------------|-------------|
| AMO-D002E | DP module |
| AMO-D003E | HDMI module |

ARK-2250 Dual Layer Expansion Option Items

Optional modules for ARK Plus Expansion

| Part Number | Description |
|-----------------------------------|---|
| AMO-2201E (2 nd Layer) | 4 x RS232/422/485 + removable 2.5" drive |
| AMO-2202E (2 nd Layer) | 4-port PoE with 12V _{DC} /10A 120W adapter |
| AMO-2203E (2 nd 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 |

AMO-2202E

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 | Each port 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 _{DC} power input (Change System Power input Cable) |
| Output PoE Power | 15W at 48 V _{DC} 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 _{DC} |
|----------------------|-----------------------|

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 |