

# ARK-2251

## Intel 13th Generation Core i3/i5/i7 Modular Fanless Box PC

NEW



### Features

- Intel® 13th Gen. Core™ i3/i5/i7 processor
- Support dual channel DDR5 SODIMM memory up to 64GB
- Support NVMe with PCIe x4
- 3x GbE, 6x USB (2x independent), 6x COM, 2x CANbus, Dual HDMI
- M.2 E key and mPCIe interfaces support wireless module installation
- Support 11x iDoors for IO expansion
- Optional PoE module
- 12-24V wide power input
- 20-60°C wide operating temperature
- WISE-DeviceOn supported for quick AI deployment at scale



WISE-DeviceOn

SUSI API



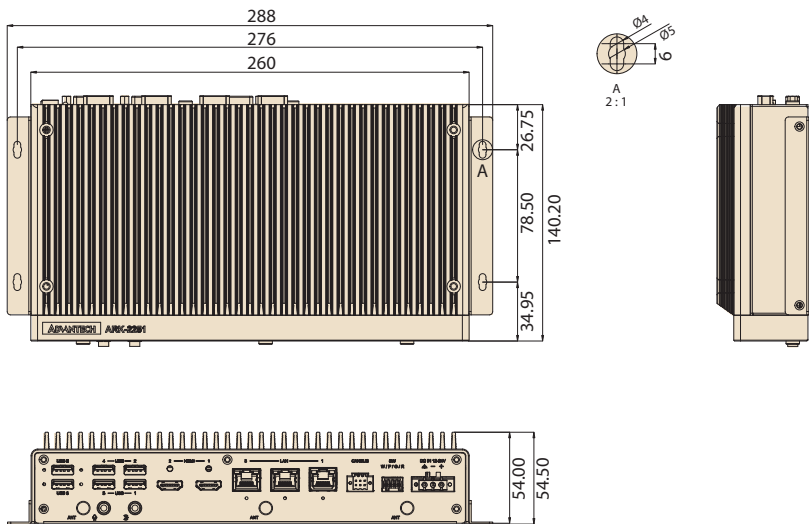
### Specifications

|                   |                            |                                                                                                                 |                                   |                |
|-------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------|
| Processor System  | CPU                        | 13th Generation Intel® Core™ i Processor                                                                        |                                   |                |
|                   |                            | Core i3-1315UE                                                                                                  | Core i5-1335UE                    | Core i7-1365UE |
|                   | Frequency                  | 1.2 GHz                                                                                                         | 1.3 GHz                           | 1.7 GHz        |
|                   | Core Number                | 2P+4E                                                                                                           | 2P+8E                             | 2P+8E          |
|                   | BIOS                       | AMI EFI 256Mbit                                                                                                 |                                   |                |
| Memory            | Technology                 | DDR5 4800 MHz                                                                                                   |                                   |                |
|                   | Max capacity               | 64GB                                                                                                            |                                   |                |
|                   | Socket                     | 2x 262-pin SODIMM (no support ECC)                                                                              |                                   |                |
| Graphics          | Chipset                    | Intel® UHD Graphics for 13th Gen Intel® Processors                                                              | Intel® Iris® Xe Graphics eligible |                |
|                   | HDMI                       | Up to 4096 x 2160 @ 60Hz                                                                                        |                                   |                |
|                   | Dual Display               | 2x HDMI                                                                                                         |                                   |                |
| Ethernet          | LAN1                       | 10/100/1000 Mbps Intel i219 GbE, support Wake On LAN                                                            |                                   |                |
|                   | LAN2                       | 10/100/1000/2500 Mbps Intel i226 GbE, support Wake On LAN (optional PoE module)                                 |                                   |                |
|                   | LAN3                       | 10/100/1000/2500 Mbps Intel i226 GbE, support Wake On LAN (optional PoE module)                                 |                                   |                |
| Audio             | Interface                  | Realtek ALC888S, High Definition Audio. Line-out, Mic-in                                                        |                                   |                |
| I/O Interface     | Serial Ports               | 6x RS-232/422/485                                                                                               |                                   |                |
|                   | USB Ports                  | 6x USB3.1 (2x are independent), 1 x internal USB2.0 for security dongle                                         |                                   |                |
|                   | GPIO                       | 8-bit Programmable DIO                                                                                          |                                   |                |
|                   | CANBus                     | 2                                                                                                               |                                   |                |
| Expansion         | Mini PCIe                  | 1x Full-size mPCIe                                                                                              |                                   |                |
|                   | M.2                        | 1x M.2 2230 (E Key) and 1x M.2 2280 (M Key)                                                                     |                                   |                |
| Storage           | NVMe                       | 1x M.2 M Key supporting NVMe (PCIe Gen3x4) <sup>#1</sup>                                                        |                                   |                |
|                   | mSATA                      | shared with mPCIe                                                                                               |                                   |                |
| Other             | WatchDog Timer             | 255 levels timer interval, setup by software                                                                    |                                   |                |
|                   | TPM                        | TPM 2.0 (Optional by AMO-I029)                                                                                  |                                   |                |
| Software Support  | Microsoft Windows          | Windows 10 Enterprise, Windows 11 IoT Enterprise                                                                |                                   |                |
|                   | Linux                      | Ubuntu 22.04, others by project support                                                                         |                                   |                |
| Power Requirement | Power Type                 | ATX/AT                                                                                                          |                                   |                |
|                   | Power Input Voltage        | 12-24 V <sub>DC</sub>                                                                                           |                                   |                |
| Power Consumption | Typical (OS idle mode)     | 19.05W                                                                                                          | 19.30W                            | 19.47W         |
|                   | Max. (Full loading)        | 38.21W                                                                                                          | 41.23W                            | 42.13W         |
| Mechanical        | Construction               | Aluminum housing                                                                                                |                                   |                |
|                   | Mounting                   | Wall mounting                                                                                                   |                                   |                |
|                   | Dimensions (W x H x D)     | 260 x 54 x 140.2 mm (10.24" x 2.13" x 5.52")                                                                    |                                   |                |
|                   | Weight                     | 2.3kg (5.06lb)                                                                                                  |                                   |                |
| Environment       | Operating Temperature      | With extended temp. peripherals: -20 ~ 60° C with 0.7m/s air flow (only up to 40°C when using with the adapter) |                                   |                |
|                   | Storage Temperature        | -40 ~ 85 °C (-40 ~ 185°F)                                                                                       |                                   |                |
|                   | Relative Humidity          | 95% @ 40 °C (non-condensing)                                                                                    |                                   |                |
|                   | Vibration during Operation | 3 Grms, IEC60068-2-64, random, 5-500 Hz, 1hr/axis                                                               |                                   |                |
|                   | Shock during Operation     | 30 G, IEC-60068-2-27, half sine, 11 ms duration                                                                 |                                   |                |
|                   | EMC                        | CE, FCC class B, CCC, BSMI                                                                                      |                                   |                |
|                   | Safety                     | CB, UL, CCC, BSMI                                                                                               |                                   |                |

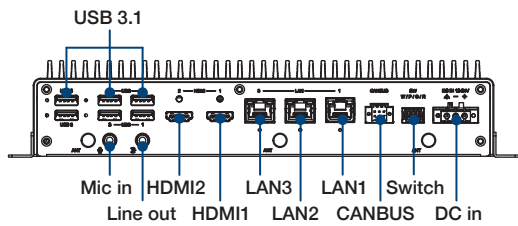
#1: M.2 M Key SSD with Heat Sink couldn't fit in ARK-2251.

Dimensions

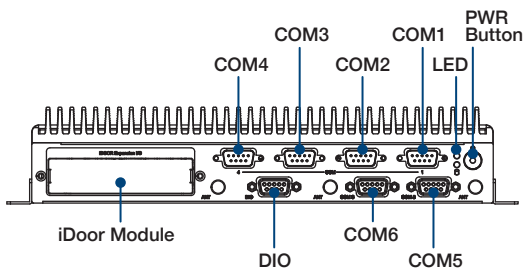
Unit: mm



Front Panel External I/O View



Rear Panel External I/O View



## Ordering Information

| Part No.        | CPU                  | RAM         | HDMI | GbE | USB3.1 | RS-232/422/485 | Audio | Full-size MiniPCle | M.2 | mSATA             | Power Input           | Operating Temp. |
|-----------------|----------------------|-------------|------|-----|--------|----------------|-------|--------------------|-----|-------------------|-----------------------|-----------------|
| ARK-2251-S2A1   | Intel Core i3-1315UE | Up to 64 GB | 2    | 3   | 6      | 6              | 2     | 1                  | 2   | shared with mPCle | 12-24 V <sub>DC</sub> | -20 ~ 60° C     |
| ARK-2251-S2A1U* | Intel Core i3-1315UE | Up to 64 GB | 2    | 3   | 6      | 6              | 2     | 1                  | 2   | shared with mPCle | 12-24 V <sub>DC</sub> | -20 ~ 60° C     |
| ARK-2251-S3A1   | Intel Core i5-1335UE | Up to 64 GB | 2    | 3   | 6      | 6              | 2     | 1                  | 2   | shared with mPCle | 12-24 V <sub>DC</sub> | -20 ~ 60° C     |
| ARK-2251-S3A1U* | Intel Core i5-1335UE | Up to 64 GB | 2    | 3   | 6      | 6              | 2     | 1                  | 2   | shared with mPCle | 12-24 V <sub>DC</sub> | -20 ~ 60° C     |
| ARK-2251-S7A1   | Intel Core i7-1365UE | Up to 64 GB | 2    | 3   | 6      | 6              | 2     | 1                  | 2   | shared with mPCle | 12-24 V <sub>DC</sub> | -20 ~ 60° C     |
| ARK-2251-S7A1U* | Intel Core i7-1365UE | Up to 64 GB | 2    | 3   | 6      | 6              | 2     | 1                  | 2   | shared with mPCle | 12-24 V <sub>DC</sub> | -20 ~ 60° C     |

\* P/N with alphabet "U" as suffix are Made in TW.

## Packing List

| Part Number    | Description                                                        |
|----------------|--------------------------------------------------------------------|
| -              | 1 x ARK-2251 Unit                                                  |
| -              | 1 x User Manual (Simplified Chinese)                               |
| -              | Wrench for top cover                                               |
| -              | Mounting kit                                                       |
| -              | Bracket & thermal pad for M.2 M Key SSD (NVMe)                     |
| -              | 1 x Thermal Pad for CPU Heatsink                                   |
| 36WSWPD0BD0211 | WISE-DeviceOn                                                      |
| 36WSWPD0BUND11 | McAfee Application Control Lite/Acronis Backup 11.7 for Windows PC |
| 1652004519     | 1 x 3-pin plug-in block for power in                               |
| 1652007880-01  | 1 x 4-pin terminal block for switch                                |
| 1652008233-01  | 1 x 6-pin terminal block for Canbus                                |

## Embedded OS

| Part Number    | Description                        |
|----------------|------------------------------------|
| 20706WX1VS0064 | WIN10 IoT LTSC 21H2 EN for i3/i5   |
| 20706WX1HS0064 | WIN10 IoT LTSC 21H2 EN for i7      |
| 20706WLH1S0043 | WIN11 IoT LTSC 24H2 EN for i7      |
| 20706WLV1S0043 | WIN11 IoT LTSC 24H2 EN for i3/i5   |
| 20706U22DS0026 | img UbuntuD ARK-2251 64b 22.04 ENU |

## Optional POE modules

| Part Number    | Description                                   |
|----------------|-----------------------------------------------|
| MIOE-PSE-SPA1* | MIOe-PSE PoE Module A1 Single 30W w/ Heatsink |

\*Besides MIOE-PSE-SPA1, please order extra parts below for ARK-2251.

1970005625N001 (Usage: 1)

1990022484N010 (Usage: 1)

1930001074 (Usage: 6)

## Optional Items

| Part Number       | Description                                    |
|-------------------|------------------------------------------------|
| 96PSA-A120W24T2-4 | ADP A/D 100-240V 120W 24V C14 CORD END 62368   |
| 96PSA-A150W24T2-4 | A/D 100-240V 150W 24V W/PFC C14 TERMINAL 62368 |
| 1702002600        | Power cable 3-pin 183 cm, USA type             |
| 1702002605        | Power cable 3-pin 183 cm, EU type              |
| 1702031801        | Power cable 3-pin 183 cm, UK type              |
| 1700000237        | Power cable 3-pin 183 cm, PSE type             |
| 1700024369-01     | 1M HDMI cable                                  |
| 1700031560-01     | 1.8M HDMI cable                                |
| AMK-V019E         | VESA mount kits                                |
| AMK-R005E         | DIN Rail mount kits                            |

### Optional MOS modules for iDoor Expansion

| Part Number     | Description                                   |
|-----------------|-----------------------------------------------|
| MOS-2110Z-1201E | USB module, 2-Ch, PCle I/F                    |
| MOS-2120-Z1101E | Giga LAN Ethernet module, 1-Ch, PCle I/F      |
| MOS-1120Y-0202E | Isolated RS-232, 2-Ch, DB9, PCle I/F          |
| MOS-1120Y-1402E | Non-Isolated RS-232, 4-Ch, DB37, PCle I/F     |
| MOS-1130Y-0201E | Isolated CANBus, 2-Ch, DB9, PCle I/F          |
| MOS-1110Y-0101E | Isolated 16 DI/8 DO, 1-Ch, DB37, PCle I/F     |
| MOS-2120-Z1201  | Dual Intel I210 GbE LAN iDoor, 2-Ch, PCle I/F |