

ARK-2232L

Intel® Atom® E3940 SoC Modular Fanless Box PC

NEW



*Dual Layer model is ARK-2232 with ARK Plus module



WISE-PaaS/ DeviceOn

SUSI API



Specifications

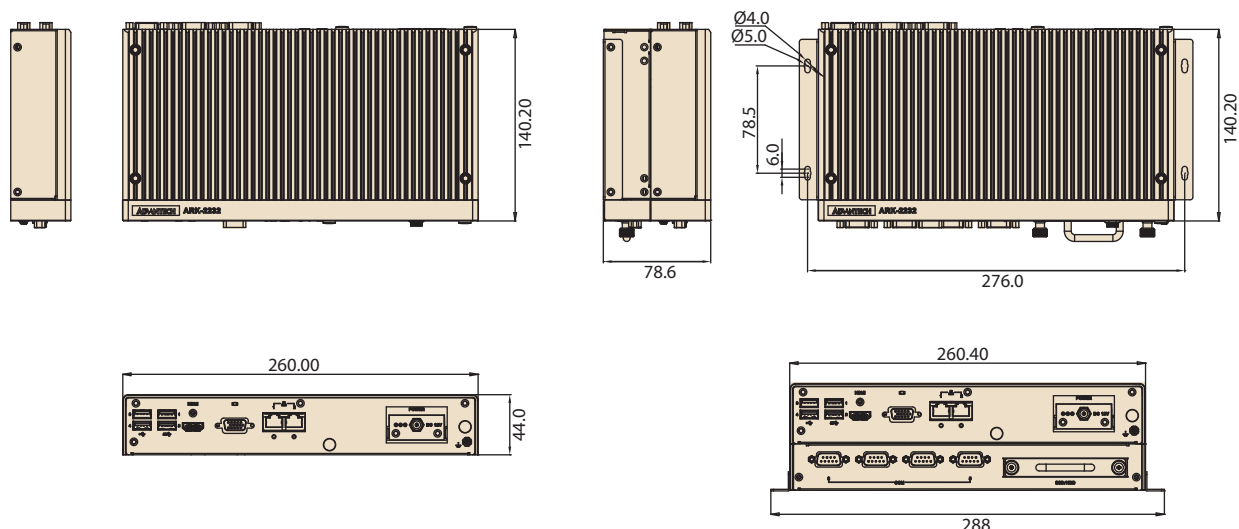
| ARK-2232L-S6A1 | | |
|-------------------------------------|----------------------------|---|
| Processor System | CPU | Intel Atom E3940 Quad Core SoC |
| | Frequency | 1.6 GHz, turbo burst 1.8 GHz |
| | L2 Cache | 2MB |
| | BIOS | AMI EFI 64-bit |
| Memory | Technology | DDR3L 1866 MHz |
| | Max. Capacity | 8 GB |
| | Socket | 1 x 204-pin SO-DIMM |
| Graphics | Chipset | Intel HD Graphics 500 |
| | Graphic Engine | 4K Codec Decode& Encode for H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG |
| | VGA | Up to 1920 x 1200 @ 60Hz |
| | HDMI | HDMI 1.4b for HD video playback, 3840 x 2160 at 30Hz |
| Ethernet | Dual Display | Yes, VGA + HDMI |
| | LAN1 | 10/100/1000 Mbps Intel i210-IT GbE, supports Wake On LAN |
| Audio | LAN2 | 10/100/1000 Mbps Intel i210-IT GbE, supports Wake On LAN |
| | Interface | Realtek ALC888S, High Definition Audio. Line-out, Mic-in |
| IO Interface | Serial Ports | 2 x RS-232 ports, 2 x RS-232/422/485 port with auto flow control |
| | Digital I/O | 8-bit programmable general purpose input/output |
| | USB Interface | 2 x USB 3.0, 4 x USB 2.0 |
| | TPM | TPM 2.0 power by Infineon SLB9665TT2.0 (by project support) |
| Other | Watchdog timer | 255 levels timer interval, setup by software |
| Expansion | Mini PCIe | 1 x full size Mini PCIe with SIM holder (PCIex1, USB 2.0, UIM, SATA III) |
| | M.2 | 1 x M.2 2230 E Key (PCIex1, UBS 2.0) |
| Storage | HDD | Supports one SATA 2.5" HDD Bay (Compatible with 12.5mm height HDD) (Max. Data Transfer Rate 300 MB/s) |
| | mSATA | 1 x full size mSATA socket (share with miniPCIe) |
| Software Support | Microsoft Windows | Windows 10 |
| | Linux | Support by project |
| Power Requirements | Power Type | AT/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 (Optional) |
| Power Consumption (CPU/Memory only) | Typical | 7.79W |
| | Max. | 17.48W |
| Mechanical | Construction | Aluminum housing |
| | Mounting | Desk/Wall-mounting (Default), Din-Rail mounting (Optional kit), VESA mounting (Optional kit) |
| | Dimensions (W x H x D) | 260 x 44 x 140.2 mm (10.24" x 1.73" x 5.52") |
| | Weight | Net Weight: 1.9kg (4.19 lbs); Gross Weight: 2.9kg (6.39 lbs) |
| 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, CB, CCC, BSMI |

Features

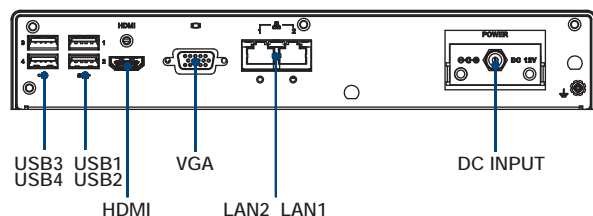
- Intel® Atom® E3940 Quad Core SoC
- Dual independent displays with one 4K HDMI and one VGA
- 12V lockable DC jack power input
- 9-36V power module compatible with all-in-one ordering
- 20 ~ 60 °C extend operating temperature
- Mini PCIe expansion with SIM holder for communication module
- M.2 NGFF 2230 E Key for WiFi 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)

Dimensions

Unit: mm

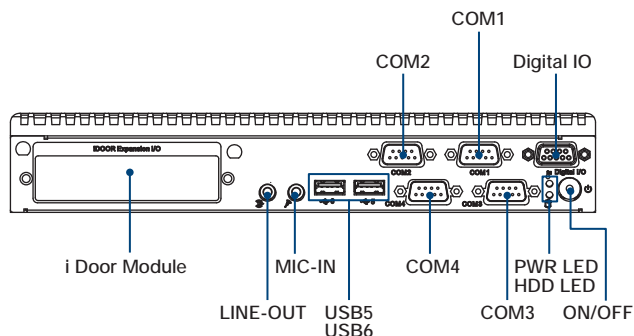


Front Panel External I/O Mechanical Layout/Drawing



*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 MiniPCIe | M.2 | SIM | mSATA | 2.5" SATA III HDD Bay | Power Input | Operating Temp. |
|----------------|------------------------------|-----|------|-----|---------|---------|--------|----------------|-----------------|--------------------|-----|-----|-------|-----------------------|--------------------|-----------------|
| ARK-2232L-S6A1 | Intel Atom E3940 1.6 GHz SoC | Yes | Yes | 2 | 4 | 2 | 2 | 2 | Lin-out, MIC-IN | 1 | 1 | 1 | 1 | 1 | 12 V _{DC} | -20 ~ 60 °C |

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

Packing List

| Part Number | Description |
|-------------|--------------------------------------|
| - | 1 x ARK-2232L Unit |
| - | 1 x User Manual (Simplified Chinese) |
| - | 1 x China RoHS |
| - | Wall mounting kit |
| - | RMM 3.2 Utility CD Package |

ARK-2232 Default SKU Option Items

Optional Embedded OS

| Part Number | Description |
|----------------|----------------------------------|
| 20706WX6ES0019 | W10 16EL ARK-2232 64bit 1709 ENG |

Optional Item for Default SKU

| Part Number | Description |
|----------------|-----------------------------------|
| 96PSA-A60W12W6 | 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-2232 Single Layer Expansion Option Items

Optional MOS Modules for iDoor Expansion

| Part Number | Description |
|-----------------|---|
| 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 to 4-ch DB9, PCIe Interface |
| MOS-1121Y-1402E | Non-Isolated RS-422/485, DB37 to 4-ch DB9, 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-2220-Z1101E | High Speed COM USB module, 1-Ch, PCIe Interface |
| MOS-2120-Z1201 | Dual Intel I210 GbE LAN iDoor, 2-Ch, PCIe Interface |
| MOS-2230-Z1201E | CANBus module, 2-Ch, USB Interface |

*ARK-2232L can support only one iDoor.

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) |
| 96PSA-A65W19P2-2 | 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-2232 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) | 4x10/100/1000Base T(X) PoE |
| AMO-2203E (2 nd Layer) | 2-Port isolated CAN-Bus |
| AMO-2204E (2 nd Layer) | 3-port GbE + iDoor |

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 (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 _{DC} power input 4 pin phoenix power (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 |

AMO-2204E

3-Port GbE + iDoor



Specifications

| General | |
|-----------------|--|
| Bus interface | MIOe |
| Ports | 3 x RJ45 10/100/1000 Mbps ports |
| Chipset | Intel 82583V Gigabit Ethernet Controller |
| Other | 1 x iDoor |
| 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-2204E | 3-Port GbE + iDoor |

*ARK-2232 supports one iDoor only.