

ARK-2250V

6th Gen Intel Core i7-6822EQ QC/i5-6442EQ QC
In-vehicle Fanless System



Features

- Intel i7-6822EQ QC/ Intel i5-6442EQ QC SoC
- Stackable extension design, option extension kit for applications
- Support 12/24V_{DC} vehicle power input with E-Mark certification
- Built-in Vehicle Power Ignition Management
- Built-in GPS and G-Sensor for GIS application
- Diversity Communication Extensible, ex. WLAN, WWAN
- Certified for EMARK, ISO7637-2, IEC 60721-3-5 5M3
- Built-in Advantech remote management software WISE-PaaS/RMM



Specifications

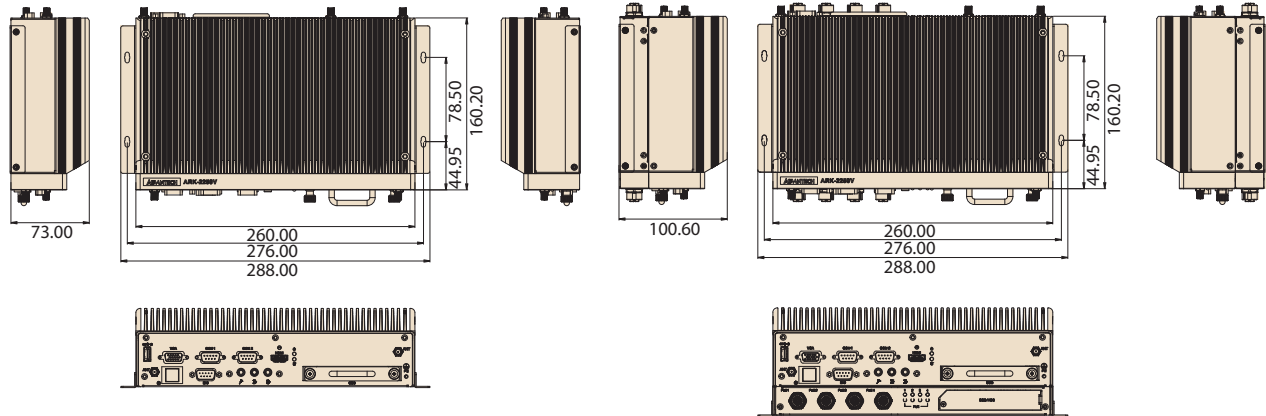
| | | ARK-2250V-U0A1E | ARK-2250V-S9A1E |
|-------------------|----------------------------|--|--|
| Processor System | CPU | Intel i7-6822EQ QC SoC | Intel i5-6442EQ QC SoC |
| | Frequency | 2.0GHz | 1.9GHz |
| | L2 Cache | 2 MB | |
| | BIOS | AMI EFI | |
| Memory | Technology | DDR4 2133MHz | |
| | Max. Capacity | 32G | |
| | Socket | 2 x 260-pin SO-DIMM | |
| Graphics | Chipset | QM170 | |
| | Graphic Engine | DirectX 11.3, OGL 4.4, OCL 2.1 Encode: H.264, MPEG2/4, VC1, WMV9 Decode: H.264, MPEG2 EHVC: H.265 | |
| | VGA | Up to 1920 x 1200 @ 60Hz | |
| | HDMI | HDMI 1.4a for HD video playback, 1080P at 60Hz | |
| | Dual Display | VGA + HDMI (Std.) or Dual HDMI (by project) | |
| | Ethernet | LAN1 | 10/100/1000 Mbps Intel i210 GbE, support Wake On Lan |
| | LAN2 | 10/100/1000 Mbps Intel i219 GbE, support Wake On Lan | |
| Audio | Interface | Realtek ALC888S, High Definition Audio. Line-out, Mic-in, Line-in | |
| IO Interface | Serial Ports | 3 x RS-232/422/485 port with auto flow control | |
| | USB Interface | 3 x USB3.0 Type A | |
| | GPIO | 4 x DI & 4 x DO w/ 1.5KV isolation, Input Voltage: 0 to 30 V _{DC} , Output Current: Max. 500 mA per channel, On-state Voltage: 24 V _{DC} nominal, open collector to 30 V _{DC} | |
| | CANBus | Optional | |
| Other | Watchdog timer | 255 levels timer interval, setup by software | |
| | GPS | On board standalone GPS, support GPS, GLONASS, BeiDou and QZSS signals | |
| | G-Sensor | On board high resolution G-Sensor, up to 13-bit resolution at ±16g | |
| Expansion | Mini PCIe | #1, Full-size Mini PCIe (SATA/PCIe/USB) w/external SIM socket #2, Full-size Mini PCIe (PCIe/USB) w/external SIM socket #3, M.2 2230 E key | |
| Storage | SSD/HDD | 1 x 2.5" SATA drive bay | |
| | mSATA | 1 x full size mSATA socket (Mini PCIe #1) | |
| Software Support | Microsoft Windows | Win7, WES7, Win8, WSE8, Win10 | |
| | Linux | Support by project | |
| Power Requirement | Power Type | ATX | |
| | Power Input Voltage | 12/24V _{DC} with E-Mark certification (Power ignition supports 9-36Vdc) | |
| | Vehicle Power Ignition | Selectable boot-up & shut-down voltage, on/off delay time | |
| Power Consumption | Isolation | 1.5 KV | |
| | Typical | TBD | |
| | Max. | TBD | |
| Mechanical | Construction | Aluminum housing | |
| | Mounting | Wall mounting kit | |
| | Dimensions (W x H x D) | 260 x 73 x 160.2mm | |
| | Weight | 3.2 Kg | |
| Environment | Operating Temperature | With extended temperature peripherals: -20 ~ 60° C with 0.7m/s air flow | |
| | Storage Temperature | - 40 ~ 85 °C (-40 ~ 185 °F) | |
| | Relative Humidity | 95% @ 40 °C (non-condensing) | |
| | Vibration During Operation | IEC 60721-3-5 5M3, MIL-STD 810G | |
| | Shock During Operation | IEC 60721-3-5 5M3, MIL-STD 810G | |
| | EMC | CE, FCC Class B, CCC, BSMI | |
| | Safety Certifications | UL, CCC, BSMI, CB, EMARK | |

Dimensions

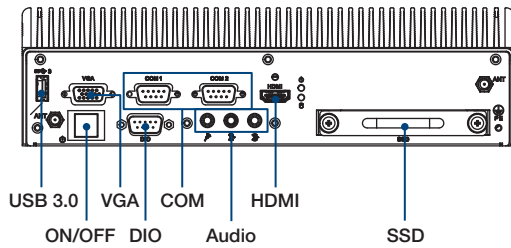
Unit: mm

ARK-2250V

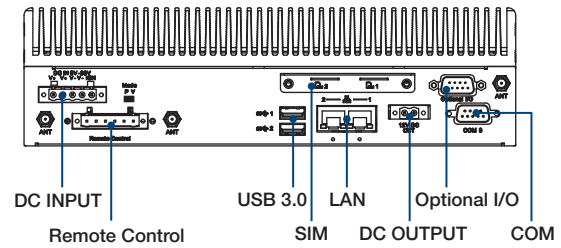
ARK-2250V+AMK-R100E



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

| Part No. | CPU | VGA | HDMI | GbE | USB 3.0 | DIO | RS-232/422/485 | Audio | MiniPCIe | M.2 | SIM | mSATA | 2.5" SATA Drive Bay | Operating Temp. |
|-----------------|-------------------------|-----|------|-----|---------|----------|----------------|-----------------------|----------|-----|-----|-------|---------------------|-----------------|
| ARK-2250V-U0A1E | Intel Core i7-6822EQ QC | 1 | 1 | 2 | 3 | 4Di, 4Do | 3 | Lin-out, Line-in, MIC | 2 | 1 | 2 | 1 | 1 | -20 ~ 60 °C |
| ARK-2250V-S9A1E | Intel Core i5-6442EQ QC | 1 | 1 | 2 | 3 | 4Di, 4Do | 3 | Lin-out, Line-in, MIC | 2 | 1 | 2 | 1 | 1 | -20 ~ 60 °C |

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

Packing List

| Part Number | Description |
|-------------|--------------------------------------|
| - | 1 x ARK-2250V Unit |
| - | 1 x User Manual (Simplified Chinese) |
| - | 1 x China RoHS |

Optional Embedded OS

| Part Number | Description |
|-------------|------------------------------|
| TBD | WES7E 64bit ENG/T-CH/S-CH/JP |
| TBD | WES8E 64bit ENG/T-CH/S-CH/JP |

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

Optional Item for Default SKU

| Part Number | Description |
|-------------|-----------------------------------|
| TBD | AC-to-DC Adapter, DC24V/150W |
| 1702002600 | Power cable 3-pin 183cm, USA type |
| 1702002605 | Power cable 3-pin 183cm, EU type |
| 1702031801 | Power cable 3-pin 183cm, UK type |

ARK-R Extended Modules

ARK-2250V+AMK-R100E

Extra 8 x GbE PoE + removable 2.5" drive bay



Specifications

| General | |
|-----------------------|---|
| Bus interface | MIOe |
| PoE | 8 x 10/100/1000Base T(X) PoE, 802.3at compliant |
| Drive bay | 1 x Removable 2.5" drive bay |
| Mechanical | |
| Dimension | 260 x 26.5 x 160.2 |
| Environment | |
| Operating temperature | -40 ~ 70 °C, EN50155 TX |
| Shock/Vibration | IEC61373 Category1, Class B |

Ordering Information

| P/N | Description |
|-----------|---|
| AMK-R100E | 8 x GbE PoE M12 X-coded, 1 x removable 2.5" drive bay |

ARK-2250V+AMK-R101E

Extra 4 x GbE PoE + removable 2.5" drive bay



Specifications

| General | |
|-----------------------|---|
| Bus interface | MIOe |
| PoE | 4 x 10/100/1000Base T(X) PoE, 802.3at compliant |
| Drive bay | 1 x Removable 2.5" drive bay |
| Mechanical | |
| Dimension | 260 x 26.5 x 160.2 |
| Environment | |
| Operating temperature | -40 ~ 70 °C, EN50155 TX |
| Shock/Vibration | IEC61373 Category1, Class B |

Ordering Information

| P/N | Description |
|-----------|---|
| AMK-R101E | 4 x GbE PoE M12 X-coded, 1 x removable 2.5" drive bay |

ARK-2250V+AMK-R104E

Extra 8 x 10/100 Mbps PoE + removable 2.5" drive bay



Specifications

| General | |
|-----------------------|---|
| Bus interface | MIOe |
| PoE | 8 x 10/100 Base T(X) PoE, 802.3at compliant |
| Drive bay | 1 x Removable 2.5" drive bay |
| Mechanical | |
| Dimension | 260 x 26.5 x 140 |
| Environment | |
| Operating temperature | -40 ~ 70 °C, EN50155 TX |
| Shock/Vibration | IEC61373 Category1, Class B |

Ordering Information

| P/N | Description |
|-----------|---|
| AMK-R104E | 8 x 10/100 Mbps PoE M12 D-Coded, 1 x removable 2.5" drive bay |

ARK-2250V+AMK-R105E

Extra 4 x 10/100 Mbps PoE + removable 2.5" drive bay



Specifications

| General | |
|-----------------------|---|
| Bus interface | MIOe |
| PoE | 4 x 10/100 Base T(X) PoE, 802.3at compliant |
| Drive bay | 1 x Removable 2.5" drive bay |
| Mechanical | |
| Dimension | 260 x 26.5 x 140 |
| Environment | |
| Operating temperature | -40 ~ 70 °C, EN50155 TX |
| Shock/Vibration | IEC61373 Category1, Class B |

Ordering Information

| P/N | Description |
|-----------|---|
| AMK-R105E | 4 x 10/100 Mbps PoE M12 D-Coded, 1 x removable 2.5" drive bay |