

**ARK-2231R**



**LISTED**

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| **C U®L US** | **RoHS** |  |
| **COMPLIANT** |  |
| **2002/95/EC** |  |

*E180881*

**Specifications**



**EN50155 Intel® Atom E3845 SoC Rolling Stock Fanless System**

**Features**

**** Intel®E3845 Quad Core 1.91 GHz SoC

**** Stackable extension design, option extension kit for applications **** DC 24V EN50155 S2/C1 compliant, DC 48/72/110V options

**** -40 ~ 70 °C wide temperature support with EN50155 TX compliant **** Solid connection for LAN/USB/Audio/COM and power input **** Anti-vibration/shock proof, IEC61373 Category1, ClassB

**** Built-in Advantech remote management software WISE-PaaS/RMM

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| --- | --- | --- | --- |
|  |  | ARK-2231R-S9A1E |  |
|  | CPU | Intel® E3845 Quad Core |  |
| Processor System | Frequency | 1.91 GHz |  |
| L2 Cache | 2 MB |  |
|  |  |
|  | BIOS | AMI EFI |  |
|  | Technology | DDR3L 1333 MHz |  |
| Memory | Max. Capacity | 8 GB |  |
|  | Socket | 1 x 204-pin SO-DIMM |  |
|  | Chipset | Intel® Gen7 Graphics |  |
|  |  | DirectX 11.1, OCL 1.2, OGL 3.2 |  |
|  | Graphic Engine | Encode: H.264, MPEG2/4, VC1, WMV9 |  |
| Graphics |  | Decode: H.264, MPEG2 |  |
|  | VGA | Up to 2560 x 1600 @ 60Hz |  |
|  | HDMI | HDMI 1.4a for HD video playback, 1080P at 60Hz |  |
|  | Dual Display | Yes, VGA + HDMI |  |
| Ethernet | LAN1 | 10/100/1000 Mbps Intel i210 GbE, support Wake On Lan, M12 X-Coded |  |
| LAN2 | 10/100/1000 Mbps Intel i210 GbE, support Wake On Lan, M12 X-Coded |  |
|  |  |
| Audio | Interface | Realtek ALC888S, High Definition Audio. Line-out,Mic-in,Line-in |  |
|  | Serial Ports | 2 x RS-232/422/485 port with auto flow control |  |
| IO Interface | USB Interface | 1 x USB2.0/3.0 Water-proof, 1 x USB2.0 M12 A-Coded, 1 x USB2.0 Type A |  |
|  | GPIO | 8bit Programable DI/DO |  |
|  | GPS | On board standalone GPS, support GPS, GLONASS, GALILEO , BeiDou and QZSS signals |  |
| Other | G-Sensor | On board high resolution G-Sensor, up to 13-bit resolution at ± 16g |  |
|  | Watchdog timer | 255 levels timer interval, setup by software |  |
|  |  | 1 x Full-size Mini PCIe (SATA/PCIe/USB) |  |
| Expansion | Mini PCIe | 1 x Full-size Mini PCIe (PCIe/USB) |  |
|  |  | 1 x Full-size Mini PCIe (USB) w/Accessible SIM socket |  |
| Storage | SSD/HDD | 1 x 2.5" SATA drive bay |  |
| mSATA | 1 x full size mSATA socket |  |
|  |  |
| Software Support | Microsoft Windows | Win7, WES7, Win8, WSE8, Win10 |  |
| Linux | Support by project |  |
|  |  |
|  | Power Type | ATX |  |
| Power Requirement | Power Input Voltage | DC 24V - StandardDC 48/72/110V - Options |  |
| Regulation | EN50155 S2/C1 Compliant |  |
|  |  |
|  | Power Adapter | 24V/ 150W (Option) |  |
| Power Consumption | Typical | 18W |  |
| Max. | 45W |  |
|  |  |
|  | Construction | Aluminum housing |  |
| Mechanical | Mounting | Wall / VESA / DIN-Rail Kit options |  |
| Dimensions (W x H x D) | 260 x 57 x 160.2 mm |  |
|  |  |
|  | Weight | 2.3 kg (5.07 lb) |  |
|  | Operating Temperature | With extended temperature peripherals: -40 ~ 70 °C EN50155 TX |  |
|  | Storage Temperature | - 40 ~ 85 °C ( -40 ~ 185 °F) |  |
|  | Relative Humidity | 95% @ 40 °C (non-condensing) |  |
| Environment | Vibration During Operation | IEC61373 Category1, Class B |  |
|  | Shock During Operation | IEC61373 Category1, Class B |  |
|  | EMC | CE/FCC Class B, CCC, BSMI, EN50155 |  |
|  | Safety Certifications | UL, CCC, BSMI, CB, EN50155 |  |



**Fanless Embedded Box PCs**

All product specifications are subject to change without notice. Last updated: 13-Nov-2018

**ARK-2231R**

**Dimensions**

**ARK-2231R**



|  |
| --- |
| 2160. |

260.0



|  |
| --- |
| 057. |

|  |  |  |
| --- | --- | --- |
| **ARK-2231R+AMK-R100E** | Unit: mm |  |
|  |  |
|  | 2160. |  |
| 83.6 | 260.0 |  |
|  |  |



288.0

**ARK-2231R+AMK-R102E**



|  |
| --- |
| 160.2 |

83.6 260.0



288.0

|  |  |
| --- | --- |
| **Front Panel External I/O Mechanical Layout/Drawing** | **Rear Panel External I/O Mechanical Layout/Drawing** |

|  |  |  |  |
| --- | --- | --- | --- |
| VGAVGA COM COM HDMI USBUSB2.20.0 | RemoteControl | USB2.0/3.0/3..0 USBUSB2.20.0 |  |
| ON/OF**F**F DIODIO Audio OptionalI/OI/O S**S**D/HDSD/H**D**D |  | DCDCINPUT | SIMSIM | LANLAN |

**Ordering Information**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Part No.** | **CPU** | **RAM** | **Display GbE** | **USB** | **USB 2.0/** | **DIO** | **RS-232/** | **Audio** | **Full-size** | **SIM** | **mSATA** | **2.5" SATA II** | **Power** | **Operating** |  |
|  |  |  |  |  | **2.0** | **3.0** |  | **422/485** |  | **MiniPCIe** |  |  | **Drive Bay** | **Input** | **Temp.** |  |
| ARK-2231R-S9A1E | Intel® Atom E3845 DC | Up to | 1 x HDMI | 2 | 2 | 1 | 8 bit | 2 | Lin-out, | 3 | 1 | 1 | 1 | 24 VDC | -40 ~ 70 °C |  |
| 1.91GHz | 8G | 1 x VGA | Line-in, |  |
|  |  |  |  |  |  | MIC |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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

|  |  |
| --- | --- |
| **Packing List** | **Optional Item for Default SKU** |
| **Part Number** | **Description** | **Part Number** | **Description** |
| ARK-2231R-S9A1E | 1 x ARK-2231R Unit | XARK-FSP180-AAAN2 | AC-to-DC Adapter, DC24V/150W |
| - | 1 x User Manual (Simplified Chinese) | 1702002600 | Power cable 3-pin 183cm, USA type |
| - | 1 x China RoHS | 1702002605 | Power cable 3-pin 183cm, EU type |
| 1750006432 | 1 x GPS antenna 5000mm | 1702031801 | Power cable 3-pin 183cm, UK type |
| 1960071555N011 | 2 x Wall mounting brackets for ARK-2231R | 1700029009-01 | M12 | A-coded to USB type A female, 10cm |
| 1652001524 | 1 x Terminal Block 6P 5.00mm | 1700028852-01 | M12 | X-coded to RJ-45 female, 10cm |
|  |  | 1700028854-01 | M12 | A-coded to 5pin terminal block (for DC input), 10cm |
| **Optional Embedded OS** |  |  |  |
| **Part Number** | **Description** |  |  |  |
| 2070015162 | 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

**Online Download** www.advantech.com/products

**ARK-R Extended Modules**

**ARK-2231R+AMK-R100E**

**Extra 8 x GbE PoE + removable 2.5" drive bay**



**Specifications**

**General**



|  |  |
| --- | --- |
| PoE | 8 x 10/100/1000Base T(X) PoE+, 802.3at compliant, Total: 60W |
| PoE Connector | M12 X-coded, 8PIN |
| Drive bay | 1 x Removable 2.5" drive bay |
| Power Consumption | 75W (Max) |
| **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-2231R+AMK-R104E**

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



**Specifications**

**General**



|  |  |
| --- | --- |
| PoE | 8 x 10/100 Base T(X) PoE+, 802.3at compliant, Total: 60W |
| PoE Connector | M12 D-coded, 4PIN |
| Drive bay | 1 x Removable 2.5” drive bay |
| Power Consumption | 75W (Max) |
| **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 |



**Fanless Embedded Box PCs**

**ARK-2231R+AMK-R101E**

**Extra 4 x GbE PoE + removable 2.5" drive bay**



**Specifications**

**General**



|  |  |
| --- | --- |
| PoE | 4 x 10/100/1000Base T(X) PoE+, 802.3at compliant, Total: 60W |
| PoE Connector | M12 X-coded, 8PIN |
| Drive bay | 1 x Removable 2.5" drive bay |
| Power Consumption | 75W (Max) |
| **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-2231R+AMK-R105E**

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



**Specifications**

**General**



|  |  |
| --- | --- |
| PoE | 4 x 10/100 Base T(X) PoE+, 802.3at compliant, Total: 60W |
| PoE Connector | M12 D-coded, 4PIN |
| Drive bay | 1 x Removable 2.5” drive bay |
| Power Consumption | 75W (Max) |
| **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 |