

# ARK-1220L A2

## Intel® Atom™ E3940 QC SoC with 4K Dual HDMI/Dual LAN/M.2 DIN-Rail Fanless Box PC



### Features

- Intel® Atom™ E3940 Quad Core SoC turbo burst up to 1.8 GHz
- DIN-Rail system with essential I/O ports on front-side bezel
- 2 x Intel GbE and 4 x USB 3.0
- Dual HDMI display up to 4K resolution
- 1 x full-size mPCIe with SIM holder and 1 x M.2 2230 for WIFI #1
- 1 x 2.5" SATA III SSD and 1 x full-size mSATA
- 12V ~ 28V wide range power input
- -30 ~ 70 °C extended operating temperature
- Advantech WISE-DeviceOn support

ubuntu® Windows Embedded **WISE-DeviceOn** SUSI API   

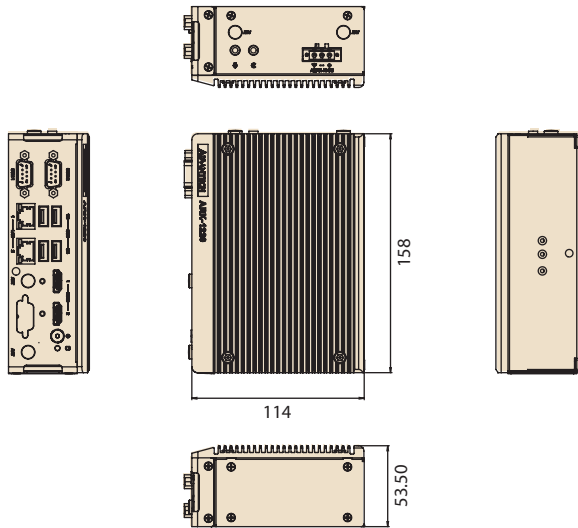
### Specifications

|                   |                            |                                                                                                                                                                                      |
|-------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model Name        | ARK-1220L-S6A2             |                                                                                                                                                                                      |
| Processor System  | CPU                        | Intel® Atom™ E3940 Quad Core SoC                                                                                                                                                     |
|                   | Frequency                  | 1.6 GHz, turbo burst up to 1.8 GHz                                                                                                                                                   |
|                   | Core Number                | 4                                                                                                                                                                                    |
|                   | BIOS                       | AMI EFI 64 Mbit                                                                                                                                                                      |
| Memory            | Technology                 | DDR3L 1600 Mhz                                                                                                                                                                       |
|                   | Max capacity               | 8GB                                                                                                                                                                                  |
|                   | Socket                     | 2 x 204-pin SO-DIMM, 2 x 4GB or 1 x 8GB memory                                                                                                                                       |
| Graphics          | Chipset                    | Intel HD Graphics 500, CPU integrated                                                                                                                                                |
|                   | Graphic Engine             | Gen9 Low Power; 18 Execution Units Media Codec Supported: H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG<br>3D HW Acceleration: OpenGL 4.4, DirectX* 12, OpenCL* 2.0 |
|                   | HDMI                       | HDMI1 : 3840 x 2160 @ 30Hz<br>HDMI2 : 3840 x 2160 @ 30Hz                                                                                                                             |
|                   | Dual Display               | HDMI1 + HDMI2                                                                                                                                                                        |
| Ethernet          | LAN1                       | 10/100/1000 Mbps Intel i210GbE, support Wake On LAN                                                                                                                                  |
|                   | LAN2                       | 10/100/1000 Mbps Intel i210GbE, support Wake On LAN                                                                                                                                  |
| Audio             | Interface                  | Realtek ALC888S, High Definition Audio, Mic-in, Line-out                                                                                                                             |
| I/O Interface     | Serial Ports               | 2 x RS-232/422/485 with auto flow control, COM2 with 5V/12V power supply                                                                                                             |
|                   | USB Ports                  | 4 x USB 3.0                                                                                                                                                                          |
|                   | GPIO                       | 8-bit Programmable DIO (Optional)                                                                                                                                                    |
| Expansion         | Mini PCIe                  | 1 x Full-size mPCIe with SIM holder #1                                                                                                                                               |
|                   | M.2                        | 1 x M.2 2230 E key for WIFI module #1                                                                                                                                                |
| Storage           | SSD/HDD                    | 1 x 2.5" SATAIII Drive bay (compatible with 9.5mm height)                                                                                                                            |
|                   | mSATA                      | 1 x Full-size mSATA (*share with mPCIe slot)                                                                                                                                         |
| Other             | WatchDog Timer             | 255 levels timer interval, setup by software                                                                                                                                         |
|                   | TPM                        | SLB9665XQ2.0 FW5.62 (Support by project)                                                                                                                                             |
| Software Support  | Microsoft Windows          | Windows 10 Enterprise                                                                                                                                                                |
|                   | Linux                      | Ubuntu Desktop 20.04 LTS 64bit                                                                                                                                                       |
| Power Requirement | Power Type                 | ATX/AT                                                                                                                                                                               |
|                   | Power Input Voltage        | 12 ~ 28 V <sub>DC</sub>                                                                                                                                                              |
|                   | Power Adaptor              | AC to DC, 60W (Optional)                                                                                                                                                             |
| Power Consumption | Typical                    | 7.6W                                                                                                                                                                                 |
|                   | Max.                       | 19W                                                                                                                                                                                  |
| Mechanical        | Construction               | Aluminum housing                                                                                                                                                                     |
|                   | Mounting                   | DIN-rail/Wall Mount                                                                                                                                                                  |
|                   | Dimensions (W x H x D)     | 53.5 x 158 x 114 mm (2.11" x 6.22" x 4.49")                                                                                                                                          |
|                   | Weight                     | 0.9kg (1.98lb)                                                                                                                                                                       |
| Environment       | Operating Temperature      | With extended temp. peripherals: -30 ~ 70 °C (-22 ~ 158 °F) with 0.7 m/s air flow<br>With 2.5 inch hard disk: 0 ~ 40 °C (32 ~ 104 °F) with 0.7 m/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, IEC60068-2-64, random, 5-500 Hz, 1hr/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                     | UL, CB, CCC and BSMI                                                                                                                                                                 |

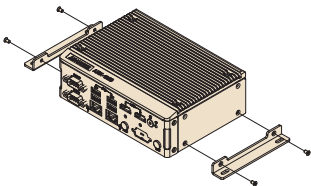
#1 SIM holder and M.2 slot are hardware interfaces for wireless communication integration only. System level RF certification is not available.

Dimensions

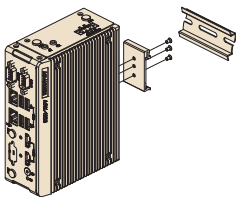
Unit: mm



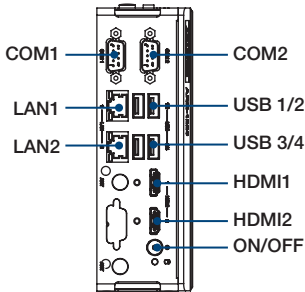
Wall Mount



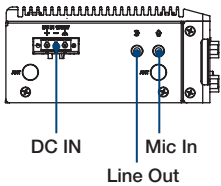
DIN Rail



Front Panel External I/O Mechanical Layout/Drawing



Top Panel External I/O Mechanical Layout/Drawing



Ordering Information

| Part No.       | CPU                          | RAM       | HDMI | GbE | USB 3.0 | RS-232/422/485 | Audio            | Full-size MiniPCle | SIM | M.2 | 2.5" SATA III HDD Bay | mSATA               | Power Input           | Operating Temp. |
|----------------|------------------------------|-----------|------|-----|---------|----------------|------------------|--------------------|-----|-----|-----------------------|---------------------|-----------------------|-----------------|
| ARK-1220L-S6A2 | Intel Atom E3940 1.6 GHz SoC | Up to 8GB | 2    | 2   | 4       | 2              | Mic-in, Line-out | 1                  | 1   | 1   | 1                     | 1 (shared w/ mPCle) | 12-28 V <sub>DC</sub> | -30 ~ 70 °C     |

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

Packing List

| Part Number    | Description                          |
|----------------|--------------------------------------|
| -              | 1 x ARK-1220L Unit                   |
| -              | 1 x User Manual (Simplified Chinese) |
| -              | Wrench for top cover                 |
| 1950016395T10C | 1x DIN-rail bracket                  |
| 1652004519     | 1x 3-pin terminal block              |

Embedded OS

| Part Number    | Description                                                                                          |
|----------------|------------------------------------------------------------------------------------------------------|
| 20706WX9ES0108 | Win10 IoT Ent 2019 LTSC 64bit, English (14.7GB)                                                      |
| 20706U20DS0029 | Ubuntu Desktop 20.04 LTS 64bit Image with license for ARK-1220L. (7.5GB) (accompany BIOS 1420054957) |

Optional Items

| Part Number      | Description                                   |
|------------------|-----------------------------------------------|
| 96PSA-A60W24T2-3 | AC to DC Adaptor, 24V/2.5A 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              |
| 1700000237       | Power cable 3-pin 183cm, PSE type             |
| 1700023855-01    | 1M lockable HDMI cable                        |
| 1700023856-01    | 3M lockable HDMI cable                        |
| 1700019967       | GPIO cable, F Cable 2*5P-2.0/D-SUB 9P(F) 15CM |
| AMK-W003         | ARK-1220L wall mount kit                      |