ARK-1220F

Intel Atom E3940 QC SoC with isolated GbE and COM ports 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 Isolated Intel GbE with protection to 2.5K V_{DC}
- 2 x Isolated COM with protection to 2.5K V_{DC}
- Isolated 8 bit GPIO (4DI/4DO) with with protection to 2.5K V_{DC}
- 4 x USB 3.0 and 1 x USB 2.0
- Dual independent displays with one 4K HDMI and one VGA
- 1 x full-size mPCIe with nano SIM holder and 1 x M.2 2230 for WIFI
- mSATA and 1 x 2.5" SATA storage device
- 12V ~ 28V wide range power input
- -30 ~ 60 °C extended operating temperature
- Advantech DeviceOn support

WISE-DeviceOn SUSI API

Specifications

Model Name		ARK-1220F-S6A1
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 128 Mbit
Memory	Technology	DDR3L 1866 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 3D HW Acceleration: OpenGL 4.4, DirectX* 12, OpenCL* 2.0
	HDMI	Up to 3840 x 2160 @ 30Hz
	VGA	Up to 1920 x 1200 @ 60 Hz
	Dual Display	HDMI + VGA
Ethernet	LAN1	10/100/1000 Mbps Intel i210-IT GbE, support Wake On LAN
	LAN2	10/100/1000 Mbps Intel i210-IT GbE, support Wake On LAN
Audio	Interface	Realtek ALC888S, High Defination Audio, Mic-in, Line-out
I/O Interface	Seriel Ports	1 x 2.5K V_{DC} Isolated RS232/RS422/RS485 1 x 2.5K V_{DC} Isolated RS422/RS485 (default RS485 for both ports)
	USB Ports	4 x USB3.0, 1 x USB2.0 ,1 internal USB2.0
	GPIO	8-bit Programmable DIO
Expansion	Mini PCIe	1 x Full-size mPCIe with nano 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 15mm 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
Software Support	Microsoft Windows	Windows 10 Enterprice
	Linux	Support by project
Power Requirement	Power Type	ATX/AT
	Power Input Voltage	12 ~ 28 V_{DC}
	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)	60 x 158 x 114 mm (2.34" x 6.22" x 4.49")
	Weight	1.5 kg (3.3lb)
Environment	Operating Temperature	With extended temp. peripherals: -30 ~ 60 °C (-22 ~ 140 °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	Heavy industrial certificates, CE/FCC Class B
	Safety	UL, CB, CCC and BSMI

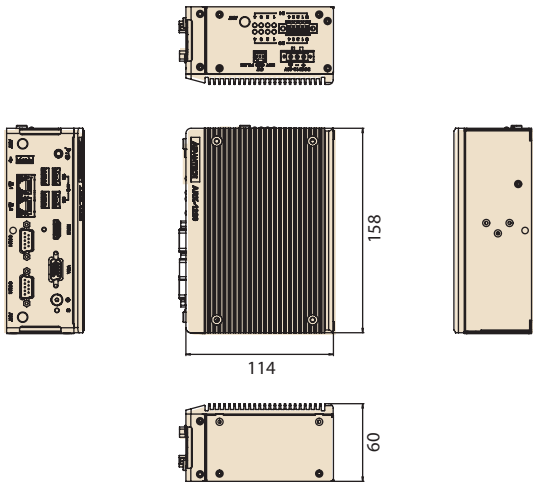
#1 SIM holder and M.2 slot are hardware interfaces for wireless communication integration only. System level RF certification is not available.

All product specifications are subject to change without notice.

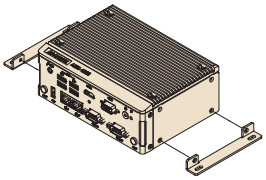
Last updated: 15-Nov-2021

Dimensions

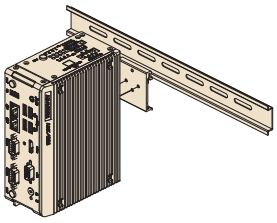
Unit: mm



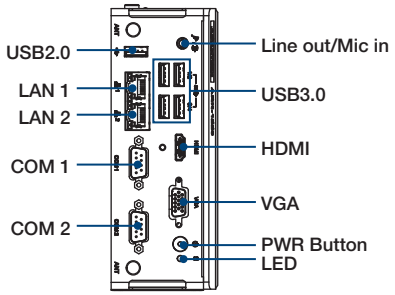
Wall Mount



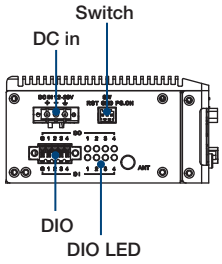
DIN Rail



Front Panel External I/O Mechanical Layout/Drawing



Top Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	RAM	HDMI	VGA	GbE	USB 3.0	USB 2.0	RS-232/ 422/485	Audio	Full-size MiniPCIe	SIM	M.2	2.5" SATA III HDD Bay	mSATA	Power Input	Operating Temp.
ARK-1220F-S6A1	Intel Atom E3940 1.6 GHz SoC	Up to 8GB	1	1	2	4	1	2	Mic-in, Line-out	1	1	1	1	1 (shared w/ mPCIe)	12~28 V_{DC}	-30 ~ 60 °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
1960015198T011	1x DIN-rail bracket
1652004519	1x 3-pin plug-in block for power in
1652007619-01	1 x 10-pin plug-in block for DIO
1652008227-01	1 x 3-pin terminal block for switch

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
AMK-W004	ARK-1220F wall mount kit

Embedded OS

Part Number	Description
20706WX9ES0143	Win10 IoT Ent 2019 LTSC 64bit, English