

# ARK-1221L

## Intel Atom x6413E Quad Core and Celeron N6210 Dual Core SoC with HDMI and DP/Dual LAN/Dual COM DIN-Rail Fanless Box PC

NEW



### Features

- Intel Atom x6413E Quad Core and Celeron N6210 Dual Core SoC
- DIN-Rail system with essential I/O ports on front-side bezel
- 2 x Intel GbE and 2 x RS-232/422/485
- Dual independent displays with one 4K HDMI and one 4K DP
- 1 x M.2 2280 B key with nano SIM holder and 1 x M.2 2230 E key
- 2 x USB 3.2 and 2 x USB 2.0
- 1 x full-size mPCIe
- mSATA and 1 x 2.5" SATA storage device
- 12V ~ 28V wide range power input
- -40 ~ 60 °C and -20 ~ 60 °C extended operating temperature
- Advantech DeviceOn support



WISE-DeviceOn SUSI API



### Specifications

Model Name		ARK-1221L-S5A1	ARK-1221L-S2A1
Processor System	CPU	Intel Atom x6413E Quad Core SoC	Intel Celeron N6210 Dual Core SoC
	Frequency	1.50 GHz, turbo burst up to 3.00 GHz	1.20 GHz, turbo burst up to 2.60 GHz
	Core Number	4	2
	BIOS	AMI EFI 256 Mbit	
Memory	Technology	DDR4 3200 MHz	
	Max capacity	32 GB	
	Socket	2 x 260-pin SO-DIMM, 2 x 16 GB or 1 x 32 GB memory	
Graphics	Chipset	Intel® UHD Graphics for 10th Gen Intel® Processors	
	HDMI	Up to 4096 x 2160 @ 60 Hz	
	DP	Up to 4096 x 2160 @ 60 Hz	
	Dual Display	HDMI + DP	
Ethernet	LAN1	Intel i225-LM, 2.5GbE, support Wake On LAN	
	LAN2	Intel i225-LM, 2.5GbE, 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 (default RS-232) with auto flow control	
	USB Ports	2 x USB3.2, 2 x USB2.0, 1 x internal USB2.0 for security dongle	
	GPIO	8-bit Programmable DIO	
	Optional CANbus	1 x CANBus 2.0 (DB9 connector)	
Expansion	Mini PCIe	1 x Full-size mPCIe	
	M.2	1 x M2. 2230 E key and 1 x M.2 2280 B key with nano SIM holder #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	TPM 2.0 (project support by AMO-I029)	
Software Support	Microsoft Windows	Windows 10 Enterprise	
	Linux	Ubuntu 20.04	
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	9.6W (OS idle mode)	12.66W (OS idle mode)
	Max.	18.96W (Full loading)	21.89W (Full loading)
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	1.05 kg (2.31lb)	
Environment	Operating Temperature	With extended temp. peripherals: -40 ~ 60 °C (-40 ~ 140 °F) with 0.7 m/s air flow	-20 to 60 °C (-4 ~ 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 (with Wall Mount)	
	Shock during Operation	With SSD: 30 G, IEC-60068-2-27, half sine, 11 ms duration (with Wall Mount)	
	EMC	CE/FCC Class B, CCC, BSMI, UKCA	
	Safety	UL, CB, CCC and BSMI, UKCA	

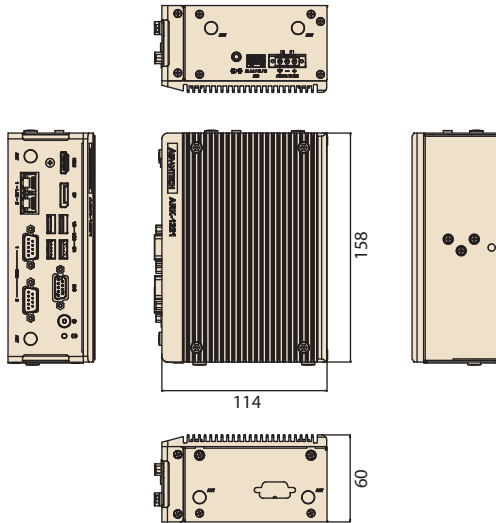
#1 SIM holder and M.2 slot are hardware interfaces for wireless communication integration only. System level RF certification is not available.

M.2 B key supports only PCIe x 2 and USB

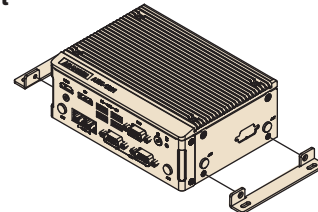
M.2 B key requires additional mechanical parts to fix for sizes other than 2280.

## Dimensions

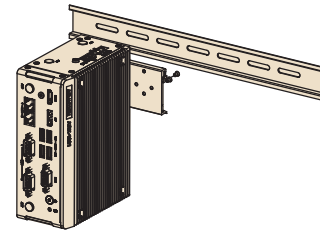
Unit: mm



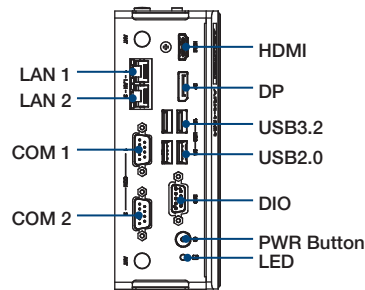
### Wall Mount



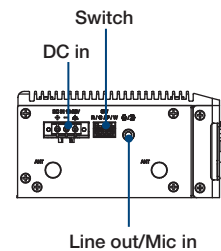
### DIN Rail



## Front Panel External I/O Mechanical Layout/Drawing



## Top Panel External I/O Mechanical Layout/Drawing



## Ordering Information

Part No.	CPU	RAM	HDMI	DP	GbE	USB 3.2	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.	Made in
ARK-1221L-SSA1	Intel Atom x6413E 1.50 GHz SoC	Up to 32 GB	1	1	2	2	2	2	Mic in or Line out	1	1	2	1	1 (shared with mPCIe)	12-28 V <sub>DC</sub>	-40 ~ 60° C	China
ARK-1221L-SSA1U	Intel Atom x6413E 1.50 GHz SoC	Up to 32 GB	1	1	2	2	2	2	Mic in or Line out	1	1	2	1	1 (shared with mPCIe)	12-28 V <sub>DC</sub>	-40 ~ 60° C	Taiwan
ARK-1221L-S2A1	Intel Celeron N6210 Dual Core SoC	Up to 32 GB	1	1	2	2	2	2	Mic in or Line out	1	1	2	1	1 (shared with mPCIe)	12-28 V <sub>DC</sub>	-20 ~ 60° C	China

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

## Packing List

Part Number	Description
-	1 x ARK-1221L Unit
-	1 x User Manual (Simplified Chinese)
-	Wrench for top cover
1950016395T101	1x DIN-rail bracket
1652004519	1x 3-pin plug-in block for power in
1652007880-01	1 x 4-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
1700030518-01	CANBus Cable

Note:  
Please update BIOS to Advantech part number 1420056720 when using the optional CANBus cable 1700030518-01.

## Embedded OS

Part Number	Description
20706WX9ES0168	Win10 IoT Ent 2019 LTSC 64bit, English
20706U20DS0041	img Ubn20.4 ARK-1221L 64b 2004 ENU