ARK-1250L

Intel® 11th Gen Core™ i processor with Triple LAN/ Quadruple COM Din-Rail Fanless Box PC

NEW

Features

- Intel 11th Gen. Core i5/i3
- DIN-Rail system with essential I/O ports on front-side bezel
- 3 x Intel GbE, 4 x RS-232/422/485, 8-bit DIO, optional CANBus
- 3 Expansions: M.2 E-Key 2230, M.2 B-Key 2280, 1 x Full-size mSATA share with mPCIe slot
- Dual independent displays with one 4K HDMI and one VGA
- 3 x USB 3.2 and 3 x USB 2.0
- mSATA and 1 x 2.5" SATA storage device
- 12V ~ 24V wide range power input
- -40 ~ 60 °C extended operating temperature
- Advantech iEdge support
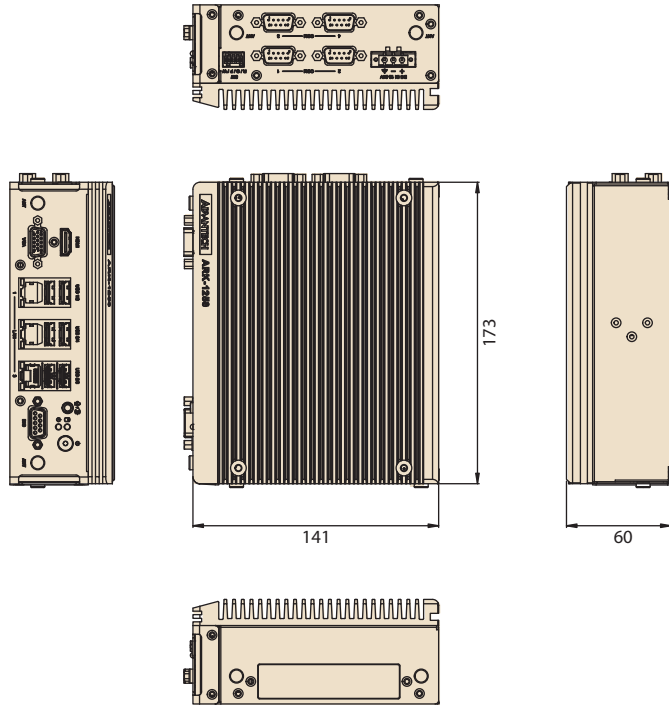- Qualified for Edge AI SRP of WISE-DeviceOn

Windows Embedded   WISE-DeviceOn   SUSI API   LISTED c(UL)us E190881   CE   FC

Specifications

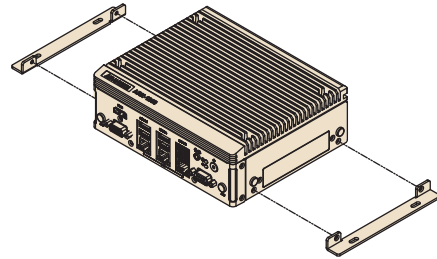| Model Name		ARK-1250L	
Processor System	CPU	Core i5-1145G7E	Core i3-1115G4E
	Frequency	1.5GHZ turbo boost up to 4.1 GHz	2.2 GHz turbo boost up to 3.9 GHz
	Core Number	4	2
	BIOS	AMI EFI 256 Mbit	
Memory	Technology	DDR4 3200 MHz	
	Max capacity	Up to 64 GB with 2 x slots	
	Socket	2 x Dual Channel DDR4 3200 MHz 260 pin SO-DIMM (no support ECC)	
Graphics	Chipset	Intel® Iris® Xe graphics	
	HDMI	Up to 4096 x 2160 @ 60Hz	
	VGA	Up to 1920 x 1200 @ 60Hz	
	Dual Display	HDMI + VGA	
Ethernet	LAN1	10/100/1000/2500 Mbps Intel i225 GbE, support Wake On LAN	
	LAN2	10/100/1000 Mbps Intel i219 GbE, support Wake On LAN	
	LAN3	10/100/1000/2500 Mbps Intel i225 GbE, support Wake On LAN	
Audio	Interface	Realtek ALC888S, High Defination Audio, Mic-in or Line-out	
I/O Interface	Seriel Ports	4 x RS-232/422/485 with auto flow control	
	USB Ports	3 x USB3.2, 3 x USB2.0, 1 x internal USB 2.0 supported by project	
	GPIO	8-bit Programmable DIO	
	CANBus	Optional (supported by project)	
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 15mm 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 (Optional, project supported by AMO-I029)	
Software Support	Microsoft Windows	Windows 10 Enterprise	
	Linux	Ubuntu 20.04, others by project support	
Power Requirement	Power Type	ATX/AT	
	Power Input Voltage	12 ~ 24 V_{DC}	
	Power Adaptor	AC to DC, 90W adaptor by default	
Power Consumption	Typical (OS idle mode)	19.8W	18W
	Max. (Full loading)	35.1W	30.6W
Mechanical	Construction	Aluminum housing	
	Mounting	DIN-rail/Wall Mount	
	Dimensions (W x H x D)	60 x 173 x 141 mm (2.36 x 6.73 x 5.55 in)	
	Weight	1.5KG	
Environment	Operating Temperature	With extended temp. peripherals: -40 ~ 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	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	
	Safety	UL, CB, CCC	

#1 SIM holder and M.2 slot are hardware interfaces for wireless communication integration only. System level RF certification is not available.
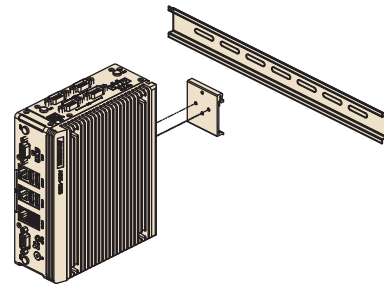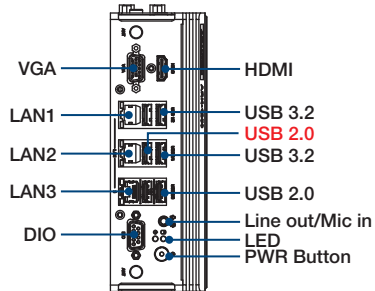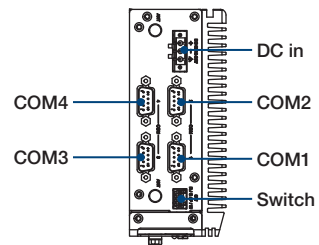M.2 B key requires additional mechanical parts to fix for sizes other than 2280.

ADVANTECH   **Fanless Embedded Box PCs**

Dimensions

Unit: mm

173

141

60

Wall Mount

DIN Rail

Front Panel External I/O Mechanical Layout/Drawing

- VGA
- LAN1
- LAN2
- LAN3
- DIO
- HDMI
- USB 3.2
- USB 2.0
- USB 3.2
- USB 2.0
- Line out/Mic in
- LED
- PWR Button

Top Panel External I/O Mechanical Layout/Drawing

- COM4
- COM3
- DC in
- COM2
- COM1
- Switch

Bottom View External I/O Mechanical Layout/Drawing

- iDoor
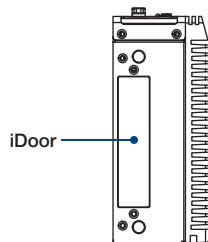
Ordering Information

Part No.	CPU	RAM	HDMI	VGA	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.
ARK-1250L-U2A1	Intel Core i3-1115G4E	Up to 64 GB	1	1	3	3	3	4	Mic in or Line out	1	1	2	1	1 (shared w/ mPCIe)	12~24 V$_{DC}$	-40 ~ 60 °C
ARK-1250L-S5A1	Intel Core i5-1145G7E	Up to 64 GB	1	1	3	3	3	4	Mic in or Line out	1	1	2	1	1 (shared w/ mPCIe)	12~24 V$_{DC}$	-40 ~ 60 °C

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

Packing List

Part Number	Description
-	1 x ARK-1250L Unit
-	1 x User Manual (Simplified Chinese)
-	Wrench for top cover
XARK-ADP-90MDH	AC to DC adaptor , 19V/90W
1950016395T101	1 x DIN-rail bracket
1652004519	1 x 3-pin plug-in block for power in
1652007880-01	1 x 4-pin terminal block for switch

Embedded OS

Part Number	Description
20706WX9VS0158	Win10 IoT Ent 2019 LTSC 64bit, English
20706U20DS0042	img Ubun20.4 ARK-1250L 64b 2004 ENU

Optional Items

Part Number	Description
96PSA-A120W24T2-4	AC to DC adaptor, 24V/120W
1700001524	Power Cable 3-pin 180cm, USA type (for XARK-ADP-90MDH)
170203183C	Power Cable 3-pin 180cm, Europe type (for XARK-ADP-90MDH)
170203180A	Power Cable 3-pin 180cm, UK type (for XARK-ADP-90MDH)
1700008921	Power Cable 3-pin PSE Mark 183cm (for XARK-ADP-90MDH)
1702002600	Power cable 3-pin 183cm, USA type (for 96PSA-A120W24T2-3)
1702002605	Power cable 3-pin 183cm, EU type (for 96PSA-A120W24T2-3)
1702031801	Power cable 3-pin 183cm, UK type (for 96PSA-A120W24T2-3)
1700000237	Power cable 3-pin 183cm, PSE type (for 96PSA-A120W24T2-3)
1700024369-01	1M HDMI cable
1700031560-01	1.8M HDMI cable
AMK-W006	ARK-1250 wall mount kit
1700030518-01	CANBus Cable (replacing GPIO)

Optional MOS modules for iDoor Expansion

Part Number	Description
MOS-2230-Z1201E	CANBus module, 2-Ch, USB Interface
MOS-2220-X1101E	Parallel LPT module, 1-Ch, USB Interface
MOS-2110Z-1201E	USB module, 2-Ch, PCIe Interface
MOS-2120-Z1101E	Giga LAN Ethernet module, 1-Ch, PCIe Interface
MOS-1120Y-0202E	Isolated RS-232, 2-Ch, DB9, PCIe Interface
MOS-1121Y-0202E	Isolated RS-422/485, 2-Ch, DB9, PCIe Interface
MOS-1120Y-1402E	Non-Isolated RS-232, DB37, 4-Ch, PCIe Interface
MOS-1121Y-1402E	Non-Isolated RS-422/485, DB37, 4-Ch, PCIe Interface
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCIe Interface
MOS-1110Y-0101E	Isolated 16 DI/8 DO, 1-Ch, DB37, PCIe Interface
MOS-2120-Z1201	GigaLAN Ethernet module, mPCIe, RJ45 2-Ch, PCIe I/F
MOS-2220-Z1101E	High Speed Serial COM module, 1-Ch, USB Interface
AMO-I032	Expansion kit M.2 B key for mPCIe idoor

Note
- Need to order AMO-I032 together with MOS modules
- mPCIe and M.2 E Key cannot be used when adding any MOS module due to mechanical interference

WISE-DeviceOn

Edge AI OTA and Container Management

WISE-DeviceOn End-to-End Solution for Edge AI

Even if all datasets, algorithms, trainings, UI/UX, and more are functioning, how can you easily deploy an AI application to hundreds, or thousands, of inference devices in production? How can you efficiently manage AI models (software updates, CI/CD), in addition to all remote, hardware devices, such as sensors?

Solution Advantages

Performance Booster
- Inference optimization
- Open Neural Network Compiler (ONNC)
- Save over 45% DRAM consumption

Fleet Management
- Remote batch control for power management, reboot, terminal and screenshot
- Real-time monitoring, diagnostics and notification
- Over 10,000 devices around the globe

Container and OTA
- Streamlined deployment process
- Docker container management
- Software OTA (over-the-air) updates

AI Security
- AI containers deployed via Azure Container Registry and Harbor
- Secured data connection (TLS/SSL)
- Integrity protection based on digital signature

☞ **Find More Information about WISE-DeviceOn End-to-End Solution for Edge AI**