ARK-2233

Intel® Core™ Series 3 Wildcat Lake Processor Fanless Box PC



Features

- 1U THIN Compact design
- Intel® Core Series 3 Wildcat Lake Processor
- DDR5-6400 CSODIMM memory support up 64G
- M.2 E Key, B Key and M Key for storage and wireless module installation
- Up to 2 x Intel GbE, 6 x serial ports, 8-bit DIO, 1 x CANBus
- 4 x USB 3.2 and 4 x USB 2.0
- 2 displays with 1 x 4K HDMI, 1 x 4K DP
- TPM on board for system security
- 12V~28V wide range power input
- -20 ~ 60 °C extended operating temperature
- Support Advantech iDoor and 5G/Wifi/AI module
- Support Edge AI SDK, WEDA

Specifications

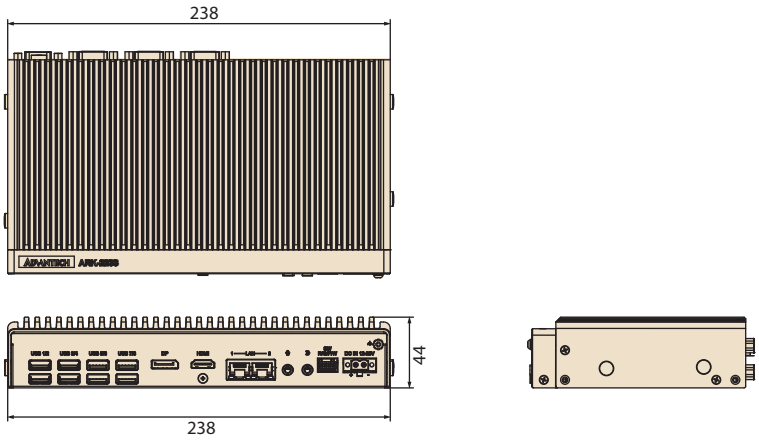
Processor System	CPU	Intel® Core™ 3 304	Intel® Core™ 5 320
	Core Number	5, 1P+4LPE	6, 2P+4LPE
	Frequency	1.5GHz up to 4.3GHz	1.5GHz up to 4.6GHz
	BIOS	AMI EFI 512 Mbit	
	NPU (INT8)	15 TOPS	
Memory	Technology	DDR5 6400 MT/s CSODIMM	
	Max capacity	Up to 64GB	
	Socket	1x 262-pin SODIMM (no support ECC)	
Graphics	Chipset	Intel® Xe3 graphics up to 16EUs (1Xe) Intel® Xe3 graphics up to 32EUs (2Xe)	
	HDMI	1x HDMI 2.1 TMDS: 3840x2160@ 60Hz	
	DP	1x DP 1.4: 3840 x 2160 @ 60Hz (or 1x VGA, for customized projects only) #1	
	Dual Display	1x HDMI+ 1x DP	
Ethernet	LAN1	10/100/1000/2500 Mbps Intel i226V GbE, support Wake On LAN	
	LAN2	10/100/1000/2500 Mbps Intel i226V GbE, support Wake On LAN	
Audio	Interface	1x Mic-in and 1x Line-out (by Realtek ALC888S)	
I/O Interface	Serial Ports	2 x RS232/422/485 (COM1/2) (default: RS-232, default support High speed COM), modified by BIOS 4 x RS232/485 (COM3/4/5/6) (default: RS-485) modified by Jumper and BIOS	
	USB Type A	4 x USB3.2 Gen2 #2 4 x USB2.0	
	GPIO	1x, 8-bit Programmable DIO	
	CANBus	1x, DB9 (CANBus 2.0) (optional, by cable, cannot co-exist w/ GPIO)	
	Remote Switch	1x 4pin connector	
Expansion	M.2	1x Key-B 3042/ 3052 (PCIe Gen4 x 1, USB3.0/2.0) with nano SIM holder, for 5G/iDoor/AI module, (modified by jumper) 1x Key-E 2230 (PCIe Gen4 x 1), for WIFI/AI module 1x Key-M 2280 (PCIe Gen4 x 2), for NVMe storage	
Storage	M.2 NVMe	Default: 1x M.2 M-key 2280 (PCIe Gen4 x 2) Optional: 1x M.2 B-key 3042/ 3052 (PCIe Gen4 x 1, USB3.0/2.0)	
Other	WatchDog	255 levels timer interval, setup by software	
	TPM 2.0	TPM2.0, NPCT764AAEYX FW7.2.4.1	
Software Support	Microsoft Windows	Windows 11 Enterprise (LTSC)	
	Linux	Ubuntu 24.04	
Power Requirement	Power Type	ATX/AT (default ATX)	
	Power Input Voltage	12-28 V_{DC}	
Power Consumption	Typical (OS idle mode)	TBC	
	Max. (Full loading)	TBC	
Mechanical	Construction	Aluminum housing + metal bottom	
	Mounting	Wall Mounting Kit	
	Dimensions (W x H x D)	238 x 44 x 133 mm	
	Weight	2.58 KG	
Environment	Operating Temperature	With extended temp. peripherals: -20 ~ 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 and SSD)	
	Shock during Operation	With SSD: 30 G, IEC-60068-2-27, half sine, 11 ms duration (with Wall Mount and SSD)	
	EMC	CE/FCC Class B, CCC, BSMI, UKCA	
	Safety	UL, CB, CCC, UKCA	

#1 DP can be replaced with VGA for customized projects. The VGA port will be located at the iDoor slot.
#2 Bandwidth is shared; 10 Gbps applies to single-port operation only.

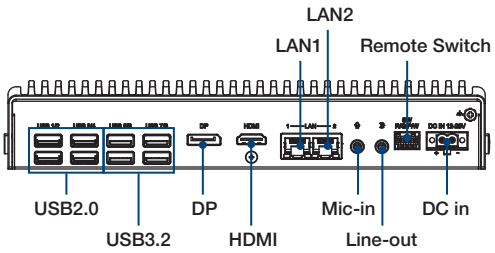
All product specifications are subject to change without notice.

Dimensions

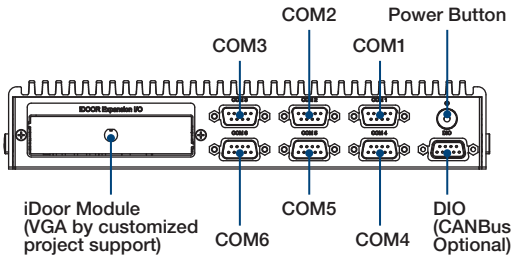
Unit: mm



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	RAM	HDMI	DP	LAN	COM	USB Type A	M.2 B	M.2 E	M.2 M	SIM	Audio	Option Module
ARK-2233-S4A1	Core 3 304	1 socket (up to 64GB)	1	1	2	6	4 x USB 3.2, 4 x USB 2.0	1	1	1	1	1 x Mic in, 1 x Line out	5G/WiFi/iDoor
ARK-2233-S5A1	Core 5 320	1 socket (up to 64GB)	1	1	2	6	4 x USB 3.2, 4 x USB 2.0	1	1	1	1	1 x Mic in, 1 x Line out	5G/WiFi/iDoor
ARK-2233-S4A1U*	Core 3 304	1 socket (up to 64GB)	1	1	2	6	4 x USB 3.2, 4 x USB 2.0	1	1	1	1	1 x Mic in, 1 x Line out	5G/WiFi/iDoor
ARK-2233-S5A1U*	Core 5 320	1 socket (up to 64GB)	1	1	2	6	4 x USB 3.2, 4 x USB 2.0	1	1	1	1	1 x Mic in, 1 x Line out	5G/WiFi/iDoor

* P/N with alphabet "U" as suffix are Made in TW

Packing List

Part Number	Description
-	1 x ARK-2233 Unit
-	1 x User Manual (Simplified Chinese)
	1 x China RoHS
1960071555N031	2 x mounting bracket
1990019810N000	1 x Memory thermal pad 60 x 23 x 2 mm
1990019242N010	1 x M.2 M key 2280 thermal pad 60 x 23 x 1.5 mm
36WSWPDOBUND11	1 x WISE-DeviceOn
1652000099	1 x 2-pin plug-in block for power in
1652007880-01	1 x 4-pin plug-in block for remote switch
36WSWPDOBD0211	Trellix, Acronis
36WSWPDOBUND11	WISE-PaaS/DeviceOn Client Bundle

Optional PCM modules for iDoor

Part Number	Description
PCM-34R1TP-AE	Intel I225, 2.5Gb/s, IEEE 1588, TSN, RJ45*1, M.2
PCM-34R2GL-AE	2 Port Giga LAN Intel i350, M.2 B+M key
PCM-37D24DI-AE	24ch Isolation Digital I/O, 16DI/ 8DO, DB37 x1
PCM-34D2R2-AE	2-Port Isolated RS-232, M.2 (2242, B key, USB), DB9
PCM-34D4R2-AE	Non-Isolated RS-232, DB37x1, M.2 Bkey(2242, USB)

1: PCM IO module need to add side bracket
a.1x 1960065854N002 (bracket)
b.2x 19310305C0 (screw)
2. PCM M.2 2242/3042 idoor main board need to assembled with expansion bracket
a.1x 1960110006N000 (expansion bracket)
b.1x 193B0305E2 (M3x5L screw)

Embedded OS

Part Number	Description
207XXXXXXXXX(TBD)	Ubuntu 24.04
207XXXXXXXXX(TBD)	Win 11 24HL 64b 24H2 ENU

Optional Items

Part Number	Description
96PSA-A150W24T2-4	A/D 100-240V 150W 24V W/PFC C14 CORD END 62368
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
1700001714	Power cable 3-pin 183cm, Taiwan BSMI
1700021732-31	VGA Cable
1960110006N000	M.2 expansion bracket for 5G/iDoor/AI module
1700037159-01	CANBus Cable
1652008233-01	6-pin terminal block for CANBus
AMK-V019E	VESA mount kits
AMK-R005E	DIN Rail mount kits

Note:
- VGA support is available upon project request, cannot co-exist with iDoor module
- CANBus cannot co-exist with GPIO