

# ARK-1551

## Intel® 8th Generation Core™ i5/Celeron Slim Fanless Computer



### Features

- 8th Gen Intel® Core™ i5/Celeron
- Dual DDR4 2400MHz SO-DIMM memory up to 32G
- 1 x swappable 2.5" SATA HDD drive bay and 1 x mSATA slot, supports Intel software RAID 0/1
- 4 x USB 3.1 Gen 2, 2 x Intel GbE LAN, 4 x RS-232/422/485, 8 bit GPIO
- 4K2K HDMI and VGA dual independent displays
- 1 x full-size mPCIe with SIM holder and 1 x M.2 2230 E Key
- Support Advantech SQF PCIe2 NVMe storage
- 12V - 24V @ -10%/+20% wide range power input
- Advantech DeviceOn built-in for easy manageability
- RED for WiFi/BT/LTE are ready



### Specifications

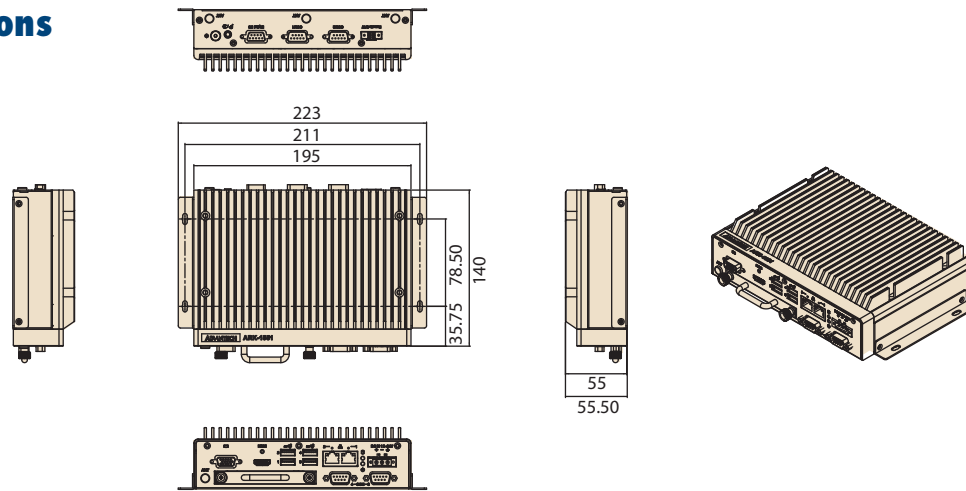
Model Name		ARK-1551-S6A1	ARK-1551-U2A1	ARK-1551-U0A1
Processor System	CPU	Intel® Core i5-8365UE	Intel® Core™ i3-8145UE	Celeron 4305UE
	Frequency	1.6 GHz, turbo burst up to 4.1 GHz	2.1 GHz, turbo burst up to 3.9 GHz	2.0 GHz
	Core Number	4	2	2
	L3 Cache	6MB	4MB	2MB
	BIOS	AMI UEFI 256Mbit	AMI UEFI 256Mbit	AMI UEFI 256Mbit
Memory	Technology	DDR4 2400MHz		
	Max capacity	32GB, each memory slot support up to 16GB		
	Socket	2 x 260-pin SO-DIMM		
Graphics	Chipset	Intel UHD Graphics 620		Intel HD Graphics 610
	Graphic Engine	Gen9 Low Power; 24 (UHD 620) /12(UHD 610) Execution Units Media Codec Supported: H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC 3D HW Acceleration: OpenGL 4.5, DirectX* 11.3/12, OpenCL* 2.1		
	Display Interface	HDMI: 1 x HDMI 1.4b, 4096 x 2160@30Hz VGA: 1 x VGA, 1920 x 1080@ 60Hz DP: 1 x DP 1.2, 4096 x 2304 @ 60Hz (*co-lay with VGA, by project support with MOQ = 30)		
	Dual Display	HDMI + VGA (Default) ; HDMI + DP (By project support, MOQ 30)		
Ethernet	LAN1	10/100/1000 Mbps Intel i210GbE, support Wake On LAN		
	LAN2	10/100/1000 Mbps Intel i219GbE, support Wake On LAN		
Audio	Interface	Realtek ALC888S, High Definition Audio, Mic-in or Line-out (ARK-1551-S6A2 without Audio)		
I/O Interface	Serial Ports	4 x RS-232/422/485 support from 50 bps to 921.6 kbps, with auto flow control. COM3 with 5V/12V power, by jumper setting		
	USB Ports	4 x USB 3.1 Gen2, Type A connector		
	GPIO	8-bit programmable DIO		
Expansion	Mini PCIe	1 x full-size mPCIe with 1x nano SIM holder (PCIe x2, USB 2.0x1, UIM, SATA x1) #1		
	M.2	1 x M.2 2230 E key for WiFi module (PCIe x2, USB 2.0x1) #1		
Storage	SSD/HDD	1 x Swappable 2.5" SATAIII drive bay (compatible with 7mm height)		
	mSATA	1 x full-size mSATA (share with mPCIe slot)		
	PCIe	Support 2x Advantech SQF PCIe2 NVMe storage (1 x M.2 2230 E Key + 1 x mPCIe)		
Other	WatchDog Timer	255 levels timer interval, setup by software		
	TPM	SLB9665XQ2.0	(Support by project)	(Support by project)
	Case Open	Support		
Software Support	Microsoft Windows	Windows 10 Enterprise		
	Linux	Ubuntu Desktop 20.04 LTS 64bit		
Power Requirement	Power Type	ATX/AT		
	Power Input Voltage	12 ~ 24 V <sub>DC</sub> @ -10%/+20%		
	Power Adaptor	i3-8145UE, Celeron 4305UE: AC to DC, 90W (Optional) i5-8365UE: AC to DC, 90W for 0 ~ 40 °C (Optional) AC to DC, 120W for -20 ~ 55 °C (Optional)		
Power Consumption	Typical	12.81 Watt	13.31 Watt	8.93 Watt
	Max.	42.14Watt	46.1 Watt	24.7 Watt
Mechanical	Construction	Aluminum housing		
	Mounting	Wall Mounting (Default); VESA & DIN-Rail Mounting (Optional)		
	Dimensions (W x H x D)	195 x 55 x 140 mm (7.68" x 2.16" x 5.52")		
	Weight	Net Weight: 1.9KG; Gross Weight: 2.6KG		
Environment	Operating Temperature	With extended temp. peripherals: -20 ~ 55 °C (-4 ~ 131 °F) with 0.7 m/s air flow 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.

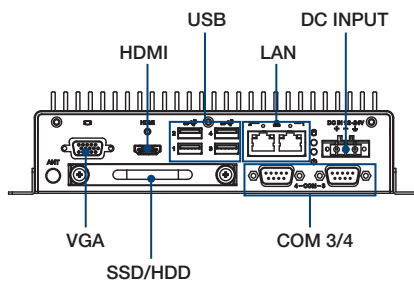
#2 RED for WiFi/BT are available with EWM-W192K2. RED for LTE is available with AIW-344FQ-E02. Other system level RF certification is not available.

## Dimensions

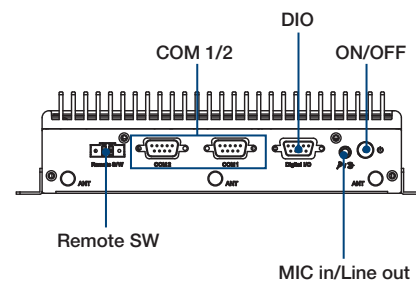
Unit: mm



### Front Panel External I/O View



### Rear Panel External I/O View



## Ordering Information

Part No.	CPU	RAM	Display	GbE	USB 3.1 Gen 2	RS-232 / 422/485	Audio	Full-size MiniPCIe	SIM	M.2	2.5" SATA III HDD Bay	mSATA	Power Input	Operating Temp.
ARK-1551-S6A1	Intel® Core i5-8365UE Q/C SoC	Up to 32GB**	HDMI x 1 VGA x 1	2	4	4	Mic-in or Line-out	1	1	1	1 x swappable HDD Bay**	1 (shared w/ mPCIe)**	12-24 Vdc	-20 ~ 55 °C*
ARK-1551-U0A1	Celeron 4305UE D/C SoC	Up to 32GB**	HDMI x 1 VGA x 1	2	4	4	Min-in or Line-out	1	1	1	1 x swappable HDD Bay**	1 (shared w/ mPCIe)**	12-24 Vdc	-20 ~ 55 °C*
ARK-1551-U2A1	CPU Intel® Core™ i3-8145UE	Up to 32GB**	HDMI x 1 VGA x 1	2	4	4	Mic-in or Line-out	1	1	1	1 x swappable HDD Bay**	1 (shared w/ mPCIe)**	12-24 Vdc	-20 ~ 55 °C*
ARK-1551-S6A2	Intel® Core i5-8365UE Q/C SoC	Up to 32GB**	HDMI x 1 VGA x 1	2	4	4	N/A	1	1	1	1 x swappable HDD Bay**	1 (shared w/ mPCIe)**	12-24 Vdc	-20 ~ 55 °C*

\*CPU condition: Turbo boost on with 0.7 air flow

\*\* Memory, storage and operating system bundled by request.

## Packing List

Part Number	Description
-	1 x ARK-1551 unit
-	1 x user manual (Simplified Chinese)
-	1 x wrench for top cover
-	1 x 3-pin terminal block
-	1 x 2-pin terminal block for remote power switch
-	WISE-PaaS/DeviceOn Package
-	2 x LAN Clip
-	1 x wall mount kit

## Optional Items

Part Number	Description
XARK-ADP-90MDH	AC to DC adaptor , 19V/90W
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-A120W24T2-4)
1702002605	Power cable 3-pin 183cm, EU type (for 96PSA-A120W24T2-4)
1702031801	Power cable 3-pin 183cm, UK type (for 96PSA-A120W24T2-4)
1700000237	Power cable 3-pin 183cm, PSE type (for 96PSA-A120W24T2-4)
1700023855-01	1M lockable HDMI cable
1700023856-01	3M lockable HDMI cable
AMK-V019E	VESA mounting kit
AMK-R005E	DIN-rail mounting kit
EWM-W192K2	WiFi/BT kit package with Intel AC9260 802.11 ac/a/b/g/n
AIW-344FQ-E02	LTE CAT4 mini PCI-e module for Europe

## Embedded OS

Part Number	Description
20706WX9VS0127	Win10 IoT Ent 2019 Value LTSC 64bit, English for ARK-1551-S6A1/ ARK-1551-S6A2/ARK-1551-U2A1
20706WX9ES0137	Win10 IoT Ent 2019 Entry LTSC 64bit, English for ARK-1551-U0A1
20706U20DS0008	Ubuntu Desktop 20.04 LTS 64bit Image with license for ARK-1551, 7GB