ARK-2250V

6th Gen Intel Core i7-6822EQ QC/i5-6442EQ QC In-vehicle Fanless System

Features

- Intel i7-6822EQ QC/ Intel i5-6442EQ QC SoC
- Support TPM2.0
- Stackable extension design, option extension kit for applications
- Support 12/24V_{DC} vehicle power input with E-Mark certification
- Built-in Vehicle Power Ignition Management
- Diversity Communication Extensible, ex. WLAN, WWAN
- Certified for EMARK, ISO7637-2, IEC 60721-3-5 5M3, MIL-STD-810G
- Built-in Advantech remote management software WISE-PaaS/RMM

Windows Embedded **WISE-PaaS/ DeviceOn**

Specifications

		ARK-2250V-U0A1E	ARK-2250V-S9A1E
Processor System	CPU	Intel i7-6822EQ QC SoC	Intel i5-6442EQ QC SoC
	Frequency	2.0GHz	1.9GHz
	Cache	8 MB	6 MB
	BIOS	AMI EFI	
Memory	Technology	DDR4 2133MHz	
	Max. Capacity	32G	
	Socket	2 x 260-pin SO-DIMM	
Graphics	Chipset	QM170	
	Graphic Engine	DirectX 11.3, OGL 4.4, OCL 2.1 Encode: H.264, MPEG2/4, VC1, WMV9 Decode: H.264, MPEG2 EHVC: H.265	
	VGA	Up to 1920 x 1200 @ 60Hz	
	HDMI	HDMI 1.4a for HD video playback, 1080P at 60Hz	
	Dual Display	VGA + HDMI (Std.) or Dual HDMI (by project)	
Ethernet	LAN1	10/100/1000 Mbps Intel i219 GbE, support Wake On Lan	
	LAN2	10/100/1000 Mbps Intel i210 GbE, support Wake On Lan	
Audio	Interface	Realtek ALC888S, High Definition Audio, Line-out,Mic-in,Line-in	
IO Interface	Serial Ports	3 x RS-232/422/485 port with auto flow control	
	USB Interface	3 x USB3.0 Type A	
	GPIO	4 x DI & 4 x DO w/ 1.5KV isolation, Input Voltage: 0 to 30 V_{DC}, Output Current: Max. 500 mA per channel, On-state Voltage: 24 V_{DC} nominal, open collector to 30 V_{DC}	
	VDC Output	12V_{DC}/1.5A	
Other	Watchdog timer	255 levels timer interval, setup by software	
	TPM	TPM2.0 (Infineon SLB9665)	
Expansion	Mini PCIe	#1, Full-size Mini PCIe(SATA/PCIe/USB) w/external SIM socket #2, Full-size Mini PCIe(PCIe/USB) w/external SIM socket #3, M.2 2230 E key	
Storage	SSD/HDD	1 x 2.5" SATA drive bay	
	mSATA	1 x full size mSATA socket (Mini PCIe #1)	
Software Support	Microsoft Windows	Win7, WES7, Win10, Win10 IoT	
	Linux	Support by project	
Power Requirement	Power Type	ATX	
	Power Input Voltage	12/24V_{DC} with E-Mark certification	
	Vehicle Power Ignition	Selectable boot-up & shut-down voltage, on/off delay time	
	Isolation	1.5 KV	
Power Consumption	Typical	22W	
	Max.	45W	
Mechanical	Construction	Aluminum housing	
	Mounting	Wall mounting kit	
	Dimensions (W x H x D)	260 x 73 x 160.2mm	
	Weight	3.2 Kg	
Environment	Operating Temperature	With extended temperature peripherals: -20 ~ 70° 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	IEC 60721-3-5 5M3, MIL-STD-810G Method 514.6	
	Shock During Operation	IEC 60721-3-5 5M3, MIL-STD-810G Method 516.6	
	EMC	CE, FCC Class B, CCC, BSMI	
	Safety Certifications	UL, CCC, BSMI, CB, EMARK (No RED certification)	

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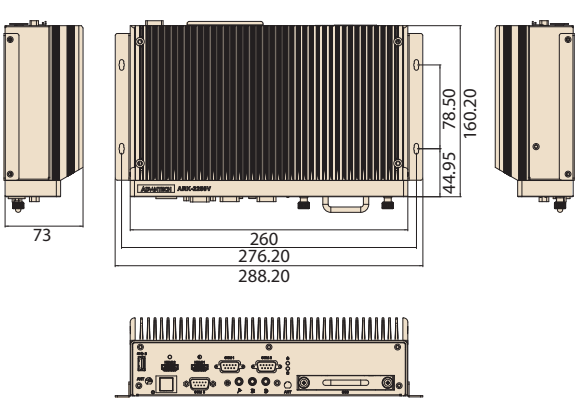
All product specifications are subject to change without notice.

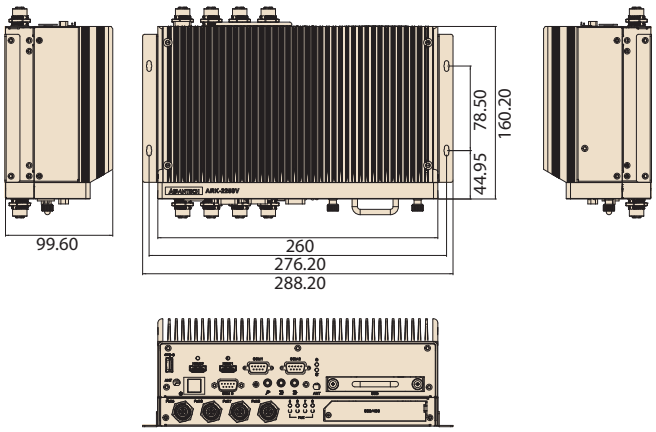
Dimensions

Unit: mm

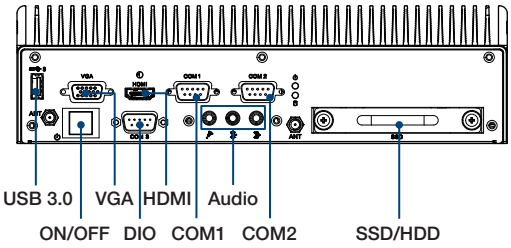
ARK-2250V



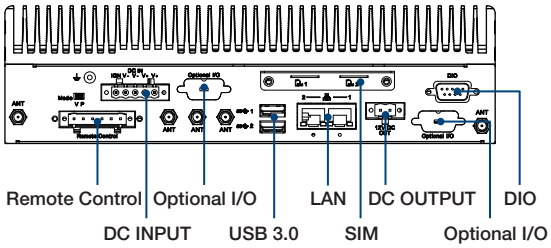
ARK-2250V+AMK-R100E



Front Panel External I/O Mechanical Layout/Drawing



Rear Panel External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	VGA	HDMI	GbE	USB 3.0	DIO	RS-232/422/485	Audio	2.5" SATA Drive Bay	Operating Temp.
ARK-2250V-U0A1E	Intel Core i7-6822EQ QC	1	1	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-U0A1EPOE*	Intel Core i7-6822EQ QC	1	1	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-U0A2E	Intel Core i7-6822EQ QC	0	2	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-U0A2EPOE*	Intel Core i7-6822EQ QC	0	2	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-S9A1E	Intel Core i5-6442EQ QC	1	1	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-S9A1EPOE*	Intel Core i5-6442EQ QC	1	1	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-S9A2E	Intel Core i5-6442EQ QC	0	2	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C
ARK-2250V-S9A2EPOE*	Intel Core i5-6442EQ QC	0	2	2	3	4Di, 4Do	3	Lin-out, Line-in, MIC	1	-20 ~ 70 °C

* : This P/N is for AMK-R100E / AMK-R101E / AMK-R104E / AMK-R105E application
Note: Memory, storage and operating system bundled by request.

Packing List

Part Number	Description
-	1 x ARK-2250V Unit
1960071555N011	2 x Wall Mounting Brackets
1652001524	1 x Terminal Block 6P 5mm
1652000177	1 x Terminal Block 5P 5mm
1652000099	1 x Terminal Block 2P 5mm

Optional Embedded OS

Part Number	Description
20706WX6HS0008	Win10 IoT Ent LTSB 2016 MultiLang 64bit (ARK-2250V-U0A1E)
20706WX9HS0025	Win10 IoT Ent LTSC 2019 MultiLang 64bit (ARK-2250V-U0A1E)
20706WX6VS0014	Win10 IoT Ent LTSB 2016 MultiLang 64bit (ARK-2250V-S9A1E)
20706WX9VS0028	Win10 IoT Ent LTSC 2019 MultiLang 64bit (ARK-2250V-S9A1E)
20706WE7ES0004	WES7E 64bit ASIA 4 MUI

Note: Default BIOS is for 64bit OS support only. 32bit OS will need to update BIOS

Optional Item for Default SKU

Part Number	Description
96PSA-A150W24T2	AC-to-DC Adapter, DC24V/150W
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type

ARK-R Extended Modules

ARK-2250V+AMK-R100E

Extra 8 x GbE PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	8 x 10/100/1000Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 160.2
Environment	
Operating temperature	-40~ 55 °C, EN50155 T2
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R100E	8 x GbE PoE M12 X-coded, 1 x removable 2.5" drive bay

ARK-2250V+AMK-R101E

Extra 4 x GbE PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	4 x 10/100/1000Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 160.2
Environment	
Operating temperature	-40~ 55 °C, EN50155 T2
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R101E	4 x GbE PoE M12 X-coded, 1 x removable 2.5" drive bay

ARK-2250V+AMK-R104E

Extra 8 x 10/100 Mbps PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	8 x 10/100 Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 140
Environment	
Operating temperature	-40~ 55 °C, EN50155 T2
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R104E	8 x 10/100 Mbps PoE M12 D-Coded, 1 x removable 2.5" drive bay

ARK-2250V+AMK-R105E

Extra 4 x 10/100 Mbps PoE + removable 2.5" drive bay

Specifications

General	
Bus interface	MIOe
PoE	4 x 10/100 Base T(X) PoE, 802.3at compliant
Drive bay	1 x Removable 2.5" drive bay
Mechanical	
Dimension	260 x 26.5 x 140
Environment	
Operating temperature	-40~ 55 °C, EN50155 T2
Shock/Vibration	IEC61373 Category1, Class B

Ordering Information

P/N	Description
AMK-R105E	4 x 10/100 Mbps PoE M12 D-Coded, 1 x removable 2.5" drive bay

Note: When installing PoE extension modules with ARK-2250 series, please check ordering information or contact us for details.