

AFE-E630

Arm-Based Industrial Edge System with multiple I/O



Features

- Rockchip RK3568J/RK3568B2 Arm 4x Cortex-A55 up to 2.0GHz, 1tops NPU
- 4K60 ,H265, H.264, VP9, VP8,MPEG decoding
- 1080P60 H.265, H.264 encoding
- 1 x HDMI2.0
- 2 x GbE LAN, 2 x USB3.0, 2 x RS232/RS485, 1 x CAN FD, 6 x GPIO
- Extend Non-isolated I/O: 4 x RS485, 2 x RS232, 2 x CAN FD, 8 x DI, 8 x DO
- Extend Isolated I/O: 4 x RS485, 2 x CAN2.0, 8 x DI, 8 x DO
- Support 4G/GPS/Wi-Fi6/BT/NVME SSD
- Support wall mount or Din-rail mount
- Linux and Android, Apphub, AIM-LINUX

Introduction

Advantech AFE-E630 support more industrial interfaces as LAN,USB,RS485/RS232,CAN,DI/DO, in particular, RS485/CAN/DI/DO support isolated and non-isolated, also support wireless technologies including 4G/GPS,Wi-Fi6. It is widely used in energy and power filed, focus on commercial and industrial storage system.

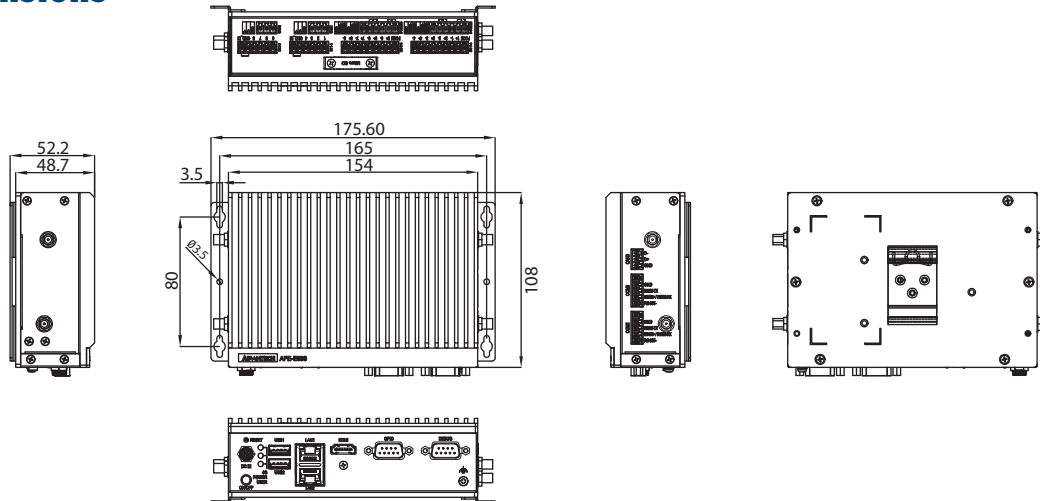
Specifications

Processor	CPU	Rockchip RK3568J/RK3568B2 Arm Quad Cortex-A55 up to 2.0GHz/1.8GHz, 1tops NPU		
Storage	Capacity	4GB/8GB LPDDR4 @2133MHz		
	Flash	32/64GB EMMC NAND Flash for OS and 64Mb SPI NOR Flash for Advantech boot loader		
Graphics	HDMI	1 x HDMI2.0, 4k@60FPS		
Ethernet	Ethernet	2 x 10/100/1000Mbps		
WatchDog Timer	WatchDog Timer	1~6527s, default 60s		
RTC	RTC	Support		
I/O	USB	2 x USB3.0 type A host		
	HDMI	1 x HDMI2.0, 4k@60FPS		
	CAN	1 x CAN FD		
	Serial Port	2 x RS232/RS485(default RS485), 1 x debug port		
	GPIO	6 (3.3V level)		
Indicator	LED	3 Green LED for power,4G,user status		
Expansion	Mini PCIe	1 x mini PCIe slot (only USB2.0 signal for 4G/GPS)		
	M.2 E Key	1 x M.2 E Key slot (for WiFi6/BT or NVME SSD)		
	Micro SD	1 x Micro SD socket		
	SIM	1 x standard SIM socket		
	Antenna Holes	4 (4G/GPS x 2, WiFi/BT x 2)		
Botton	Reset Botton	1 x reset botton		
Extend I/O (option)	Non-isolated I/O		UIO-4031	UIO-4035+UIO-4035D
		Serial port	4 x RS485, 2 x 2-wire RS232	4 x RS485
		CAN	2 x CAN FD	2 x CAN FD
				8 x DI
		DI	4 x DI, Dry contact Logic 0: Open (default) Logic 1: Close to ground	- Dry contact (default): Logic 0: Close to ground Logic 1: Open(default) -Wet contact: Logic 0: 10 ~ 30 V _{DC} Logic 1: 0 ~ 3 V _{DC}
		DO	4 x DO, sink type, Voltage Range: 5 ~ 30 V _{DC} Current : MAX 100 mA/channel	8 x DO, sink type Voltage Range: 5 ~ 30 V _{DC} Current : MAX 500 mA/channel
	Isolated I/O		UIO-4033+UIO-4033D	
		Serial port	4 x RS485 with 2500 V _{DC} isolation protection	
		CAN	2 x CAN 2.0 with 2500 V _{DC} isolation protection	
			8 x DI with 2500 V _{DC} isolation protection - Dry contact(default): Logic 0: Close to ground Logic 1: Open (default) -Wet contact: Logic 0: 10 ~ 30 V _{DC} Logic 1: 0 ~ 3 V _{DC}	
		DI		
		DO	8 x DO with 2500 V _{DC} isolation protection,sink type, Voltage Range: 5 ~ 30 V _{DC} Current: MAX 500 mA/channel	
Mechanical	System	154 x 108 x 48.7 mm		
	Mounting	Wall mount or Din-rail mount		
Power	Power supply	9~30V DC IN ATX/AT mode		
Environment	Operating temperature	-40~70°C/0~60°C		
Operating System	Linux; Android	Debian11 (RTM),Android		
Certifications		CE/FCC Class B/CCC/BSMI		

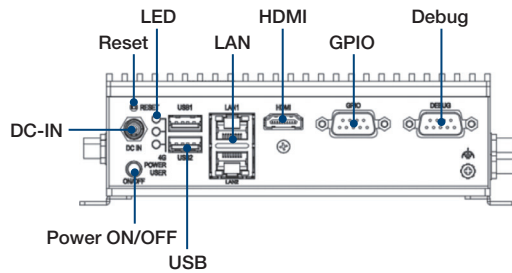
Remark: Extend I/O choose one of the three from UIO-4035/UIO-4035D,UIO-4033/UIO-4033D,UIO-4031

Dimensions

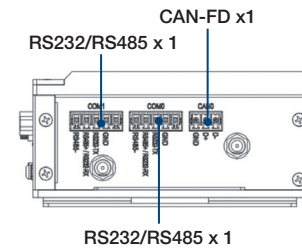
Unit: mm



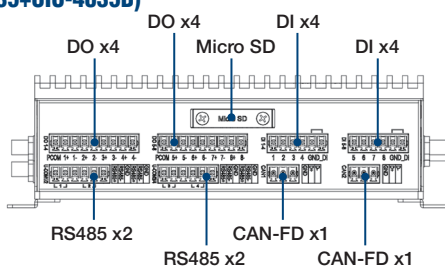
Front Panel External I/O Mechanical Layout/Drawing



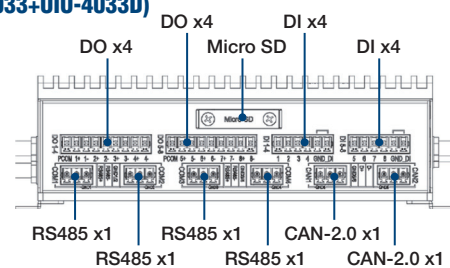
Side Panel External I/O Mechanical Layout/Drawing



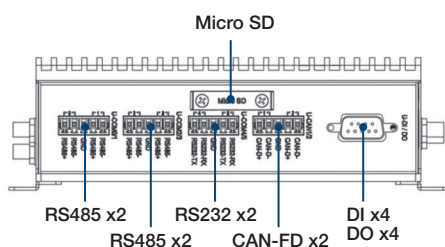
Rear Panel I/O Mechanical Layout/Drawing-1 (UIO-4035+UIO-4035D)



Rear Panel I/O Mechanical Layout/Drawing-2 (UIO-4033+UIO-4033D)



Rear Panel I/O Mechanical Layout/Drawing-3 (UIO-4031)



Ordering Information

Part Number	CPU	Memory	EMMC	HDMI	USB	LAN	Non-isolated Serial Port	Isolated Serial Port	Non-isolated CAN	Isolated CAN	Non-isolated DI/DO	Isolated DI/DO	Micro SD	GPIO	4G/ GPS	WiFi6/BT or NVME SSD	Operating Temperature	ATX/ AT
AFE-E630-U0A1	RK3568J 1.8GHz	4GB	32GB	1	2xUSB3.0	2	2xRS485/RS232 1xDebug	-	1	-	-	-	1	6	Support	Support	-40 ~ 70°C	ATX
AFE-E630-U0B1	RK3568J 1.8GHz	4GB	32GB	1	2xUSB3.0	2	2xRS485/RS232 1xDebug 4xRS485 2xRS232	-	3	-	-	-	1	6	Support	Support	-40 ~ 70°C	ATX
AFE-E630-U0C1	RK3568J 1.8GHz	4GB	32GB	1	2xUSB3.0	2	2xRS485/RS232 1xDebug 4xRS485	-	3	-	8xDI 8xDO	-	1	6	Support	Support	-40 ~ 70°C	ATX
AFE-E630-U0D1	RK3568J 1.8GHz	8GB	32GB	1	2xUSB3.0	2	2xRS485/RS232 1xDebug	4xRS485	1	2	-	8xDI 8xDO	1	6	Support	Support	-40 ~ 70°C	ATX
AFE-E630-U0E1	RK3568J 1.8GHz	4GB	32GB	1	2xUSB3.0	2	2xRS485/RS232 1xDebug	4xRS485	1	2	-	8xDI 8xDO	1	6	Support	Support	-40 ~ 70°C	AT
AFE-E630-U0F1	RK3568J 1.8GHz	8GB	32GB	1	2xUSB3.0	2	2xRS485/RS232 1xDebug	4xRS485	1	2	-	8xDI 8xDO	1	6	Support	Support	-40 ~ 70°C	AT
AFE-E630-U0G1	RK3568J 1.8GHz	4GB	64GB	1	2xUSB3.0	2	2xRS485/RS232 1xDebug 4xRS485	-	3	-	8xDI 8xDO	-	1	6	Support	Support	-40 ~ 70°C	AT
AFE-E630-U0H1	RK3568B2 2.0GHz	4GB	32GB	1	2xUSB3.0	2	2xRS485/RS232 1xDebug	4xRS485	1	2	-	8xDO 8xDO	1	6	Support	Support	0 ~ 60°C	AT

Packing List

Part Number	Description
1652008790-01	TEP Push-In 1x3/3.81/PA66/VA(F)/Sn/BK/H7.7
1652008507-01	Terminal Plug 1x5P/3.81/PA66/VA/BK/H22.9mm
1930008529	Screw M3*4.0L S/S D=4.8 H=0.8 (2+) ST/H BZn
1960099634N003	Mount Bracket for EPC-R3720 Powder 432C
1652008508-01	Terminal Plug 1x6P/3.81/PA66/VA/BK/H22.9mm
1652008510-01	Terminal Plug 1x9P/3.81/PA66/VA/BK/H22.9mm
1970005861T001	HD R2 None 3.4W 45x40x18.8mm SC PCIE for 4G heatsink (QTY *1)
1990029618N000	Thermal-Pad 39x29.5x1 K=6 TP GR-HM DMS-SJ03 for 4G module(QTY *1)
1970005863T001	HD R2 None 6.93W 37x22x20.7mm SC NVME for WiFi or SSD heatsink (QTY *1)
1990027162N010	Thermal Pad XR-HL 20x20x1.5mm K=1.2 for WIFI module (QTY *1)
1990010451N000	Thermal Pad GR-HM 15X15X2t for POC-S175 for SSD module (QTY *1)

Optional Accessories

Part Number	Description
96PSA-A36W12W7-5	ADP A/D 100-240V 36W 12V C6 LOCK DC JACK 62368
96PSA-A60W24T2-3	ADP A/D 100-240V 60W 24V C14 CORD END 2PIN 62368
1702002605	Power Cord 3P EU 10A 250V 183 cm (72 in)
1702031801	Power Cord 3P UK 10A 250V 183 cm (72 in)
1702002600	Power Cord UL 3P 10A 125V 183 cm (72 in)
1700008921	Power Cord 3P PSE 183 cm (72 in)
1700009652	Power Cord CCC 3P 10A 250V 187 cm (73.6 in)
AIW-344FQ-N01	AIW-3 series LTE CAT4 mini PCIe module for US (QTY *1)
AIW-344FQ-E02	AIW-3 series LTE CAT4 mini PCI-e module for Europe (QTY *1)
AIW-344FQ-J01	AIW-3 series LTE CAT4 mini PCI-e module for JP (QTY *1)
TBD	Quectel EC20CEFRSG-MINIPCI-E-C 4G module for China (QTY *1)
1750009372-01	Ant.SMA/M 90/180 5G BLK 167mm RG178 for 4G Antenna (QTY *2)
1751000361-01	GPS&BEIDOU ANTENNA L=5m for GPS Antenna (QTY *1)
1750008652-01	Cable Ant. SMA/F-BH CI-113/113 BLK 200mm for 4G/ GPS cable (QTY *1)
1750009035-01	Cable Ant. SMA/F-BH MHF1/113 BLK L100mm for 4G cable (QTY *1)
AIW-162BS-GI1	Industrial grade Wi-Fi 6 M.2 solution (QTY *1)
1751000591-01	Dipole Ant. WiFi 6E SMA/M-R BLK L163.1mm for WiFi6 Antenna (QTY *2)
1750009360-01	Cable Ant. SMA/F-R-BH MHF4/113 BLK L100mm for WiFi6 Antenna Cable (QTY *2)
1950003423T10A	DIN RAIL(POWDER Pantone 432C)ASS'Y FOR EKI-2741F

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