

# ARES-1980-AI

**HAILO**

Fanless Rugged Controller with 11<sup>th</sup> Gen. Intel® Core™ i Processor (Tiger Lake UP3) & Hailo-8™ M.2 AI Accelerator



## Features

- Fanless controller with Edge AI compatibility
- Intel® Core™ i Processor (Tiger Lake UP3)& pre-installed Hailo-8™ M.2 AI accelerator
- Support 2 x 260-pin DDR4 SO-DIMM sockets
- Support 5G (Sub-6G) module, M.2 NVMe SSD Gen3 x4, USB 3.2 Gen2, and 2.5 GbE LAN
- Rich I/O: 4 x COM/ 3 x LAN/ 4 x USB3.2 Gen 2/ Remote PWR
- Support Triple-display (DVI-D/HDMI/DP)
- Wide Power Input: 9~36VDC
- Power on/off delay control / configurable ignition power control

## System

CPU	Soldered onboard Intel® i7/ i5/ i3 Processor (Default: i5 CPU Tiger Lake-U)
AI Processor	Hailo-8™ AI Processor, up to 26 Tera-Operations Per Second (TOPS) with typical power consumption: 2.5W *FPS of Hailo-8 is 2.5 times better than Orin Nano 4GB
Memory	2 x 260-pin DDR4 SO-DIMM sockets, supporting 3200MHz SDRAM total up to 64GB
Chipset	SoC
Graphics	Intel® Iris® Xe Graphics
LAN Chipset	2 x Intel® i211AT PCIe controller 1 x Intel® 225LM PCIe controller (iAMT support w/ i5/i7 skus)
Watchdog Timer	1~255 levels reset

## I/O

Serial Port	2 x DB-9 connectors for RS232 2 x DB-9 connectors for RS232/422/485 (RI/5V/12V)
USB Port	4 x USB-A 3.2 Gen2 (2 w/ independent full speed) 1 x USB-A 2.0 onboard for encryption dongle
LAN	2 x RJ-45 ports for GbE LAN (PoE complies with IEEE802.3af) 1 x RJ-45 ports for 2.5 GbE LAN (iAMT support w/ i5/i7 SKUs)
Video Port	1 x HDMI 2.0b, up to 3840x2160@60Hz 1 x DisplayPort 1.4, up to 3840x2160@60Hz 1 x DVI-D, up to 1920x1080@60Hz
Audio	1 x Mic-in & 1 x Line out
Expansion Bus	1 x mPCIe (PCIe x1 + USB 2.0, Full Size) w/ 1 x nano SIM card slot 1 x M.2 B-Key 2242/3042/3052 (PCIe x2 + USB 3.0) with Hailo-8™ AI accelerator pre-installed 1 x M.2 E-Key 2230 (CNVi + USB 2.0) slot for WiFi /BT <b>**Support CNVi modules only**</b>
Digital I/O	8 x DI & 8 x DO w/ 1.5KV isolation
Multi-Serial Bus	I <sup>2</sup> C/SPI/UART/GPIO (w/ 3.3 or 5V) via DB-26
Others	10 x Antenna Holes are reserved

## Storage

Type	1 x M.2 M-Key 2242/2280 slot (PCIe Gen III x4 + SATAIII) 1 x 2.5" HDD/SSD tray (SATA III + SATA PWR connector)
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## Environmental

Operating Temp.	-20 ~ 60°C (-4 ~ 140°F), ambient w/ air flow
Storage Temp.	-40 ~ 70°C (-40 ~ 158°F)
Operating Humidity	10-95% @ 60°C (non-condensing)
Vibration	5~500Hz 3 Grms X,Y,Z axis w/ SSD, according to IEC 60068-2-64 40G peak acceleration (11 m sec. duration), operation w/ SSD
Shock	80G peak acceleration (11 m sec. duration), nonoperation w/ SSD According to IEC 60068-2-27

## Qualification

Certification	CE/ FCC Class A
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## Power Requirement

Power Input	DC 9~36V (3-pin terminal block: V+, V-, GND)
Max. Power Consumption	120W
Remote Control	1x3-pin terminal block for remote control and PWR LED output
Power Ignition	IGN +/-

## Mechanical

Construction	Sheet Metal + Aluminum Alloy
Mounting	Wall-mount (standard) DIN-rail or VESA mount (optional w/ CTOS bracket)
Weight	3.7kg
Dimensions (W x D x H)	210 x 180 x 70 mm

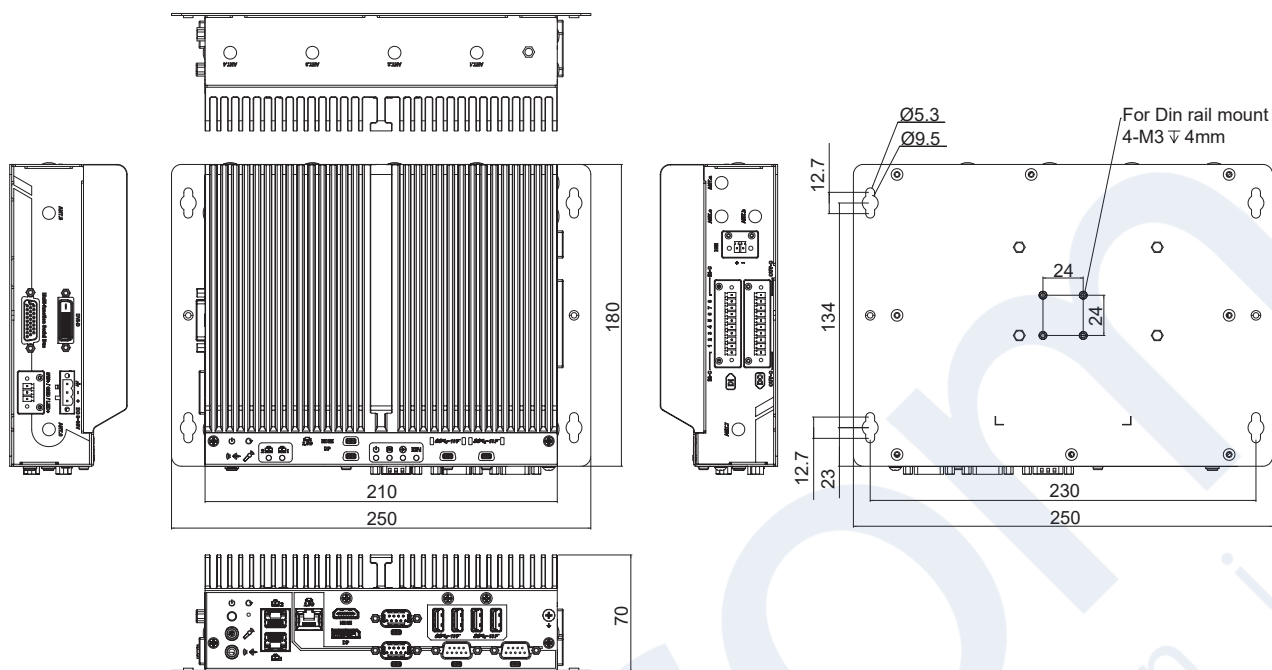
## OS Support

Windows® 10 IoT ; Windows® 11 IoT  
Ubuntu 22.04 above, Ubuntu 22.04 host OS,  
Hailo SW via Ubuntu container

## \*Hailo-8™ M.2 Driver

**Note:** Please register on <https://hailo.ai>, and download the device driver.

# Dimensions



## Optional Configuration (\*CTOS Kit)

MM-4C-4G/8G/16G DIMM Memory	4G/8G/16G DDR4 Memory	
PAC-180W6C-FSP-ES	24V/7.5A, 180W AC/DC adapter kit	
WIFI-AT4550	Atheros QCNFA324 mPCIe Wi-Fi+BT Module Kit (w/ 2 x 30cm RF Cable)	
ANT-D11	1 x Wi-Fi Dual-band 2.4G/5G Antenna Kit	
LTE-4450	Quectel EG25-G mPCIe LTE Cat 4 Module Kit (for Global, w/ 1 x 25cm RF Cable)	
ANT-H11	1 x 2dBi HSUPA Antenna Kit	
DRK-002	DIN Rail Mounting Kit for ARES Series	

\*CTOS means Configure-to-Order Service.