

AIB-2941M | AIB-2941M/S1

Edge AI controlle, Metal Case

Features

- M.2 Key B connector with USB interface for AI accelerator modules
- M.2 Key M connector with PCIe interface for AI accelerator modules/SSD
- Compatible with 13 TPOS Hailo 8 Lite AI Accelerator(Equipped with AIB-2941M/S1)
- Built-in multiple communication interfaces(Ethernet x 2, USB x 4, RS-485 x 2)
- 2-CH isolated DI and 2-CH isolated DO
- Support HDMI output 4k display
- I/O Expansion Bus

Introduction

The AIB-2000 series controller is a fanless, secure, compact, low-power edge AI computing device powered by an ARM-based CortexR-A72 processor. Equipped with peripherals such as GbE LAN, HDMI, USB 3.1, DIO and 4G wireless connectivity. Through the AI accelerator module, AI computing capabilities can be expanded, and AI and edge computing can be introduced into industrial applications. A wide range of I/O expansion boards can be used for expansion. Rugged stainless steel housing and heat dissipation make it suitable for operation in -20 to +70 °C environments.

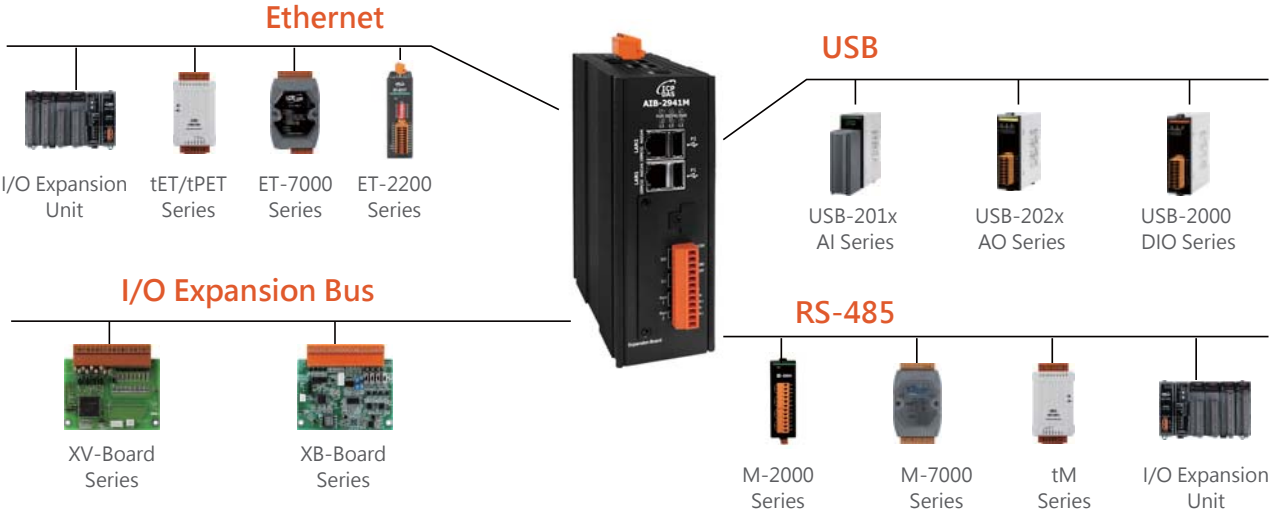
Ubuntu OS

Ubuntu is an easy-to-use operating system that is well-suited for both beginners and experienced users. It features an intuitive interface and a wealth of functionalities, making it versatile for various purposes and one of the most widely used Linux distributions.

When applied to AIB-2941M, it can fully leverage its capabilities and performance. Here are some key aspects of Ubuntu:

- Exceptional User Experience
- Ease of Use, Versatility, and Security
- Rich Community Support
- Embedded Services: Includes Web Server, FTP Server, Telnet Server, SSH Server.
- Comprehensive Software Support and Development Tools: Offers dedicated SDKs, Perl, Java, GUI software, and more.

Appications



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Specifications

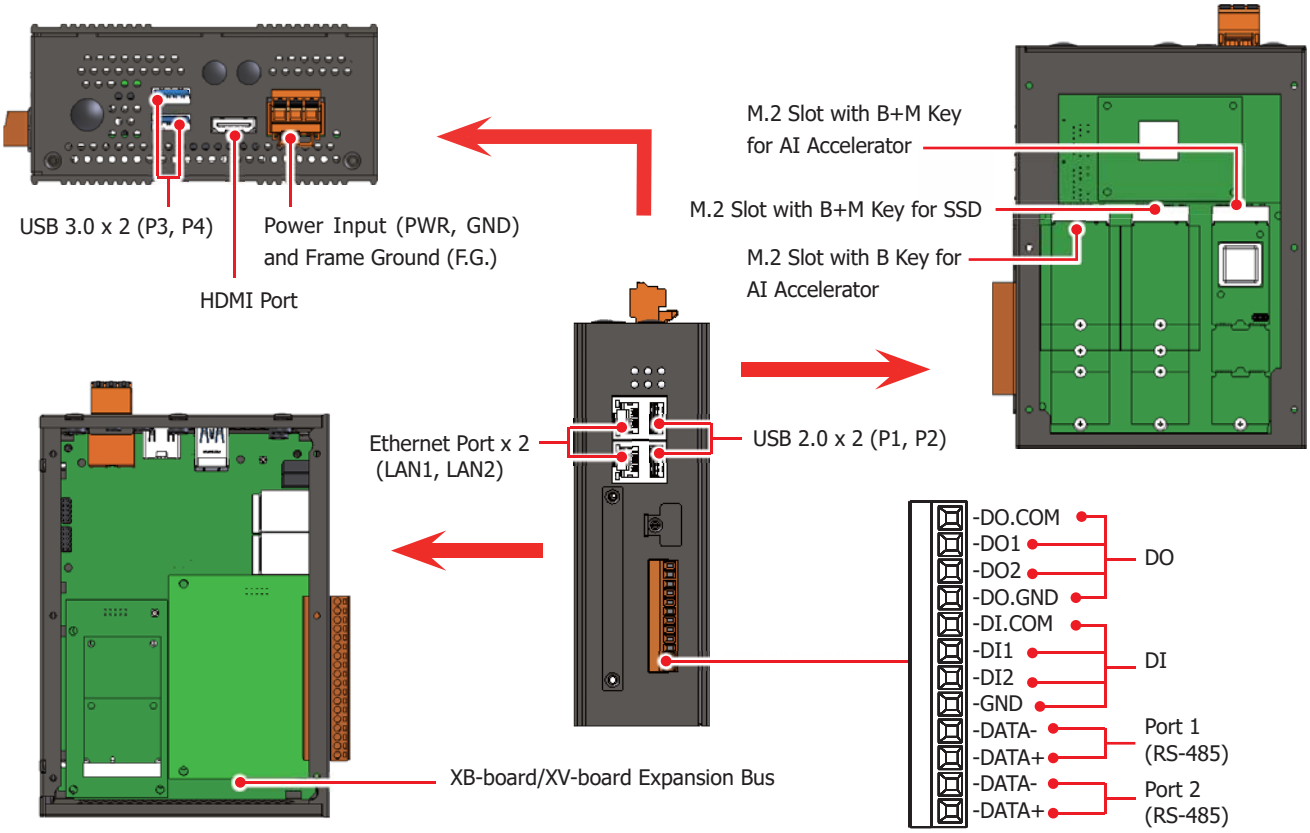
Software	
OS	Ubuntu OS
SDK Provided	C / Python library
Multilanguage Support	English, Simplified Chinese, Traditional Chinese
CPU Module – Raspberry Pi CM4	
CPU	Quad-core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz
64-bit Hardware Serial Number	Yes
System Memory	4GB LPDDR4 SDRAM
Storage	On-board 32GB eMMC
Non-Volatile Memory	16 KB FRAM
Real Time Clock	Provide second, minute, hour, date, day of week, month, year
Watchdog Timer	Yes
Display	
GPU	VideoCoreVI (OpenGL ES 3.0), H.265 (up to 4Kp60fps decode), H.264 (up to 1080p60fps, 1080p30 encode)
Signal	HDMI port x 1 (4Kp 60fps with Audio)
LED Status	6 LED indicators for Power and Running; 3 LED for user defined
Communication Ports	
Ethernet	2 x RJ-45, 10/100/1000 Based-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)
USB Port	2 x USB 2.0 (host), 2 x USB 3.0 (host)
COM Port	RS-485 x 2, (Data+, Data-); 2500 VDC Isolated
Digital Input	
Channels	2
Type	Wet Contact
Sink/Source (NPN/PNP)	Sink/Source
ON Voltage Level	+19 VDC ~ +24 VDC
Channels	+11 VDC Max.
Digital Output	
Channels	2
Type	Isolated Open Collector
Load Voltage	+24 VDC
Load Current	100 mA/Channel
Overvoltage Protection	60 VDC
Overload Protection	1.1 A
Short-circuit Protection	Yes
Audio	
Jack	Mic-In x 1 and Line-Out x 1 (Optional)
Mechanical	
Casing	Metal
Cooling Type	CPU Heat Sink / Fanless
Dimension (W x L x H)	52 mm x 177 mm x 128 mm
Installation	DIN-Rail, Wall mounting
Environmental	
Operating Temperature	-20 ~ +70 °C
Storage Temperature	-40 ~ +80 °C
Humidity	10 ~ 90 % RH, Non-condensing
Power	
Input Range	+12 ~ 48 VDC
Consumption	4.8 W (0.2 A @ 24 VDC)

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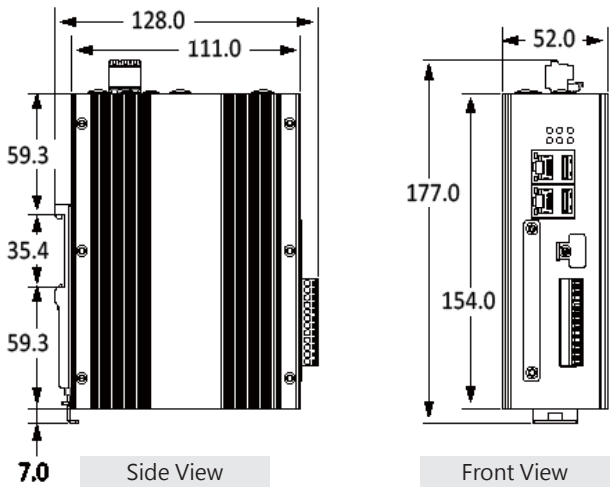
Specifications

Model	AIB-2941M	AIB-2941M/S1
AI Accelerator		
Model Number	-	Hailo 8 Lite
AI frameworks	-	TensorFlow, TensorFlow Lite, Keras, PyTorch & ONNX
TOPS	-	13
Runtime	-	Hailo RT Rev. 4.19, pre-installed
Power Consumption	-	1.5 W
I/O Expansion		
Slots	1x XV-board/XB-board/eXV-board (Optional) 1x M.2 key B, 2x M.2 key M; Note: the three M.2 slots share one PCIe-2.0x1	

外觀



Dimensions (Units: mm)



Accessories

XB-board/XV-board
I/O Expansion Board for expanding I/O channels, COM Ports, memories or hardware functions.



Ordering Information

AIB-2941M CR	Edge AI controller, expandable AI accelerator (RoHS)
AIB-2941M/S1 CR	Edge AI controller, includes AI accelerator (Hailo 8 Lite, TOPS=13) (RoHS)

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