DeviceEdge Mini Series

AIE-CO11/AIE-CN11/AIE-CT41 User Manual

aetina

Document Change History

Version	Date	Description	Authors
V1	2022/2/14	Initial Release.	Rick Chiu

Packing List

Before setting up the system, please confirm that the following items are included with the product：

- 1 x DB9 female to 15 pin-connector cable
- 1 x HDMI Type-D male to Type-A female cable
- 1 x 60W(12V @ 5A) power adapter
- 1 x Power cord
- 1 x Mounting bracket(VESA)
- 4 x Countersunk screw flat head + 4 x truss head screw
- 1 x Quick reference guide

If any item is missing or damaged, please contact your dealer immediately.

Contents

1. Introduction

Mini series – M1 is a standard system, supporting for NVIDIA® Jetson Nano™, NVIDIA® Jetson Xavier™ NX, and NVIDIA® Jetson™ TX2 NX. It features build-in PoE Powered Devices function which simplifies design and installation, reducing cost of materials and labor. Its palm-size appearance specifically designed for high performance and low power consumption to fit in limited space. With smart button for one-key recovery function to address critical system failure and real-time monitoring for status of device through the AIM (Aetina Intelligent Management), M1 is suitable for diverse applications such as smart city, AGV in intelligent warehousing and so on.

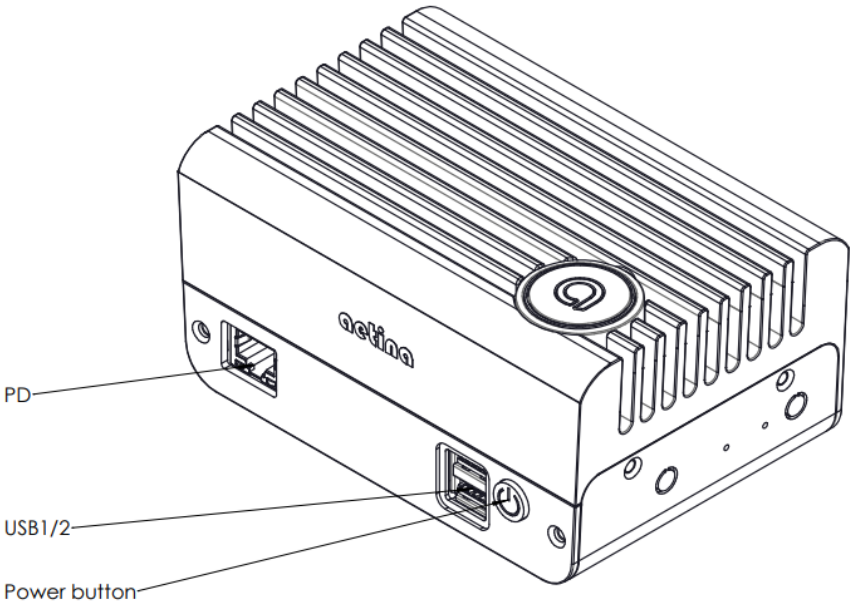
2. Product Features and Specifications

Specifications			
Product Name	AIE-CO11-A0	AIE-CN11-A0	AIE-CT41-A0
Module Compatibility	Nvidia Jetson Nano	Nvidia Jetson Xavier NX	Nvidia Jetson TX2 NX
CPU	Quad-core ARM Cortex-A57 MPCore processor	6-core NVIDIA Carmel ARM®v8.2 64-bit CPU 6MB L2 + 4MB L3	Dual-core NVIDIA Denver 2 64-bit CPU and quad-core Arm® Cortex®-A57 MPCore processor complex
GPU	NVIDIA Maxwell™ with 128 NVIDIA CUDA® cores	NVIDIA Volta™ with 384 CUDA® cores and 48 Tensor Cores	Nvidia Pascal™ with 256 CUDA® cores
AI Performance	0.5 TFLOPS (FP16) at 5-10W	14 TOPS (INT8) at 10W , 21 TOPS (INT8) at 15W	1.33 TFLOPS at 7.5-15W
System Memory	4 GB 64-bit LPDDR4	8 GB 128-bit LPDDR4	4 GB 128-bit LPDDR4
Storage	- 16GB eMMC 5.1 Flash		
Display	- 1x HDMI 1.4 with microHDMI D Type connector		
Audio	- HDMI Integrated		
LAN	- 2x RJ-45 for GbE (1 for PoE PD 802.3 at)		
Expansion	- 1x M.2 M-key 2242 : NVMe 128G SSD (build-in) - 1x M.2 E-key 2230 : WiFi/BT function		
USB	- 2x USB 3.2 Gen1 Type A - 1x USB Type-C (OTG only)		
MISC. External Interfaces	- 1x AI button (iTons) - 1x Power button		

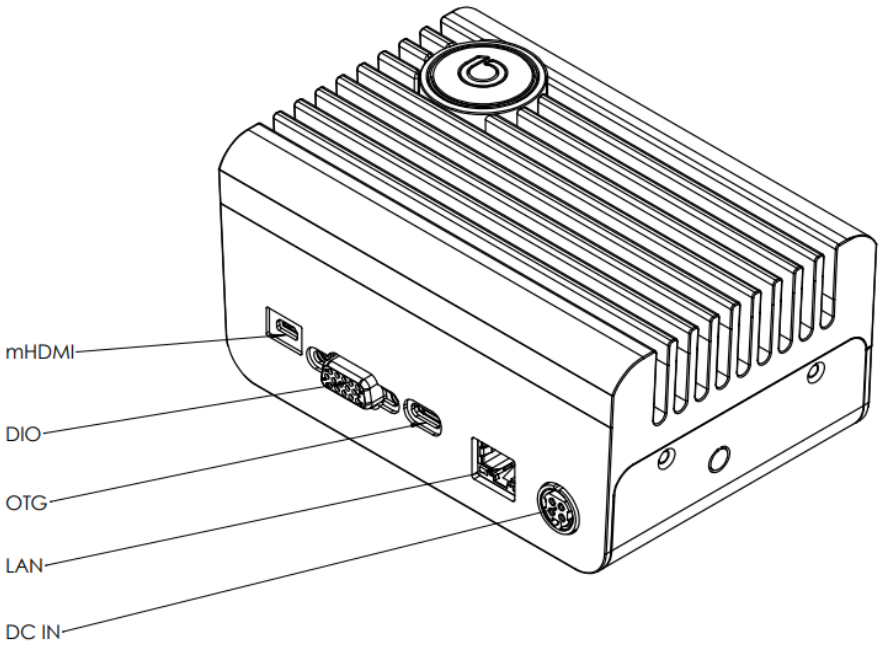
	- 1x Recovery button - 1x Reset button - 1x DB15 female connector (5x GPIO, 1x UART, 1x I2C, 1x CAN bus) - 2x Antenna (optional)
Power Input	- DC-in 12V~24V (DC Jack 4pin)
Dimension	- 132.6 x 88.7 x 63.55mm (WxDxH)
Mounting	- Deskmount
Net Weight	- 970g
Operating Temperature	- -20°C ~ +50°C
Operating Humidity	- 10% ~ 90%
Storage Temperature	- -40°C ~ +85°C
Certification	- CE/FCC

3. Product Overview

3.1 Front view



3.2 Rear view



3.3 External Connector Summary

Location	External Connector	Description
Front	LAN	- RJ-45 Gigabit Ethernet connector (PoE PD function)
	USB ports	- Dual USB3.2 Gen1 Type-A connector
	Power on	- Power pushbutton
Back	OTG	- USB Type-C OTG connector
	Expansion I/O	- DB15 female connector
	HDMI	- HDMI 1.4 with microHDMI Type-D connector
	LAN	- RJ-45 Gigabit Ethernet connector
	Power input	- 12V to 24V 4-pin DC Jack power input
Top	AI button	- One-key recovery pushbutton
Side	Recovery	- Recovery pushbutton
	Reset	- Reset pushbutton
	Antenna performed socket	- Dual socket for antennas

3.3.1 External I/O Introduction

- 10/100/1000 Ethernet connector (PoE PD function)

Location	Front
Type	RJ-45 Connector
Pin	Refer to Ethernet Standard
Description	Support for IEEE 802.3 at

- 10/100/1000 Ethernet connector

Location	Rear
Type	RJ-45 Connector
Pin	Refer to Ethernet Standard

- Dual USB3.2 Gen1 Type-A connector

Location	Front
Type	Type-A USB connector
Pin	Refer to USB Standard

- Power pushbutton

Location	Front
Type	Pushbutton

- HDMI 1.4 with microHDMI Type-D connector

Location	Rear
Type	HDMI horizontal connector
Pin	Refer to microHDMI Type-D Standard

- GPIO connector : DB15 female connector

Location		Rear
Type		GPIO
Pin No.	Description	SOM Pin assignment
1	GPIO 3	GPIO07
2	GND	GND
3	GND	GND
4	UART 1 TxD	UART1 TxD
5	CAN0L	CAN0 (not for Nano)
6	GPIO 1	GPIO01
7	GPIO 4	GPIO12
8	SCL	I2C0_SCL
9	5V (2A)	N/A
10	UART 1 RxD	UART1 RxD
11	GPIO 2	GPIO06
12	GPIO 5	GPIO13
13	SDA	I2C0_SDA
14	3V3 (2A)	N/A
15	CAN0H	CAN0 (not for Nano)

- USB Type-C (OTG only)

Location	Rear
Type	Type-C USB connector
Pin	D- / D+ / VBUS / CC1 / GND (Refer to USB Type-C standard, but only use these five pin)

- Power input connector

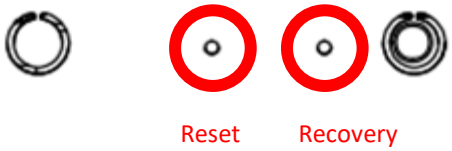
Location	Rear
Type	12V to 24V 4-pin DC Jack

- AI button (One-key recovery pushbutton)

Location	Top
Type	Pushbutton

- Reset & Recovery button

Location	Side
Type	Pushbutton



- Antenna performed socket

Location	Side
Type	Performed socket

3.4 Instruction

3.4.1 Boot up

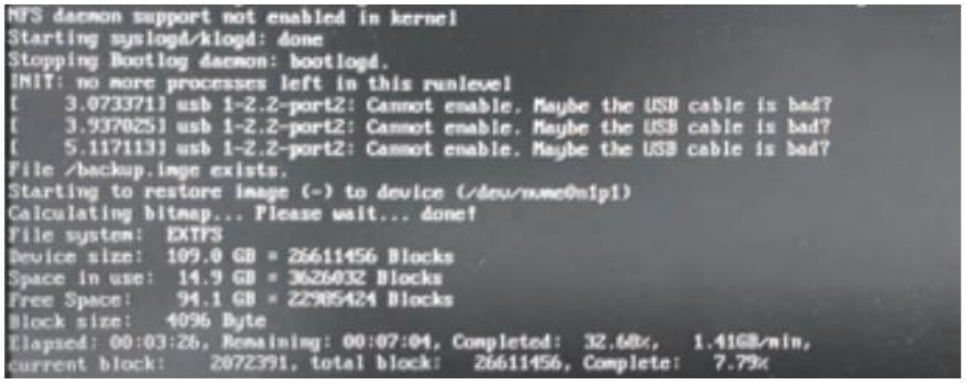
a) Press the power button to power on the device and boot up when plugging in the power cable.

3.4.2 Recovery mode

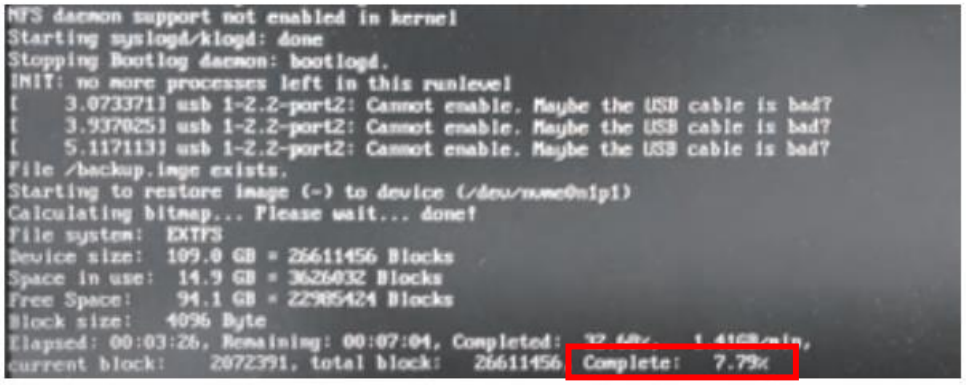
a) Press the iTons (AI button) first and hold it before the device is on.

b) Press the power button to power on the device and boot up when plugging in the power cable.

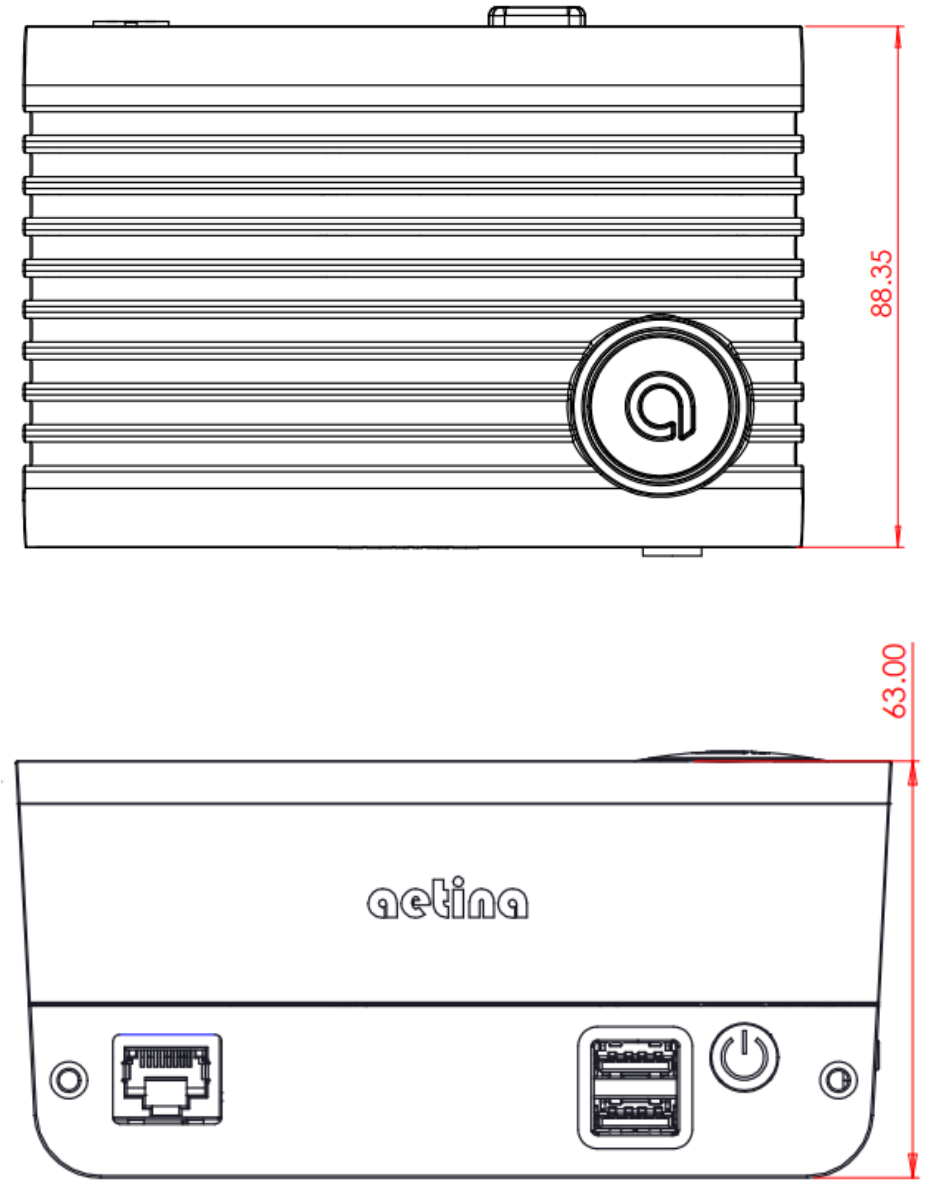
c) Hold the iTons (AI button) continually and wait for seconds to see the scene as shown below.

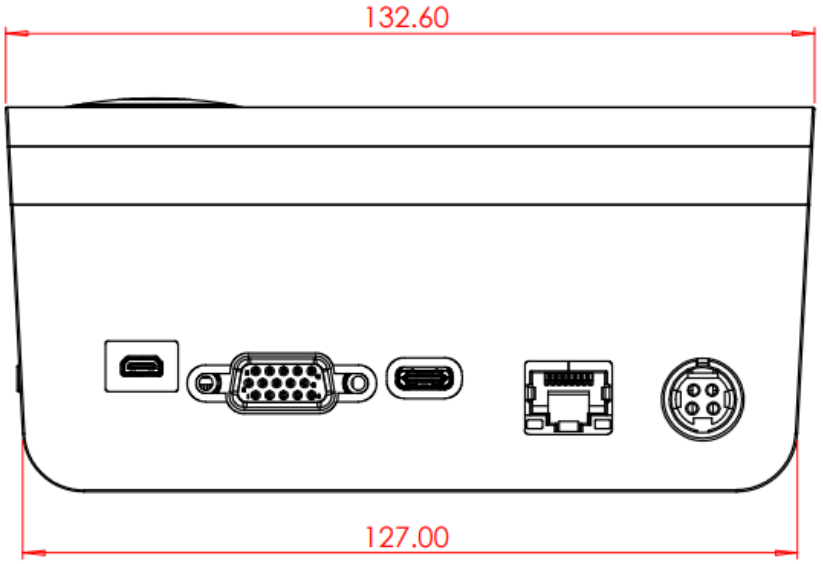


d) Wait for completion and the system will reboot.



3.5 Mechanical dimensions

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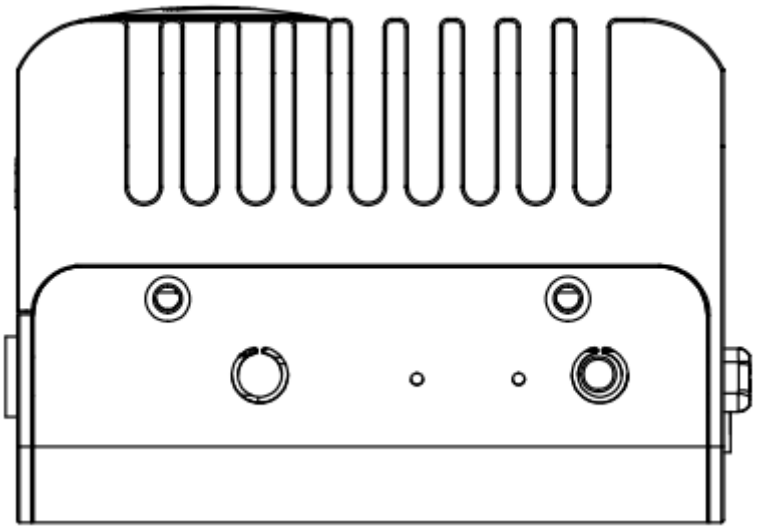

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