BOXER-8652AI-PLUS

AI@Edge Compact Fanless Embedded AI System
with NVIDIA® Jetson Orin™ NX

User's Manual 1st Ed

Last Updated: March 2, 2026

Copyright Notice

Acknowledgements

Packing List

Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
● BOXER-8652AI-PLUS	1
● Wallmount Bracket	2
● Screw Package	1
● Power Connector	1

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the product page at AAEON.com for the latest version of this document.

Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. All cables and adapters supplied by AAEON are certified and in accordance with the material safety laws and regulations of the country of sale. Do not use any cables or adapters not supplied by AAEON to prevent system malfunction or fires.
3. Make sure the power source matches the power rating of the device.
4. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
5. Always completely disconnect the power before working on the system's hardware.
6. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
7. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
8. Always disconnect this device from any power supply before cleaning.
9. While cleaning, use a damp cloth instead of liquid or spray detergents.
10. Make sure the device is installed near a power outlet and is easily accessible.
11. Keep this device away from humidity.
12. Place the device on a solid surface during installation to prevent falls
13. Do not cover the openings on the device to ensure optimal heat dissipation.
14. Watch out for high temperatures when the system is running.
15. Do not touch the heat sink or heat spreader when the system is running
16. Never pour any liquid into the openings. This could cause fire or electric shock.

17. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.

18. If any of the following situations arises, please the contact our service personnel:

    i. Damaged power cord or plug
    ii. Liquid intrusion to the device
    iii. Exposure to moisture
    iv. Device is not working as expected or in a manner as described in this manual
    v. The device is dropped or damaged
    vi. Any obvious signs of damage displayed on the device

19. DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.

FCC Statement

This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte.
Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur.
Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

AAEON System QO4-381 Rev.A2

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板及其电子组件	×	○	○	○	○	○
外部信号连接器及线材	×	○	○	○	○	○
外壳	○	○	○	○	○	○
中央处理器与内存	×	○	○	○	○	○
硬盘	×	○	○	○	○	○
液晶模块	×	○	○	○	○	○
光驱	×	○	○	○	○	○
触控模块	×	○	○	○	○	○
电源	×	○	○	○	○	○
电池	×	○	○	○	○	○

本表格依据 SJ/T 11364 的规定编制。

○：表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T 26572 标准规定的限量要求以下。

×：表示该有害物质的某一均质材料超出了 GB/T 26572 的限量要求，然而该部件仍符合欧盟指令 2011/65/EU 的规范。

环保使用期限(EFUP (Environmental Friendly Use Period)) : 10 年

备注：

一、此产品所标示之环保使用期限，系指在一般正常使用状况下。

二、上述部件物质中央处理器、内存、硬盘、光驱、电源为选购品。

三、上述部件物质液晶模块、触控模块仅一体机产品适用。

China RoHS Requirement (EN)

Name and content of hazardous substances in product

AAEON System QO4-381 Rev.A2

Part Name	Hazardous Substances					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
PCB Assemblies	×	○	○	○	○	○
Connector and Cable	×	○	○	○	○	○
Chassis	○	○	○	○	○	○
CPU and Memory	×	○	○	○	○	○
Hard Disk	×	○	○	○	○	○
LCD Modules	×	○	○	○	○	○
CD-ROM/DVD-ROM	×	○	○	○	○	○
Touch Modules	×	○	○	○	○	○
Power	×	○	○	○	○	○
Battery	×	○	○	○	○	○

The table is prepared in accordance with the provisions of SJ/T 11364.

○：Indicates that said hazardous substance contained in all of the homogenous materials for this product is below the limit requirement of GB/T 26572.

×：Indicates that said hazardous substance contained in at least one of the homogenous materials used for this part is above the limit requirement of GB/T 26572. But this product still be compliance with 2011/65/EU Directive (allowed with 2011/65/EU Annex III of RoHS exemption with number 6(c),7(a),7(c)-1).

EFUP (Environment Friendly Use Period) value: 10 years.

Notes：

1. This product defined period of use is under normal condition.
2. In above part, CPU/Memory/ Hard Disk/CD-ROM/DVD-ROM/ Power are optional.
3. In above part, LCD Modules/ Touch Modules are for all-in-one product model.

Table of Contents

Chapter 1

Product Specifications

1.1 Specifications

System	
AI Accelerator	NVIDIA® Jetson Orin™ NX with Super Mode
CPU	6-core Arm® Cortex®-A78AE v8.2 64-bit CPU
System Memory	8GB/16GB LPDDR5
Storage Device	M.2 2280 M-Key x 1 (populated by 128GB NVMe SSD by default)
Display Interface	HDMI 2.0 x 1
Ethernet	GbE, RJ-45 x 2
I/O	USB 3.2 Gen 2 (Type-A) x 4 DB-9 x 1 for CANBus FD DB-9 x 1 for RS-232/422/485 DB-15 x 1 for DIO 8-bit Micro USB x 1 for OS Flash Reset Button x 1 Power Button x 1 External SMA Antenna x 6
Expansion	M.2 3052 B-Key x 1 + Nano SIM x 1 (4G/5G/LTE) M.2 2230 E-Key x 1 (Wi-Fi/BT) M.2 2280 M-Key x 1 (NVMe)
Indicator	Power LED x 1 System LED x 1
OS Support	Linux (NVIDIA Jetpack™ 6.x and up)

Power Supply	
Power Requirement	DC-in 12V – 24V with 2-pin Terminal Block

Mechanical

Mounting	Wall Mount
Dimensions (W x D x H)	5.98" x 3.78" x 2.42" (152mm x 96 mm x 61.5mm)
Gross Weight	TBD
Net Weight	TBD

Environmental

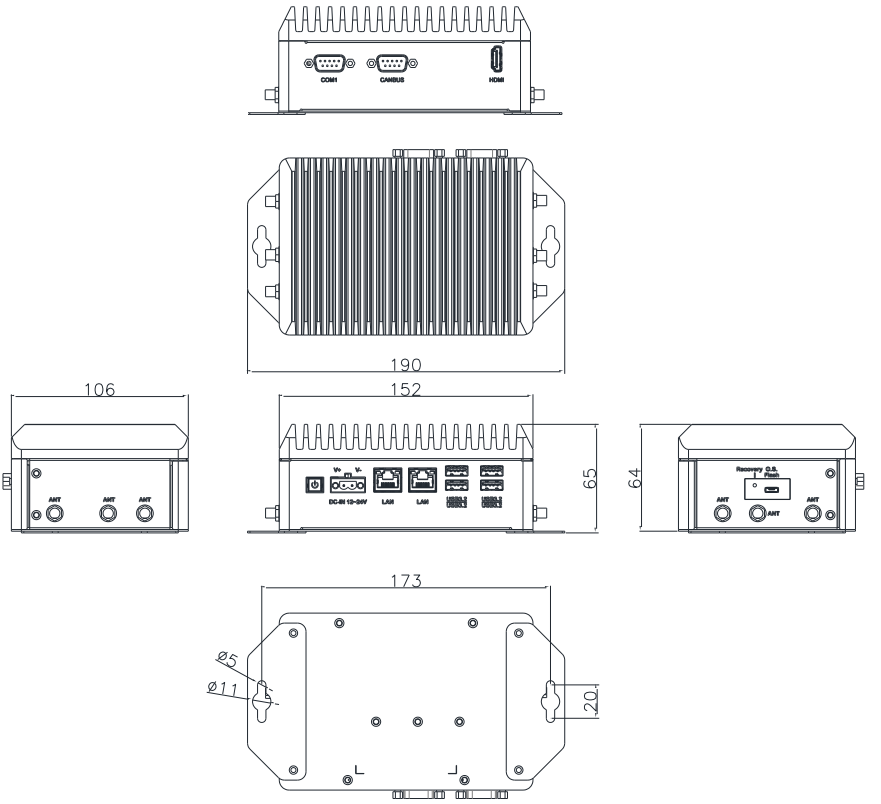
Operating Temperature	13°F – 149°F (-25°C – 65°C) according to IEC60068-2 with 0.7 m/s Airflow (25W)
Storage Temperature	-40°F – 176°F (-40°C – 85°C)
Storage Humidity	5 – 95% @ 40°C, non-condensing
Anti-Vibration	3.5G / 5~500Hz / operating w/ NMVe
Anti-Shock	50G peak acceleration w/ NMVe
Certification	CE/FCC Class A without RF

Chapter 2

Hardware Information

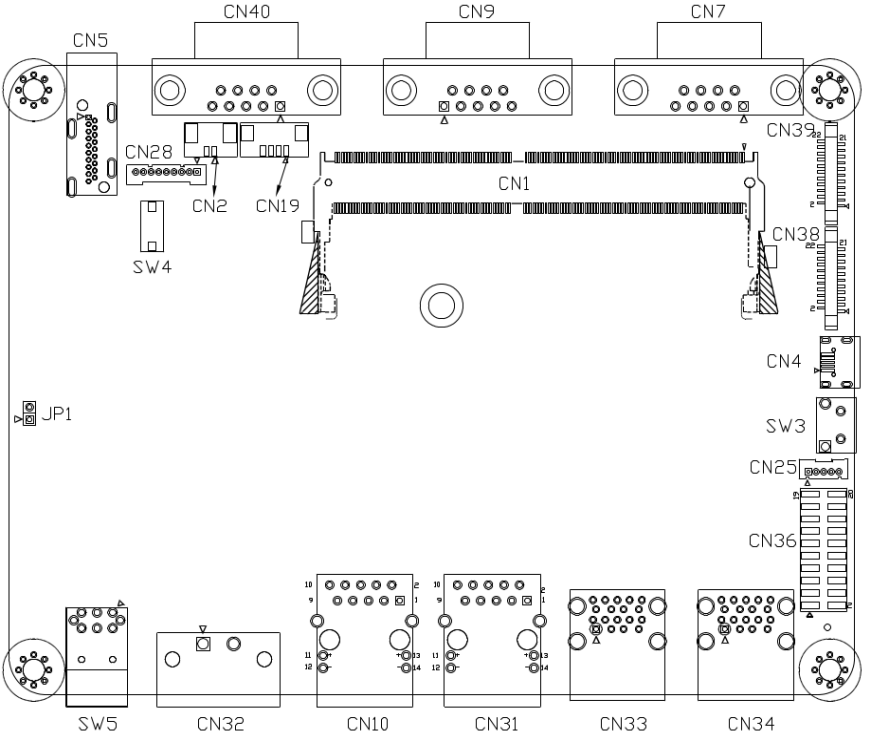
2.1 Dimensions

System



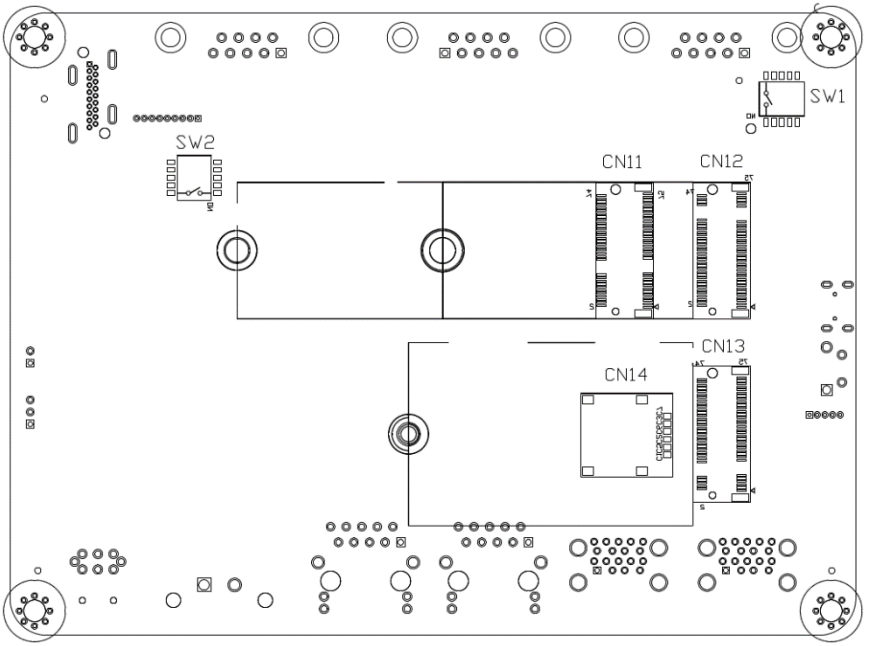
2.2 Jumpers and Connectors

Top



Note: For information regarding how to access the system's PCBA, please see section 2.5.

Bottom



2.3 List of Jumpers

The board has a number of jumpers that allow you to configure your system to suit your application.

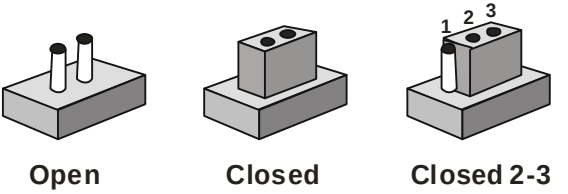
The table below shows the function of each of the board's jumpers

Label	Function
JP1	AT/ATX Mode Selection

2.3.1 Jumper Settings

You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper you connect the pins with the clip.

To "open" a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2 or 2 and 3.

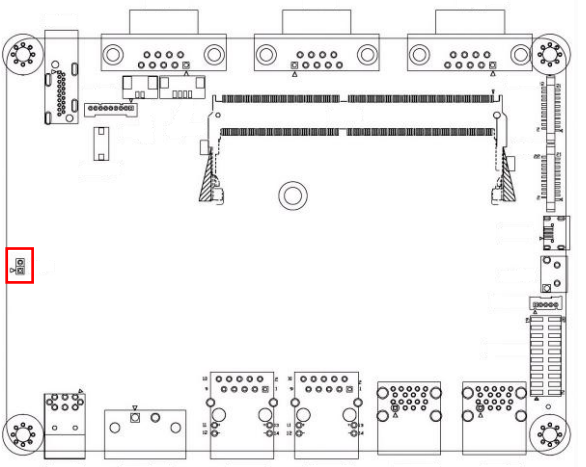


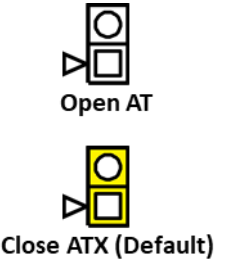
A pair of needle-nose pliers may be helpful when working with jumpers.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any change.

Generally, you simply need a standard cable to make most connections.

2.3.2 Auto Power Button (CN3)





Pin	Function
1-2	Open AT
1-2	Close ATX (Default)

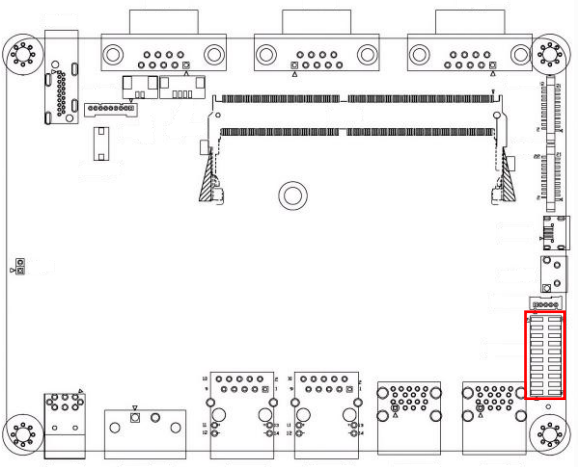
2.4 List of Connectors

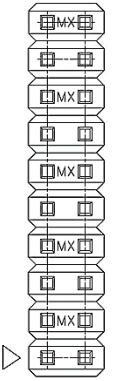
The board has a number of connectors that allow you to configure your system to suit your application.

The table below shows the function of each of the board's connectors

Label	Function
CN1	Jetson Orin NX Connector
CN2	RTC Battery Connector
CN4	Micro USB for Flash Connector
CN5	HDMI Connector
CN7	RS-232/422/485 Connector
CN9	CANBus Connector
CN10	GbE LAN Connector (SoM)
CN11	M.2 2230 E-Key
CN12	M.2 2280 M-Key
CN13	M.2 3052 B-Key
CN14	Nano SIM Socket
CN19	Fan Connector(5V)
CN25	Internal USB 2.0 Connector
CN28	Internal RS-232/422/485 Connector
CN31	GbE LAN Connector (NCSI)
CN32	5.08mm Power Connector
CN33	USB 3.2 Gen 2 Connector
CN34	USB 3.2 Gen 2 Connector
CN36	NCSI Connector
CN38	MIPI CSI-2 Connector
CN39	MIPI CSI-2 Connector
CN40	DIO Connector
SW1	RS-232/422/485 Select (CN7)
SW2	RS-232/422/485 Select (CN28)
SW3	Recovery Button
SW4	Reset Button
SW5	Power Button

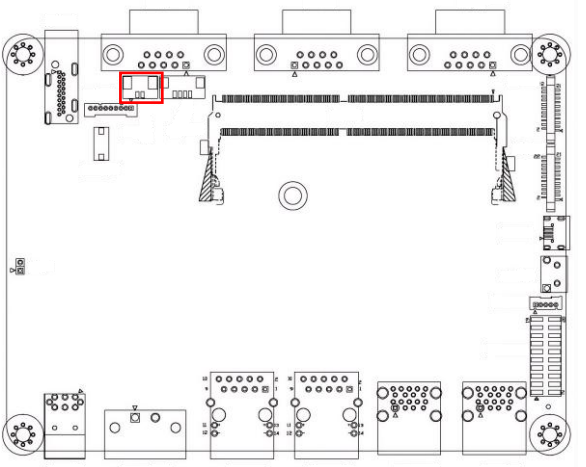
2.4.1 NCSI Connector (CN36)

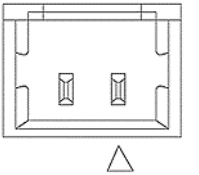




Pin	Signal	Pin	Signal
1	3.3V_AO	2	5V_AO
3	Debug UART TX	4	NC_SI_TXD0
5	Debug UART RX	6	NC_SI_TXD1
7	I2C1 SCL	8	NC_SI_RXD0
9	I2C1 SDA	10	NC_SI_RXD1
11	System Reset	12	NC_SI_CLK_IN
13	GND	14	NC_SI_CRB
15	Button power	16	NC_SI_TX_EN
17	GND	18	OOB_UART_TX
19	5V_SYS	20	OOB_UART_RX

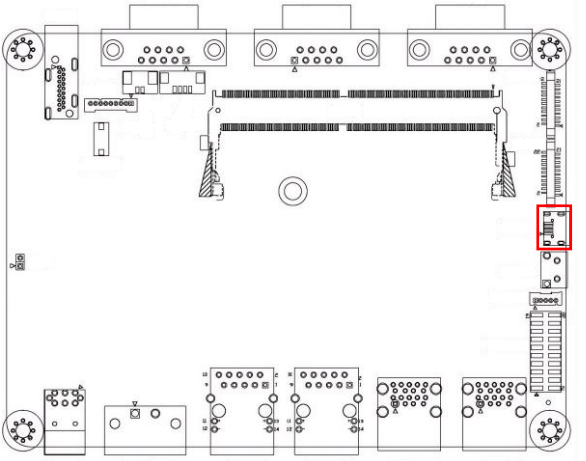
2.4.2 RTC Battery Connector (CN2)

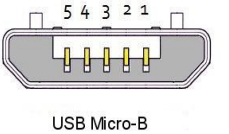




Pin	Signal	Pin	Signal
1	Positive	2	Negative

2.4.3 Micro USB for Flash Connector (CN4)



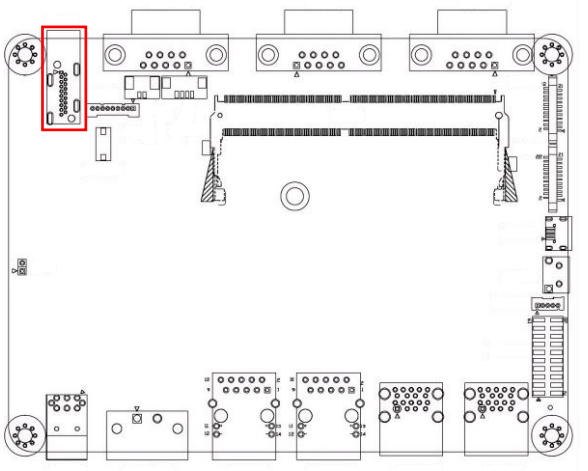


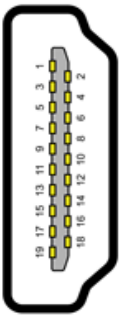
USB Micro-B

Pin	Signal	Pin	Signal
1	+5V	2	USB1-
3	USB1+	4	

Pin	Signal	Pin	Signal
5	GND		

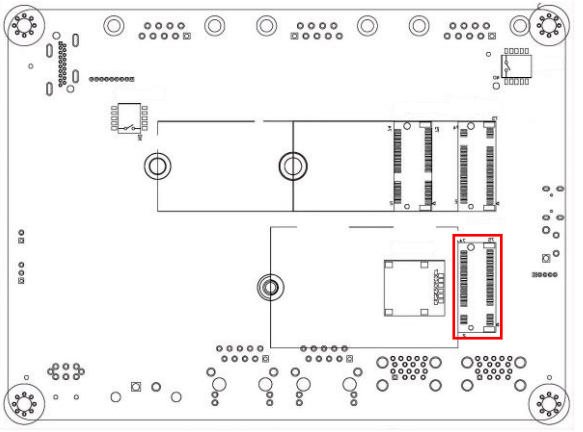
2.4.4 HDMI Connector (CN5)

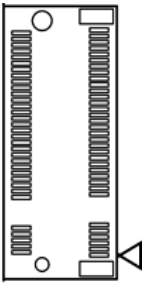




Pin	Signal	Pin	Signal
1	HDMI_DATA2_P	2	GND
3	HDMI_DATA2_N	4	HDMI_DATA1_P
5	GND	6	HDMI_DATA1_N
7	HDMI_DATA0_P	8	GND
9	HDMI_DATA0_N	10	HDMI_CLK_P
11	GND	12	HDMI_CLK_N
13	NC	14	NC
15	HDMI_SCL	16	HDMI_SDA
17	GND	18	HDMI_PWR
19	HDMI_HDP		

2.4.5 M.2 3052 B-Key (CN13)

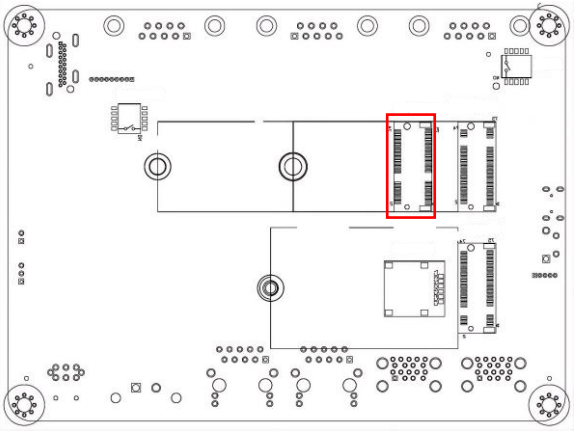




Pin	Signal	Signal	Pin
74	3.3 V	CONFIG_2	75
72	3.3 V	GND	73
70	3.3 V	GND	71
68	SUSCLK(32kHz)	CONFIG_1	69
66	SIM DETECT	RESET#	67
64	COEX_RXD	ANTCTL3	65
62	COEX_TXD	ANTCTL2	63
60	COEX3	ANTCTL1	61
58	NC	ANTCTL0	59
56	NC	GND	57
54	PEWAKE#	PCIE CLK P	55
52	CLKREQ#	PCIE CLK N	53
50	PERST#	GND	51
48	NC	PCIE TX P	49
46	NC	PCIE TX N	47
44	NC	GND	45
42	NC	PCIE RX P	43
40	NC	PCIE RX N	41
38	NC	GND	39
36	UIM1-PWR	USB3.1-Tx+	37
34	UIM1-DATA	USB3.1-Tx-	35
32	UIM1-CLK	GND	33
30	UIM1-RESET	USB3.1-Rx+	31
28	GPIO_8	USB3.1-Rx-	29

Pin	Signal	Signal	Pin
26	GPIO_10	GND	27
24	GPIO_7	DPR	25
22	GPIO_6	GPIO_11	23
20	GPIO_5	CONFIG_0	21
		Key B	
		Key B	
		Key B	
		Key B	
		GND	11
10	GPIO_9/DAS/DSS/LED_1#	USB_D-	9
8	W_DISABLE1#	USB_D+	7
6	FULL_CARD_POWER_OFF#	GND	5
4	3.3 V	GND	3
2	3.3 V	CONFIG_3	1

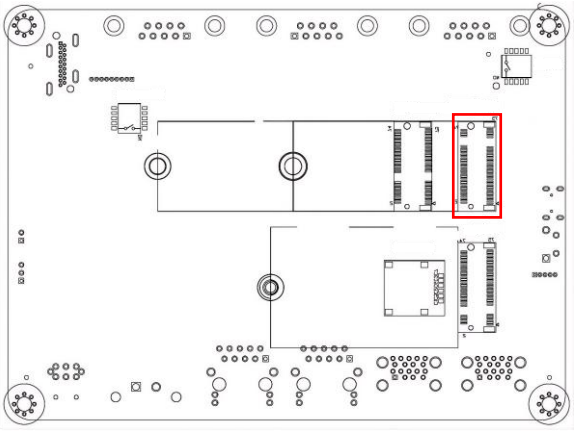
2.4.6 M.2 2230 E-Key (CN11)

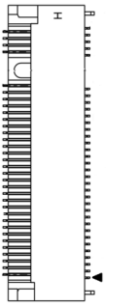


Pin	Signal	Signal	Pin
74	3.3V	GND	75
72	3.3V	RESERVED/REFCLKn1	73
70	NC	RESERVED/REFCLKp1	71
68	NC	GND	69
66	NC	RESERVED/PERn1	67
64	RESERVED	RESERVED/PERp1	65
62	ALERT#	GND	63

Pin	Signal	Signal	Pin
60	I2C_CLK	RESERVED/PETn1	61
58	I2C_DATA	RESERVED/PETp1	59
56	W_DISABLE1#	GND	57
54	W_DISABLE2#	PEWAKE0#	55
52	PERST0#	CLKREQ0#	53
50	SUSCLK(32kHz)	GND	51
48	NC	REFCLKn0	49
46	NC	REFCLKp0	47
44	NC	GND	45
42	NC	PERn0	43
40	NC	PERp0	41
38	NC	GND	39
36	NC	PETn0	37
34	NC	PETp0	35
32	NC	GND	33
		Key E	
		Key E	
		Key E	
		Key E	
		NC	23
22	NC	NC	21
20	UART WAKE#	NC	19
18	GND	NC	17
16	NC	NC	15
14	I2S SD_OUT	NC	13
12	I2S SD_IN	NC	11
10	I2S WS	NC	9
8	I2S SCK	GND	7
6	NC	USB_D-	5
4	3.3V	USB_D+	3
2	3.3V	GND	1

2.4.7 M.2 2280 M-Key (CN12)

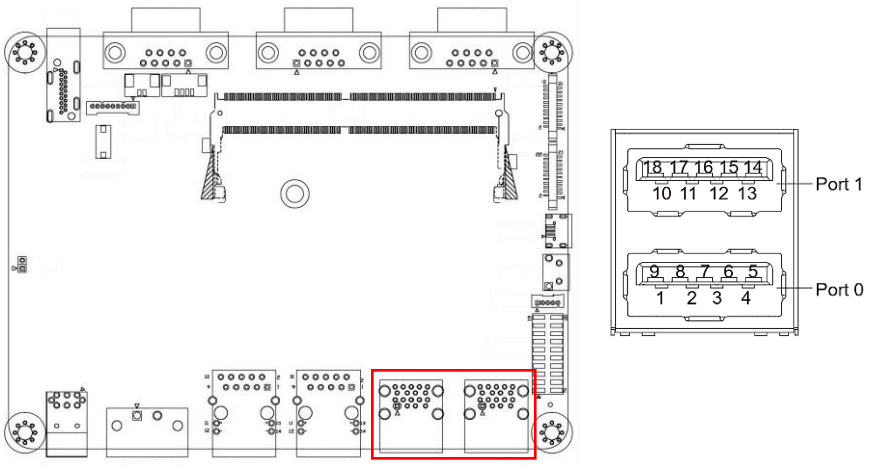




Pin	Signal	Signal	Pin
74	3.3 V	GND	75
72	3.3 V	GND	73
70	3.3 V	GND	71
68	SUSCLK	PEDET	69
		NC	67
	Key M	Key M	
	Key M	Key M	
	Key M	Key M	
	Key M	Key M	
58	NC	GND	57
56	NC	REFCLKp	55
54	PEWAKE#	REFCLKn	53
52	CLKREQ#	GND	51
50	PERST#	PETp0	49
48	NC	PETn0	47
46	NC	GND	45
44	ALERT#	PERp0	43
42	SMB_DATA	PERn0	41
40	SMB_CLK	GND	39
38	DEVSLP	PETp1	37
36	NC	PETn1	35
34	NC	GND	33
32	NC	PERp1	31
30	NC	PERn1	29

Pin	Signal	Signal	Pin
28	NC	GND	27
26	NC	PETp2	25
24	NC	PETn2	23
22	NC	GND	21
20	NC	PERp2	19
18	3.3 V	PERn2	17
16	3.3 V	GND	15
14	3.3 V	PETp3	13
12	3.3 V	PETn3	11
10	DAS/DSS	GND	9
8	NC	PERp3	7
6	NC	PERn3	5
4	3.3 V	GND	3
2	3.3 V	GND	1

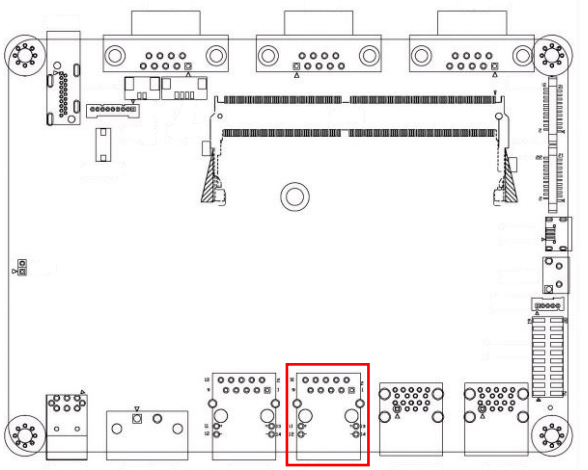
2.4.8 USB 3.2 Gen 2 Connector (CN33/CN34)

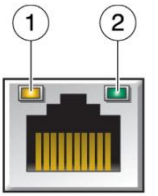


Pin	Signal	Pin	Signal
U1	VBUS_1	U10	VBUS_2
U2	(A)D-	U11	(B)D-
U3	(A)D+	U12	(B)D+
U4	GND	U13	GND
U5	(A)SSRX-	U14	(B)SSRX-
U6	(A)SSRX+	U15	(B)SSRX+

Pin	Signal	Pin	Signal
U7	GND	U16	GND
U8	(A)SSTX-	U17	(B)SSTX-
U9	(A)SSTX+	U18	(B)SSTX+

2.4.9 GbE LAN Connector (NCSI) (CN31)

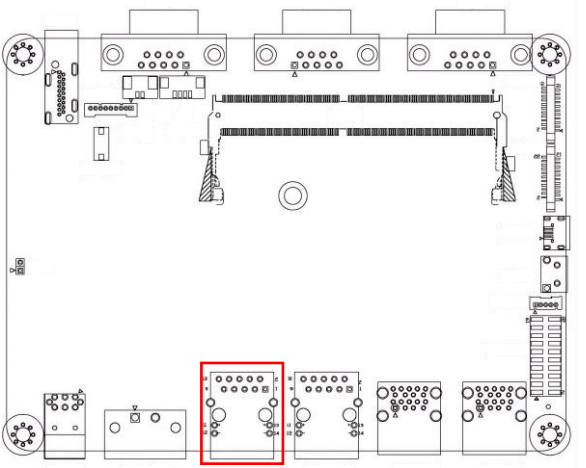


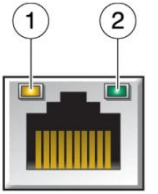


Pin	Signal	Pin	Signal
1	MDI0+	2	MDI0-
3	MDI1+	4	MDI1-
5	MDI2+	6	MDI2-
7	MDI3+	8	MDI3-

1	Active LED	2	Speed LED
Orange	Blinking	Green	100Mbps
		Orange	1Gbps

2.4.10 GbE LAN Connector (SoM) (CN10)

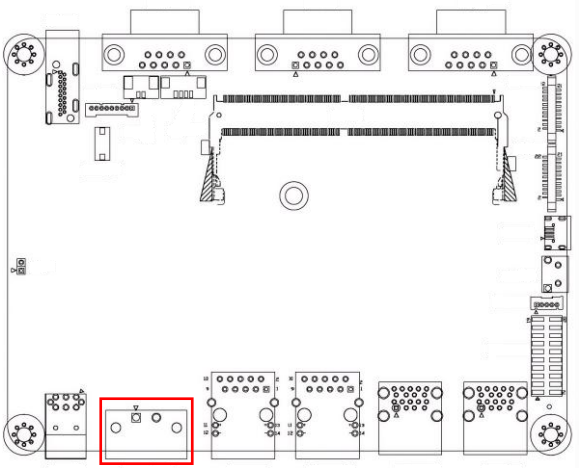


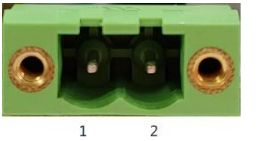


Pin	Signal	Pin	Signal
1	MDI0+	2	MDI0-
3	MDI1+	4	MDI1-
5	MDI2+	6	MDI2-
7	MDI3+	8	MDI3-

1	Active LED	2	Speed LED
Orange	Blinking	N/A	100Mbps
		Orange	1Gbps

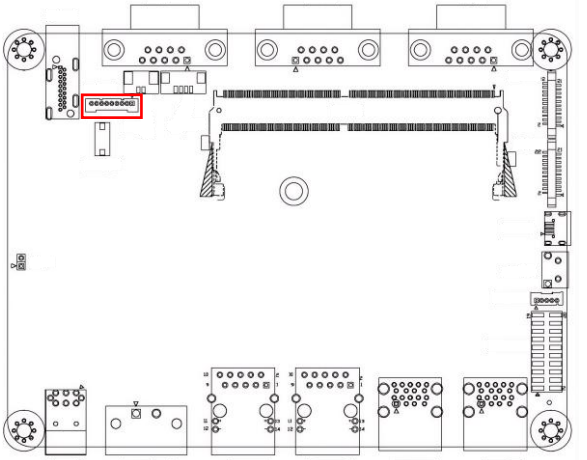
2.4.11 5.08mm Power Connector (CN32)

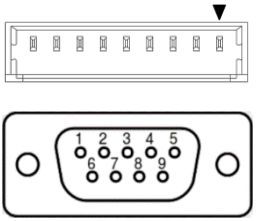




Pin	Signal	Pin	Signal
1	DC Positive	2	DC Negative

2.4.12 RS-232/422/485 Connector (CN28/SW2)





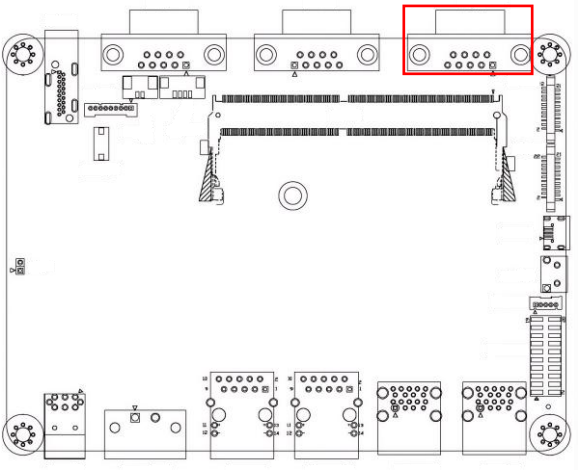
Internal (CN28):

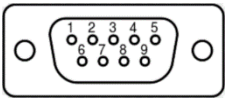
Pin	RS-232	RS-422	RS-485
1		TX-	D-
2			
3	RXD	TX+	D+
4			
5	TXD	RX-	
6			
7		RX+	
8			
9	GND	GND	GND

External (SW2):

Pin	RS-232	RS-422	RS-485
1		TX-	D-
2	RXD	TX+	D+
3	TXD	RX+	
4		RX-	
5	GND	GND	GND
6			
7	RTS#	RTS#	RTS#
8	CTS#	CTS#	CTS#
9			

2.4.13 RS-232/422/485 Connector (CN7/SW1)



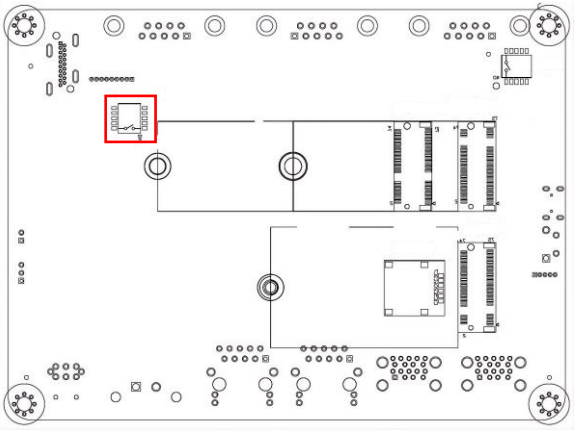


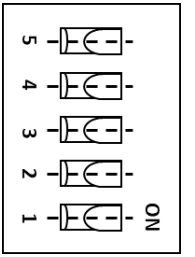
External (CN7):

Pin	RS-232	RS-422	RS-485
1		TX-	D-
2	RXD	TX+	D+
3	TXD	RX+	
4		RX-	
5	GND	GND	GND
6			
7	RTS#	RTS#	RTS#
8	CTS#	CTS#	CTS#
9			

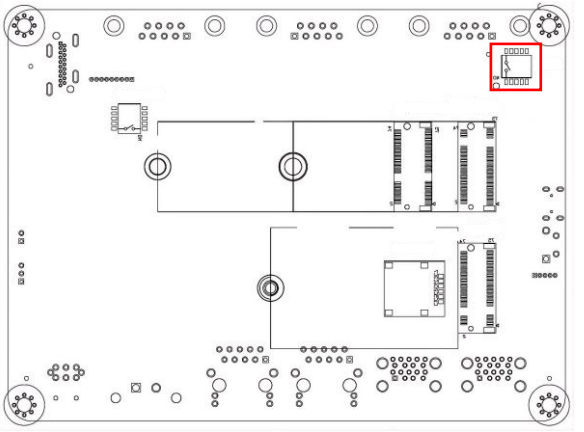
2.4.14 RS-232/422/485 Select (SW1/SW2)

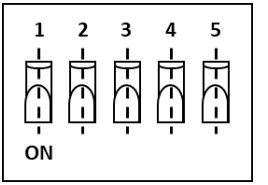
SW2:





SW1:

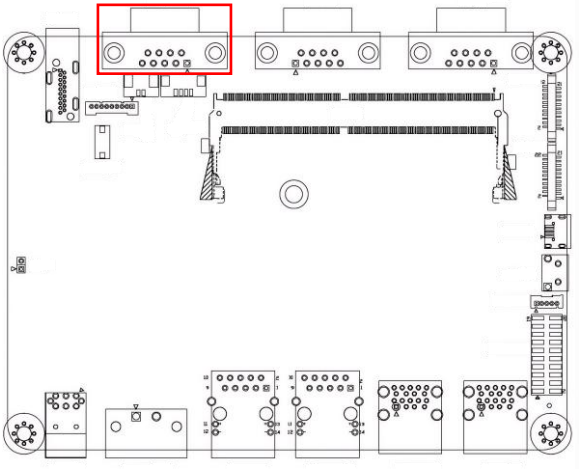


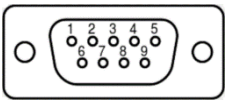


Mode	S-1	S-2	S-3	S-4	S-5
2T/2R RS-232	On	On	On		
1T/1R RS-422 Full Duplex w/o RTS#, TX always enable	On	On	Off		
1T/1R RS-422 Full Duplex TX enable low active with auto sensing	On	Off	On		
1T/1R RS-422 Full Duplex TX enable when RTS# is low	On	Off	Off		

Mode	S-1	S-2	S-3	S-4	S-5
1T/1R RS-485 Half Duplex TX enable low active with auto sensing	Off	On	On		
1T/1R RS-485 Half Duplex TX enable when RTS# is low.	Off	On	Off		
Low power shutdown	Off	Off	On		
250kbps for RS-232 and RS-485					On
RS-232 to 3Mbps and RS-485 to 20Mbps					Off
Enable RS-485 bias and termination resistors.				On	
Disable RS-485 bias and termination resistors.				Off	

2.4.15 DIO Connector (CN40)



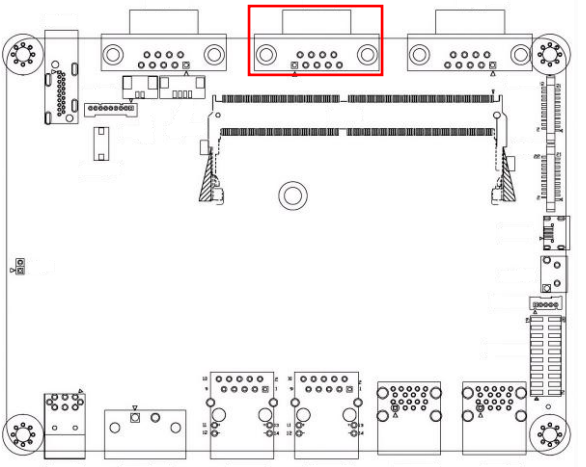


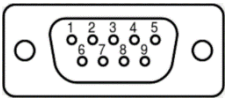
Pin	Signal	Pin	Signal
1	PY.03(SPI CS0)	2	PY.02(SPI MOSI)
3	PY.01(SPI MISO)	4	PY.00(SPI SCK)
5	GND	6	PI.02(I2S0 LRCK)
7	PI.01(I2S0 SDIN)	8	PI.00(I2S0 SDOUT)
9	PH.07(I2S0 SCLK)		

Drive Current: 15mA

All Logical Level: +3.3V

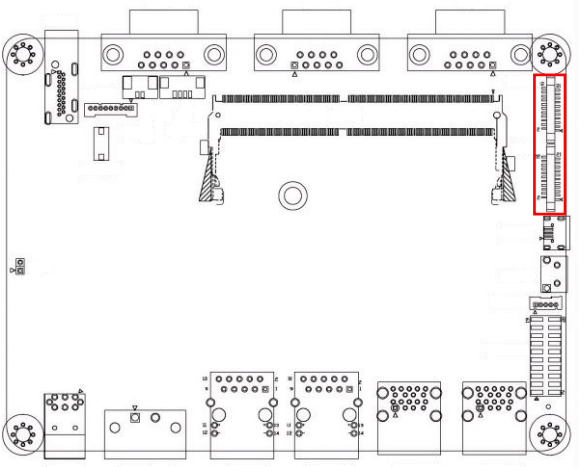
2.4.16 CANBus Connector (CN9)

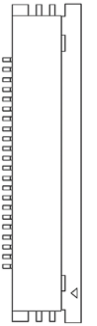




Pin	Signal	Pin	Signal
1		2	CAN L
3		4	
5		6	
7	CAN H	8	
9	+5V		

2.4.17 MIPI CSI Connector (CN38/CN39)





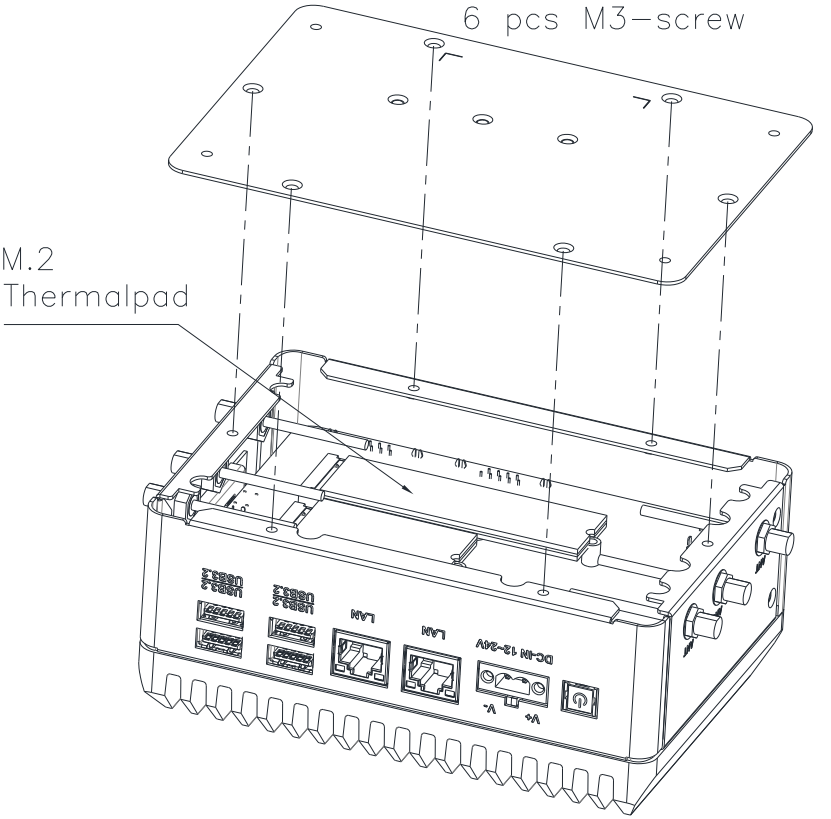
Pin	Signal	Pin	Signal
1	+3.3V	12	CSI0_D0_N
2	CAM0 SDA	13	GND
3	CAM0 SCL	14	CSI1_CLK_P
4	GND	15	CSI1_CLK_N
5	CAM0 MCLK	16	GND
6	CAM0 PWDN	17	CSI1_D1_P
7	GND	18	CSI1_D1_N
8	CSI0_D1_P	19	GND
9	CSI0_D1_N	20	CSI1_D0_P
10	GND	21	CSI1_D0_N
11	CSI0_D0_P	22	GND

2.5 Hardware Installation

2.5.1 Expansion Module Installation

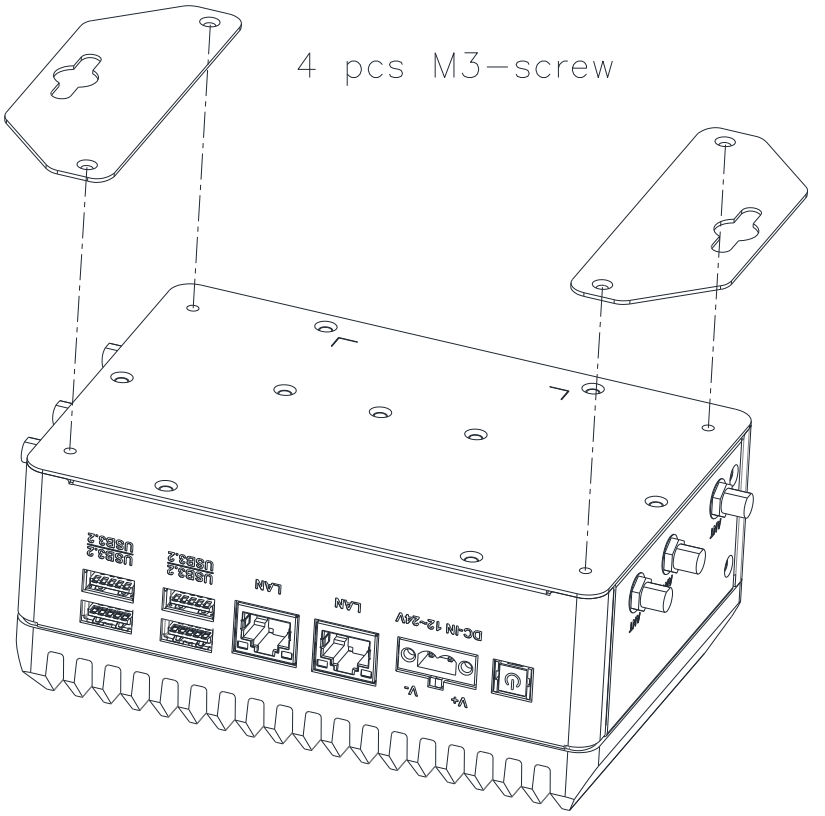
Note: Before installing expansion modules, ensure the system is powered down and disconnect the power cord from the system.

Turn the BOXER-8652AI-PLUS system over so the bottom is facing up. Install each module by first inserting at an angle (approx. 30°), then gently press down to secure. Refer to the images below for guidance on removing the bottom panel, the location of each M.2 Key slot, and thermal pad requirements.



2.5.2 Wall Mount Installation

Turn the BOXER-8652AI-PLUS system over so the bottom is facing up. Install the two (2) wall mount brackets with a total of four (4) M3 screws, with each bracket secured with two (2) screws, as below.



Chapter 3

BSP Flash Guide

3.1 Before Installation

Before starting the process make sure your BOXER-8652AI-PLUS system is turned off and the power is disconnected. You will need a Host PC running Ubuntu 20.04 or Ubuntu 22.04, and make sure the NVIDIA Jetson Orin NX module is installed onto the BOXER-8652AI-PLUS system's carrier board

Note: Do not use a virtual machine as a host PC, as some virtual machines may have unstable USB connections which can cause the flash procedure to fail.

Download the compressed BSP image file "BOXER-8652AI-B1_J6.2.1_A00_1.0.0_20260205.tar.gz" to a directory on the Host PC running Ubuntu 20.04 or Ubuntu 22.04.

Note: No spaces, special characters, or non-English characters can be used for the name of the folder where the file is stored, or its parent folder.

Note: Ensure the language settings of Ubuntu 18.04 or 20.04 are set to English, and the format setting is the United States, to prevent flash failure.

3.2 Force Recovery Mode

Step 1:

On the Host computer, open Linux terminal and enter the following command to extract the compressed BSP image files (BSP file name may vary):

```
$ sudo tar zxf BOXER-8652AI-B1_J6.2.1_A00_1.0.0_20260205.tar.gz
```

Note: Do not decompress the file (i.e. FAT NTFS exFAT) using a Windows OS. The BSP file must be extracted on a Linux system using an EXT3 or EXT4 file system.

Step 2:

Perform the following actions to force the system to start in USB Recovery Mode:

1. Connect the Micro USB plug on the USB cable to the Recovery Port on the BOXER-8652AI-PLUS, and the other end to an available USB port on the Host PC.
2. Connect the BOXER-8652AI-PLUS to a power supply.
3. Press and hold the recovery key button. While holding the recovery key button, power on the system, and continue to hold the recovery key button for approximately two seconds, then release. The BOXER-8652AI-PLUS should then enter recovery mode.
4. To check if device is in recovery mode, enter the command lsusb in terminal on Host.

```
$ lsusb | grep "Nvidia Corp"
```

If successful, the command will return "Bus <bbb> Device <ddd>: ID 0955: <nnnn> Nvidia Corp."

Where:

<nnnn> is a four-digit number that represents the type of your Jetson

- 7323 for Jetson Orin NX (P3767-0000 with 16GB)
- 7423 for Jetson Orin NX (P3767-0001 with 8GB)

Note: Recovery mode cannot be initiated if the NVIDIA Jetson Orin NX module is disassembled. Ensure the NVIDIA Jetson Orin NX module is installed and refer to the image below to perform the force recovery mode steps:

3.3 Flash Image to BOXER Platform

Use the following steps to flash the OS to the BOXER-8652AI-PLUS.

1) Open terminal on the Ubuntu Host PC, then access the folder you extracted in the previous section.

2) Enter the following command in terminal to flash the image:

./flashboxer.sh -s 62517420 nvme

3) Wait as the image is installed. Once complete you should see the following:

4) After Steps 2 and 3, mass-flash image is built up internally, so you can flash up to 10 targets at once by using the following command:

./flashboxer.sh -m nvme

3.4 Check BSP Version

Once the flash image is successfully installed, the BOXER-8652AI-PLUS will reboot automatically. Next, check the BSP version to confirm that the correct version has been flashed.

Open a Terminal, and type command "$ cat /proc/product"

You will see the product name with version and date

BOXER-8652AI-B1_J6.2.1_A00_1.0.0_20260205

The version name will follow the format of:

{PJ_IF}_{JPV_IF}_A00_{IMGV_IF}_{BD_IF}

For example:

BOXER-8652AI-B1_J6.2.1_A00_1.0.0_20260205

Note: Filename may differ from this example.

{PJ_IF} is Project Information; e.g. BOXER-8652AI-B1

{IMGV_IF} is Build Version; e.g. 1.0.0

{JPV_IF} is Jetpack Version; e.g. J6.2.1

{BD_IF} is Build Date; e.g. 20260205

Chapter 4

OS User Guide

4.1 Introduction

The BOXER-8652AI-PLUS' OS, Ubuntu/Linux version, and preinstalled SDK components are as follows:

For Jetpack 6.2.1 (l4t 36.4.4):

1. Ubuntu/Linux version
    a. Ubuntu version: 22.04.5
    b. Kernel version: 5.15.148-tegra
    c. UEFI version: 36.4.4-gcid-41062509
2. Built-in all Jetson SDK Components
    a. CUDA Toolkit for L4T 12.6.10
    b. cuDNN 9.3.0
    c. TensorRT 10.3.0
    d. OpenCV 4.8
    e. VPI 3.2
    f. NVIDIA Container Runtime 2.1
    g. Multimedia API 36.4.7
    h. Nsight Systems 2024.5
    i. Nsight Graphics 2024.2
    j. Deepstream 7.1
3. Built-in Allxon DMS
    a. Please refer to https://www.allxon.com/solutions

Default login user/password is:

Account: aaeon

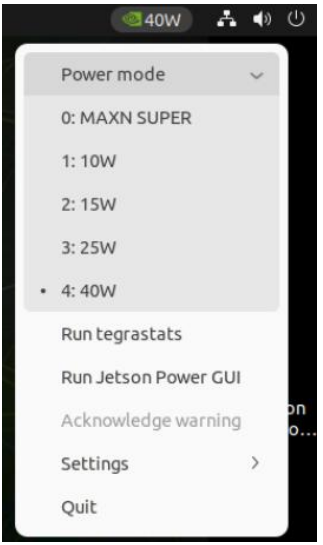
Password: aaeon

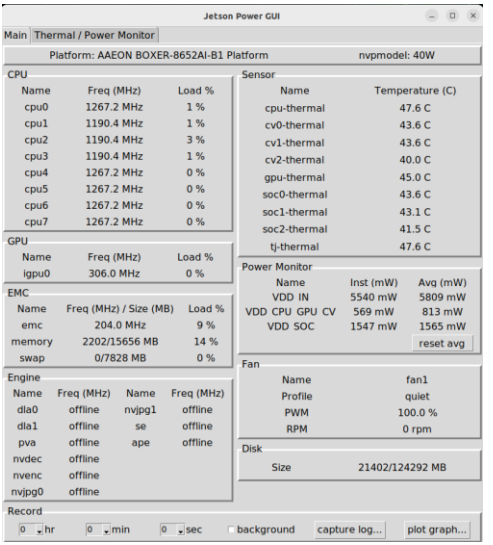
4.2 Update Note

Running **$ sudo apt upgrade** command in terminal may overwrite AAEON kernel, device tree (.dtb), kernel image (Image), or bootloader in the OS, which can lead to unexpected results, including loss of I/O ports. Therefore, AAEON disables the NVIDIA apt repository by default to prevent updating NVIDIA packages.

4.3 Power Mode for the BOXER-8652AI-PLUS

The NVIDIA Jetson Orin NX power mode can be selected and monitored via the GUI. Please refer to the following figure:





Note: Power mode is dependent on DRAM size. For more detailed information please visit:

https://docs.nvidia.com/jetson/archives/r36.4.4/DeveloperGuide/SD/PlatformPowerAndPerformance/JetsonOrinNanoSeriesJetsonOrinNxSeriesAndJetsonAgxOrinSeries.html#supported-modes-and-power-efficiency