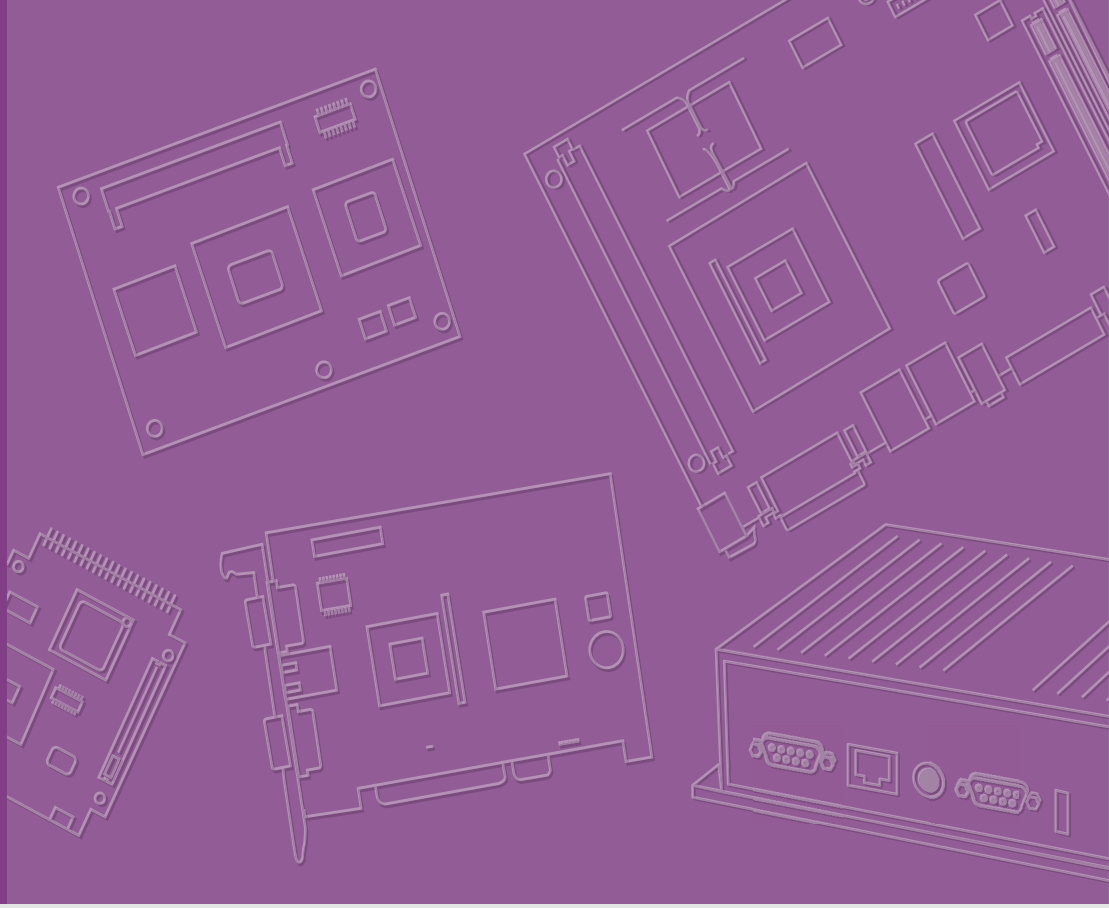


User Manual

AIR-075

Edge AI System

ADVANTECH

Enabling an Intelligent Planet

Attention!

This product contains a hard copy of the Chinese user manual for China CCC certification purposes. A PDF of the English user manual is included on the accompanying CD. Please disregard the hard copy Chinese user manual if the product is not sold and/or installed in China.

Copyright

Acknowledgments

Award is a trademark of Award Software International, Inc.

VIA is a trademark of VIA Technologies, Inc.

IBM, PC/AT, PS/2 and VGA are trademarks of International Business Machines Corporation.

Intel® and Pentium® are trademarks of Intel Corporation.

Microsoft Windows® is a registered trademark of Microsoft Corp.

RTL is a trademark of Realtek Semi-Conductor Co., Ltd.

ESS is a trademark of ESS Technology, Inc.

UMC is a trademark of United Microelectronics Corporation.

SMI is a trademark of Silicon Motion, Inc.

Creative is a trademark of Creative Technology LTD.

CHRONTEL is a trademark of Chrontel Inc.

All other product names or trademarks are properties of their respective owners.

For more information about this or other Advantech products, visit our website at
http://www.advantech.com/

https://www.advantech.com/en/products/air-edge-ai-inference-systems-servers/sub-_65f20c25-f6ef-4ab5-be3c-b7dfa7a833b3

For technical support and customer service, visit our support website at
http://support.advantech.com.tw/support/

Part No. 2006007500 Edition 1

Printed in China July 2026

Product Warranty (2 years)

Advantech warrants the original purchaser that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products that have been repaired or altered by persons other than repair personnel authorized by Advantech, or products that have been subject to misuse, abuse, accident, or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced free of charge during the warranty period. For out-of-warranty repairs, customers will be billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details.

If you believe your product to be defective, follow the steps outlined below.

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages displayed when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain a return merchandize authorization (RMA) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a completed Repair and Replacement Order Card, and a proof of purchase date (such as a photocopy of your sales receipt) into a shippable container. Products returned without a proof of purchase date are not eligible for warranty service.
5. Write the RMA number clearly on the outside of the package and ship the package prepaid to your dealer.

Declaration of Conformity

FCC Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.

Technical Support and Assistance

1. Visit the Advantech website at www.advantech.com/support to obtain the latest product information.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before calling:
   - Product name and serial number
   - Description of your peripheral attachments
   - Description of your software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wording of any error messages

Warnings, Cautions and Notes

Warning! Warnings indicate conditions that if not observed can cause personal injury!

Les avertissements indiquent des conditions qui, si elles ne sont pas observées, peuvent entraîner blessure!

Caution! Cautions are included to help prevent hardware damage and data losses.

For example,

“Batteries are at risk of exploding if incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.”

Des précautions sont fournies pour vous aider à éviter d’endommager le matériel ou de perdre vos données.

Par exemple,

“Les piles présentent un risque d’explosion si elles sont mal installées. Ne tentez pas de recharger, d’ouvrir de force ou de chauffer la pile. Remplacez-la uniquement par une pile du même type ou d’un type équivalent recommandé par le fabricant. Jetez les piles usagées conformément aux instructions du fabricant.”

Note! *Notes provide additional optional information.*

Packing List

Before system installation, check that the items listed below are included and in good condition. If any item does not accord with the list, contact your dealer immediately.

- 1 x AIR-075 unit
- 1 x Phoenix connector counterpart (1652003234)
- Simplified Chinese User Manual
- 1 x Wall Mount Kit for AIR-075

* In case of any changes, the actual packaging shall prevail.

Ordering Information

Model Number	Description
AIR-075A-S6A1U	Edge AI Inference System NVIDIA Thor T5000
AIR-075A-S6B1U	Edge AI Inference System NVIDIA Thor T4000

Option Items

Part Number	Description
96PSA-A330W24P4-3	A/D 100-240V 330W 24V C14 TERMINAL BLOCK 4P
1702002600	Power Cord UL 3P 10A 125V 183 cm (US)
1702002605	Power Cord EU 3P 10A 250V 183 cm (EU)
1702031801	Power Cord BSI 3P 10A 250V 183 cm (UK)
1700000237	Power Cord PSE 3P 12A 125V 183 cm (Japan)
1700013977	Power Cord CCC 3P 10A 250V 200 cm 90°(China)
AIW-169BR-GX1	Realtek Wi-Fi 6E M.2 2230 E-Key
1751000620-01	1 x Cable Ant. L300mm for Wi-Fi
1751000651-01	1 x Antenna for Wi-Fi
AIW-356DQ-JK1	Qualcomm 5G M.2 3052 B-Key
1751000623-01	1 x Cable Ant. L300mm for 5G
1750009372-01	1 x Antenna for 5G
MIOE-PSE-DPA1	PoE Module w/ Heatsink
1700034631-01	M cable USB Type-A 4P(M)/USB-C 24P(M) 90 cm

Note! *If Wi-Fi/5G module is required, the package must include the module, antenna, and antenna cable.*

Safety Instructions

1. Read these safety instructions carefully.
2. Retain this user manual for future reference.
3. Disconnect the equipment from all power outlets before cleaning. Use only a damp cloth for cleaning. Do not use liquid or spray detergents.
4. For pluggable equipment, the power outlet socket must be located near the equipment and easily accessible.
5. Protect the equipment from humidity.
6. Place the equipment on a reliable surface during installation. Dropping or letting the equipment fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. Do not cover the openings.
8. Ensure that the voltage of the power source is correct before connecting the equipment to a power outlet.
9. Position the power cord away from high-traffic areas. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage from transient overvoltage.
12. Never pour liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If any of the following occurs, have the equipment checked by service personnel:
    - The power cord or plug is damaged.
    - Liquid has penetrated the equipment.
    - The equipment has been exposed to moisture.
    - The equipment is malfunctioning, or does not operate according to the user manual.
    - The equipment has been dropped and damaged.
    - The equipment shows obvious signs of breakage.
15. Do not leave the equipment in an environment with a storage temperature of below -40°C (-40°F) or above 85°C (185°F) as this may damage the components. The equipment should be kept in a controlled environment.
16. Any unverified component may cause unexpected damage. To ensure correct installation, always use the components (e.g., screws) provided in the accessory box.
17. CAUTION: Batteries are at risk of exploding if incorrectly replaced. Replace only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.
18. Always disconnect the power cord from the chassis before manually handling the hardware. Do not implement connections or configuration changes while the device is powered on. Sudden power surges may damage sensitive electronic components.
19. In accordance with IEC 704-1:1982 specifications, the sound pressure level at the operator's position does not exceed 70 dB (A).
20. DISCLAIMER: These instructions are provided according to IEC 704-1 standards. Advantech disclaims all responsibility for the accuracy of any statements contained herein.
21. The product is intended to be supplied by an IEC/EN 62368-1/ UL Listed Adapter or DC power source suitable for use at Tma 40° C min. and is rated: 19-

36VDC, 17.36-9.16A with mating connector. The power cord shall be connected to a socket-outlet with a protective earth (ground) connection. For further assistance, please contact Advantech for additional information.

22. RESTRICTED ACCESS AREA: The equipment should only be installed in a Restricted Access Area.

Consignes de Sécurité

1. Veuillez lire attentivement ces instructions de sécurité.
2. Veuillez conserver ce manuel de l'utilisateur pour référence ultérieure.
3. Veuillez débrancher cet équipement de la prise secteur avant le nettoyage. Utilisez un chiffon humide. Ne pas utiliser de détergent liquide ou pulvérisé pour le nettoyage. Utilisez une feuille ou un chiffon humide pour le nettoyage.
4. Pour les équipements enfichables, la prise de courant doit être à proximité de l'équipement et doit être facilement accessible.
5. S'il vous plaît garder cet équipement de l'humidité.
6. Posez cet équipement sur une surface fiable lors de l'installation. Une chute ou une chute pourrait causer des blessures.
7. Les ouvertures sur le boîtier sont destinées à la convection d'air, protégeant. ainsi l'équipement de la surchauffe. NE COUVREZ PAS LES OUVERTURES.
8. Au moyen d'un cordon d'alimentation connecté à une prise de courant avec mise à la terre.
9. Placez le cordon d'alimentation de sorte que personne ne puisse marcher dessus. Ne placez rien sur le cordon d'alimentation.
10. Tous les avertissements et mises en garde sur l'équipement doivent être notés.
11. Si l'appareil n'est pas utilisé pendant une longue période, débranchez-le du secteur pour ne pas être endommagé par une surtension transitoire.
12. Ne jamais verser de liquide dans les ouvertures de ventilation; Cela pourrait provoquer un incendie ou un choc électrique.
13. N'ouvrez jamais l'équipement. Pour des raisons de sécurité, seul le personnel de maintenance qualifié doit ouvrir l'équipement.
14. Si l'une des situations suivantes se présente, faites vérifier le matériel par le personnel de service:
    - Le cordon d'alimentation ou la fiche est endommagé.
    - Un liquide a pénétré dans l'appareil.
    - L'équipement a été exposé à l'humidité.
    - L'équipement ne fonctionne pas bien ou vous ne pouvez pas le faire fonctionner conformément au manuel d'utilisation.
    - Equipment L'équipement est tombé et a été endommagé.
    - Equipment L'équipement présente des signes évidents de rupture.
15. Ne laissez pas cet équipement dans un environnement où la température de stockage peut être inférieure à -40° C (-40° F) ou supérieure à 85° C (185° F). Cela pourrait endommager l'équipement. L'équipement doit être dans un environnement contrôlé.
16. Tout composant non vérifié peut causer des dommages inattendus. Pour garantir une installation correcte, veuillez toujours utiliser les composants (ex. Vis) fournis avec la boîte d'accessoires.
17. ATTENTION: L'ordinateur est équipé d'un circuit d'horloge temps réel alimenté par batterie. Il y a un risque d'explosion si la batterie est remplacée de manière incorrecte. Remplacez uniquement avec le même type ou un type équivalent recommandé par le fabricant. Jetez les piles usagées conformément aux instructions du fabricant.

18. Débranchez toujours complètement le cordon d'alimentation de votre châssis lorsque vous utilisez du matériel. Ne faites pas de connexion quand l'appareil est sous tension. Les composants électroniques sensibles peuvent être endommagés par des surtensions soudaines.
19. Niveau de pression acoustique au poste de l'opérateur selon la norme CEI 704-1: 1982 n'est pas supérieur à 70 dB (A).
20. AVERTISSEMENT: Cet ensemble d'instructions est donné conformément à la norme CEI 704-1. Advantech décline toute responsabilité quant à l'exactitude des déclarations contenues dans ce.
21. Ce produit est destiné à être alimenté par un adaptateur certifié IEC/EN 62368-1 et répertorié UL, ou par une source d'alimentation en courant continu (CC) adaptée à une utilisation à une température ambiante minimale (Tma) de 40° C, et est spécifié comme suit: 19–36 V_{CC}, 17,36–9,16 A, avec un connecteur compatible. Le cordon d'alimentation doit être raccordé à une prise de courant équipée d'une connexion de terre de protection. Pour toute assistance complémentaire, veuillez contacter Advantech pour plus d'informations.
22. ZONE D'ACCES RESTREINTE: L'équipement ne doit être installé que dans une zone d'accès restreint.

Contents

Chapter 1 General Introduction 1

1.1 Introduction 2
1.2 Product Features.....3
1.2.1 General 3
Table 1.1: General.....3
1.2.2 Display 4
1.2.3 Ethernet 4
1.2.4 I/O Ports and Expansion 4
1.2.5 CPU 4
1.2.6 GPU 4
1.3 Mechanical Specifications.....5
1.3.1 System Dimensions 5
1.3.2 Weight.....5
1.4 Power Requirements.....6
1.4.1 System Power.....6
1.4.2 RTC Battery 6
1.5 Environmental Specifications 6
1.5.1 Operating Temperature.....6
1.5.2 Relative Humidity 6
1.5.3 Storage Temperature.....6
1.5.4 Vibration Tolerance.....6
1.5.5 Shock Tolerance 6
1.5.6 Safety Certification.....6
1.5.7 EMC Certification 6

Chapter 2 Hardware Configuration.....7

2.1 Introduction 8
2.2 Jumpers 8
2.2.1 Jumper Description 8
2.2.2 Jumper List 8
Table 2.1: Jumper Settings.....8
2.2.3 Jumper Locations.....9
Figure 2.1 Bottom Layer Overview 9
Table 2.2: AT/ATX Mode Switch (JPSON1) 9
Table 2.3: Recovery mode switch (RST_RCOVY) 10
Table 2.4: COM mode switch (COM1_SW1, COM2_SW1) 10
Table 2.5: COM Fail Safe Switch (COM12_SAFE1) 10
2.3 I/O Introduction..... 11
2.4 External I/O 12
2.4.1 Power On/Off Button..... 12
Figure 2.2 Power On/Off Button 12
2.4.2 Power Input Connector 12
Figure 2.3 Power Input Connector..... 12
2.4.3 LED Indicator 12
Figure 2.4 Power Input Connector..... 12
2.4.4 HDMI and DisplayPort Stack Connector (HDMI_DP1) 13
Figure 2.5 HDMI Port Connector 13
Figure 2.6 DisplayPort Connector..... 13
Table 2.6: HDMI and DisplayPort Connector Pin Definition (HDMI_DP1) 13
2.4.5 USB 3.2 Gen1 Type-C Stack Connector (USBC_1/2)..... 14
Figure 2.7 Type C Stack Connector 14
Table 2.7: USB type-C Connector (USB1/2) Pin Definition 14

2.4.6 USB 3.2 Gen2 Type-A Stack Connector (USB3_1/2) 15
Figure 2.8 Type A Stack Connector 15
Table 2.8: USB Type-A Connector (USB1/2) Pin Definition 15
2.4.7 Ethernet Connector (LAN1/2, 3/4) 16
Figure 2.9 Ethernet Connector (LAN1/2, LAN3/4) 16
Table 2.9: Ethernet Connector LED 16
Table 2.10: Ethernet Connector (LAN1/2, LAN3/4) Pin Definition ... 16
2.4.8 GPIO Connector 17
Figure 2.10 GPIO Connector 17
Table 2.11: GPIO Connector and Pin Definition 17
2.4.9 HD Analog Audio Interface Mic-in (MICIN1) 17
Figure 2.11 Audio Interface 17
Table 2.12: HD Analog Audio Interface Mic-in (MICIN1) 17
2.4.10 HD Analog Audio Interface Line-out (LINEOUT1) 18
Figure 2.12 Audio Interface 18
Table 2.13: HD Analog Audio Interface Line-out (LINEOUT1) 18
2.4.11 COM Connector (COM1/2) 18
Figure 2.13 COM Connector 18
Table 2.14: COM Connector (COM1/2) 18
2.4.12 CANBUS Connector (CAN1/2) 19
Figure 2.14 CANBus Connector 19
Table 2.15: CANBUS Connector (CAN1/2) 19
2.4.13 OTG Type-C for Recovery Mode Only (RCM_TYPEC1) 19
Figure 2.15 Type-C Connector 19
Table 2.16: OTG Type-C for Recovery Mode Only (RCM_TYPEC1) 19
2.4.14 Antenna Socket 20
Figure 2.16 Antenna Socket 20
2.5 Installation 20
2.5.1 M.2 M-Key 2280(default)/2242 Installation 20
2.5.2 M.2 B/E-Key Installation 22
2.5.3 Wall Mount Installation 24
2.5.4 PoE Installation (Optional Item) 25

Chapter 3 Software Functionality 29

3.1 CAN 30
3.2 GPIO 8-bit 30
Table 3.1: Pin table with DIO expander number 30
3.3 Serial Ports 31
3.3.1 RS-232 31
3.3.2 RS-422 31
3.3.3 RS-485 32
3.4 Wireless module 32
3.4.1 AIW-356 32
3.4.2 AIW-169 33
3.5 LED 33
Table 3.2: Pin table with LED 33
3.6 USB Type-C 33

Chapter 4 Embedded O.S 35

4.1 Introduction 36
4.1.1 Build Environment on Host 36
4.1.2 Getting Linux Source Code 37

Chapter 5 System Recovery.....39

5.1 System Recovery 40
5.1.1 System Requirement 40
5.1.2 Set AIR-075 into Recovery Mode 40
5.1.3 Install Dependency 42
5.1.4 Flash Image 42

Chapter 1

General Introduction

This chapter gives background information on the AIR-075 series.

1.1 Introduction

The AIR-075 is an ultra-compact Edge AI inference system powered by the NVIDIA® Jetson™ Thor family and designed for high-performance edge computing. By supporting NVIDIA® Jetson™ Thor T4000 or T5000 modules, it delivers scalable AI performance of up to 2070 TFLOPS (FP4—Sparse). The system features a ruggedized chassis and four low-profile fans with flexible thermal solutions, making it an ideal choice for diverse industrial installation environments.

Comprehensive I/O and Industrial Connectivity

Designed for seamless peripheral integration, the AIR-075 is equipped with a comprehensive set of industrial I/O ports. The front panel features 4 x RJ-45 Ethernet ports (10GbE) for high-speed network communication, along with 2 x USB Type-A ports, 2x USB Type-C ports for device connections and 1x DP, and 1x HDMI for versatile display.

The rear panel features 2 x CANBus, 2 x COM ports, and 1 x GPIO for legacy device control, as well as 1 x Line-out and 1 x Mic-in for audio applications.

The system also supports flexible wireless hardware expansion via M.2 slots for 5G and Wi-Fi/Bluetooth modules. This extensive hardware connectivity ensures seamless deployment in automation control cabinets and mobile robot platforms.

1.2 Product Features

1.2.1 General

Table 1.1: General

Model	AIR-075A-S6A1U	AIR-075A-S6B1U
NVIDIA Jetson Series	Thor T5000	Thor T4000
CPU	14-core Arm® Neoverse®-V3AE 64-bit CPU	12-core Arm® Neoverse®-V3AE 64-bit CPU
GPU	2560-core NVIDIA Blackwell architecture GPU with 96 fifth-gen Tensor Cores	1536-core NVIDIA Blackwell architecture GPU with 64 fifth-gen Tensor Cores
Memory	128GB 256-bit LPDDR5X	64GB 256-bit LPDDR5X
Storage	512GB (default built-in M.2 2280 NVMe)	512GB (default built-in M.2 2280 NVMe)
Ethernet	4 x 10GbE (reserve 2 for PoE)	2 x 10GbE (reserve 2 for PoE)
Serial Port	2 x RS-232/422/485	2 x RS-232/422/485
CANBus	2	NA
GPIO	8-bit	8-bit
Audio	1 x Line-out, 1 x Mic-in	1 x Line-out, 1 x Mic-in
USB Type-A	2 x USB 3.2 Gen2	2 x USB 3.2 Gen2
USB Type-C	2 x USB 3.2 Gen1 1 x USB 3.2 Gen1 (for system recovery only)	2 x USB 3.2 Gen1 1 x USB 3.2 Gen1 (for system recovery only)
Expansion	1 x M.2 2280 M-Key (PCIe x4) for NVMe (default built-in 512GB in M.2 2280) 1 x M.2 2242 M-Key (PCIe x2) for NVMe 1 x M.2 2230 E-Key (PCIe x1; USB2.0) for Wi-Fi/BT 1 x M.2 3052 B-Key (1 x USB3.2; USB2.0) for 5G	1 x M.2 2280 M-Key (PCIe x4) for NVMe (default built-in 512GB in M.2 2280) 1 x M.2 2242 M-Key (PCIe x2) for NVMe 1 x M.2 2230 E-Key (PCIe x1; USB2.0) for Wi-Fi/BT 1 x M.2 3052 B-Key (1 x USB3.2; USB2.0) for 5G

1.2.2 Display

- **Resolution:**
  - 1 x HDMI 2.1 (Max. resolution 3840 x 2160 @60Hz)
  - 1 x DisplayPort 1.4a (Max. resolution 3840 x 2160 @60Hz)

1.2.3 Ethernet

- **Chipset:** Marvell AQR113
- **Speed:** 10M/100M/1G/2.5G/10Gbps
- **Interface:** 4 x RJ-45

1.2.4 I/O Ports and Expansion

- 1 x HDMI 2.1 max. 3840 x 2160 @ 60Hz
- 1 x DP 1.4a max. 3840 x 2160 @ 60Hz
- 2 x USB 3.2 Gen1 Type-C (5V/3A)
- 2 x USB 3.2 Gen2 Type-A (5V/1A)
- 4 x LAN (4 for RJ-45 include 2 for PoE) (PoE out: 50Vdc, each 15W, total max. 30W)
- 1 x 8-bit GPIO (DB9 connector)
- 2 x RS-232/RS-422/RS-485 (DB9 connector)
- 2 x CANBus (DB9 connector)
- 1 x OTG USB Type-C (Recovery only)
- 1 x Line out
- 1 x Mic in
- 1 x M.2 2280 M-Key (PCIe x4) for NVMe, default 512GB storage built-in
- 1 x M.2 2242 M-Key (PCIe x2) for NVMe
- 1 x M.2 2230 E-Key (PCIe x1; USB2.0) for Wi-Fi/BT
- 1 x M.2 3052 B-Key (1 x USB3.2; USB2.0) for 5G

1.2.5 CPU

- **AIR-075A-S6A1U:** 14-core Arm® Neoverse®-V3AE 64-bit CPU
- **AIR-075A-S6B1U:** 12-core Arm® Neoverse®-V3AE 64-bit CPU

1.2.6 GPU

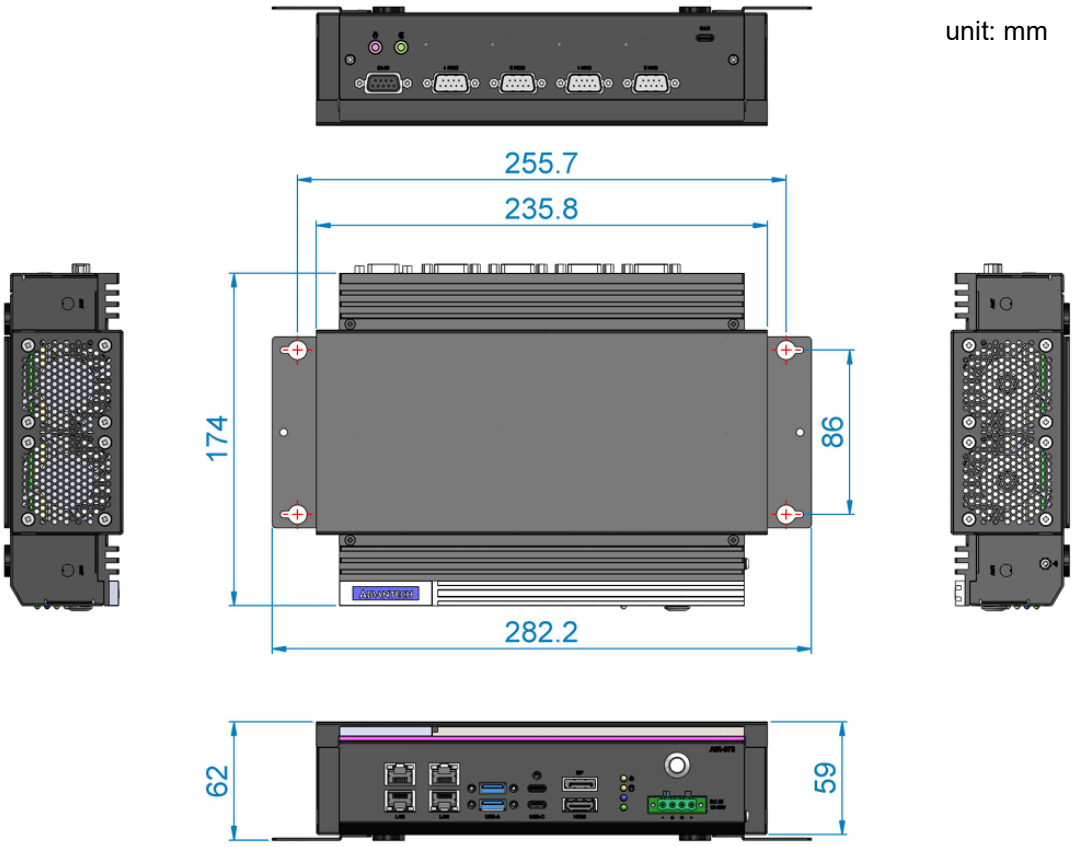
- **AIR-075A-S6A1U:** 2560-core NVIDIA Blackwell architecture GPU with 96 fifth-gen Tensor Cores
- **AIR-075A-S6B1U:** 1536-core NVIDIA Blackwell architecture GPU with 64 fifth-gen Tensor Cores

1.3 Mechanical Specifications

1.3.1 System Dimensions

- **AIR-075A-S6A1U:** 235.8 × 174 × 59 mm (w/o wall mount)
- **AIR-075A-S6B1U:** 235.8 × 174 × 59 mm (w/o wall mount)

unit: mm



1.3.2 Weight

- **AIR-075A-S6A1U:** 2.89 kg
- **AIR-075A-S6B1U:** TBD

1.4 Power Requirements

1.4.1 System Power

- **Power Input:** DC In 19-36V
- **Power type:** ATX/AT mode, ATX default

1.4.2 RTC Battery

- **Lithium:** 3V/200mAH

1.5 Environmental Specifications

1.5.1 Operating Temperature

- **AIR-075A-S6A1U:** -10 ~ 40°C w/o PoE, -10 ~ 35°C w/PoE (TDP 130W)
- **AIR-075A-S6B1U:** -10 ~ 50°C w/o PoE, -10 ~ 40°C w/PoE

1.5.2 Relative Humidity

- 95% @40°C (104°F) (non-condensing)

1.5.3 Storage Temperature

- -40 ~ 85°C (-40 ~ 185°F)

1.5.4 Vibration Tolerance

- When the system is equipped with an M.2 SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500Hz, 1 hr/axis, (x, y, z) 3 axes (operation)

1.5.5 Shock Tolerance

- When the system is equipped with an M.2 SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration, 6 faces, 3 times/per face (operation)

1.5.6 Safety Certification

- CB-IEC62368-1 2nd/CB-IEC62368-1 3rd/UL- UL62368-1 3rd

1.5.7 EMC Certification

- CE, FCC Class B, CCC, BSMI

Chapter 2

Hardware Configuration

This chapter details instructions for installing AIR-075 hardware and external I/O.

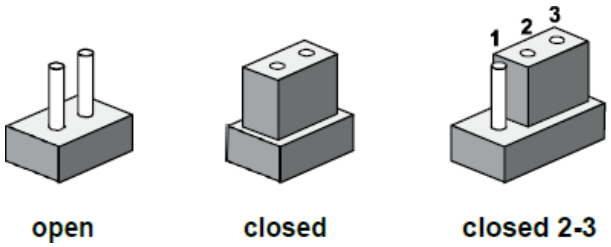
2.1 Introduction

The following sections demonstrate the internal jumper settings and the external connector pin assignments.

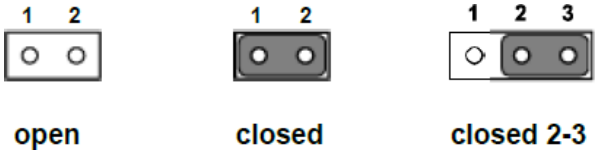
2.2 Jumpers

2.2.1 Jumper Description

The AIR-075 can be configured to satisfy specific application requirements by setting jumpers. A jumper is a metal bridge used to close an electric circuit. 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, connect the pins with the clip. To open a jumper, remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. For these jumpers, connect either pins 1 and 2, or 2 and 3.



The jumper settings are schematically diagrammed in this manual as follows:



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

2.2.2 Jumper List

Table 2.1: Jumper Settings

Location	Function
JPSON1	AT/ATX mode switch
RST_RCOVY	Recovery mode switch
COM1_SW1	COM mode switch
COM2_SW1	COM mode switch
COM12_SAFE1	COM fail safe switch

2.2.3 Jumper Locations

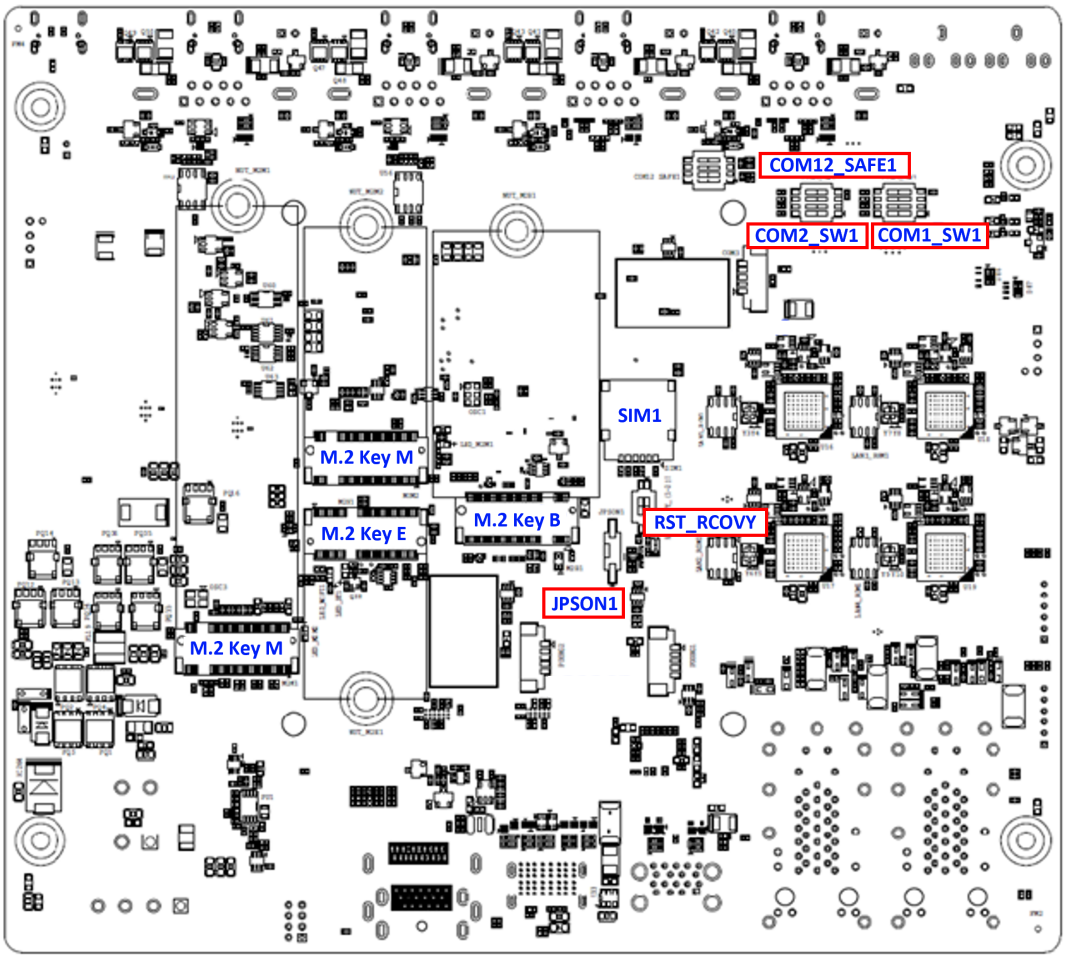


Figure 2.1 Bottom Layer Overview

Table 2.2: AT/ATX Mode Switch (JPSON1)

Pin	Signal
1	AT
2	ATX (default)

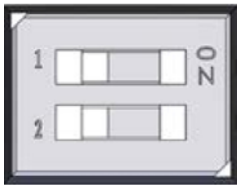


Table 2.3: Recovery mode switch (RST_RCOVY)

	Mode/Description	Pin1	Pin2
Recovery mode switch (RST_R-COVY) Setting	Reset Device	ON: Enable OFF: Disable (Default)	
	Recovery Device		ON: Enable OFF: Disable (Default)

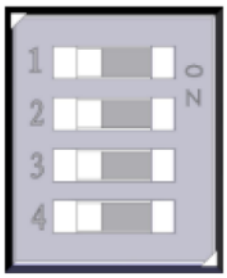


Table 2.4: COM mode switch (COM1_SW1, COM2_SW1)

	Mode/Description	Pin1	Pin2	Pin3	Pin4
COM1_SW1 (COM1) COM2_SW1 (COM2) Setting	RS-232 (Default)	OFF	OFF	OFF	OFF
	RS-422	ON	OFF	OFF	OFF
	RS-422 (enable terminal)	ON	OFF	ON	OFF
	RS-485 (Software flow control)	ON	ON	OFF	ON
	RS-485 (enable TX terminal)	ON	ON	ON	OFF
	RS-485 (enable RX terminal)	ON	ON	ON	ON
	LOOPBACK mode	OFF	ON	OFF	OFF

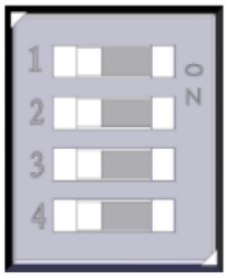
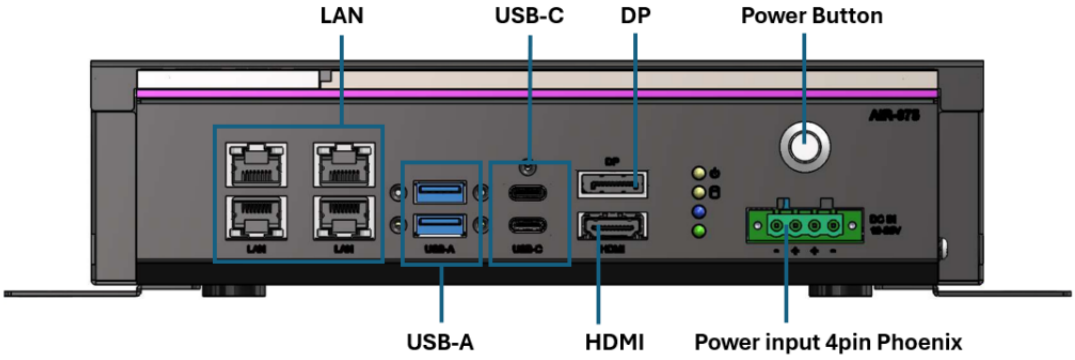


Table 2.5: COM Fail Safe Switch (COM12_SAFE1)

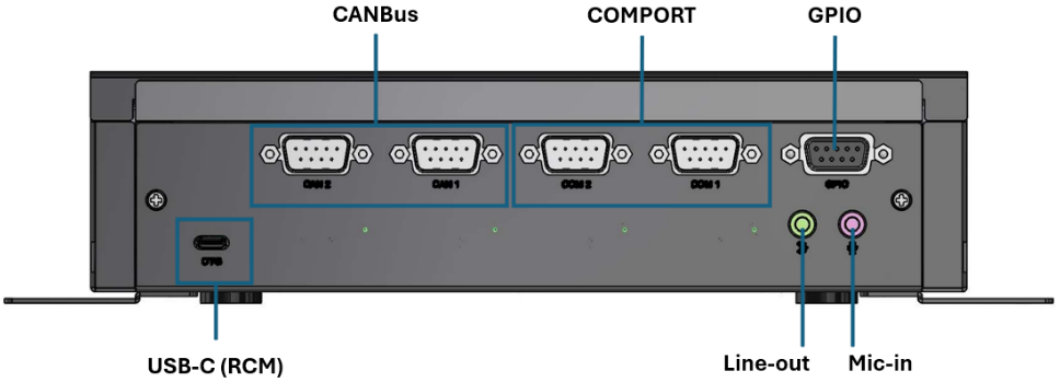
	Mode/Description	Pin1	Pin2	Pin3	Pin4
COM1/2F switch (COM1/2_Safe1)	Disable (default)	OFF	OFF	OFF	OFF
	COM1 fail safe enable	OFF	OFF	ON	ON
	COM2 fail safe enable	ON	ON	OFF	OFF
	COM1, COM2 fail safe enable	ON	ON	ON	ON

2.3 I/O Introduction

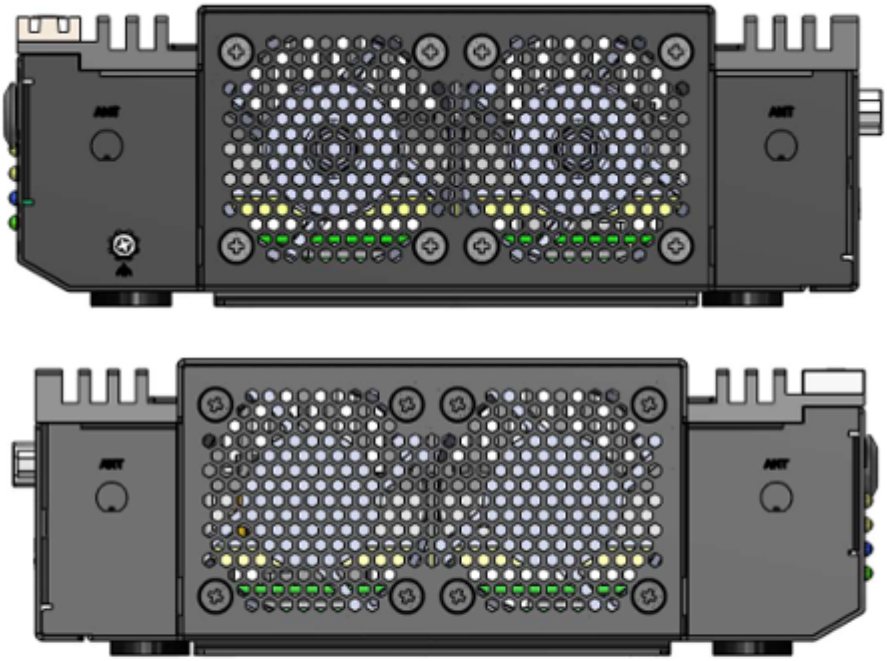
Front View



Rear View



Side View



2.4 External I/O

2.4.1 Power On/Off Button

The AIR-075 features a Power On/Off button.

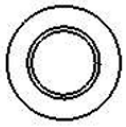


Figure 2.2 Power On/Off Button

2.4.2 Power Input Connector

The power input connector supports DC in 19-36V.

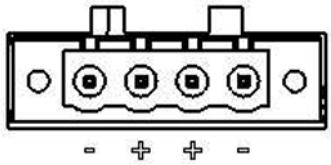


Figure 2.3 Power Input Connector

2.4.3 LED Indicator

There are 4 x LEDs on the front panel that indicate the system's status:

From Top:

- Power LED: system on/system suspend with green light
- HDD LED: M.2 HDD is working with amber light
- Customized LED: Blue
- Customized LED: Green

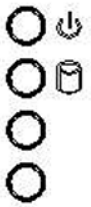


Figure 2.4 Power Input Connector

2.4.4 HDMI and DisplayPort Stack Connector (HDMI_DP1)

The AIR-075 offers one 19-pin receptacle connector HDMI 2.1 interfaces. The HDMI link supports resolutions up to 3840 x 2160 @ 60Hz.

Also, the AIR-075 provides one 20-pin receptacle connector DisplayPort 1.4a interfaces. The DisplayPort link supports resolutions up to 3840 x 2160 @60Hz.

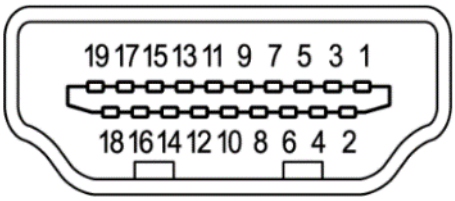


Figure 2.5 HDMI Port Connector

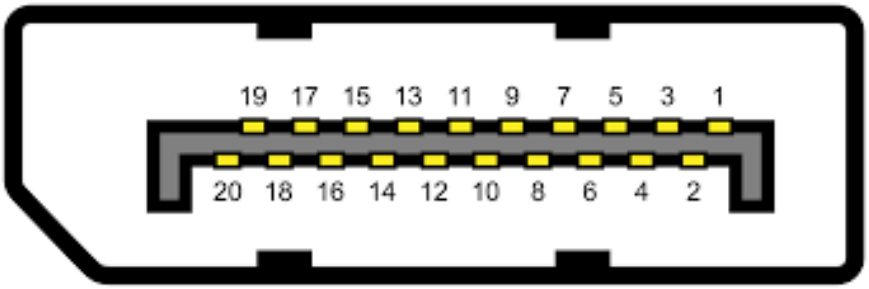


Figure 2.6 DisplayPort Connector

Table 2.6: HDMI and DisplayPort Connector Pin Definition (HDMI_DP1)

Pin	Signal	Pin	Signal
P1	HDMI_D2P	P20	DP_TX0+
P2	GND	P21	GND
P3	HDMI_D2N	P22	DP_TX0-
P4	HDMI_D1P	P23	DP_TX1+
P5	GND	P24	GND
P6	HDMI_D1N	P25	DP_TX1-
P7	HDMI_D0P	P26	DP_TX2+
P8	GND	P27	GND
P9	HDMI_D0N	P28	DP_TX2-
P10	HDMI_D3P	P29	DP_TX3+
P11	GND	P30	GND
P12	HDMI_D3N	P31	DP_TX3-
P13	NC	P32	DP_CAD
P14	NC	P33	GND
P15	HDMI_SCL	P34	DP0_AUX+
P16	HDMI_SDA	P35	GND
P17	GND	P36	DP0_AUX-
P18	+5V	P37	DP_HPD
P19	HDMI_HPD	P38	GND
		P39	+3.3V

2.4.5 USB 3.2 Gen1 Type-C Stack Connector (USBC_1/2)

The AIR-075 features 2 x 24-pin USB Type-C connector with a rotationally symmetrical design. Please note that this port supports data transfer only.

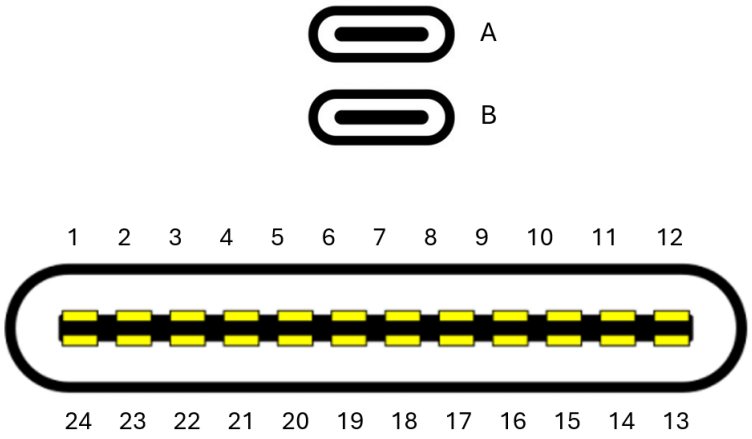


Figure 2.7 Type C Stack Connector

Table 2.7: USB type-C Connector (USB1/2) Pin Definition

Pin	Signal Pin Definition	Pin	Signal Pin Definition
A1	GND	A13	GND
A2	SSTXp1	A14	SSRXp2
A3	SSTXn1	A15	SSRXn2
4A	VBUS	A16	VBUS
A5	CC1	A17	SBU1
A6	Dp1	A18	Dn2
A7	Dn1	A19	Dp2
A8	SBU1	A20	CC2
A9	VBUS	A21	VBUS
A10	SSRXn2	A22	SSTXn1
A11	SSRXp2	A23	SSTXp1
A12	GND	A24	GND
B1	GND	B13	GND
B2	SSTXp1	B14	SSRXp2
B3	SSTXn1	B15	SSRXn2
B4	VBUS	B16	VBUS
B5	CC1	B17	SBU1
B6	Dp1	B18	Dn2
B7	Dn1	B19	Dp2
B8	SBU1	B20	CC2
B9	VBUS	B21	VBUS
B10	SSRXn2	B22	SSTXn1
B11	SSRXp2	B23	SSTXp1
B12	GND	B24	GND

2.4.6 USB 3.2 Gen2 Type-A Stack Connector (USB3_1/2)

AIR-075 supports 2 x USB 3.2 interfaces, which support Plug-and-Play functionality and hot swapping for up to 127 external devices. The USB interfaces comply with USB UHCI, Rev. 3.2. USB 3.2 connectors contain legacy pins to interface to USB 2.0 devices and a new set of pins for USB 3.2 connectivity.

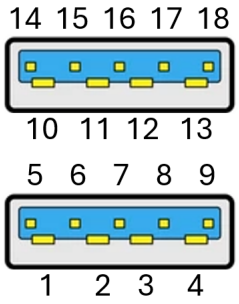


Figure 2.8 Type A Stack Connector

Table 2.8: USB Type-A Connector (USB1/2) Pin Definition

Pin	Signal Pin Definition	Pin	Signal Pin Definition
1	+5V	10	+5V
2	USB2_D-	11	USB2_D-
3	USB2_D+	12	USB2_D+
4	GND	13	GND
5	USB3_RX-	14	USB3_RX-
6	USB3_RX+	15	USB3_RX+
7	GND	16	GND
8	USB3_TX-	17	USB3_TX-
9	USB3_TX+	18	USB3_TX+

2.4.7 Ethernet Connector (LAN1/2, 3/4)

The AIR-075 is equipped with 4 x 10GbE Ethernet ports. These Ethernet ports provide standard RJ-45 connectors with LED indicators to show its “Active/Link” status (active in green light blinking and link in green light) and “Speed” status (10GbE in green light; 2.5GbE in orange light).

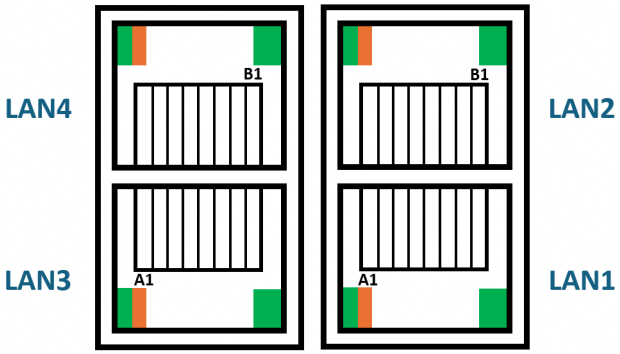


Figure 2.9 Ethernet Connector (LAN1/2, LAN3/4)

Table 2.9: Ethernet Connector LED	
Right Side LED: Green LED	
Green blink	Link & active
Green	Link idle
off	No link
Left Side LED: Green/Orange LED	
Green	10GbE
Orange	2.5GbE
Off	Other status

Table 2.10: Ethernet Connector (LAN1/2, LAN3/4) Pin Definition

Pin	Signal Pin Definition	Pin	Signal Pin Definition
A1	MDI0+	B1	MDI0+
A2	MDI0-	B2	MDI0-
A3	MDI1+	B3	MDI1+
A4	MDI1-	B4	MDI1-
A5	MDI2+	B5	MDI2+
A6	MDI2-	B6	MDI2-
A7	MDI3+	B7	MDI3+
A8	MDI3-	B8	MDI3-

2.4.8 GPIO Connector

The AIR-075 offers 8-bit GPIO and pin definition as shown below.

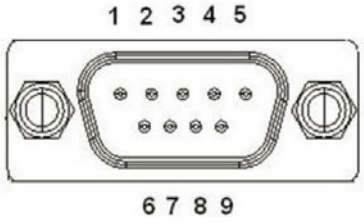


Figure 2.10 GPIO Connector

Table 2.11: GPIO Connector and Pin Definition

Pin	Signal Name
1	GPIO bit 0
2	GPIO bit 1
3	GPIO bit 2
4	GPIO bit 3
5	GPIO bit 4
6	GPIO bit 5
7	GPIO bit 6
8	GPIO bit 7
9	GND

2.4.9 HD Analog Audio Interface Mic-in (MICIN1)

The AIR-075 provides a Mic-in function with 1 x HD analog audio.

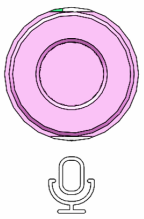


Figure 2.11 Audio Interface

Table 2.12: HD Analog Audio Interface Mic-in (MICIN1)

Pin	Signal Pin Definition
1	GND_A
2	MIC_1P
3	GND_A
4	MIC-JD
5	MIC_2P

2.4.10 HD Analog Audio Interface Line-out (LINEOUT1)

The AIR-075 provides line-out function with 1x HD analog audio.

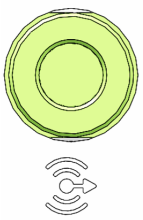


Figure 2.12 Audio Interface

Table 2.13: HD Analog Audio Interface Line-out (LINEOUT1)	
Pin	**Signal Pin Definition**
1	GND_A
2	LOUT_L
3	GND_A
4	FRONT-JD
5	LOUT_R

2.4.11 COM Connector (COM1/2)

The AIR-075 offers 2 x COM in DB9 connectors and pin definition as shown below. COM1 and COM2 offers RS-232/422/485 serial communication interface ports.

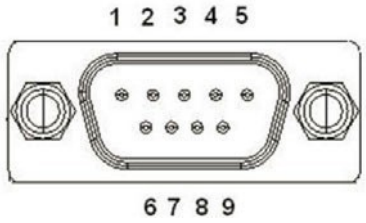


Figure 2.13 COM Connector

Table 2.14: COM Connector (COM1/2)			
Pin	**RS-232**	**RS-422**	**RS-485**
1	NC	Tx-	D-
2	RxD	Tx+	D+
3	TxD	Rx+	NC
4	NC	Rx-	NC
5	GND	GND	GND
6	NC	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	NC	NC	NC
NC represents “No Connection”			

2.4.12 CANBUS Connector (CAN1/2)

The AIR-075 offers 2 x bit CANBus (1Mbps) and pin definition as shown below.

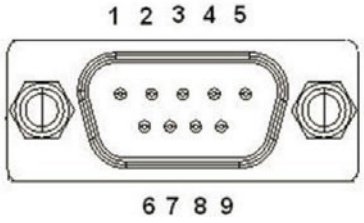


Figure 2.14 CANBus Connector

Table 2.15: CANBUS Connector (CAN1/2)

Pin	Signal Pin Definition	Pin	Signal Pin Definition
1	NC	6	NC
2	CAN_D-	7	CAN_D+
3	GND	8	NC
4	NC	9	NC
5	NC		

2.4.13 OTG Type-C for Recovery Mode Only (RCM_TYPEC1)

The AIR-075 supports USB Type-C 24-pin USB connector for system recovery.

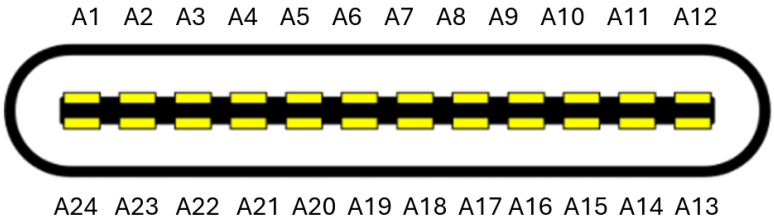


Figure 2.15 Type-C Connector

Table 2.16: OTG Type-C for Recovery Mode Only (RCM_TYPEC1)

Pin	Signal Pin Definition	Pin	Signal Pin Definition
A1	GND	A13	GND
A2	NC	A14	NC
A3	NC	A15	NC
4A	VBUS	A16	VBUS
A5	NC	A17	NC
A6	Dp1	A18	Dn2
A7	Dn1	A19	Dp2
A8	NC	A20	NC
A9	VBUS	A21	VBUS
A10	NC	A22	NC
A11	NC	A23	NC
A12	GND	A24	GND

2.4.14 Antenna Socket

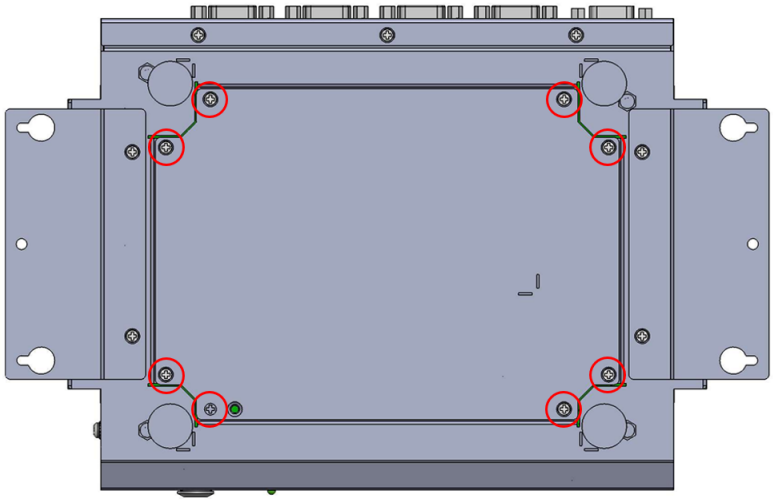
The AIR-075 reserves 4 x antenna sockets for the installation of wireless/LTE device antennas. Each antenna socket is labeled “ANT” for easy identification.

Figure 2.16 Antenna Socket

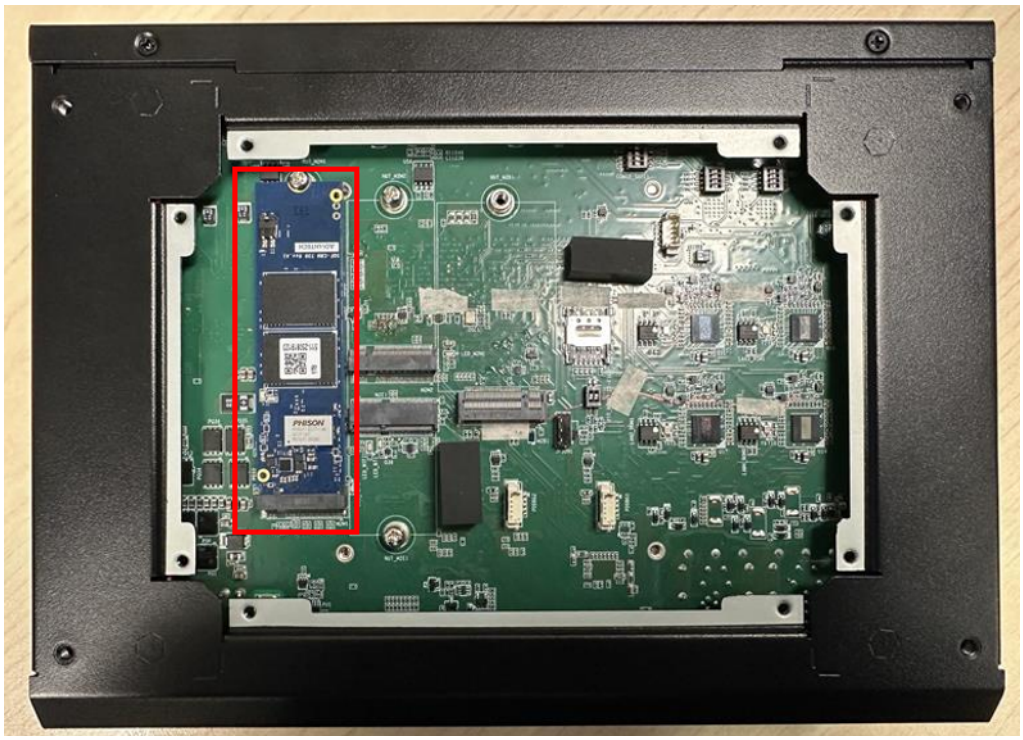
2.5 Installation

2.5.1 M.2 M-Key 2280(default)/2242 Installation

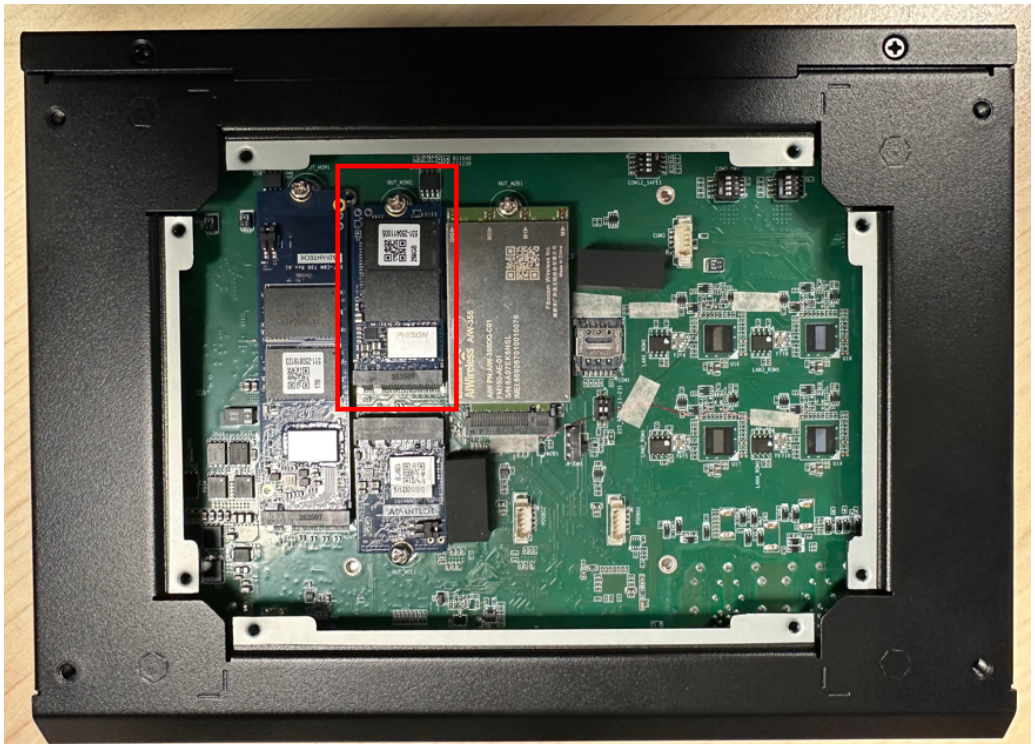
1. Remove the 8 screws and detach the bottom cover.



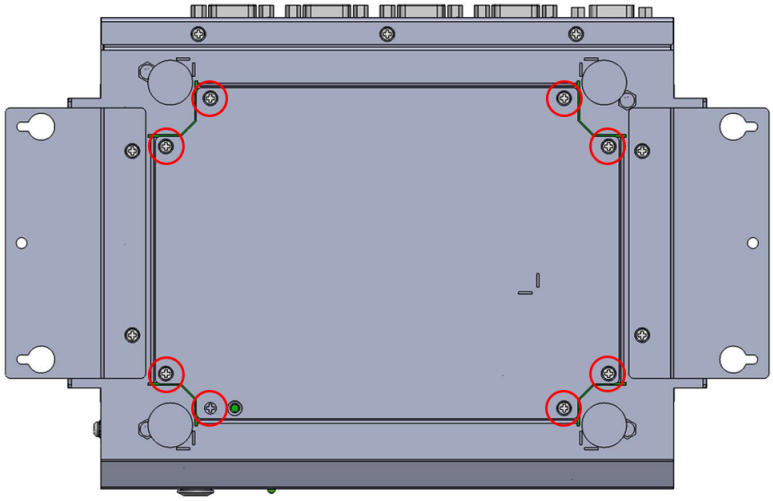
2. Identify the pre-installed M.2 2280 M-Key NVMe SSD (512GB default), as indicated by the red box in the figure.



3. Insert an additional M.2 2242 NVMe SSD into the available M-Key slot (as indicated by the red box in the figure) and secure it with a screw.

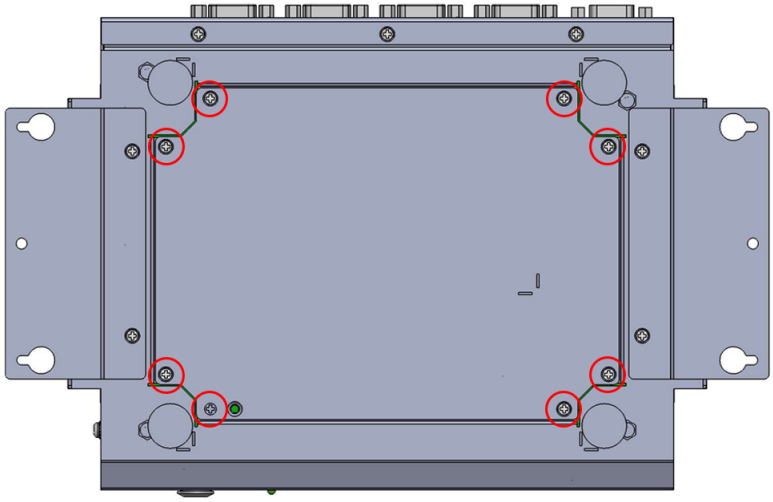


4. Reattach the bottom cover and secure all 8 screws.

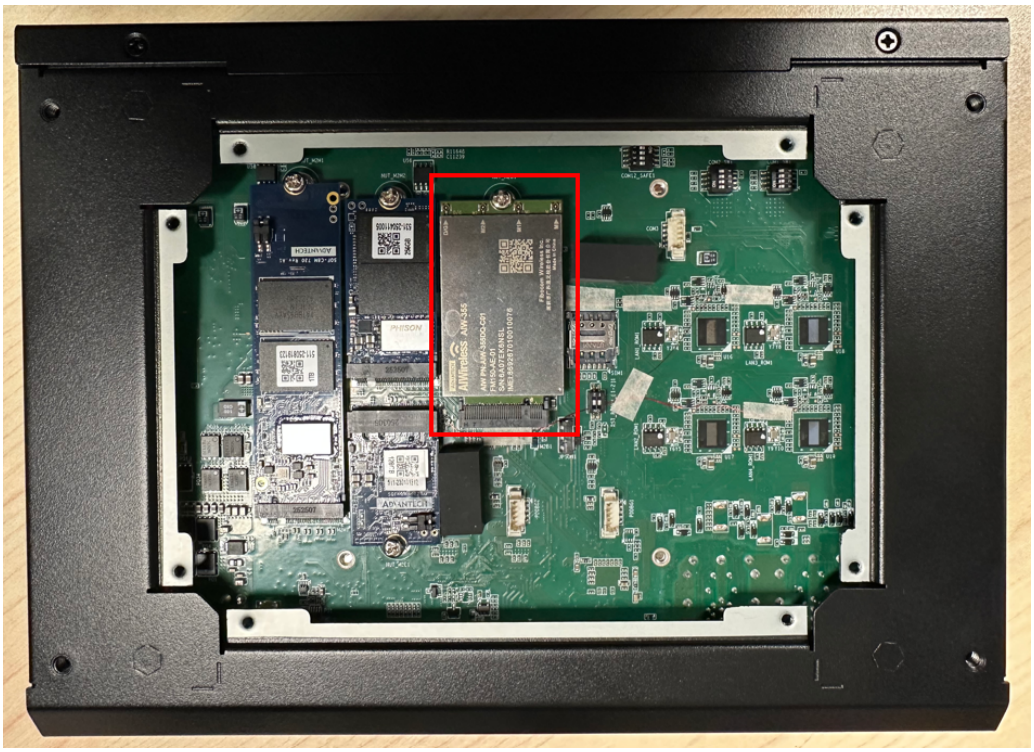


2.5.2 M.2 B/E-Key Installation

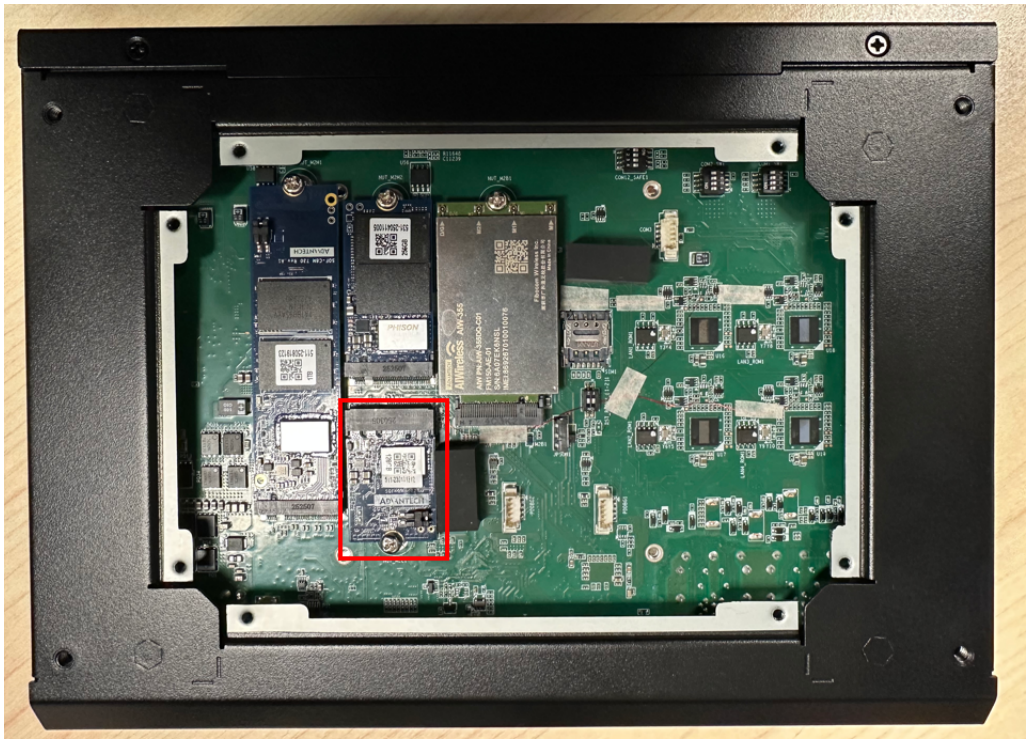
1. Remove the 8 screws and detach the bottom cover.



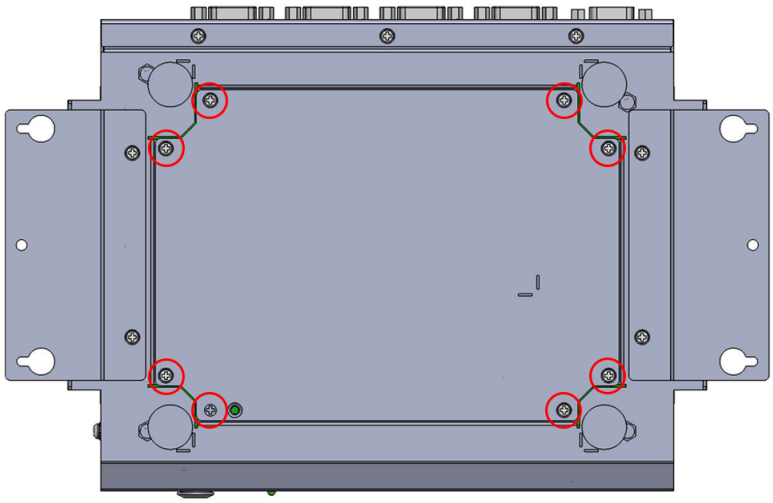
2. Install the B-Key 5G module.



3. Install the E-Key Wi-Fi module.



4. Reattach the bottom cover and secure all 8 screws.



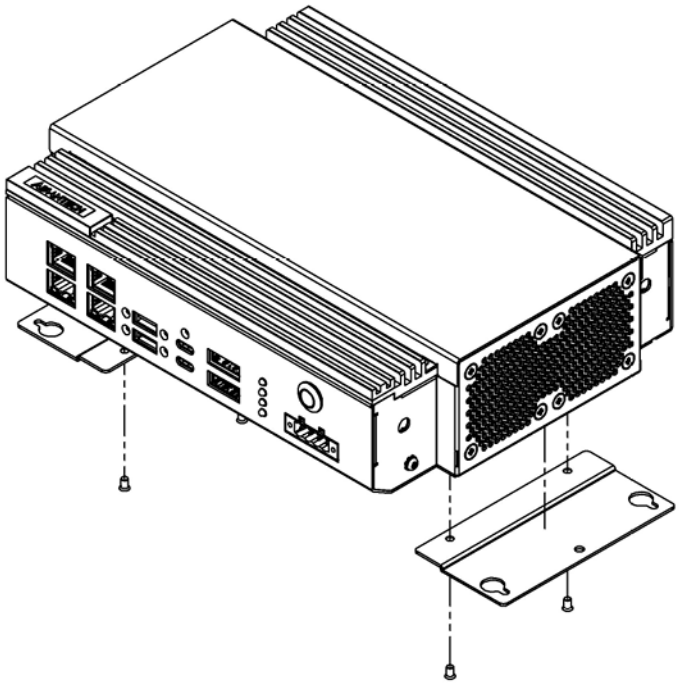
2.5.3 Wall Mount Installation

The Wall Mount Kit is included as a standard accessory in the product package.

It contains:

- 2 × wall mounts
- 4 × M3×5L screws

The wall mounts shall be secured to the system using the supplied M3 × 5L screws.

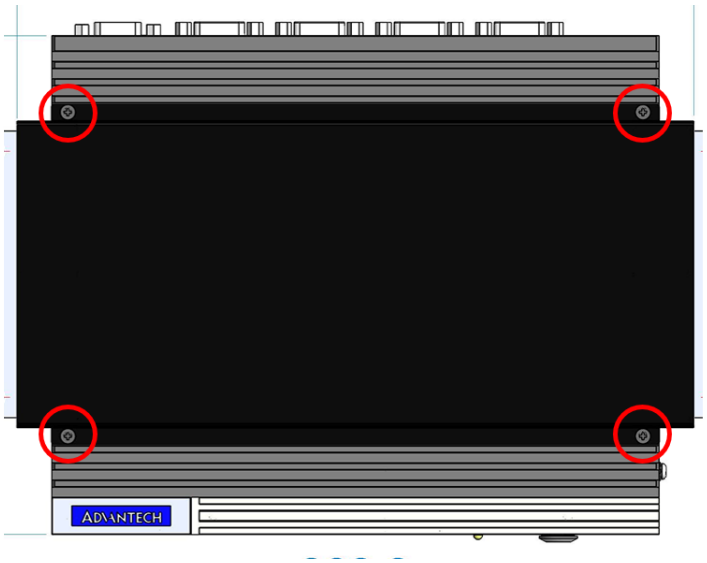


2.5.4 PoE Installation (Optional Item)

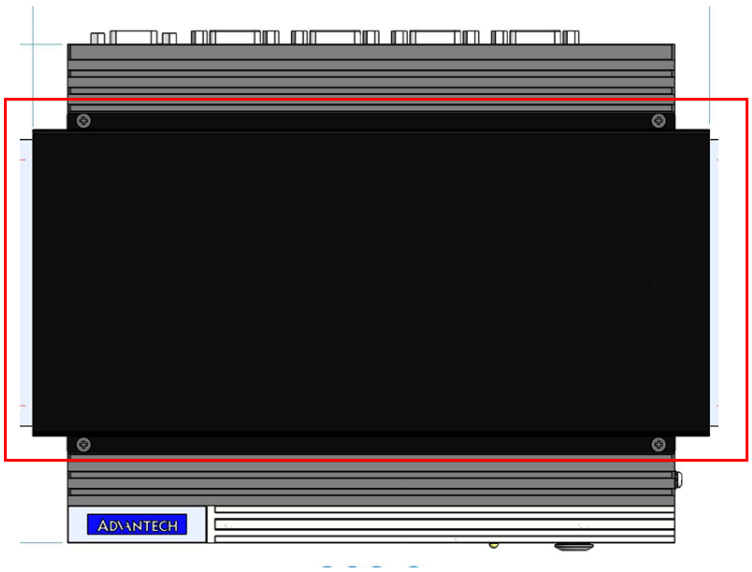
The PoE module (MIOE-PSE-DPA1) is an optional item and is not included in the standard product configuration. Installation is required only when the PoE module is purchased separately. Please ensure the PoE module is available before proceeding with installation.

Note! *The heatsink and the 4Pin-to-6Pin cable included in the PoE kit are not required for this installation.*

1. Remove the 4 screws on the top cover.

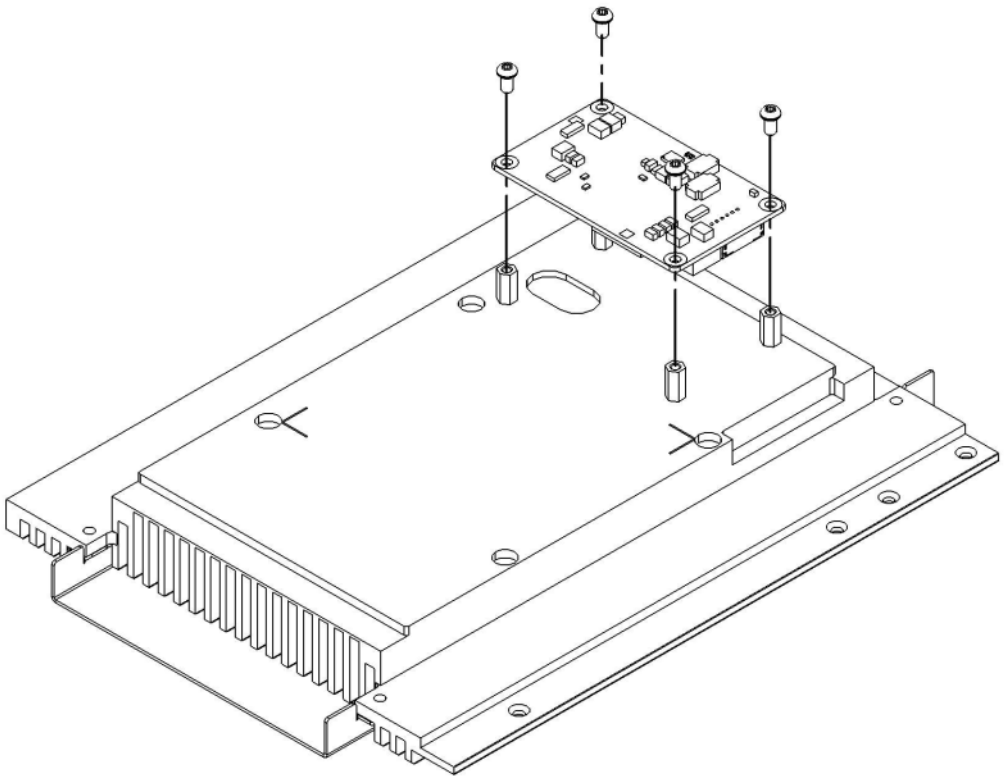


2. Remove top cover.

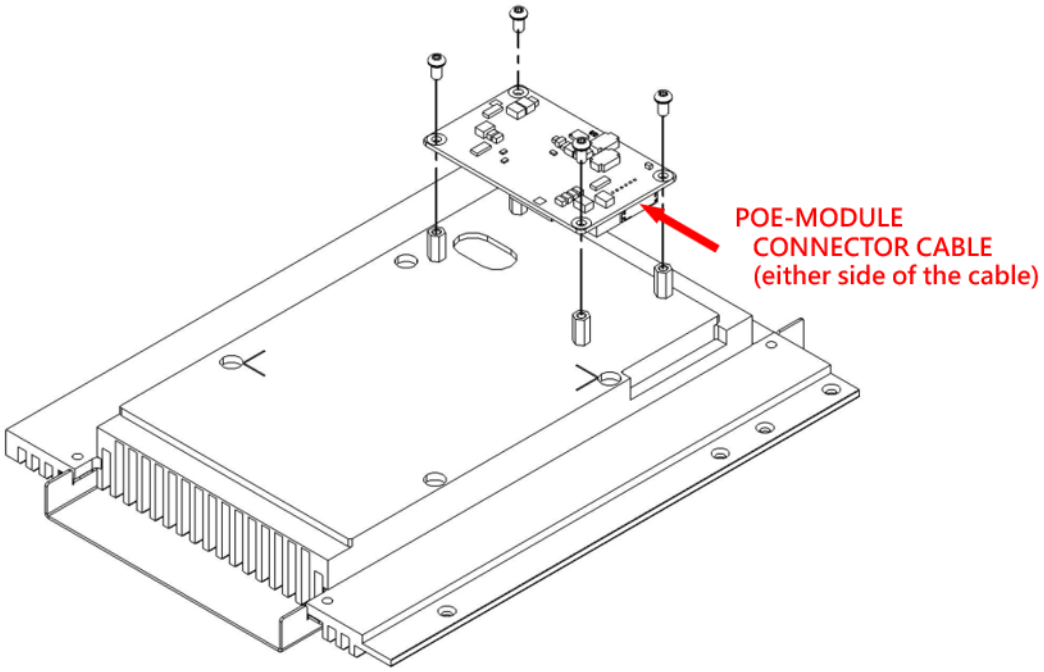


3. Remove the heatsink. Apply moderate force if necessary, as it's bottom is adhered to the thermal pad. Use an appropriate tool to gently lift it loose.

4. Turn the top cover over, then mount the PoE board onto it using 4 screws. Make sure the PoE board orientation matches the direction shown in the image below.

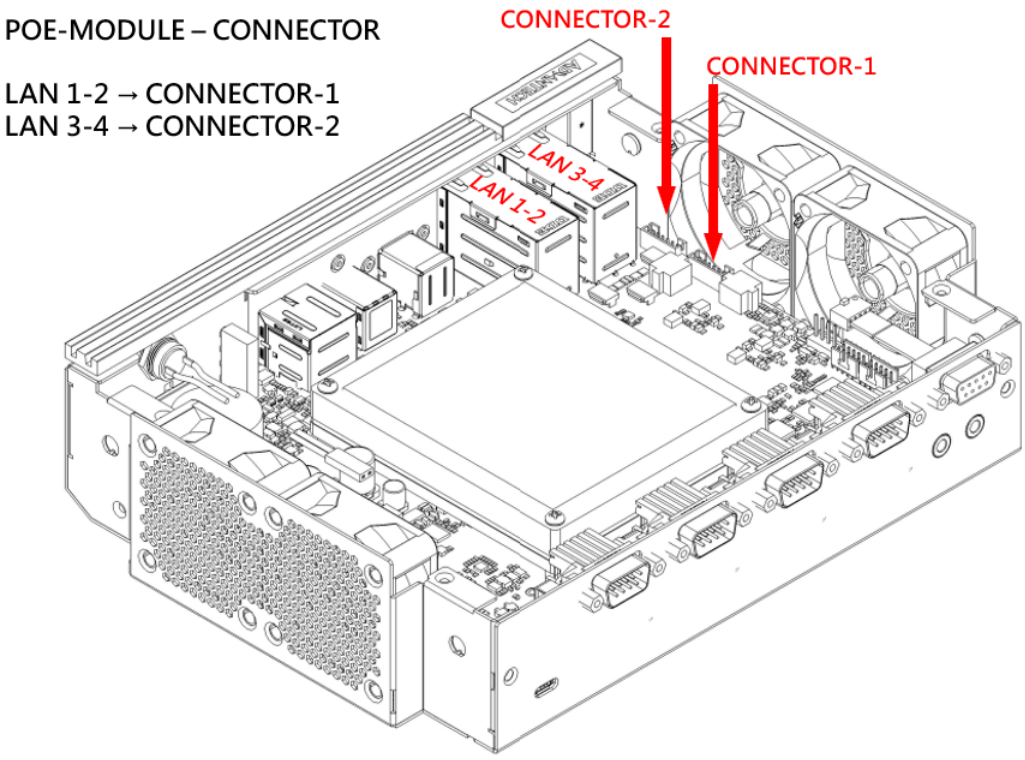


5. Prepare the 6pin-to-6pin cable. Connect one end of the PoE cable to the connector on the PoE board, as indicated by the arrow in the illustration.

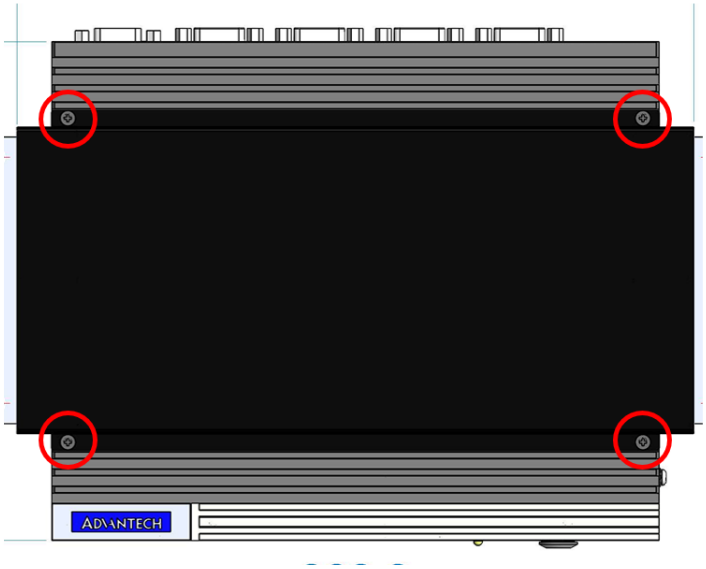


6. Connect the other side of the PoE cable to the connector inside the system.

- Connector 1: LAN1–LAN2 PoE
- Connector 2: LAN3–LAN4 PoE



7. Reattach the heatsink and top cover to the system and secure it with 4 screws.



Chapter 3

Software Functionality

This chapter details the software functions on the AIR-075.

3.1 CAN

<Receive> In terminal, run the below command

```
$ sudo su
# modprobe can
# modprobe can-dev
# modprobe mttcan
# ip link set can0 type can bitrate 500000
# ip link set can0 up
# candump can0
```

<Transmit> In other device terminal, run below command

```
$ sudo su
# modprobe can
# modprobe can-dev
# modprobe mttcan
# ip link set can0 type can bitrate 500000
# ip link set can0 up
# cansend can0 123#abcdabcd
```

3.2 GPIO 8-bit

Table 3.1: Pin table with DIO expander number

Pin	Signal Name	sysfs	gpiod
1	DIO bit 0	704	Line 0
2	DIO bit 1	705	Line 1
3	DIO bit 2	706	Line 2
4	DIO bit 3	707	Line 3
5	DIO bit 4	712	Line 8
6	DIO bit 5	713	Line 9
7	DIO bit 6	714	Line 10
8	DIO bit 7	715	Line 11
9	GND	N/A	N/A

Sysfs usage:

For example set Pin1 direction out, value high

```
$ sudo su
# echo 704 > /sys/class/gpio/export
# echo out > /sys/class/gpio/gpio704/direction
# echo 1 > /sys/class/gpio/gpio704/value
```

For example set Pin5 direction in

```
$ sudo su
# echo 712 > /sys/class/gpio/export
# echo in > /sys/class/gpio/gpio712/direction
```

To release the GPIO Pin, unexport Pin-5 for example

```
$ sudo su
# echo 712 > /sys/class/gpio/unexport
```

gpiod usage:

```
$ sudo apt update && sudo apt install -y gpiod
$ sudo su
# gpiodetect
# gpioinfo gpiochip3
```

For example set Pin-2 as DO, pull high

set Pin3 as DO, pull low

```
# gpioset --mode=wait gpiochip3 1=1
# gpioset --mode=wait gpiochip3 2=0
```

For example Read Pin6 high/low

```
# gpioget gpiochip3 9
```

3.3 Serial Ports

3.3.1 RS-232

Hardware setting: COM1 link loopback

COM1_SW1 OFF-OFF-OFF-OFF

```
$ sudo su
# stty -F /dev/ttyAMA9 speed 115200 raw -echo
# cat /dev/ttyAMA9 &
# echo "1234" > /dev/ttyAMA9
```

Hardware setting: COM2 link loopback

COM2_SW1 OFF-OFF-OFF-OFF

```
$ sudo su
# stty -F /dev/ttyAMA10 speed 115200 raw -echo
# cat /dev/ttyAMA10 &
# echo "1234" > /dev/ttyAMA10
```

3.3.2 RS-422

Hardware setting: COM1 link COM2

<Receive> In terminal, run below command

COM1_SW1 ON-OFF-ON-OFF

```
$ sudo su
# stty -F /dev/ttyAMA9 speed 115200
# cat /dev/ttyAMA9 &
```

<Transmit> In other terminal, run below command

COM2_SW1 ON-OFF-ON-OFF

```
$ sudo su
# stty -F /dev/ttyAMA10 speed 115200
# echo "1234" > /dev/ttyAMA10
```

3.3.3 RS-485

Hardware setting: COM1 link COM2

<Receive> In terminal, run below command

COM1_SW1 ON-ON-ON-ON

```
$ sudo su
# stty -F /dev/ttyAMA9 speed 115200 raw -echo
# cat /dev/ttyAMA9 &
```

<Transmit> In other terminal, run below command

COM2_SW1 ON-ON-ON-OFF

```
$ sudo su
# stty -F /dev/ttyAMA10 speed 115200 raw -echo
# echo "1234" > /dev/ttyAMA10
```

For SW flow control:

Hardware setting

COM1_SW1 ON-ON-OFF-ON

COM2_SW1 ON-ON-OFF-ON

COM1 sets as transmitter, COM2 sets as receiver

COM1 Flow control pin: PM.04 (SYSFS:663;gpiochip2 line 92)

COM2 Flow control pin: PH.04 (SYSFS:631;gpiochip2 line 60)

Control COM1 as transmitter: (pull high control pin)

```
$ sudo gpioset --mode=wait gpiochip2 92=1
```

Control COM2 as receiver: (pull low control pin)

```
$ sudo gpioset --mode=wait gpiochip2 60=0
```

3.4 Wireless module

3.4.1 AIW-356

Switch Module to MBIM

```
$ stty -F /dev/ttyUSB2 raw -echo
$ cat /dev/ttyUSB2 &
$ echo -ne 'AT+GTUSBMODE=30\r\n' > /dev/ttyUSB2
```

Go to Setting -> Mobile Network -> Setting internet

3.4.2 AIW-169

Wi-Fi:

Setting-> Wi-Fi -> Connect to router success, ping google success.

BT:

```
$ sudo cp \
/lib/firmware/rtl8852cu_fw \
/lib/firmware/rtl_bt/rtl8852cu_fw.bin
$ sudo cp \
/lib/firmware/rtl8852cu_config \
/lib/firmware/rtl_bt/rtl8852cu_config
$ sudo reboot
```

3.5 LED

Table 3.2: Pin table with LED

Pin	Signal Name	sysfs	gpiod
LED	LED_BLUE	Gpiochip2	Line 31
LED	LED_GREEN	Gpiochip2	Line 14

gpiod usage:

```
$ sudo apt update && sudo apt install -y gpiod
$ sudo su
# gpiodetect
# gpioinfo gpiochip2
# gpioset --mode=wait gpiochip2 31=0
```

For example control LED_BLUE pull low:

```
# gpioset --mode=wait gpiochip2 31=0
```

3.6 USB Type-C

Please run the following commands to enable the USB Type-C.

```
$ cd /tools

$ sudo ./add-overlays.sh /boot/dtb/kernel_tegra264-p4071-0000+p3834-
0008-nv.dtb /boot/tegra264-air075-a1-typec-host-overlay.dtbo
```

Chapter 4

Embedded O.S

This chapter details instructions for building Linux systems.

4.1 Introduction

Advantech's AIR-075 comes preloaded with Ubuntu 24.04 based embedded O.S., It contains all the system-required shell commands and drivers needed to operate the platform. We do not offer IDE developing environment on AIR-075 BSP. Users can evaluate and develop their device using the Ubuntu 24.04 LTS environment.

This chapter introduces the software configuration and development of the AIR-075. It enables users to develop their application(s) efficiently.

For detailed operation, please refer to the Ubuntu Version-A User Guide. The following link directs you to the JetPack 7.1 series Wikipedia page:

https://docs.aim-linux.advantech.com/

4.1.1 Build Environment on Host

Docker container

Use the advrisc/u20.04-nvlbv2 container to match the JetPack 7.1 toolchain.

```
$ sudo docker pull advrisc/u20.04-nvlbv2:20240515
```

Run container

Launch a container and mount your BSP workspace:

```
$ sudo docker run -it --name jetson_linux_risc -v /home/bsp/myLi-
nux:/home/adv/BSP:rw --privileged advrisc/u20.04-nvlbv2:20240515 /
bin/bash
```

Inside the container adjust ownership if needed:

```
$ sudo chown adv:adv -R BSP
```

Host dependencies

Install helper tools on the host when you encounter Exec format error or similar issues:

```
$ sudo apt-get update
$ sudo apt-get install flex bison qemu-user-static -y
```

Workspace initialisation

```
$ export GIT_SSL_NO_VERIFY=1
$ cd ~/BSP
$ mkdir -p jetson_linux_risc
$ cd jetson_linux_risc
$ git config --global user.name "Your Name"
$ git config --global user.email "you@example.com"
```

4.1.2 Getting Linux Source Code

```
$ repo init -u  https://AIM-Linux@dev.azure.com/AIM-Linux/meta-
advantech-nvidia/_git/adv-manifest -b JP7.1-r38.4.0 -m default.xml
$ repo sync
$ cd adv-jetson-custom
$ ./generate_profile.py --project air075a1
$ ./apply_profile.py --project air075a1
```

Build Image

```
$ sudo ./scripts/build_release.sh
```

Tar Image for Test unit

```
$ sudo tar zcvf AIR-075_XXX.tar.gz Linux_for_Tegra
```

To reflash into target device, please refer CH5.

Chapter 5

System Recovery

This chapter details system recovery procedures for a damaged Linux OS.

5.1 System Recovery

5.1.1 System Requirement

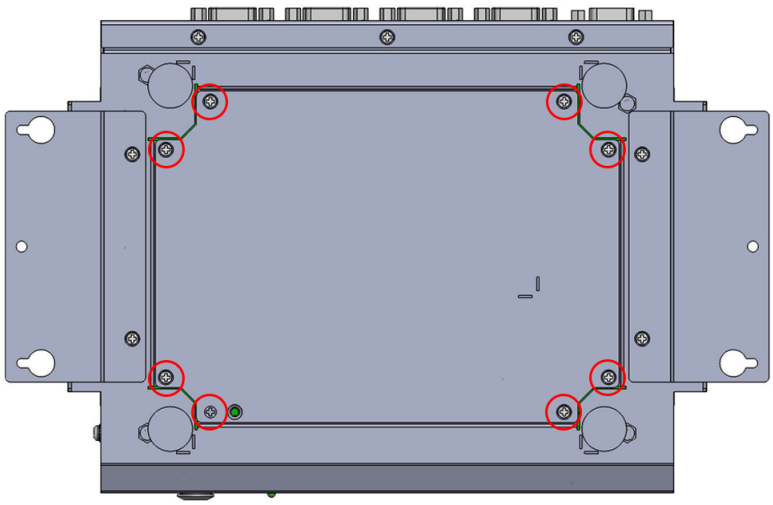
Prepare the following items before starting the system recovery process:

1. Host PC: x86-based system running Ubuntu 22.04 (recommended) or later, with at least 128 GiB of available disk space. (Virtual machines and ARM-based platforms are not supported.)
2. AIR-075 device
3. USB Type-C to USB Type-C cable with data transfer capability
4. AIR-075 Image

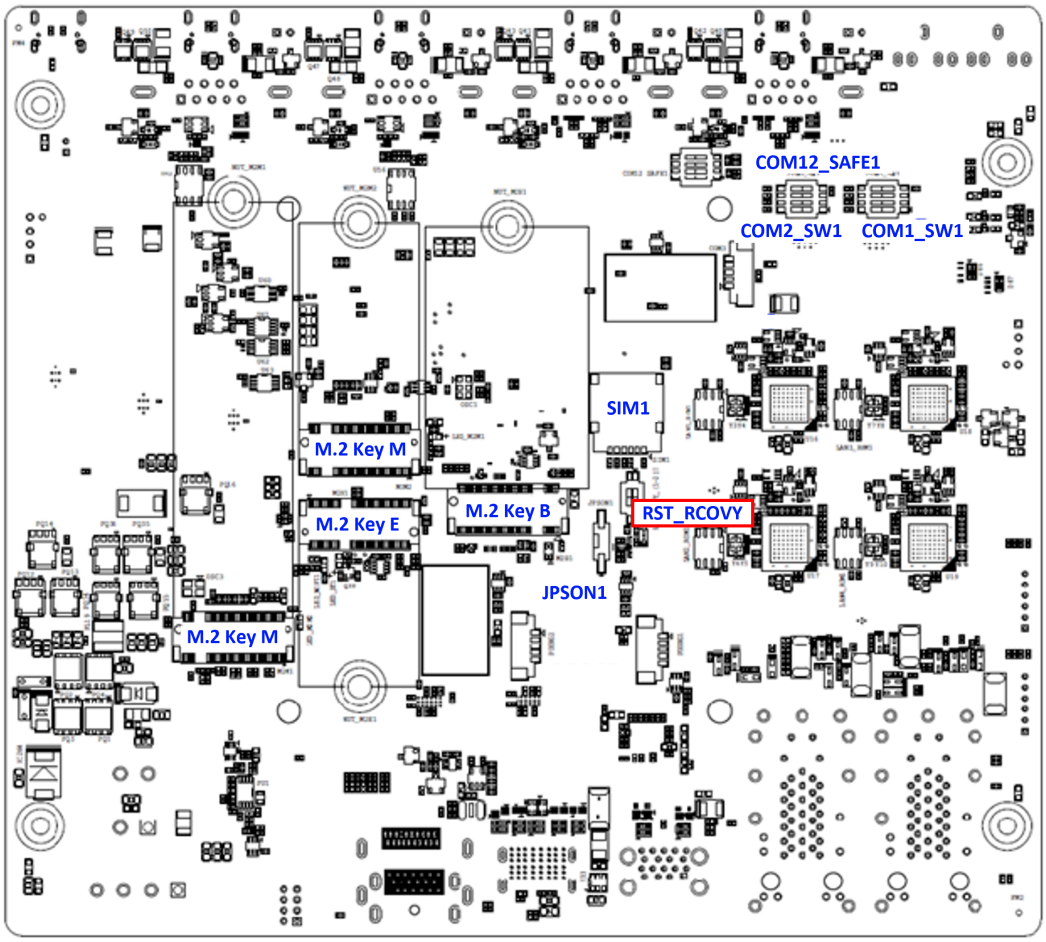
5.1.2 Set AIR-075 into Recovery Mode

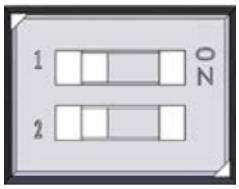
1. Power off the device, then connect a USB Type-C cable from the host PC to the AIR-075 OTG port.

2. Remove the 8 screws and detach the bottom cover.

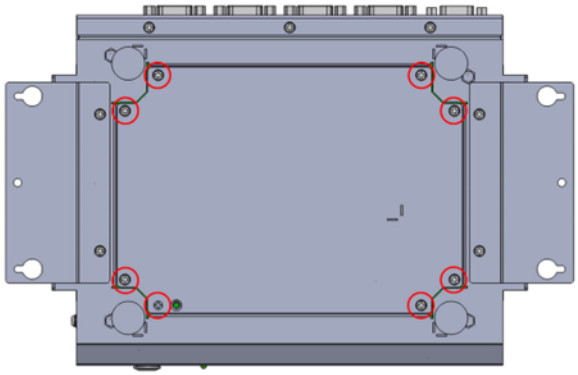


3. Set the recovery switch (RST_RCOVY) Pin 2 to the ON position.





4. Reattach the bottom cover and reattach all 8 screws.



5.1.3 Install Dependency

Install required package on Host for reflash AIR-075 image.

```
$ sudo usermod -aG dialout $USER
$ sudo apt update
$ sudo Linux_for_Tegra/tools/l4t_flash_prerequisites.sh
$ sudo reboot
```

5.1.4 Flash Image

1. In the Host PC, make sure the AIR-075 (NVidia Corp) has detected.

```
[ubuntu@linux 11:55:43 ~]$ lsusb
Bus 001 Device 024: ID 0955:7223 NVidia Corp. APX
```

2. Extracted file.

```
$ sudo tar -zxvf AIR-075_JP7.1_2025xxxx.tar.gz
$ cd Linux_for_Tegra
```

3. Flash image (THOR MODULE + NVMe).

```
$ sudo ./l4t_initrd_flash.sh \
  -c tools/kernel_flash/flash_l4t_t264_nvme.xml \
  --external-device nvme0n1p1 \
  --showlogs jetson-agx-thor-air075-a1 \
  internal
```

4. If both 2242/2280 NVMe are installed on the system, please refer commands below:

Flash image to 2242 SSD (THOR MODULE + NVMe)

```
$ sudo ./l4t_initrd_flash.sh \
  -c tools/kernel_flash/flash_l4t_t264_nvme.xml \
  --external-device nvme0n1p1 \
  --showlogs jetson-agx-thor-air075-a1 \
  internal
```

Flash image to 2280 SSD (THOR MODULE + NVMe)

```
$ sudo ./l4t_initrd_flash.sh \
  -c tools/kernel_flash/flash_l4t_t264_nvme.xml \
  --external-device nvme1n1p1 \
  --showlogs jetson-agx-thor-air075-a1 \
  internal
```

Note! *Please change the Switch back to prevent boot into Recovery Mode.*

ADVANTECH

Enabling an Intelligent Planet

www.advantech.com

Please verify specifications before quoting. This guide is intended for reference purposes only.