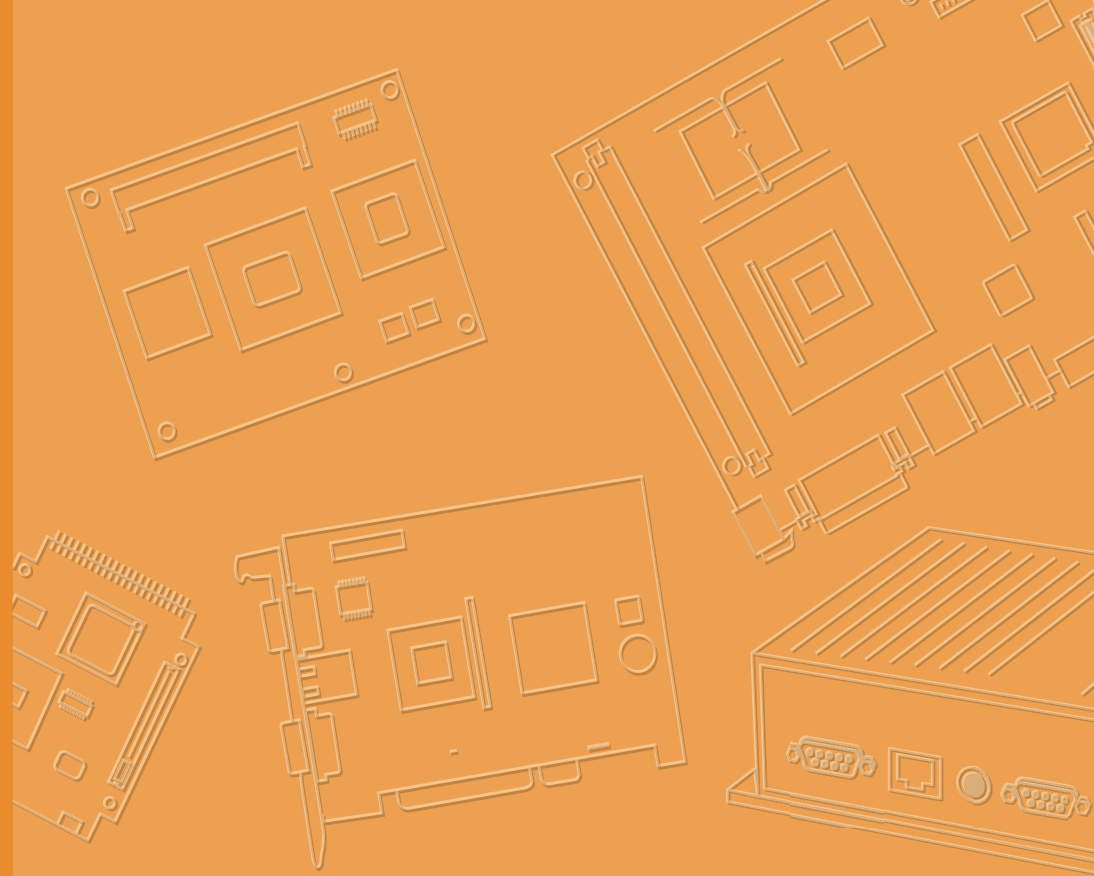


User Manual



UBX-330M

**Intelligent edge computer with
Intel Core Ultra 7, Core Ultra 5
processor**

ADVANTECH

Enabling an Intelligent Planet

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For technical support and customer service, visit our support website at

<http://support.advantech.com.tw/support>

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 merchandise 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!



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

Note! Notes provide additional information.



Packing List

Before installation, check that the following items were included with the product:

- 1 x UBX-330M Edge Intelligent Computer
- 1 x Power Adapter (DC 12V, 84W)
- 1 x Thermal Pad for DDR5 Memory
- 1 x Thermal Pad for M.2 2280 Storage
- 1 x UBX-330M Wall Mount Kit

Ordering Information

Part Number	Description
UBX-330M-BI5H0	UBX-330M, Core Ultra 5 125H, Barebone
UBX-330M-BI5U0	UBX-330M, Core Ultra 5 135U, Barebone
UBX-330M-BI7U0	UBX-330M, Core Ultra 7 155U, Barebone

Safety Instructions

1. Read these safety instructions carefully.
2. Retain this user manual for future reference.
3. Disconnect the equipment from all AC 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 of the enclosure are for air convection. Protect the equipment from overheating. Do not cover the openings.
8. Ensure that the voltage 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 unused for a long time, disconnect the equipment 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 one of the following occurs, have the equipment checked by authorized 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 store the equipment in an environment with a room temperature of below -20°C (-4°F) or above 60°C (140°F) as this may cause damage. The equipment should be stored in a controlled environment.
16. Any unverified components may cause unexpected damage. To ensure correct installation, always use the components (e.g., screws) provided in the accessory box.
17. Batteries are at risk of exploding if incorrectly installed. 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 the IEC 704-1:1982 specifications, the sound pressure level at the operator position should not exceed 70 dB (A).
20. The equipment should only be installed in a restricted access area.
21. **DISCLAIMER:** These instructions are provided according to IEC 704-1 standards. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

22. This model is intended to be supplied by a UL-certified power supply (Adapter: FSP/ FSP060-DAAN2) suitable for use at TMA 60 °C (140 °F) min., and the output is rated 12 V_{DC}, 5.0A min., ES1. If you need further assistance, contact Advantech for additional information.

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. Assurez-vous de la tension de la source d'alimentation lorsque vous connectez l'équipement à la prise secteur.
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.
 - L'équipement est tombé et a été endommagé.
 - 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 -20 °C (-4 °F) ou supérieure à 60 °C (140 °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. L'équipement ne doit être installé que dans une zone d'accès restreint.
21. **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.
22. Ce modèle est destiné à être alimenté par une alimentation certifiée UL (adaptateur: FSP/FSP060-DAAN2), adaptée à une utilisation à 60 degrés Celsius. et la sortie est nominale 12Vcc, 5.0A min., ES1, si vous avez besoin d'une assistance supplémentaire, veuillez contacter Advantech pour plus.

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Chapter 1

General Information

1.1 Introduction

The UBX-330M is an edge intelligent computer powered by an Intel Core Ultra 7/5 processors. This compact, NUC-sized device is designed for powerful edge computing. With three AI engines, it delivers low-latency, fast response times for real-time tasks. The flexible I/O expansion ensures seamless connectivity, while select SKUs offer Intel Arc graphics and vPro Enterprise for enhanced visuals and enterprise-grade security. Compact yet versatile, the Edge Intelligent Computer is perfect for demanding environments, providing top-tier performance and adaptability.

1.2 Product Features

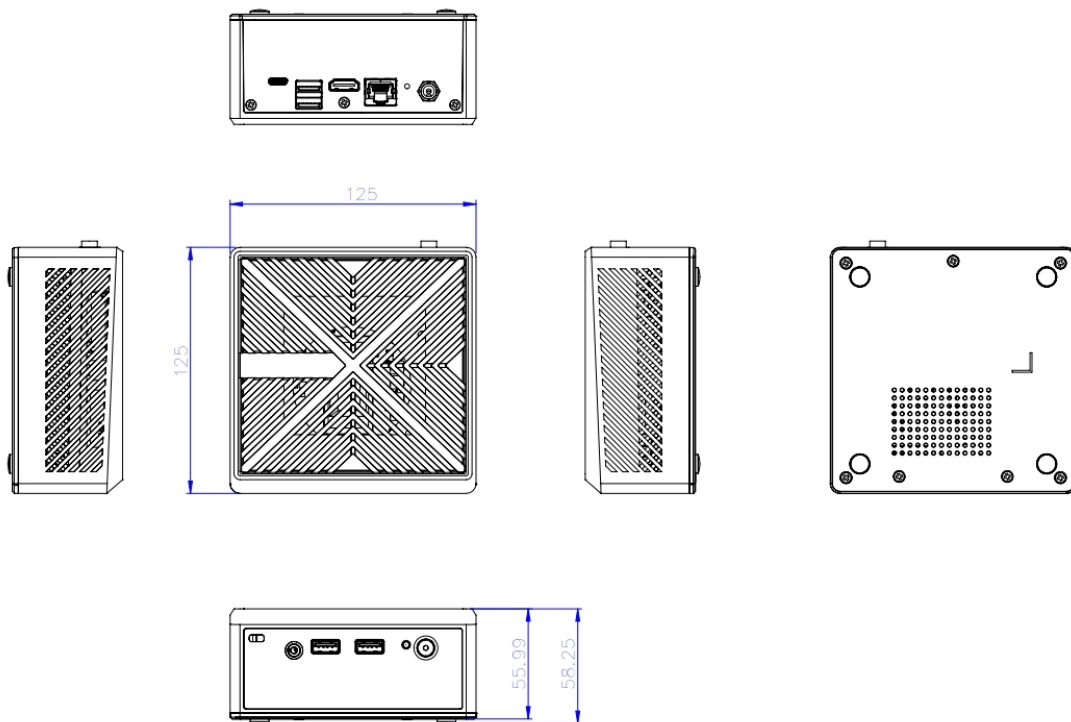
1.2.1 General

- **CPU:**
 - Intel Core Ultra 5 125H
 - Intel Core Ultra 5 135U
 - Intel Core Ultra 7 155U
- **BIOS:** AMI 256 Mbit Flash BIOS
- **Video:**
 - 1 x USB Type-C, supports DisplayPort protocols. 125H SKU supports 10W power delivery, but 135U and 155U SKUs support 15W power delivery
 - 1 x HDMI 2.1
- **Dual Display:** USB Type-C + HDMI
- **Memory (Optional):** 1 x DDR5 262-pin SO-DIMM, support up to 48GB (non-ECC)
- **Storage (Optional):** 1 x M.2 2280 SATA Storage
- **USB:**
 - 2 x USB 3.2
 - 2 x USB 2.0
- **Audio:** HD audio (via USB Type-C, HDMI), 1 x Mic-in/Line-out combo audio
 - LAN: 1 x RJ-45 (Intel i226, supports up to 2.5 Gbps)
- **Expansion:**
 - Wi-Fi: 1 x M.2 2230 E-Key
 - I/O Expansion 1:
 - > 1 x COM, supports RS232 only
 - > 1 x LAN, supports up to 2.5 Gbps
 - I/O Expansion 2:
 - > 1 x 2.5" SATA Storage
 - I/O Expansion 3:
 - > 1 x M.2 3052 B-Key
 - > 1 x SIM slot
 - > 4 x Antenna connectors

1.3 Mechanical Specifications

1.3.1 System Dimensions

Unit: mm



1.3.2 Weight

- **NW:** 0.8 kg
- **GW:** 1.0 kg

1.4 Power Requirements

1.4.1 System Power

- **Power Input:** DC-in 12V

1.4.2 RTC Battery

- **Lithium:** 3V/220 mAh

1.5 Environmental Specifications

1.5.1 Temperature

- **Operating Temperature:** 0 ~ 40°C
- **Storage Temperature:** -20 ~ 60°C

1.5.2 Relative Humidity

- **95% @40°C (104°F)** (non-condensing)

1.5.3 Vibration Tolerance

- The system is equipped with a memory and two M.2 Storage: random - 3 Grms; sine - 2 Grms
- Reference IEC60068-2-6:2007, random, 5 ~ 500 Hz, 1 hr/axis, (x, y, z) 3 axes

1.5.4 Shock Tolerance

- The system is equipped with one memory slot and two M.2 storage slots: 30G acceleration
- Reference IEC60068-2-27:2008, half sine, 11 ms pulse duration

1.5.5 Safety Certification

- UL, CB, CCC, BSMI

1.5.6 EMC Certification

- CE, FCC, CCC, BSMI, RED

Chapter 2

Hardware Installation

2.1 Introduction

The following sections introduce I/Os of the UBX-330M and demonstrate the memory, storage, and Wi-Fi module installation.

2.2 UBX-330M I/O Connectors

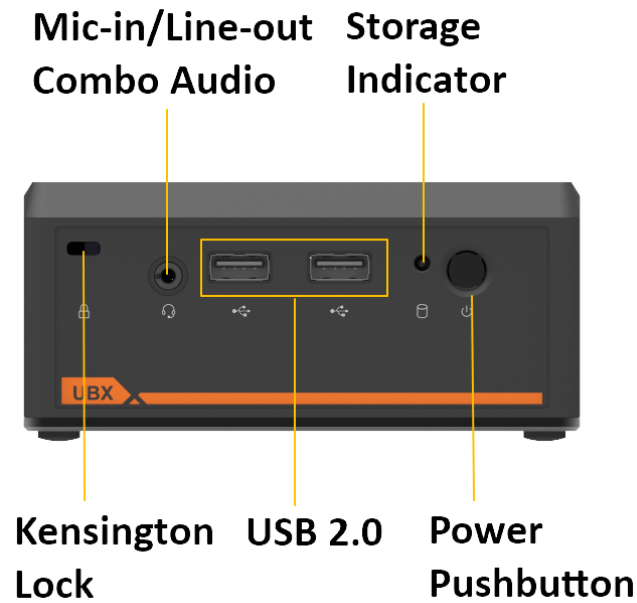


Figure 2.1 UBX-330M Front View

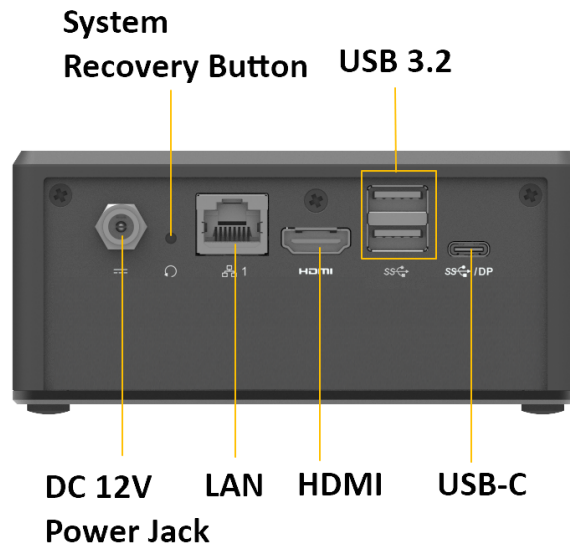


Figure 2.2 UBX-330M Rear View

2.3 Hardware Installation

2.3.1 DDR, Storage, and Wi-Fi Module Installation

Please follow the steps to install the Wi-Fi module for the UBX-330M.

1. Remove the specified screws, and remove the bottom cover.



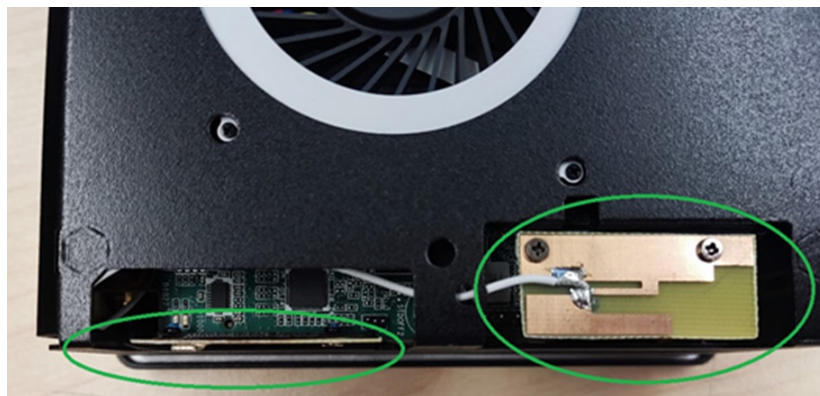
2. Remove the specified screws and detach the front I/O bracket from the UBX-330M.



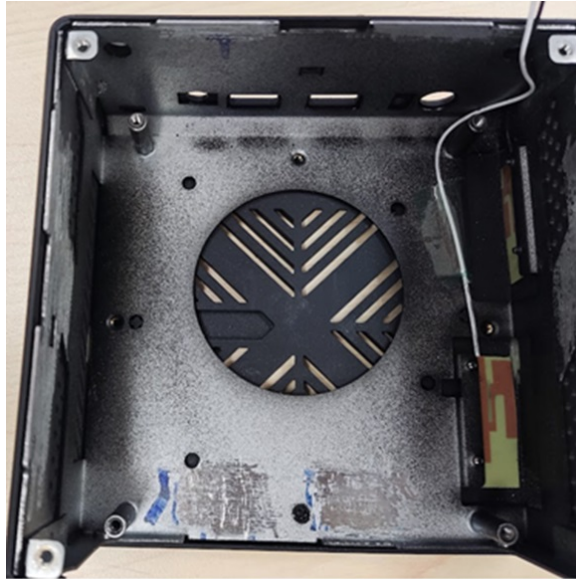
3. Please remove the screws to detach the mainboard. And then, please detach the plastic housing.



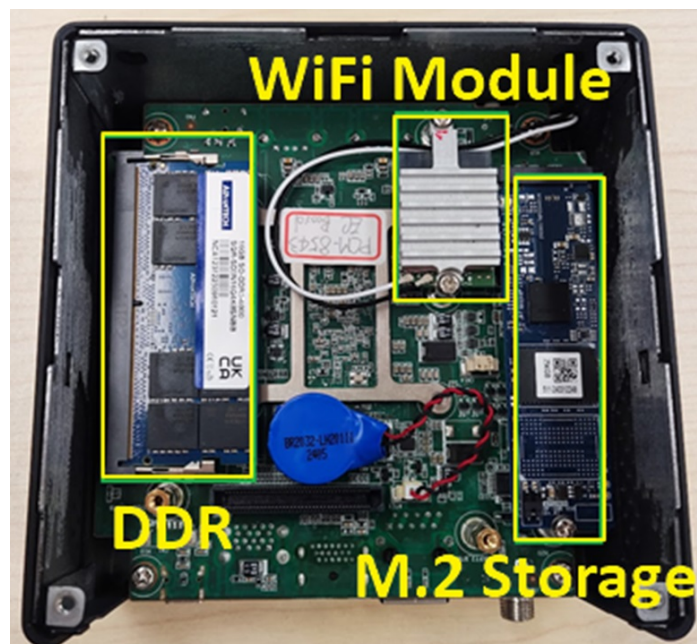
4. Lock the Wi-Fi antenna cables.



5. Re-attach the plastic housing and fix the antenna cabling.



6. Based on the DDR5 memory, M.2 storage, and Wi-Fi module location to install the accessories.



7. Lock the screws on the mainboard. Then reattach the front I/O bracket to assemble the device body. Use the screws to lock the bracket.



8. Use the screws to lock the bottom cover.

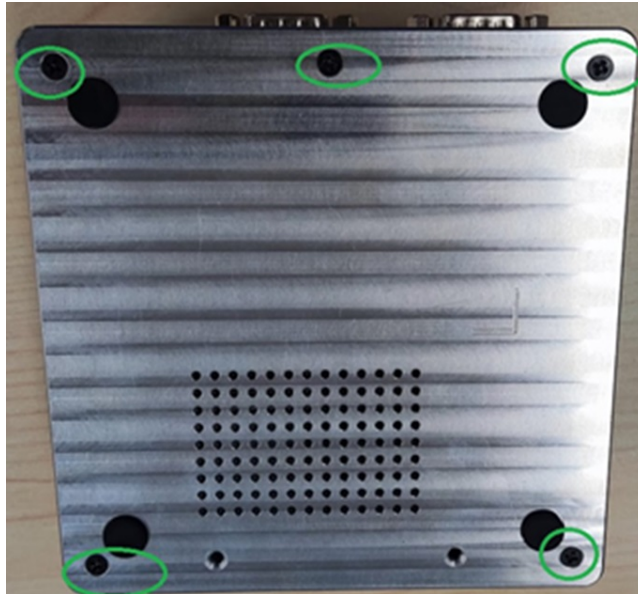


2.3.2 Additional I/O Board Installation

The UBX-330M has three I/O board expansion kits to fulfill different user demands. Please follow the steps to install the expansion kits for the UBX-330M.

2.3.2.1 UBX-300E-CM00 Installation:

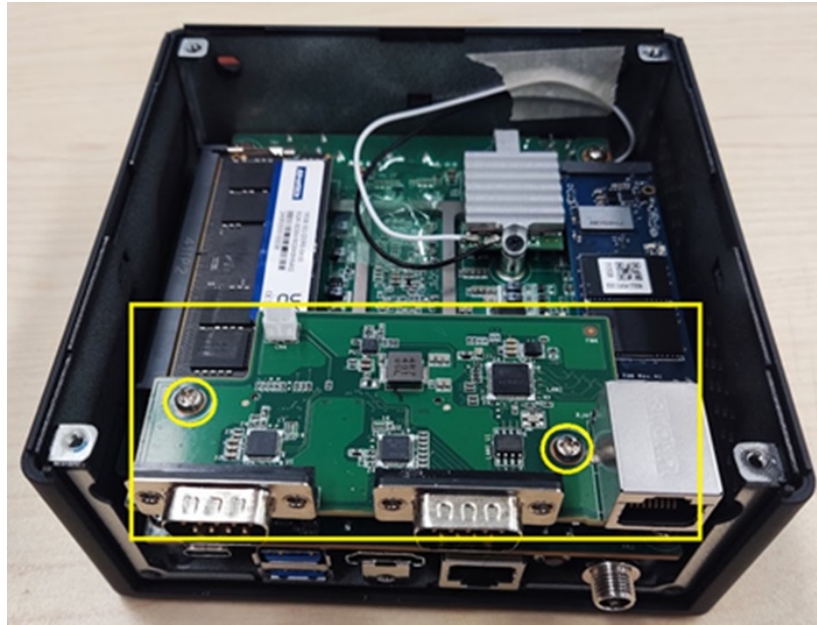
1. Remove the specified screws, and remove the bottom cover.



2. Remove the specified screws and detach the front I/O bracket from the UBX-330M.



3. Unpack the package and use the screws to lock the UBX-330M-CM00 I/O board.



4. Attach the bracket of UBX-300E-CM00 and use the screws to lock the bracket.



5. Use the screws to lock the bottom cover.



2.3.2.2 UBX-300E-SA00 Installation:

1. Remove the specified screws and bottom cover.



2. Remove the specified screws and detach the rear I/O bracket from the UBX-330M.



3. Unpack the package and use the screws to lock the 2.5" SATA storage on the UBX-330M-SA00 I/O board into place.



4. Use the screws to lock the UBX-300E-SA00 I/O board.



5. Re-attach the rear I/O bracket and use the screws to lock it.



6. Use the screws to lock the bottom cover.



2.3.2.3 UBX-300E-TE00 Installation:

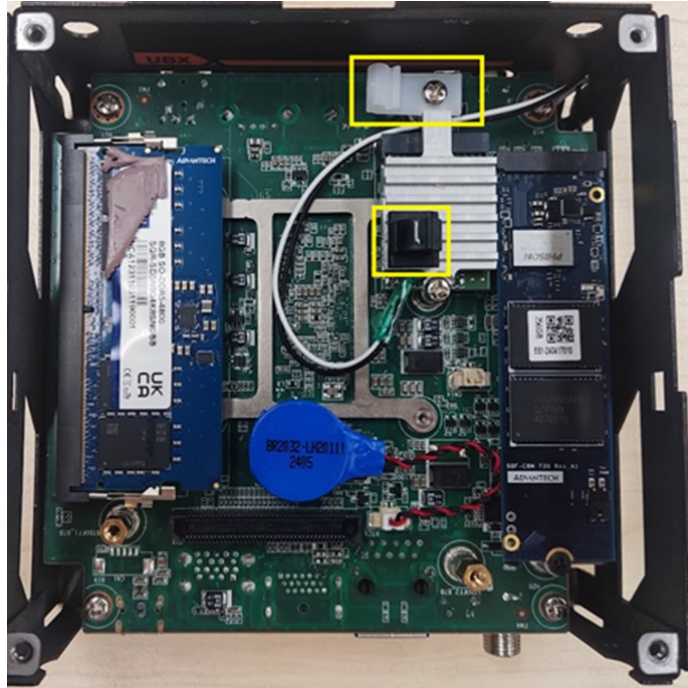
1. Remove the specified screws and then remove the bottom cover.



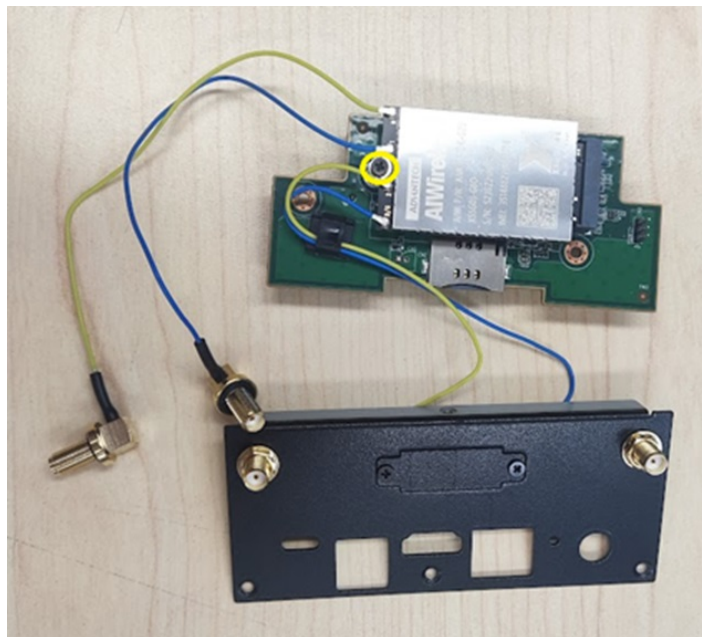
2. Remove the specified screws and detach the rear I/O bracket from the UBX-330M.



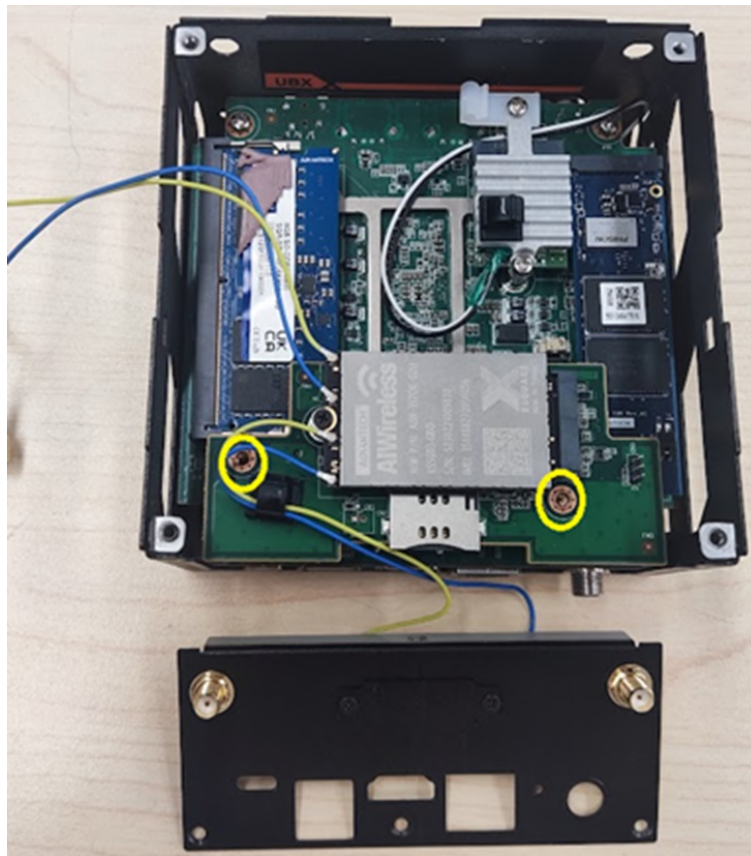
3. Fix the 5G module antenna cables on the mainboard.



4. The 5G module assembly.



5. Use the screws to fix the UBX-300E-TE00 I/O board.



6. Use the screws to fix the UBX-300E-TE00 I/O board.



7. Use the screws to lock the bottom cover.



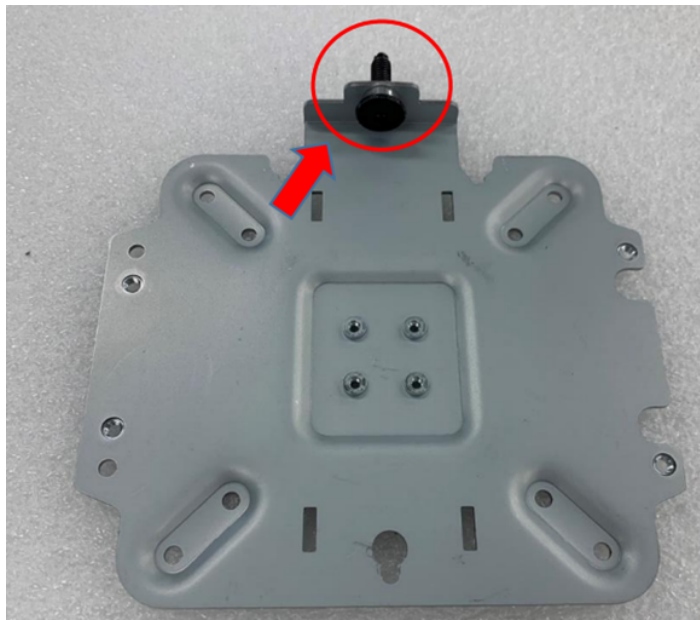
8. Connect the 5G module antennas to the UBX-330M.



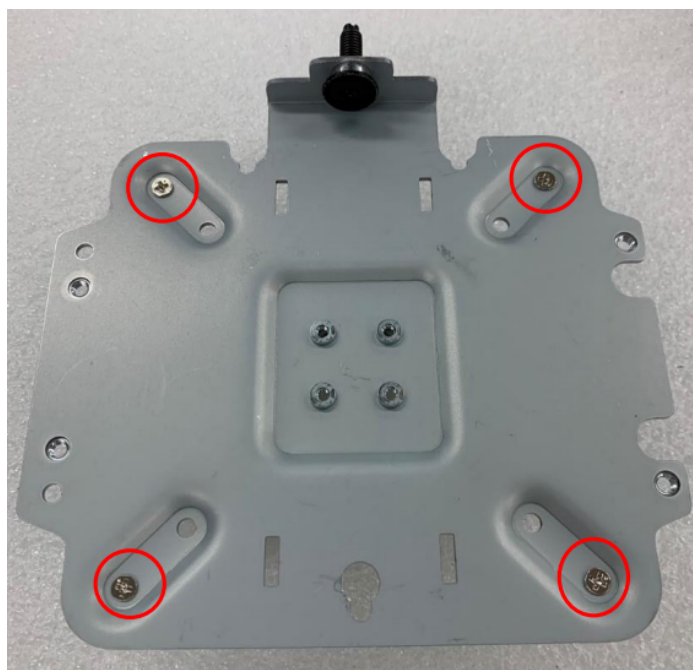
2.3.3 Wall Mount Kit Installation

The UBX-330M supports wall mount kit installation to help users mount the UBX-330M on the wall.

1. Please lock the specific screw on the wall mount bracket.



2. Please use the accessory, 4 pcs of M4*6L screws to lock the wall mount bracket.



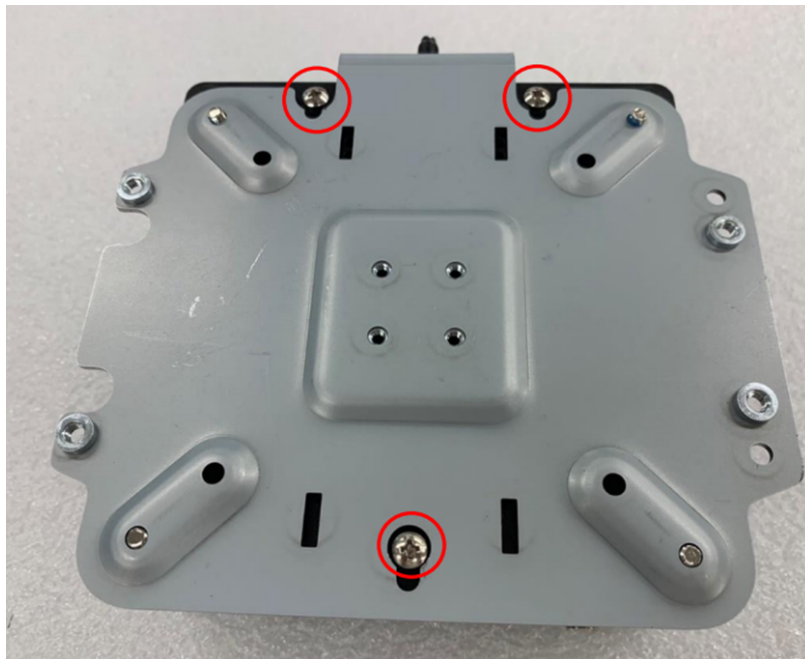
3. Please remove three screws of the UBX-330M bottom cover.



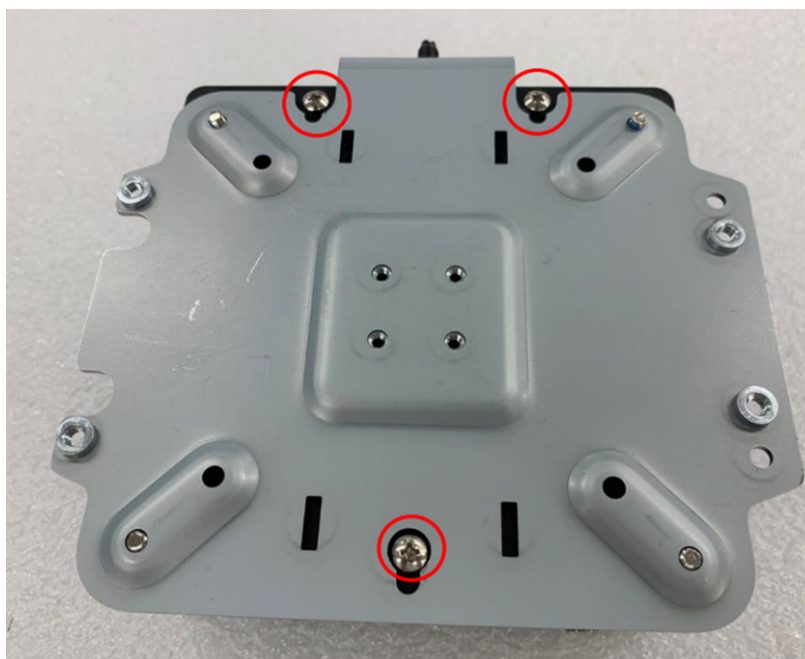
4. Please replace the original screws with three new specific ones.



5. Attach the wall mount kit on the bottom cover of the UBX-330M.



6. Hang on the UBX-330M on the bracket.



7. Turn the screw in the opposite direction to secure the UBX-330M to the wall bracket.



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