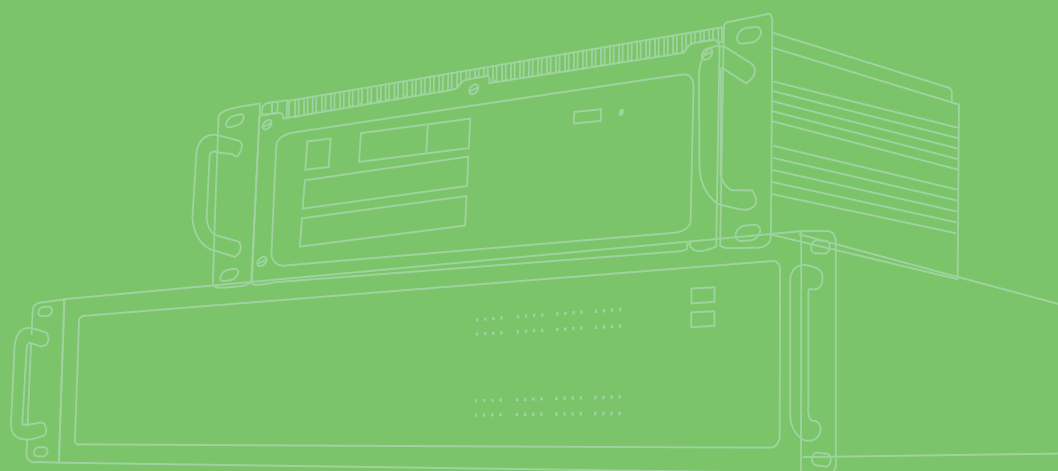


User Manual



ECU-150V2

ADVANTECH

Enabling an Intelligent Planet

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Support

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For technical support and service, please visit our support website at: <http://www.advantech.com/support/>

Declaration of Conformity

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This type of cable is available from Advantech. Please contact your local supplier for ordering information.

Test conditions for passing also include the equipment being operated within an industrial enclosure. In order to protect the product from damage caused by electrostatic discharge (ESD) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. 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. Operation of this equipment in a residential area is likely to cause harmful interference. In this event, users are required to correct the interference at their own expense.

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

Safety Precaution - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

- To avoid electrical shock, always disconnect the power from the PC chassis before manual handling. Do not touch any components on the CPU card or other cards while the PC is powered on.
- Disconnect the power before making any configuration changes. A sudden rush of power after connecting a jumper or installing a card may damage sensitive electronic components.

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 THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -30° C (-22° F) OR ABOVE 70°C (158° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.
16. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
17. This product is intended to be supplied by an UL certified power supply or dc source with SELV output, rated 10 to 36Vdc, 1.5 to 0.5A minimum and maximum ambient temperature (Tma) 70 degree C minimum without power source or adapter. If you need further assistance, please contact Advantech for further information.
18. Ensure that the voltage of the power source is correct before connecting the equipment to a power outlet. The power outlet socket should have a grounded connection.
19. For use in pollution free environments and indoor use.
20. This equipment is not suitable for use in locations where children are likely to be present.

21. If the equipment is used in a manner not specified by the Advantech, the protection provided by the equipment may be impaired.
22. The equipment contains no user-serviceable parts. Do not open, Return to manufacturer for servicing.
23. Do not block air ventilation holes.
24. This is open type equipment and should be installed in a suitable enclosure.
25. Equipment is intended for installation in Restricted Access Area.

Consignes de sécurité

1. Lire attentivement les instructions de sécurité.
2. Conserver ce manuel pour utilisation ultérieure,
3. Débranchez cet équipement de toute prise secteur avant le nettoyer. Utilisez seulement un chiffon humide. N'utilisez pas de détergent liquide ou pulvérisé pour le nettoyage.
4. Gardez cet équipement à l'abri de l'humidité.
5. Placez cet équipement sur une surface fiable pendant l'installation. Le faire ou bien le laisser tomber peut causer des dégâts.
6. Les ouvertures sur l'enceinte servent à la convection de l'air. Protégez l'équipement contre surchauffe. **NE COUVREZ PAS LES OUVERTURES.**
7. Assurez-vous que la tension de la source d'alimentation est correcte avant de connecter l'équipement à une prise de courant. La prise de courant doit avoir une connexion à la terre.
8. Placez le câble d'alimentation de manière à ce que personne ne puisse marcher dessus. Ne placez rien sur le câble d'alimentation.
9. Toutes les mises en garde et tous les avertissements sur l'équipement doivent être notés.
10. Si l'équipement n'est pas utilisé pendant une longue période, débranchez-le de la source d'alimentation pour éviter tout endommagement dû à une surtension transitoire.
11. Ne jamais verser de liquide dans une ouverture. Cela pourrait provoquer un incendie ou un choc électrique.
12. N'ouvrez jamais l'équipement. Pour des raisons de sécurité, l'équipement doit être ouvert uniquement par du personnel qualifié.
13. Si l'une des situations suivantes se présente, faites vérifier l'équipement par le personnel de service:
 - un liquide a pénétré dans l'équipement.
 - L'équipement a été exposé à l'humidité.
 - L'équipement ne fonctionne pas bien, ou vous ne pouvez pas le faire fonctionner selon le manuel de l'utilisateur.
 - The equipment does not work well, or you cannot get it to work according to the user's manual.
 - L'équipement est tombé et endommagé.
 - L'équipement présente des signes évidents de rupture.
14. **NE LAISSEZ PAS CET ÉQUIPEMENT DANS UN ENVIRONNEMENT OU LA TEMPÉRATURE DE STOCKAGE PEUT ÊTRE INFÉRIEURE À -30 ° C (-22 ° F) OU BIEN SUPÉRIEURE À 70 ° C (158 ° F). CECI POURRAIT ENDOMMAGER L'EQUIPEMENT. L'ÉQUIPEMENT DEVRAIT ÊTRE DANS UN ENVIRONNEMENT CONTRÔLÉ.**
15. Ce produit est destiné à être alimenté par une source d'alimentation certifiée UL ou par une source cc convenant à une utilisation à une température minimal de 40 degrés Celsius, dont la sortie est conforme à la norme SELV et dont la puis-

sance nominale est de 10 to 36Vdc, 1.5 to 0.5A en cas de besoin. Température ambiante maximale (tma) minimum 70 degrés Celsius sans alimentation ni adaptateur contactez Advant-ech pour plus d'informations.

16. Pour une utilisation dans des environnements non polluant et à l'intérieur.
17. C'est appareil ne doit pas être utilisé dans des endroits où se trouvent des enfants.
18. Si l'équipement est utilisé d'une manière non spécifiée par le fabricant, la protection fournie par l'équipement peut être altéré.
19. L'équipement ne contient aucune pièce réparable par l'utilisateur. Ne pas ouvrir, retourner au fabricant pour réparation.
20. Ne bloquez pas les ou es de ventilation.
21. Il s'agit d'un équipement de type ouvert et doit être installé dans un boîtier approprié.
22. Les matériels sont destinés à être installés dans des EMPLACEMENTS À ACCÈS RESTREINT

ATTENTION! *Danger d'explosion si la batterie est mal remplace. Remplacer uniquement par le meme type ou equivalent recommandé par le fabricant. Jeter les piles usagées selon les instructions du fabricant.*



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Chapter 1

Overview

1.1 Introduction

The ECU-150 is a compact, industrial-grade IoT gateway that provides connectivity for a wide range of devices and industrial applications. Its compact form factor enables installation in space-constrained environments and supports flexible deployment across various industrial scenarios.

1.2 Specifications

1.2.1 General

- **Certification:** CE, FCC, UL 62368, IEC-62368, BSMI
- **Dimensions (WxDxH):** 38 x 93 x 100 (1.5 x 3.7 x 3.94 in.)
- **Enclosure:** Aluminum Housing
- **Mounting:** Wall-Mount, DIN-rail Mount
- **Power Consumption (without M.2 modules installed):**
10 ~ 36 V_{DC} @ 0.5~0.16 A Typ.
10 ~ 36 V_{DC} @ 0.74~0.22 A Max.
- **Power Connector:** 1 x 2-Pin Terminal Block, 16~24 AWG

1.2.2 System

- **CPU:** NXP i.MX8M Plus, Quad-Core ARM Cortex A53, up to 1.6GHz
- **Memory:** 2 or 4 GB (Up to 8GB) LPDDR4
- **Storage:** 16 or 32 GB (up to 128GB) eMMC
- **Real Time Clock:** Yes
- **Display:** 1 x HDMI*
- **FRAM/MRAM:** Optional
- **LED:** 4 x LED (1 x Power, 3 x programmable)
- **Button:** 1 x Reset & Recovery
- **TPM:** Yes*

* Subject to change by different SKUs

1.2.3 I/O Expansion

- **M.2 Slots:**
 - 1 x M.2 B-key 3042 (Signal: USB3.0) for LTE (SIM card slot connected)
 - 1 x M.2 E-key 2242 (Signal: USB2.0/PCIe)

1.2.4 Serial Communication

- **Ports:** 2
- **Mode supported:** 2x RS232 or RS485, software configurable
- **Baud rate:** 115,200 max.
- **Isolation Protection:** 2,500 V_{DC}
- **Connector:** 1 x 5-pin press terminal block, 16~24 AWG

1.2.5 Software

- **Operating System:** Yocto Linux with EdgeLink, or Ubuntu by different SKUs

1.2.6 CAN FD Expansion (Optional)

- **Ports:** 2
- **Protocol:** CAN FD with CAN 2.0 A/B backward compatible
- **Speed:** CAN 2.0: 1Mbps max.
CAN FD:
Arbitration phase: 1Mbps max.
Data phase: 5Mbps max.
- **Isolation Protection:** 2,500 V_{DC}
- **Connector:** 1 x 5-pin press terminal block, 16~24 AWG

1.2.7 Environment

- **Operating Temperature:**
-40 ~ 70°C (-40 ~ 158°F), without M.2 Modules
-40 ~ 55°C (-40 ~ 131°F), with M.2 Modules
- **Storage Temperature:** -40 ~ 85°C (-40 ~ 185°F)
- **Operating Humidity:** Up to 90% RH, non-condensing
- **Ingress Protection:** IP30
- **Vibration:** 1Grms @ 5~150Hz, 1hr/axis
- **Shock:** 15G, half sine, 11ms

1.2.8 EdgeLink*

- **Supported Protocol**
 - South Bound: North Bound
 - IEC 60870-5-101: Modbus Server
 - IEC 60870-5-103: IEC 60870-104 Server
 - IEC 60870-5-104: WASCADA (WebAccess)
 - DL/T 645-2007: BACnet Server
 - DL/T 645-1997: OPC UA Server
 - IEC 62056-21: Data Transfer
 - ODBC: EdgeHub
 - JDBC
 - OPCUA Client
 - BACnet IP
 - BACnet MS/TP
 - SNMP
 - Modbus Client
- **PLC Driver Support**
 - ABB/Advantech/Allen-Bradley/BECKHOFF/ DELTA/
 - FATEK/GE/Honeywell/Keyence/Mitsubishi/Omron/
 - Panasonic/Schneider/Sharp/Siemens/Toyopuc/
 - Wago 750/Yaskawa/Yokogawa
- **Programming:** Linux C, Python
- **Configuration Tool:** EdgeLink Studio
- **Data Monitoring:** 20,000 Tags MAX.
- **Cloud Connectivity (MQTT):** EdgeSync, WISE-PaaS, Azure, AWS, Google Cloud, IoT Core and more
- **Database Transmission:** SQL Server, MySQL, ORACLE, FTP Server
- **VPN:** Open VPN

* EdgeLink is bundled with Yocto Linux version. Please refer to EdgeLink specification for more details.

1.3 Default Software Configurations

- **Programming Support:** Linux C, Python
- **SSH:** Enabled on LAN1 & LAN2
- **Default Login Details* (SSH/Console):**
 - User Name: root
 - Password: None (press “Enter”)
 - Console baud rate: 115,200
- **Default Ethernet Mode:** DHCP
- **Default IP (when without DHCP server)**
 - LAN1: 10.0.0.1
 - LAN2: 11.0.0.1

Caution! For cybersecurity concern, we strongly suggest to revise the root password and manage the user accounts well before deploying the ECU-1270 device to the field.



1.4 Chassis Dimensions

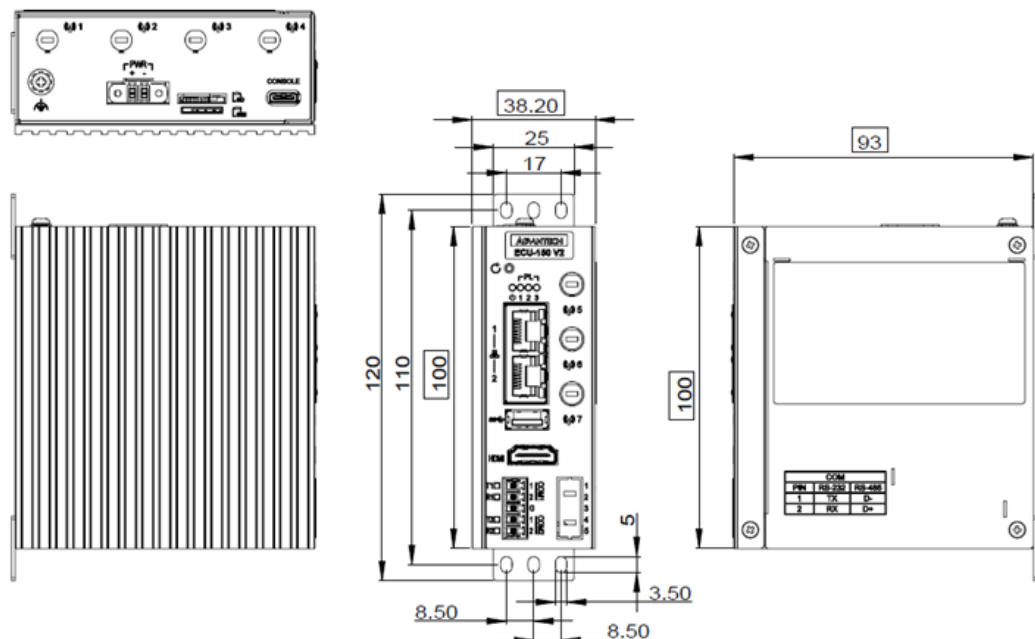


Figure 1.1 Dimension of ECU-150 V2 (with wall mount kit)

1.5 Packing List

- ECU-150 V2 main unit
- DIN rail mount kit x 1
- Wall mount bracket x 2
- Screws for mounting kit x 2
- Screws for M.2 expansion x 2
- 5-pin terminal block x 1
- 2-pin terminal block x 1

Chapter 2

Operation Details

2.1 Product Overview

2.1.1 Outlook

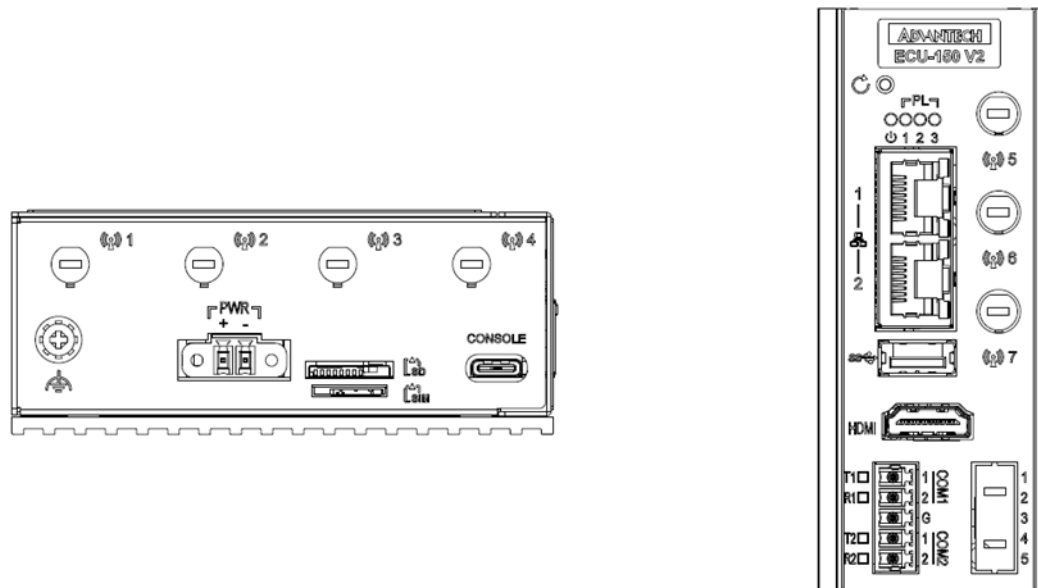


Figure 2.1 Outlook of ECU-150 V2

2.1.2 Internal Switch, Jumper and Connectors

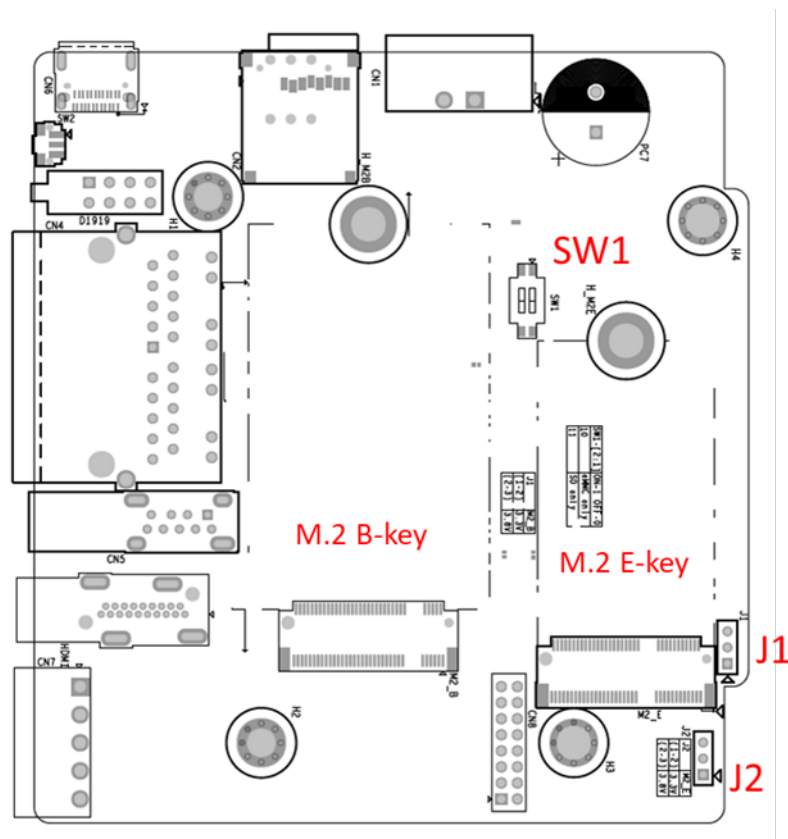


Figure 2.2 Internal Layout of ECU-150 V2

Table 2.1: Internal Switch, Jumper and Connectors

Items	Description	Functions
SW1	Boot option	Select boot option between SD card and eMMC
J1	Jumper for M.2 B-key supply voltage	Setup the supply voltage to M.2 B-key device
J2	Jumper for M.2 E-key supply voltage	Setup the supply voltage to M.2 E-key device
M.2 B-key	M.2 B-key Slot	Expansion slot with USB 3.0 interface, such as LTE
M.2 E-key	M.2 E-key Slot	Expansion with PCIe and USB 2.0 interfaces, such as Wi-Fi, Storage...etc.

2.2 System Button

Table 2.2: System Button

Button	Description	Action	Function
Reset	Reset button/ Recovery to default	Short press	System reboot
		Press and hold then power on for about 8~10 seconds until PL1 blinks	System recovery to default settings

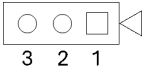
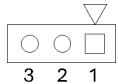
2.3 LED Indicator Status

Table 2.3: LED Indicator Status

LED	Description	Off	On
PWR	Power Indicator	Power Off	Power On
PL1~PL3	Programmable LED1~3	Programmed Off	Programmed On

2.4 Jumper Settings

Table 2.4: Jumper Settings

Jumper location	Symbol on PCB	Description	1-2 Close (default)	2-3 Close
J1		Supply voltage selection for M.2 B-key	3.3V	3.8V
J2		Supply voltage selection for M.2 E-key	3.3V	3.8V

2.5 Switch Configurations

Table 2.5: Switch Configurations

Switch location	Symbol on PCB	Description	1 OFF, 2 ON	1 ON, 2 ON
SW1		Boot Option Selection (down: ON, up: OFF)	Boot from eMMC	Boot from SD Card

2.6 Serial Port Mode Settings

The serial port modes for COM0 and COM1 on the ECU-150 V2 are software configurable. Use the `com_mode_config` command in the command prompt to configure the serial port mode. The following sections provide the command syntax and configuration examples.

```
root@ecu150-b94d84:~# com_mode_config
usage: /usr/bin/com_mode_config get | set [COM_NUM(AL) [COM_MODE]]
/usr/bin/com_mode_config get           # get COM0/COM1 RS232/RS485 mode
/usr/bin/com_mode_config set COM0 232  # set COM0 mode to RS232
/usr/bin/com_mode_config set ALL 232    # set COM0 and COM1 mode to RS232

root@ecu150-b94d84:~# com_mode_config get
COM0 MODE is RS485
COM1 MODE is RS232
root@ecu150-b94d84:~# com_mode_config set COM0 232
setup COM0 MODE to RS232
root@ecu150-b94d84:~# com_mode_config set COM1 485
setup COM1 MODE to RS485
root@ecu150-b94d84:~# com_mode_config set ALL 232
setup ALL MODE to RS232
```

2.7 Debug Console and SSH Connection

The debug console includes a UART-to-USB bridge and can be accessed using a USB Type-C cable. After connecting the cable, the system may initially detect an unknown serial device. The system then automatically identifies the device and installs the appropriate driver.

Once the driver is installed, a COM port appears in Device Manager (Windows), or a `/dev/tty*` device appears in Linux. Open the corresponding serial port using a terminal application to access the console prompt.

SSH access is available through both Ethernet ports. Refer to Section 1.3 for login information.

2.8 Image Update

The ECU-150 provides two methods for updating the default EdgeLinux or EdgeLink image. For models running EdgeLink, the image can be updated online using EdgeLink Studio. For models running EdgeLinux, the image can be updated using an SD card.

Note! *Image updates are rarely required. Contact technical support to confirm whether an image update is necessary before proceeding.*



2.8.1 Update via EdgeLink Studio

Connect the device via Ethernet and open the EdgeLink Studio, right click to find "Image Update", and the prompt would show up to select the update file.

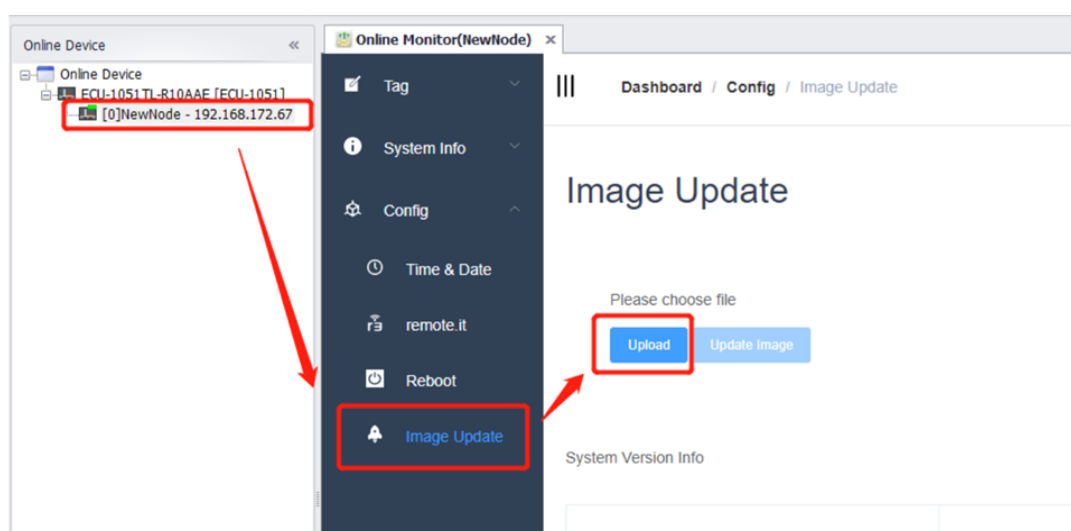


Figure 2.3 Update image via EdgeLink

Once the file is uploaded, click Update Image to start the update process. If Restore factory default setting is selected, the existing EdgeLink project on the ECU will be deleted. If this option is not selected, the device will retain and run the existing project after the system restarts.

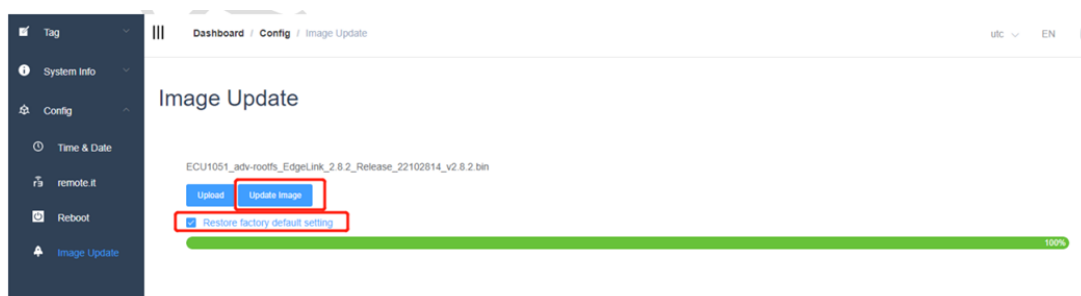


Figure 2.4 Update image via EdgeLink (conti.)

After the update, the device will restart automatically and the notification message will be shown as in Figure 2.5.

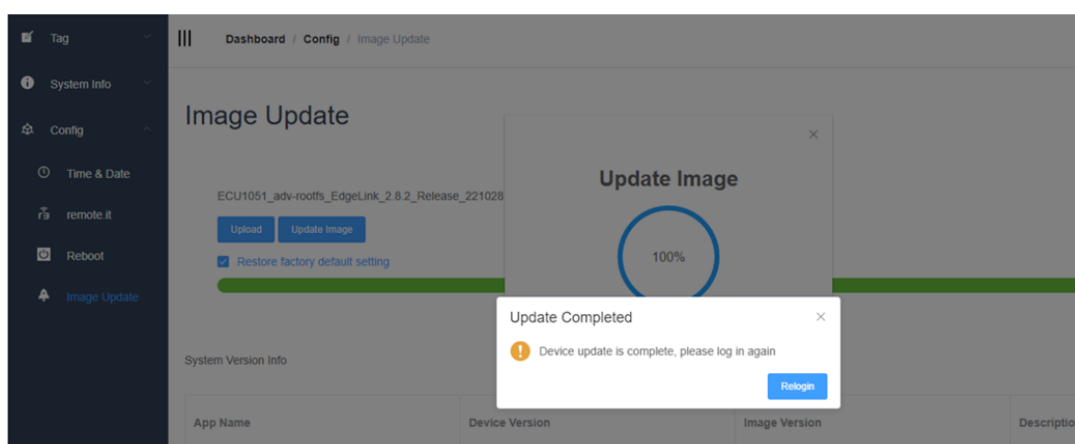


Figure 2.5 Update completed

2.8.2 Update via SD Card

1. Download the update (xxxx.bin) file from the Advantech Support Portal. Search ECU-150 and you'll find the download link
2. Prepare an SD card with FAT32 format and at least 32GB capacity. Change the subfile name from .bin to .zip and unzip the files to the SD card.

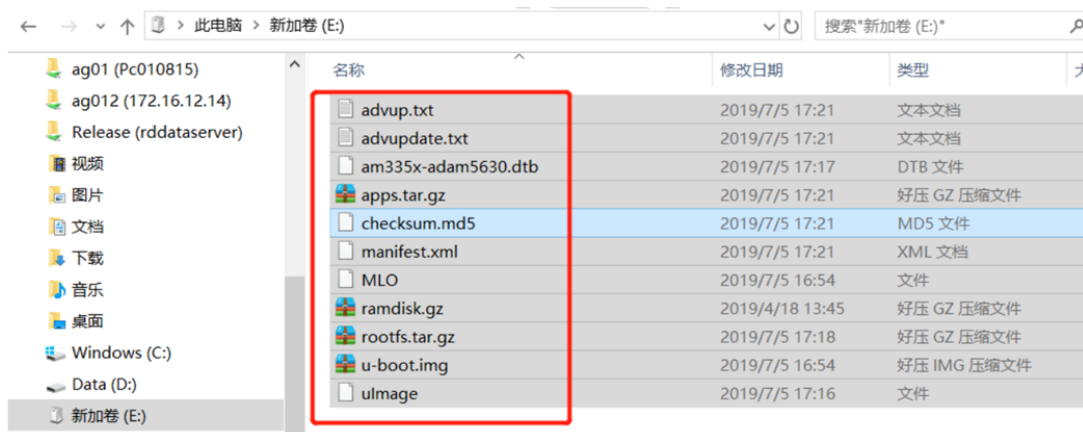


Figure 2.6 Files Unzipped from the Package

3. If this device has EdgeLink installed, and you expect to clear all the EdgeLink project, please revise the parameter advfactory to "y" in the advupdate.txt.

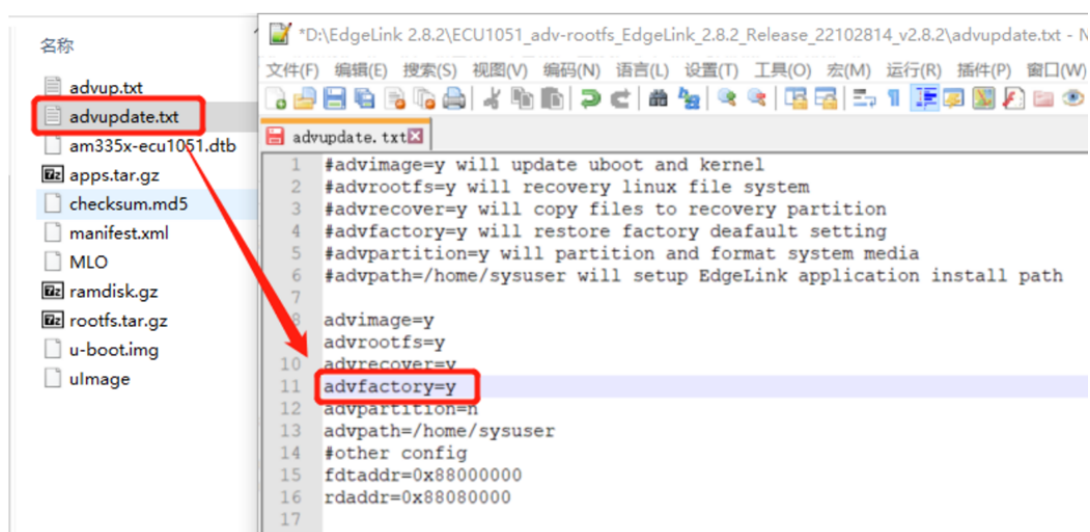


Figure 2.7 Settings Return the Device to Factory Default after Image Update

4. Insert the SD card into the device and power on the device. Leave the boot option set to eMMC. The update starts automatically during the boot process. Once the update is complete, the Linux prompt appears in the console.
5. Unplug the power and remove the SD card. The image update is completed.

2.9 System Recovery

The reset button of ECU-150 V2 also provides system recovery function in both EdgeLinux and EdgeLink images. Users can proceed with system recovery by utilizing this function. The procedure is:

1. Make sure the device is powered off
2. Press and hold the reset button
3. Power on the device
4. Wait until the PL1 starts blinking. If the users connect the console, the prompt will show the message "Enter Recovery Mode!".
5. The PL1 will stop blinking whenever the recovery is completed.

If the users deployed an image build from BSP, this wouldn't apply to the ECU-150 V2.

Chapter 3

Signal Connection for
I/O Interfaces

3.1 Power Connector

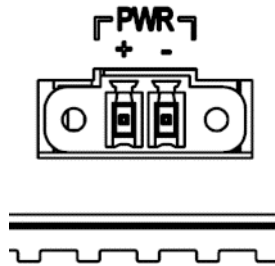


Figure 3.1 Power Connector Layout

Caution!



1. The wiring for the power input terminal block must be installed by a skilled person.
2. The power input terminal block should be installed using 16-24 AWG wires. Wire type: Copper conductor, Torque value 2.5 in-lbf.
1. *Le câblage du bornier d'entrée d'alimentation doit être effectué par un technicien qualifié.*
2. *Le bornier d'entrée d'alimentation doit être installé avec des câbles de calibre 16 à 24 AWG. Type de câble : conducteur en cuivre. Couple de serrage : 2,5 po-lbf.*

Table 3.1: Power Connector

Pin	Description
PWR+	Positive pole of power input
PWR-	Negative pole of power input

3.2 Ethernet Ports



Figure 3.2 RJ45 LAN Connector Layout

Table 3.2: Ethernet Ports

LED	Status	Description
Link	Off	10Mbps
	Orange	100Mbps
	Green	1000 Mbps
Act	Green	No data transmission
	Green Blinking	Transmitting data

3.3 I/O Port Pin Assignment

3.3.1 CAN Ports (Optional)

Table 3.3: CAN Ports (Optional)

	CAN1		G	CAN2	
Pin	1	2	3	4	5
CAN FD	CAN L	CAN H	GND	CAN L	CAN H

The H and L should connect to CAN High and CAN Low respectively on the device end to complete a CAN communication wiring.

3.3.2 Serial Ports

Table 3.4: Serial Ports

	COM1		G	COM2	
Pin	1	2	G	1	2
RS-232	Tx	Rx	Iso. GND	Tx	Rx
RS-485	Data-	Data+	Iso. GND	Data-	Data+

RS-232: The Rx should connect to Tx of the device, and Tx should connect to Rx of the device. GND connect to device ground pin.

RS-485: The D+ should connect to Data+ of the device, and the D- should connect to Data- of the device. GND isn't necessary to be connected.

Chapter 4

System Installation Guide

4.1 Expansion Port/Module Installation

This chapter describes the installation and assembly procedures. All screws required for the following procedures are included in the product package (refer to the packing list in Section 1.5). If any items are missing, contact Advantech or your sales representative.

4.1.1 M.2 Modules

1. Unscrew the side plate and open the enclosure.

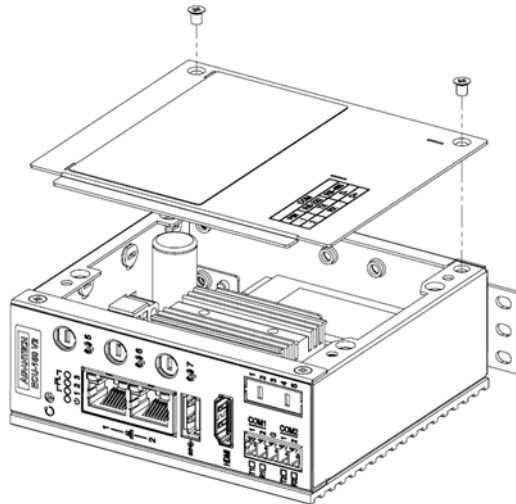


Figure 4.1 Unscrew the side plate to open the enclosure

2. Insert the M.2 module(s) into the corresponding slot(s) and secure them with the screws.

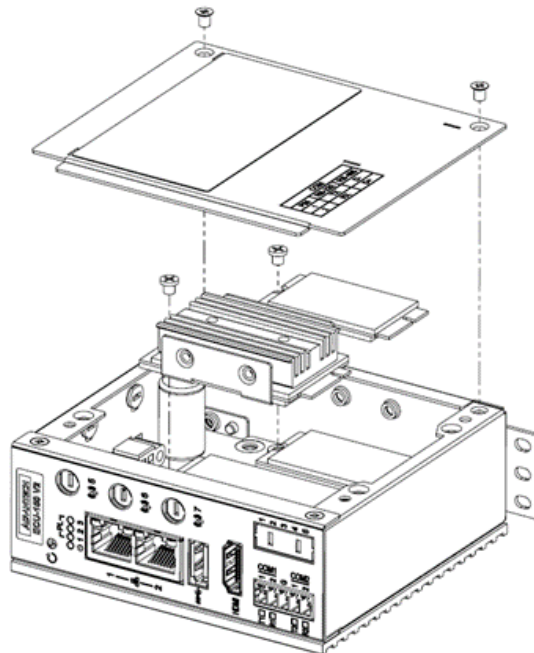


Figure 4.2 Install the M.2 modules

3. Reattach the side plate using the screws.

4.1.2 Module Expansion

This chapter describes the installation and assembly procedures. All screws required for the following procedures are included in the product package (refer to the packing list in Section 1.5). If any items are missing, contact Advantech or your sales representative.

1. Unscrew the side plate and open the enclosure, same as shown in Figure 4.1.
2. Bend the plate of the I/O port to open the slot for plug-terminal installation.

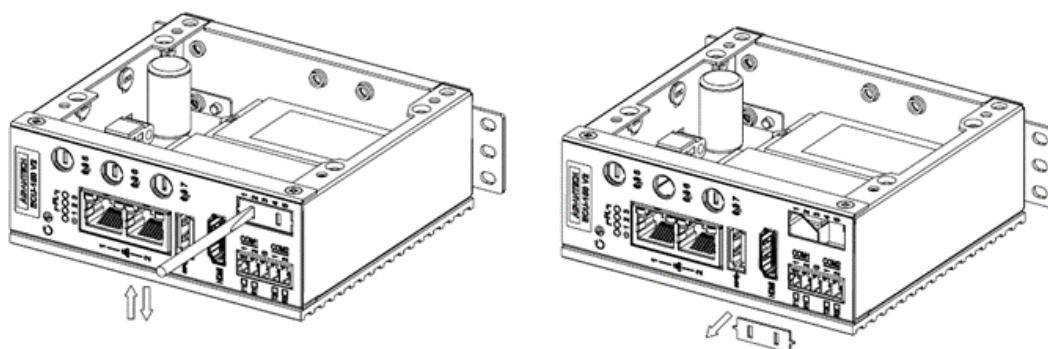


Figure 4.3 Bend the plate and open the frame for installation

3. Insert the terminal, and connect the module onto the connector on the main board, then screw it onto the posts.

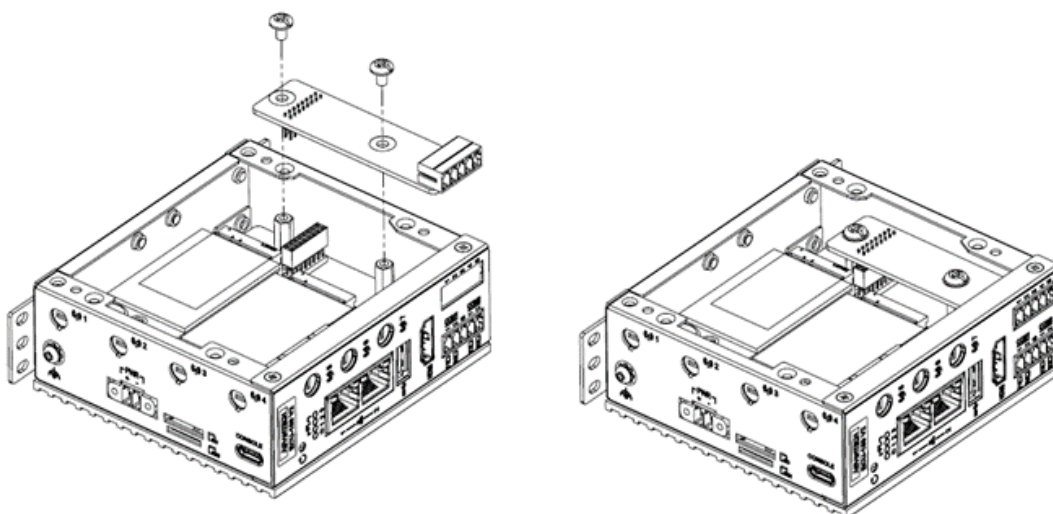


Figure 4.4 Install the expansion module

4. Reattach the side plate using the screws.
5. Affix the pin definition label to the corresponding column. The label is included with the expansion module.

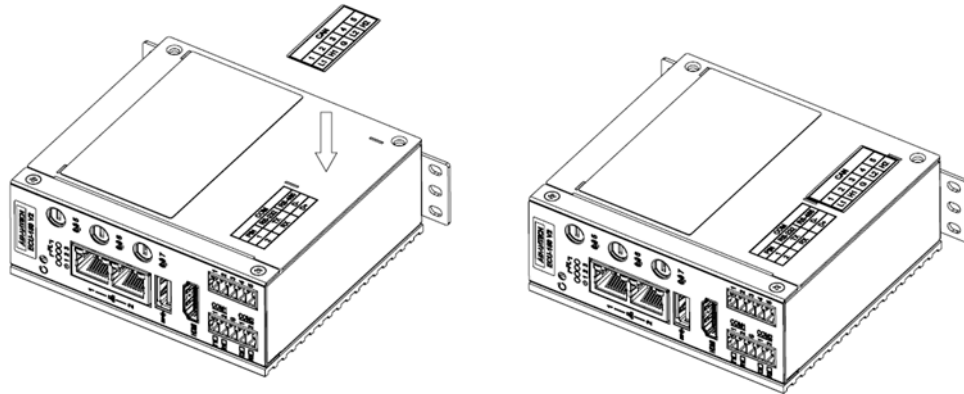


Figure 4.5 Stick the pin assignment stickers

4.1.3 iDoor Expansion

The iDoor modules consist of an M.2 B-key main board and an I/O terminal to be installed on the panel. For installing an iDoor module in the ECU-150 V2 system, the steps are:

1. Remove the screws from the side plate and open the enclosure, as shown in Figure 4.6.
2. Install the iDoor main board into the M.2 slot.
3. Install the iDoor terminal on the second-stack installation frame and secure it with screws.
4. Secure the second-stack installation frame to the main unit with screws.

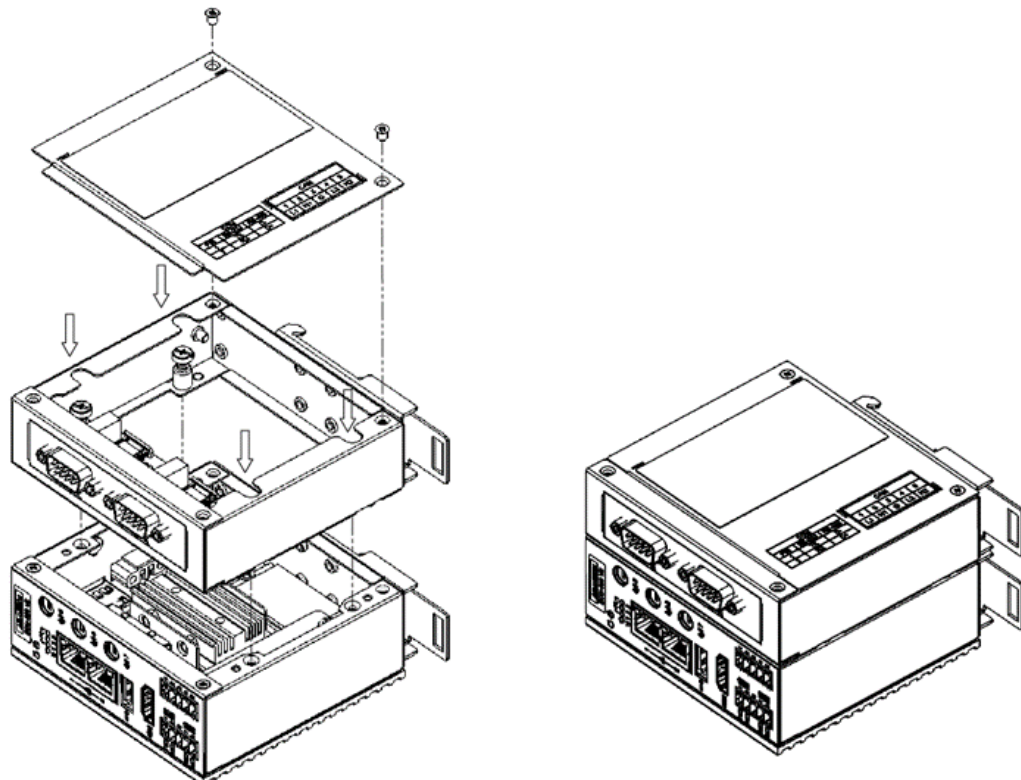


Figure 4.6 Secure the second stack to the main unit and reattach the side plate to complete the installation.

5. Screw the enclosure back

Note! The iDoor module should be purchased separately.



4.2 DIN Rail Kit Installation

Use M3 × 4 mm screws to install the DIN-rail mounting kit.

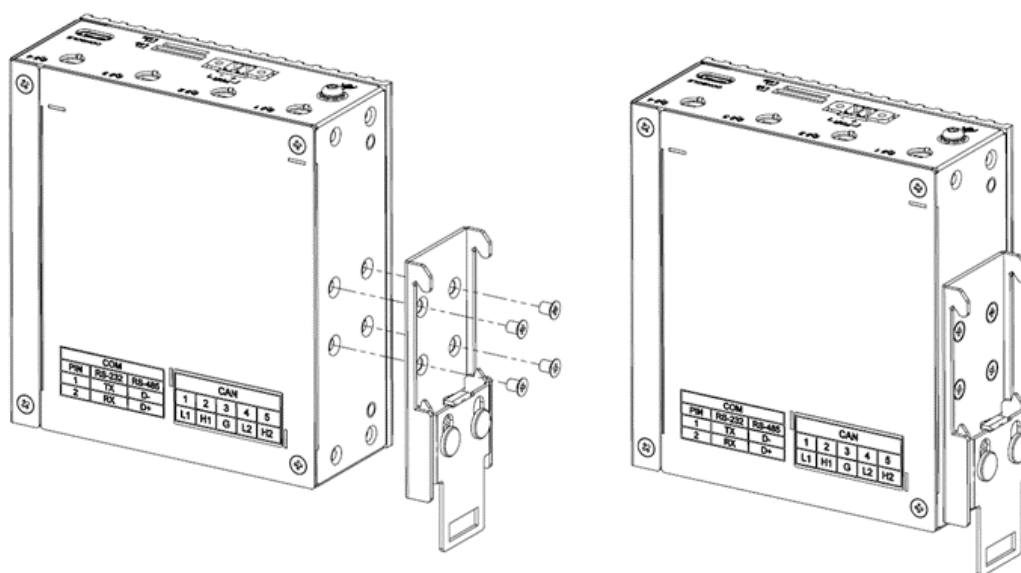


Figure 4.7 Screw the DIN rail kit onto the back of the device

4.3 Wall Mount Kit Installation

Remove the two screws from the rear of the device. Use the M3 × 4 mm screws to secure the wall-mount kit to the rear of the device.

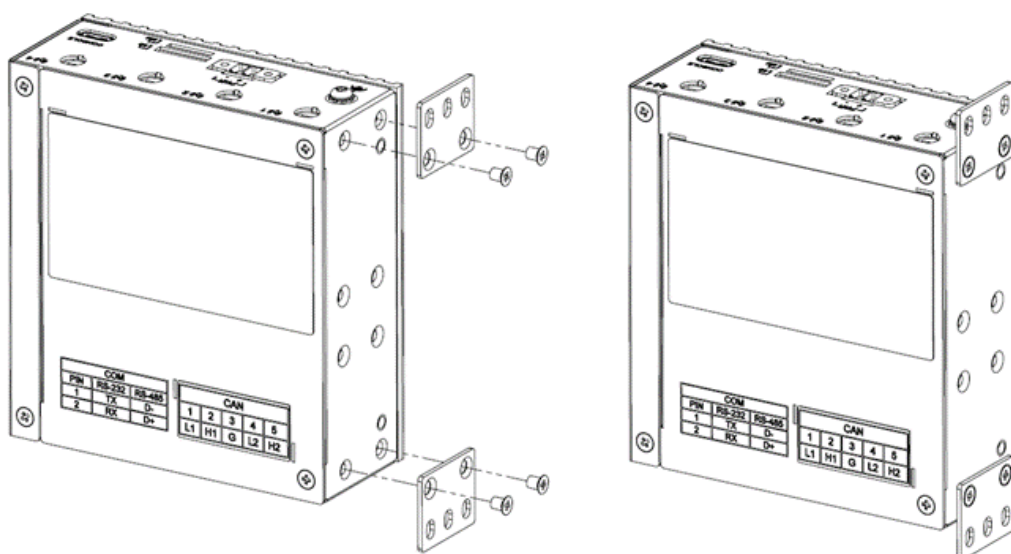


Figure 4.8 Screw the wall-mount kit onto the back of the device

4.4 Antenna Connector Installation

The antenna installation holes are located on the top of the device. Before installing the antenna connectors, bend and remove the covers to expose the installation holes. Then, install the connectors through the holes, as shown in Figure 4.9.

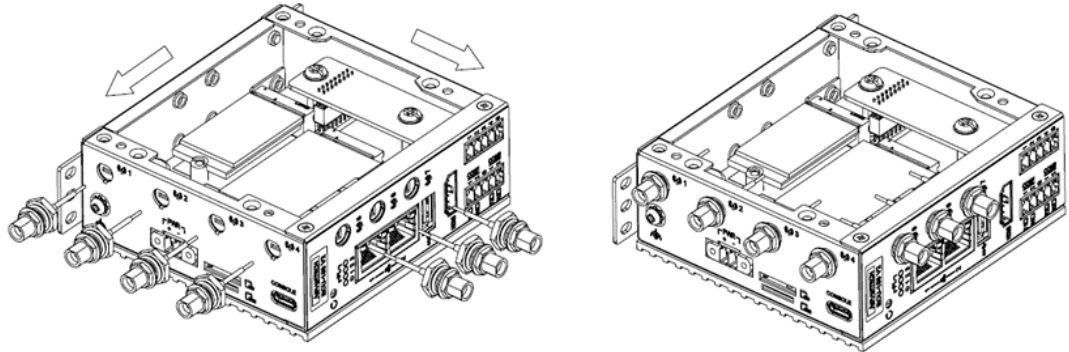


Figure 4.9 Screw the antenna connectors to the device

The antenna cables have to be purchased along with the wireless modules separately. Please refer to the ordering information.

4.5 Ground Connection

To create good ground connection, the ground wire should be connected to the enclosure GND. Unscrew and connect the ground wire then screw it back to complete the ground connection.

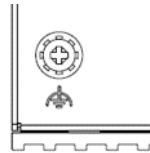


Figure 4.10 Ground Screw

4.6 Field installation safety notification

4.6.1 Required heat dissipation space

To ensure adequate heat dissipation for the ECU-150 V2, maintain sufficient clearance between the ECU-150 V2 and other devices, particularly those that generate significant heat. The figure below shows the required clearance, where A = 50 mm and B = 100 mm.

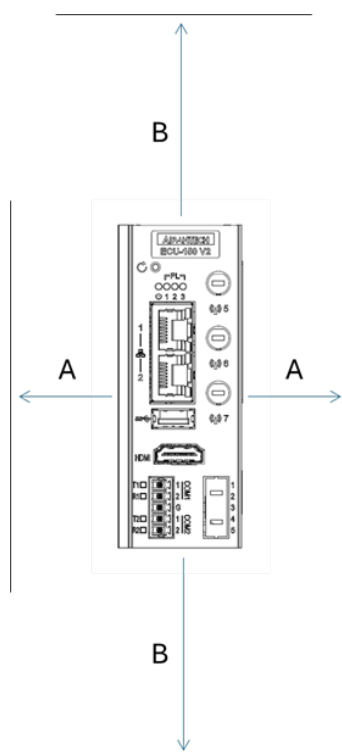


Figure 4.11 Suggested installation space reserved for the ECU-150 V2

4.6.2 DIN rail installation

Please note that the ECU-150 V2 can only be installed on and removed from the DIN rail in one direction. Refer to Figure 4.12 for details. The left image shows how to install the device on the DIN rail, and the right image shows how to remove it.

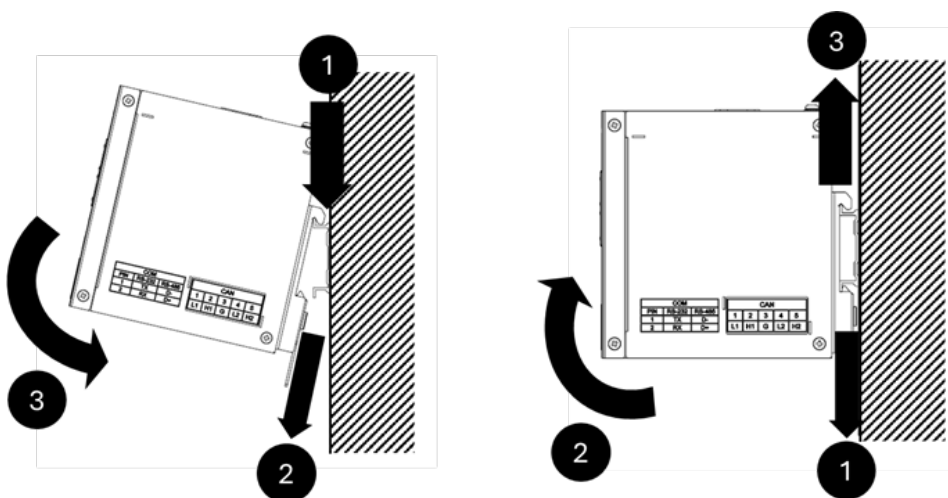


Figure 4.12 Install and release the ECU-150 V2 for DIN rail mounting

4.6.3 Power Requirement

This product is intended to be supplied by a UL-certified power supply or DC source suitable for use at a minimum Tma of 70°C. The output must meet SELV or ES1 requirements and be rated at 10–36 VDC, 0.74–0.22 A minimum.

Ensure that the power source voltage is correct before connecting the equipment to a power outlet. Use a power cord connected to an earthed socket outlet.

For further assistance, contact Advantech.

www.advantech.com

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

All product specifications are subject to change without notice.

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