ED-IPC1000

User Manual

by EDA Technology Co., Ltd

built: 2025-12-12

1 Hardware Manual

This chapter introduces the product overview, packing list, appearance, button, indicator, and interface.

1.1 Overview

The ED-IPC1000 is a low-cost industrial computer based on the Raspberry Pi CM0, featuring 512MB of RAM as standard. Depending on the application scenario and user requirements, it supports customizable configurations with eMMC or an SD card.

- Available eMMC options include 8GB and 16GB.
- The available SD card option is 32GB.

The ED-IPC1000 provides commonly used interfaces such as HDMI, USB, and Ethernet, and supports network connectivity via Wi-Fi or Ethernet. It integrates an RTC and Watch Dog, making it primarily suitable for industrial control and Internet of Things (IoT) applications.

1.2 Packing List

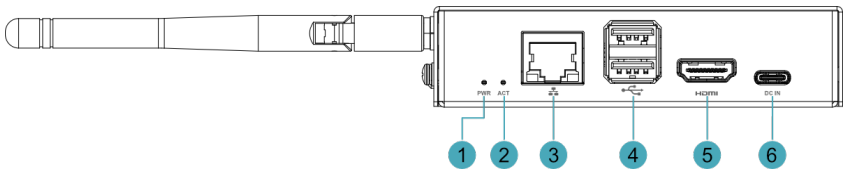
- 1 x ED-IPC1000 Unit
- [Optional Wi-Fi/BT Version] 1 x 2.4GHz Wi-Fi/BT Antenna

1.3 Appearance

Introduce the functions and definitions of the interfaces on each panel.

1.3.1 Front Panel

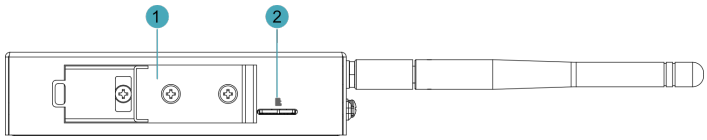
Introduce the types and definitions of the front panel interfaces.



NO.	Function Definition
1	1 x red power indicator, used to display the device's power on/off status.
2	1 x green system status indicator, used to monitor the device's operating status.
3	1 x adaptive 10/100M ethernet port, RJ45 connector. It can be used to access the network.
4	2 x USB 2.0 ports, stacked Type-A connector, each supporting a maximum data transfer rate of 480Mbps.
5	1 x HDMI port, Type-A connector, compliant with HDMI 1.3a standard, supports 1080p resolution at 30Hz and display connectivity.
6	1 x DC input, USB Type-C connector, supports 5V input.

1.3.2 Rear Panel

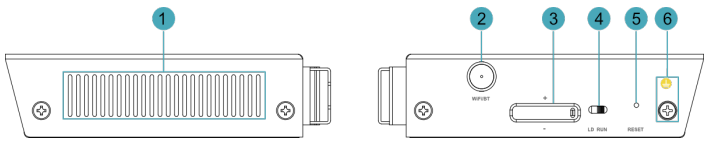
Introducing the types and definitions of the rear panel interface.



NO.	Function Definition
1	1 x Rail mounting bracket, used to install the ED-IPC1000 unit on a DIN rail via the bracket.
2	1 x Micro SD card slot, supports inserting a Micro SD card for system boot. Note: The system supports booting from a Micro SD card only when the ED-IPC1000 is equipped with a CM0Lite.

1.3.3 Side Panel

Introducing the types and definitions of side panel interfaces.



NO.	Function Definition
1	Heat dissipation holes, which help improve cooling performance.
2	1 x Wi-Fi/BT antenna port (optional), SMA connector, for connecting the Wi-Fi/BT antenna.
3	1 x RTC battery port (default installed rubber plug), supports installation of an RTC battery (CR2032) via this port.
4	1 x DIP switch, supports switching between normal operation mode and flashing mode. • LD: Flashing mode • RUN: Normal operation mode (default state)
5	1 x reset button, recessed design, pressing the button restarts the device.
6	1 x Grounding point, for connecting to the earth ground of an external power supply.

1.4 Button

The ED-IPC1000 device includes one RESET button, which is a recessed button marked with "RESET" on the casing silkscreen. Pressing the RESET button reboots the device.

1.5 Indicator

Introduce the various states and meanings of the indicator included in the ED-IPC1000.

Indicator	Status	Description
PWR	On	The device has been powered on.
	Blink	Power supply of the device is abnormal, please stop the power supply immediately.
	Off	The device is not powered on.
ACT	Blink	The system started successfully and is reading and writing data.
	Off	The device is not powered on or does not read and write data.
Green indicatorof Ethernet port	On	The Ethernet connection is abnormal.
	Blink	Data is being transmitted over the Ethernet port.
	Off	The Ethernet connection is not set up.
Yellow indicatorof Ethernet port	On	The Ethernet connection is in the normal state.
	Blink	The Ethernet connection is abnormal.
	Off	The Ethernet connection is not set up.

1.6 Interface

Introduce the definitions and functions of the various interfaces in the product.

1.6.1 Micro SD Card Slot

The ED-IPC1000 device includes one Micro SD card slot, with the slot interface silkscreened as " ". It supports the installation of a Micro SD card to boot the system.

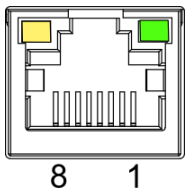
> TIP
>
> - Booting from a Micro SD card is supported only when the ED-IPC1000 is equipped with a CM0Lite.
> - When the ED-IPC1000 uses a CM0 with 8GB or 16GB eMMC, the Micro SD card slot is a non-functional interface.

1.6.2 Power Interface

The ED-IPC1000 device features one power input interface using a USB Type-C connector, with the interface silkscreened as "DC IN". It supports 5V power input.

1.6.3 100M Ethernet Interface

The ED-IPC1000 device includes one adaptive 10/100M Ethernet interface, with the interface silkscreened as " ". It uses an RJ45 connector, and when connecting to Ethernet, it is recommended to use a network cable of Cat6 or above specification. The pin definitions corresponding to the connector are as follows:



Pin ID	Pin Name
1	TX+
2	TX-
3	Rx+
4	-
5	-
6	RX-
7	-
8	-

1.6.4 HDMI Interface

The ED-IPC1000 device includes one HDMI interface, silkscreened as "HDMI", which is a standard Type-A connector. It is compatible with HDMI displays and supports video output of up to 1080p30.

1.6.5 USB 2.0 Interface

The ED-IPC1000 device includes two USB 2.0 interfaces, silkscreened as " ", which are standard dual-layer Type-A connectors. They support connection with standard USB 2.0 peripherals and offer a maximum transmission rate of 480 Mbps.

1.6.6 Antenna Interface (optional)

If the selected ED-IPC1000 device includes Wi-Fi/BT functionality, it features one SMA antenna interface silkscreened as "WiFi/BT" for connecting the Wi-Fi/BT antenna.

1.6.7 RTC Battery Interface

The ED-IPC1000 device includes one RTC battery interface (default installed with a rubber plug), which supports the installation of an RTC battery.

> TIP
>
> - The supported battery model is CR2032.
> - Before installing the battery, please confirm the positive and negative poles of the battery, and install it according to the positive and negative pole indications on the port silkscreen.

1.6.8 DIP Switch

The ED-IPC1000 device includes one DIP switch that supports switching between normal operation mode (default state) and flashing mode.

- LD: Flashing mode. In this mode, the device allows flashing to eMMC via the Type-C port when connected to a PC.
- RUN: Normal operation mode. In this mode, the device functions normally.

> WARNING
>
> The default state of the DIP switch is normal operation mode (RUN). Incorrect operation may affect the normal use of the device. Please proceed with caution.

2 Installing Components (optional)

This chapter describes how to install optional components.

2.1 Install Antenna

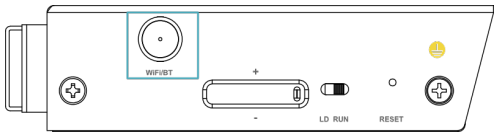
If the purchasing ED-IPC1000 includes Wi-Fi functions, the antenna need to be installed before using the device.

Preparation:

The antenna has been obtained from the packaging box.

Steps:

1. Find the location of antenna port, as indicated in the figure below.



2. Align the connectors on both sides of the device and the antenna, and turn the antenna clockwise to secure it.

2.2 Install Micro SD Card

If you need to install the Micro SD card while using the product, you can refer to the following instructions.

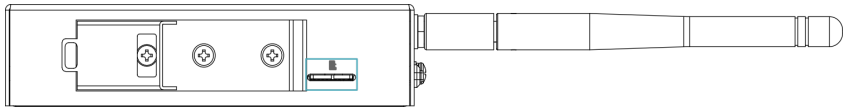
> NOTE
>
> Please turn off the power before inserting or removing the Micro SD card.

Preparation:

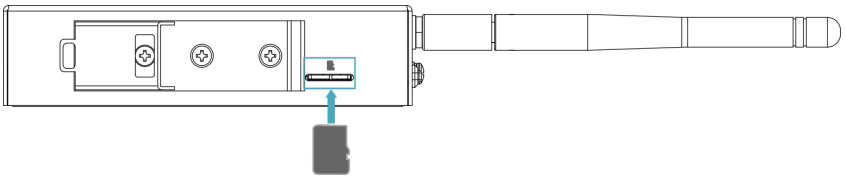
- Micro SD card is ready.
- The device has been disconnected from power.

Steps:

1. Find the location of Micro card slot, as indicated in the figure below.



2. Insert the Micro SD card into the corresponding card slot with the contact side facing down, and hear a sound to indicate that the installation is completed.



2.3 Remove Micro SD card

If you need to remove the SD card during product usage, refer to the following instructions.

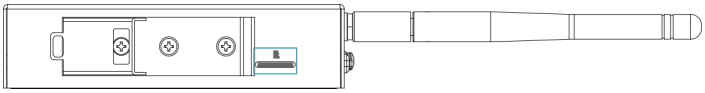
> NOTE
>
> Please turn off the power before inserting or removing the Micro SD card.

Preparation:

The power supply to the ED-IPC1000 has been disconnected.

Steps:

1. Find the location of Micro card, as indicated in the figure below.



2. Press the Micro SD card gently into the slot until it ejects, then remove it.

2.4 Install RTC Battery

The ED-IPC1000 device supports the installation of a CR2032 battery as an RTC backup power supply. The installation steps are described below.

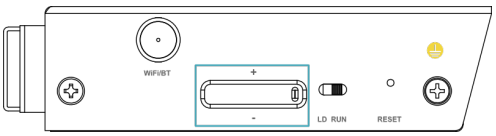
> NOTE
>
> Please turn off the power before installing the RTC battery.

Preparation:

- The CR2032 battery has been obtained.
- The device power supply has been disconnected.

Steps:

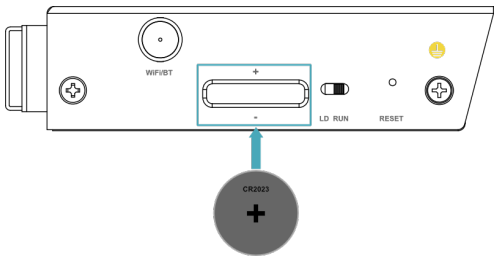
1. Find the location of RTC battery interface, as indicated in the figure below.



TIP

Before installing the RTC battery, remove the rubber plug from the RTC battery interface.

2. Insert the CR2032 battery with the positive terminal facing upward into the corresponding interface, ensuring it is fully seated in the RTC battery base.

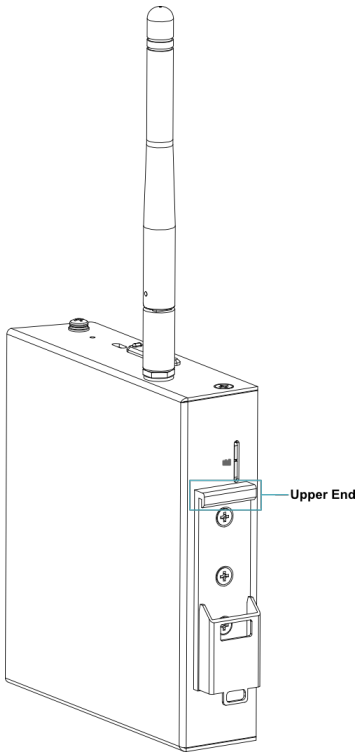


3 Installing Device

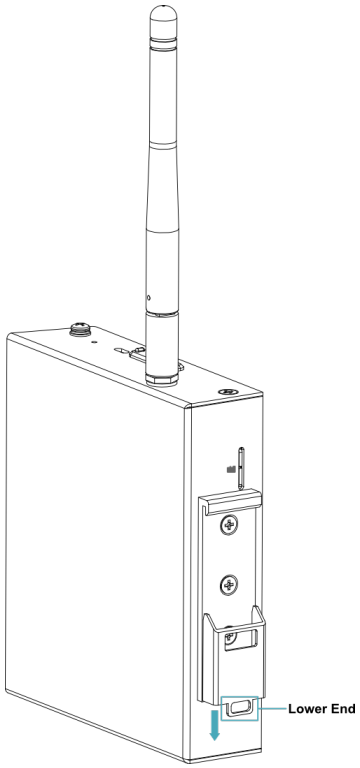
The ED-IPC1000 supports DIN rail installation and comes pre-installed with a DIN rail mounting bracket as standard.

Steps:

1. Align the side of the device with the pre-installed rail bracket toward the target DIN rail, and hook the upper end of the bracket onto the top edge of the DIN rail.



2. Hold the lower end of the bracket and pull it downward in the direction indicated by the arrow until the bracket snaps securely into place on the DIN rail.


Lower End

4 Booting the Device

This chapter introduces how to connect cables and boot the device.

4.1 Connecting Cables

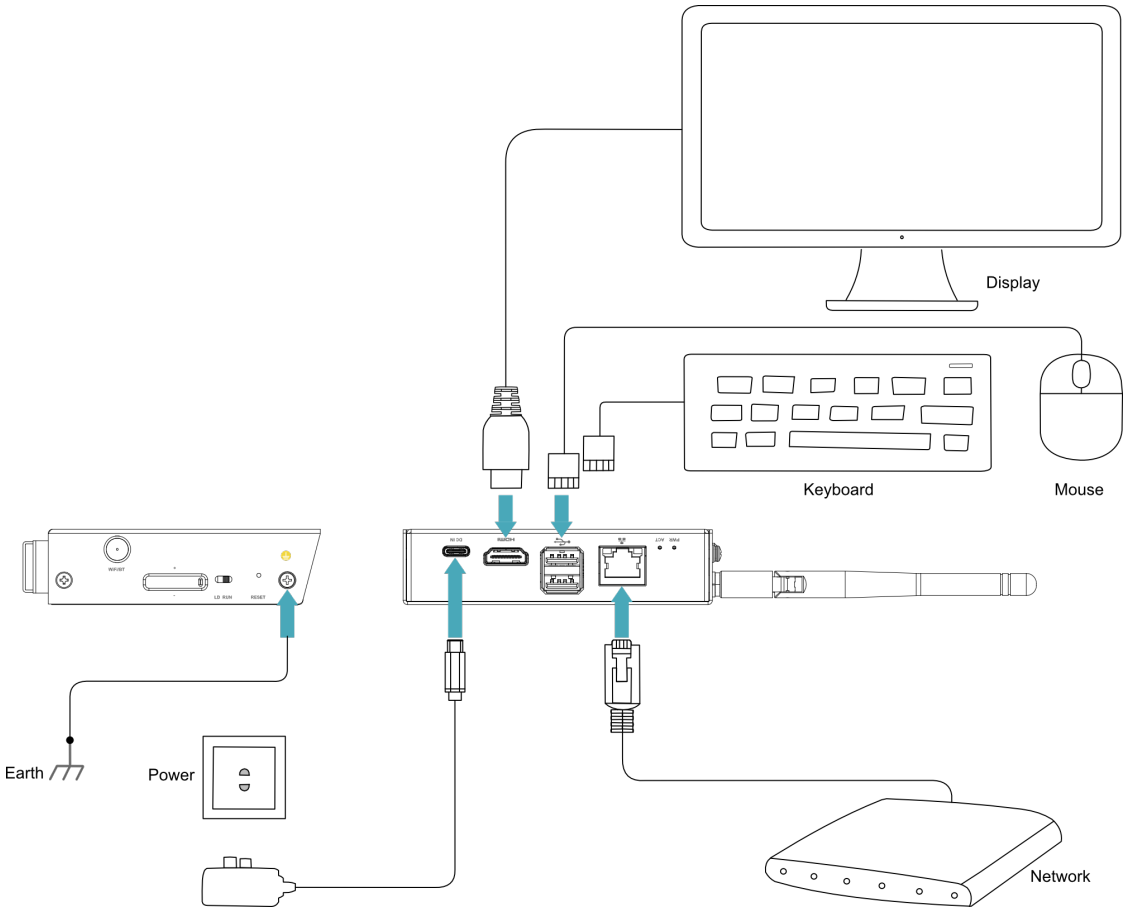
This section describes how to connect cables.

Preparation:

- Accessories such as display, mouse, keyboard and power adapter that can be used normally have been ready.
- A network that can be used normally.
- Get the HDMI cable and network cable that can be used normally.

Schematic diagram of connecting cables:

Please refer to 1.6 Interface for the pin definition of each interface and the specific method of wiring.



4.2 Booting The System For The First Time

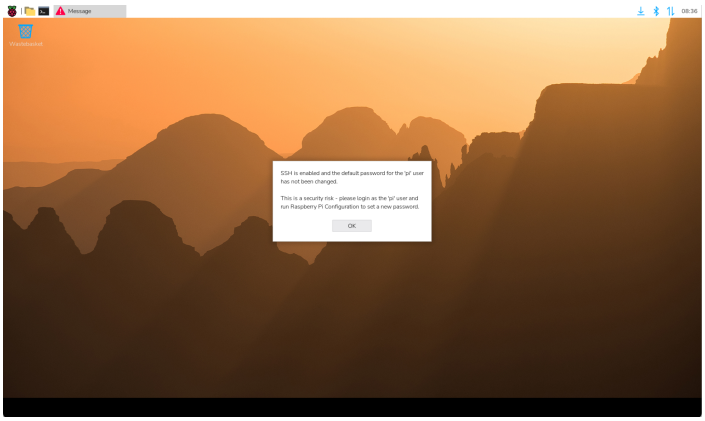
The ED-IPC1000 device are not equipped with a power switch. The system will begin to start once power is connected.

- The red PWR indicator is on, indicating that the device has been powered normally.
- The green ACT indicator is blinking, indicating that the system is started normally, and then the logo of Raspberry Pi will appear in the upper left corner of the screen.

> TIP
>
> Default username is `pi` , Default password is `raspberry` .

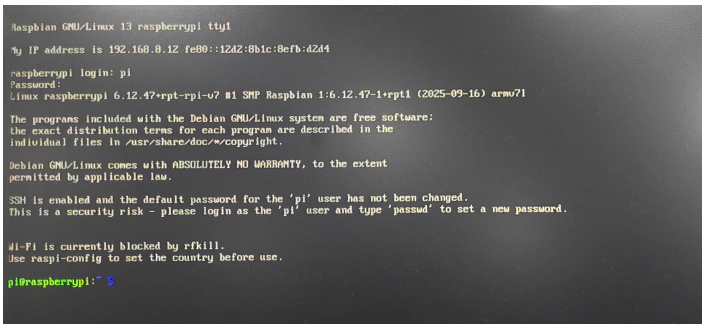
4.2.1 Raspberry Pi OS (Desktop)

If the device is pre-installed with the Desktop edition of the system at the factory, it will directly enter the desktop interface after startup, as shown in the figure below.



4.2.2 Raspberry Pi OS (Lite)

If the device is pre-installed with the Lite edition of the system at the factory, it will automatically log in using the default username `pi` . After startup, with the default password being `raspberry` . The figure below indicates that the system has started successfully.



5 Configuring System

This chapter introduces how to configure system.

5.1 Finding Device IP

Finding Device IP

5.2 Remote Login

Remote Login

5.3 Configuring Storage Devices

Configuring Storage Devices

5.4 Configuring Ethernet IP

Configuring Ethernet IP

5.5 Configuring Wi-Fi (Optional)

Configuring Wi-Fi

5.6 Configuring Bluetooth (Optional)

Configuring Bluetooth

5.7 Configuring RTC

Configuring RTC

5.8 Configuring Watch Dog

Configuring Watch Dog

6 Installing OS (optional)

The device is shipped with an operating system by default. If the OS is corrupted during use or the user needs to replace the OS, it is necessary to re-download the appropriate system image and install it. Our company supports to install the OS by installing the standard Raspberry Pi OS first, and then install the Firmware package.

The following sections detail the specific steps for downloading the image, flashing the image, and installing the Firmware package.

6.1 Downloading OS File

You can download the corresponding official Raspberry Pi OS file according to your actual needs, the download path is listed below:

OS	Download Path
Raspberry Pi OS(Desktop) 64-bit-trixie (Debian 13)	https://downloads.raspberrypi.com/raspios_arm64/images/raspios_arm64-2025-10-02/2025-10-01-raspios-trixie-arm64.img.xz (https://downloads.raspberrypi.com/raspios_arm64/images/raspios_arm64-2025-10-02/2025-10-01-raspios-trixie-arm64.img.xz)
Raspberry Pi OS(Lite) 64-bit-trixie (Debian 13)	https://downloads.raspberrypi.com/raspios_lite_arm64/images/raspios_lite_arm64-2025-10-02/2025-10-01-raspios-trixie-arm64-lite.img.xz (https://downloads.raspberrypi.com/raspios_lite_arm64/images/raspios_lite_arm64-2025-10-02/2025-10-01-raspios-trixie-arm64-lite.img.xz)
Raspberry Pi OS(Desktop) 32-bit-trixie (Debian 13)	https://downloads.raspberrypi.com/raspios_armhf/images/raspios_armhf-2025-10-02/2025-10-01-raspios-trixie-armhf.img.xz (https://downloads.raspberrypi.com/raspios_armhf/images/raspios_armhf-2025-10-02/2025-10-01-raspios-trixie-armhf.img.xz)
Raspberry Pi OS(Lite) 32-bit-trixie (Debian 13)	https://downloads.raspberrypi.com/raspios_lite_armhf/images/raspios_lite_armhf-2025-10-02/2025-10-01-raspios-trixie-armhf-lite.img.xz (https://downloads.raspberrypi.com/raspios_lite_armhf/images/raspios_lite_armhf-2025-10-02/2025-10-01-raspios-trixie-armhf-lite.img.xz)

> TIP
>
> It is recommended to use the Lite version of the image. For the latest version, please refer to the Raspberry Pi official website: Raspberry Pi OS (https://www.raspberrypi.com/software/operating-systems/) .

6.2 Flashing Image

ED-IPC1000 supports booting from eMMC or Micro SD card. Refer to the instructions below for flashing image based on the product model selected by the user.

> TIP
>
> When purchasing the product, customers can choose between the eMMC version or the Micro SD card version of the ED-IPC1000.
>
> - If the selected product includes eMMC, please refer to the eMMC flashing procedure.
> - If the selected product includes a Micro SD card, please refer to the SD card flashing procedure.

6.2.1 Flashing to eMMC

It is recommended to use the Raspberry Pi official tools. The download paths are as follows:

- Raspberry Pi Imager: https://downloads.raspberrypi.org/imager/imager_latest.exe (https://downloads.raspberrypi.org/imager/imager_latest.exe)
- SD Card Formatter: https://www.sdcardformatter.com/download/ (https://www.sdcardformatter.com/download/)
- Rpiboot: https://github.com/raspberrypi/usbboot/raw/master/win32/rpiboot_setup.exe (https://github.com/raspberrypi/usbboot/raw/master/win32/rpiboot_setup.exe)

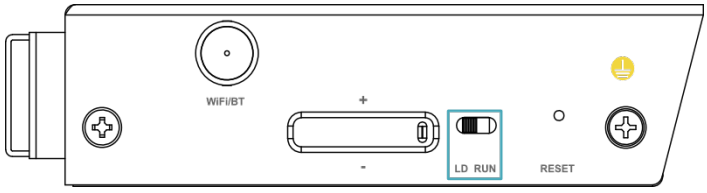
Preparation:

- The flashing tool has been downloaded and installed on the computer.
- A USB-A to USB Type-C cable (USB flashing cable) has been prepared.
- The OS file to be flashed has been obtained.

Steps:

The steps are described using Windows system as an example.

1. Disconnect the power supply from the ED-IPC1000.
2. Set the device's DIP switch to the LD position, as shown in the figure below.

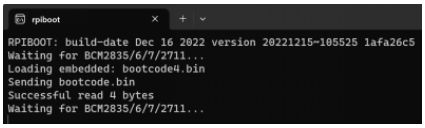


3. Connect the USB flashing cable: one end to the Type-C USB port on the ED-IPC1000, and the other end to a USB port on the PC.

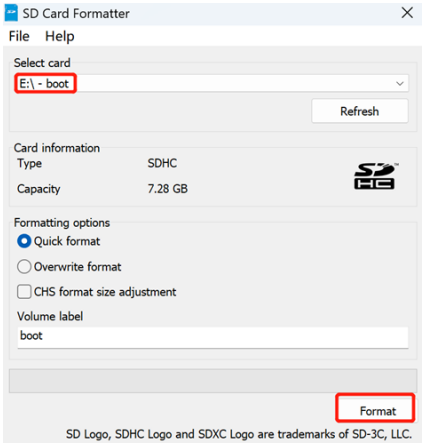
> TIP

> In flashing mode, the Type-C USB port serves as both the flashing interface and the power supply interface.

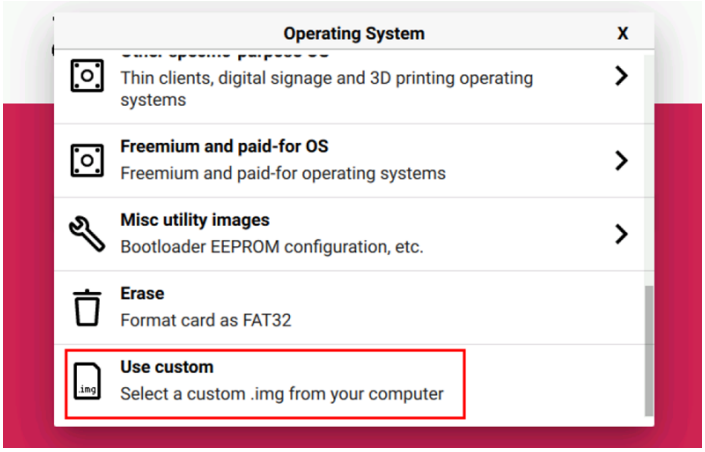
4. Launch the installed `rpiboot` tool to automatically assign a drive letter.



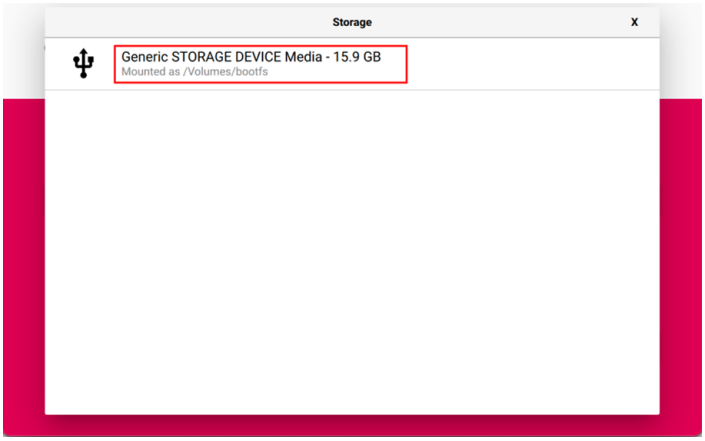
5. After the drive letter assignment is complete, a new drive letter notification will appear in the system tray (bottom-right corner of the computer).
6. Open `SD Card Formatter`, select the drive letter to be formatted, and click "Format" at the bottom right to begin formatting.



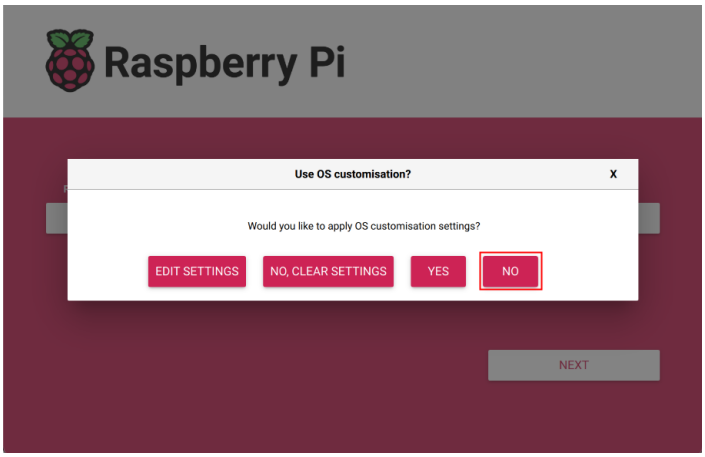
7. In the pop-up dialog box, click "Yes".
8. When the formatting is completed, click "OK" in the prompt box.
9. Close `SD Card Formatter`.
10. Open `Raspberry Pi Imager`, select "CHOOSE OS" and select "Use Custom" in the pop-up pane.



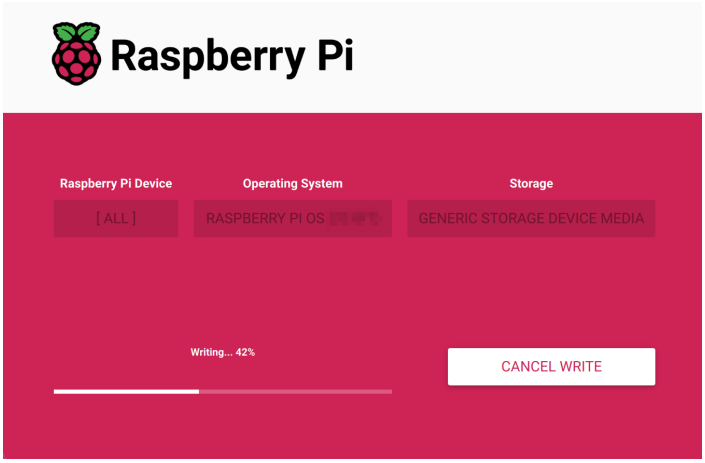
11. According to the prompt, select the OS file under the user-defined path and return to the main page.
12. Click "CHOOSE STORAGE", select the default device in the "Storage" interface, and return to the main page.



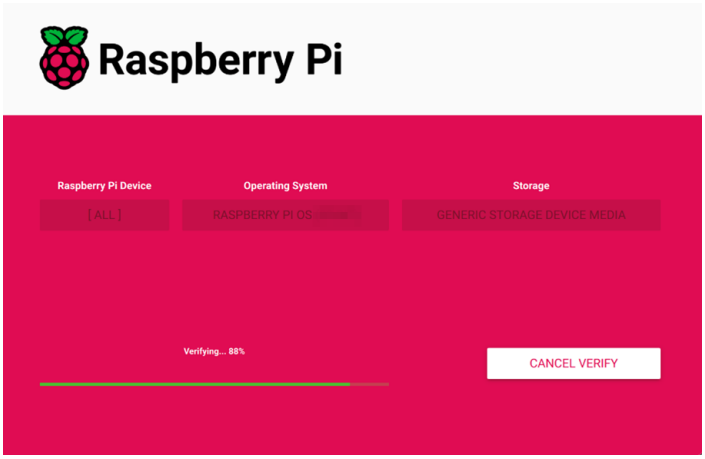
13. Click “NEXT”, select "NO " in the pop-up “Use OS customization?” pane.



14. Select “YES” in the pop-up “Warning” pane to start writing the image.



15. After the OS writing is completed, the file will be verified.



16. After the verification is completed, click “CONTINUE” in the pop-up “Write Successful” box.
17. Close `Raspberry Pi Imager`, disconnect the USB flashing cable, set the DIP switch to RUN, and finally repower the ED-IPC1000.

6.2.2 Flashing to SD Card

It is recommended to use the Raspberry Pi official tools. The download paths are as follows:

- Raspberry Pi Imager: https://downloads.raspberrypi.org/imager/imager_latest.exe (https://downloads.raspberrypi.org/imager/imager_latest.exe)
- SD Card Formatter: https://www.sdcardformatter.com/download/ (https://www.sdcardformatter.com/download/)

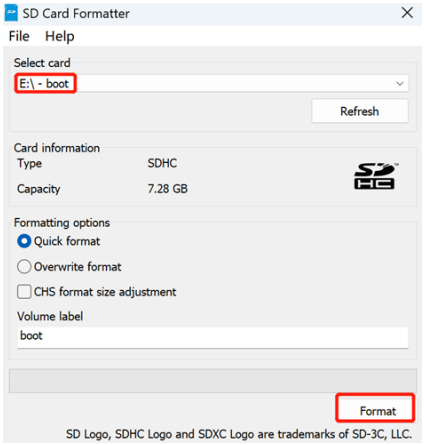
Preparation:

- The flashing tool has been downloaded and installed on the computer.
- The OS file to be flashed has been obtained.
- A Micro SD card reader has been prepared.
- The Micro SD card to be flashed has been acquired.

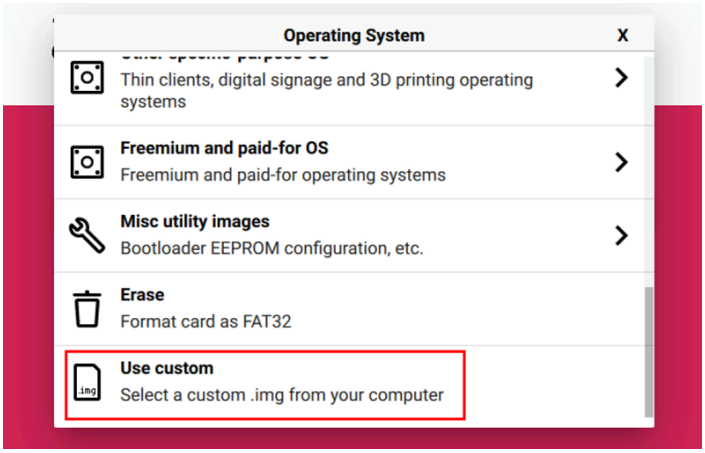
Steps:

The steps are described using Windows system as an example.

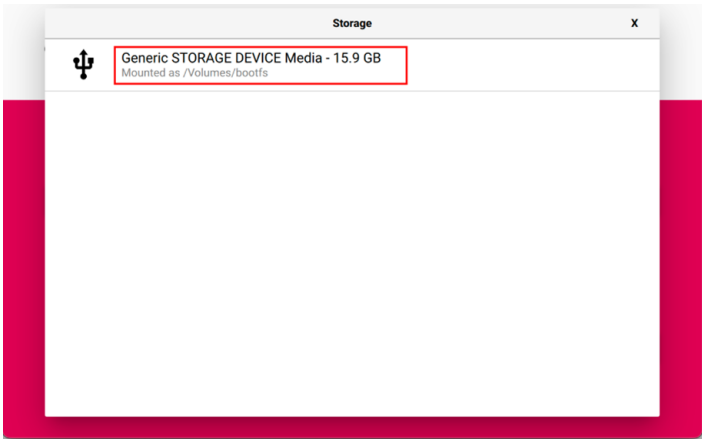
1. Before flashing to the SD card, the Micro SD card must be removed. For specific operations, refer to 2.3 Remove Micro SD Card.
2. Insert the Micro SD card into the card reader, then connect the reader to the computer's USB port.
3. Open `SD Card Formatter`, select the drive letter to be formatted, and click "Format" at the bottom right to begin formatting.



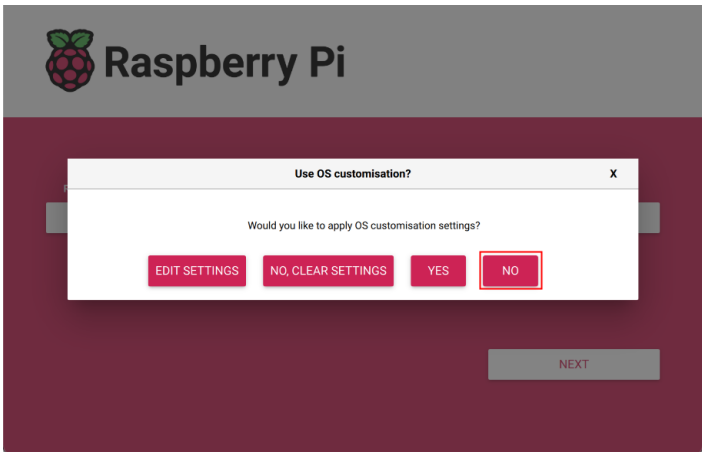
4. In the pop-up dialog box, click "Yes".
5. When the formatting is completed, click "OK" in the prompt box.
6. Close `SD Card Formatter` .
7. Open `Raspberry Pi Imager` , select "CHOOSE OS" and select "Use Custom" in the pop-up pane.



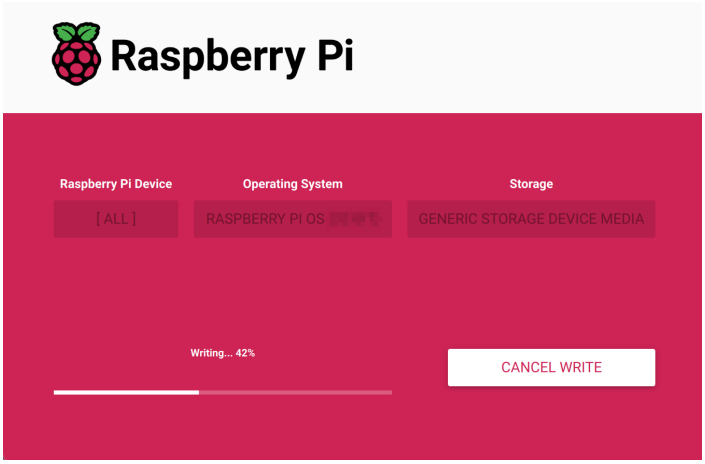
8. According to the prompt, select the OS file under the user-defined path and return to the main page.
9. Click "CHOOSE STORAGE", select the default device in the "Storage" interface, and return to the main page.



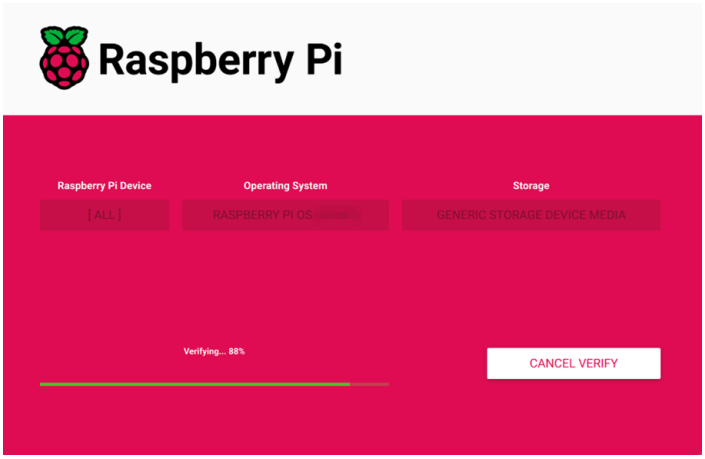
10. Click “NEXT”, select "NO" in the pop-up “Use OS customization?” pane.



11. Select “YES” in the pop-up “Warning” pane to start writing the image.



12. After the OS writing is completed, the file will be verified.



13. After the verification is completed, click “CONTINUE” in the pop-up “Write Successful” box.
14. Close `Raspberry Pi Imager`, and remove the card reader along with the Micro SD card from USB port of PC.
15. Insert the Micro SD card into the ED-IPC1000, then power on the ED-IPC1000.

6.3 Installing Firmware Package

After you have finished flashing image on ED-IPC1000, you need to configure the system by adding edatec apt source and installing firmware package to make the system work. The following is an example of Debian 13 (trixie) desktop version.

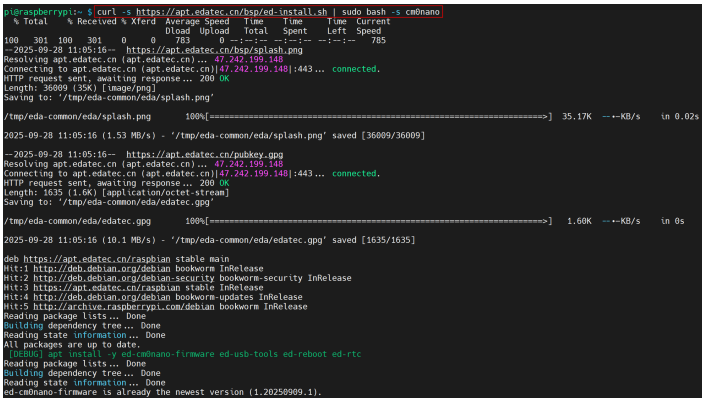
Preparation:

- The flashing of the standard Raspberry Pi OS (trixie) image has been completed.
- ED-IPC1000 has booted normally and the required startup configuration has been finalized.

Steps:

1. After the ED-IPC1000 starts normally, execute the following commands in the command pane to add the edatec apt source and installing firmware package.

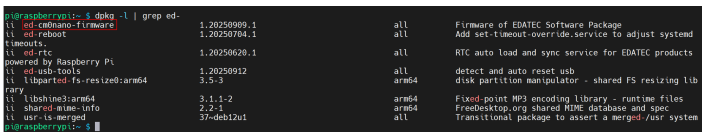
```sh
curl -s https://apt.edatec.cn/bsp/ed-install.sh | sudo bash -s cm0nano
```



2. After the installation is complete, the system automatically reboots.
3. Execute the following command to check whether the firmware package is installed successfully.

```sh
dpkg -l | grep ed-
```

The result in the picture below indicates that the firmware package has been installed successfully.



> TIP
>
> If you have installed the wrong firmware package, you can execute `sudo apt-get --purge remove package` to delete it, where “package” is the package name.