



ED-IPC1100

User Manual

by EDA Technology Co., Ltd

built: 2025-12-01

1 Hardware Manual

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

1.1 Overview

The ED-IPC1100 is an industrial computer based on the Raspberry Pi CM0, featuring 512MB of RAM as standard with optional 8GB or 16GB eMMC storage. It provides common interfaces such as HDMI, USB, Ethernet, and RS485, and supports network connectivity via Wi-Fi, Ethernet, and 4G. Integrated with an RTC, it is primarily designed for industrial control and IoT applications.



1.2 Packing List

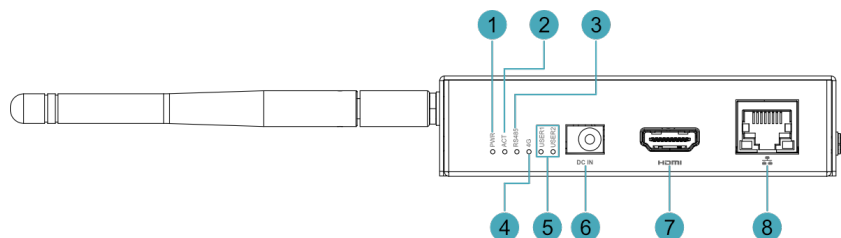
- 1 x ED-IPC1100 Unit
- 1 x 2.4GHz Wi-Fi/BT Antenna
- 1 x 4G Antenna
- 1 x 3-Pin Phoenix Terminal

1.3 Appearance

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

1.3.1 Front Panel

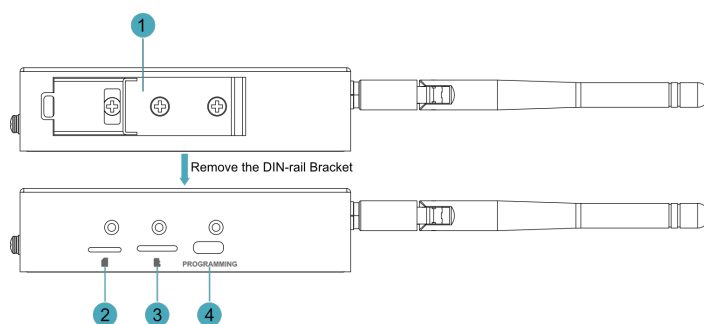
Introduce the types and definitions of the front panel interfaces.



NO.	Function Definition
1	1 x power indicator, red, used to display the device's power on/off status.
2	1 x system status indicator, green, used to monitor the device's operating status.
3	1 x RS485 indicator, green, used to display the communication status of the RS485 serial port.
4	1 x 4G signal indicator, green, for checking the status of the 4G signal.
5	2 x User indicators, green, allowing users to customize the status based on actual needs.
6	1 x DC input, DC jack connector, supports 9V~28V input.
7	1 x HDMI port, Type-A connector, compliant with HDMI 1.3a standard, supports 1080p resolution at 30Hz.
8	1 x adaptive 10M/100M ethernet port, RJ45 connector. It can be used to access the network.

1.3.2 Rear Panel

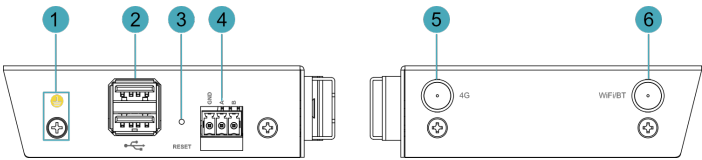
Introducing the types and definitions of the rear panel interface.



NO.	Function Definition
1	1 x Rail mounting bracket, used to install the ED-IPC1100 unit on a DIN rail via the bracket.
2	1 x Nano SIM card slot for installing a Nano SIM card to obtain 4G signal.
3	1 x Micro SD card slot, supports installation of a Micro SD card for system boot. Note: The system supports booting from a Micro SD card only when the ED-IPC1100 is equipped with a CM0Lite.
4	1 x Type-C USB interface, supports eMMC flashing via this interface.

1.3.3 Side Panel

Introducing the types and definitions of side panel interfaces.



NO.	Function Definition
1	1 x Grounding point, for connecting to the earth ground of an external power supply.
2	2 x USB 2.0 ports, stacked Type-A connector, each supporting a maximum data transfer rate of 480Mbps.
3	1 x reset button, recessed design, pressing the button restarts the device.
4	1 x RS485 interface, 3-pin 3.5mm pitch phoenix terminal, signal definitions: GND/A/B.
5	1 x Antenna interface, SMA connector, for connecting 4G antenna
6	1 x Antenna interface, SMA connector, for connecting Wi-Fi/BT antenna

1.4 Button

The ED-IPC1100 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-IPC1100.

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.
USER1 and USER2	On	User-defined
	Off	The device is not powered on or is not user-defined. The default state is off.
4G	On	Dial-up successful, connection established.
	Off	The 4G signal is not connected or the device is not powered on.

Indicator	Status	Description
Green indicator of 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 indicator of 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.
RS485	On/Blink	Data is being transmitted.
	Off	The device is not powered on or there is no data transmission.


1.6 Interface

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

1.6.1 Card Slot

ED-IPC1100 includes a Micro SD card slot and a Nano SIM card slot.


1.6.1.1 Micro SD Card Slot

The silkscreen on the case of Micro SD card slot is "". 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-IPC1100 is equipped with a CM0Lite.
- When the ED-IPC1100 uses a CM0 with 8GB or 16GB eMMC, the Micro SD card slot is a non-functional interface.

1.6.1.2 Nano SIM Card Slot

The silkscreen on the case of Nano SIM card slot is "", and is used to install a Nano SIM card for obtaining a 4G signal.

1.6.2 Power Interface

The ED-IPC1100 device features one power input interface using a DC Jack connector, with the interface silkscreened as "DC IN". It supports a power input range of 9V to 28V.

TIP

It is recommended to use a 12V 2A power adapter.

1.6.3 RS485 Interface

The ED-IPC1100 device includes one RS485 interface using a 3-pin 3.5mm pitch Phoenix terminal connector, silkscreened as "GND/A/B", which supports connection with third-party controllers.

Pin Definition

Terminal pins are defined as follows:

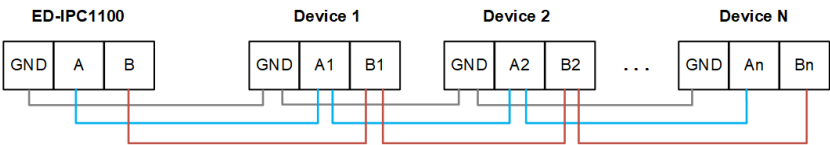
	Pin ID	Pin Name
	1	GND
	2	RS485-A
	3	RS485-B

The pin names corresponding to the RS485 interface on the CM0 are as follows:

Signal	CM0 Pin Out
RS485-A	GPIO14
RS485-B	GPIO15

Connecting Cables

Schematic diagram of RS485 wires is as follows:




RS485 Terminal Resistance Configuration

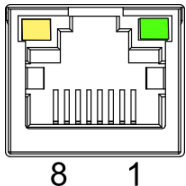
The ED-IPC1100 device includes one RS485 interface with a pre-installed 120Ω termination resistor between the A and B lines of the RS485 circuit. Inserting a jumper cap enables this termination resistor. By default, the jumper cap is not installed, rendering the 120Ω termination function inactive. The location of the termination resistor on the PCBA is marked as J10.

TIP

Opening the device case is required to access the location of the 120Ω termination resistor.

1.6.4 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	-

1.6.5 HDMI Interface

The ED-IPC1100 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.

1.6.6 USB 2.0 Interface

The ED-IPC1100 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.

1.6.7 Type-C USB Interface

The ED-IPC1100 device includes one Type-C USB interface, silkscreened as "PROGRAMMING", which supports flashing the device's eMMC by connecting to a PC.

1.6.8 Antenna Interface

The ED-IPC1100 device includes two SMA antenna interfaces, silkscreened as "4G" and "WiFi/BT" respectively, which are used to connect the 4G antenna and the Wi-Fi/BT antenna accordingly.

2 Installing Components (optional)

This chapter describes how to install optional components.

2.1 Install Antenna

The ED-IPC1100 device supports both 4G and Wi-Fi functionality, and antennas must be installed before using the device.

Preparation:

The corresponding antenna(s) have been obtained from the packaging box. If multiple antennas are included, they can be distinguished by the labels on the antennas.

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

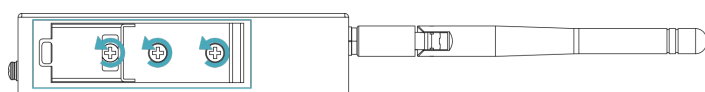
Please turn off the power before inserting or removing the Micro SD card.

Preparation:

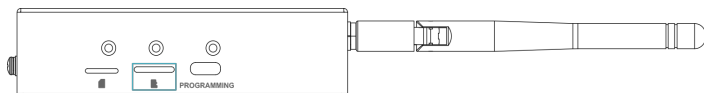
- Micro SD card is ready.
- The device has been disconnected from power.

Steps:

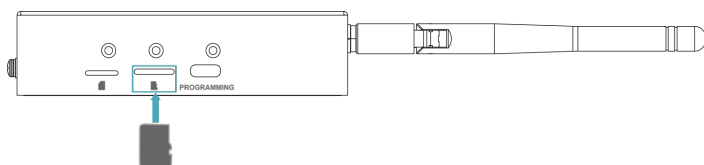
1. Use a Phillips screwdriver to turn the three screws on the DIN rail bracket counterclockwise and remove the default DIN rail bracket.



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



3. 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.



4. Install the DIN rail bracket onto the device.

2.3 Install Nano SIM Card

The ED-IPC1100 device includes 4G functionality by default. Before using the 4G feature, a Nano SIM card must be installed.

NOTE

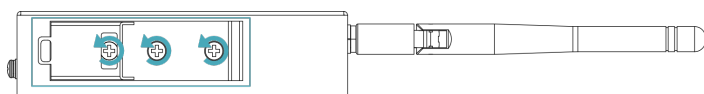
Please turn off the power before inserting or removing the Nano SIM card.

Preparation:

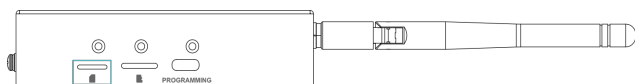
- Nano SIM card is ready.
- The device has been disconnected from power.

Steps:

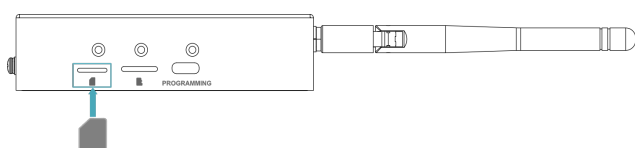
1. Use a Phillips screwdriver to turn the three screws on the DIN rail bracket counterclockwise and remove the default DIN rail bracket.



2. Find the location of Nano SIM card slot, as indicated in the figure below.



3. Insert the Nano SIM card with the contact side facing down into the corresponding slot. A click sound indicates that the installation is complete.



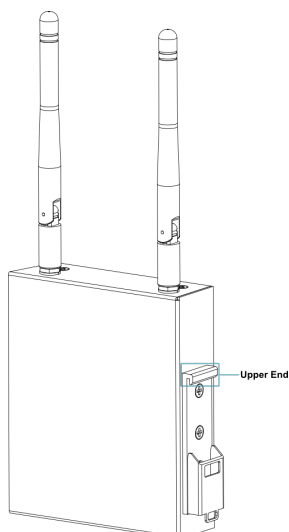
4. Install the DIN rail bracket onto the device.

3 Installing Device

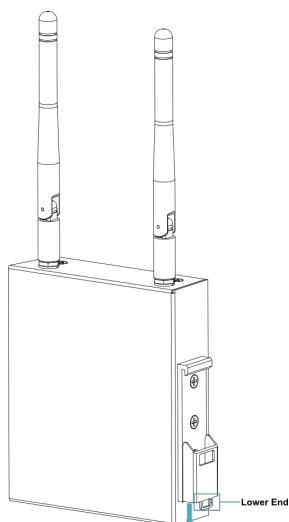
The ED-IPC1100 supports DIN rail installation and comes pre-installed with a DIN rail mounting bracket as standard.

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.



4 Booting the Device

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

4.1 Connecting Cables

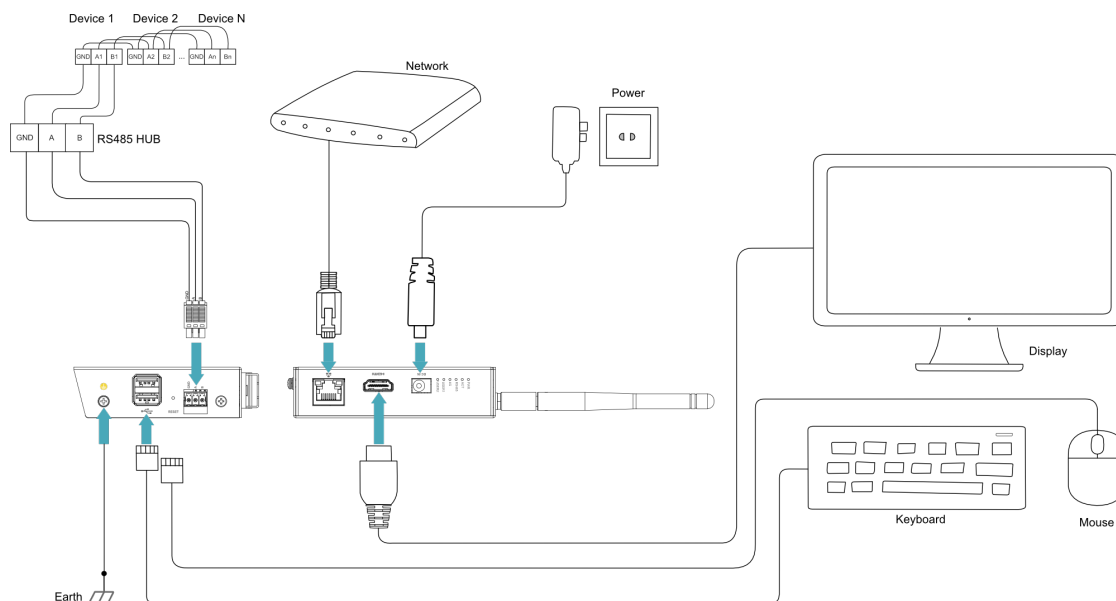
This section describes how to connect cables.

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-IPC1100 device are not equipped with a power switch. The system will begin to start once power is connected.

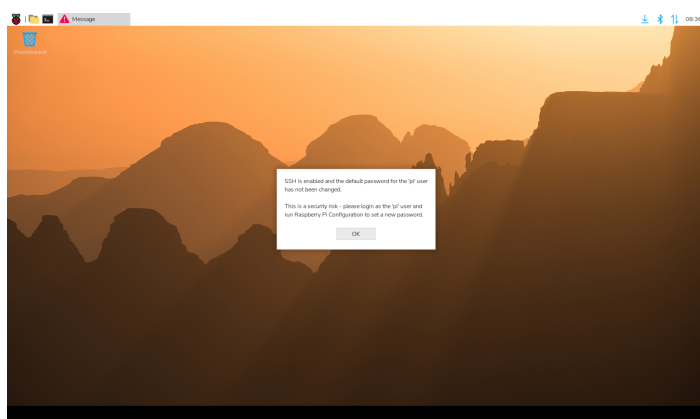
- The red PWR indicator is on, indicating that the device has been powered normally.
- The green ACT indicator is blinking, indicating that the system is started normally, and then the logo of Raspberry Pi will appear in the upper left corner of the screen.

TIP

Default username is `pi` , Default password is `raspberrypi` .

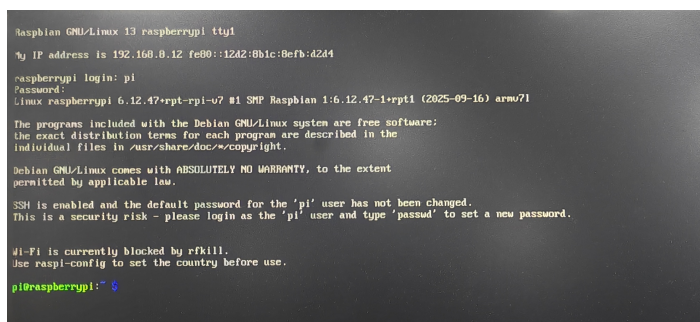
4.2.1 Raspberry Pi OS (Desktop)

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 `raspberrypi` . 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

Configuring Wi-Fi

5.6 Configuring Bluetooth

Configuring Bluetooth

5.7 Configuring 4G

The ED-IPC1100 device has 4G functionality enabled by default. When a user inserts a SIM card and powers on the device, the 4G network will automatically connect.

5.7.1 Scenarios Without APN Configuration

If the user's 4G network does not require APN configuration, the 4G network status can be checked by following the steps below.

Preparation:

- The ED-IPC1100 device has started up normally.
- A Nano SIM card with 4G network capability has been correctly installed into the SIM card slot of the ED-IPC1100.

NOTE

Please turn off the power before inserting or removing the Nano SIM card.

Steps:

1. Open the command window and execute the following command to check if the 4G network is connected.

```
ifconfig
```

sh

The returned information is as shown in the figure below (the usb0 interface indicates the 4G interface):

```
pi@raspberrypi:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.8.20 netmask 255.255.255.0 broadcast 192.168.8.255
    inet6 fe80::732e:31bc:ae26:f477 prefixlen 64 scopeid 0x20<link>
    ether 00:e0:9a:1b:05:24 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

usb0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.191.34.79 netmask 255.0.0.0 broadcast 10.255.255.255
    inet6 fe80::c704:40cc:227f:72b6 prefixlen 64 scopeid 0x20<link>
    ether ae:0c:29:a3:9b:6d txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

wlan0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    ether 8c:1f:64:34:a0:04 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

- If the usb0 interface in the returned information displays a specific IP address, it indicates that the 4G network is connected.
- If the usb0 interface in the returned information does not display a specific IP address, it indicates that the 4G network is not connected.

2. Execute the following command to query the status of the 4G service.

```
sudo systemctl status ed-ec800m.service
```

sh

The returned information is as shown in the figure below:

```

pi@raspberrypi:~$ sudo systemctl status ed-lte-daemon.service
● ed-lte-daemon.service - EDATEC QML Reconnect service
   Loaded: loaded (/lib/systemd/system/ed-lte-daemon.service; enabled; preset: enabled)
   Active: active (running) since Fri 2025-09-19 03:24:01 BST; 42min ago
     Main PID: 541 (ed-lte-tool)
        Tasks: 7 (limit: 178)
           CPU: 2.298s
   CGroup: /system.slice/ed-lte-daemon.service
           └─ 541 /usr/local/bin/ed-lte-tool --daemon
              └─ 2911 quectel-QM -4

Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< OK
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT> AT+QNETDEVCTL?
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< +QNETDEVCTL: 1,1,1,1
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< OK
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT> AT+CGACT?
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< +CGACT: 1,1
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< OK
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT> AT+CGPADDR=1
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< +CGPADDR: 1,"10.191.34.79"
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< OK

```

- If the information at the marked position in the returned message shows "Active: active (running)", it indicates that the 4G status is normal.
- If the information at the marked position in the returned message shows "Active: inactive (dead)", it indicates that the 4G status is abnormal.

5.7.2 Scenarios With APN Configuration

If the user's 4G network requires APN configuration, it can be configured by following the steps below.

Preparation:

- The ED-IPC1100 device has started up normally.
- A Nano SIM card with 4G network capability has been correctly installed into the SIM card slot of the ED-IPC1100.
- The APN name, username, and password have been obtained. The following information is used as an example:
 - APN name: APN1
 - Username: admin
 - Password: admin

NOTE

Please turn off the power before inserting or removing the Nano SIM card.

Steps:

1. Open the command window and execute the following commands in sequence to open the `ed-qml.conf` configuration file.

```

cd /etc/
sudo nano ed-qml.conf

```

sh

2. Configure the "apn", "apn_user", and "apn_password" in the "APN Config" section as needed.

```

GNU nano 8.4                                     ed-qml.conf
reset_pin=0
lte_led_pin=4

## APN CONFIG
# apn=
# apn_user=
# apn_password=
# auth: 1~pap(default), 2~chap, 3~MsChapV2
# apn_auth=1

# Network
# Use the ping server method to check if the device is online.
# ping_server=edatec.cn
# Customize your own monitoring online services:
# exit 0 - online;
# exit non-zero - offline;
# online_script=
interface=usb0
# interval time(Second) and greater than 0, Default 60s
# intervaltime=60
dev=/dev/ttyUSB2
# Use Quectel auto dial: 1~enable(default), 0~disable
quectel_auto_dial=1

```

TIP

The "ping_server" and "online_script" in the "Network" section also support user configuration as needed.

3. Type `ctrl+o` to save the file, then press `Enter`, and finally type `ctrl+x` to exit the file editing mode.
4. Open the command window and execute the following command to check if the 4G network is connected.

```
ifconfig
```

```
sh
```

The returned information is as shown in the figure below (the usb0 interface indicates the 4G interface):

```

pi@raspberrypi:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.8.20 netmask 255.255.255.0 broadcast 192.168.8.255
    inet6 fe80::732e:31bc:ae26:f477 prefixlen 64 scopeid 0x20<link>
    ether 00:e0:9a:1b:05:24 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

usb0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.191.34.79 netmask 255.0.0.0 broadcast 10.255.255.255
    inet6 fe80::c704:40cc:227f:72b6 prefixlen 64 scopeid 0x20<link>
    ether ae:0c:29:a3:9b:6d txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

wlan0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    ether 8c:1f:64:34:a0:04 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

```

- If the usb0 interface in the returned information displays a specific IP address, it indicates that the 4G network is connected.
- If the usb0 interface in the returned information does not display a specific IP address, it indicates that the 4G network is not connected.

5. Execute the following command to query the status of the 4G service.

```
sudo systemctl status ed-ec800m.service
```

sh

The returned information is as shown in the figure below:

```

pi@raspberrypi:~$ sudo systemctl status ed-lte-daemon.service
● ed-lte-daemon.service - EDATEC OML Reconnect service
   Loaded: loaded (/lib/systemd/system/ed-lte-daemon.service; enabled; preset: enabled)
   Active: active (running) since Fri 2025-09-19 03:24:01 BST; 42min ago
     Main PID: 541 (ed-lte-tool)
        Tasks: 2 (limit: 178)
           CPU: 2.298s
   CGroup: /system.slice/ed-lte-daemon.service
           └─ 541 /usr/local/bin/ed-lte-tool --daemon
             2911 quectel-OM --d

Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< OK
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT> AT+QNETDEVCTL?
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< +QNETDEVCTL: 1,1,1,1
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< OK
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT> AT+CGACT?
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< +CGACT: 1,1
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< OK
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT> AT+CGPADDR=1
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< +CGPADDR: 1,"10.191.34.79"
Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT< OK

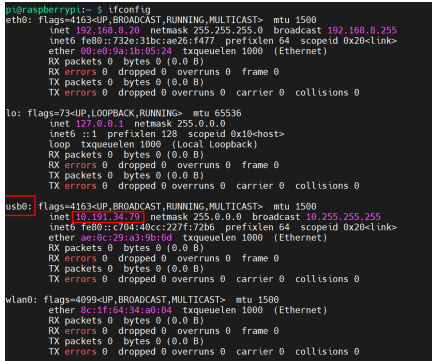
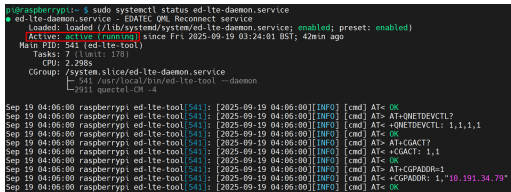
```

- If the information at the marked position in the returned message shows "Active: active (running)", it indicates that the 4G status is normal.
- If the information at the marked position in the returned message shows "Active: inactive (dead)", it indicates that the 4G status is abnormal.

5.7.3 Basic Configuration Commands

If the 4G network cannot be connected, use the following commands for querying and configuration.

Command	Description
ifconfig	

Command	Description
	<p>Check whether the 4G network is connected, where the usb0 interface indicates the 4G interface, as shown in the figure below.</p>  <pre> pi@raspberrypi:~\$ ifconfig eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500 inet 192.168.0.20 netmask 255.255.255.0 broadcast 192.168.0.255 inet6 fe80::732e:3bce:ae26:1477 prefixlen 64 scopeid 0x20<link> ether 00:0d:58:1b:05:24 txqueuelen 1000 (Ethernet) RX packets 0 bytes 0 (0.0 B) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 0 bytes 0 (0.0 B) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536 inet 127.0.0.1 netmask 255.0.0.0 inet6 ::1 prefixlen 128 scopeid 0x10<host> loop txqueuelen 1000 (local loopback) RX packets 0 bytes 0 (0.0 B) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 0 bytes 0 (0.0 B) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 usb0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500 inet 10.191.34.79 netmask 255.0.0.0 broadcast 10.255.255.255 inet6 fe80::c045:44cc:22f1:7206 prefixlen 64 scopeid 0x20<link> ether 0c:29:a3:9b:6d txqueuelen 1000 (Ethernet) RX packets 0 bytes 0 (0.0 B) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 0 bytes 0 (0.0 B) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 wlan0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500 ether 8c:1f:64:a0:04 txqueuelen 1000 (Ethernet) RX packets 0 bytes 0 (0.0 B) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 0 bytes 0 (0.0 B) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 </pre> <ul style="list-style-type: none"> • If the usb0 interface in the returned information displays a specific IP address, it indicates that the 4G network is connected. • If the usb0 interface in the returned information does not display a specific IP address, it indicates that the 4G network is not connected.
sudo systemctl status ed-ec800m.service	<p>Query the status of the 4G service, as shown in the figure below.</p>  <pre> pi@raspberrypi:~\$ sudo systemctl status ed-lte-demon.service ● ed-lte-demon.service - EDATEC 4G Reconnect service Loaded: loaded (/lib/systemd/system/ed-lte-demon.service; enabled; preset: enabled) Active: active (running) since Fri 2025-09-19 03:24:01 BST; 42min ago Main PID: 541 (ed-lte-tool) Tasks: 7 (limit: 179) CPU: 2.296s CGroup: /system.slice/ed-lte-demon.service └─ 541 /usr/local/bin/ed-lte-tool --daemon └─ 541 /usr/local/bin/ed-lte-tool --daemon Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT+OK Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT+ATHOMEDEVCTL? Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT+HOMEDEVCTL: 1,1,1,1 Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT+OK Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT+CGACT? Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT+CGACT: 1,1 Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT+OK Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT+CGPADDR=1 Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT+CGPADDR: 1,"10.191.34.79" Sep 19 04:06:00 raspberrypi ed-lte-tool[541]: [2025-09-19 04:06:00][INFO] [cmd] AT+OK </pre> <ul style="list-style-type: none"> • If the information at the marked position in the returned message shows "Active: active (running)", it indicates that the 4G status is normal. • If the information at the marked position in the returned message shows "Active: inactive (dead)", it indicates that the 4G status is abnormal.
sudo systemctl enable ed-ec800m.service	Enable 4G Service
sudo systemctl start ed-ec800m.service	Start 4G Service
sudo systemctl stop ed-ec800m.service	Stop 4G Service
pinctl set 0 op dh && sleep 0.3 && pinctl set 0 op dl	Reset 4G Module (Chinese Version and EU Version) - The reset pin of the 4G module is GPIO0
pinctl set 0 op dh && sleep 0.1 && pinctl set 1 op dh && sleep 0.2 && pinctl set 0 op dl && sleep 0.5 && pinctl set 1 op dl	Reset 4G Module (US Version) - The reset pin of the 4G module is GPIO0

If the 4G service status is found to be abnormal when the 4G port connection is normal, you can enable and then start the 4G service sequentially.

5.8 Configuring RTC

Configuring RTC

5.8 Configuring Serial Port

Introduce the configuration method for RS485.

5.8.1 Installing Picocom Tool

In a Linux environment, you can use the picocom tool to debug the RS485 serial port.

Execute the following command to install the picocom tool.

```
sudo apt-get install picocom
```

sh

5.8.2 Configuring RS485

The ED-IPC1100 includes one RS485 interface, and its corresponding COM port and device file are as shown in the following table:

Number of RS485 Interfaces	Corresponding COM Port	Corresponding Device File
1	RS485	/dev/rs485

TIP

RS485 communication supports baud rates from 2400 to 115200.

Preparation:

The connection of the ED-IPC1100's RS485 port to the external device has been completed.

Steps:

1. Disable the serial port login shell.

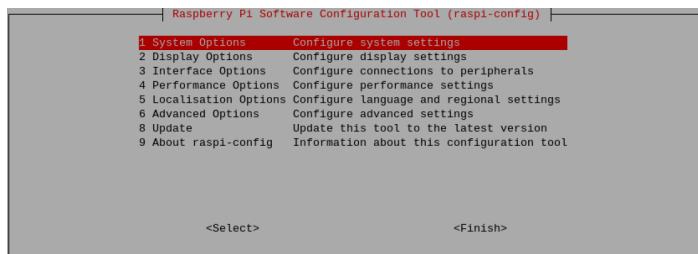
TIP

The RS485 port of the ED-IPC1100 device defaults to serial port login shell. Before sending or receiving data via the serial port, the serial port login shell must be disabled.

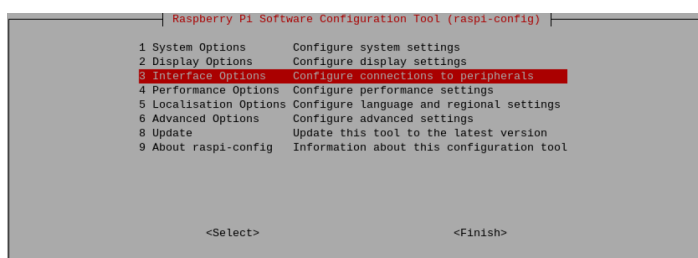
a. Open the command window and execute the following command to launch the configuration tool interface.

```
sudo raspi-config
```

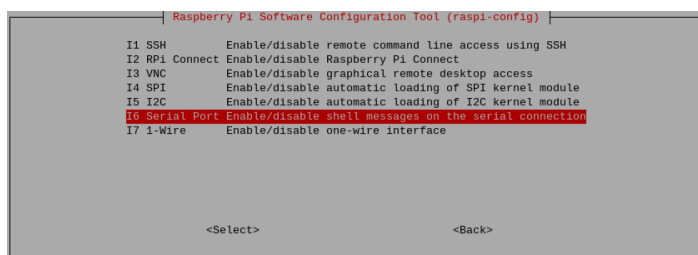
sh



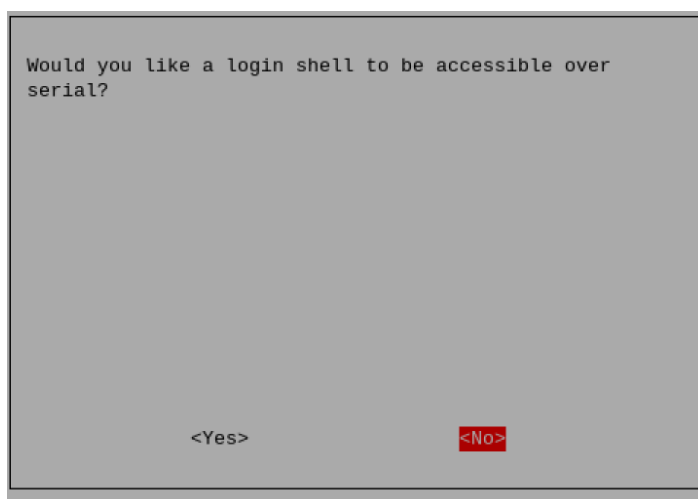
b. Select "Interface Options" from the menu, then press "Enter".



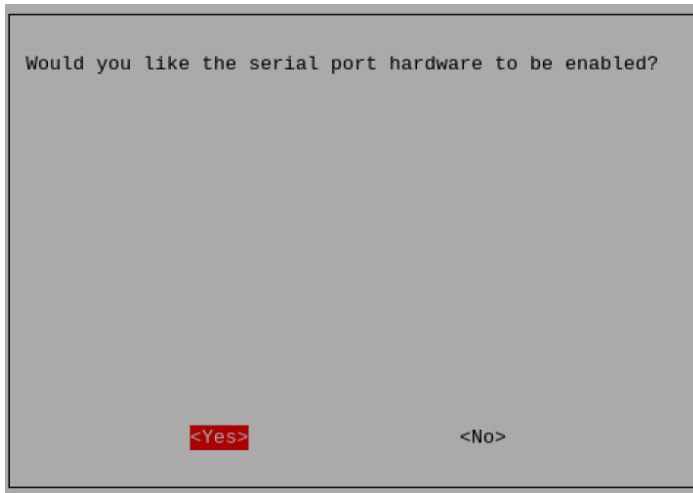
c. Select "Serial Port" from the menu, then press "Enter".



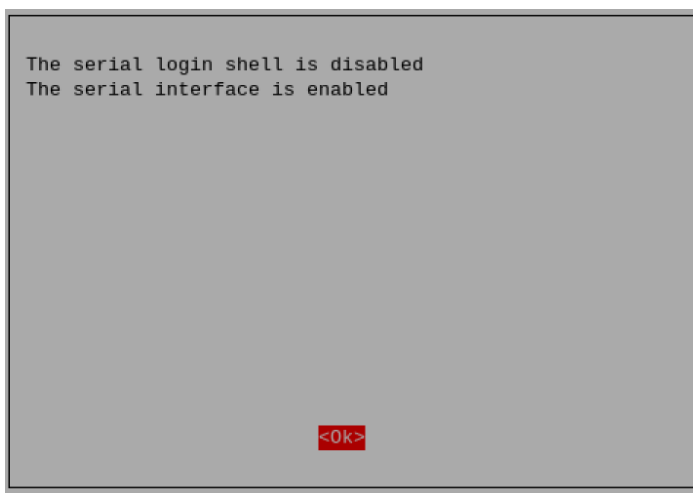
d. Select "No" in the prompt box, then press "Enter".



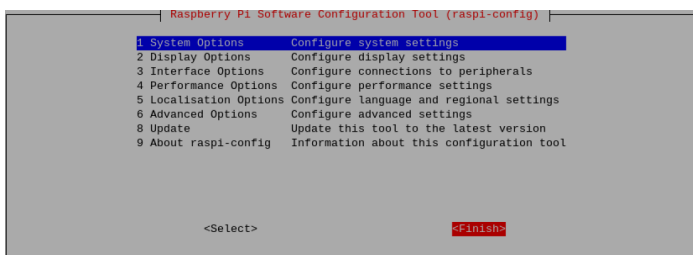
e. Select "Yes" in the prompt box, then press "Enter".



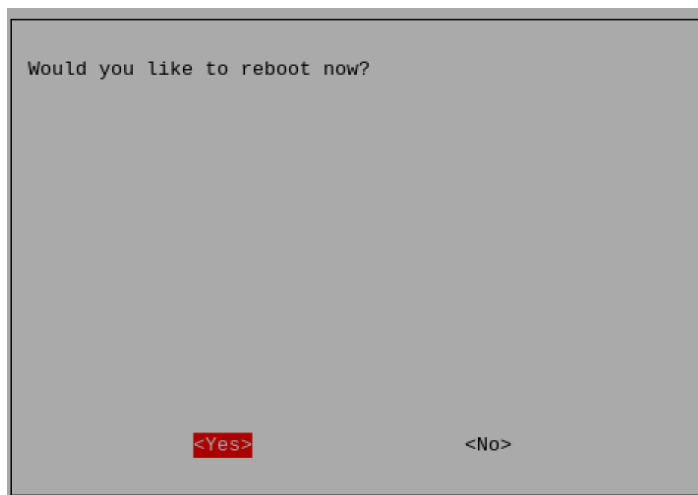
f. Press "Enter" to confirm the settings.



f. Select "Finish" in the configuration tool interface, then press "Enter".



g. Select "Yes" in the prompt box, then press "Enter" to restart the device.



2. Execute the following command to open the RS485 serial port and set the baud rate to 115200.

```
picocom -b 115200 /dev/rs485
```

sh

3. Enter commands as needed to control the external device.

5.9 Configuring USER Indicators

The ED-IPC1100 includes two USER indicators, namely USER1 and USER2, both controlled via GPIO. Their corresponding GPIO pins are listed in the table below:

USER Indicators	Corresponding GPIO
USER1	GPIO5
USER2	GPIO6

- Turn on the USER1 indicator

```
pinctrl set 5 op dl
```

sh

- Turn on the USER2 indicator

```
pinctrl set 6 op dl
```

sh

- Turn off the USER1 indicator

```
pinctrl set 5 op dh
```

sh

- Turn off the USER2 indicator

```
pinctrl set 6 op dh
```

sh

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 \(https://www.raspberrypi.com/software/operating-systems/\)](https://www.raspberrypi.com/software/operating-systems/) .

6.2 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)

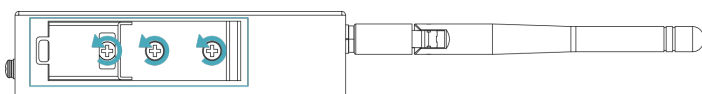
Preparation:

- 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.

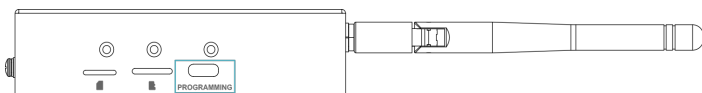
Steps:

The steps are described using Windows system as an example.

1. Use a Phillips screwdriver to turn the three screws on the DIN rail bracket counterclockwise and remove the default DIN rail bracket.



2. Find the location of Type-C USB interface, as indicated in the figure below.



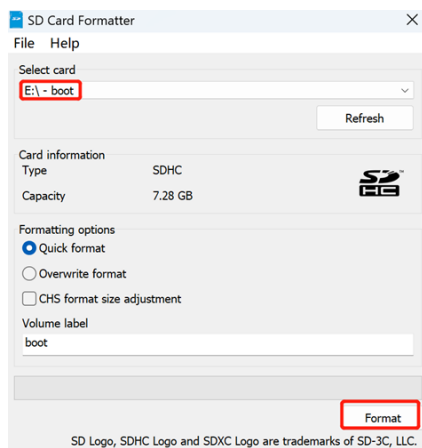
3. Connect the power cable and the USB flashing cable (Type-C USB to USB-A) properly.
 - Connect the USB flashing cable: one end to the Type-C USB interface on the device side, and the other end to the USB interface on the PC.
 - Connect the power cable: one end to the DC Jack terminal on the device side, and the other end to an external power supply.
4. Disconnect the power supply from the ED-IPC1100.
5. Launch the installed `rpiboot` tool to automatically assign a drive letter.

```

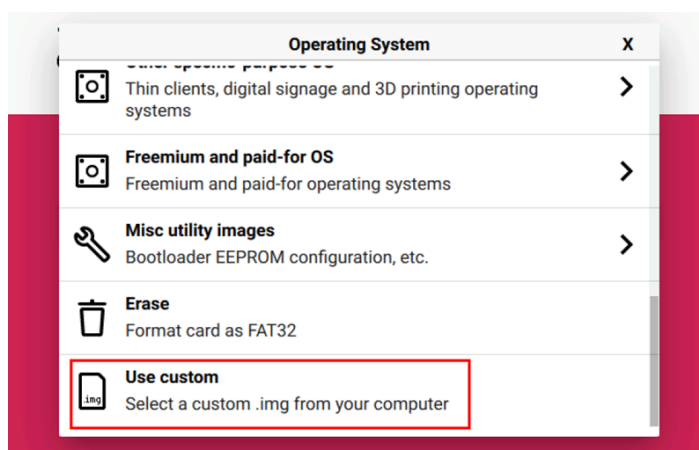
rpiboot
RPiBOOT: build-date Dec 16 2022 version 20221215-105525 1afa26c5
Waiting for BCM2835/6/7/2711...
Loading embedded: bootcode4.bin
Sending bootcode.bin
Successful read 4 bytes
Waiting for BCM2835/6/7/2711...

```

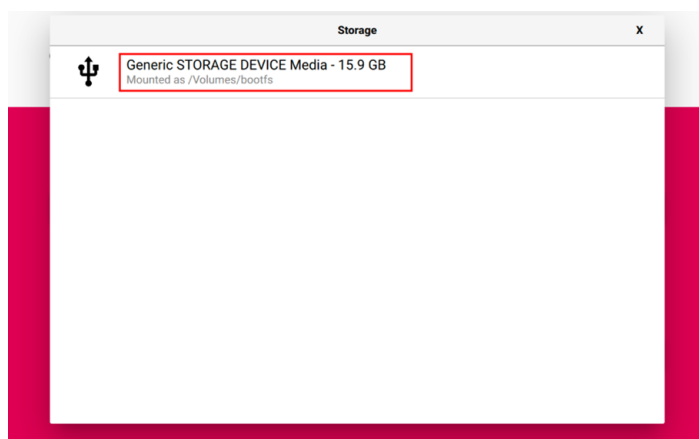
6. After the drive letter assignment is complete, a new drive letter notification will appear in the system tray (bottom-right corner of the computer).
7. Open `SD Card Formatter`, select the drive letter to be formatted, and click "Format" at the bottom right to begin formatting.



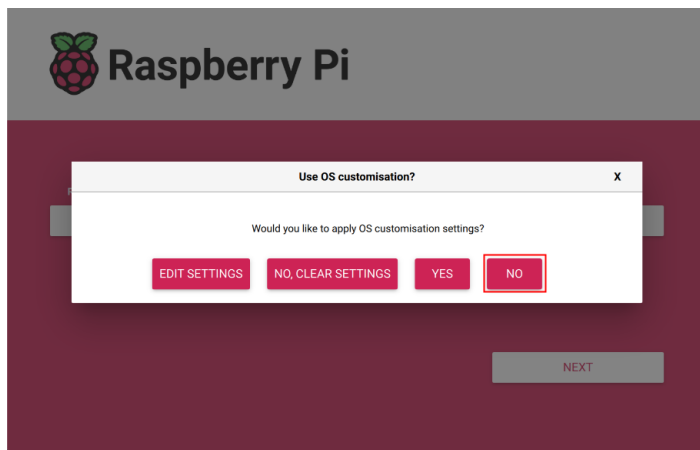
8. In the pop-up dialog box, click "Yes".
9. When the formatting is completed, click "OK" in the prompt box.
10. Close **SD Card Formatter**.
11. Open **Raspberry Pi Imager**, select "CHOOSE OS" and select "Use Custom" in the pop-up pane.



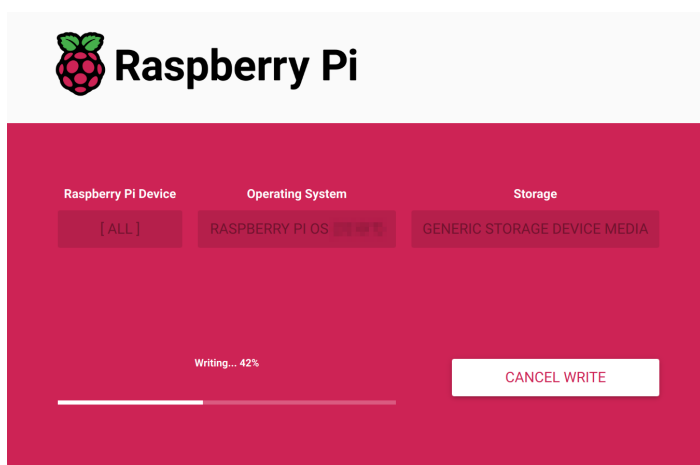
12. According to the prompt, select the OS file under the user-defined path and return to the main page.
13. Click "CHOOSE STORAGE", select the default device in the "Storage" interface, and return to the main page.



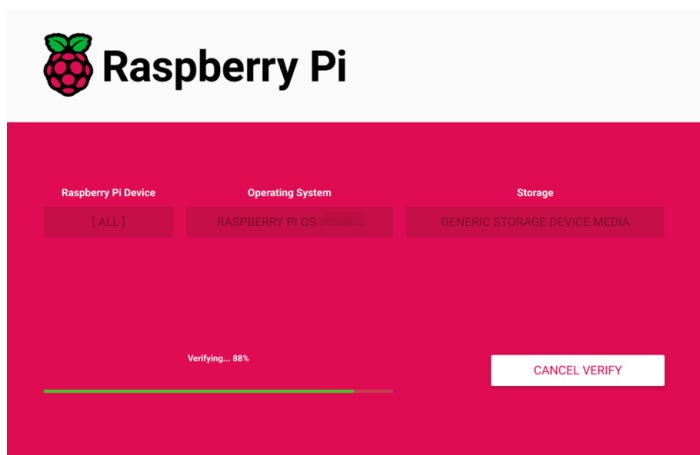
14. Click "NEXT", select "NO" in the pop-up "Use OS customization?" pane.



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



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



17. After the verification is completed, click “CONTINUE” in the pop-up “Write Successful” box.

18. Close **Raspberry Pi Imager**, disconnect the USB flashing cable,

19. Install the DIN rail bracket onto the device and finally repower the ED-IPC1100.

6.3 Installing Firmware Package

After you have finished flashing image on ED-IPC1100, 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-IPC1100 has booted normally and the required startup configuration has been finalized.

Steps:

1. After the ED-IPC1100 starts normally, execute the following commands in the command pane to add the edatec apt source and installing firmware package.

```
curl -s https://apt.edatec.cn/bsp/ed-install.sh | sudo bash -s ipc1100
```

sh

```
pi@raspberrypi:~$ curl -s https://apt.edatec.cn/bsp/ed-install.sh | sudo bash -s ipc1100
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
--2025-09-28 11:25:24-- https://apt.edatec.cn/bsp/splash.png
Resolving apt.edatec.cn (apt.edatec.cn)... 47.242.199.148
Connecting to apt.edatec.cn (apt.edatec.cn):47.242.199.148:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 36009 (35K) [image/png]
Saving to: '/tmp/eda-common/eda/splash.png'

/tmp/eda-common/eda/splash.png 100%[=====] 35.17K --KB/s in 0.02s
2025-09-28 11:25:25 (1.48 MB/s) - '/tmp/eda-common/eda/splash.png' saved [36009/36009]

--2025-09-28 11:25:25-- https://apt.edatec.cn/pubkey.gpg
Resolving apt.edatec.cn (apt.edatec.cn)... 47.242.199.148
Connecting to apt.edatec.cn (apt.edatec.cn):47.242.199.148:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1635 (1.6K) [application/octet-stream]
Saving to: '/tmp/eda-common/eda/edatec.gpg'

/tmp/eda-common/eda/edatec.gpg 100%[=====] 1.60K --KB/s in 0s
2025-09-28 11:25:25 (9.99 MB/s) - '/tmp/eda-common/eda/edatec.gpg' saved [1635/1635]

deb https://apt.edatec.cn/raspbian stable main
Hit:1 http://deb.debian.org/debian bookworm InRelease
Hit:2 https://apt.edatec.cn/raspbian stable InRelease
Hit:3 http://deb.debian.org/debian-security bookworm-security InRelease
Hit:4 http://deb.debian.org/debian bookworm-updates InRelease
Hit:5 http://archive.raspberrypi.com/debian bookworm InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
11 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ed-sbc1100-firmware is already the newest version (1.20250913.1).
ed-qmi-tool is already the newest version (1.20250913.2).
ed-usb-tools is already the newest version (1.20250912).
ed-lvd is already the newest version (1.20250903.1).
```

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

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

sh

```
pi@raspberrypi:~$ dpkg -l | grep ed-
ii ed-lvd 1.20250903.1 all LVD detect service
ii ed-qmi-tool 1.20250913.2 all EDATEC Quectel QMI Software Package
ii ed-reboot 1.20250704.1 all Add set-timeout-override.service to adjust systemd timeouts.
ii ed-rtc 1.20250620.1 all RTC auto load and sync service for EDATEC products
ii ed-sbc1100-firmware 1.20250913.1 all Firmware of EDATEC Software Package
ii ed-usb-tools 1.20250912 all detect and auto reset usb
ii libparted-fs-resize0:arm64 3.5-3 arm64 disk partition manipulator - shared FS resizing lib
rmy
ii libshine3:arm64 3.1.1-2 arm64 Fixed-point MP3 encoding library - runtime files
ii shared-mime-info 2.2-1 arm64 FreeDesktop.org shared MIME database and spec
ii usr-is-merged 37~deb12u1 all Transitional package to assert a merged-/usr system
pi@raspberrypi:~$
```

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.