4G LTE Connection Management Tool

User Guide

by EDA Technology Co., Ltd

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1 Overview

This document introduces the development background of the 4G LTE Connection Management Tool and its applicable product range.

1.1 Background

To address the issue where ED-IPC and ED-HMI series products fail to automatically reconnect after a 4G network disconnection, leading to network instability, EDATEC has developed the 4G LTE Connection Management Tool — referred to as ed-clte based on Raspberry Pi OS, helping to simplify and enhance 4G network management capabilities.

The ed-clte is a complete 4G network management solution comprising four core components:

Component	Description
ed-lte-tool	Main command-line tool providing module information query, signal detection, reset, dial-up, and daemon functions.
ed-net-monitor	Independent network priority monitoring process that detects network interface status in real time and dynamically adjusts routing priorities.
ed-net-priority	Auxiliary script for manually setting routing metric values for network interfaces, supporting both level-based (1–14) and absolute metric modes.
ed-lte	Low-level QMI dial-up wrapper script that invokes quectel-CM to perform actual dial-up and disconnection operations.

The ed-clte provides core functionalities including automatic dial-up and reconnection, two-level heartbeat detection, multi-level fault tolerance recovery, backup mode switching, network priority management, LED status indication, and SIM PIN management.

- Automatic Dial-up and Reconnection: The daemon continuously monitors the module status and automatically initiates reconnection upon disconnection.
- Two-Level Heartbeat Detection: Combines local IP/process detection with remote DNS Ping for fast and accurate fault determination.
- Multi-Level Fault Tolerance Recovery: Executes CFUN software recovery, hardware reset, and timed hardware reset in sequence, progressively escalating recovery measures.
- Backup Mode Switching: Automatically enables the `AT+QNETDEVCTL=3,1,1` backup mode under ECM mode to bypass `quectel-CM`.
- Network Priority Management: Supports configuring interface priority by level (1-14), with downgrade persistence and automatic fallback when high-priority networks recover.
- LED Status Indication: Supports single-color/dual-color LEDs to intuitively display module registration status and signal strength.
- SIM PIN Management: Supports automatic SIM card PIN unlocking, with a built-in protection mechanism limiting attempts to a maximum of 3 to prevent card locking.
- Online Detection: Supports Ping detection against multiple DNS servers and allows integration of user-defined online detection scripts.

- Module Auto-Detection: Automatically matches default configurations such as reset GPIO, LED, and serial port based on the installed BSP package.

The ed-clte supports direct operation via command line and also allows users to modify configuration files to customize parameters such as LED, module reset, APN, network detection conditions, and network priority.

> TIP
>
> - The software name of the old version of the 4G LTE connection management tool was ed-qmi-tool, and it was changed to ed-clte starting from version V2.0.4.
> - The ed-clte uses Quectel QMI dial-up by default.
> - All devices with 4G functionality shipped from the factory come pre-installed with the ed-clte.
> - The ed-clte will undergo continuous development and updates.

1.2 Scope of Application

The ed-clte tool is applicable to all ED-IPC, ED-HMI, and ED-SBC series products with 4G functionality. The specific models are as follows:

Series	Product Models
ED-IPC Series	ED-IPC1100, ED-IPC1200, ED-IPC1220 ED-IPC2100, ED-IPC2200, ED-IPC2600 ED-IPC3100, ED-IPC3200, ED-IPC3600 ED-CM4SEN, ED-CM4IND, ED-CM4MEDIA
ED-HMI Series	ED-HMI2120-070C, ED-HMI2120-101C ED-HMI2220-070C, ED-HMI2220-101C ED-HMI2630-101C ED-HMI3120-070C, ED-HMI3120-101C, ED-HMI3120-116C, ED-HMI3120-133C, ED-HMI3120-156C, ED-HMI3120-185C, ED-HMI3120-215C ED-HMI3630-101C, ED-HMI3630-116C, ED-HMI3630-133C, ED-HMI3630-156C
ED-SBC Series	ED-SBC2300 ED-SBC3300

2 Installation

The ed-clte is pre-installed by default in the OS of devices with 4G functionality shipped from our factory, and users can use it directly. If a new version of the ed-clte is released and an upgrade is required, please refer to the instructions below for installation.

> TIP
>
> - If the old version of the 4G LTE connection management tool has been installed, please manually uninstall it first, then install the new version.
> - The package name for older versions was ed-qmi-tool. The package name was changed to ed-clte starting from V2.0.4.

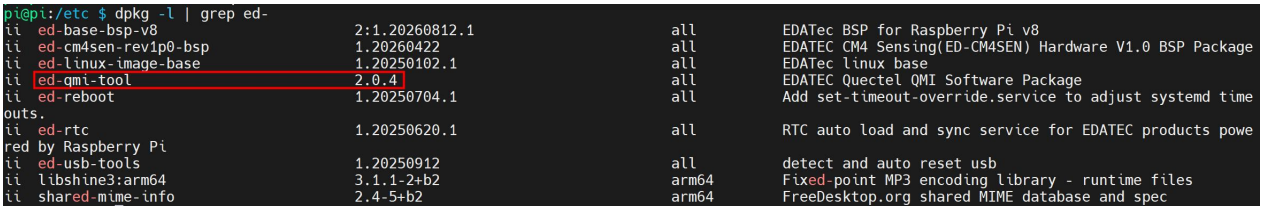
Preparation:

- The 4G module and 4G antenna are properly installed on the device, and a functioning SIM card has been inserted.
- The device has been started normally and connected to the network.

Steps:

1. Log in to the device and open a terminal window.
2. Execute the following command to check whether an older version of the ed-clte is installed. The presence of the content shown in the red box in the image below (name: ed-qmi-tool, version 2.0.4 or lower) indicates that an older version is installed.

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



3. Execute the following command to uninstall the old version of the package.

```sh
sudo apt purge ed-qmi- -y
```

4. Execute the following commands sequentially in the terminal to add the `edatec apt` source.

```sh
curl -sS https://apt.edatec.cn/pubkey.gpg | sudo gpg --dearmor -o /etc/apt/trusted.gpg.d/edate
echo "deb https://apt.edatec.cn/raspbian stable main" | sudo tee /etc/apt/sources.list.d/edate
sudo apt update
```

> NOTE
>
> When copying commands directly, if line breaks appear after pasting, please remove the line breaks and insert a space in their place.

```
pi@ :/etc $ curl -sS https://apt.edatec.cn/pubkey.gpg | sudo gpg --dearmor -o /etc/apt/trusted.gpg.d/edatec-archive-stable.gpg
File '/etc/apt/trusted.gpg.d/edatec-archive-stable.gpg' exists. Overwrite? (y/N) y
pi@ :/etc $ echo "deb https://apt.edatec.cn/raspbian stable main" | sudo tee /etc/apt/sources.list.d/edatec.list
deb https://apt.edatec.cn/raspbian stable main
pi@ :/etc $ sudo apt update
Hit:1 http://archive.raspberrypi.com/debian trixie InRelease
Get:2 https://apt.edatec.cn/raspbian stable InRelease [3,246 B]
Get:3 https://apt.edatec.cn/raspbian stable/main arm64 Packages [22.1 kB]
Get:4 https://apt.edatec.cn/raspbian stable/main armhf Packages [12.6 kB]
Hit:5 http://raspbian.raspberrypi.com/raspbian trixie InRelease
Fetched 37.9 kB in 2s (23.2 kB/s)
173 packages can be upgraded. Run 'apt list --upgradable' to see them.
```

5. Execute the following commands sequentially to install the **ed-clte **.

```sh
sudo apt install ed-clte -y
```

```
pi@ :/etc $ sudo apt install ed-clte -y
Installing:
  ed-clte

Summary:
  Upgrading: 0, Installing: 1, Removing: 0, Not Upgrading: 173
  Download size: 4,194 kB
  Space needed: 17.5 MB / 4,358 MB available

Get:1 https://apt.edatec.cn/raspbian stable/main armhf ed-clte all 2.0.4 [4,194 kB]
Fetched 4,194 kB in 1s (3,017 kB/s)
Selecting previously unselected package ed-clte.
(Reading database ... 68971 files and directories currently installed.)
Preparing to unpack .../archives/ed-clte_2.0.4_all.deb ...
Unpacking ed-clte (2.0.4) ...
Setting up ed-clte (2.0.4) ...
```

6. Execute the following command to verify whether the **ed-clte ** has been successfully installed. A successful installation is indicated by the content shown in the red box in the image below.

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

```
pi@ipc1220:/etc $ dpkg -l | grep ed-
ii  ed-adc                          1.20260604.1          all          EDATEC ADC ibrary
ii  ed-base-bsp-v8                  2:1.20260528.1        all          EDATec BSP for Raspberry Pi v8
ii  ed-clte                         2.0.4                 all          EDATEC Quectel QMI Software Package
ii  ed-ipc1220-firmware             1.20260617.1          all          Firmware of EDATEC Software Package
ii  ed-mgmt                         1.20260410-1          all          Command line management tools, support various functions to open and configure
ii  ed-wk2xxx-uart-firmware         1.20260310.1          all          Firmware of EDATEC Software Package
ii  shared-mime-info                2.4-5                 armhf        FreeDesktop.org shared MIME database and spec
```

7. After installation, execute the following commands sequentially to start and enable the network connection service.

```sh
sudo systemctl start ed-lte-daemon.service
sudo systemctl enable ed-lte-daemon.service
```

3 Configuring the Network

This chapter describes how to connect to the network and configure various network parameters using the ed-clte.

3.1 Connecting to the Network

Select the appropriate connection method based on whether your network requires APN configuration.

3.1.1 Scenario Without APN Configuration

After installing the ed-clte, if your 4G network does not require APN configuration, the network will connect automatically. You can confirm the network status by following the steps below.

Preparation:

- The device has been started normally.
- The SIM card has been correctly installed into the SIM card slot.

> NOTE
>
> Hot-swapping of the SIM card is not supported.

Steps:

1. Open a terminal window and execute the following command to check whether the 4G port is connected.

```sh
ifconfig
```

The returned information is shown in the figure below (the wwan0 or usb0 port indicates the 4G port):

```
pi@pi:~ $ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.8.3  netmask 255.255.255.0  broadcast 192.168.8.255
        inet6 fe80::722e:a0c0:893b:dd23  prefixlen 64  scopeid 0x20<link>
        ether 88:a2:9e:83:42:d1  txqueuelen 1000  (Ethernet)
        RX packets 7105  bytes 2472699 (2.3 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 927  bytes 69308 (67.6 KiB)
        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 72  bytes 7073 (6.9 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 72  bytes 7073 (6.9 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

wlan0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.2.193  netmask 255.255.255.0  broadcast 192.168.2.255
        inet6 fe80::d250:e80f:a8e5:9c13  prefixlen 64  scopeid 0x20<link>
        ether 88:a2:9e:83:42:d2  txqueuelen 1000  (Ethernet)
        RX packets 19383  bytes 2256926 (2.1 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 164  bytes 26085 (25.4 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

wwan0: flags=4305<UP,POINTOPOINT,RUNNING,NOARP,MULTICAST>  mtu 1500
        inet 172.21.162.240  netmask 255.255.255.224  destination 172.21.162.240
        inet6 fe80::d4bd:467c:8cbf:2b26  prefixlen 64  scopeid 0x20<link>
        unspec 00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00  txqueuelen 1000  (UNSPEC)
        RX packets 39  bytes 3720 (3.6 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 77  bytes 9353 (9.1 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

- f the wwan0/usb0 port in the returned information shows a specific IP address, the 4G port is connected.
- If the wwan0/usb0 port in the returned information does not show a specific IP address, the 4G port is not connected.

The 4G port name varies by device model, as shown in the table below:

Product Model	4G Port Name
ED-IPC1100、ED-IPC1200、ED-IPC1220	usb0
ED-IPC2100、ED-IPC2200、ED-IPC2600 ED-CM4SEN、ED-CM4MEDIA、ED-CM4IND ED-IPC3100、ED-IPC3200、ED-IPC3600 ED-HMI2120-070C、ED-HMI2120-101C ED-HMI2220-070C、ED-HMI2220-101C ED-HMI2630-101C、ED-HMI3120-070C ED-HMI3120-101C、ED-HMI3120-116C ED-HMI3120-133C、ED-HMI3120-156C ED-HMI3120-185C、ED-HMI3120-215C ED-HMI3630-101C、ED-HMI3630-116C ED-HMI3630-133C、ED-HMI3630-156C ED-SBC2300、ED-SBC3300	wwan0

2. Execute the following command to check the 4G service status and network status.

```sh
sudo systemctl status ed-lte-daemon.service
```

The returned information is shown in the figure below:

```
pi@pi:~ $ sudo systemctl status ed-lte-daemon.service
● ed-lte-daemon.service - EDATEC QML Reconnect service
     Loaded: loaded (/usr/lib/systemd/system/ed-lte-daemon.service; enabled; preset: enabled)
     Active: active (running) since Wed 2026-09-09 11:22:34 CST; 3h 19min ago
 Invocation: cc73337805574e56bc5dcb399657e14f
   Main PID: 1579 (ed-lte-tool)
      Tasks: 5 (limit: 1626)
        CPU: 2min 49.629s
     CGroup: /system.slice/ed-lte-daemon.service
             ├─1579 /usr/local/bin/ed-lte-tool --daemon
             └─1610 quectel-CM -4

Sep 09 13:55:06 pi ed-lte-tool[1579]: [2026-09-09 13:55:06][INFO] Ping: 1.1.1.1 via wwan0 [SUCCESS]
Sep 09 14:00:10 pi ed-lte-tool[1579]: [2026-09-09 14:00:10][INFO] Ping: 1.1.1.1 via wwan0 [SUCCESS]
Sep 09 14:05:14 pi ed-lte-tool[1579]: [2026-09-09 14:05:14][INFO] Ping: 1.1.1.1 via wwan0 [SUCCESS]
Sep 09 14:10:18 pi ed-lte-tool[1579]: [2026-09-09 14:10:18][INFO] Ping: 1.1.1.1 via wwan0 [SUCCESS]
Sep 09 14:15:22 pi ed-lte-tool[1579]: [2026-09-09 14:15:22][INFO] Ping: 1.1.1.1 via wwan0 [SUCCESS]
Sep 09 14:20:26 pi ed-lte-tool[1579]: [2026-09-09 14:20:26][INFO] Ping: 1.1.1.1 via wwan0 [SUCCESS]
Sep 09 14:25:30 pi ed-lte-tool[1579]: [2026-09-09 14:25:30][INFO] Ping: 1.1.1.1 via wwan0 [SUCCESS]
Sep 09 14:30:33 pi ed-lte-tool[1579]: [2026-09-09 14:30:33][INFO] Ping: 1.1.1.1 via wwan0 [SUCCESS]
Sep 09 14:35:37 pi ed-lte-tool[1579]: [2026-09-09 14:35:37][INFO] Ping: 1.1.1.1 via wwan0 [SUCCESS]
Sep 09 14:40:41 pi ed-lte-tool[1579]: [2026-09-09 14:40:41][INFO] Ping: 1.1.1.1 via wwan0 [SUCCESS]
```

- If the information at the marked position reads "Active: active (running)", the 4G service status is normal.
- If the information at the marked position reads "Active: inactive (dead)", the 4G service status is abnormal.
- In the network connection information, if the status is [SUCCESS], network communication is normal.

3.1.2 Scenario With APN Configuration

After installing the ed-clte, if your 4G network requires APN configuration, you can follow the steps below to configure it.

Preparation:

- The device has been started normally.
- The SIM card has been correctly installed into the SIM card slot.
- The APN name, username, and password have been obtained. This document uses the following information as an example.
  - APN Name: APN1
  - Username: admin
  - Password: admin

> NOTE
>
> Hot-swapping of the SIM card is not supported.

Steps:

1. Open a terminal window and execute the following commands sequentially to open the `ed-qml.conf` configuration file.

```sh
cd /etc/
sudo nano ed-qml.conf
```

2. Set the "apn", "apn_user", and "apn_password" in the "APN CONfig" section as needed.



> TIP
>
> When configuring "apn", "apn_user", and "apn_password", delete the `#` character preceding the parameter to enable the configured parameter.

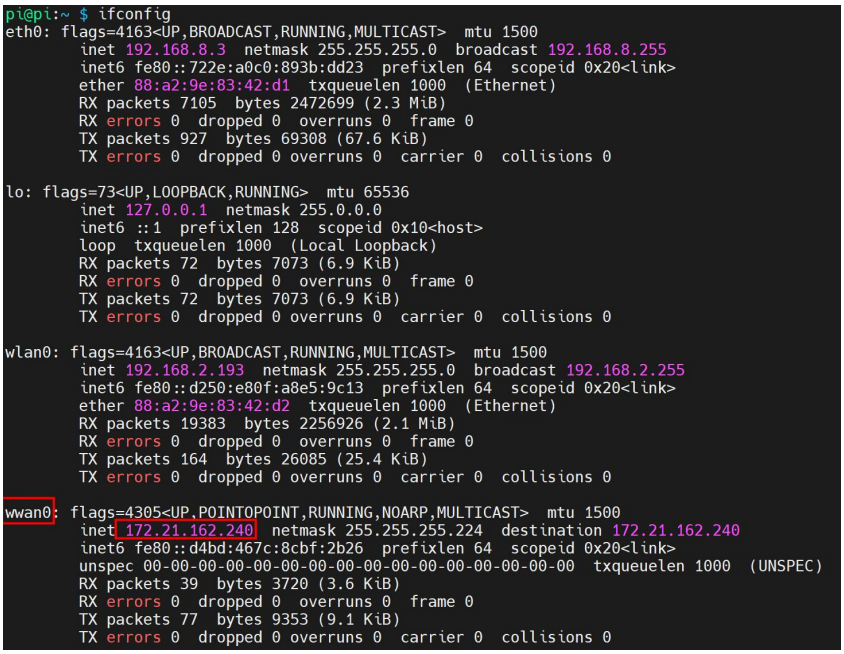
3. Press `ctrl+o` to save the file, then press `Enter`, and finally press `ctrl+x` to exit the file editing mode.
4. Execute the following command to restart the 4G service and apply the configuration.

```sh
sudo systemctl restart ed-lte-daemon.service
```

5. Execute the following command to check whether the 4G port is connected.

```sh
ifconfig
```

The returned information is shown in the figure below (the wwan0 or usb0 port indicates the 4G port):



- If the wwan0/usb0 port in the returned information shows a specific IP address, the 4G port is connected.
- If the wwan0/usb0 port in the returned information does not show a specific IP address, the 4G port is not connected.

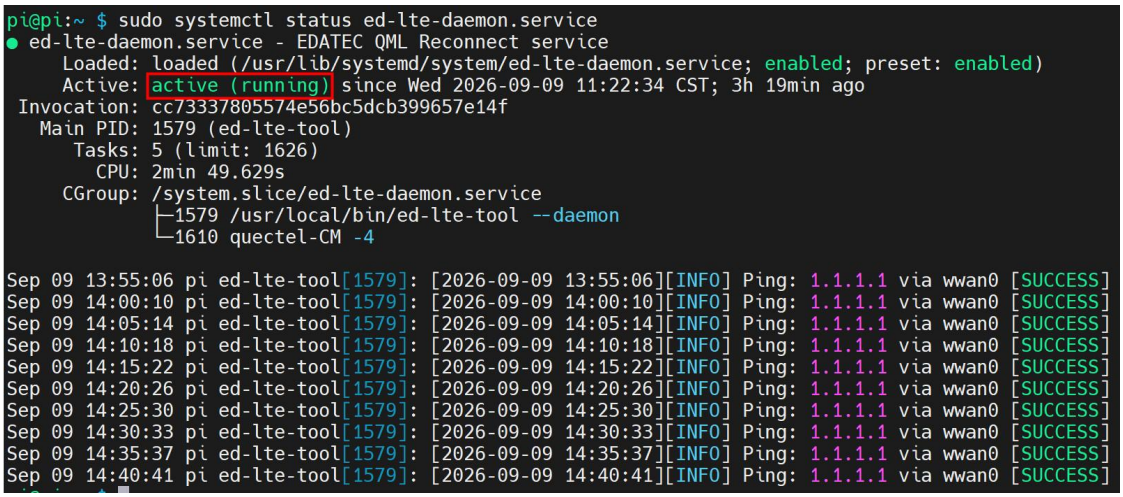
The 4G port name varies by device model, as shown in the table below:

Product Model	4G Port Name
ED-IPC1100、ED-IPC1200、ED-IPC1220	usb0
ED-IPC2100、ED-IPC2200、ED-IPC2600 ED-CM4SEN、ED-CM4MEDIA、ED-CM4IND ED-IPC3100、ED-IPC3200、ED-IPC3600 ED-HMI2120-070C、ED-HMI2120-101C ED-HMI2220-070C、ED-HMI2220-101C ED-HMI2630-101C、ED-HMI3120-070C ED-HMI3120-101C、ED-HMI3120-116C ED-HMI3120-133C、ED-HMI3120-156C ED-HMI3120-185C、ED-HMI3120-215C ED-HMI3630-101C、ED-HMI3630-116C ED-HMI3630-133C、ED-HMI3630-156C ED-SBC2300、ED-SBC3300	wwan0

6. Execute the following command to check the 4G service status and network status.

```sh
sudo systemctl status ed-lte-daemon.service
```

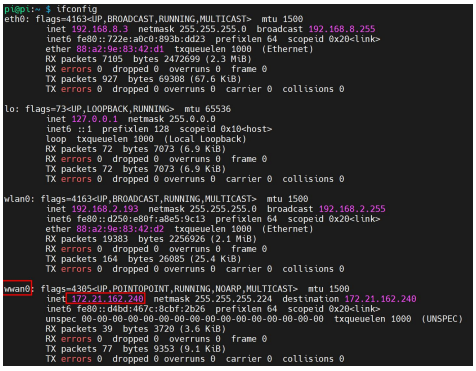
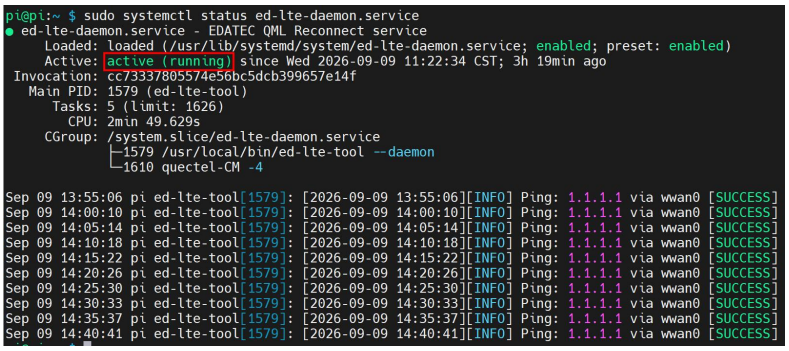
The returned information is shown in the figure below:



- If the information at the marked position reads "Active: active (running)", the 4G service status is normal.
- If the information at the marked position reads "Active: inactive (dead)", the 4G service status is abnormal.
- In the network connection information, if the status is [SUCCESS], network communication is normal.

3.2 Basic Configuration Commands

The following are commonly used query and configuration commands, suitable for troubleshooting abnormal network connections.

Command	Description
sudo ed-lte-tool --daemon	Start the network monitoring daemon and automatically connect to the network.
ifconfig	Check whether the 4G port is connected, where the wwan0 or usb0 port indicates the 4G port, as shown in the figure below.  • If the wwan0/usb0 port shows a specific IP address, the 4G port is connected. • If the wwan0/usb0 port does not show a specific IP address, the 4G port is not connected.
sudo systemctl status ed-lte-daemon.service	Check the 4G service status and network status, as shown in the figure below.  • If the information at the marked position reads "Active: active (running)", the 4G service status is normal. • If the information at the marked position reads "Active: inactive (dead)", the 4G service status is abnormal. • In the network connection information, if the status is [SUCCESS], network communication is normal.
sudo systemctl enable ed-lte-daemon.service	Enable the network service
sudo systemctl start ed-lte-daemon.service	Start the network service
sudo systemctl stop ed-lte-daemon.service	Stop the network service

Command	Description
sudo ed-lte-tool -m	View network module information
sudo ed-lte-tool -s	View network signal strength
sudo ed-lte -c	Manually dial up to connect to the network
sudo ed-lte -d	Manually disconnect the network; automatic reconnection is not supported after disconnection
sudo ed-lte-tool -r	Manual reset of the 4G module
cd /var/log/ed-qmi/ sudo nano xxxx-xx-xx.log	Navigate to the /var/log/ed-qmi/ directory and view the log file for a specified date, where xxxx-xx-xx represents the year-month-day format, e.g., 2026-06-18
journalctl -u ed-lte-daemon.service	View real-time network logs

TIP

If the 4G port is connected normally but the 4G service status is found to be abnormal, you can execute the following commands sequentially to enable and start the network service.

```sh
sudo systemctl enable ed-lte-daemon.service
sudo systemctl start ed-lte-daemon.service
```

TIP

- If the device has a 4G indicator LED, after successfully connecting to the 4G network using the ed-clte, you can determine whether the network is connected by checking the 4G indicator LED status.
  - The 4G indicator LED being lit indicates that the device is connected to the 4G network.
  - The 4G indicator LED being off indicates that the device is not connected to the network.

3.3 Configuring Network Parameters

After successfully connecting to the network, users can edit the `/etc/ed-qml.conf` file to configure various network parameters as needed.

TIP

When configuring parameters, delete the `#` character preceding the parameter to make the configured parameter take effect.

3.3.1 Configuring 4G Module Reset

The 4G module reset can be enabled in the `ed-qml.conf` configuration file.

Steps:

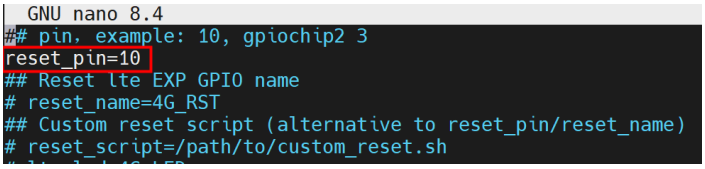
1. Open a terminal window and execute the following commands sequentially to open the `ed-qml.conf` configuration file.

```sh
cd /etc/
sudo nano ed-qml.conf
```

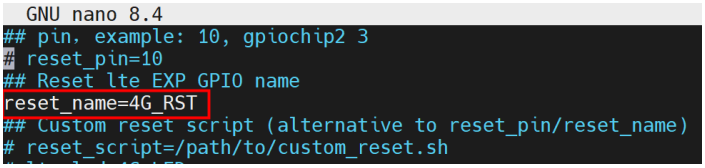
2. Configure the 4G module reset parameters as needed. The 4G module reset can be implemented via Pin number, Pin name, or a custom script. Users can choose one method according to their actual situation.



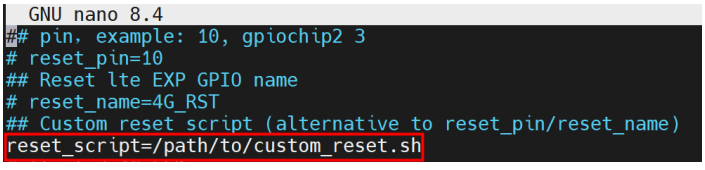
- Configure via Pin number:



- Configure via Pin name:



- Configure via custom script:



The Pin number and Pin name vary for each device. Please configure them according to the actual values.

Product Model	Pin Number	Pin Name
ED-CM4SEN	10	-
ED-CM4MEDIA	10	-

Product Model	Pin Number	Pin Name
ED-CM4IND	10	-
ED-IPC1100	-	4G_RST
ED-IPC1200	-	4G_RST
ED-IPC1220	-	4G_RST
ED-IPC2100	-	4G_RST
ED-IPC2200	-	4G_RST
ED-SBC2300	-	4G_RST
ED-IPC2600	-	4G_RST
ED-IPC3100	-	4G_RST
ED-IPC3200	-	4G_RST
ED-SBC3300	-	4G_RST
ED-IPC3600	-	4G_RST
ED-HMI2120-070C、ED-HMI2120-101C	-	4G_RST
ED-HMI2220-070C、ED-HMI2120-101C	-	4G_RST
ED-HMI2630-101C	-	4G_RST
ED-HMI3120-070C、ED-HMI3120-101C ED-HMI3120-116C、ED-HMI3120-133C ED-HMI3120-156C、ED-HMI3120-185C ED-HMI3120-215C	-	4G_RST
ED-HMI3630-101C、ED-HMI3630-116C、ED-HMI3630-133C、ED-HMI3630-156C	-	4G_RST
ED-SBC2300、ED-SBC3300	-	4G_RST

3. Press `ctrl+o` to save the file, then press `Enter`, and finally press `ctrl+x` to exit the file editing mode.
4. Execute the following command to restart the 4G network service and apply the configuration.

```sh
sudo systemctl restart ed-lte-daemon.service
```

> TIP
>
> After configuring the 4G module reset parameters, when the network connection is abnormal, the ed-clte mechanism will first attempt to connect automatically. If the connection remains abnormal, it will initiate airplane mode detection. If the 4G network still

> cannot connect after airplane mode detection, the software will automatically reset the 4G module at intervals of 10 minutes, 20 minutes, 30 minutes, and 1 hour.

3.3.2 Configuring 4G Module LED

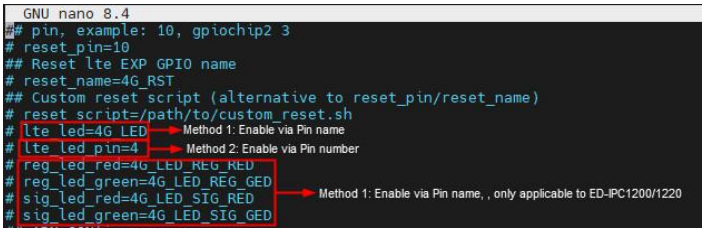
The 4G module LED can be configured in the `ed-qml.conf` configuration file.

Steps:

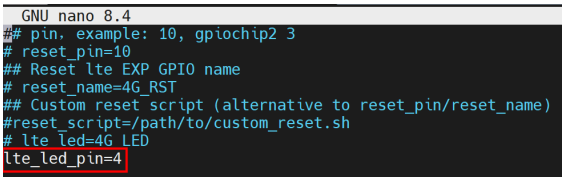
1. Open a terminal window and execute the following commands sequentially to open the `ed-qml.conf` configuration file.

```sh
cd /etc/
sudo nano ed-qml.conf
```

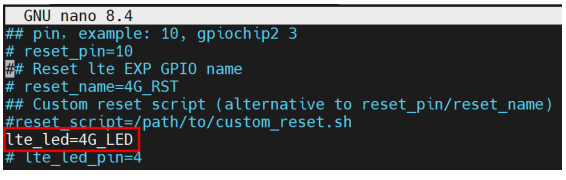
2. Configure the 4G module LED as needed. The 4G module LED can be implemented via Pin number or LED name. Users can choose one method according to their actual situation.

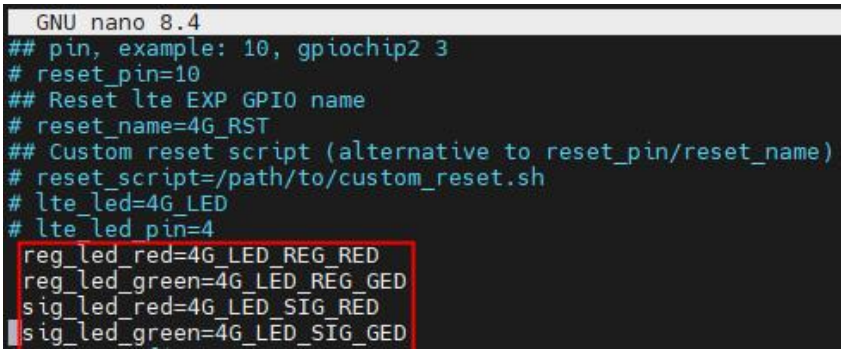


- Configure via Pin number:



- Configure via Pin name:





The Pin number and name corresponding to the 4G module LED vary for each device. Please configure them according to the actual values.

Product Model	LED Pin Number	LED Name
ED-IPC1100	-	4G_LED
ED-IPC1200	-	4G_LED_REG_RED 4G_LED_REG_GED 4G_LED_SIG_RED 4G_LED_SIG_GED
ED-IPC1220	-	4G_LED_REG_RED 4G_LED_REG_GED 4G_LED_SIG_RED 4G_LED_SIG_GED
ED-IPC2100	-	4G_LED
ED-IPC2200	-	4G_LED
ED-IPC2600	-	4G_LED
ED-IPC3100	-	4G_LED
ED-IPC3200	-	4G_LED
ED-IPC3600	-	4G_LED
ED-HMI2120-070C、ED-HMI2120-101C	-	4G_LED
ED-HMI2220-070C、ED-HMI2120-101C	-	4G_LED
ED-HMI2630-101C	-	4G_LED
ED-HMI3120-070C、ED-HMI3120-101C ED-HMI3120-116C、ED-HMI3120-133C ED-HMI3120-156C、ED-HMI3120-185C ED-HMI3120-215C	-	4G_LED
ED-HMI3630-101C、ED-HMI3630-116C ED-HMI3630-133C、ED-HMI3630-156C	-	4G_LED

TIP

ED-IPC1200 and ED-IPC1220 include 2 dual-color 4G indicator LEDs with 4 states. The recommended configuration is as follows:

- 4GR LED:
  reg_led_red=4G_LED_REG_RED
  reg_led_green=4G_LED_REG_GED

- 4GS LED:
  sig_led_red=4G_LED_SIG_RED
  sig_led_green=4G_LED_SIG_GED

3. Press `ctrl+o` to save the file, then press `Enter`, and finally press `ctrl+x` to exit the file editing mode.
4. Execute the following command to restart the 4G network service and apply the configuration.

```sh
sudo systemctl restart ed-lte-daemon.service
```

> TIP
>
> After configuring the 4G module LED, the 4G indicator LED has two states.
>
> - When the network is being connected, the 4G indicator LED blinks.
> - After the network is successfully connected, the 4G indicator LED stays solid on.

3.3.3 Configuring APN

The APN can be configured in the `ed-qml.conf` configuration file.

Steps:

1. Open a terminal window and execute the following commands sequentially to open the `ed-qml.conf` configuration file.

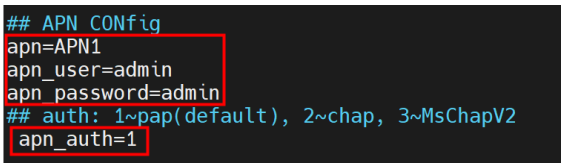
```sh
cd /etc/
sudo nano ed-qml.conf
```

2. Set the "apn", "apn_user", and "apn_password" in the "APN CONfig" section as needed.



- APN Name: User-defined.
- APN Username: User-defined.
- APN Password: User-defined.
- APN Authentication Type: Default is pap. Users can configure it as chap or MschapV2 based on the actual SIM card type.

Configuration example:



3. Press `ctrl+o` to save the file, then press `Enter`, and finally press `ctrl+x` to exit the file editing mode.
4. Execute the following command to restart the 4G network service and apply the configuration.

```sh
sudo systemctl restart ed-lte-daemon.service
```

3.3.4 Configuring SIM Pin

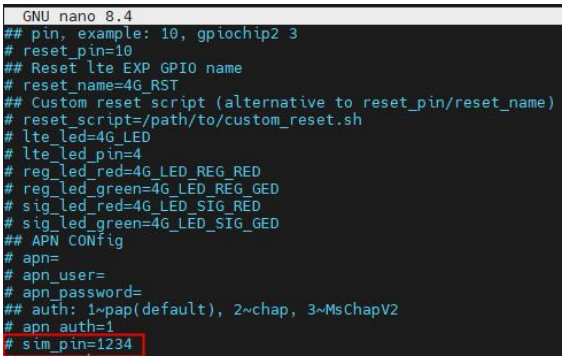
If the SIM card used for 4G internet access has a pin, the SIM Pin can be configured in the `ed-qml.conf` configuration file.

Steps:

1. Open a terminal window and execute the following commands sequentially to open the `ed-qml.conf` configuration file.

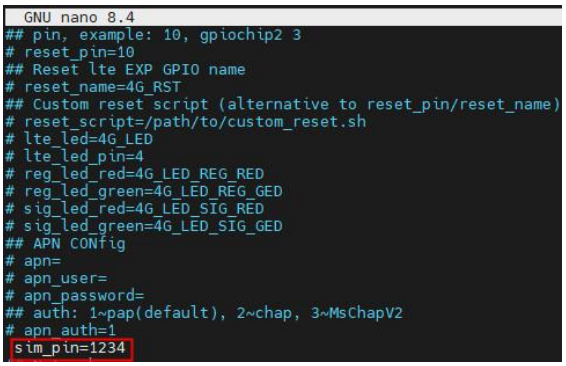
```sh
cd /etc/
sudo nano ed-qml.conf
```

2. Set "sim_pin" as needed.



- sim_pin: User-defined.

Configuration example (setting the sim_pin to 1234):



3. Press `ctrl+o` to save the file, then press `Enter`, and finally press `ctrl+x` to exit the file editing mode.
4. Execute the following command to restart the 4G network service and apply the configuration.

```sh
sudo systemctl restart ed-lte-daemon.service
```

3.3.5 Configuring ping_server

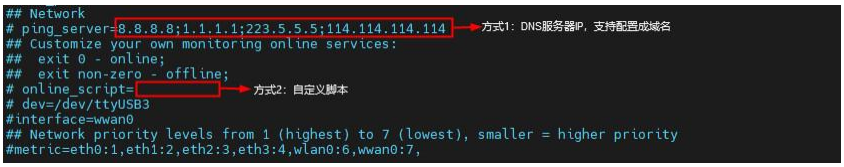
Since some users use internal networks, the ping_server needs to be configured with an internal address to properly detect the network status. The ping_server can be configured in the `ed-qml.conf` configuration file.

Steps:

1. Open a terminal window and execute the following commands sequentially to open the `ed-qml.conf` configuration file.

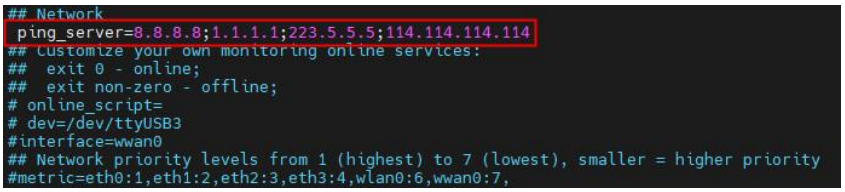
```sh
cd /etc/
sudo nano ed-qml.conf
```

2. Set the network ping_server as needed.



- The default ping_server includes four DNS server IPs: 8.8.8.8, 1.1.1.1, 223.5.5.5, and 114.114.114.114.
- The ping_server supports custom settings and can be specified as other DNS server IPs or domain names (e.g., baidu.com). It also supports configuration as a custom script.

Configuration example:



3. Press `ctrl+o` to save the file, then press `Enter`, and finally press `ctrl+x` to exit the file editing mode.
4. Execute the following command to restart the 4G network service and apply the configuration.

```sh
sudo systemctl restart ed-lte-daemon.service
```

3.3.6 Configuring Network Priority

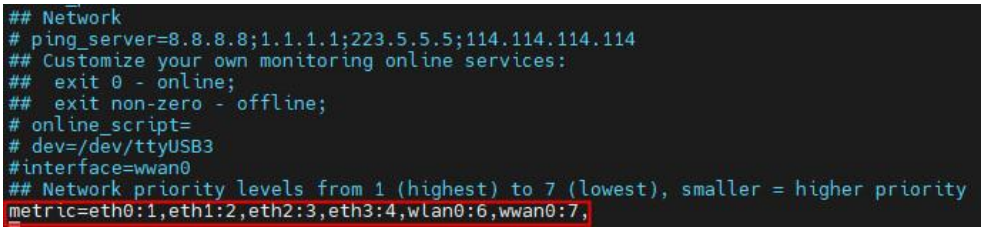
Network priority can be configured in the `ed-qml.conf` configuration file.

Steps:

1. Open a terminal window and execute the following commands sequentially to open the `ed-qml.conf` configuration file.

```sh
cd /etc/
sudo nano ed-qml.conf
```

2. Set the metric values for eth0, eth1, eth2, wlan0, and wwan0 as needed to adjust the priority of network ports.



- eth0, eth1, and eth2: Represent Ethernet ports. Different device models have different numbers of ports.
- wlan0: Represents the Wi-Fi port.
- wwan0: Represents the 4G network port (the 4G network port on some devices is usb0).

The larger the metric value for a port, the lower the priority of that port. As shown in the figure above, the network priority is: `eth0 > eth1 > eth2 > wlan0 > wwan0`

> TIP
>
> The default network priority from the factory is `Ethernet > Wi-Fi > 4G`.
>
> - If Ethernet is not connected, it will automatically switch to Wi-Fi.
> - If neither Ethernet nor Wi-Fi is connected, it will automatically switch to the 4G network.

3. Press `ctrl+o` to save the file, then press `Enter`, and finally press `ctrl+x` to exit the file editing mode.
4. Execute the following command to restart the 4G network service and apply the configuration.

```sh
sudo systemctl restart ed-lte-daemon.service
```