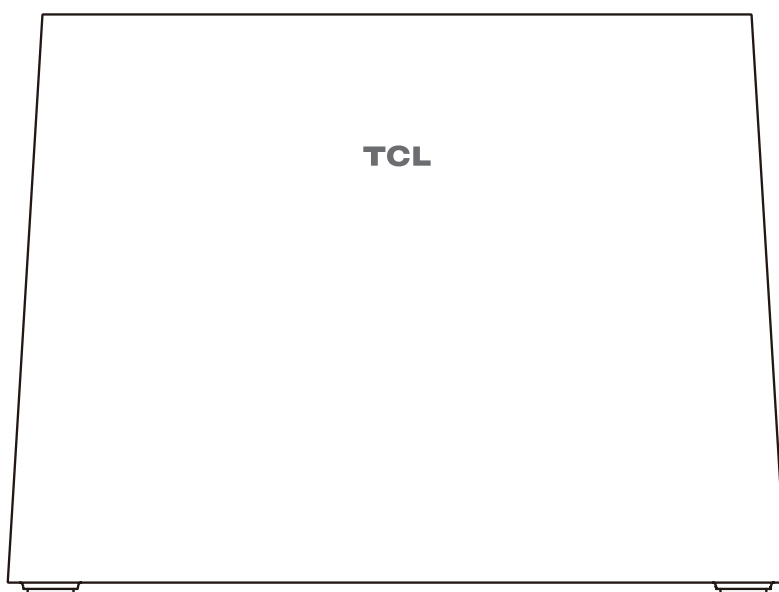




LINKHUB 5G⁺_T

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Read this first

- Before using this documentation and the device it supports, ensure you read and understand the “Chapter Important safety information” on page 16
- Illustrations in this documentation might look different from your device.
- Instructions in this documentation may vary depending on your device model and software version.
- Some apps and features are not available in all countries or regions. App and feature availability is subject to change.
- Documentation content is subject to change without notice. We make constant improvements on the documentation of your device, including this user manual.
- TCL Communication Ltd. does not assume any liability that may occur due to the use or application of the product described herein. Every effort has been made in the preparation of this documentation to ensure accuracy of the contents, but all statements, information and recommendations in this documentation do not constitute the warranty of any kind, express or implied.

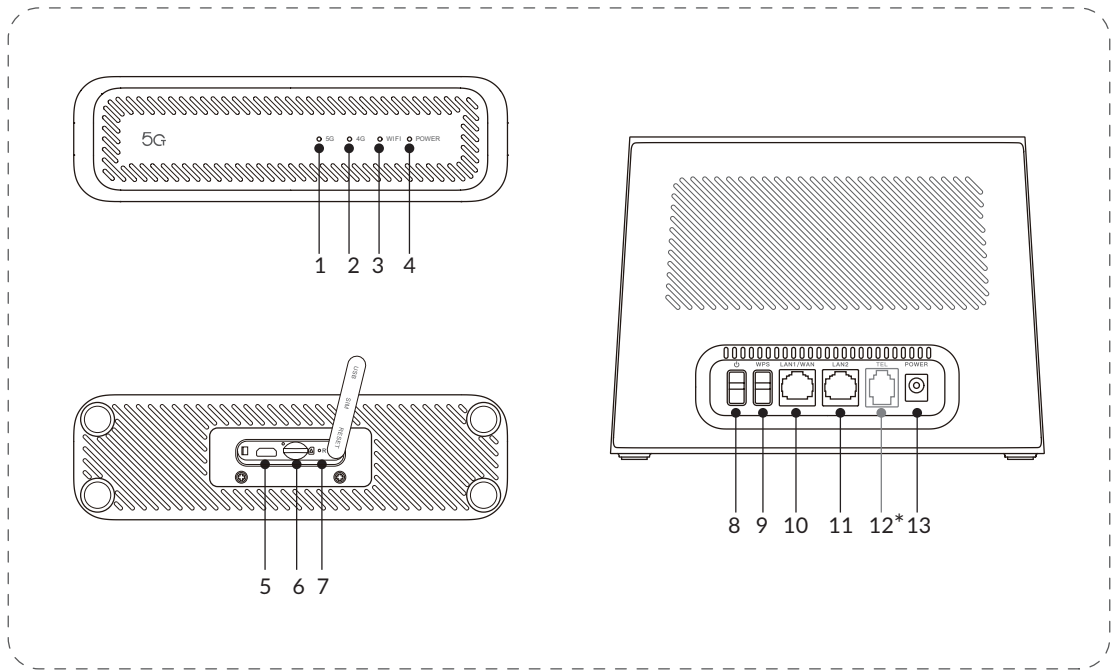
Chapter 1. Meet your CPE

This TCL 5G CPE provides wired and wireless access for multiple computers and mobile devices. With a variety of features and functions, the CPE is a perfect hub for your home or business network.

1.1 System requirements

Your CPE is compatible with Wi-Fi-enabled devices which support 2.4 GHz (802.11b/g/n/ax) or 5 GHz/6 GHz (802.11a/n/ac/ax). It also works with a range of browsers, including: Firefox, Safari, Internet Explorer, Opera, and Google Chrome.

1.2 Overview



* For selected models



NOTE

Depending on the model, your CPE may look different from the illustration.

1. 5G network indicator	Solid blue: The signal is good. Solid yellow: The signal is weak. Off: The 5G network is not working.
-------------------------	---

2. 4G network indicator	Solid blue: The signal is good. Solid yellow: The signal is weak. Off: The 4G network is not working.
3. Wi-Fi/WPS indicator	Solid blue: Wi-Fi is enabled. Blinking blue: WPS connection is available. Off: Wi-Fi is disabled.
4. Power indicator	Solid blue: The device is powered on. Blinking blue: The device is performing firmware update via FOTA. Off: The device is powered off.
5. Micro USB port	Dedicated port for debugging.
6. Nano SIM card slot	Insert a nano SIM card in the slot.
7. Reset button	Use a paperclip to press the button for 3 seconds to reset the device.
8. Power button	Press for 3 seconds to power off your device. Press for 1 second to power on your device.
9. WPS button	Press the button for 3 seconds to enable the WPS function. The WPS function will be automatically disabled if a WPS connection is not established within 2 minutes.
10. WAN/LAN port	For connecting with an internet source or wired devices such as computers or switches.
11. LAN port	For connecting with wired devices such as computers or switches.
12. Telephone port (for HH512LV only)	Connect a telephone to make or answer calls.
13. Power connector	For connecting with the power adapter.



NOTE

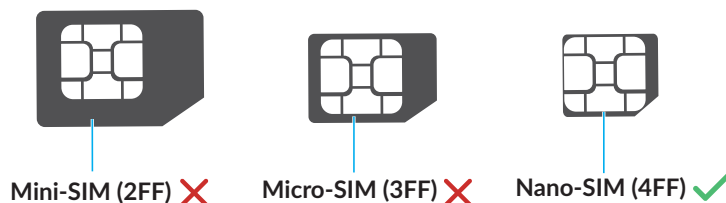
When the CPE downloads and installs software updates, the power indicator will blink with a blue light. Do not power off your CPE during this process as it may cause the device to malfunction.

Chapter 2. Get started with your CPE

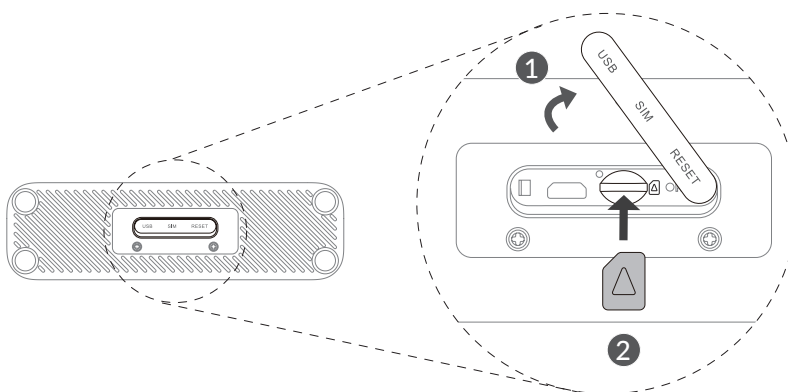
This chapter introduces the basic instructions on how to get your CPE up and running. The instructions may vary depending on your CPE model.

2.1 Insert a SIM card

PREREQUISITE: Select the right size of SIM card for your CPE.



Locate the SIM card slot and insert a SIM card as illustrated below. Close the SIM card slot cover after inserting the card in the CPE.



NOTES

- Note the orientation of the SIM card. If the SIM card is inserted incorrectly, it may get jammed.
- Do not remove the SIM card when your CPE is in use. Otherwise, it may cause your CPE to malfunction or data from the SIM card to be lost.

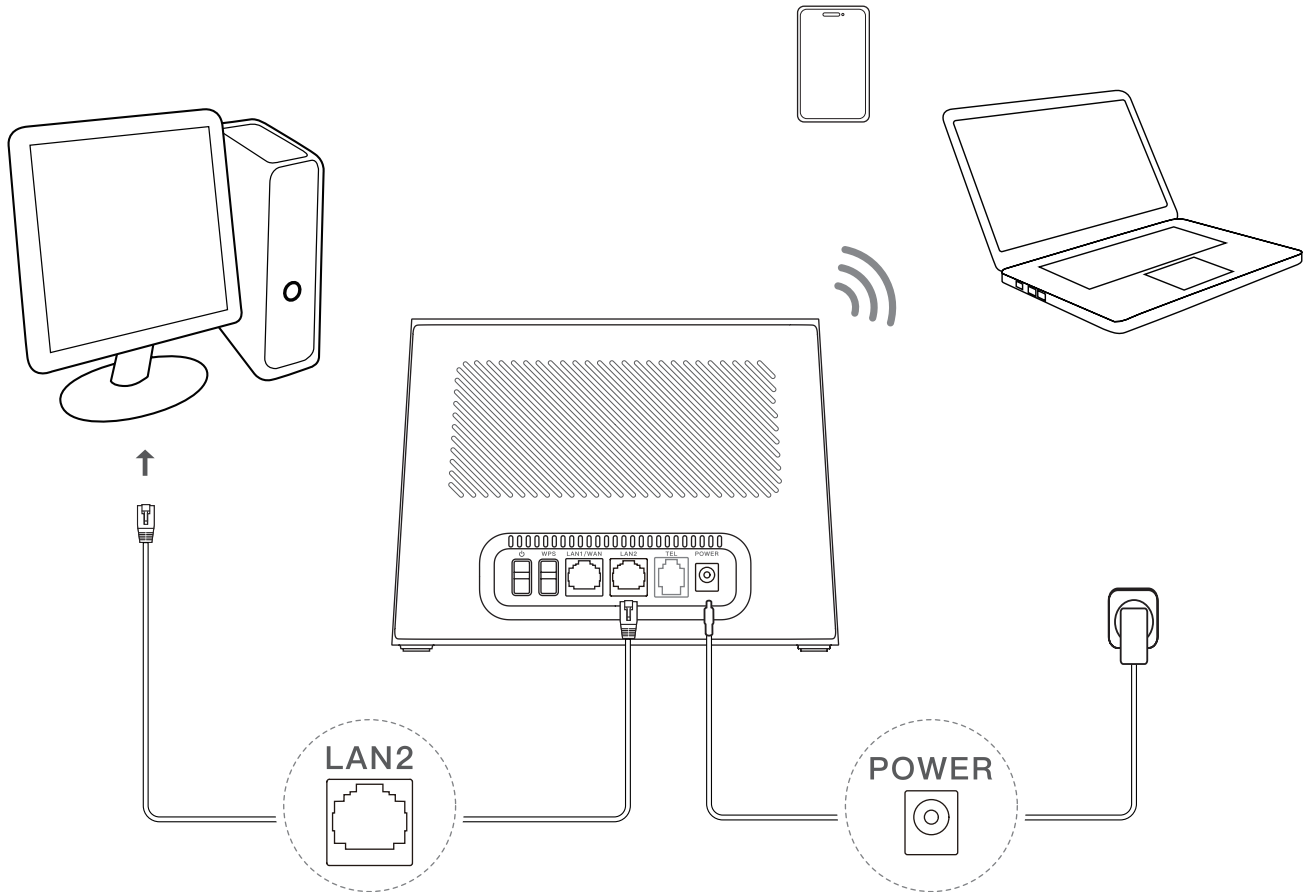
2.2 Identify an ideal location

Identify an ideal location for your 5G CPE. To make the most of your CPE, make sure the location meets the following criteria:

- Near a window
- A cool, dry and well-ventilated area away from objects such as walls and electrical appliances
- Near a power outlet
- On a sturdy and flat surface

2.3 Access CPE network

You can link your devices to the CPE network using wired or wireless connections as illustrated below.



Access wired network

To establish a wired network connection, connect the wired device to the LAN port of your CPE using an Ethernet cable.

Access wireless network

To establish a wireless network connection, select the Wi-Fi name (or the SSID) of the CPE on your wireless devices, and enter the Wi-Fi password.



NOTE

The Wi-Fi name and the Wi-Fi password can be found on the bottom label of your CPE.

If your wireless device is WPS-enabled, you can also access the CPE Wi-Fi network through a WPS connection. Select one of the following options to make a WPS connection.

Option 1: WPS button

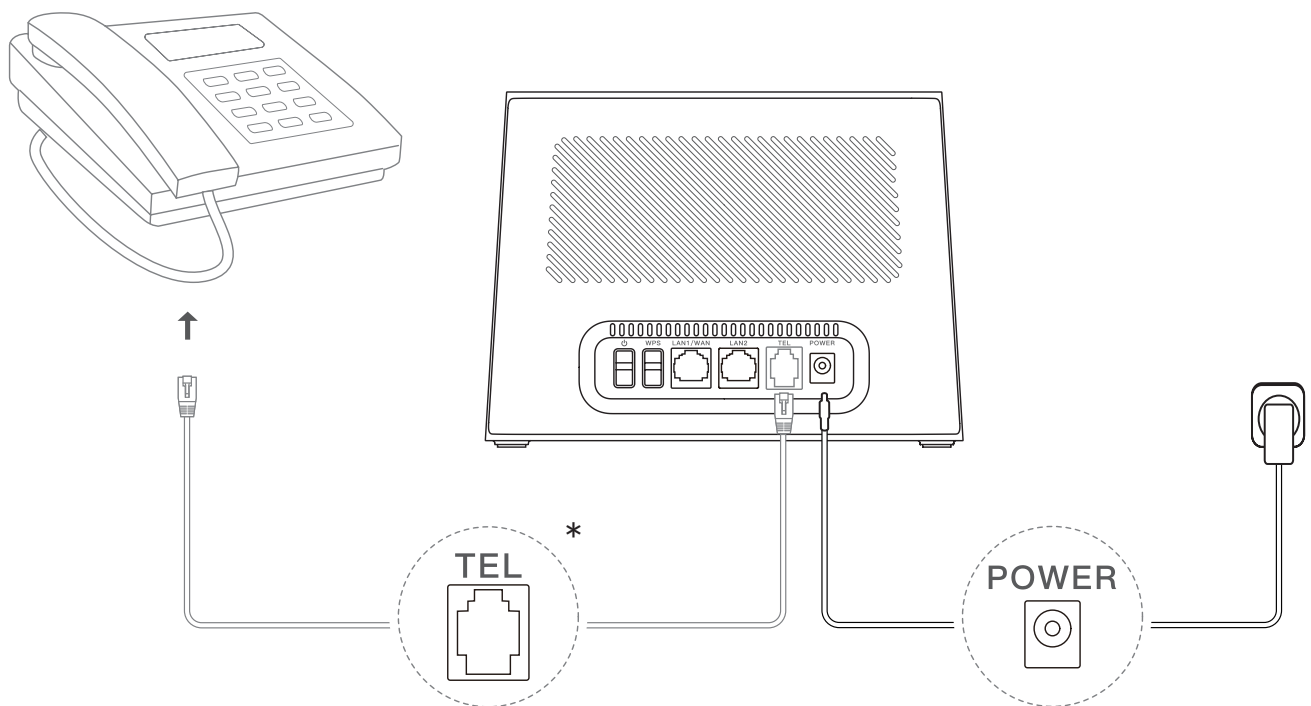
1. Press the WPS button on your CPE for 3 seconds.
2. Enable the WPS function of your wireless device within 2 minutes to make a WPS connection.

Option 2: Web UI

1. Log in to the web user interface (UI) of your CPE, and go to [Settings](#) > [Wi-Fi](#) > [WPS](#). (For more information on how to log in to the web UI, see “Chapter 3. Access the web UI” on page 6.)
2. Click [Start WPS](#).
3. Enable the WPS function of your wireless device within 2 minutes to make a WPS connection.

2.4 Use the telephone function

Selected models support telephone functionality. Connect a telephone to your CPE using a telephone cable as illustrated below.



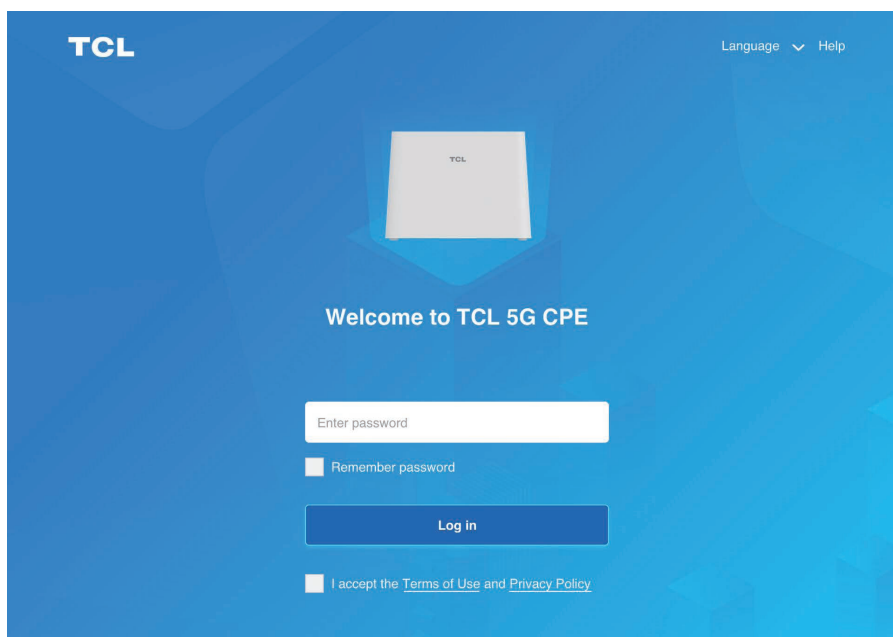
Chapter 3. Access the web UI

This chapter provides information on how to get access to the web UI of your CPE, and gives you a glimpse of the web UI.

3.1 Log in to the web UI

To log in to the web UI, follow these steps:

1. Open a web browser on the device connected to the CPE network.
2. Log into the website, then follow the on-screen instructions to finish the login process.
For the website and the default login information, refer to the bottom label of your CPE.



NOTES

- Click [Language](#) at the upper right of the screen to change the language setting.
- Click [Help](#) at the upper right of the screen to access the user manual.

3.2 Explore web UI features

The web UI is mainly comprised of the following sections: [Home](#), [Status](#), [Services](#), [Settings](#), and [System](#). Click on each section to display more information about your CPE.

Commonly-used status icons are displayed in the web UI, which provide information about your CPE.

Status icon	What it means
4G or 5G	This is the network your CPE connects to. No Service will be displayed when there is no network available.

	The number of signal bars indicates the signal strength. The more signal bars are shown, the stronger the signal is.
	VoLTE is enabled.
	VoLTE is disabled.
	The CPE is connected to the WAN network.
	The CPE is disconnected from the WAN network.
	New messages or unread messages.
	The SMS inbox is full.
	Wi-Fi is enabled.
	Wi-Fi is disabled.
	Click to log out of the web UI.

Chapter 4. Configure your CPE

In this chapter, we will show you how to get the most out of your CPE using the web UI. With the web UI, you can configure Wi-Fi settings, view connected devices, set up a guest network, and more.

4.1 Home

This section allows you to quickly check connection status, network information, device information, and connected devices.

Network overview

The network overview panel shows the current network connection status, download and upload speeds, and the number of connected devices.

Click [Disconnect](#) to disconnect your CPE from the WAN network.

Click [Connect](#) to connect your CPE to the WAN network.



Network

The [Network](#) panel displays the network name, network type, and network connection status.

Click [Network](#) to access the internet setting page.

Device information

The [Device information](#) panel shows the device model, software version, and running time.

Click [Device information](#) to get more information on your device.

Connected devices

The [Connected devices](#) panel displays the number of wired and wireless devices currently connected to your CPE.

Click [Connected devices](#) to get more detailed information on the connected devices.

4.2 Status

This section allows you to view your network information, connection status, device information, and more.

Status

This allows you to quickly check on your device information, such as Internet, LAN, WAN, Wi-Fi, and diagnostics.

Connected devices

This tab allows you to edit the names of connected devices, and manage their Internet access.

4.3 Services

Navigate to [Services](#), and click the [SMS](#) tab to display the information you want or change SMS settings as desired.

Refer to the following table for the description of each folder under the [SMS](#) tab.

Inbox	Incoming messages are stored in this folder.
Outbox	Outgoing messages are stored in this folder.
New message	Write a new message in this folder.
SMS settings	Configure SMS settings in this folder.

Refer to the following table for commonly used SMS message operations.

Read a message	Click the message you want to read.
Send a message	1. Click SMS > New message. 2. Input the recipient's number and message content. 3. Click Send. NOTE: A message can be sent to up to five recipients simultaneously.
Reply to a message	1. Click the message you want to reply to. 2. Click Reply. 3. Input the message content, then click Send.
Delete a message	1. Locate the message you want to delete in the Inbox or Outbox folder. 2. Tick the checkbox beside the message you want to delete. 3. Click Delete.
Delete all messages	1. Click at the top of the checkbox column to select all messages. 2. Click Delete.

Forward all messages	1. Click SMS settings. 2. Enable SMS forwarding to mobile phone. 3. Input the recipient's number. 4. Click Apply.
Enable SMS delivery reports	Click SMS settings , then enable SMS report.
Disable SMS delivery reports	Click SMS settings , then disable SMS report.

4.4 Settings

This section allows you to prioritize the network connection, configure the connection mode, manage WAN, LAN and Wi-Fi settings, and more.

Quick setup

In this tab, you can configure basic connection settings, enable or disable data roaming, enable or disable 2.4 GHz and 5 GHz/6 GHz networks, change SSID and Wi-Fi passwords, and more.

Setup

Network connection

In this option, you can configure and manage connection mode, mobile data, and data roaming.

Profile management

In this option, you can set up a new APN profile, and edit or delete existing profiles.

Add a new profile	1. Click New. 2. Input the correct parameters (like profile name, APN, authentication, and IP type) for your network operator. 3. Click Save.
Edit a profile	1. Select the profile from the profile management list. 2. Click Edit to set the parameters. 3. Click Save.
Delete a profile	1. Select the profile from the profile management list. 2. Click Delete. NOTE: The default profile cannot be deleted.
Set as default	1. Select the profile from the profile management list. 2. Click Set as default.

Network settings

You can set the network search mode to [Auto](#) or [Manual](#), and change the network mode.

Make sure you click [Apply](#) after making the desired changes.

Wi-Fi

Basic

Configure basic Wi-Fi settings in this option.

SSID	SSID is the name of the Wi-Fi network.
SSID Broadcast	This function is enabled by default. When this function is disabled, other users cannot detect the SSID or the Wi-Fi name. They need to manually enter the SSID to connect to your CPE network.
Security	The available security modes include Disable , WPA2 , WPA/WPA2 , WPA2/WPA3 , WPA3 .
Encryption	The AES encryption is set by default.
Password	Check the Wi-Fi password in this item.

Advanced

Configure advanced Wi-Fi settings in this option.

Max. connected devices	The maximum number of client devices that can connect to your CPE network at a time is set to 16.
Wi-Fi mode	The mode is set to 802.11ax by default.
AP isolation	The AP isolation function enables you to create a separate virtual network for each wireless client that is connected to your CPE network. When this function is enabled, all wireless devices in the network will not be able to communicate with each other.
Channel bandwidth	Select the available options from the drop-down menu.
Channel	Different regions use different channels: Channel 1-11 in FCC (US)/ IC (Canada), Channel 1-13 in ETSI (Europe), and Channel 1-13 in MKK (Japan). When the channel option is set to Auto , the CPE will select the best channel automatically.

Guest network

In this tab, you can enable or disable the [Guest network](#) feature, and configure the guest network Wi-Fi name, Wi-Fi password, and validity duration. Devices connected to the guest network can access the Internet, but cannot access the CPE web UI or the master network.

WPS

Wi-Fi Protected Setup (WPS) is a wireless network security standard that tries to make connections between your CPE and wireless devices faster and easier.

If your wireless device is WPS-supported, you can access the CPE Wi-Fi network through a WPS connection. Select one of the following options to make a WPS connection.

Option 1	1. Press the WPS button on your CPE for 3 seconds. 2. Enable the WPS function of your wireless device within 2 minutes to make a WPS connection.
Option 2	1. Log in to the web UI of your CPE, and go to Settings > Wi-Fi > WPS. (For how to log in to the web UI, see “Chapter 3. Access the web UI” on page 6.) 2. Click Start WPS. 3. Enable the WPS function of your wireless device within 2 minutes to make a WPS connection.

Security

SIM PIN management

Enable SIM PIN	1. When the SIM PIN feature is disabled, click . 2. Set a SIM PIN code that is 4 to 8 digits long. 3. Click Apply.
Disable SIM PIN	1. When the SIM PIN feature is enabled, click . 2. Enter the current SIM PIN code. 3. Click Apply.
Change SIM PIN	1. When the SIM PIN feature is enabled, click Change SIM PIN. 2. Enter the original SIM PIN code and confirm the new SIM PIN code. 3. Click Apply. NOTE: When the SIM PIN code is entered incorrectly 3 times, a PUK code is required. You can obtain the PUK code by calling customer services on 150 using your SIM card.

Advanced settings

WAN (Basic)

Set up the WAN connection mode and modify related parameters under this option. You can set the connection mode to [DHCP](#), [PPPoE](#) or [Static IP](#).

DHCP	Dynamic Host Configuration Protocol (DHCP) is a client or server protocol that automatically provides you with an Internet Protocol (IP) host. The IP address and related configuration settings such as subnet mask and default gateway are all automatically assigned.
PPPoE	Point-to-Point Protocol over Ethernet (PPPoE) is a network protocol that is mainly used for DSL services whereby individual users connect to a modem using an Ethernet connection. Enter the username and password provided by your network service provider, and click Apply.

Static IP	Access the internet using a fixed IP address, subnet mask, gateway IP address and Primary DNS server. These information should be provided by your network service provider.
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WAN (MAC clone)

When the [MAC clone](#) function is enabled, multiple client devices can connect to the CPE and access the Internet.

Your current MAC address is displayed in this option. Click [Reset](#) to set a new MAC address. Click [Clone](#) to copy your host MAC address.

LAN

The default gateway address is 192.168.1.1, and the default subnet mask is 255.255.255.0.

With the [DHCP server](#) function enabled, IP addresses will be assigned automatically to client devices in the network. If the [DHCP server](#) function is disabled, the CPE will not assign IP addresses to the connected client devices. The IP address must be entered on each client device.

Bridge mode

Bridge mode allows two routers together. When it enabled, it essentially turns the respective router into a switch. The bridge-enabled router will still transfer data, but it won't perform traditional Network Access Translation (NAT) processes. Instead, the bridge-enabled router will extend its port access to the connected devices.

IP passthrough

CPE IP Passthrough hands off the WAN IP to the Ethernet tethering client.

IP filter

By default, any device connected to your CPE network is allowed to access the Internet. Specify which device cannot access the Internet by adding the device to the blacklist.

MAC filter

By default, any device connected to your CPE network is allowed to access the Internet. You can specify which device can or cannot access the Internet by adding the device to the blacklist or whitelist.

Disable	All connected devices can access the Internet.
Whitelist	Only devices with a MAC address in this list can access the Internet.
Blacklist	Devices with a MAC address in this list cannot access the Internet.

DDNS

A WAN IP address is needed when some functions of your CPE are enabled. If the WAN IP address of your CPE changes, these functions may not work properly.

The Dynamic Domain Name Server (DDNS) function allows you to map a dynamic WAN IP address (public IP address) to a static domain name, helping Internet users (WAN side) access the CPE network via a static domain name.

DMZ

If external users cannot access certain network services within the LAN, you can enable the DMZ function and set a new host IP address.

UPnP

Universal Plug and Play (UPnP) is a set of networking protocols that allows connected devices to discover each other and establish functional network services for data sharing, communications, and entertainment.

VPN

Virtual Private Network (VPN) is a dedicated network across the shared or public network (usually the Internet). The VPN technology allows employees at a branch of an enterprise and employees at the headquarters to exchange resources conveniently without exposing these resources to other Internet users.

Port Forwarding

This function enables external users to access FTP and other services within the LAN.

Parental control

Set an Internet access schedule for the client devices on the CPE network, and define which websites the client devices can and cannot visit.

To manage parental control, click [Set](#), then set an Internet access schedule and specify the website blacklist.

4.5 System

In this section, you can quickly view device information, reboot or reset your device, modify the login password, and more.

Device information

You can view device information in this tab, including IMEI, software version, and MAC address.

Login password

Enter your current password, and set a new one. The new password must be 4 to 16 characters long.

System time

Manage the time zone in this tab.

TR-069

This is a protocol for communication between CPE and an Auto Configuration Server (ACS) that provides secure auto-configuration as well as other CPE management functions within a common framework.

Backup & restore

This feature allows you to back up the current device configuration, or restore the device to a previous configuration by importing the backup configuration file.

Restart & reset

This function enables you to restart or factory reset the CPE.

If the CPE does not work properly, you can try restarting the CPE to solve the problem.

If you can't access the Internet for unknown reasons, or forget the login password, you can restore the CPE to factory settings. To reset the CPE, you can also use a paperclip to press the reset button on the CPE for 3 seconds.

Firmware update

Click [Check for update](#), and the CPE will detect the current software version. If a new version is available, you can click [Update](#) to upgrade the software.



NOTE

Do not power off the device during the upgrade process. Otherwise, it may be damaged.

Important safety information

Read all the safety information before using your product. Failure to follow these safety instructions could result in injury, or damage to your product or other property.

Important safety instructions

- Observe signs and notices that prohibit or restrict the use of wireless devices.
- Always handle your device with care. It contains sensitive electronic components inside. The device can be damaged if dropped, burned, punctured, or crushed, or if it comes in contact with liquid.
- Do not disassemble or attempt to repair your device yourself. Disassembling the device may damage it, or cause injury to you.
- The device and its accessories may present a choking hazard to small children. Do not let children use the device and its accessories without supervision.

Medical device interference

Your router contains components which may interfere with medical devices such as pacemakers, defibrillators, or other medical devices. Maintain a safe distance of separation between your medical device and your router. Consult your physician and medical device manufacturer for information specific to your medical device.

Power adapter

Use only the supplied power adapter or adapters that are compliant with the applicable international and regional safety standards. Using other adapters could cause damage to the device or pose a risk of injury or death. It is important to keep the power adapter in a well-ventilated area when the power adapter is plugged into an electrical outlet. Don't use damaged power adapters.

Operating temperature

Your device is designed to work best in ambient temperatures between 0°C and 45°C (32°F and 113°F), and should be stored between ambient temperatures of –10°C and 70°C (14°F and 158°F). Your device may malfunction if operated or stored outside of these temperature ranges. Avoid exposing the device to dramatic changes in temperature or humidity.

Regulatory compliance information

This section introduces regulatory information, certification, and compliance information specific to your product.

Electromagnetic fields (EMF)

This product complies with all applicable standards and regulations regarding exposure to electromagnetic fields.

European Union (EU) compliance



Hereby, TCL Communication Ltd. declares that the radio equipment type TCL HH512LV/HH512LM is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. You can find the Declaration of Conformity at <https://www.tcl.com/global/en/service-support-mobile/eu-doc.html>.

Disposal and recycling information

At TCL, we continually strive to improve our operations and products, and minimize our impact on the environment.



Your product is designed and manufactured with high quality materials and components, which can be recycled and reused. Please observe the local regulations regarding the disposal of packaging materials, exhausted batteries and old equipment. For recycling information, please visit www.tcl.com.



This symbol on your device and/or its accessories indicates that this device should not be disposed of with household waste. When this device reaches its end of life, take it to a collection point designated by local authorities. For more detailed information about device recycling, contact your local authorities, household waste disposal centers, or retail stores.

The separate collection and recycling of your device and/or its accessories at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

Troubleshooting

If you encounter problems while using the product, use the troubleshooting information to help determine the problem and find possible solutions.

General problems

Problem	Solution
I've forgotten the Wi-Fi password.	• Log in to the web UI, then go to Settings > Wi-Fi > Basic, and find the current Wi-Fi password. • Or use a paperclip to press the reset button for 3 seconds to restore the device to its factory settings.
How do I change the Wi-Fi name and password?	1. Log in to the web UI. 2. Go to Settings > Wi-Fi > Basic.
The network indicator is off.	When the SIM card or network service is not available, or the device is not registered to the network, the network indicator will be off. • If you are using a SIM card, make sure the SIM card is valid and inserted correctly, or place the CPE in an area with a better signal (for example near a window), and try again. • If you are using an Ethernet connection, check if the network is working properly.
I can't find the Wi-Fi name of the CPE on my wireless device.	• Make sure the Wi-Fi indicator of your CPE is solid blue. • Refresh the available network list on your wireless device.
How do I set a new PIN code for my SIM card?	1. Log in to the web UI. 2. Go to Settings > Security > SIM PIN management. 3. Enable PIN operation, and enter a new PIN code. 4. Click Apply.
Where can I find the device's model number and firmware version?	1. Log in to the web UI. 2. Go to System > Device information.

Web UI problems

Problem	Solution
How can I access the web UI?	1. Open the web browser, and log into the website. Find the website on the bottom label of the CPE. 2. Enter the login information as required. Find the default login information on the bottom label of the CPE.

I can't log in to the web UI.	• Make sure the website is entered correctly in the web browser. • Make sure the CPE is powered on. • Check whether the device is connected to the CPE network properly.
How do I change the login password?	1. Log in to the web UI. 2. Go to System > Login password.
"No SIM card" or "Invalid SIM card" is displayed on the web UI.	• Make sure there is a SIM card in your CPE. • Reinstall the SIM card, and log in to the web UI again. NOTE: Power off your device before removing the SIM card.

Connection problems

Problem	Solution
I can't access the Internet.	• If no SIM card is detected, power off your CPE, and reinsert the SIM card, then try again. • If a PIN code is required, enter the PIN code, and try again. • If no network is available, place the CPE in an area with a better signal (for example near a window), and try again. • Reboot your CPE, and try again. • If the MAC filter function is enabled, make sure your device's MAC address is on the whitelist.
How can I access the CPE network wirelessly?	Select the Wi-Fi name (or the SSID) of the CPE on your wireless devices, and enter the Wi-Fi password. NOTE: The default Wi-Fi name and the Wi-Fi password can be found on the bottom label of your CPE.
"PIN lock" or "PUK lock" is displayed on the screen of the device connected to the CPE network.	This indicates that the SIM card is locked. To unlock the SIM card, log in to the web UI and enter the PIN code or PUK code. To obtain the PUK code, contact your Internet service provider. NOTE: If the PIN code is entered incorrectly 3 times, you will be required to enter the PUK code. If the PUK code is entered incorrectly 10 times, the SIM card will be locked permanently.