

PROception

By

blake UK

User Guide

BLA4GROUTER

150Mbps Mi-Fi 4G Wireless Router



Ver1.12.3_2

Contents

About This Guide.....	Page 3
<u>Getting to Know Your 4G LTE Router</u>	
Router Layout.....	Page 6
Back Panel.....	Page 7
<u>Connecting Your Devices.</u>	
Insert SIM card.....	Page 8
Quick Configuration guide.....	Page 9-12
Log into Your Router.....	Page 9
<u>Setup Internet Data Connection.</u>	
APN selection.....	Page 11-12
<u>Advanced Section</u>	
<u>Network & Security.</u>	
Wi-Fi name (SSID).....	Page 9, 10, 13,14, 19
Initial Information screen.....	Page 14
Alignment of External Antenna.....	Page 15
MMC, MNC and PLMN.....	Page 16
Limiting connectivity.....	Page 17
Wi-Fi switch.....	Page 18
Wi-Fi setting up SSID and password.....	Page 19
WPS Settings.....	Page 20
PIN Management.....	Page 20, 22
LAN IP Allocation & DHCP.....	Page 21, 23
Static IP Switch.....	Page 23
Static Routing.....	Page 24
Data management limiting.....	Page 25 & 37
DDNS Set-up.....	Page 26
Band Cell Locking.....	Page 27
Connected Devices.....	Page 28
Whitelist & Blacklist MAC filtering.....	Page 29
Firewall Port forwarding.....	Page 33, 35
Firewall URL Filtering.....	Page 34
Firewall UPnP.....	Page 35
Firewall DMZ.....	Page 36
Firewall Bandwidth limiting.....	Page 37
NTP Time server settings.....	Page 38
Modify login password.....	Page 38
Ping & Trace.....	Page 39
Updating Firmware.....	Page 40
System Restart.....	Page 41
<u>SMS</u>	
View, Send & Receive SMS.....	Page 31, 38
<u>Wireless (Wi-Fi) settings</u>	
Changing SSID & passwords.....	Page 13 & 19
Using WPS.....	Page 20
Setting up DDNS.....	Page 26
Specifications.....	Page 42 & 43

About This Guide

This guide is both a simple quick installation guide and also includes a more in-depth look at all of the features of the 4G router.

The Quick Installation Guide instructs you on quick Internet setup and also provides details of each function and shows you the way to configure the functions appropriate to your needs.

When using this guide, please notice that features of the router may vary slightly depending on the model and software version you have, and on your location and Internet service provider.

All screenshots, images, parameters and descriptions documented in this guide are used for demonstration only and may be subject to change as the device is developed.

More Information

The latest firmware can be found at our Download Center at www.proceptionwi-fi.co.uk/downloads or www.blake-uk.com.

The Quick Installation Guide and copies of this guide can be found in our Download Center at www.proceptionwi-fi.co.uk/downloads or www.blake-uk.com.

Specifications can be found on the product page at www.proceptionwi-fi.co.uk or www.blake-uk.com. Technical Support is provided via our website chat at www.blake-uk.com.

We strongly suggest you only use unlimited data plan Sims with this 4G router. Please be aware that updates from computers, mobile phones and tablets will still take place while connected to the 4G router and these updates can be a substantial size at times. We cannot be held responsible for the exceeding of your data plan.

Please note:

Most UK Mobile SIM providers do not permit a forward facing public IP. This will mean that the port forwarding and firewall functions will not be effective on a network that does not allow this type of operation.

You can check if your IP is a publicly viewable one, by looking at the WAN IP address which is displayed on the front main page and compare addresses with the one shown on whatsmyip.com. If they are different, you are not on a public facing IP address and opening ports will not be relevant in this case.

You can however still use cloud services when using CCTV and security cameras. If the IP is the same on both website and router all of the Firewall Operations will function as described.

PROception



Thank you for purchasing the Proception 4G wireless
CAT4 DL150Mbps & UL50Mbps Router.

For cellular data transmission services, wireless routing and sending
and receiving SMS text messages.

The router adopts a high-performance processor, which can process large amount
of data and provides 802.11b/g/n Wi-Fi access.



4G router with RJ45 Ethernet Port, RJ11 Voice Port , external antennas support and Internal battery (Optional extra)

This router is compatible with our Blake 4G panel antenna,
4GLTE-698-2700-PAN



This 4G antenna enables you to receive and transmit mobile phone signal in areas where this may be difficult, such as underground buildings, basements, rural areas or weak signal areas in general.

With MIMO technology, (Multiple-Input Multiple-Output), the antenna uses multiple transmitters and receivers to transfer more data at the same time.

It is to be used in conjunction with a 3G/4G router (not provided) which will work with a SIM card from your provider. The contract with your provider will determine how much 3G or 4G you will be able to use within the time frame agreed, so make sure you choose a deal that is right for you.

The antenna is pointed towards a local 3G or 4G transmitter where it will receive and transmit data to. The router allows your device/s to receive the data and transmit data back.

Pre-fitted 5m dual coax SMA lead. We do not recommend extending more than 10m (5m cable already attached to aerial so a total of 15m) because this will affect the quality of the signal.



Front:

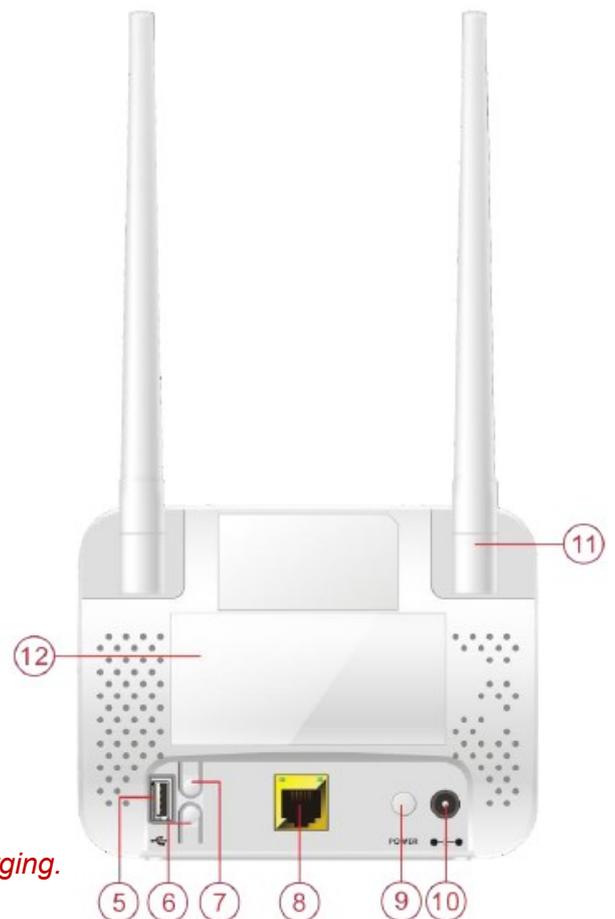
- 1 Power LED
- 2 Wi-Fi on LED
- 3 LTE on LED
- 4 Signal Strength LED

Rear:

- 5 USB
- 6 WIFI on/off
- 7 WPS activate
- 8 Ethernet RJ45 port
- 9 Power button
- 10 DC Power (adapter supplied)
- 11 Antenna SMA x 2

Under Cover:

- 12 Micro SIM slot
- 13 Factory Reset button
- 14 External 2 hour battery backup JST XH connector. (Proception Li-ion battery optional extra)



3.2 Indicators

Type	Status	Description
WI-FI	Off	WI-FI off
	On	WI-FI on
	Blinking	WPS client is connecting
Signal Strength	Off	No signal, (the signal can be checked via the router configuration page).
	On	Signal reception, 4 or 5 bars better
POWER	Off	Router power off
	On	Power normal, router power on
LINE	On	Wired connection is normal, ready for data transmission
	Off	Error in wired connection, cannot perform data transmission
4G_LTE	Red light on	4G network is not connected or weak connection.
	Blue light on	4G network is connected, internet connection available

If the power indicator is flashing this means the battery is charging. If yellow, this means you are running on battery. The Proception battery (PRO4GBATTERY) is an optional extra and will provide power for up to three hours of intermittent use.

Rear Connectors



On the rear of the unit are several connectors and buttons.

Please see below description and use:-

SMA: Dual MiMo connectors for external Proception 4G antenna connection
Never power the router on without the antenna being connected.

USB: For file sharing with other computer on the LAN

WPS: Connection of devices using WPS (see page 20)

Wi-Fi: Turn Wi-Fi on and off

Gray: RJ11: VOIP Telephone connection (Not all SIMS provide this service)
Please check with your SIM provider first if you wish to use this option.

Yellow: RJ45: LAN port for connecting PC via cable

Black: 12v DC Power connector, (always use the power supply provided)
A 12v Cigarette lighter adapter is available as an optional extra

White: Power on and off button

Inside rear cover

SIM card holder: For Micro SIM card

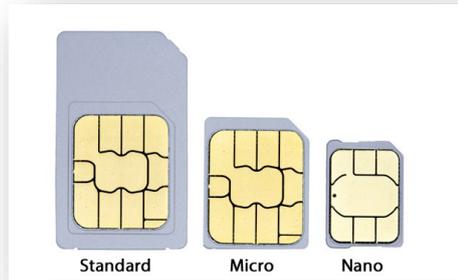
Reset: Button will factory reset the device, push in for 5 seconds and watch front lights change to ensure reset has occurred

White 3 Pin connector: This JST XH connector is for use with the Proception Li-Ion Battery only. (Optional extra)

Connecting other batteries to this connector will invalidate your warranty.

Inserting the SIM

- Open the rear cover of the router and insert the MICRO SIM into the slot



- Make sure you insert the SIM card in the right direction/orientation **before** connecting power. Power on, then press the reset button (see below) for 15 seconds



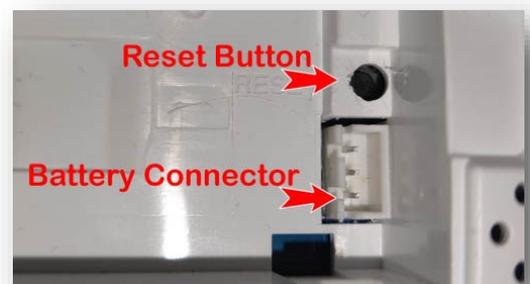
- Use Proception CAT6 FTP cable if you wish to connect the router to a PC
- Use the power adapter (supplied) to connect the router to the power socket
- Turn on the power button at the rear

The router starts automatically after an initialization period of 2 minutes

Attention:

1. Do not insert the SIM card while the router is connected to the power supply. The SIM card is **not** hot swappable and could cause damage by removing/inserting SIM while power is connected.
2. Always gently slide the MICRO SIM card into the holder otherwise you could damage the card or delicate pins on the router connection.

Note: The battery connector is for use with our Li-ion 7.4v 2000mAh 14.8Wh battery (Optional extra) providing up to two hours of use without mains power.



Quick Configuration Guide

The router supports RJ45 cables; (we recommend Proception CAT6 FTP shielded leads) or the WLAN wireless mode to connect.

Step 1. Connect Antenna & Insert SIM & Power On

Follow the above instructions on page 7 in regards to inserting the SIM and the separate instructions for connecting the external antenna BEFORE connecting power.

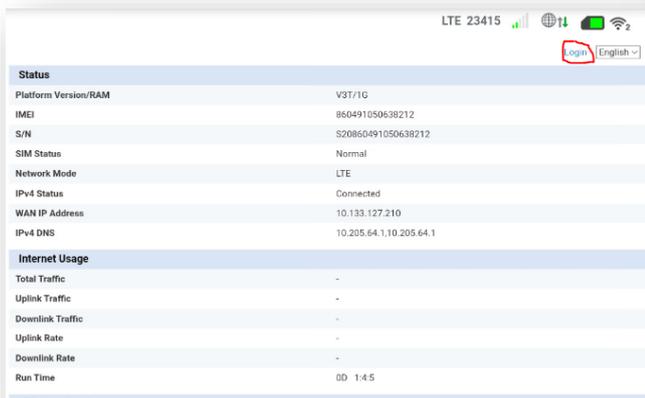
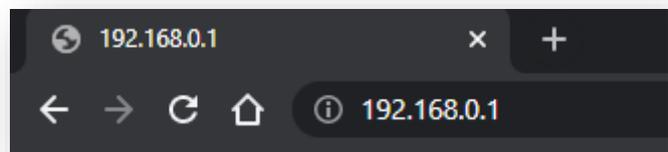
Step 2. Connect to Wi-Fi

Allow 2-3 minutes for the router to initialise. You may not be able to connect to the Wi-Fi until the router has completed the process.

Connect to the Routers Wi-Fi (SSID: **ProWiFi_4G**) and use password **4wG7cZXd**

Step 3. Go to setup Interface

In your browser enter 192.168.0.1 or type my.router

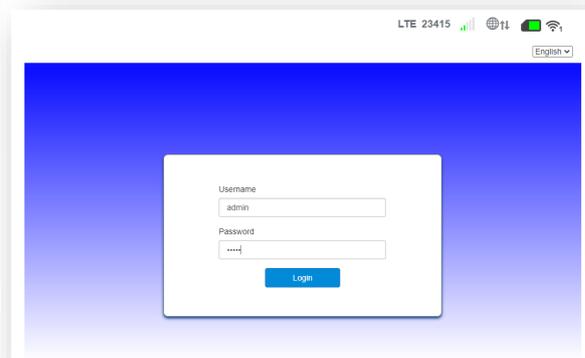


This takes you to the status screen, click login (Top right)

This screen automatically refreshes every 10 seconds

Step 4

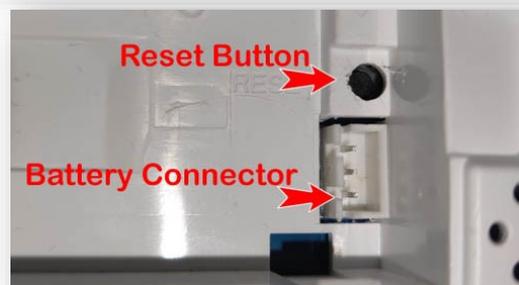
Log in to the admin page using the default Username: **admin** and Password: **4wG7cZXd**



Warning

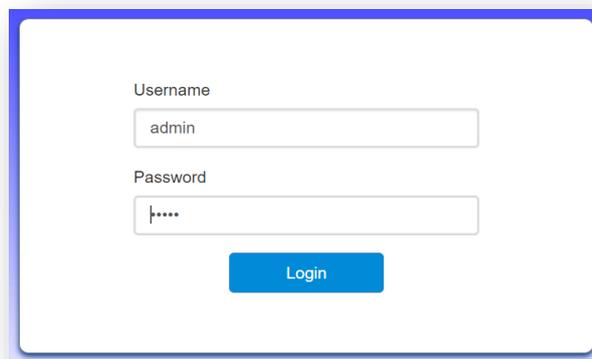
If you change and forget the login password, you will need to factory reset the unit. (Reset button is on the back of the router)

See page 39 on changing login password.



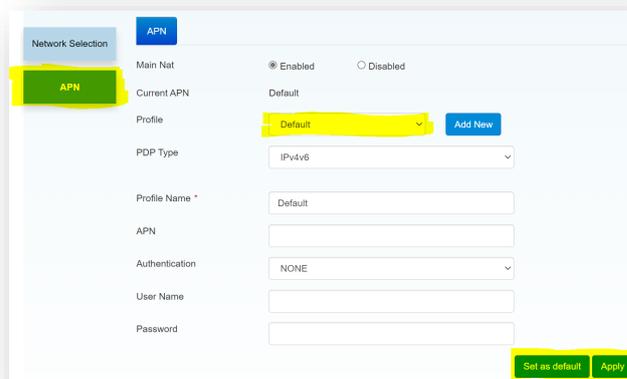
Summary of quick installation

1. Install your chosen SIM
2. Connect the two antenna or a Proception 4G MiMo antenna
3. Plug in the power and switch on at the rear of the router
4. Wait 3 minutes for the router to initialise
5. Connect to the Wi-Fi signal ProWiFi_4G and use password 12345678
6. In your browser enter 192.168.0.1 in the bar at the top
7. Log in with username **admin** and password **admin**



A screenshot of a login interface. It features two input fields: 'Username' with the text 'admin' and 'Password' with masked characters '*****'. Below the fields is a blue 'Login' button.

8. In the column labelled **Internet** click **settings**
9. Click APN tab on left



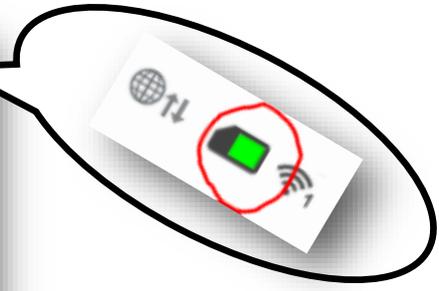
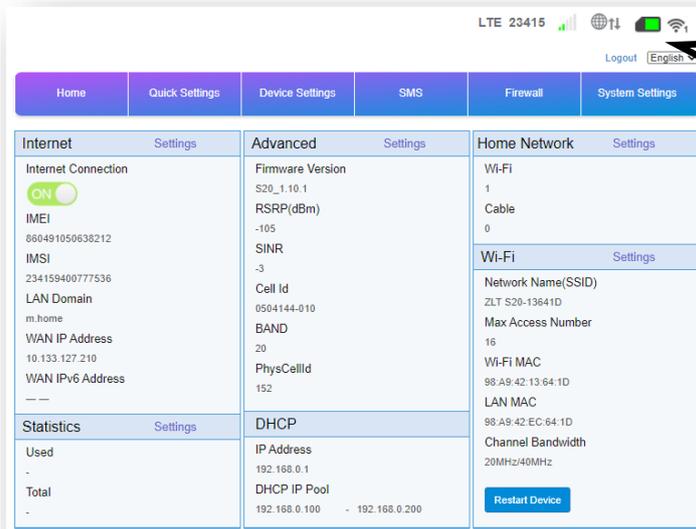
A screenshot of the 'APN' settings page. The left sidebar has 'APN' highlighted in yellow. The main content area shows various settings: 'Main Nat' (radio buttons for Enabled/Disabled), 'Current APN' (dropdown menu with 'Default' selected and highlighted in yellow, and an 'Add New' button), 'PDP Type' (dropdown menu with 'IPv4v6' selected), 'Profile Name' (text input with 'Default'), 'APN' (text input), 'Authentication' (dropdown menu with 'NONE' selected), 'User Name' (text input), and 'Password' (text input). At the bottom right, there are 'Set as default' and 'Apply' buttons.

10. Click the profile dropdown box and select the SIM provider
11. Click set as default, then Apply
12. Power off the router wait 5 seconds and power back on
13. Wait 3 minutes for the router to initialise

Please see the rest of this instruction book for details on changing passwords and Wi-Fi SSID (Name) and other features.

Look at the top right of the screen and check the SIM is coloured **green**. You should also see blue arrows on the  front. Both should show blue and signal should show a signal level 1-5.

If it is **red** then the SIM provider has not been automatically recognised, the SIM is incorrectly inserted or not setup in APN.



Entering APN manually

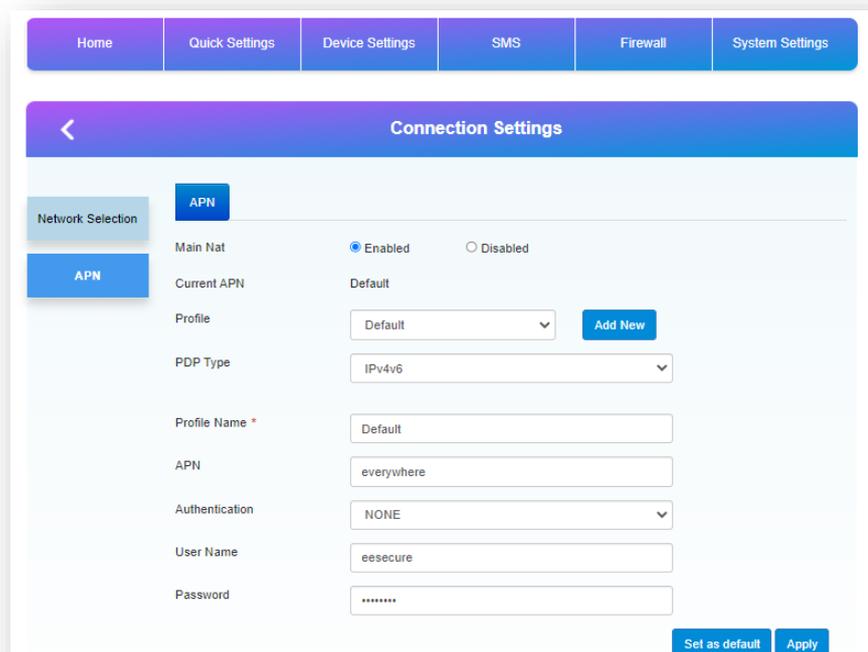
Although the router will usually detect the main service providers SIMS and set the APN for the SIM in use, at times you may need to set this up manually.

Select your sim from the dropdown list or enter manually.

(see page 10 for APN settings)

Check the APN setting on the next page or check your provider's website.

Enter these settings into the Connection Setting's page found on the APN TAB, on the left of the page.



Once this has been selected click apply, then you will now need to power off.

One you have selected or manually entered the correct APN for the sim card in use, click apply. To ensure the details are used we suggest you power off and back on.



Once the correct APN has been entered and you reboot the device, wait for the red arrows to go blue and the signal level indicators to display. If there are no signal indicators lit, then your chosen SIM provider has no service in the area.

GiffGaff APN

APN: giffgaff.com
Authentication type: PAP
Username: giffgaff
Password: password

O2 APN PAYG

APN: mobile.o2.co.uk
Authentication type: PAP
Username: o2web
Password: password

Plusnet Mobile APN

APN: everywhere
Authentication type: PAP
Username: eesecure
Password: secure

EE APN

APN: everywhere
Authentication type: PAP
Username: eesecure
Password: secure

SKY APN

APN: mobile.sky
Authentication type: PAP
Username: *(leave blank)*
Password: *(leave blank)*

Voxi APN

APN: pp.vodafone.co.uk
Authentication type: PAP
Username: *wap*
Password: *wap*

Three APN

APN: three.co.uk
Authentication type: X
Username: *(leave blank)*
Password: *(leave blank)*

Virgin Mobile APN

APN: goto.virginmobile.uk
Authentication type: PAP
Username: user
Password: <Not Set>

Tesco APN

APN: prepay.tesco-mobile.com
Authentication type: PAP
Username: tescowap
Password: password

Vodafone APN

APN: internet (or) wap.vodafone.co.uk
Authentication type: PAP
Username: wap
Password: wap

Smarty APN

APN: mob.asm.net
Authentication type: PAP
Username: *(leave blank)*
Password: *(leave blank)*

O2 APN Monthly

APN: wap.o2.co.uk
Authentication type: PAP
Username: o2web
Password: password

Quick Settings

SSID

This section is the wizard for setting up the Wi-Fi section of the router. SSID is the broadcasting name of the Wi-Fi. The name should be less than 32 characters and not include spaces or special characters for maximum compatibility.

SSID Broadcast is to hide the name of the Wi-Fi for improved security. (we suggest you leave enabled)

This screenshot shows the 'Quick Settings' wizard for SSID configuration. The interface includes a top navigation bar with 'Home', 'Quick Settings', 'Device Settings', 'SMS', 'Firewall', and 'System Settings'. Below the navigation bar is a blue header with a back arrow and the text: 'Quick Settings. The wizard will show you how to set up basic parameters of gateway safely: Click "Previous" & "Next" to navigate, and click "Apply" to save settings. For advanced parameters, set them in other menu.' A 'Next' button is located on the right side of the header. The main content area is titled 'SSID' and contains a 'Network Name(SSID) *' field with the value 'ZLT S20-13641D' and an 'SSID Broadcast' section with radio buttons for 'Enabled' (selected) and 'Disabled'. A help icon (?) is at the bottom left.

This screenshot shows the 'Quick Settings' wizard for Security Mode configuration. The interface includes a top navigation bar with 'Home', 'Quick Settings', 'Device Settings', 'SMS', 'Firewall', and 'System Settings'. Below the navigation bar is a blue header with a back arrow and the text: 'Quick Settings. The wizard will show you how to set up basic parameters of gateway safely: Click "Previous" & "Next" to navigate, and click "Apply" to save settings. For advanced parameters, set them in other menu.' 'Previous' and 'Next' buttons are located on the right side of the header. The main content area is titled 'Security Mode' and contains a 'Security Mode' dropdown menu set to 'WPA2-PSK(AES)', a 'Pass Phrase *' field with the value 'E84FA9D7', and a checked checkbox for 'Display Password'. A help icon (?) is at the bottom left.

This screenshot shows the 'Quick Settings' wizard displaying the final configuration summary. The interface includes a top navigation bar with 'Home', 'Quick Settings', 'Device Settings', 'SMS', 'Firewall', and 'System Settings'. Below the navigation bar is a blue header with a back arrow and the text: 'Quick Settings. The wizard will show you how to set up basic parameters of gateway safely: Click "Previous" & "Next" to navigate, and click "Apply" to save settings. For advanced parameters, set them in other menu.' 'Previous' and 'Apply' buttons are located on the right side of the header. The main content area is titled 'Configuration as Follows' and contains a table with the following data:

Parameter	Value
Network Name(SSID)	ZLT S20-13641D
SSID Broadcast	Enabled
Security Mode	WPA2-PSK(AES)

A help icon (?) is at the bottom left.

Advanced section

This is the initial screen displaying most of the information available

To access some advanced settings, use the Username: root & Password: admin

INTERNET CONNECTION

IMEI: (International Mobile Equipment Identity) Unique number for identifying a device on a mobile network.

IMSI: (International mobile subscriber identity) Unique number containing country code, network operator code and mobile device number.

LAN Domain: You can enter this into your browser to access this interface instead of using 192.168.0.1

WAN IP Address: (Wide area network) This is the external (or Internet) IP number for remote access.

WAN IPV6 Address: This is the external (or Internet) IPV6 number (if available by your provider) for remote access.

STATISTICS

Used: The amount of data used since switch on.

Total: The amount of data since reset.

ADVANCED

Firmware version: The revision of software built into the device.

RSRP: (Reference Signals Received Power) measurement of signal level and quality of the networks.

Please see antenna instructions for suggested RSRP levels.

SNIR: (Signal to Interference & Noise Ratio) Increasing your SINR can have a dramatic impact on your connection speeds. The best way to improve SINR is to use a directional outdoor antenna, An SNIR =>20 is considered excellent ,13-20 good, 1-13 mid to poor.

CellID: A GSM Cell ID is a unique number used to identify each base transceiver station.

Band: Band is an indication of the frequency of operation (Please see page 5 of the panel antenna instructions)

PhysCellID: The physical cell ID (PCI) is used to indicate the physical layer identity of the cell. The PCI is used for cell identity during cell selection procedure.

HOME NETWORK

WiFi: The number of devices connected to the router via Wi-Fi

Cable: The number of devices connected to the router via a direct cable connection.

WI-FI

Network name (SSID): The same of the Wi-Fi that is broadcast from the Router

Max access number: The maximum number of permitted connections on the Wi-Fi at any one time.

Channel Bandwidth: The Wi-Fi bandwidth set. Use the narrower 20 MHz WiFi channel width to avoid interference.

Alignment of the External Antenna

LTE Signal Status	
PLMN	-/-
Service Status	Limited Service
PhysCellId	-
Cell Id	-
RSRQ(dB)	-
RSRP(dBm)	-
SINR	-
Roaming	-
BAND	-
MCS	-
CQI	-
RSSI(dBm)	-

There are four indicators to help with alignment of the antenna. These are all found on the main screen.

RSRQ (dB) **Reference Signals Received Power**

Indicates the quality of the received reference signal. The RSRQ measurement provides additional information when RSRP is not sufficient to make a reliable cell selection. For LTE frequencies. -90dBm is excellent, -120dBm is poor or no signal

RSRP(dBm) **Reference Signal Received Quality**

An RSRP of -40dBm would be a strong signal whereas -120dBm would be poor. RSRP is a better indicator of signal strength.

SINR (**Signal to Interference & Noise Ratio**)

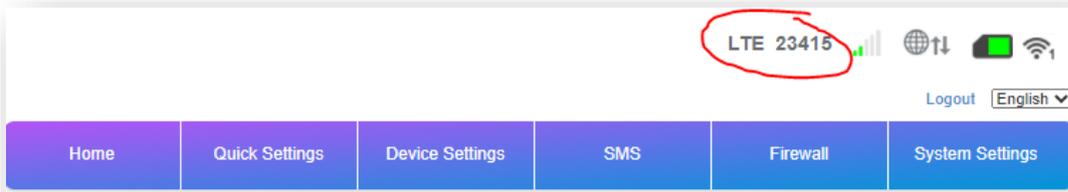
Measures signal quality: the strength of the wanted signal compared to the unwanted Interference and noise.

RSSI (dBm) (**Received Signal Strength Indicator**)

A measure of cellular signal strength. RSSI is displayed as a negative number from 0dBm (best signal) to -110dBm (weakest/no signal). RSSI is used when measuring the strength of 3G networks. The router may show an RSSI of -70dBm, which would be a strong connection. A value closer to 0 is good!

The screen updates every 10 seconds so moving the antenna around slowly will effect these signal readings.

Please see separate instructions for the 4G Panel antenna for further setup instructions of the antenna.



At the top of the main screen you will sometimes see a string of numbers; this is the HNI Home Network Identity.

These numbers are the MCC (*Mobile Country Code*) 234 or 235 for the UK.

This is followed by the MNC (*Mobile Network Code*) of the SIM operator.

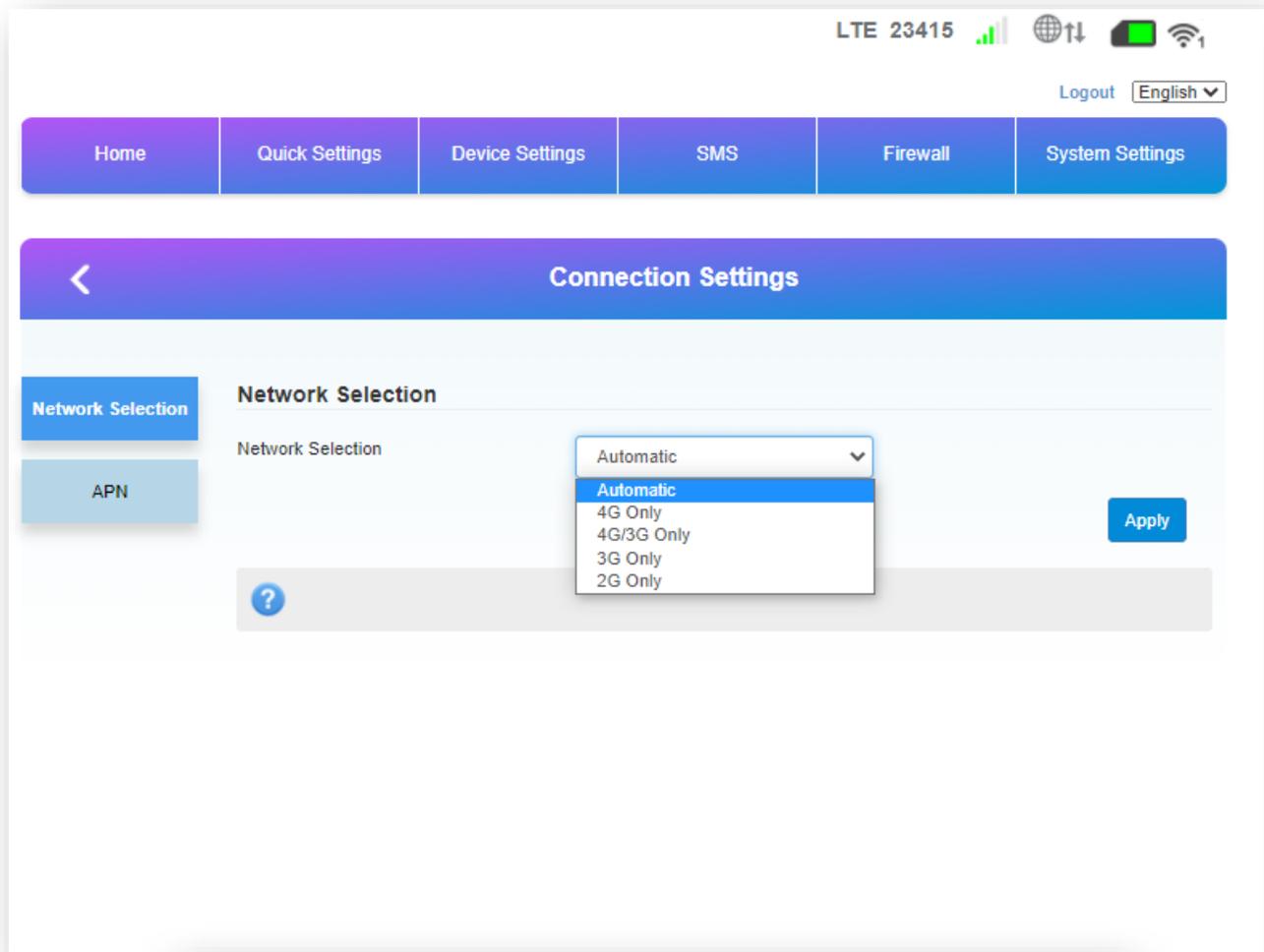
From this you can see which SIM you have inserted and which mobile network you are connected to. If the router recognises the SIM, then the provider's name will be shown here.

MCC	MNC	Operator
234	20 & 94	Three Mobile (Hutchison 3G UK Ltd)
234	26 & 99	Lycamobile UK Limited
234	02, 10, 11 or 76	O2 (Telefonica UK Ltd)
234	57	Sky UK Limited
234	24	Stour Marine Limited
234	30, 31,32, 33, 34, 38 or 86	EE (Everything Everywhere Limited)
234	25	Truphone (Software Cellular Network Ltd)
234	16	TalkTalk
234	31	Virgin Mobile UK (Telefonica UK MVNO)
234	07, 15, 27, 77 or 89	Vodafone UK
234	57	Sky Mobile
234	00 or 76	BT Group
234	26 or 99	LycaMobile
235	91 or 92	Vodafone UK
235	94	Three Mobile (Hutchison 3G UK Ltd)
235	01 or 02	EE (Everything Everywhere Limited)
235	77	O2 (Telefonica UK Ltd)



Correct as of 24/01/22 E&OE.

Limiting Connectivity



2G	Second Generation of mobile networks	GSM, D-AMPS, IS-95
3G	Third Generation of mobile networks	UMTS, CDMA2000
4G	Fourth Generation of mobile networks	LTE

Things to be mindful of before changing settings...

This option is for only permitting certain types of mobile data connections.

Select from the dropdown the connection you only wish to receive and click apply.

We suggest you leave this set to Automatic (Default) as if your signal is weak you may not be able to use the de-

Usual 4G download speeds can be between 4 to 10 megabits a second (Mbit/s) with possible instances of above this.

This largely depends on the network, signal strength and number of people on the network

This router can be used up to 150Mbit/s.

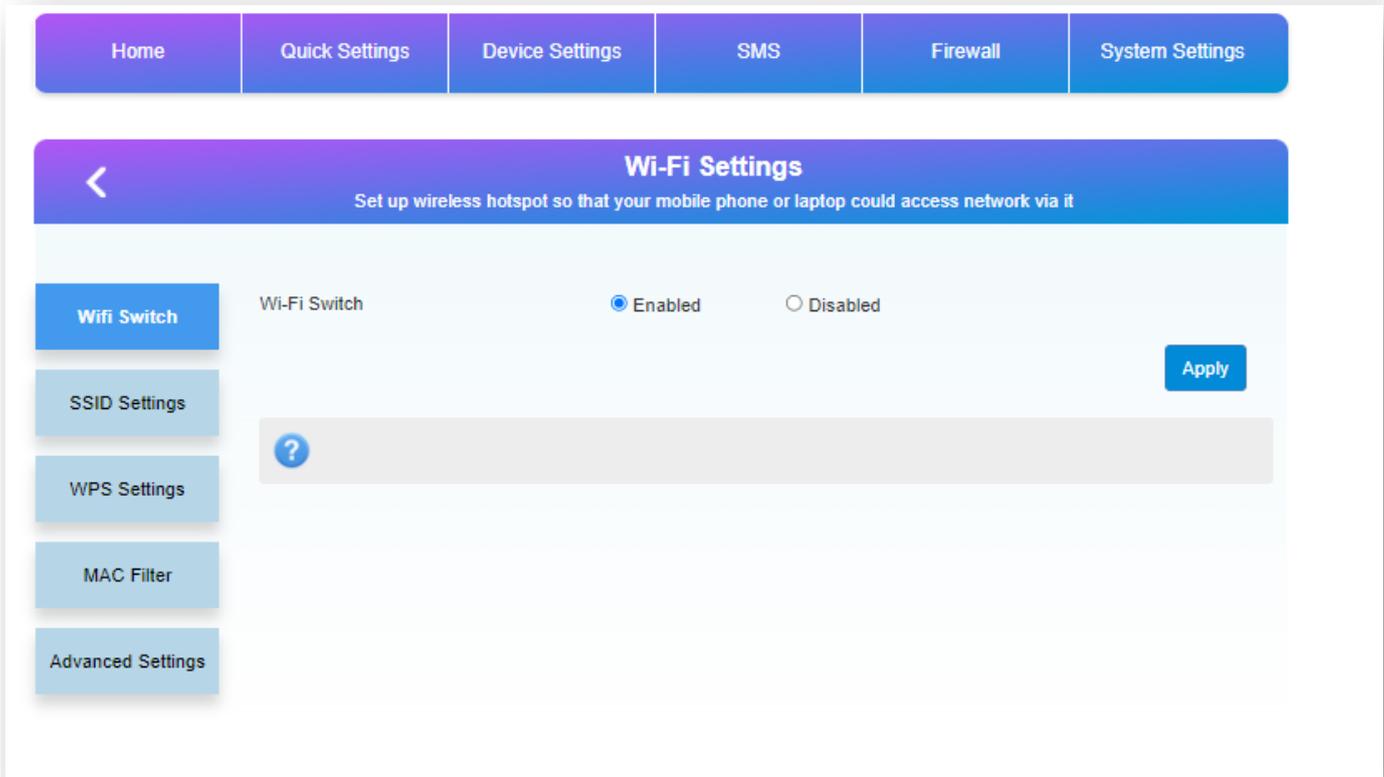
Upload speeds can be between 5-6Mbit/s with possible instances of up to 15Mbit/s.

Latency - the time it takes the network to respond to your action.

Typical 4G latency is only 60-70 milliseconds (ms), while 3G latency is typically 100-125ms.

You may really appreciate the difference if you're flicking through webpages or playing online action games.

Wi-Fi Switch



In this screen you can disable the Wi-Fi.

This is useful if you are using the router via a network cable (into the grey socket on the rear of the router).

This feature is also useful for maintaining security by removing access to Wi-Fi or for reducing the data usage overnight, by preventing tablets, phones or PCs downloading large updates.

Please bear in mind that once the Wi-Fi is switched off, you will need to use a network cable to re-enable Wi-Fi connections.

Wi-Fi Settings

Home Quick Settings Device Settings SMS Firewall System Settings

Wi-Fi Settings

Set up wireless hotspot so that your mobile phone or laptop could access network via it

Wifi Switch Main SSID SSID1 SSID2

SSID Settings

WPS Settings

MAC Filter

Advanced Settings

Network Name(SSID) * ZLT S20-13641D

SSID Broadcast

Security Mode WPA2-PSK(AES)

Pass Phrase * E84FA9D7

Display Password

Display QR Code



Max Station Number 16

Apply

Here you can name your SSID, (the name of your Wi-Fi), to make certain of its compatibility. Ensure that the name is more than eight characters, less than 16 characters and does not include any unusual characters or spaces. Using only letters, numbers, underscores, and dashes is advised.

WPA2-PSK(AES) is advised for the best security of your Wi-Fi.

The pass phrase is the password of your Wi-Fi. We suggest using the same method as above when creating your password.

After entering all the details, you will see a QRCode will have been generated. You can right click and save this to your device for printing or scanning later.

This will connect you to your Wi-Fi by simply scanning the code.

The maximum number of devices permitted to connect to the router via Wi-Fi is selected with the dropdown box.

WPS Settings

The screenshot shows the 'Wi-Fi Settings' interface. At the top, there's a blue header with a back arrow and the title 'Wi-Fi Settings'. Below the header, a subtitle reads 'Set up wireless hotspot so that your mobile phone or laptop could access network via it'. On the left, there's a vertical menu with options: 'Wifi Switch', 'SSID Settings', 'WPS Settings' (highlighted in blue), 'MAC Filter', and 'Advanced Settings'. The main content area has two sections. The first section contains 'WPS Switch' (radio buttons for 'Enabled' and 'Disabled', with 'Enabled' selected) and 'Current PIN Switch' (radio buttons for 'Enabled' and 'Disabled', with 'Enabled' selected). An 'Apply' button is to the right. The second section shows 'Current PIN' as '06382124', with buttons for 'Reset PIN Code' and 'Random PIN Code'. Below this, a note states: 'The PIN code generated by the wireless client input of the page can be connected with the wireless gateway.' The third section is 'Add new device *', with radio buttons for 'PIN' and 'PBC' (selected), and an empty text input field. An 'Apply' button is at the bottom right. A help box at the bottom contains a question mark icon and a list of bullet points explaining WPS, PIN, PBC, and the 2-minute timeout.

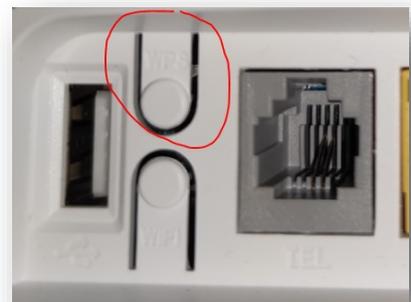
PIN method

A PIN provided by the router may be entered into the new device to connect. The device needs to be WPS pin compatible. The PIN that needs to be entered into the connecting device is indicated on this page. You can either enter your own PIN or generate a random PIN then click apply.

Push button connection (PBC)

Where the user has to push a button on the router and the device, this button is on the rear of the router, labelled WPS.

The discovery mode turns itself off as soon as a connection is established or after a delay of 2 minutes, whichever comes first..



LAN IP setting and allocations

The router will automatically allocate IP address to the devices that connect via Wi-fi or the RJ45 ethernet connection. You can, if required alter the IP allocations and the Subnet mask if you require a specific range.

By default DHCP is switched on and unless you are an advanced user please leave this to default.

Switching to static (DHCP disabled) you will need to enter the individual details for each device that connects, within the range you have selected and the gateway IP address, as you have selected within this screen.

The screenshot shows the 'Advanced Settings' page for DHCP configuration. At the top, there is a navigation bar with 'Logout' and 'English' dropdown. Below it are tabs for 'Home', 'Quick Settings', 'Device Settings', 'SMS', 'Firewall', and 'System Settings'. The main content area is titled 'Advanced Settings' and has a left sidebar with options: DHCP (selected), USSD, PIN Management, Static IP, Static Routing, DDNS, and Cell Locking. The DHCP settings are as follows:

Setting	Value
IP Address *	192.168.0.1
Subnet Mask *	255.255.255.0
DHCP Server	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
DHCP DNS *	192.168.0.1
DHCP IP Pool *	192.168.0.100 - 192.168.0.200
DHCP Lease Time *	24 hour(s)

An 'Apply' button is located at the bottom right of the settings area.

IP Address: The IP of this device (the router), This is the IP that you will enter to gain access to the setup interface.

(Default 192.168.0.1)

Subnet mask: Usually 255.2255.255.0. You will not need to change this unless you want to work on a different subnet

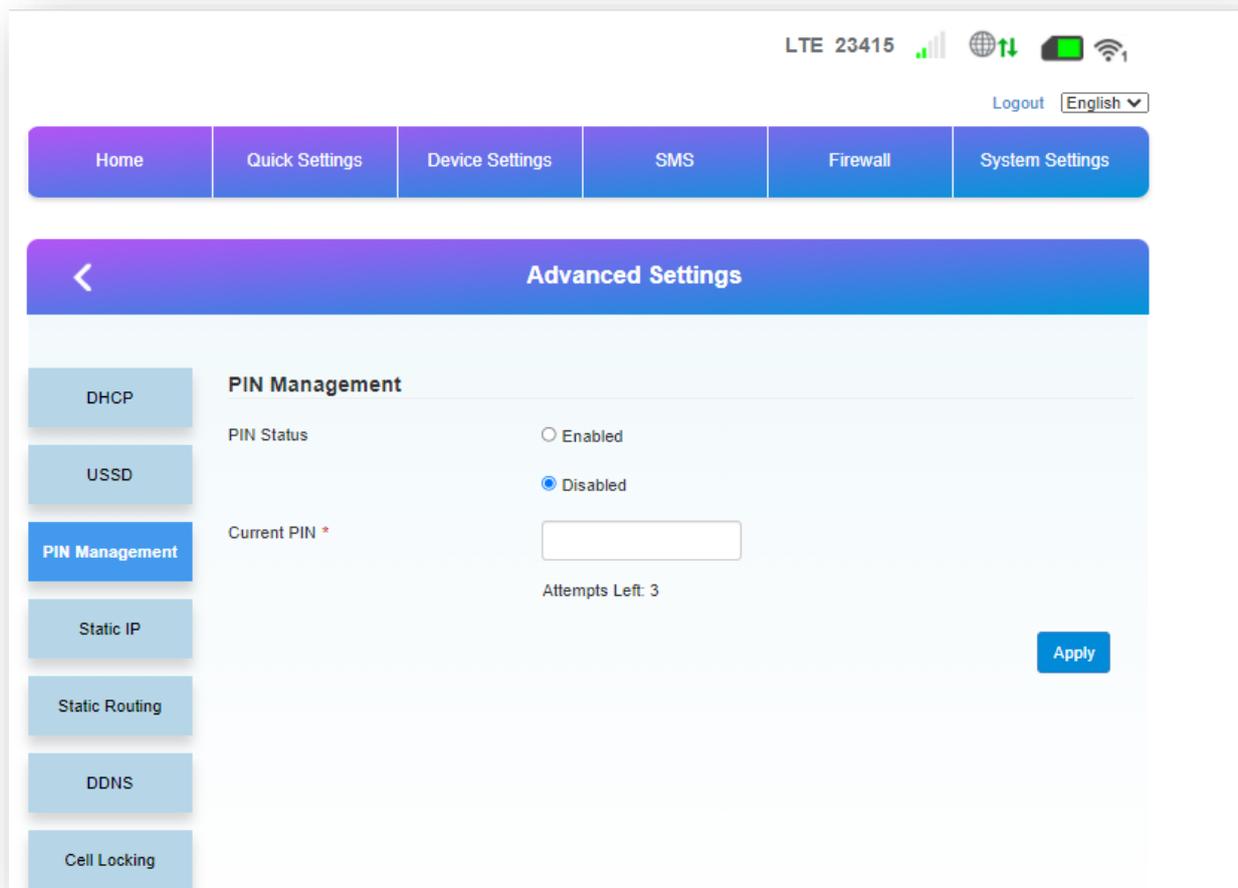
DHCP server: On by default. The Router will allocate addresses automatically. Off the router will not allocate IP addresses; this will mean you have to allocate a static IP to devices.

DHCP DNS: This should be left to 1.1.1.1 (Default)

This is Cloudflare, one of the fastest and most secure DNS resolvers available.

DHCP lease time: the amount of time a network device can use an IP Address before being reallocated in a network. Default is 24 hours.

PIN Management.



PIN Management

PIN Management provides PIN security settings to prevent unauthorised use of the SIM, USIM, or UIM card.

Turning On or Off PIN Verification

If PIN verification is turned on, you need to enter the PIN only when the Mobile Broadband is turned on. If PIN verification is turned off, no PIN is required.

If a PIN is required, enter the correct PIN.

WARNING: If you enter your PIN incorrectly, consecutively three times, the SIM/USIM/UIM card will lock and you must enter the PIN unlock key (PUK).

If you enter the PUK incorrectly ten times consecutively, the SIM/USIM/UIM card will lock permanently.

If you cannot enter the correct PIN or PUK, network-associated functions are unavailable.

The PIN and the PUK are provided with the SIM/USIM/UIM card. If you did not receive them or have forgotten them, contact the operator.

Procedure

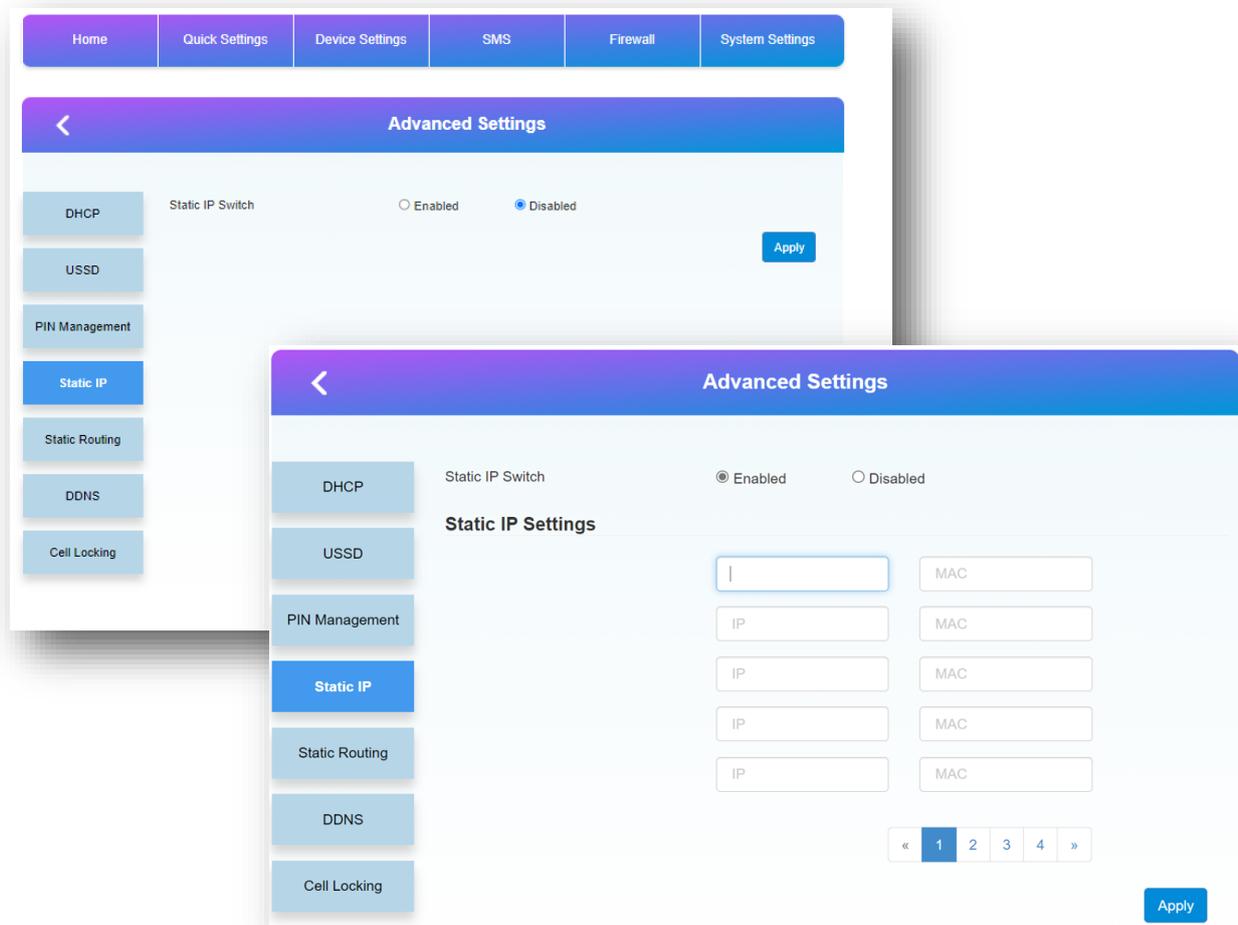
Choose Settings > Security > PIN Management .

From PIN operation, select: Enable: to turn on PIN verification or disable: to turn off PIN verification.

Enter the correct PIN.

Click Apply.

Static IP Switch

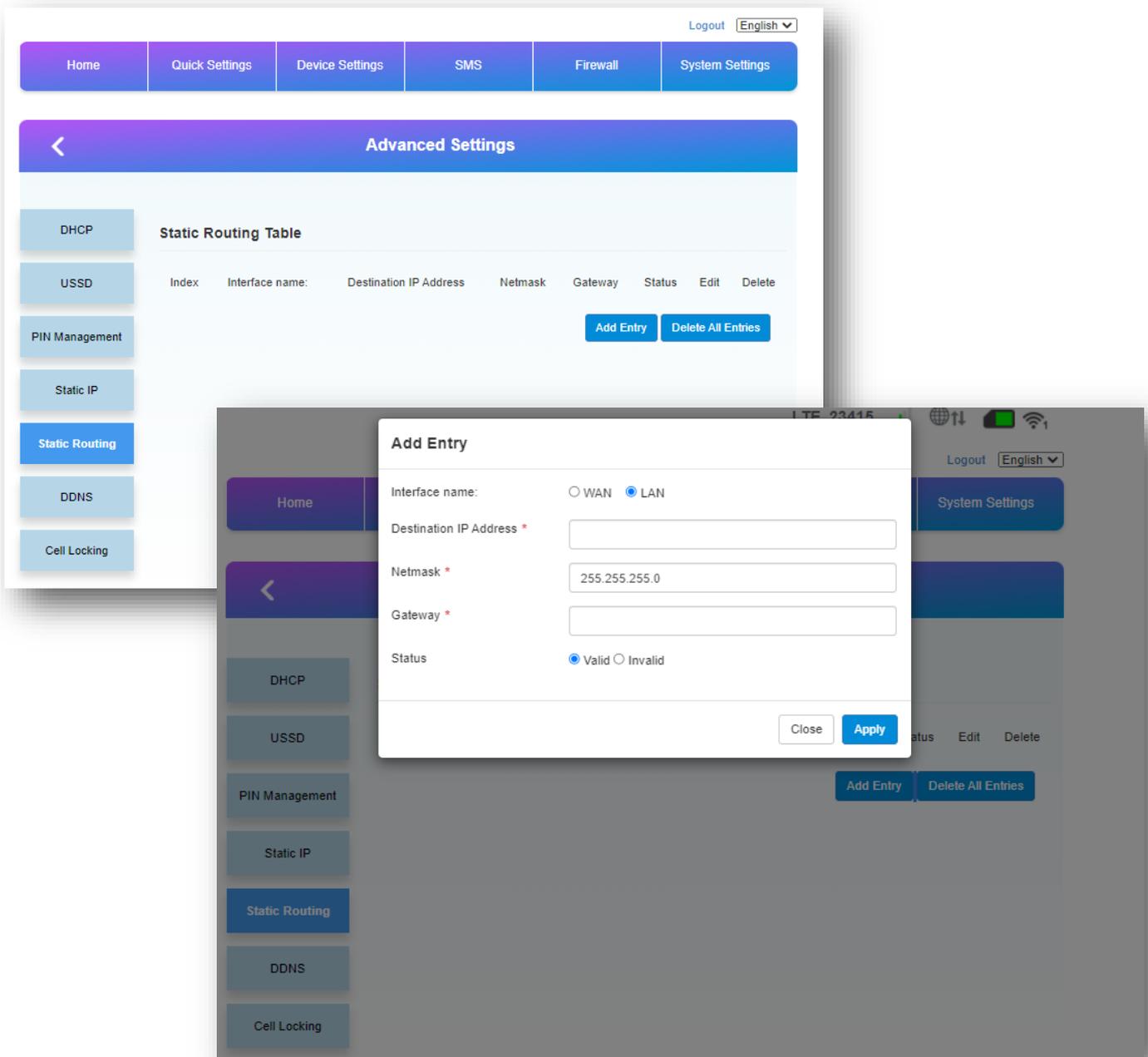


Static IP Switch is used when you are using DHCP (Automatic IP allocation) but require some devices to always have the same IP.

Enter the IP you would like fixed to a device and the device's MAC address, usually found on a label on the device.

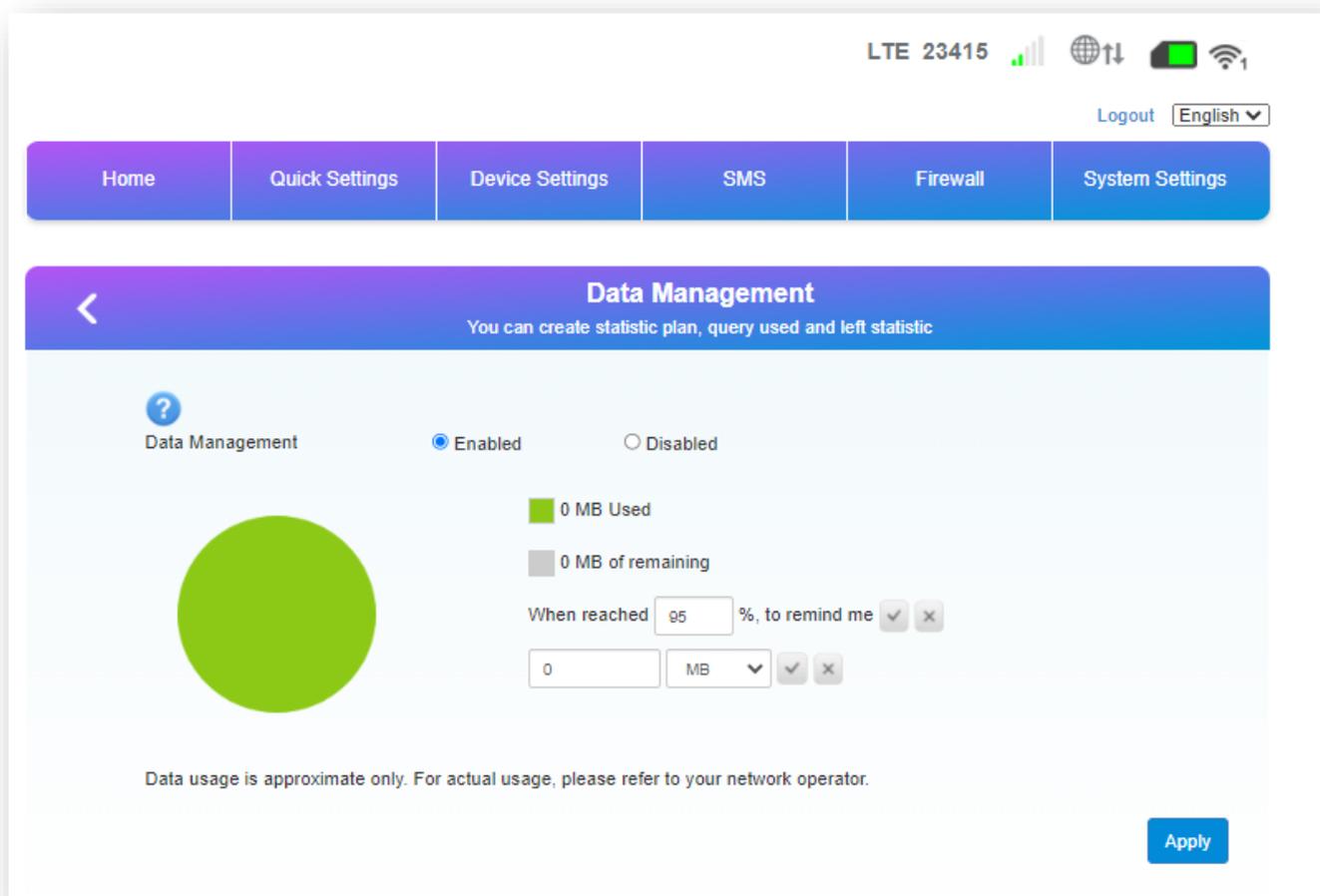
Please note this function will not work if the device you are trying to fix the IP on, uses a random MAC address.

Static Routing Table



Manually enter the routes and tell the router, for each IP network, what next hop the traffic should be delivered to. With static routing, you are telling your router to send traffic with a destination IP address to a router with an IP address of x.x.x.x. When a packet comes into the router and is ready to be routed, the destination IP address is looked up in the routing table.

Restricting the amount of data used



You can limit your data usage according to your monthly allowance of data. Set the data limit in the lower box and press the tick.

Enter a percentage in the **When reached** field to prevent data overuse. Press the tick to set the level and click apply.

When data usage reaches the alert level, a warning will be shown on this page. For applications like CCTV over 3G/4G, then the amount of data used can be huge but will depend upon how often you access your equipment remotely, on codecs of the CCTV equipment, and the streaming quality configured on the IP camera's or DVR / NVR equipment. Also any automatic firmware updates or prolonged usage for remote viewing or downloading of files.

Your CCTV manufacturer or installer should be able to advise the streaming and download data rates per minute or per hour, so you can get an idea of the amount of data you will use.

This is only an indication of approximate data being used

Please check with your mobile data provider for a more accurate indication of data usage. This can sometimes be seen on the SIM provider's app, if available. We cannot be held responsible for over usage charges made by your carrier.

DDNS Set-up

Logout English ▾

Home Quick Settings Device Settings SMS Firewall System Settings

< Advanced Settings

DHCP

USSD

PIN Management

Static IP

Static Routing

DDNS

Cell Locking

DDNS

DDNS

Dynamic DNS Provider

Account *

Password *
 Display Password

Domain Name *

DDNS Status Not registered

Apply

?



We provide two DDNS update clients within the router.

This feature is ideal for use with CCTV, remote management of the router or anything where you would normally need a static WAN IP address.

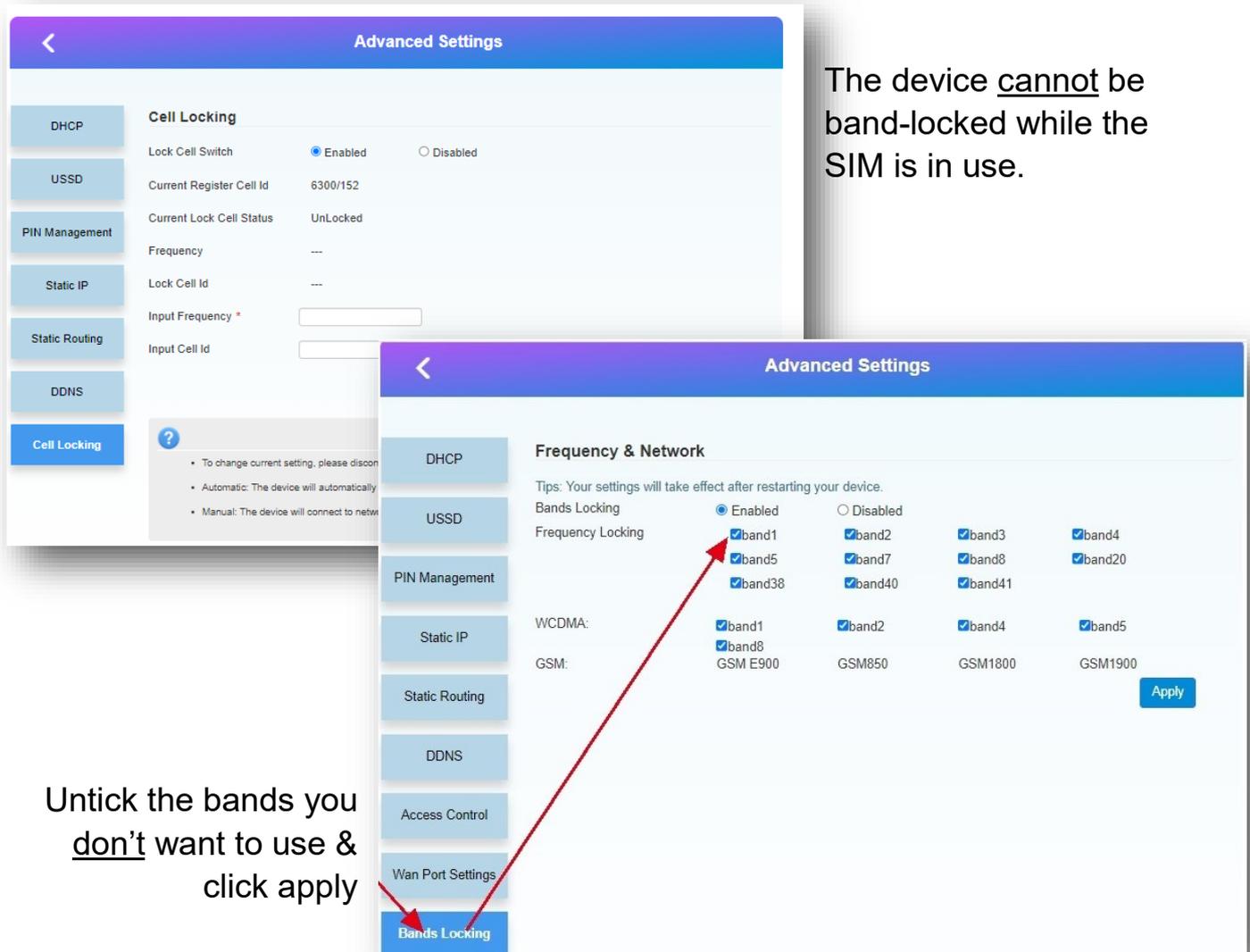
This allows the router to act as a client to communicate with the dynamic DNS service provider anytime the IP addresses provided by the ISP is changed.

The dynamic DNS provider in turn updates the DNS with those changes.

See either <https://www.dyn.com> or <https://www.noip.com> for setting up an account and usage.

Band Locking

You can lock the device to a set of supported frequency bands on LTE, WCDMA, or GSM. Note that this operation will result in no service if you prevent the use of all bands that are available at the current location. Checking all bands is equivalent to no lock applied.



The main reason for using this feature is to get better data rates.

Routers do not always pick the best combination of bands to connect in order to get the fastest data rates. This problem isn't unique to this device - almost every Router has the same issue.

So if you're looking to boost your data rates and you have the Proception 4G MiMo external antenna, this can help you access stronger, clearer signal and connect on more bands. Subsequently, this can have a huge impact on data rates, and band locking is an excellent way to optimise your connection.

Band-locking isn't something we'd recommend for everyone.

Do not change this setting unless you are experienced in Band locking.

Changing the default settings can stop the router connecting to the network.

Connected Devices

Home Quick Settings Device Settings SMS Firewall System Settings

Connected Devices

All of devices connected to this router will show on the page, including device name and MAC address

Wireless Access Device

No.	SSID	Host Name	IP Address	MAC Address
1	Main SSID	LAPTOP-3RARDH9C	192.168.0.103	C8:FF:28:E7:9D:E5

Cable Access Devices

No.	Host Name	IP Address	MAC Address
No data			

The connected device's screen is simply there to tell you what is connected (Both via Wi-Fi and cable)

You can however also allocate a specific IP to each device if needed. (If the router is set to DHCP (Default).

You can also change the Host name on devices connected within this screen.

Tip

To check which device you are renaming, you can check the MAC address is the same on this screen, as one found on the device.

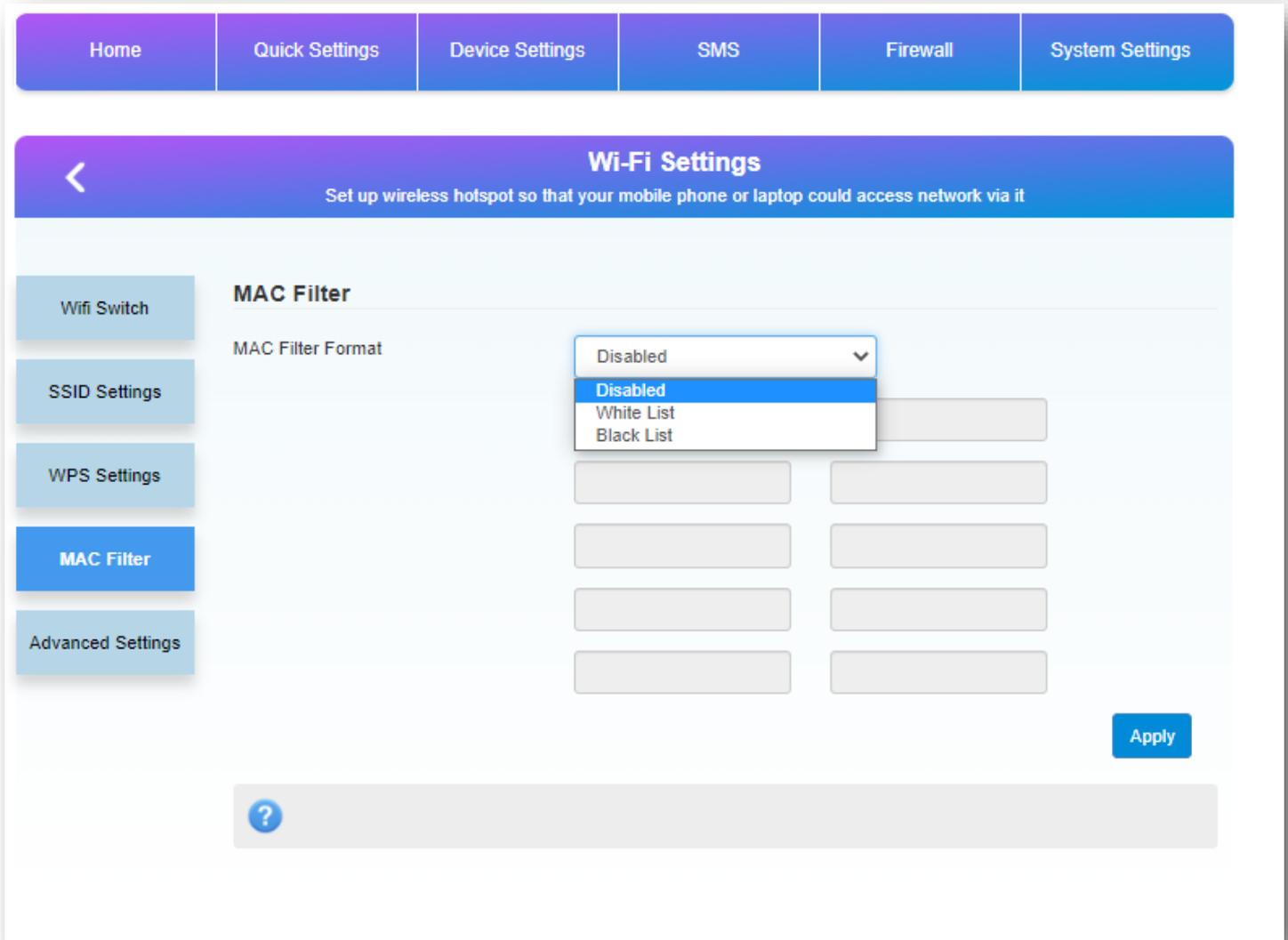
Due to a security update on Apple products from iOS14 and Android Q 10

Due to the fact a device's MAC address changes when disconnected from a Wi-Fi network, it can no longer be used to persistently track a device .

Devices are identified with a unique (random) MAC address per network. This random feature can be disabled by the user.

You can use this screen in conjunction with the White and Black list to choose to permit or block. See next page on white and black lists

Wi-Fi Settings

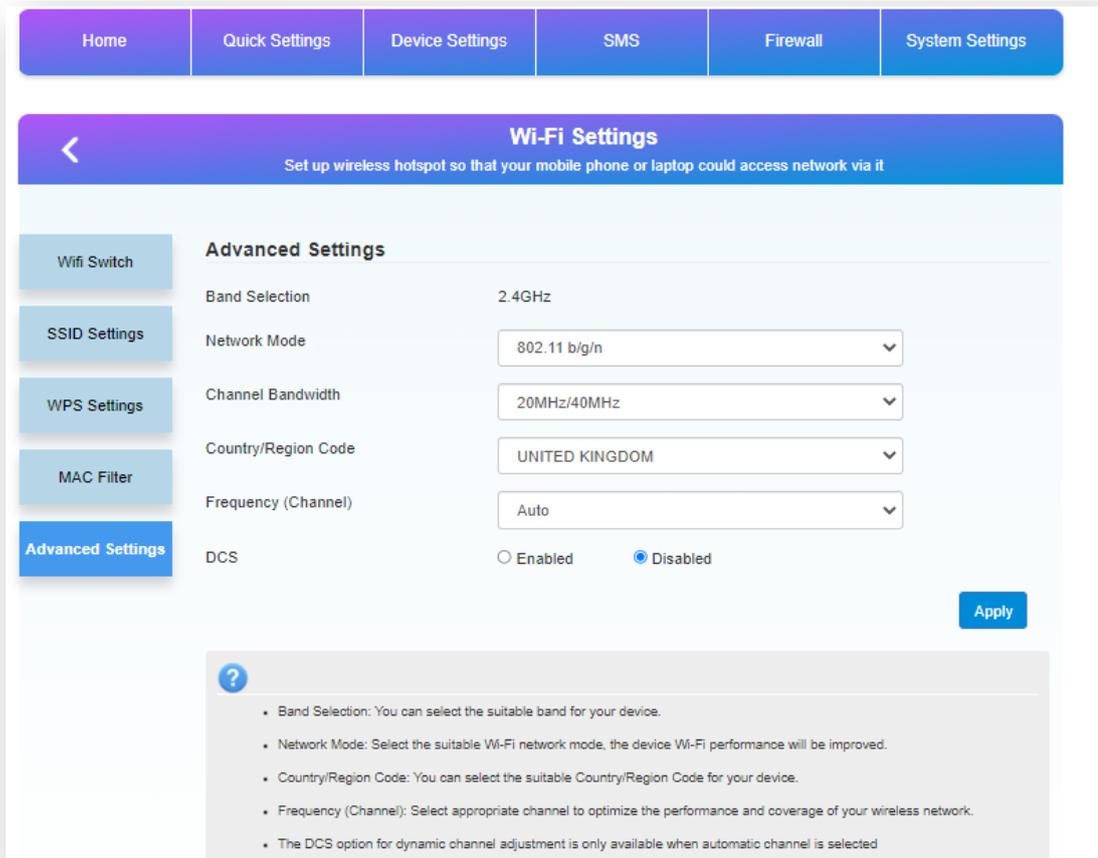


Here you can choose which devices can (White list) and cannot (Black list) connect via Wi-Fi to the router.

Simply enter the MAC address of the device in either White or Black list and click apply.

Due to changes in new Apple products that use random MAC addresses, the ability to restrict these products may not function as expected.

Wi-Fi settings



Wi-Fi standard is 802.11 and the b, g, n are different published standards. b was released in 1999, g in 2003 and n in 2009.

Leaving the Network mode on 802.11b/g/n, will allow the fastest Wi-Fi connection and backward compatibility between older and newer devices.

Setting the Wi-Fi to N only, could prevent some devices from connecting to the Wi-Fi.

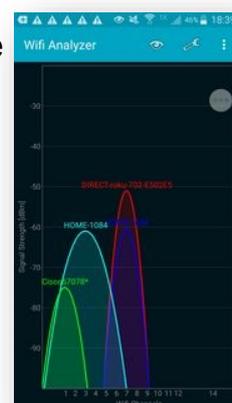
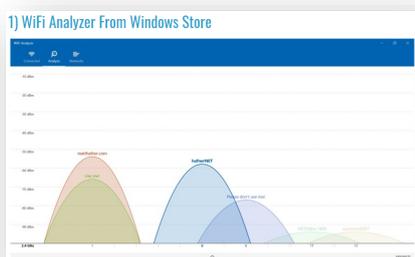
The country region should always be set to the country you are using the router in, to maintain legal use of the correct channels.

Frequency (Channel) should be set to a free channel to prevent interference and slowing of the Wi-Fi. Channels 1, 6 and 11 are suggested.

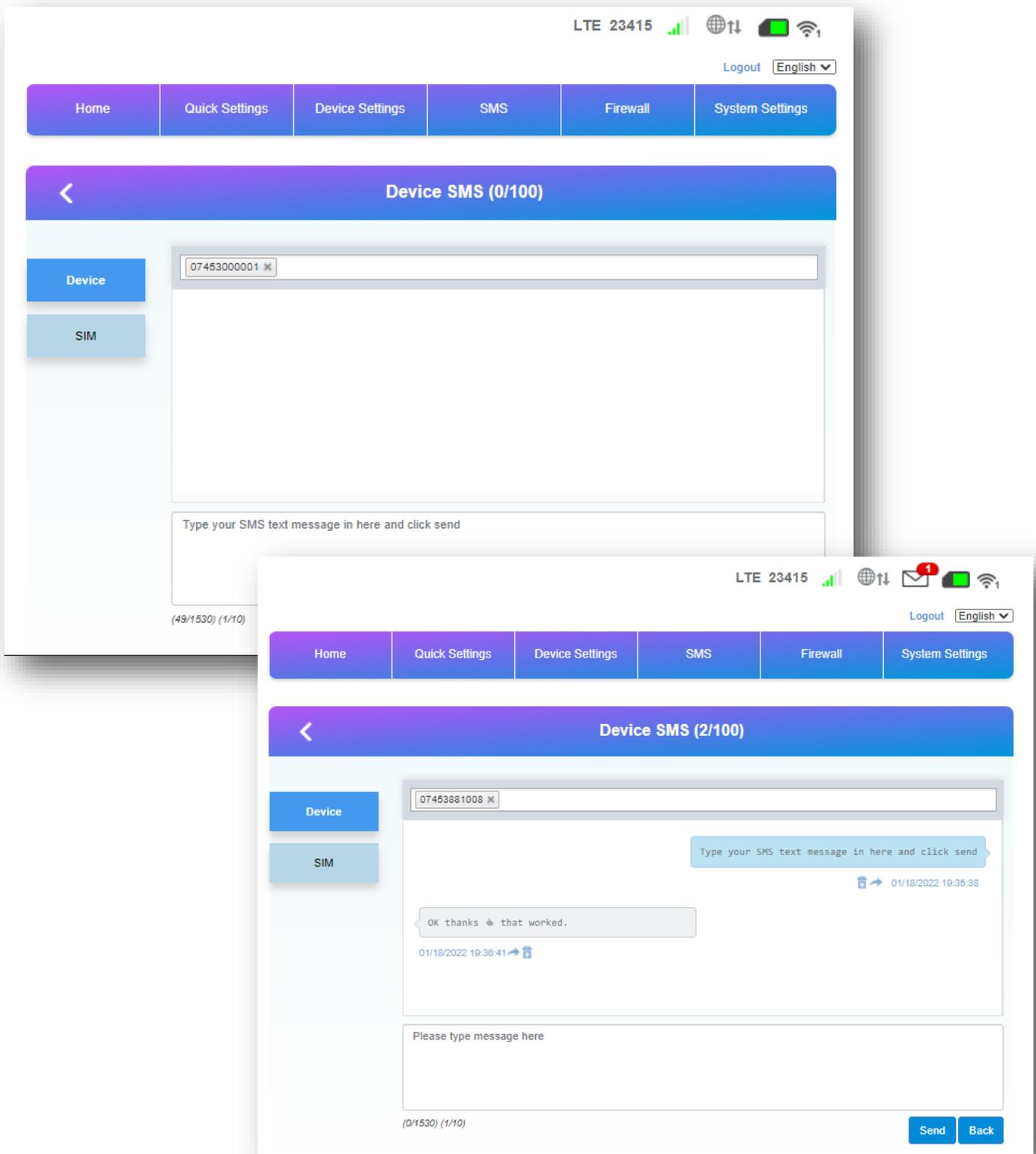
Use an app on your phone to see what Wi-Fi channels are free in the area.

For Android we suggest Wi-Fi Analyzer by Kevin Yan (Farproc) and for Apple we suggest NetSpot by Etwok Inc.

On Windows you can use WiFi Analyzer available from the Windows store [Get WiFi Analyzer](#)



SMS Text Messaging



You can send text messages from your router.

Enter the number you wish to send the SMS to and press enter. Enter more numbers if needed.

In the lower box, enter your message and press the send button.

You can also received SMS messages.

If you receive a SMS message you will see a red icon over the envelope stating the number of SMS received.



Firewall Port Filtering

The screenshot shows the Firewall settings interface. At the top, there are navigation tabs: Home, Quick Settings, Device Settings, SMS, Firewall (selected), and System Settings. Below the tabs, the Firewall section is active, showing a toggle for MAC/IP/Port Filtering set to Disabled. An arrow points to this toggle with the text "After enabling you will see the box below". Below the toggle is a grey box with a question mark. A second arrow points down to a detailed configuration form for MAC/IP/Port Filtering Settings. This form includes fields for IP Settings (IPv4 selected), MAC Address (00:1E:90:FF:FF:FF), Source IP Address (84.67.4.67), Dest. IP Address (192.168.1.7), Protocol (TCP), Source Port Range (90-95), Dest. Port Range (80-80), Action (Accept selected), and Comment (Web_Server). An Apply button is at the bottom right. Below the configuration form is a table titled "Current MAC/IP/Port Filtering Rules in System" showing one rule with the following details:

MAC Address	IP Type	Source IP Address	Dest. IP Address	Protocol	Source Port Range	Dest. Port
00:1E:90:FF:FF:FF	IPv4	84.67.4.67	192.168.1.7	TCP	80 - 80	80 - 80

Below the table is a Delete button and a grey box with a question mark.

A Firewall sits between you and the internet to protect you from a potential hacker gaining access to your computer, files and images.

We suggest you leave the Firewall on.

If you require to port forward, perhaps for a CCTV system. The only open the ports that are absolutely necessary. **IPV4** is the current standard, **IPV6** is not usually used by cellular network however to check go to <https://www.test-ipv6.com>

MAC Address is the MAC address of the device you are wanting to expose to the WAN.

Source IP Address is the external WAN IP address of the router with **Dest. IP Address** is the IP address of the device you are opening the ports for.

Source port is the incoming port number to be used and this can be in a range (From-To)

Dest. Port Range is the actual open ports of the device you wish to use (EG. 80 is the standard HTTP port) and again this can be in a range (From-To) You can enter a different port as source on and another for the destination.

Action is the ability to either accept incoming on the ports or Drop (Deny)

Firewall Port Forward

<
Firewall

Port Filtering

Port Forwarding Enabled Disabled

Apply

?

Port Forwarding Settings

Src. Port *	<input type="text"/>	(1~65000)
Dest. IP Address *	<input type="text"/>	(e.g., 192.168.0.101)
Dest. Port *	<input type="text"/>	(1~65000)
Protocol	TCP+UDP	▼
Comment *	<input type="text"/>	

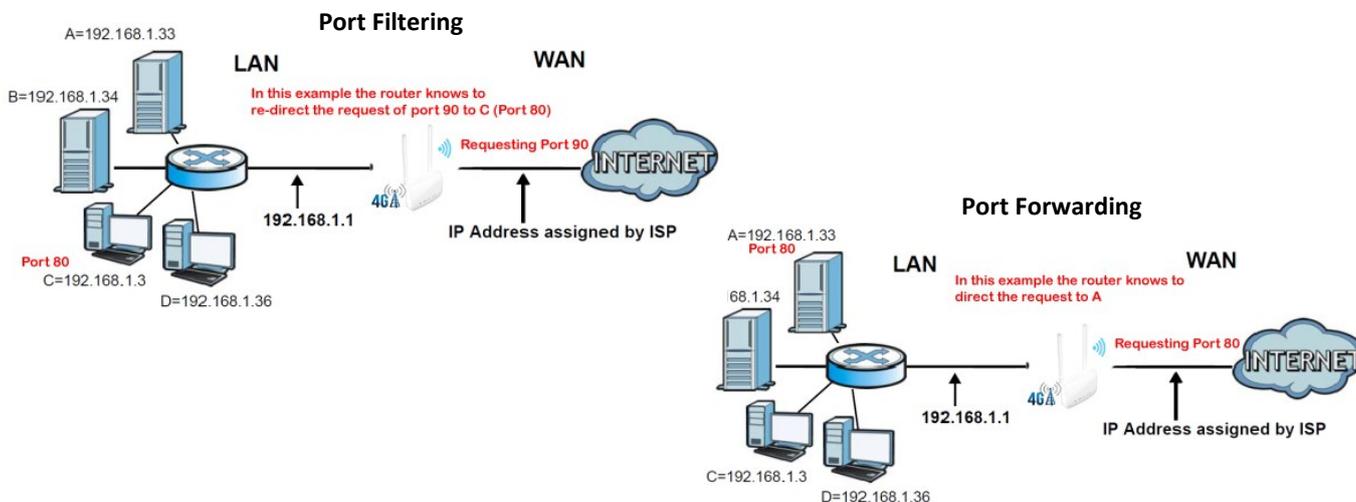
Apply

?

Current Virtual Servers in system

	Src. Port	Dest. IP Address	Dest. Port	Protocol	Comment

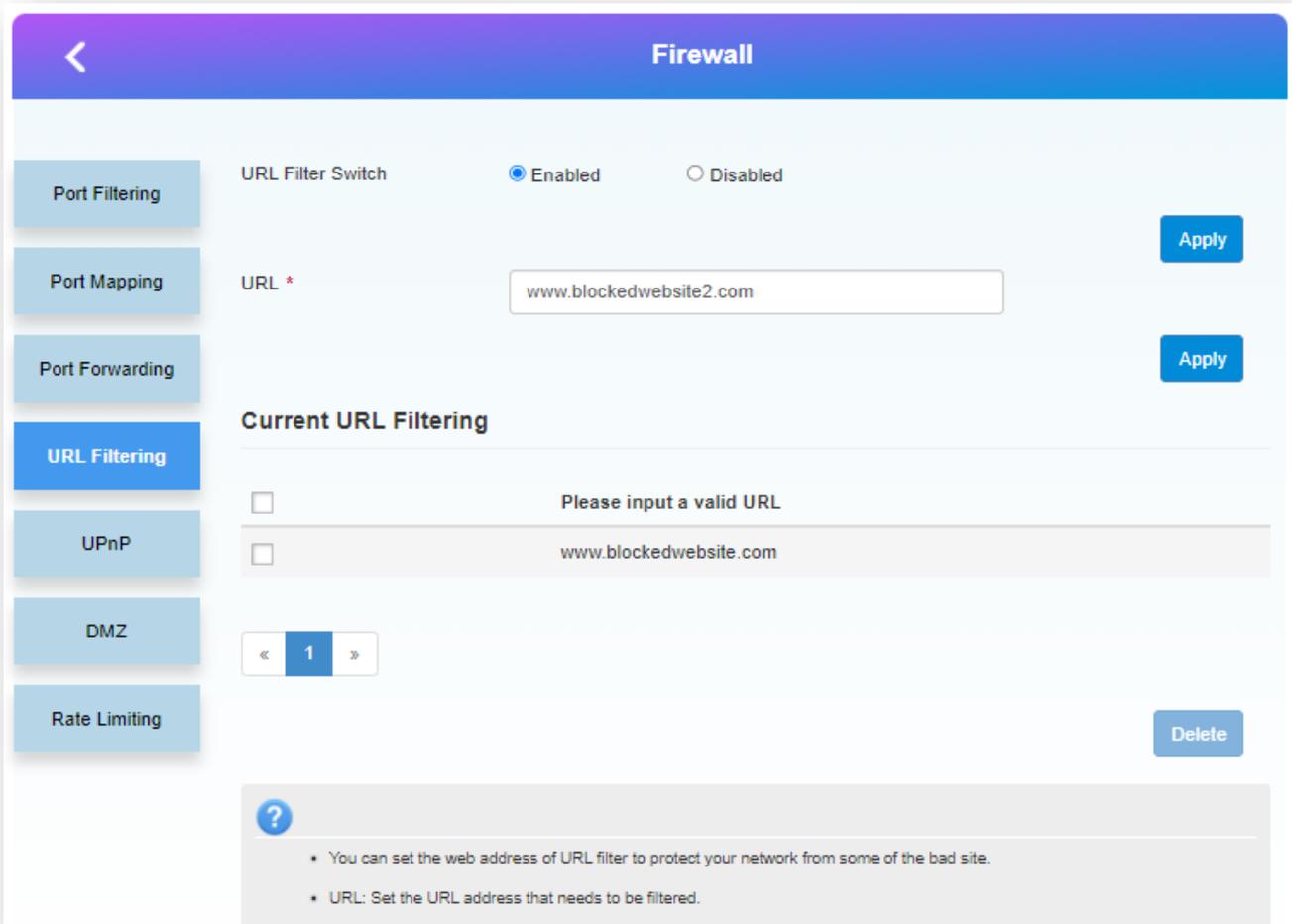
This is similar in operation to port filtering but you use the same port coming in WAN (Source) as going out Local (Destination).



Local Network: If you are sharing a file from the server to your PC in your office, then your PC's LAN (local) IP is the source IP and the WAN (Internet) IP is destination IP.

Internet: If you are streaming a video from a music website from your PC in your office then your internet routers WAN IP is the source IP and music website's IP is destination IP.

Firewall URL Filtering



URL filtering restricts what web content users can access. It does this by blocking certain URLs from loading. Implement URL filtering to prevent people from using resources devices, network bandwidth, etc., or can help stop malware and phishing attacks by blocking certain webpages. For example blocking www.mozilla.org would prevent someone visiting that website.



The filtering takes place within the router so anyone connected wirelessly or hard wired will be blocked from viewing the websites listed here.

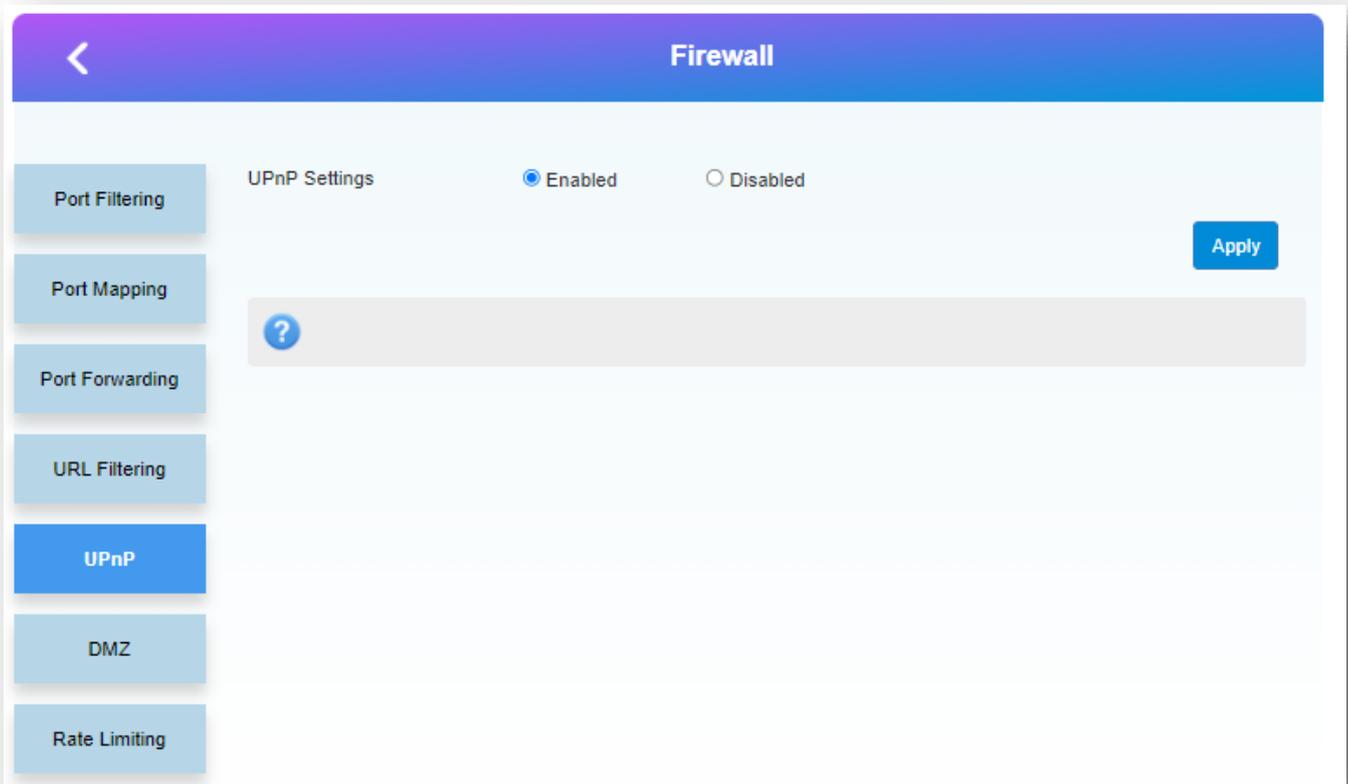
Enable the feature and click apply.

Enter the URL you wish to block and click apply.

You can see at the bottom of the screen the URL that you already have blocked and these can be removed by selecting the line and clicking the delete button.

Firewall

Universal Plug and Play



UPnP stands for Universal Plug and Play. It's a protocol that sets you free from manual network configuration and enables you to connect compatible devices to your 4G router. When enabled, UPnP devices directly forward a port on your router and save you from manually forwarding ports.

Although UPnP is more convenient for users, there are security implications to using the service.

We suggest leaving at default (disabled) unless you understand all of the implications of using UPnP.

Make sure you're not using an infected device while enabling UPnP, otherwise it can infect all of your local devices.

Firewall

DMZ Settings

The screenshot shows a web interface for Firewall settings. At the top, there is a navigation bar with tabs: Home, Quick Settings, Device Settings, SMS, Firewall, and System Settings. Below this is a header for the 'Firewall' section with a back arrow. On the left side, there is a vertical menu with options: Port Filtering, Port Mapping, Port Forwarding, URL Filtering, UPnP, DMZ (highlighted in blue), and Rate Limiting. The main content area is titled 'DMZ Settings' and features a radio button selection for 'Enabled' (selected) and 'Disabled'. Below this is a text input field labeled 'IP Address *'. An 'Apply' button is located to the right of the input field. A grey bar with a question mark icon is positioned below the input field.

DMZ sometimes referred to as a “demilitarised zone” can be used in two ways. Either a security method where Hosts in the DMZ have tightly controlled access permissions to other services within the internal network, because the data passed through the DMZ is not as secure. On top of that, communications between hosts in the DMZ and the external network are also restricted to help increase the protected border zone. DMZ can also be used to “open all ports” to one device, perhaps a CCTV system that needs several ports forwarded.

Unless you understand the security implications of using DMZ, please leave this option to its default (disabled).

Firewall

Rate Limiting Setting

The screenshot shows a web interface for configuring firewall settings. At the top, there is a navigation bar with tabs for Home, Quick Settings, Device Settings, SMS, Firewall, and System Settings. Below this is a header for the Firewall section with a back arrow and the title 'Firewall'. On the left side, there is a vertical menu with buttons for Port Filtering, Port Mapping, Port Forwarding, URL Filtering, UPnP, DMZ, and Rate Limiting (which is highlighted in blue). The main content area shows 'Rate Limiting Settings' with radio buttons for 'Enabled' (selected) and 'Disabled'. An 'Apply' button is located to the right. Below this is a greyed-out section with a question mark icon. The 'Rate Limiting Settings' section contains four input fields: 'IP Address *' with a placeholder '(e.g., 192.168.0.101)', 'Download Speed *' with a unit 'KB (1 ~ 1000, 000)', 'Upload Speed *' with a unit 'KB (1 ~ 1000, 000)', and 'Comment *'. An 'Apply' button is located at the bottom right of this section.

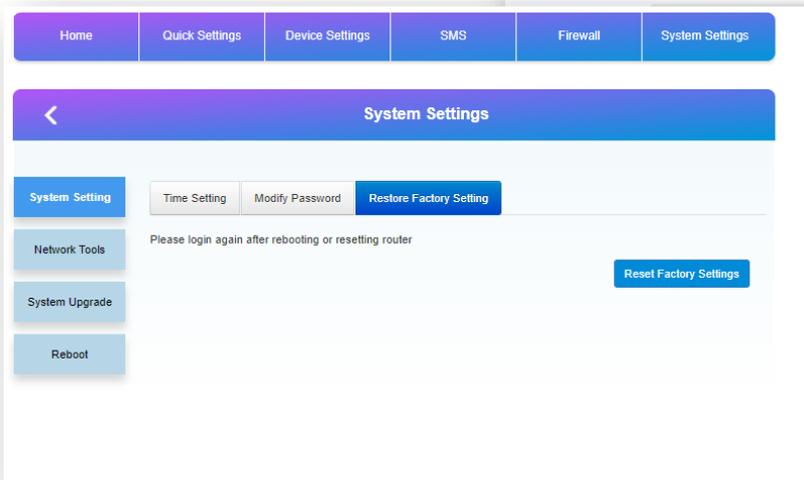
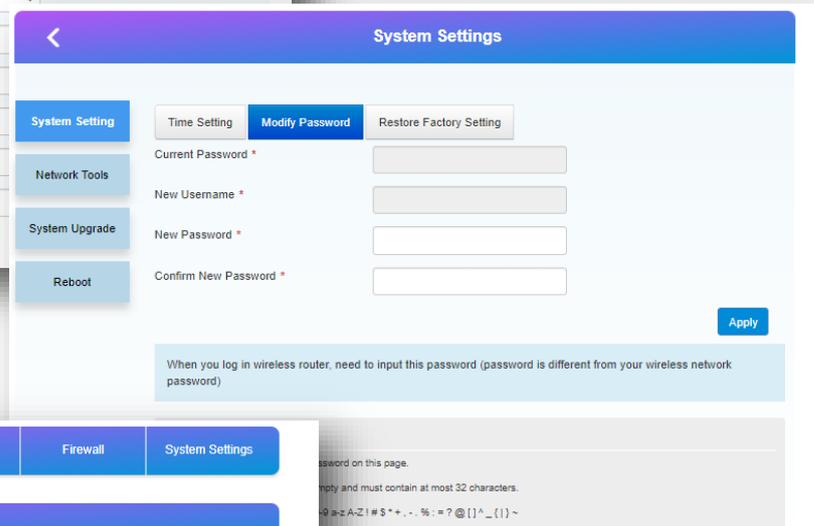
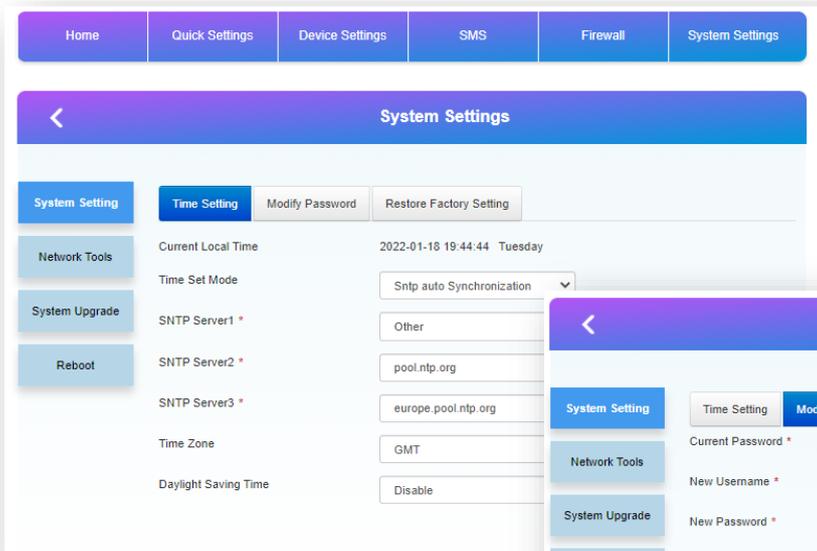
Rate limiting also called bandwidth limiting is used to restrict or “throttle” a device on the network. You can limit upload and download speeds.

Enter the local LAN IP of the device you wish to restrict.

Set the required download and upload speed and enter any comment below, perhaps a reminder of why you did the restriction or what the device is.

You would typically use this if one device on the network is using lots of bandwidth and is affecting other devices on the same network.

System settings



NTP:

The Network Time Protocol (NTP) is a networking protocol for clock synchronisation between computer systems.

This is used for keeping accurate time within the 4g router.

Time is used in logs and within the SMS section of the router to keep an accurate record of when SMS was sent or received.

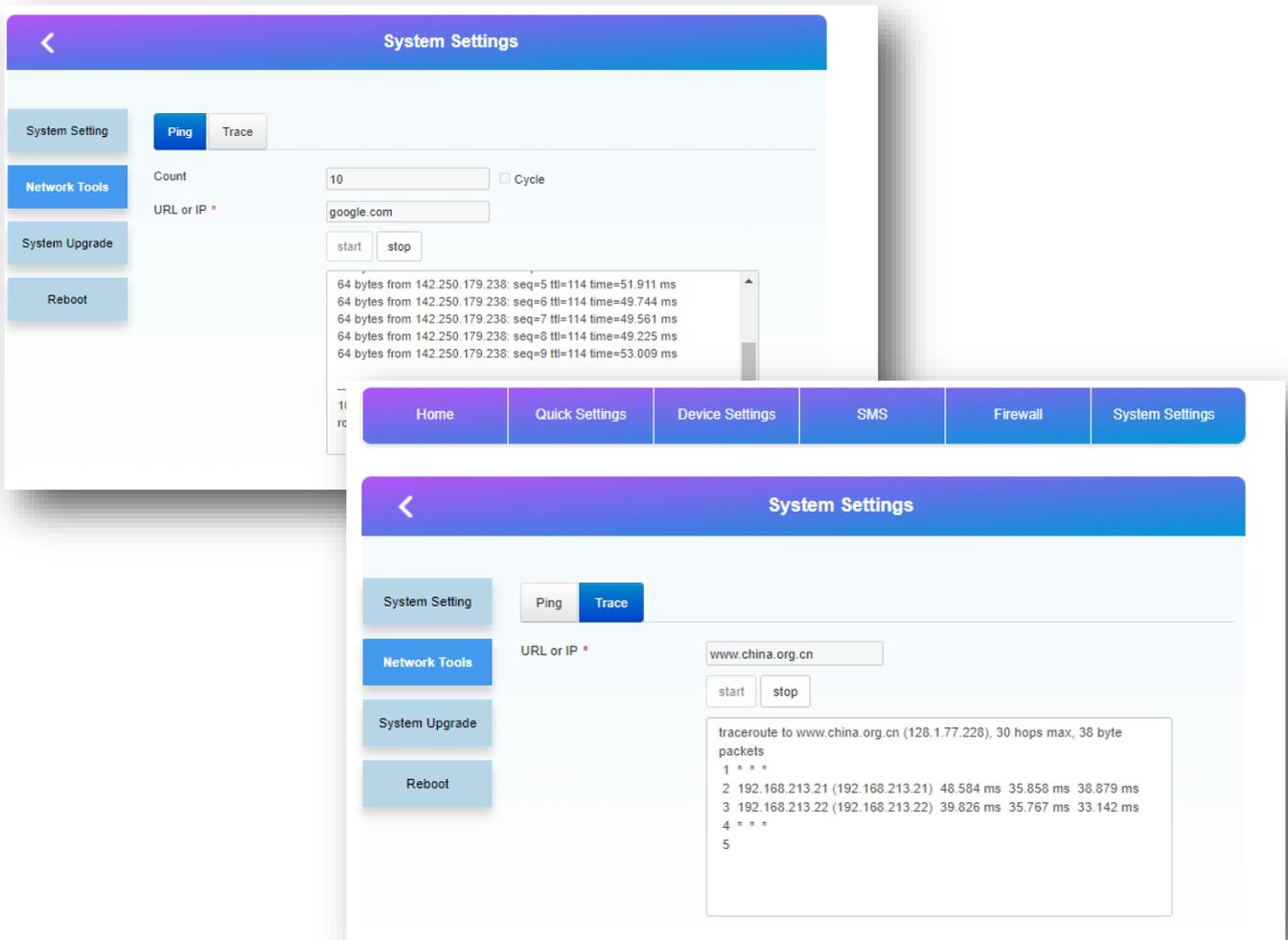
Modify password:

This screen is for changing the password to login to the router, on the initial admin login screen. Be careful when changing this, as you will need to factory reset the router by holding the black button down inside the rear battery cover for 15 seconds.

Restore Factory Settings:

This option is to fully factory restore the 4G router as it was when it was first purchased. Using this option will mean you will need to set the router back up and ALL options will be reset to default.

System settings



Ping:

This is used to test to see if a networked device or website is reachable.

You can also use this as a simple tool to determine if you have internet access.

The ping command sends a request over the network to a specific device. A successful ping results in a response (echo) from the computer that was pinged back to the router.

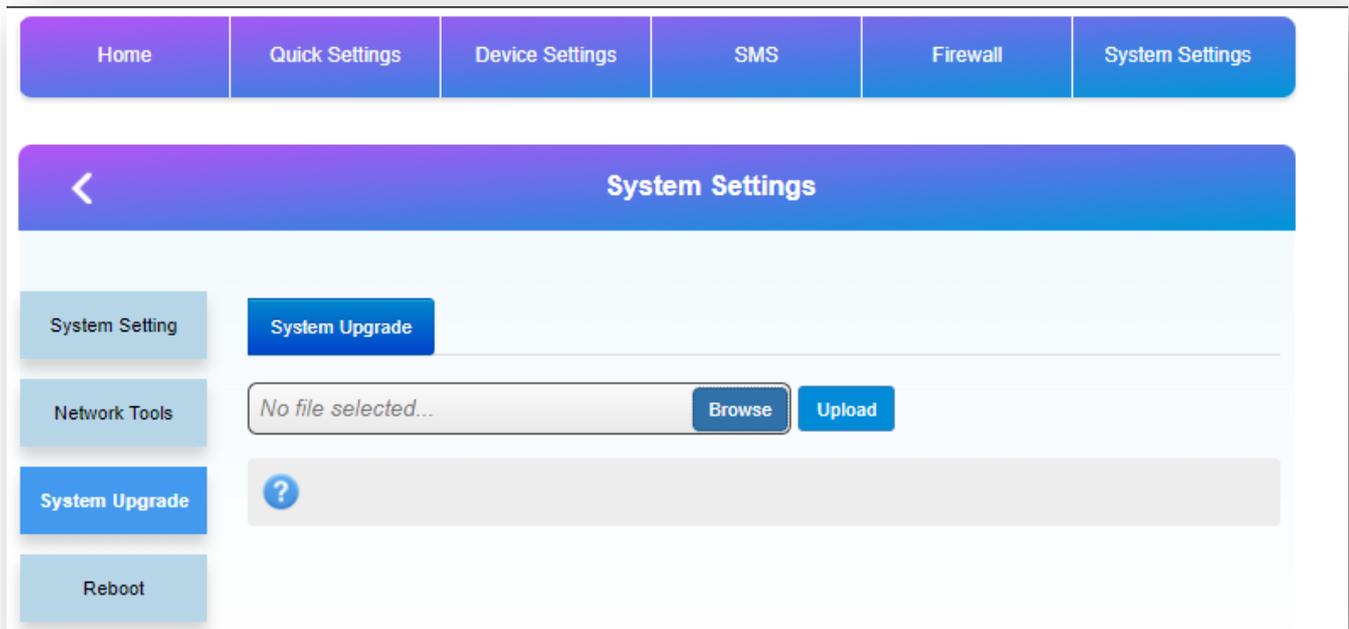
If you use an IP number, then you can also check problems with DNS.

If you can ping a website using its IP number but cannot using its URL, then this suggests a possible DNS issue.

Trace:

Trace is similar to ping but also shows the route it has taken to get to the destination.

System settings



The system update page is used for updating the Firmware (The operating software within the 4G router) to the latest edition.

Only install firmware files directly downloaded from our website (Blake-uk.com or Proceptionwifi.co.uk)

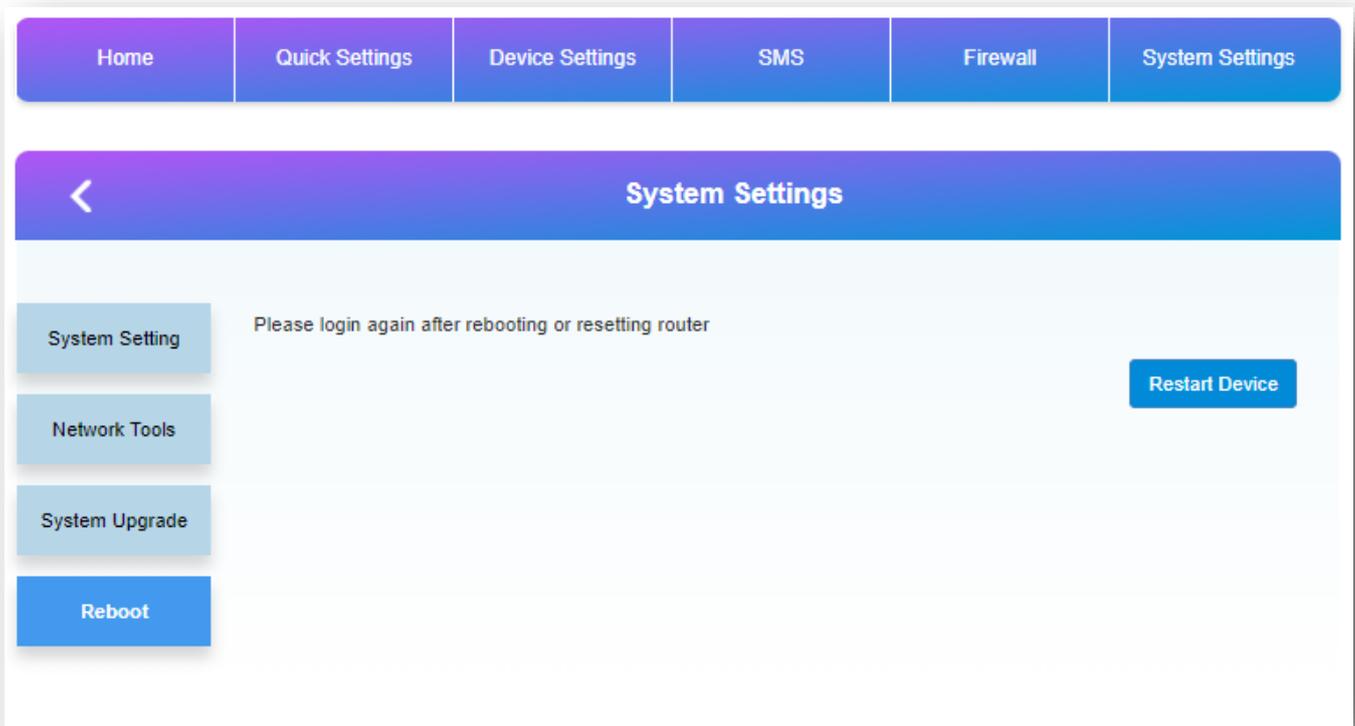
When there is an update available, save the update to your desktop, click browse to find the file you downloaded and click update.

Leave the router for at least ten minutes to update and restart.

DO NOT CLOSE THE SCREEN OR SWITCH EITHER YOUR COMPUTER OR 4G ROUTER OFF UNTIL COMPLETED AS THIS WILL DAMAGE THE ROUTER.

We suggest not using this option unless you are instructed by a member of our support team as doing so could invalidate the warranty.

System settings



On this page you have the option to reboot the device.
This is a warm boot and simply restarts the router.

To do a full reboot (cold start), please power off the device using the power button on the rear of the 4G router.

Hardware Specifications

Spec	Description
Chipset	ZX297520V3E/ ZTE
LTE Standard	LTE CAT4 150 Mbps(DL)/50 Mbps(UL)
Memory	ROM: 128MB NAND Flash
	RAM: 64MB DDR
Interfaces	LAN RJ45 Port (FE) * 1; RJ11 Port * 1 (Optional); DC Socket; Battery Socket (Optional); SMA Interface * 2; SIM Slot * 1; USB Socket (For Manufacture);
Buttons	POWER On/Off Button WPS Button Wi-Fi Button RESET Button
Indicators	Power/Battery Wi-Fi Switch 4G/3G/2G Internet Signal Strength (5 bars)
SIM	Micro SIM(3FF) Support 1.8V & 3.3V
Power Adaptor	AC100V~240V,50Hz~60Hz DC 12V 1A, DC 12V 0.5A(If no need battery and voice)
Battery	Rechargeable lithium battery
	Capacity: 7.4V/2000mAh
	Maximum working hours: 2 (depending on the network)
	Maximum standby hours: 8 (depending on the network)
Dimensions	130*100*46mm
Weight	Approximately 100g

RF Specifications

Feature	Capability
Supported Bands (Band will be customized as per requirement)	LTE TDD: B38/39/40/41 LTE FDD: B1/2/3/4/5/7/8/20(28)
	HSPA+/HSPA/UMTS: B1/B2/B4/B5/B8
	GSM: 850MHz/900MHz/1800MHz/ 1900MHz
LTE MIMO	MIMO 2*2(1TX 2RX)
LTE Tx	1 Tx
LTE Output Power@25℃	23±2 dBm
LTE Antenna	2 Built-in 2 External
LTE Antenna Gain	Built-in Antennas: 3 dBi; External Antennas: 5 dBi;
LTE Peak Throughput	DL 150 Mbps, UL 50 Mbps
Wi-Fi Frequency	2.4 GHz
Wi-Fi Output Power	15 dBm/2.4G
Wi-Fi Antenna	2 Build-in Antennas
Wi-Fi Antenna Gain	3 dBi
Wi-Fi Channel BW	20MHz, 40MHz
Wi-Fi Concurrent Users	32

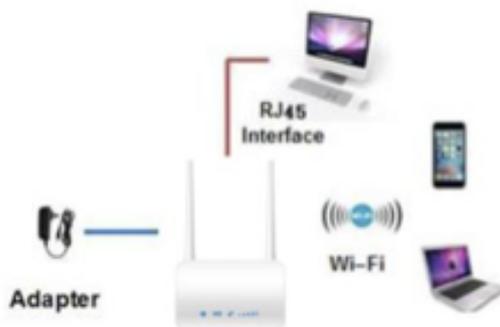
If the LTE antenna supports all frequency, the antenna gain will be lower than the value in table.

Environment Specifications

Feature	Capability
Operating Temperature	0°C~45°C
Storage Temperature	-20°C~70°C
Operating humidity	95% Maxton-condensing
Storage humidity	95% Maxton-condensing

Topology

Topology based on LTE WAN network



Software Specifications

Spec	Description
Language	English
	Chinese
	Could be customized
Https/http	Both
User login	Support two users (user and admin) with different limitation and display
SMS	Write/send/receive short messages Send/receive extra-long messages
LTE Network Setup	Create/delete/edit APN
IPv4v6 dual stack	Support IPV4, IPV6, IPV4V6

Wi-Fi/WLAN Setup	SSID/Key, SSID broadcasting and hiding, Security Mode: None (Open), WPA2-PSK(AES), and WPA/WPA2-PSK(TKIP/AES) WPS Setup, Multiple SSID Settings, Wi-Fi MAC Filter, Wi-Fi Advanced Settings.
DHCP Setup	Enable/disable DHCP server Configure DHCP IP Pool Configure DHCP Lease Time
DNS Setup	Support the auto DNS or manual DNS configuration
SIM Card	PIN Management
	SIM card Authentication
Backup/Restore	Encryption backup current settings and restore the backup settings
Diagnosis	Export current diagnosis results and operation logs
Statistics	Link Status (LAN/Wi-Fi Connected Devices)
	Transmit / receive traffic in packets
	Up Time
Multi-APN	3
VPN	L2TP, PPTP, GRE; VPN PASSTHROUGH;
4G Status	Signal strength
	Network type
	Network connection status
	Operator name, system mode
	SIM card status
Cell lock	Support
Carrier SIM Lock	Support
Work Mode	NAT/ Router mode



PRO4GROUTER

150Mbps Mi-Fi 4G Wireless Router