D-Link

User Manual

LTE CAT6 Fibre Wi-Fi AC1200 Gigabit Router

G413K

Preface

D-Link reserves the right to revise this publication and to make changes in the content hereof without obligation to notify any person or organization of such revisions or changes.

Manual Revisions

Revision	Date	Description
1.10	13 November 2023	Final Release

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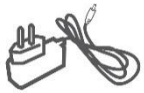
Product Overview

Package Contents

G413 router



Power Adapter

Ethernet Cable

Quick Install Guide

If any of the above items are missing or damaged, please contact your reseller.

Note: *Using a power supply other than the one included with the G413K may cause damage and void the warranty for this product.*

System Requirements

Network Requirements

An active account with an Internet Service Provider using one of the following connection types:

- A Mobile connection using a SIM card
- A broadband device connected using the WAN port

Web-based Configuration Utility Requirements Computer with the following:

- Windows®, Macintosh, or Linux-based operating system
- An installed Ethernet adapter

Browser Requirements:

- Internet Explorer 10 or higher
- Microsoft EDGE Browser 20 or higher
- Firefox 11 or higher
- Safari 5 or higher
- Chrome 17 or higher

Windows® Users: Make sure you have the latest version of Java installed. Visit version of Java installed. Visit www.java.com to download the latest version.

Introduction

The D-Link G413K LTE CAT6 Fibre Wi-Fi AC1200 Gigabit Router share your internet connection over blazing-fast Wireless AC. Equipped with advanced AC beamforming technology to maximize the speed and range of your wireless signal to significantly outperform 802.11n and other older, non-beamforming capable 802.11ac devices. It also has a Gigabit WAN port, and four Gigabit ports to provide speeds up to 10 times faster than standard 10/100 ports.

Enjoy uninterrupted Internet service thanks to failover protection, the WAN port to connect to Ethernet based networks while the built-in SIM slots allows for mobile broadband connection. With the addition of Advanced Quality of Service (QoS), data streams are separated, which helps organize and prioritize your network traffic so your video streaming, gaming run smoother over both your wired and wireless network.

Features

- **Faster Wireless Networking** -The G413K is dual-band capable and equipped with four antennas to provide wireless speeds of up to 1200 Mbps* for your wireless devices. It operates on both the 2.4 GHz and 5GHz bands to allow separation of traffic so users can participate in high-bandwidth activities, such as video streaming, online gaming, and real-time audio, without affecting low-priority traffic like email and web surfing.

- **Compatible with 802.11n/g/b/a devices** - The G413K is still fully compatible with the 802.11n, 802.11g, and 802.11a standards, so it can connect with existing 802.11n, 802.11g, 802.11b, and 802.11a wireless devices.

- **Advanced Firewall Features** - The web-based user interface allows you to configure a number of advanced network management features including:

  - **Content Filtering** - Easily apply content filtering based on MAC address, URL, and/or domain name.

  - **Scheduling** - The wireless features can be scheduled to be active on a schedule you define.

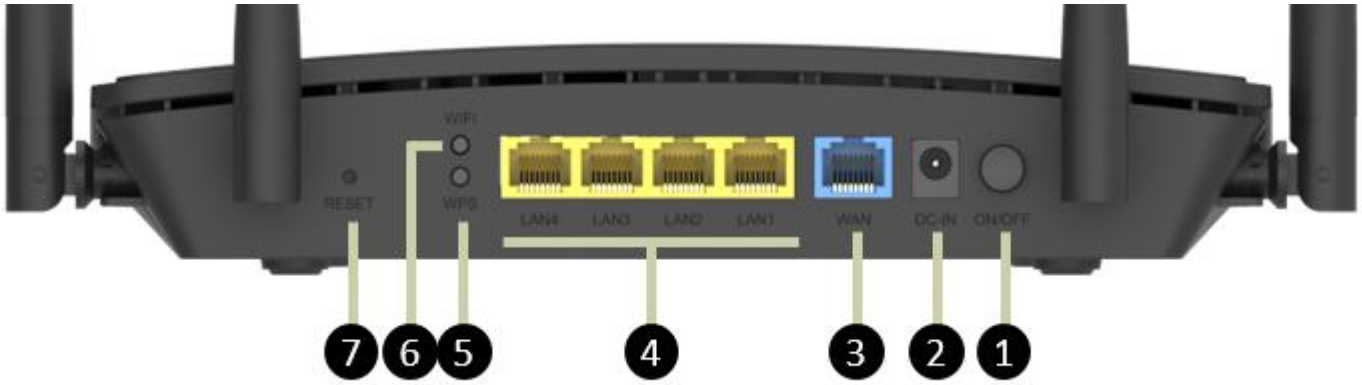
- **Multiple/Concurrent VPN Sessions** - The G413K can pass through VPN sessions. It supports multiple and concurrent IPsec and PPTP sessions, so users behind the G413K can access encrypted corporate networks.

- **User-friendly Setup Wizard** - Through its easy-to-use web-based user interface, the G413K lets you control what information is accessible to those on the wireless network, whether from the Internet, or from your company's server. Configure your router to your specific settings within minutes.

* Maximum wireless signal rate derived from IEEE Standard 802.11a, 802.11b, 802.11g, 802.11n, and 802.11ac specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

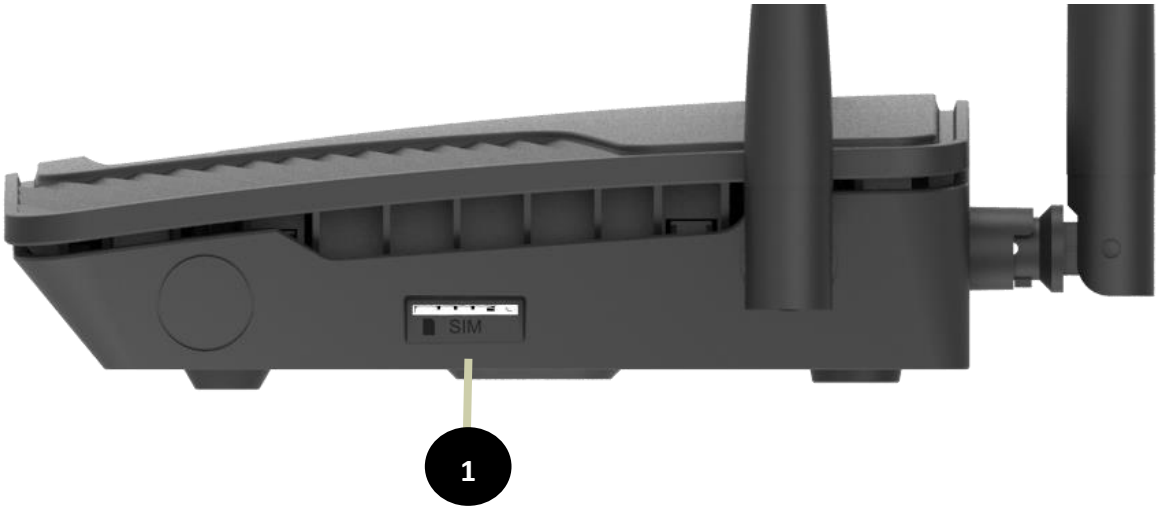
Hardware Overview

Back Panel



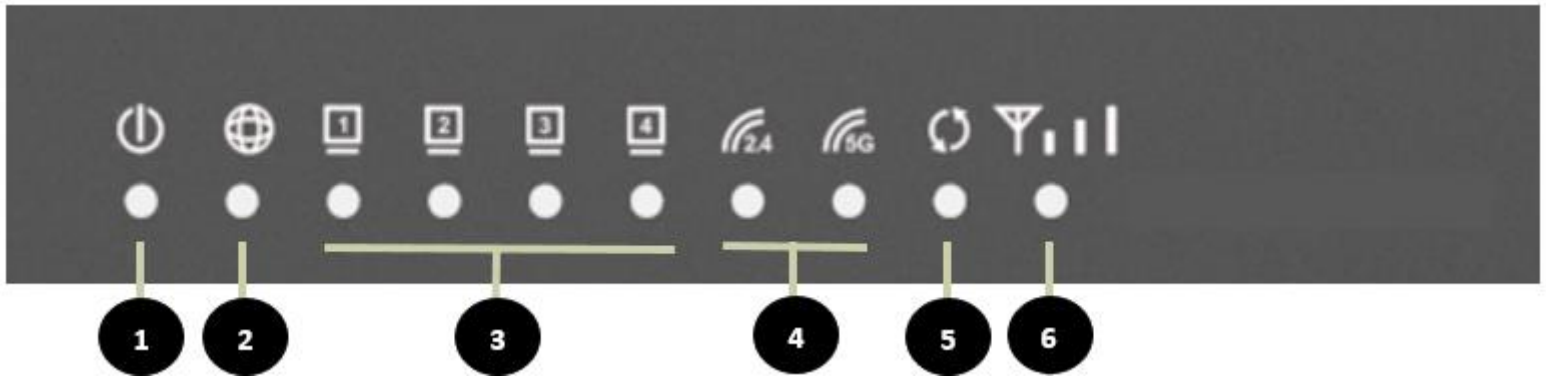
1.	Power Button	Press to switch router ON/OFF
2.	Power Connector	Connector for the supplied power adapter.
3.	WAN Port	Connects to Ethernet WAN devices.
4.	Ethernet Ports	Connects to Ethernet devices such as computers.
5.	WPS button	Press and hold for 5 seconds to activate WPS function
6.	Wi-Fi on/off button	Press and hold for 5 seconds to turn off your 2.4G & 5.8G Wi-Fi, Press and hold for 5 seconds again to switch them back on, please wait for 30 seconds before the Wi-Fi goes on/off
7.	Reset hole	Press and hold for 15 seconds to factory reset your router

Side Panel



1.	SIM Slot	Inset a Sim card into this slot for mobile connection

LEDs



1.	Power	Solid Green	Device is powered on.
2.	WAN	Solid Green	The WAN is properly connected.
		Blinking Green	The WAN is properly connected and data is being transmitted.
		OFF	No connection or Cable not connected properly.
3.	LAN 1,2,3,4	Solid Green	A device is connected to the Ethernet port.
		Blinking Green	A device is connected to the Ethernet port and data is being transmitted.
		OFF	Nothing is connected to the Ethernet port.
4.	Wi-Fi 2.4Ghz/5Ghz	Blinking Green	Enabled and data is being transmitted.
		Solid Green	Enabled and no data is being transmitted.
		OFF	Wi-Fi is turned OFF
5.	WPS	Blinking Green	WPS pairing mode active.
		Solid Blue	WPS enabled, paired with WPS client
		OFF	WPS disabled.
6.	LTE Signal	Red	No Internet connection or SIM not reading.
		Green	Device is connected to a mobile network.

Installation

This section will walk you through the installation **process**.
Placement of the router is very important. Do not place the router in an enclosed area such as a closet, cabinet, attic, or garage.

Note: This installation section is written for users who are setting up their home Internet service with the G413K LTE CAT6 Fibre Wi-Fi AC1200 Gigabit Router for the first time. If you are replacing an existing modem and/or router, you may need to modify these steps.

Before you begin

- Make sure to have your active account with an Internet Service Provider using one of the following connection types either:
    - A Mobile connection using a SIM card
    - Fibre service information provided by your Internet Service Provider handy. This information is likely to include your Fibre account's Username and Password. Your ISP may also supply you with additional WAN configuration settings which are necessary to establish a connection. This information may include the connection type (DHCP IP, Static IP, PPPoE, or PPPoA) and/or ATM PVC details.

- If you are connecting a considerable amount of networking equipment, it may be a good idea to take the time to label each cable or take a picture of your existing setup before making any changes.
- We suggest setting up your G413K from a single device and verifying that it is connected to the Internet before connecting additional devices.

Wireless Installation Considerations

The D-Link wireless router lets you access your network using a wireless connection from virtually anywhere within the operating range of your wireless network. Keep in mind that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through may limit the range.

Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business.
The key to maximizing wireless range is to follow these basic guidelines:

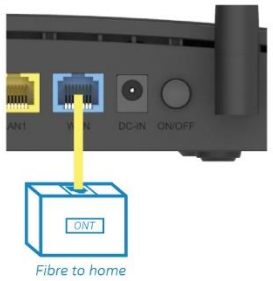
1. Keep the number of walls and ceilings between the D-Link router and other network devices to a minimum - each wall or ceiling can reduce your adapter's range from 1-30 meters. Position your devices so that the number of walls or ceilings is minimized.
2. Be aware of the direct line between network devices. A wall that is 0.5 meters thick, at a 45-degree angle appears to be almost 1 meter thick. At a 2-degree angle it looks over 14 meters thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.
3. Building materials make a difference. A solid metal door or aluminium studs may have a negative effect on range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.
4. Keep your product away 1-2 meters from electrical devices or appliances that generate RF noise.
5. If you are using 2.4 GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4 GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone is not in use.

Hardware Installation

01

Connect the Ethernet cable supplied with your Fibre device (ONT) to a LAN port on the ONT. Then connect the other end of the cable to the blue WAN port on the back of the router.

If you have a Fibre service



Fibre to home

OR

01

A. Locate the SIM card slot on the right hand side of the router.

B. Slide the SIM card into the slot with the gold contact points facing upwards and the cut facing towards the router

C. Gently press the SIM card into the slot untill you hear a click.

If you have a LTE service

A

B

C

02

Connect the power connector of the power supply to the power socket at the back of the router.

Plug the power supply into the wall outlet. Switch the wall outlet and the router on.

03

You can set up your router using Wi-Fi or an Ethernet cable.

Ethernet cable:
Connect the RJ-45 Ethernet cable to any yellow LAN port at the back of the router and the other end into your PC LAN port.

Wi-Fi:
Use the default Wi-Fi SSID and password (Wi-Fi Pwd) printed on the bottom of the router to connect your Wi-Fi enabled device to the router.

04

If you are using an Ethernet cable / Wi-Fi to complete the setup:
Launch an Internet browser (Google Chrome, Firefox, Internet Explorer, Safari, etc.) on your connected device.

In the URL web address field, type **10.0.0.2** and press enter.

The Setup wizard will start automatically. Please follow the steps of the wizard to finish the configuration of the router

Getting Started

Quick Setup

Step 1

The Quick Setup menu is used to set up the Internet connection on the

G413K. This is the first step in the Quick Setup tool and allows you to

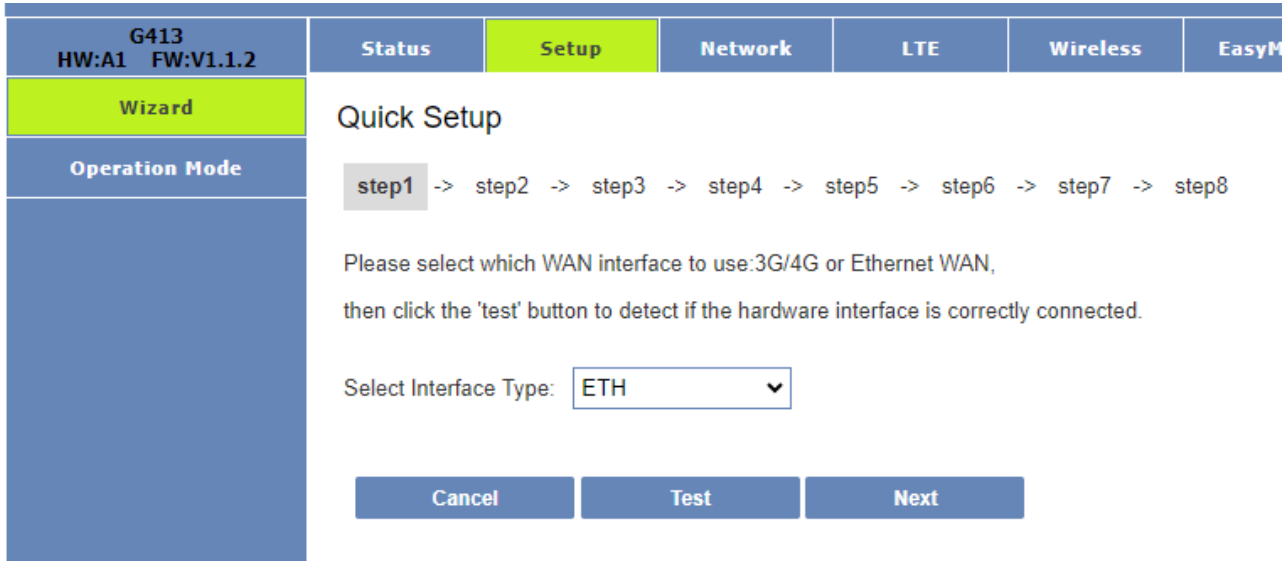
choose the connection type.

Step 1: Select Interface

Type: Please select which WAN interface to use: 3G/4G or ETH. Your ISP

should inform you of what method you use to connect to the Internet.

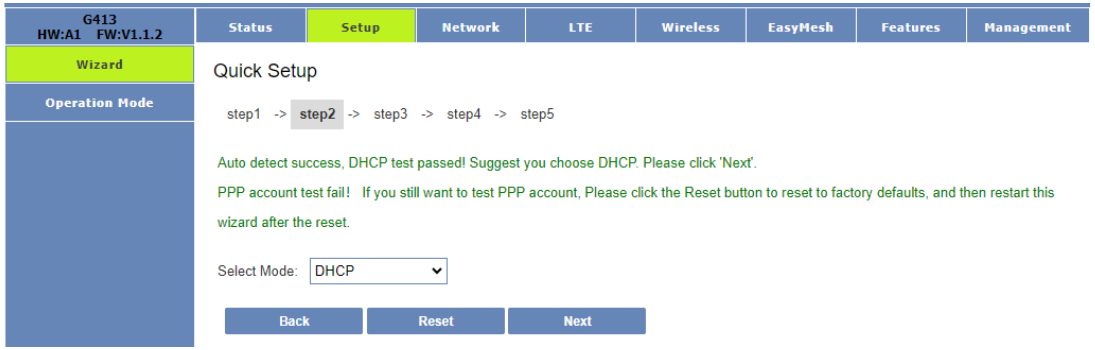
Click Next to continue.



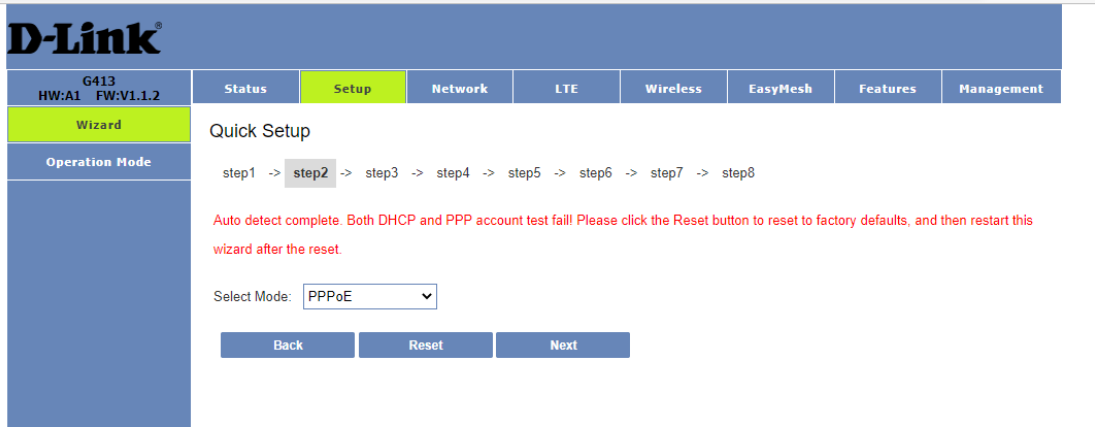
Step 2

Step 2 Auto detecting 3G/4G will use DHCP, or IF you are on Fibre you will use either PPPoE or DHCP connection.

If PPPoE or DHCP is successful, please click the next button to continue to next step.



If both DHCP and PPPoE test fails, For SIM card: please verify sim card connectivity (whether the SIM card is active and inserted correctly) For Fibre: please verify that your fibre is active and the cable from the ONT device is plugged into the blue port at the back of the G413K



Step 3

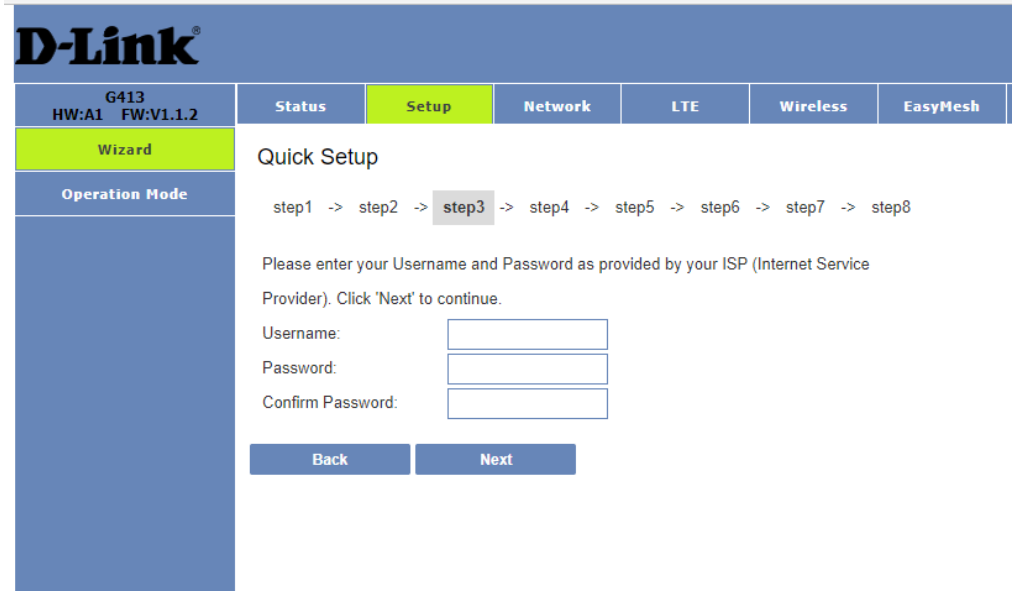
If PPPoE Passed then user will need to enter the Username and Password as provided by the Internet Service Provider (ISP). IF DHCP passed device will automatically skip to **step 5**.

Username: Enter your Username here.

(Usually looks like an email address like Yourname@telkomsa.net)

Password: Enter your Password here.

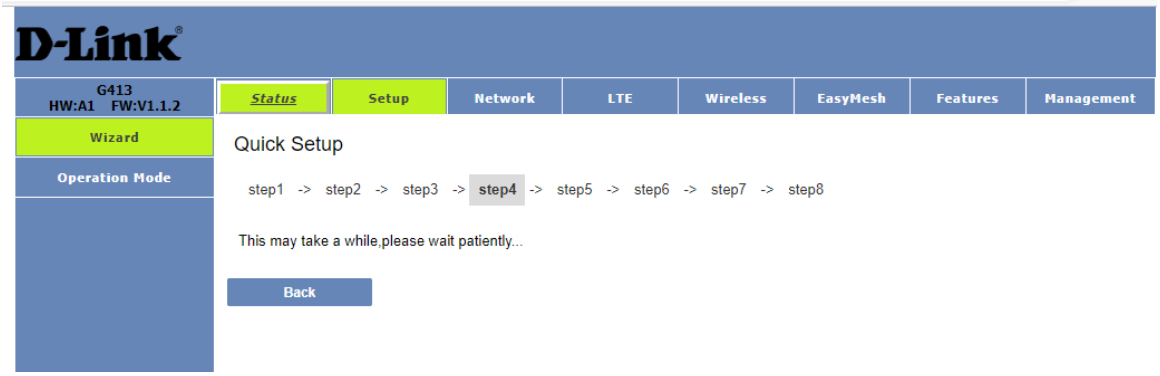
Confirm Password: Enter the same password again here.



Note: Using admin for the username & password will not work on this step as this is the account details for your Fibre line, which is unique to each client's account.

Step 4.

If connection is on PPPoE device will now test if the configured account is valid. If the test fails, please click on the back button and double check that the details on **step 3** are correct. If the details have been entered correctly and **step 4** still fails, please contact your Internet Service Provider and request for them to send you new PPPoE details.



Step 5

On **Step 5** the user will be able to modify the WiFi SSID and Preshare Key to their requirements.

SSID 2.4GHz: The name of the Wi-Fi network operating on 2.4GHz.

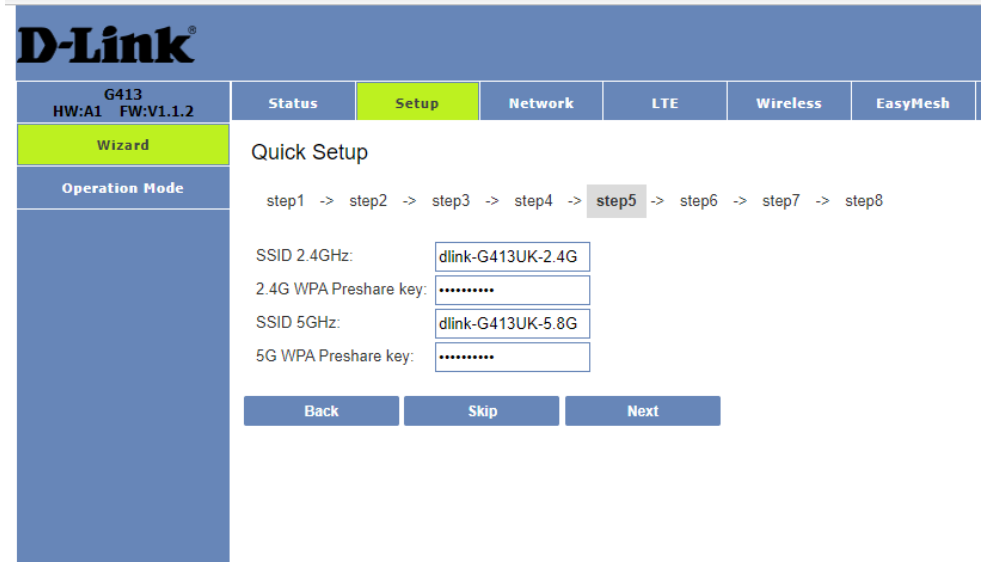
Preshare key: The password for the Wi-Fi network operating on 2.4GHz.

SSID 5GHz: The name of the Wi-Fi network operating on 5GHz.

5G WPA Preshare key: The password for the Wi-Fi network operating on 5GHz.

Click Back to go back to the pervious page, click Skip to skip this configuration

or click Next to continue to **Step 6**.



Step 6

In this step you can enter the change the web UI credentials. (The details used to log into the settings page of your router on 10.0.0.2)

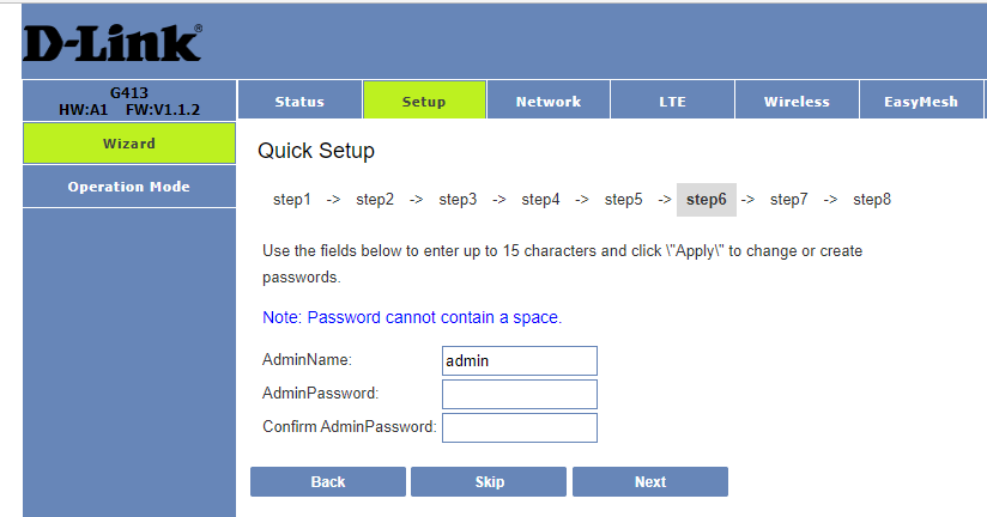
AdminName: The username to log in to the web UI.

AdminPassword: Enter the password here for logging into the web UI.

AdminPassword: Enter the password for logging in to the web UI again to confirm.

Note: Password cannot contain a space.

Click Back to go back to the pervious page, click Skip to skip this configuration (not recommended for security purposes) or click Next to continue to **Step 7**.



Step 7

In this step you can enter the Site Username, Site Password, Confirm Site Password and Site LAN IP/Netmask to connect to Telkom VPN lite

Site Username: The site username.

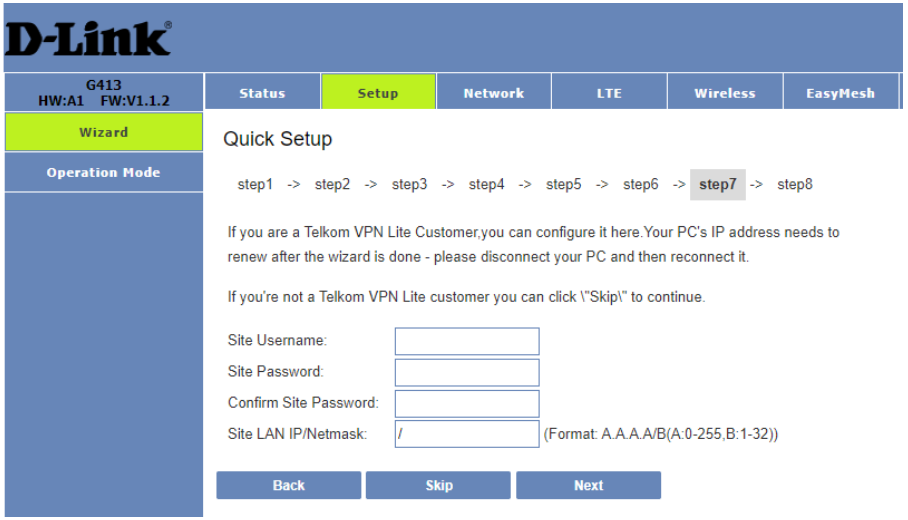
Site Password: Enter the site password here.

Confirm Site Password: Enter the site password again to confirm.

Site LAN IP/ Netmask: Enter the LAN IP or Netmask for the site here.

Note: Password cannot contain a space.

Click Back to go back to the pervious page or click Next to continue to **Step 8**.



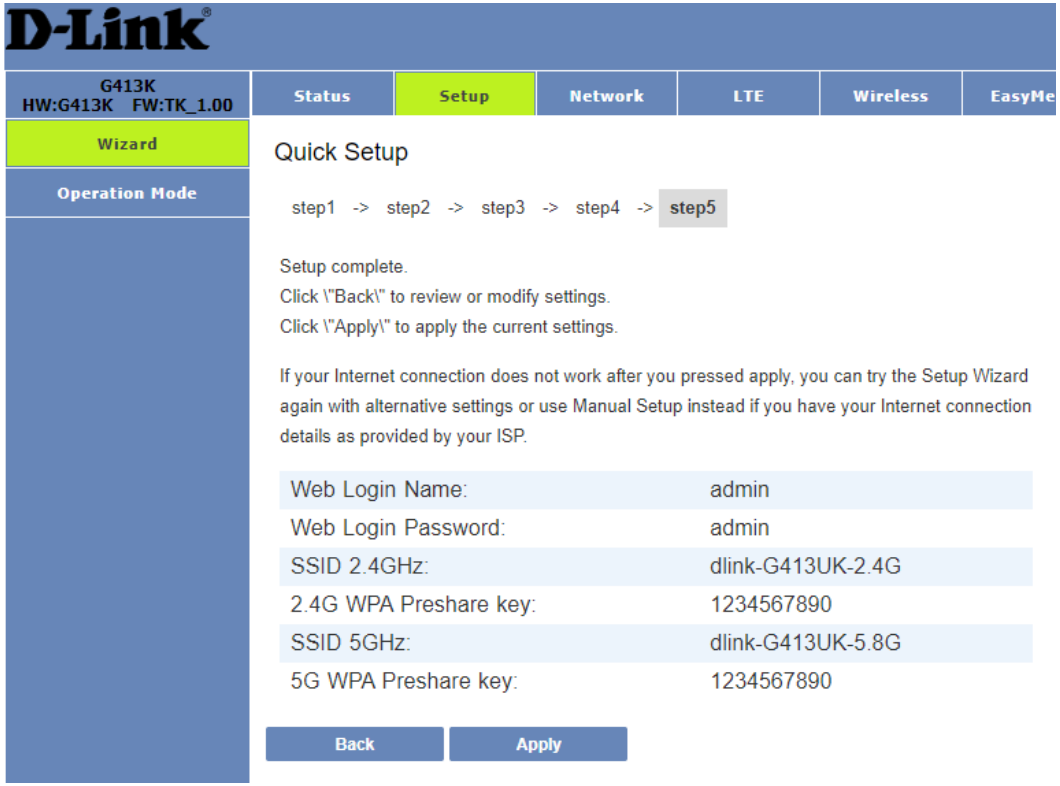
Step 8

In this step you can you can review everything for accuracy.

Click Back to go back to the pervious page

or click Apply to apply all of the

configuration settings.

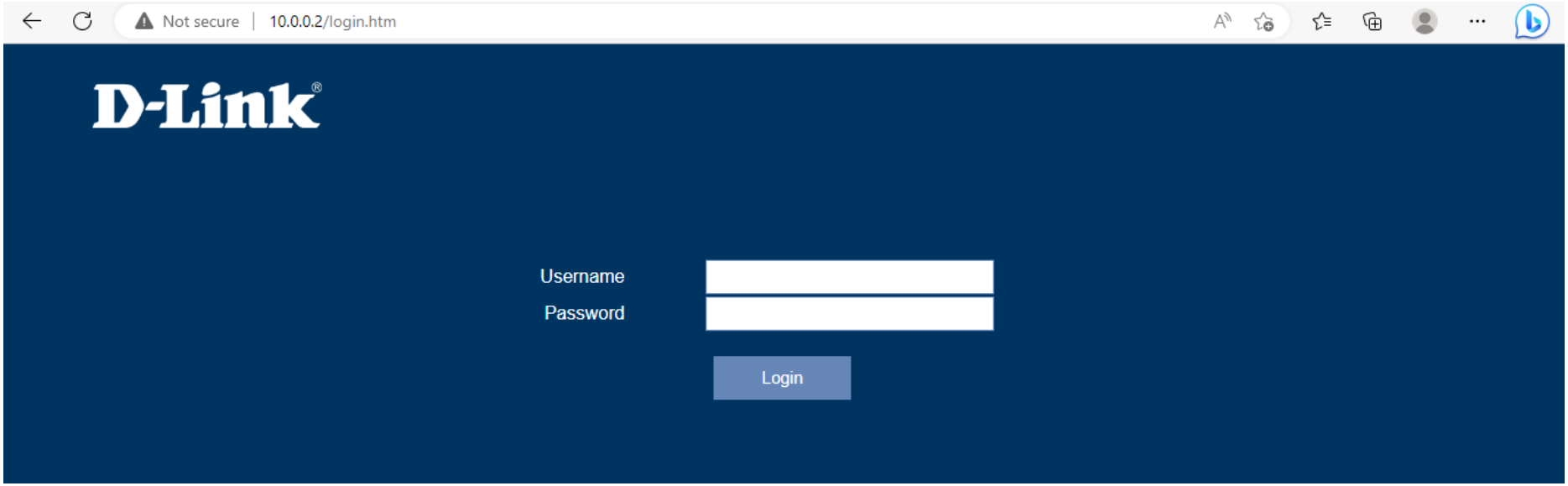


Configuration

Log in

To access the web interface, open a web browser and enter the IP address of the router (by default this is **10.0.0.2**) into the address bar. When the login page of the G413K is displayed, enter the username and password you set on step 4 of the setup wizard. By default, the login details are **admin** for the username and **admin** for the password if you chose to not change the details on the wizard.

Click **Log In** to proceed.

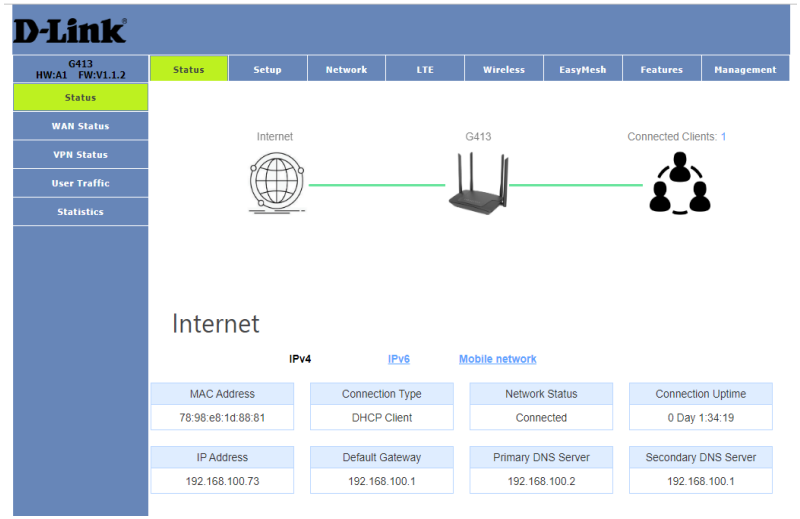


Note: *If you cannot remember your password or cannot log in, follow the factory reset procedure to restore the router to its default settings. The web interface is used to set up and change settings on the G413K. Follow the steps below to access the web interface and start setting up the G413K.*

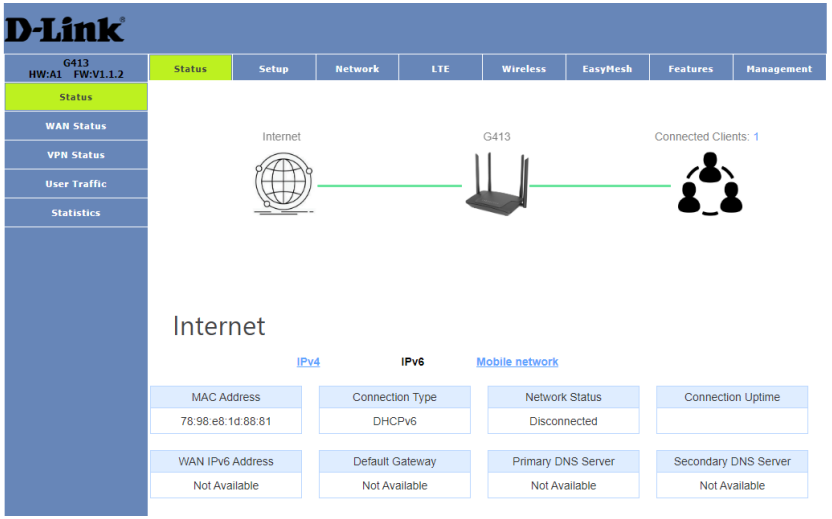
Status

The Status menu is used to display the status of your connection either WAN (IPV4/IPv6) or mobile connection (LTE).

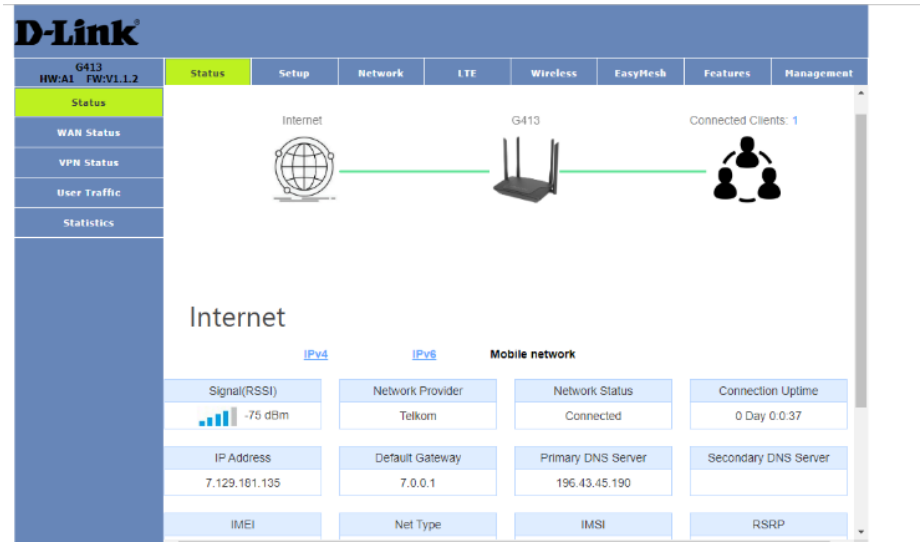
IPV4



IPV6

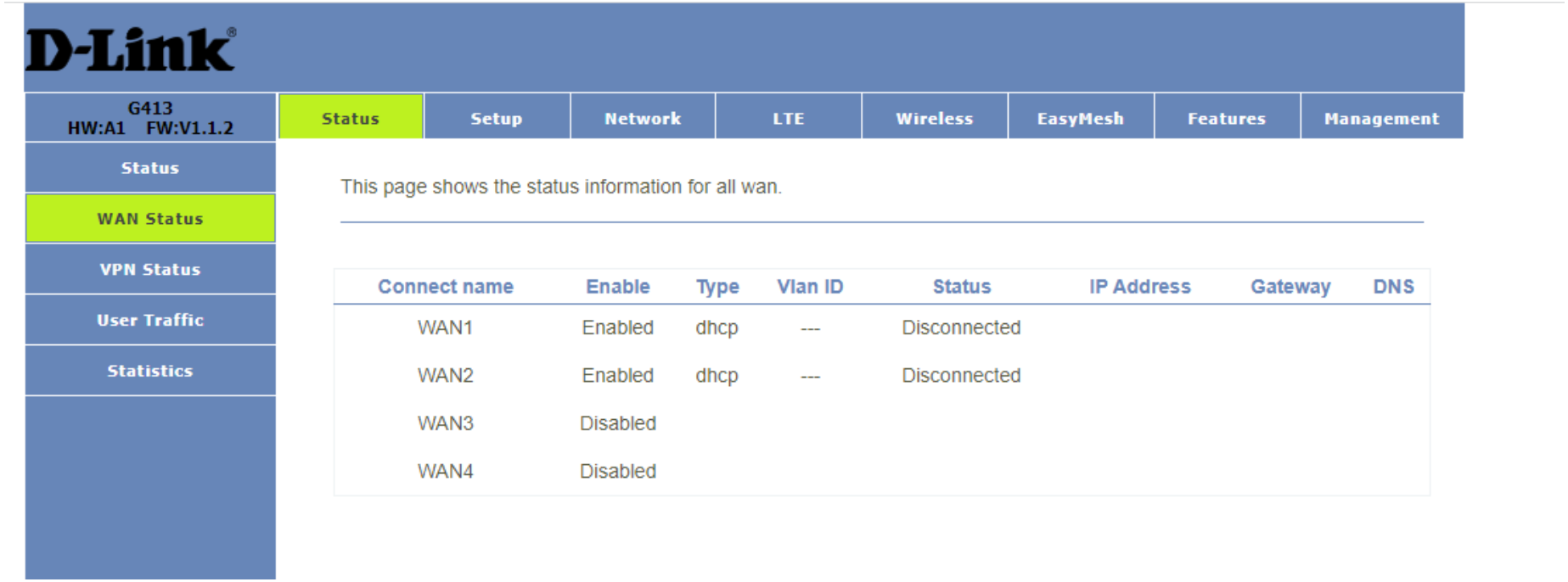


Mobile Network



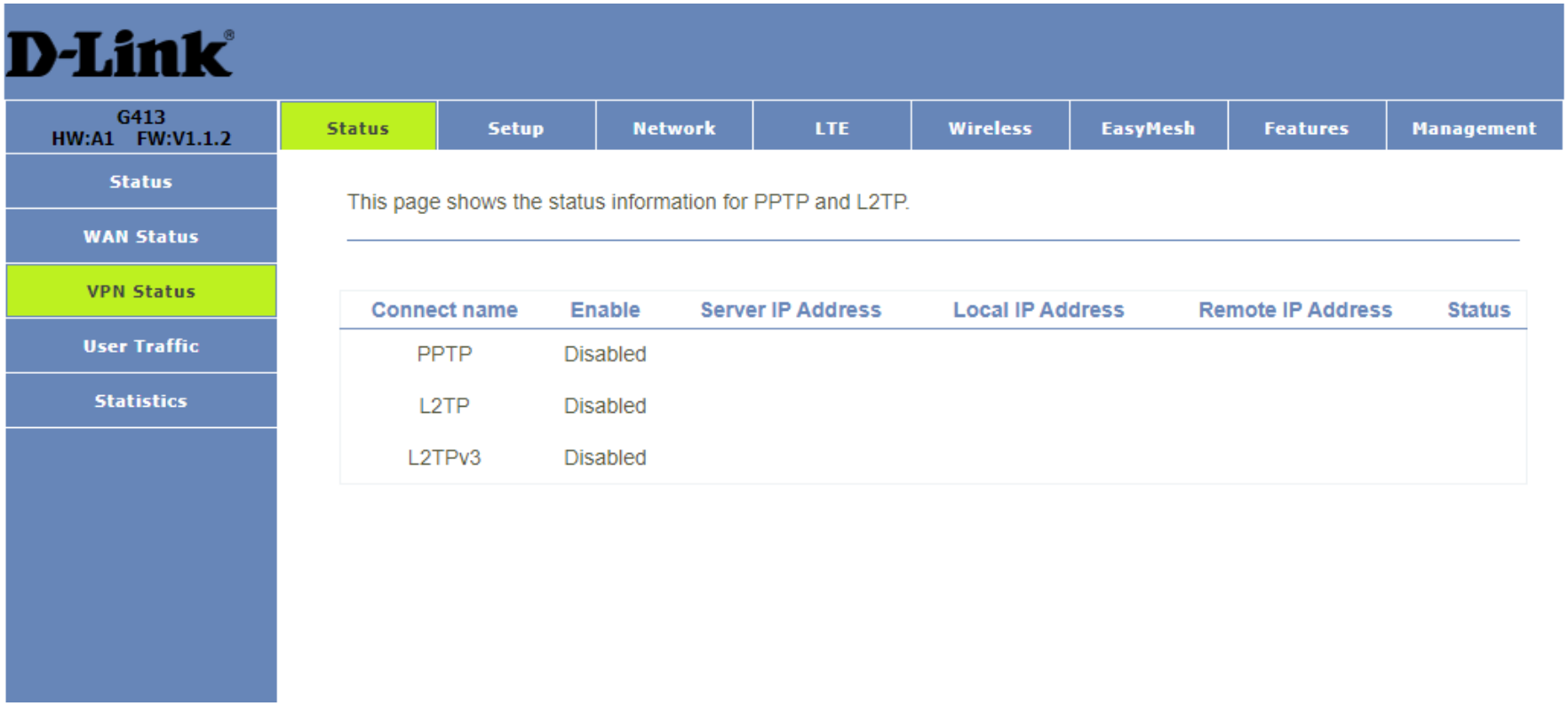
WAN Status

This displays Network status information of your WAN profiles.



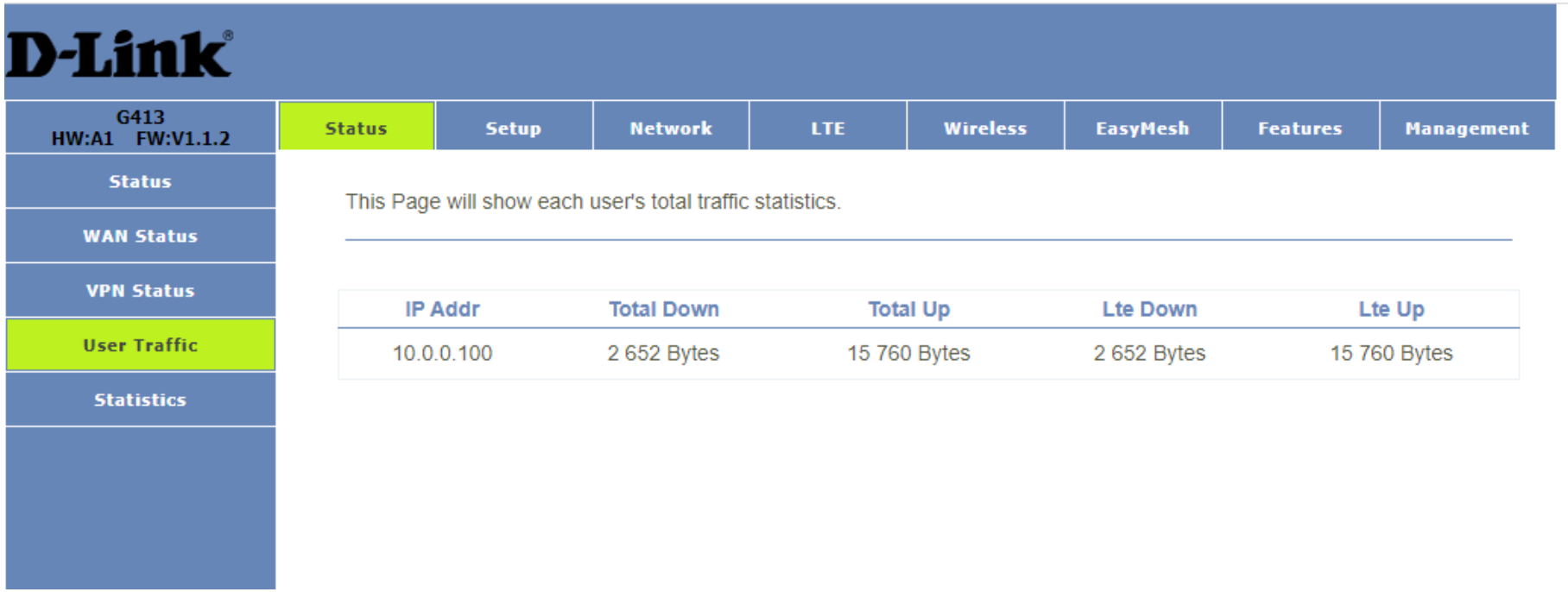
VPN Status

This Displays the L2TP and PPTP VPN connection status.



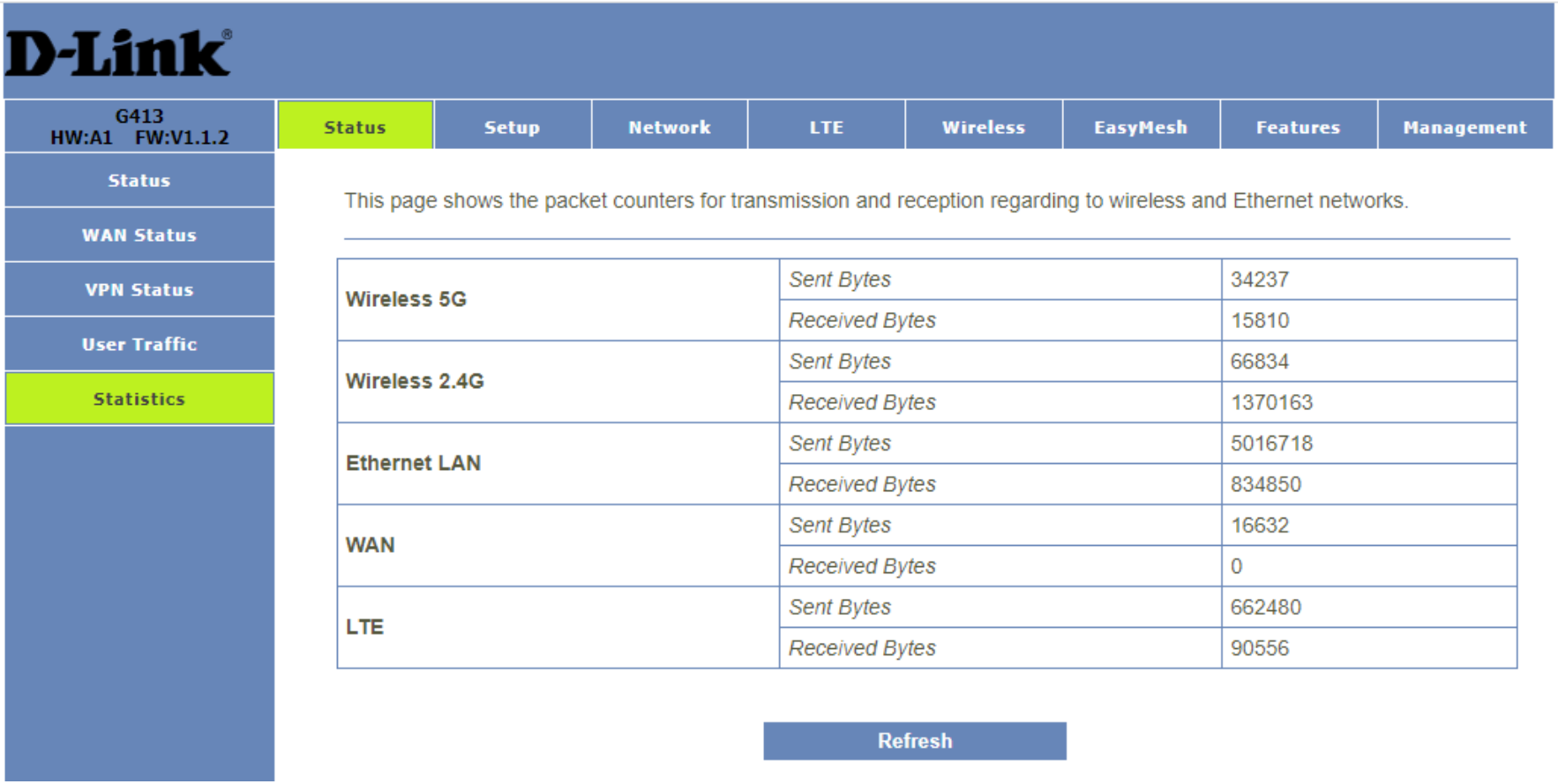
User Traffic

This Displays each connected user’s total traffic statistics .



Statistics

The displays all packet counters for transition and reception on wireless and ethernet networks.



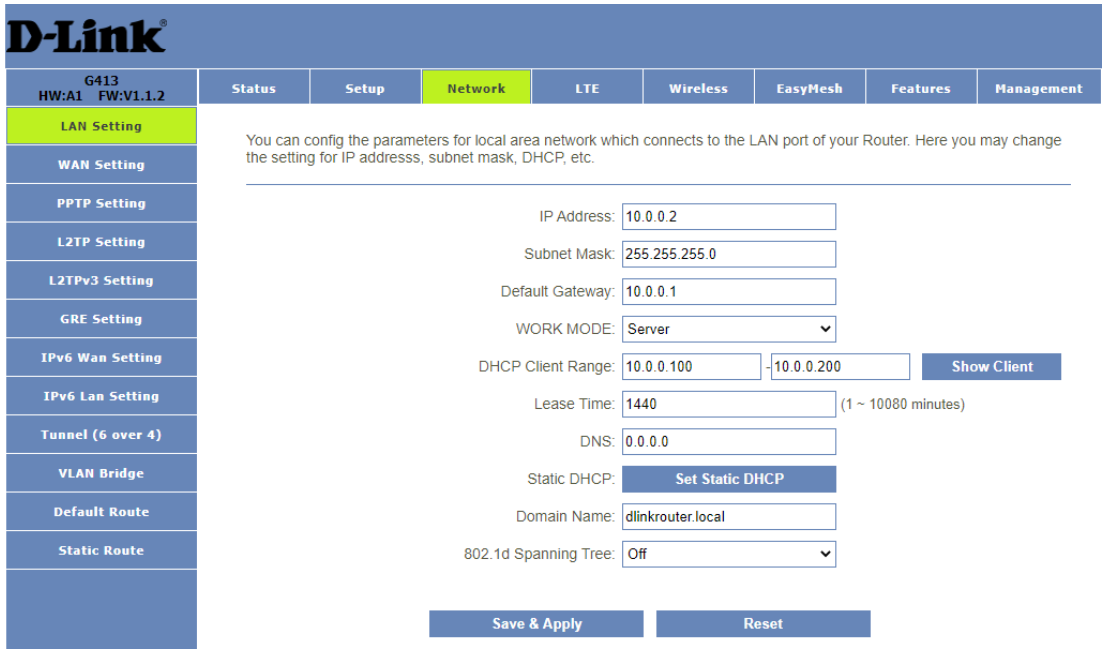
Network

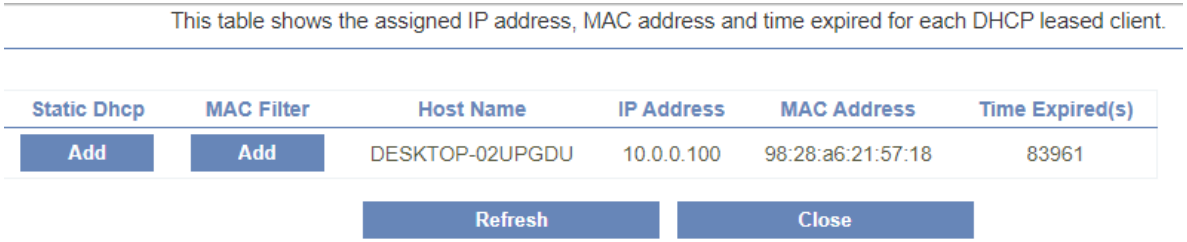
LAN Setting

The LAN setting menu is used to set IPv4 Local Area Network settings on the G413K.
This allows you to set the IP address settings and DHCP options for IPv4.

IP Address: The IP address of the router.
Subnet Mask: The subnet mask of the router IP address.
Default Gateway: The default gateway of your router.
Work Mode: Set the work mode of the router (Server, Client or Off)
DHCP Client Range: Set the range of IP addresses given to end devices.
Lease Time: Set the lease time of your router.
DNS: Set the DNS for your router.
Static DHCP: Set a specific range for your DHCP IP addresses
Domain Name: Set the domain name of your network.
802.1d Spanning Tree: Turn on or off.

Other settings:
Show Client: Displays all devices that received an IP address from the router.

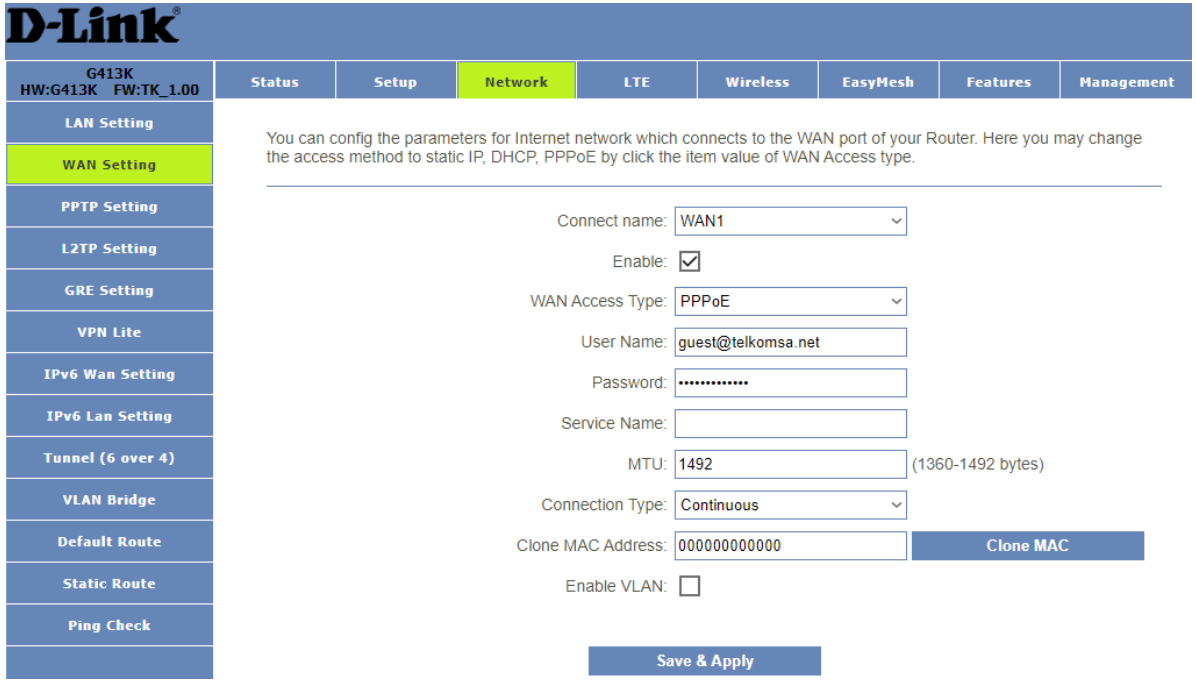




WAN Setting

The WAN settings page is used to change your WAN profile settings.

Connect Name: Select witch WAN interface to use.
Enable: Enable or disable the profile.
WAN Access Type: Select with connection method to use DHCP, PPPOE or Static IP.



WAN Access Type

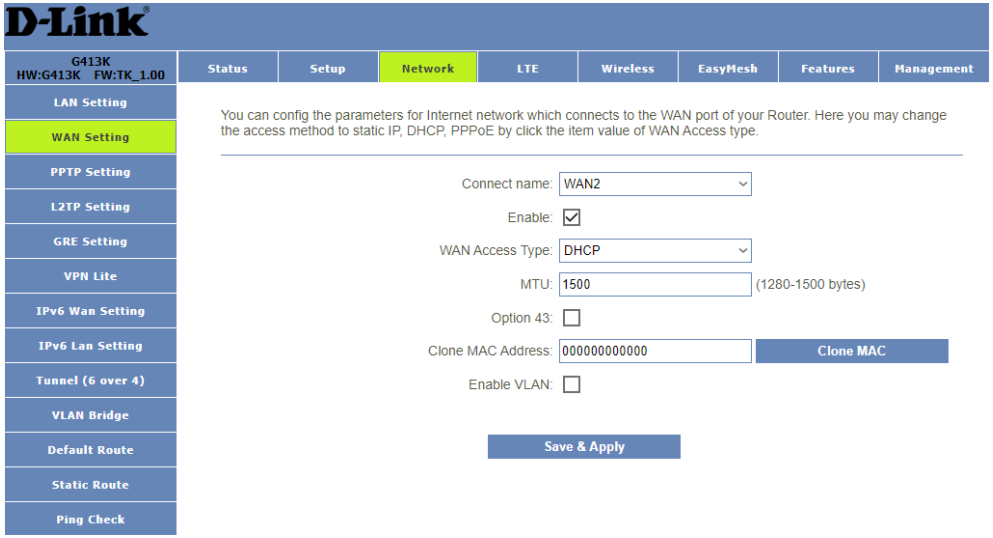
DHCP settings:

MTU: Select your MTU size between 1280-1500 bytes.

Option 43: Ethernet ports give simultaneously access to both the NTP and PTP servers.

Clone MAC Address: Used to clone MAC address.

Enable VLAN: Enable or Disable VLAN on WAN profile.



PPPOE settings:

User Name: Enter the username as provided by your ISP (Internet Service Provider)

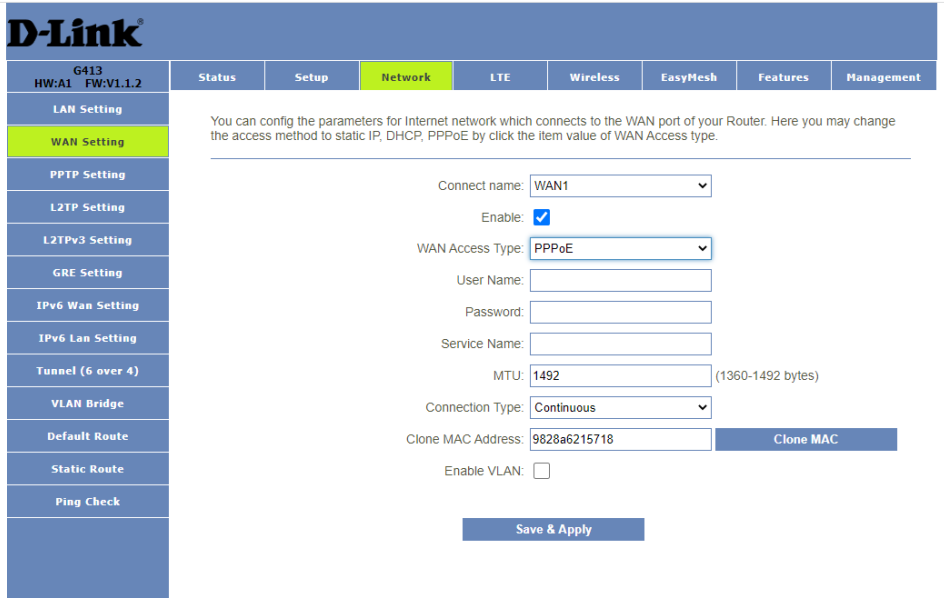
Password: Enter the password as provided by your ISP (Internet Service Provider)

MTU: Select your MTU size between 1360-1492 bytes.

Connection Type: Select when the profile will be active Continuous, Connect on Demand or Manual

Clone MAC Address: Used to clone MAC address.

Enable VLAN: Enable or Disable VLAN on WAN profile.



Static IP settings:

IP Address: Enter the static IP adress as provided by you ISP (Internet Service Provider).

Subnet Mask: Enter a matching subnet mask as provided by you ISP (Internet Service Provider).

Default Gateway: Enter the default gateway as provided by you ISP (Internet Service Provider).

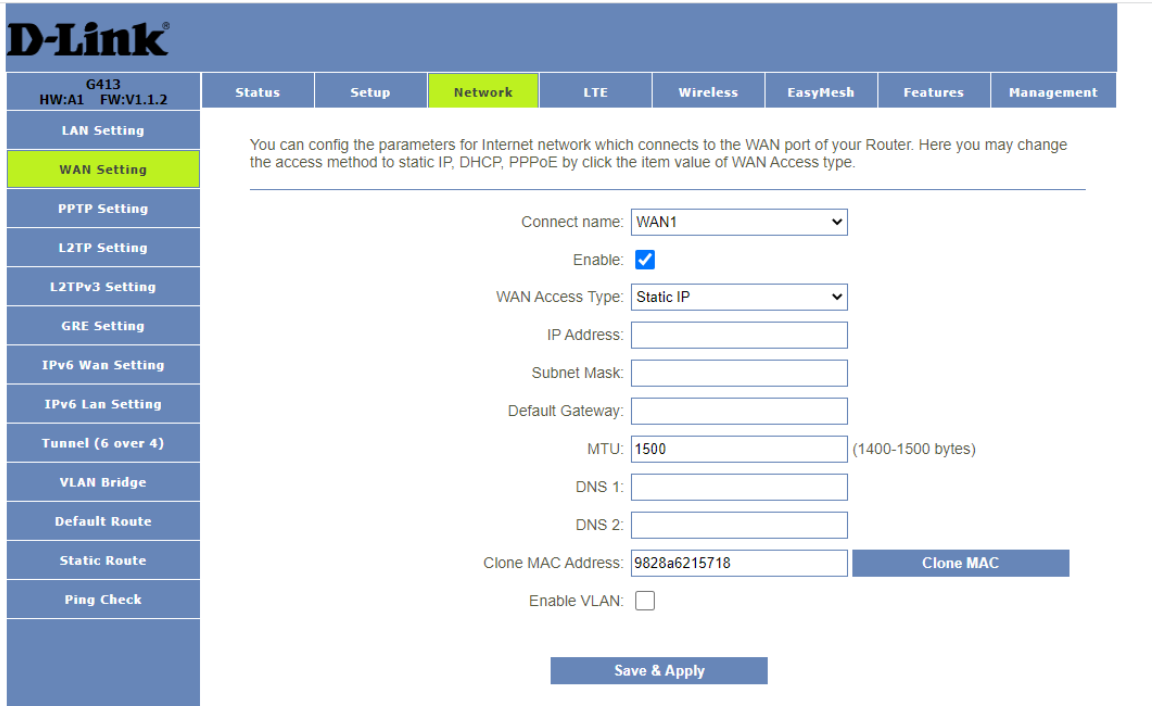
MTU: Select your MTU size between 1400-1500 bytes.

DNS 1: Enter the DNS address as provided by you ISP (Internet Service Provider).

DNS 2: Enter the DNS address as provided by you ISP (Internet Service Provider).

Clone MAC Address: Used to clone MAC address.

Enable VLAN: Enable or Disable VLAN on WAN profile.

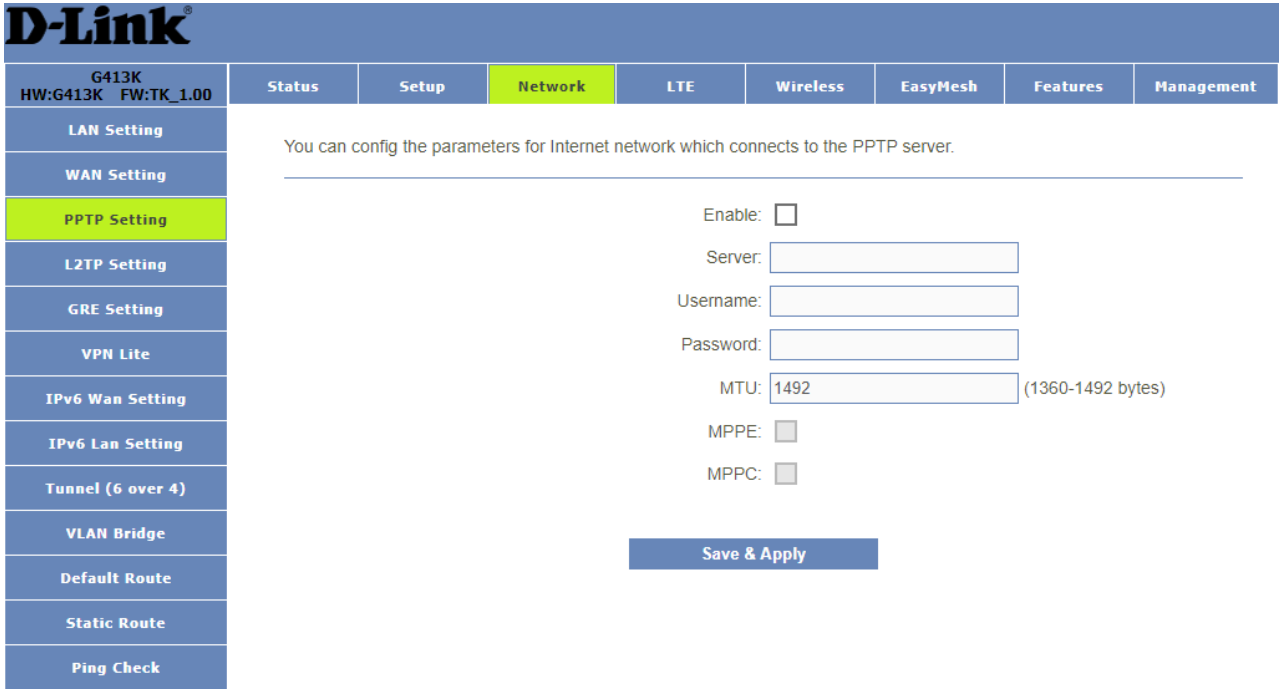


PPTP Setting

Enable: Enable or disable the PPTP connection.
Server: Enter the server address of your PPTP connection.
Username: Enter the username for your PPTP connection.
Password: Enter the password for your PPTP connection.
MTU: Select your MTU size between 1360-1492 bytes.

MPPE: Enable or disable Microsoft Point-to-Point Encryption.

MPPC: Enable or disable Microsoft Point-to-Point Compression



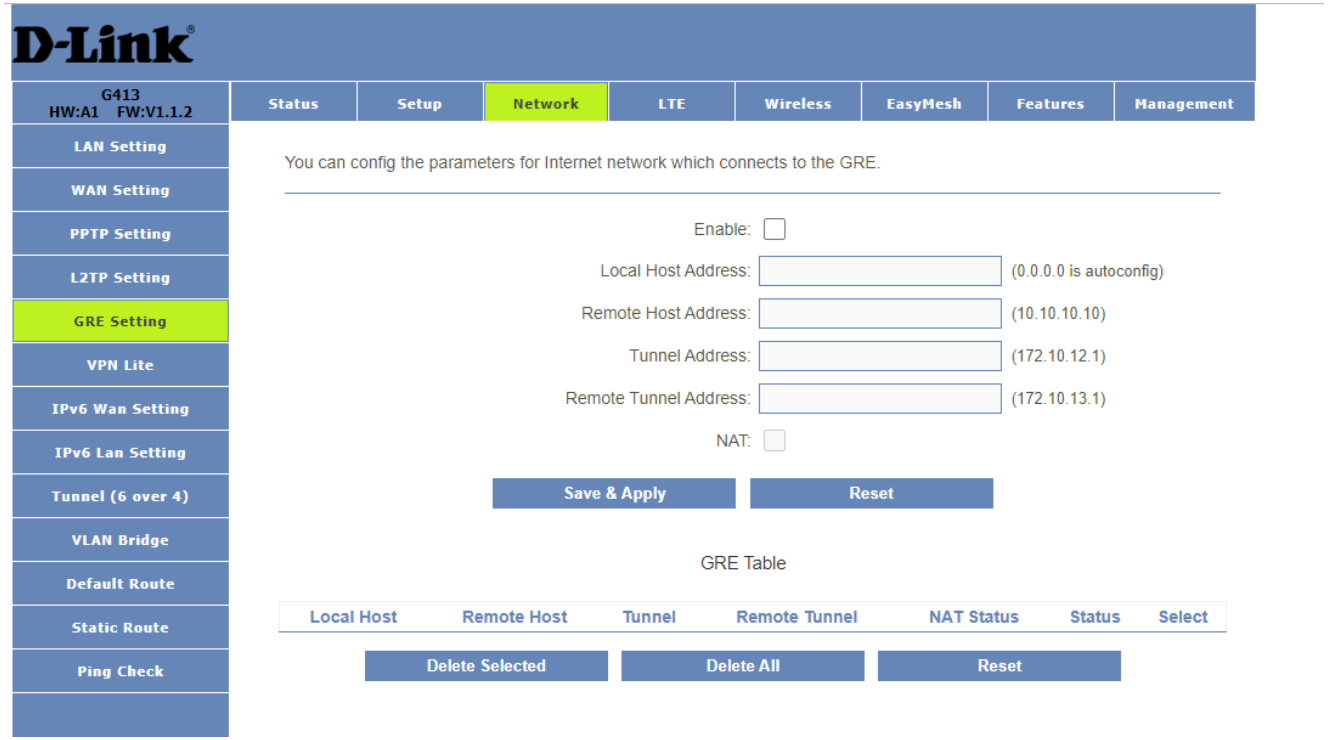
L2TP Setting

Enable: Enable or disable the L2TP connection.
Server: Enter the server address of your L2TP connection.
Username: Enter the username for your L2TP connection.
Password: Enter the password for your L2TP connection.
MTU: Select your MTU size between 1360-1492 bytes.

GRE Setting

You can config the parameters for Internet network which connects to the GRE.

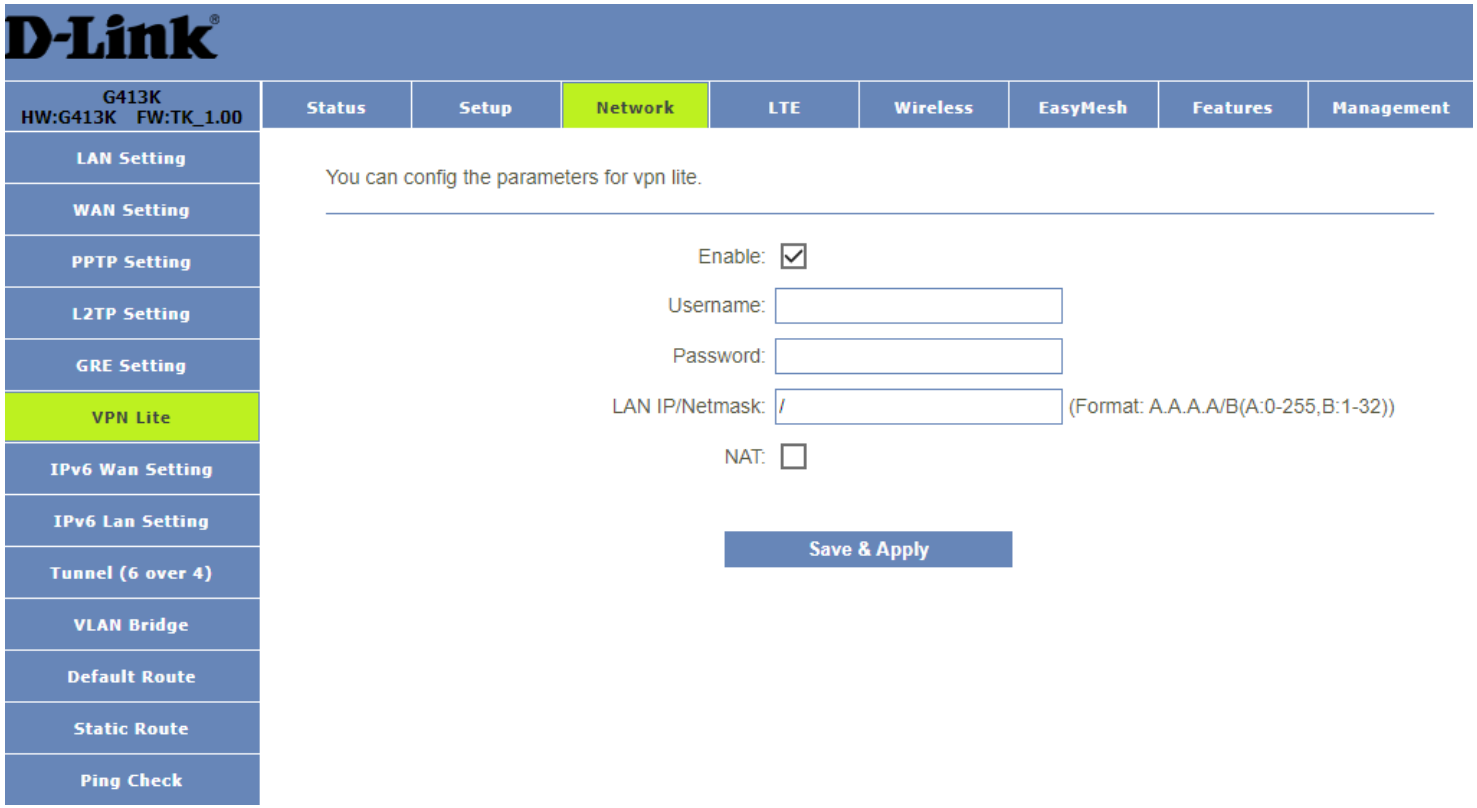
Enable: Enable or disable the GRE connection.
Local Host Address: Enter the IP address of your local host.
Remote Host Address: Enter the IP address of your remote host.
Tunnel Address: Enter the IP address of your tunnel host.
Remote Tunnel Address: Enter the IP address of your remote tunnel host.
NAT: Enable or disable network access translation.



VPN Lite

You can config the parameters for VPN lite.

Enable: Enable or disable the VPN lite connection.
Username: Enter your VPN lite username as provided by your ISP.
Password: Enter your VPN lite password as provided by your ISP.
LAN IP/Netmask: Enter IP address and subnet mask as provided by your ISP.
NAT: Enable or disable network access translation.



IPv6 WAN Setting

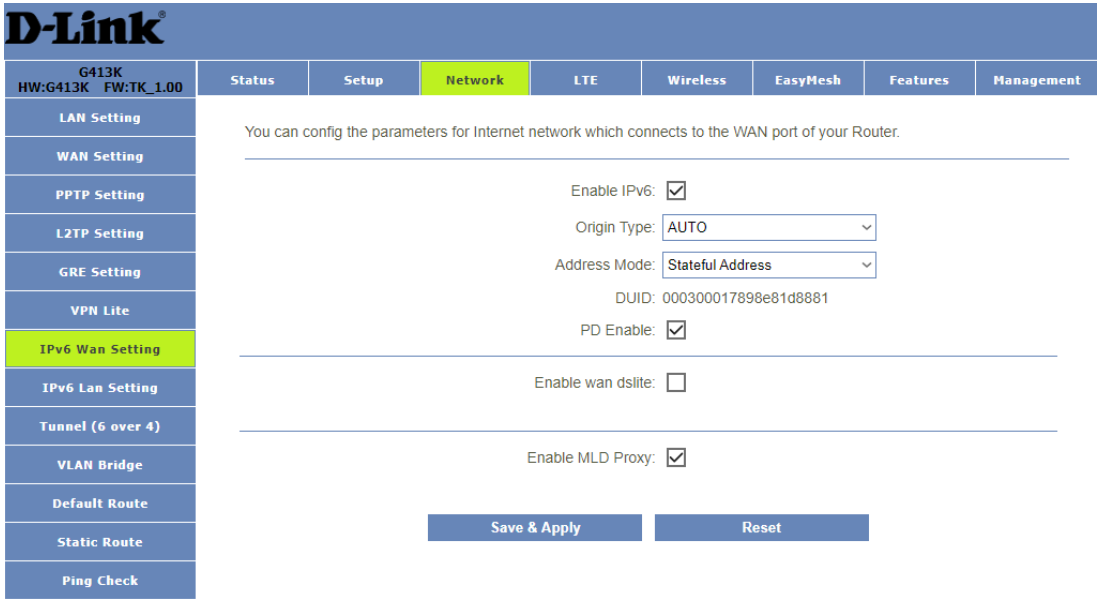
You can config the parameters for Internet network which connects to the WAN port of your Router.

Enable: Enable or disable the IPv6 connection.

Origin Type: Auto

Address Mode: Select between Stateful or Stateless Address type.

PD Enable: Enable or disable the IPv6 Prefix Delegation.

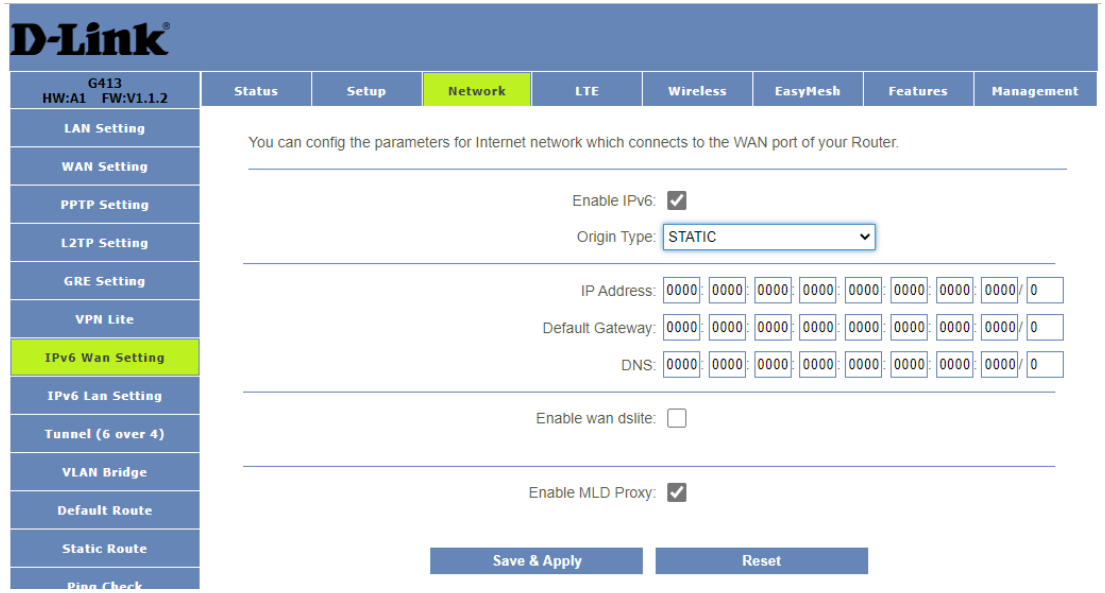


Origin Type: Static

IP Address: Enter your static IPv6 address.

Default Gateway: Enter your static IPv6 default gateway.

DNS: Enter your IPv6 DNS address.



Origin Type: 6RD

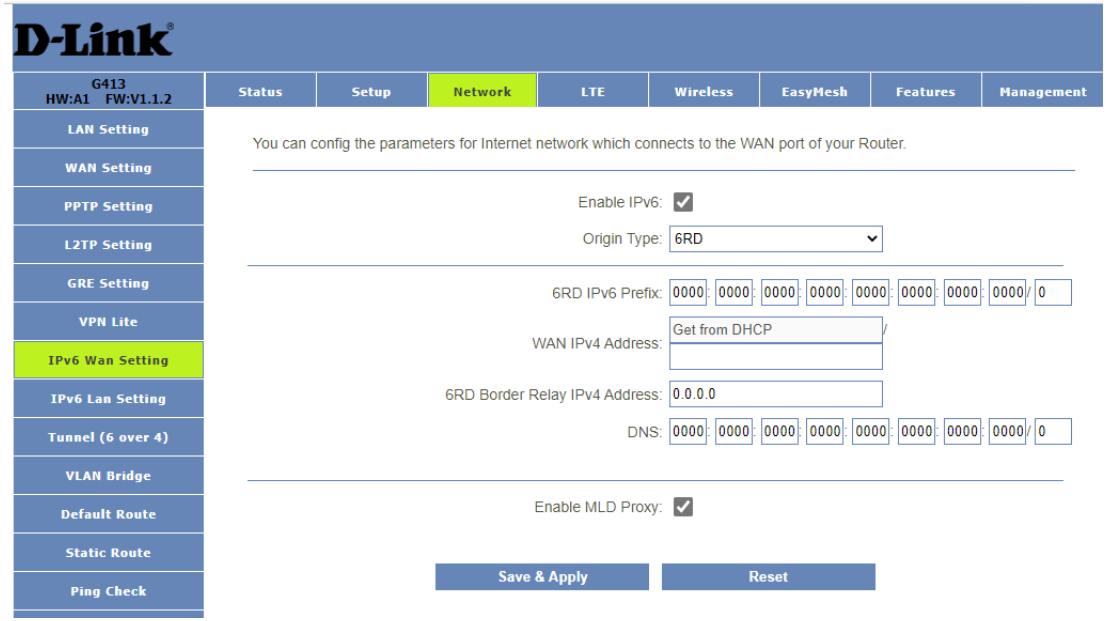
6RD IPv6 Prefix: Enter your IPv6 Prefix address.

WAN IPv4 Address: Enter WAN IPv4 address.

6RD Border Relay IPv4 address: Enter you IPv4 relay IP address.

DNS: Enter your IPv6 DNS address.

Enable MLD Proxy: Enable or disable MLD Proxy.

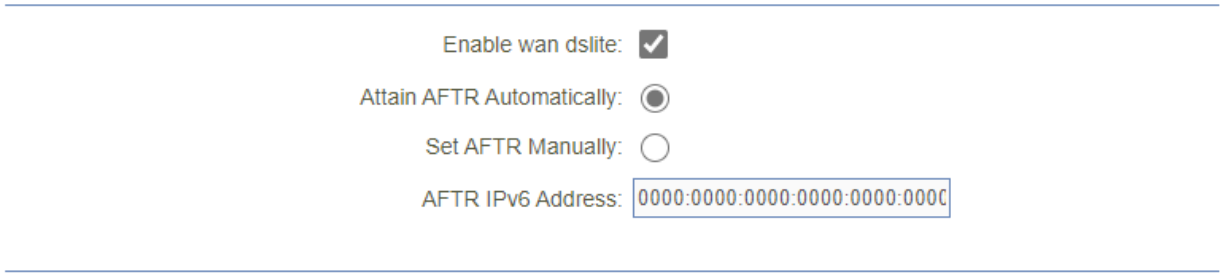


Enable wan dslite:

Attain AFTR Automatically: Enable if you want to attain AFTR automatically.

Set AFTR Manually: Enable if you want to manually set the AFTR.

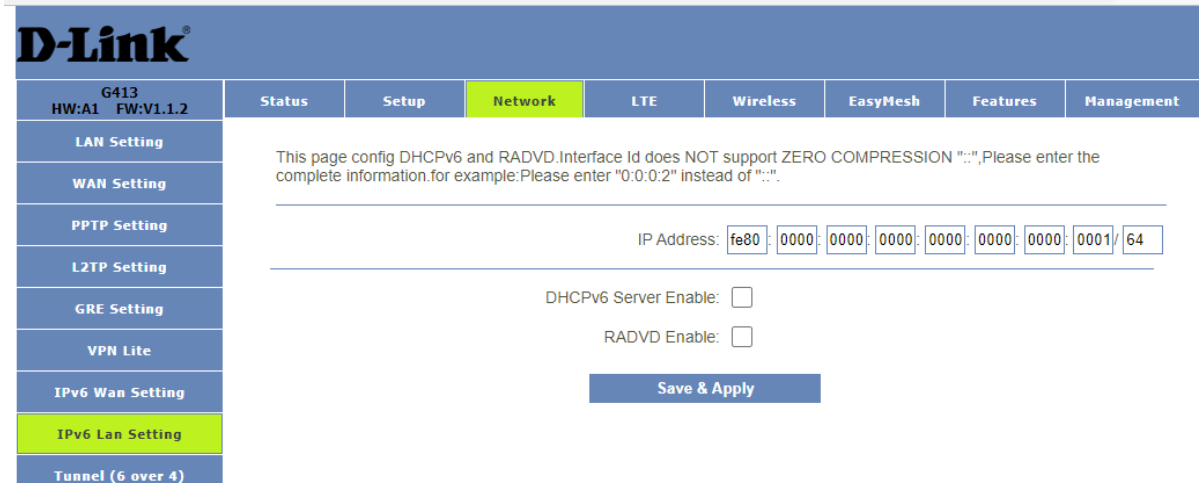
AFTR IPv6 Address: Enter you AFTR IPv6 address.



IPv6 LAN Setting

This page config DHCPv6 and RADVD, Interface Id does NOT support ZERO COMPRESSION "::",Please enter the complete information. For example: Please enter "0:0:0:2" instead of "::".

IP Address: Enter your LAN IPv6 address.



DHCPv6 Server Enable:

DNS Addr: Enter your DNS address.

Address Mode: Select between Stateful or stateless addresses.

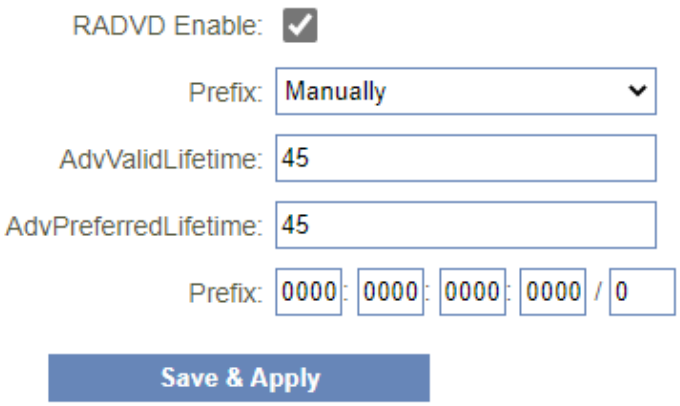
RADVD Enable:

Prefix: Select between Manually and Prefix delegation (auto).

AdvValidlifetime: Enter the lifetime counter.

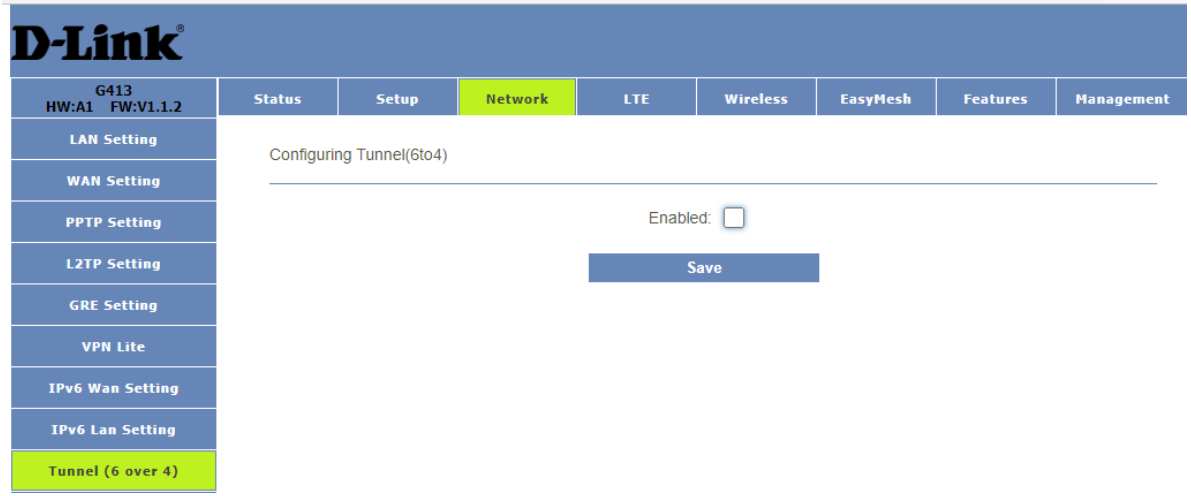
AdvPreferredlifetime: Enter the preferred lifetime counter.

Prefix: If you selected Manually, you can enter your IPv6 Prefix.



Tunnel (6 over 4):

Enable: Select if you want to enable iPv6 tunnelling over IPv4.



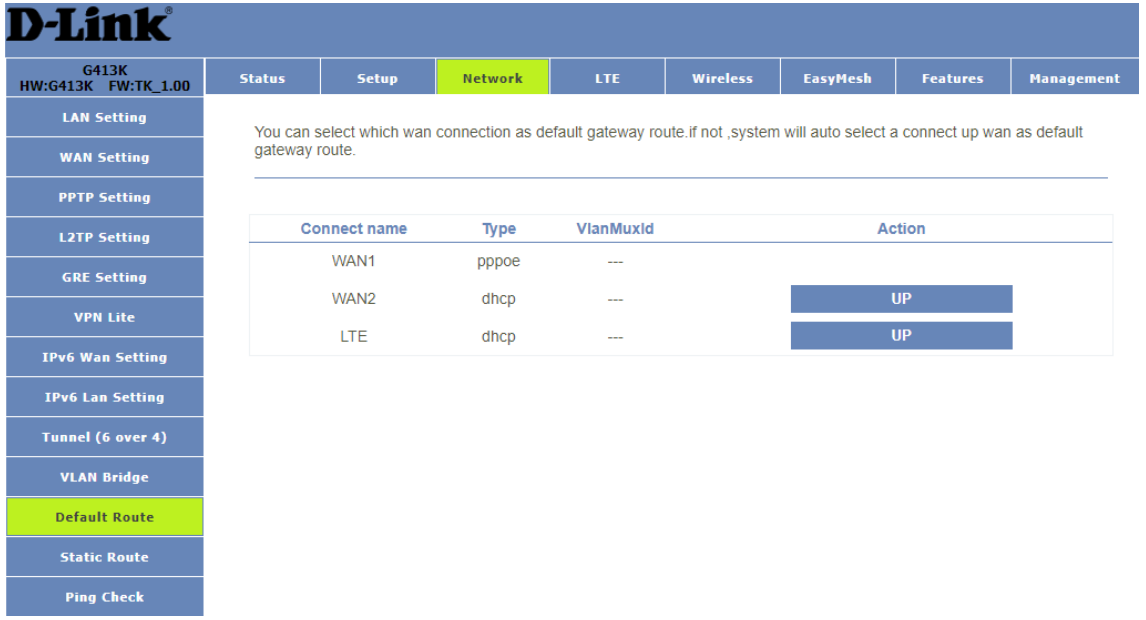
VLAN Bridge

VLAN ID (1-4095): Select the VLAN ID you want to bridge the select with interfaces/ports you want your VLAN bridge to passthrough.

Current VLAN Table: You will see all your VLAN bridges in this table.

Default Route

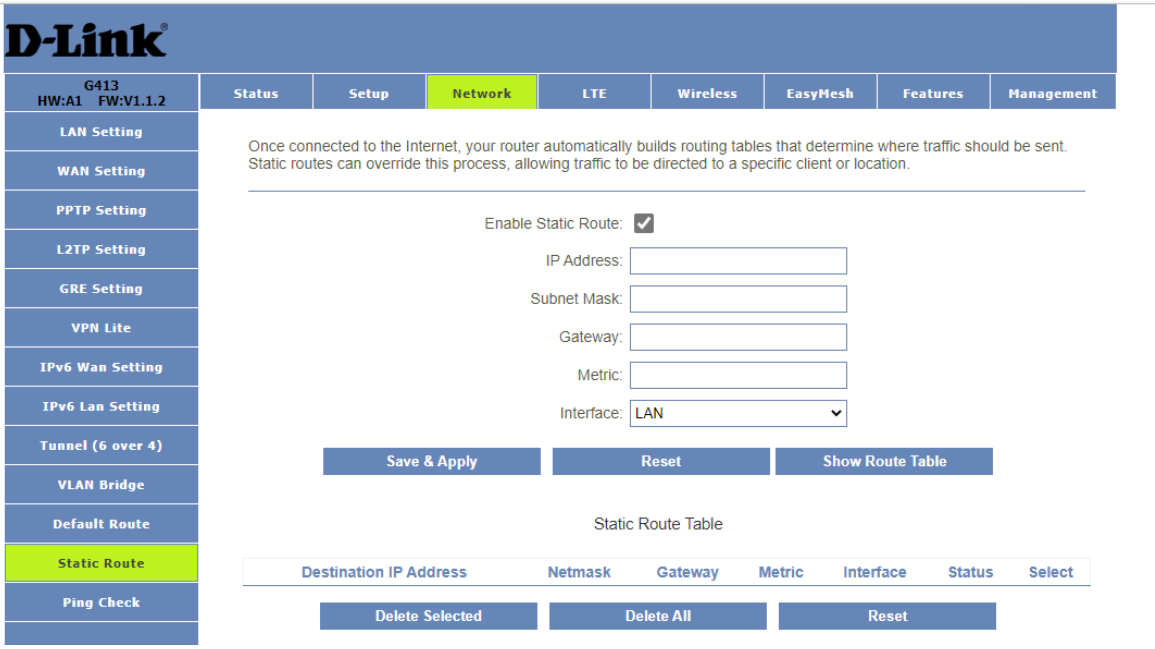
You can select which wan connection as default gateway route. If not, system will auto select a connect up wan as default gateway route.



Static Route

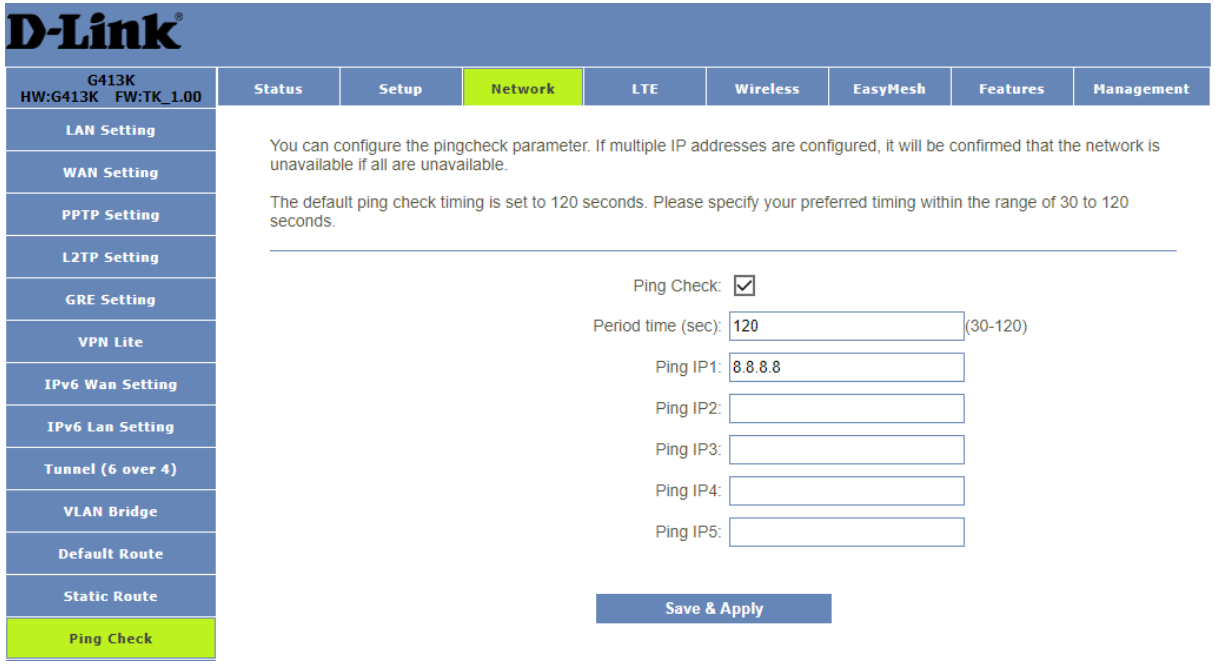
Once connected to the Internet, your router automatically builds routing tables that determine where traffic should be sent. Static routes can override this process, allowing traffic to be directed to a specific client or location.

Enable Static Route: Enable or Disable static route.
IP Address: Enter your static router IP address.
Subnet Mask: Enter your static route subnet mask.
Gateway: enter you Gateway for your static route.
Metric: Enter your static route metric.
Interface: Select what wan interface your static router needs to use WAN, LAN or LTE.



Ping Check

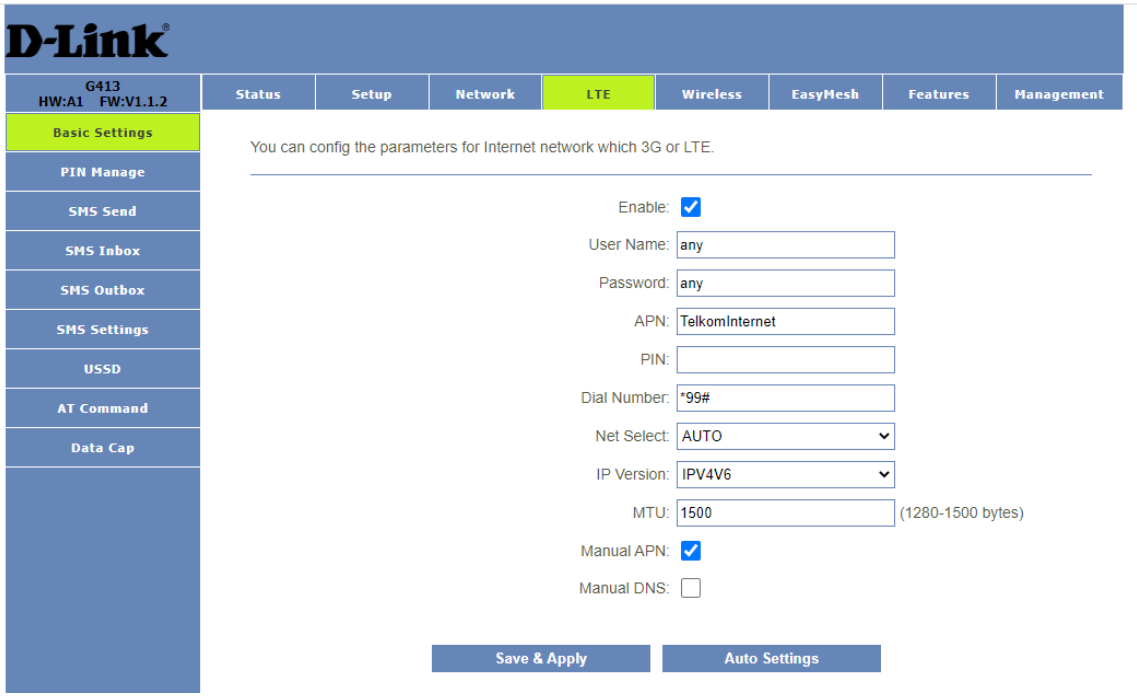
You can configure the ping check parameter. If multiple IP addresses are configured, it will be confirmed that the network is unavailable if all are unavailable. The default ping check timing is set to 120 seconds. Please specify your preferred timing within the range of 30 to 120 seconds.



LTE

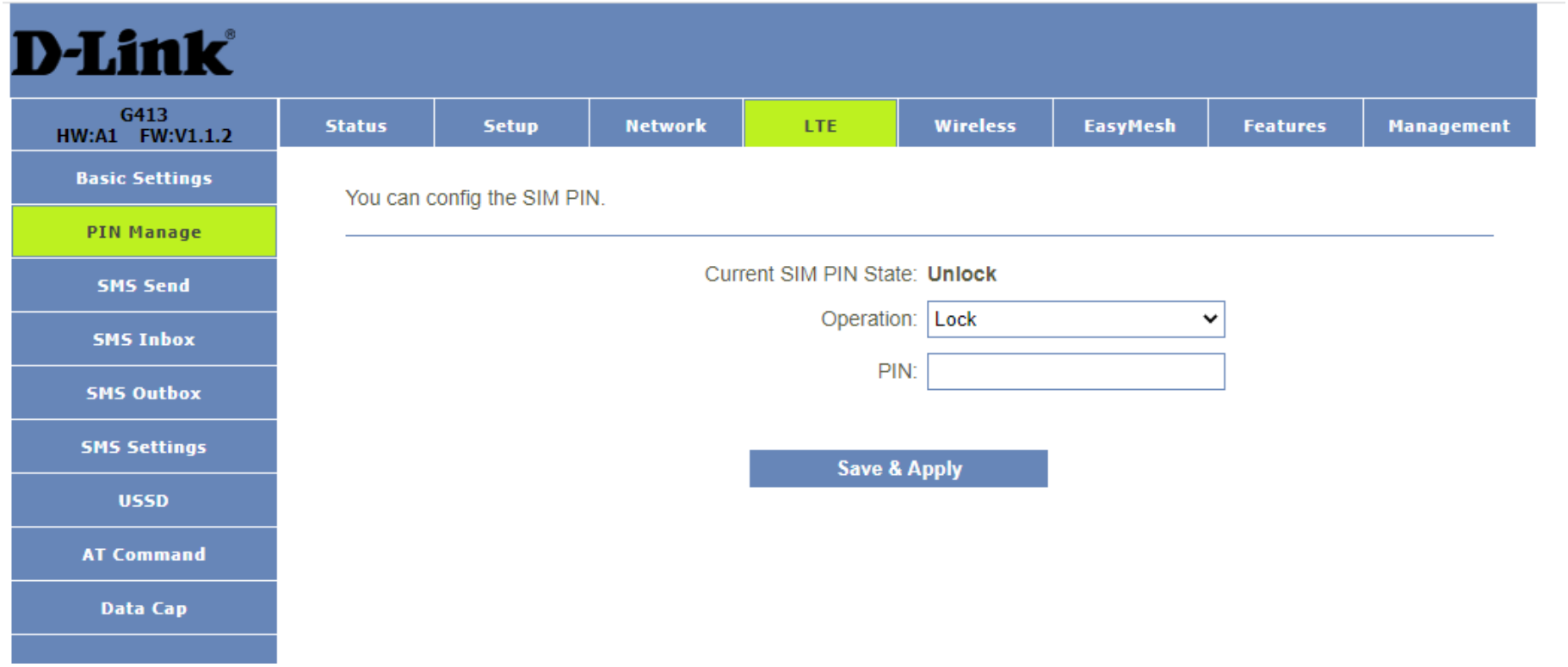
Basic Settings

Enable: Enable or Disable LTE/3G WAN profile
User Name: Enter your LTE user name as specified by your ISP.
Password: Enter your LTE password as specified by your ISP.
APN: Enter you APN as specified by your ISP.
PIN: Enter the PIN code of your sim card.
Dial Number: Enter dial number as specified by your ISP.
Net Select: Manually select the network you would like to connect to 2G, 3G, 4G or Auto.
IP Version: Select your IP version you use IPv4 or IPv6 or IPv4v6.
MTU: Select your MTU between 1280-1500.
Manual APN: Enable if you want to use a custom APN.
Manual DNS: Enable if you want to manually set your DNS connection.
DNS1-2: Enter your DNS details



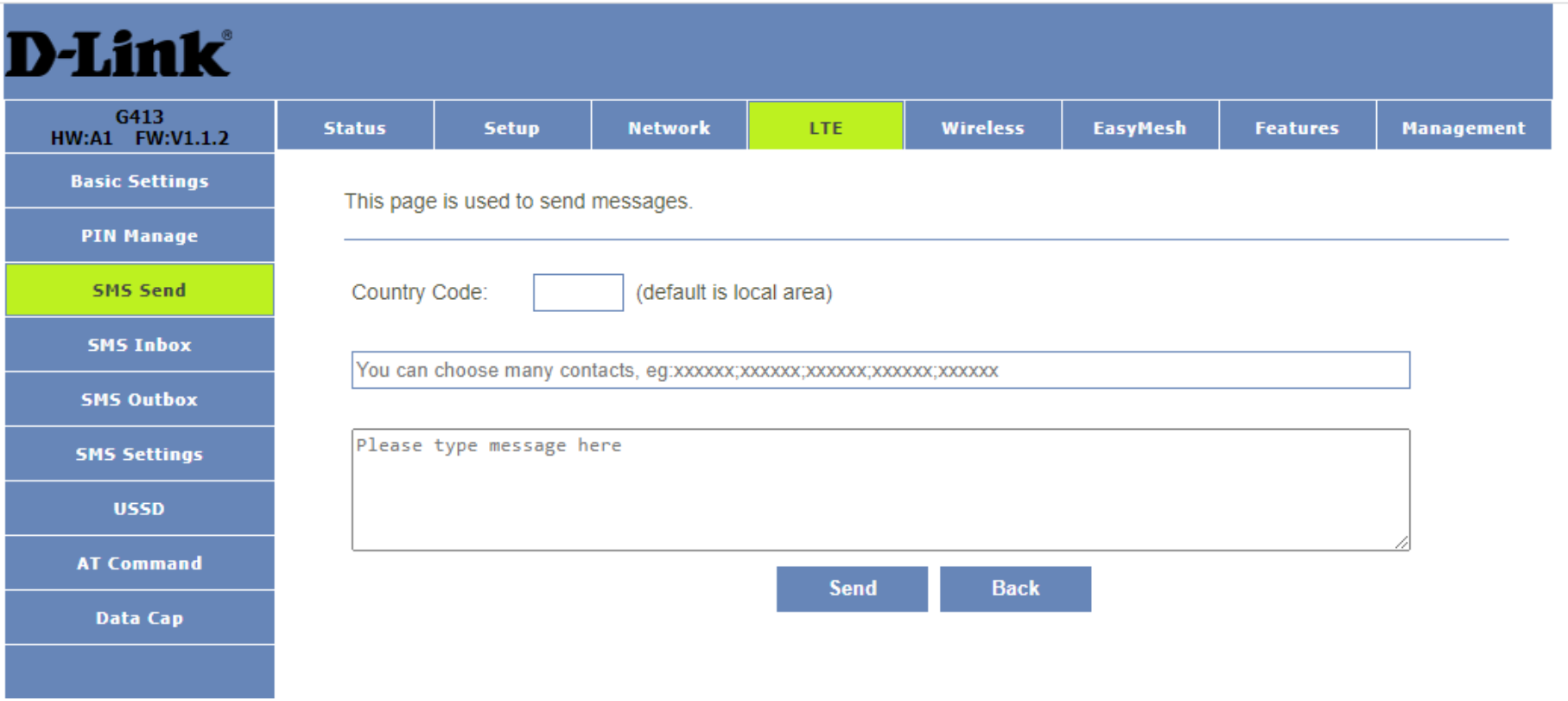
PIN Manage

You can configure your SIM PIN



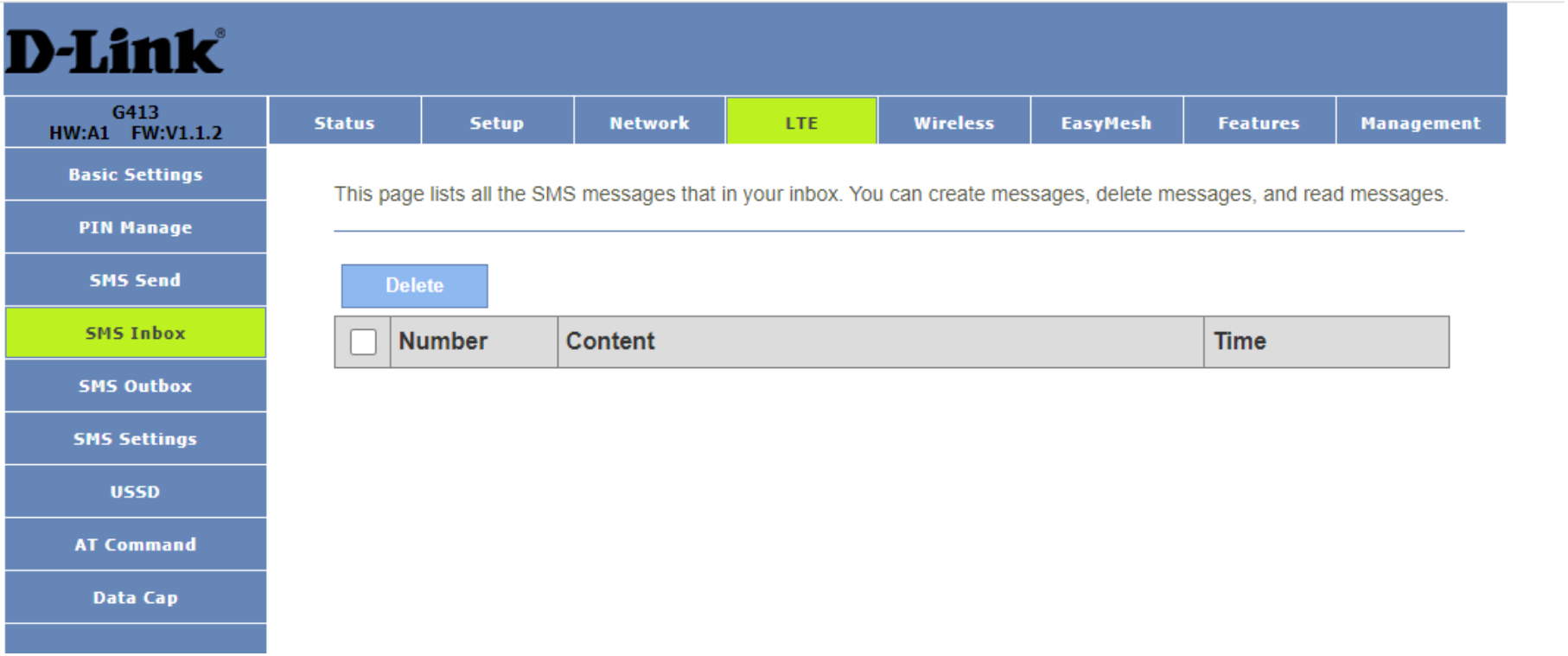
SMS Send

This page is used to send SMS’s



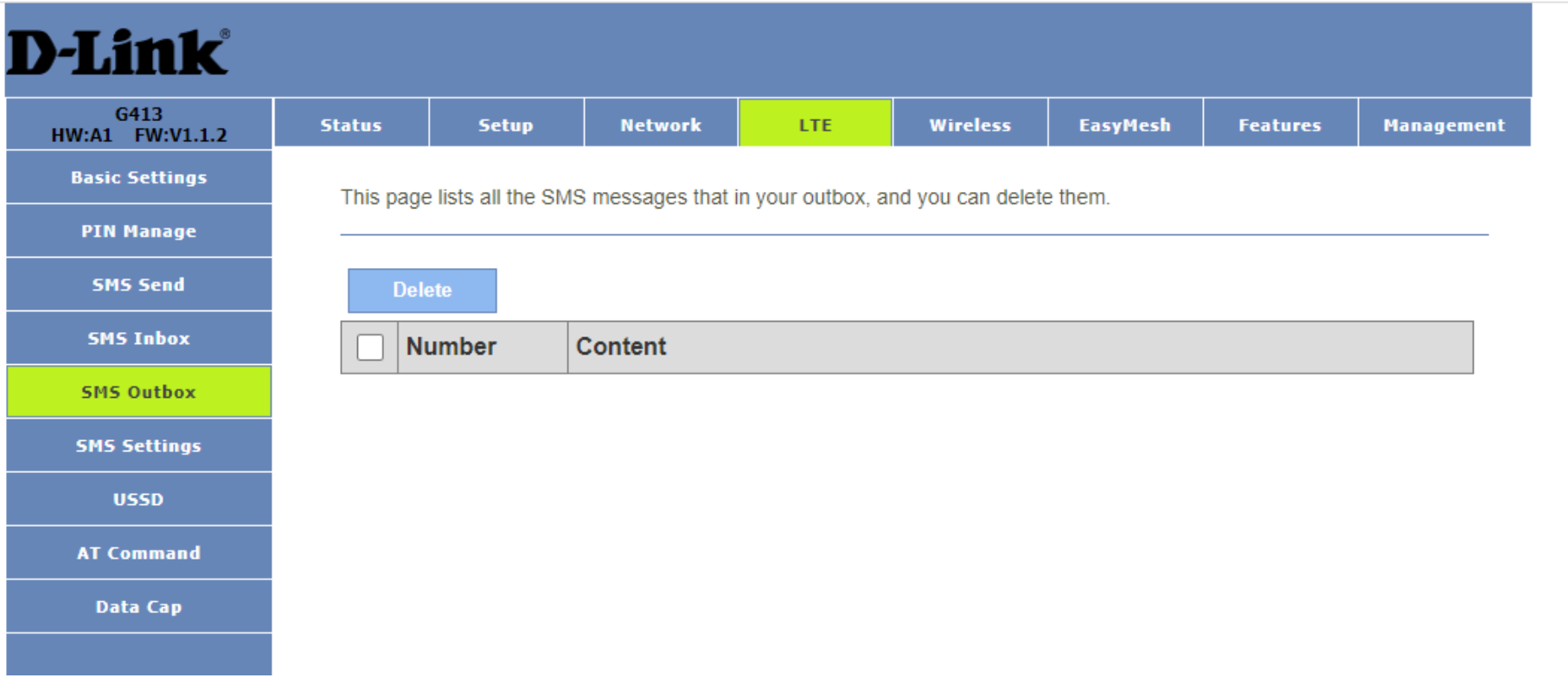
SMS Inbox

This page lists all the SMS messages that in your inbox. You can create messages, delete messages, and read messages.



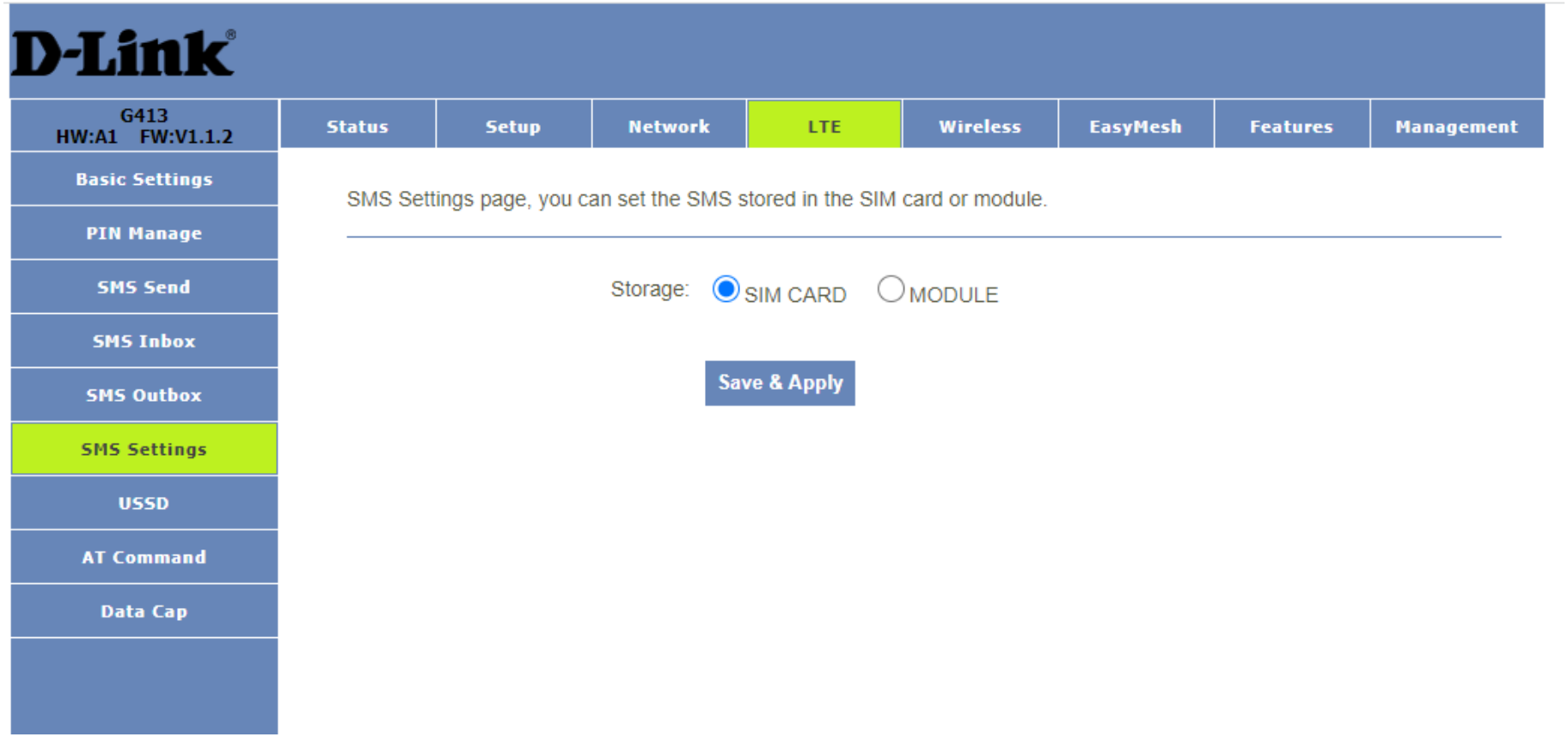
SMS Outbox

This page lists all the SMS messages that in your outbox, and you can delete them.



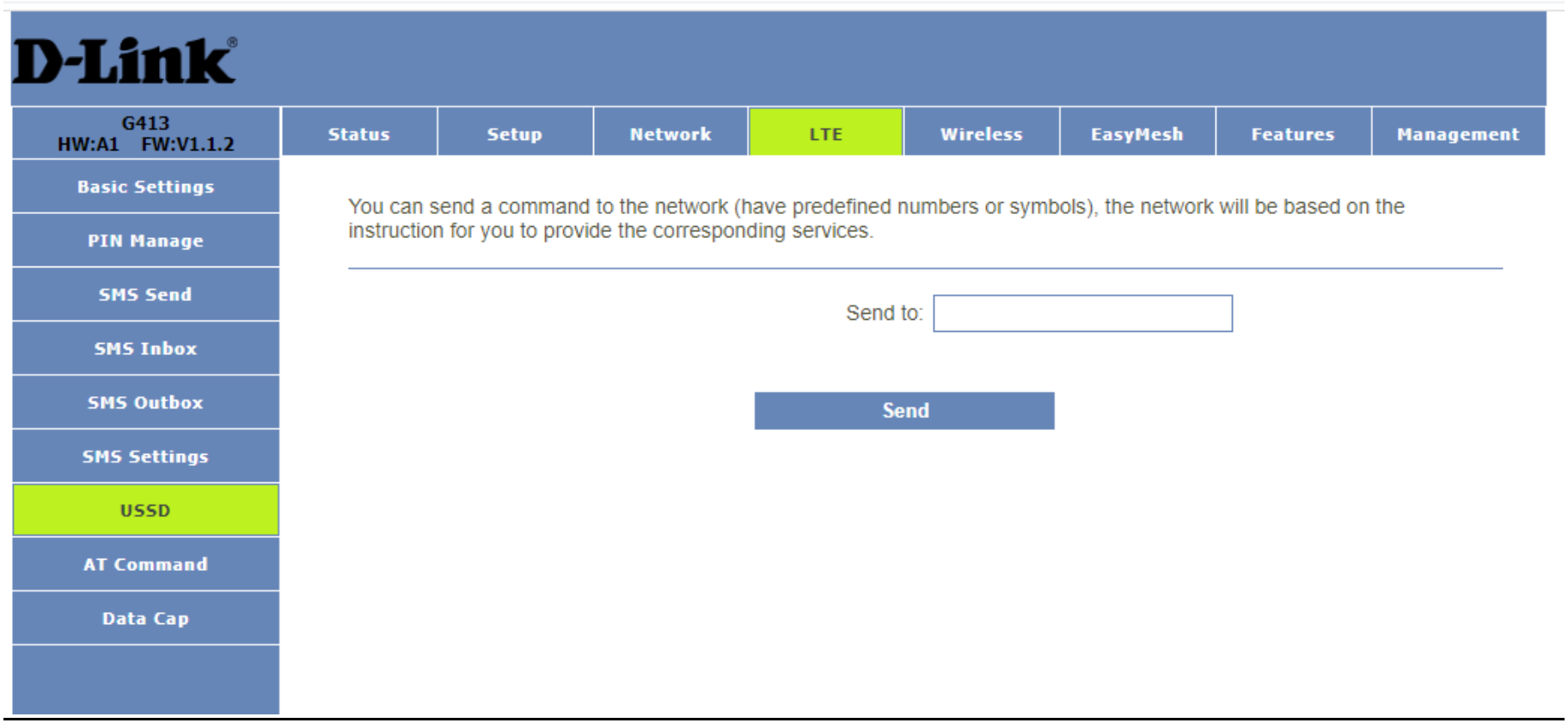
SMS Settings

SMS Settings page, you can set the SMS stored in the SIM card or module.



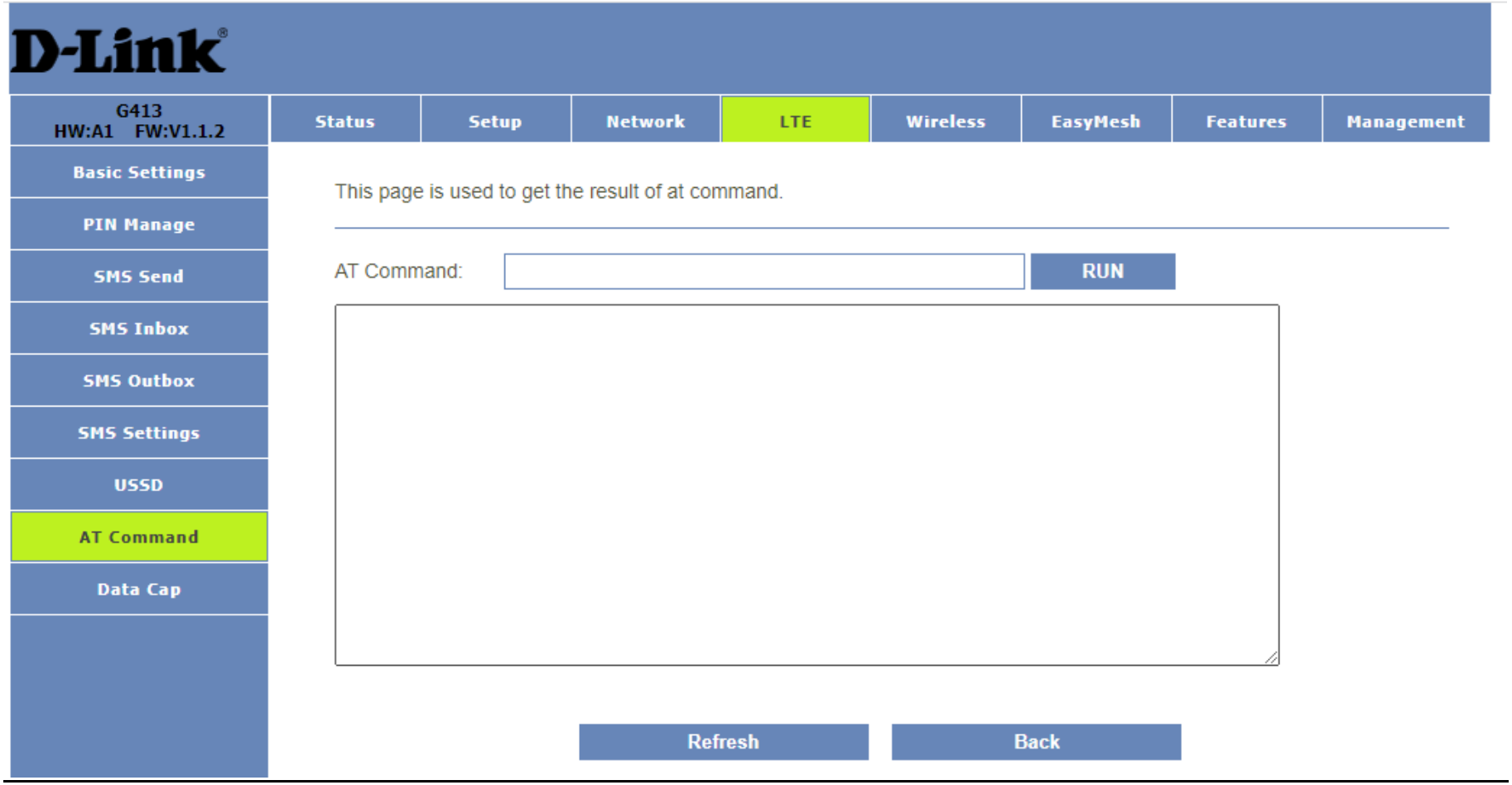
USSD

You can send a command to the network (have predefined numbers or symbols), the network will be based on the instruction for you to provide the corresponding services.



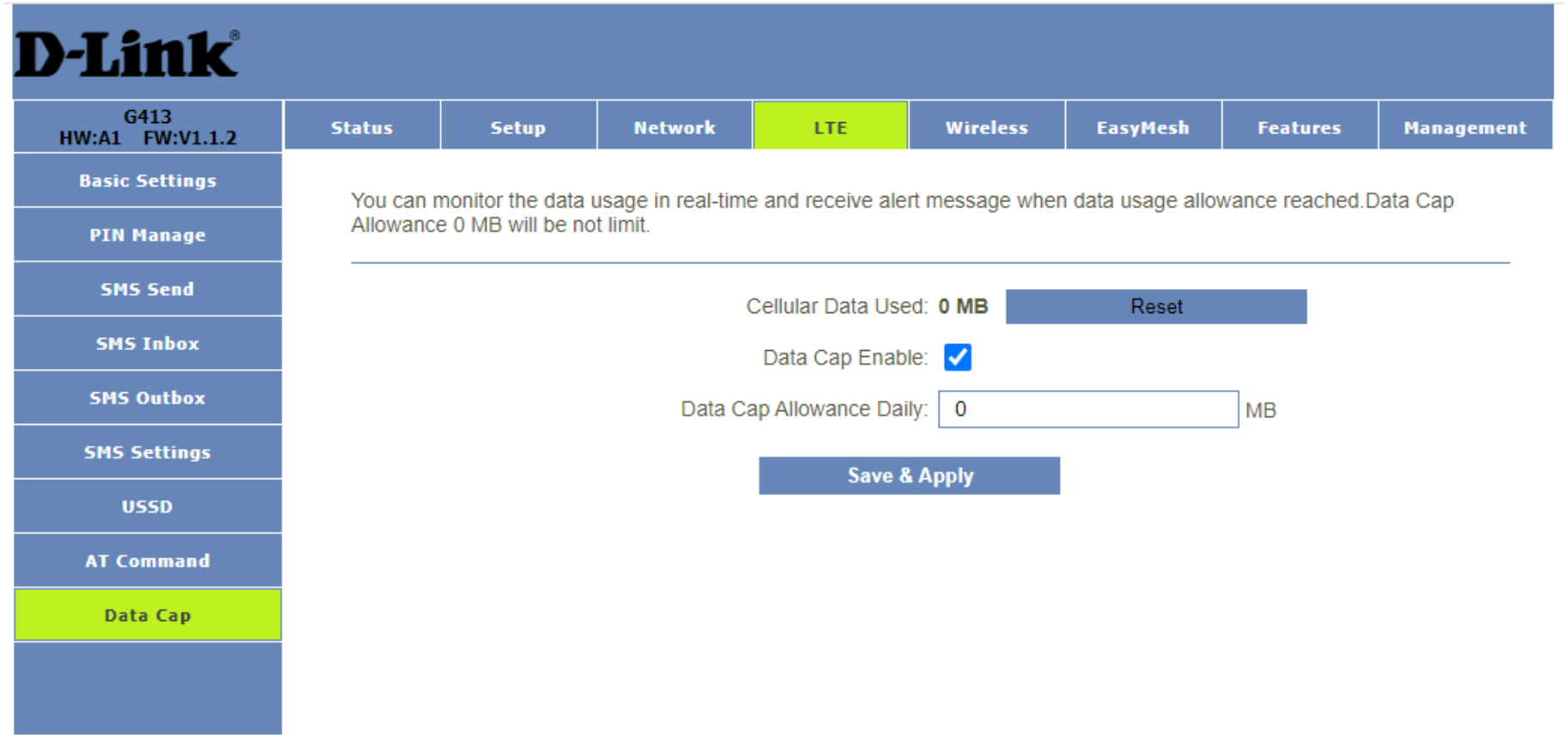
At Command

This page is used to get the result of at command.



Data Cap

You can monitor the data usage in real-time and receive alert message when data usage allowance reached. Data Cap Allowance 0 MB will be not limit.

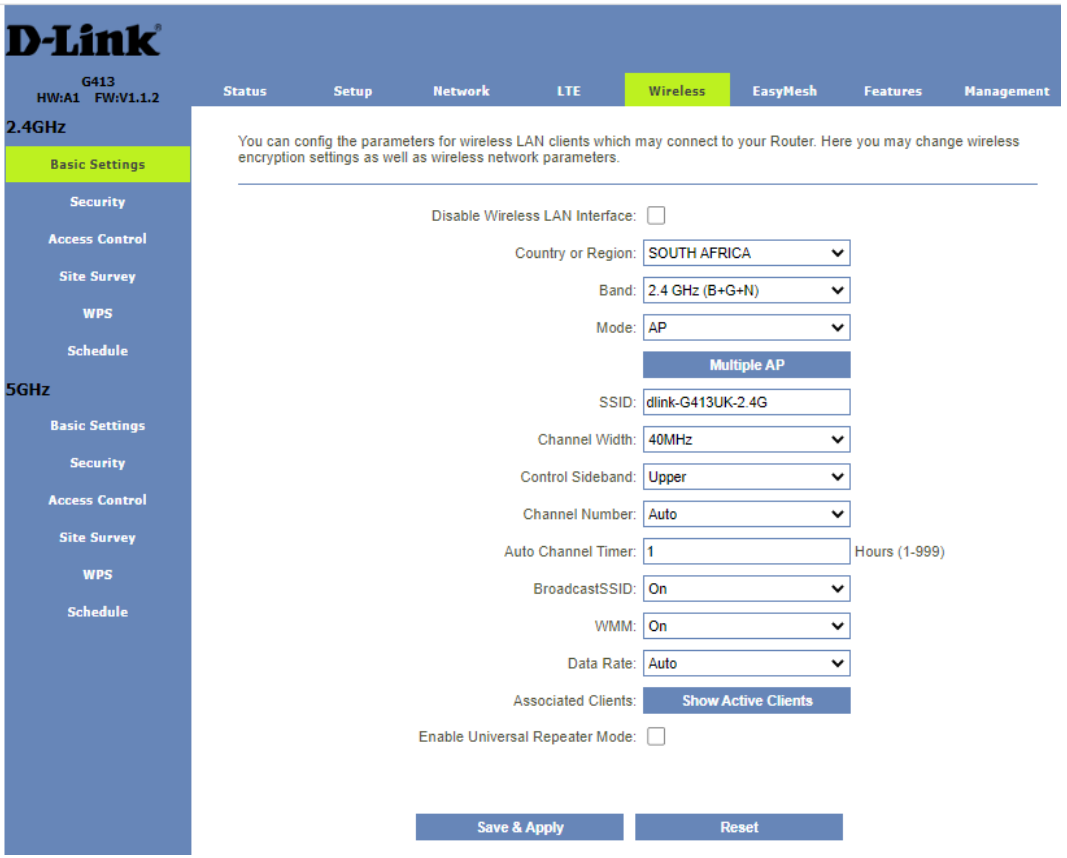


Wireless

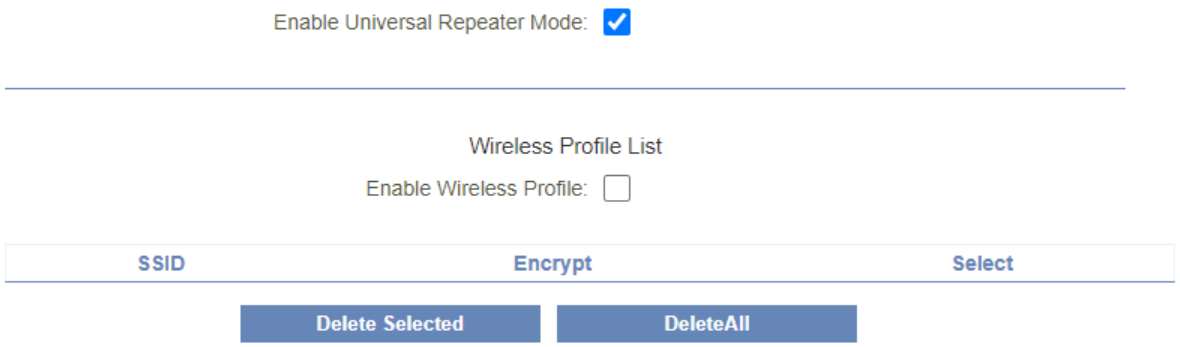
2.4Ghz Basic Settings

You can config the parameters for wireless LAN clients which may connect to your Router. Here you may change wireless encryption settings as well as wireless network parameters.

Disable Wireless LAN Interface: Enable if you want to turn off the 2.4GHz Wi-Fi.
Country or Region: Select your Country.
Band: Select the band of your 2.4Ghz Wi-Fi.
Mode: Select the mode of your 2.4Ghz Wi-Fi, Client or AP (Access Point).
SSID: Change the Wi-Fi name that appears on end devices.
Channel Width: Select the bandwidth of your 2.4Ghz Wi-Fi, 20MHz or 40MHz.
Control Sideband: Defines the sideband of the channel of your 2.4Ghz Wi-Fi.
Channel Number: Select the channel of your 2.4GHz Wi-Fi.
Auto Channel Timer: Select your Channel timer between 1-999 hours.
BroadcastSSID: Turn your SSID off or on for the 2.4Ghz Wi-Fi.
WMM: Prioritizes network traffic to improve the performance of a variety of network applications.
Data Rate: Select the data rate of your 2.4Ghz Wi-Fi.
Associated Clients: Shows an active list of all clients contacted to the 2.4Ghz Wi-Fi.



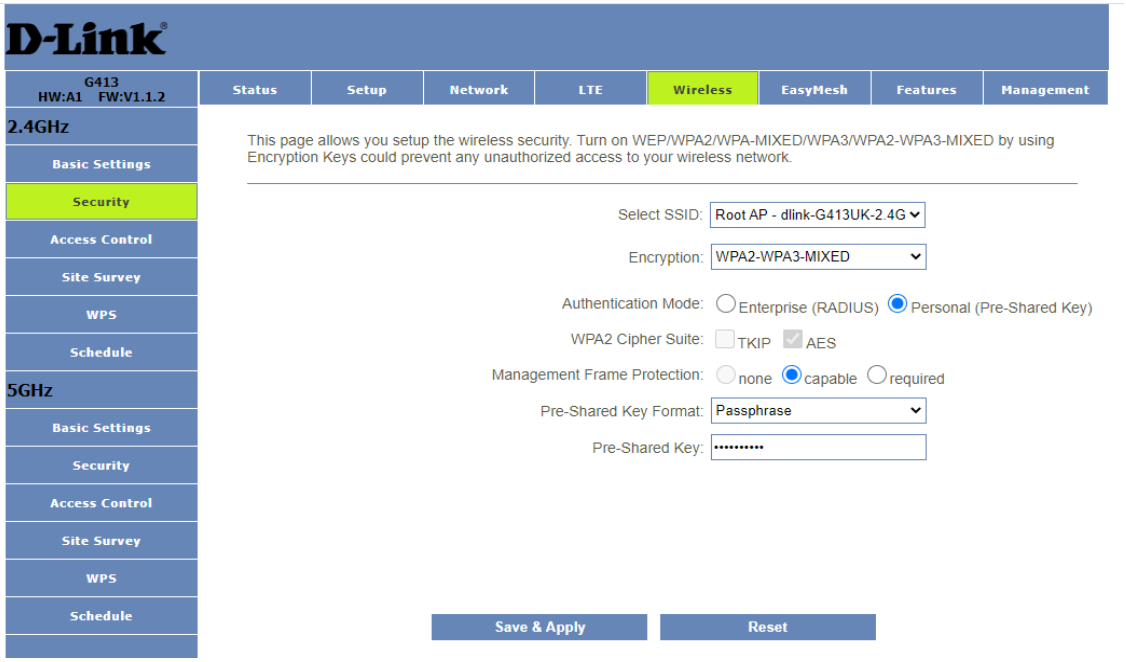
Enable Universal Repeater Mode: Enables the Wi-Fi repeater function of the router so you can extend existing wireless networks.



2.4Ghz Security

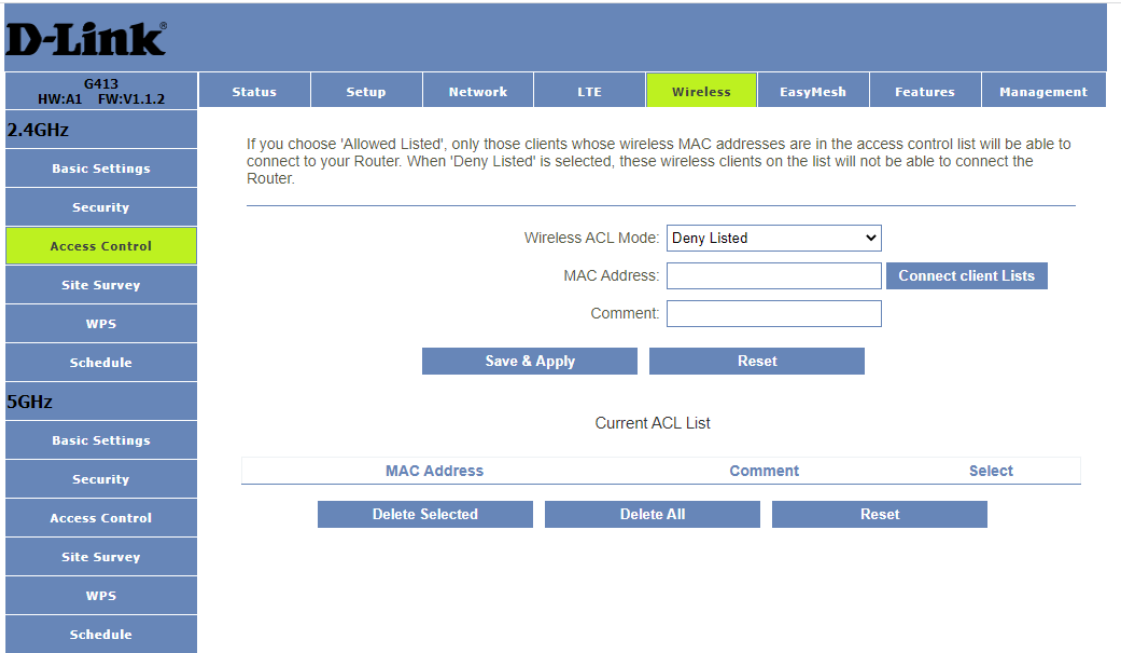
This page allows you setup the wireless security. Turn on WEP/WPA2/WPA-MIXED/WPA3/WPA2-WPA3-MIXED by using Encryption Keys could prevent any unauthorized access to your wireless network.

Select SSID: Select your SSID.
Encryption: Select the encryption type.
Authentication Mode: Select your authentication method Enterprise or pre-shared key.
WPA2 Cipher Suite: Select between TKIP or AES.
Management Frame Protection: Provides integrity protection for both unicast and broadcast management frames.
Pre-Shared Key Format: Select the format of your pre-shared key.
Pre-Shared Key: Select your pre-shared key (Wi-Fi password).



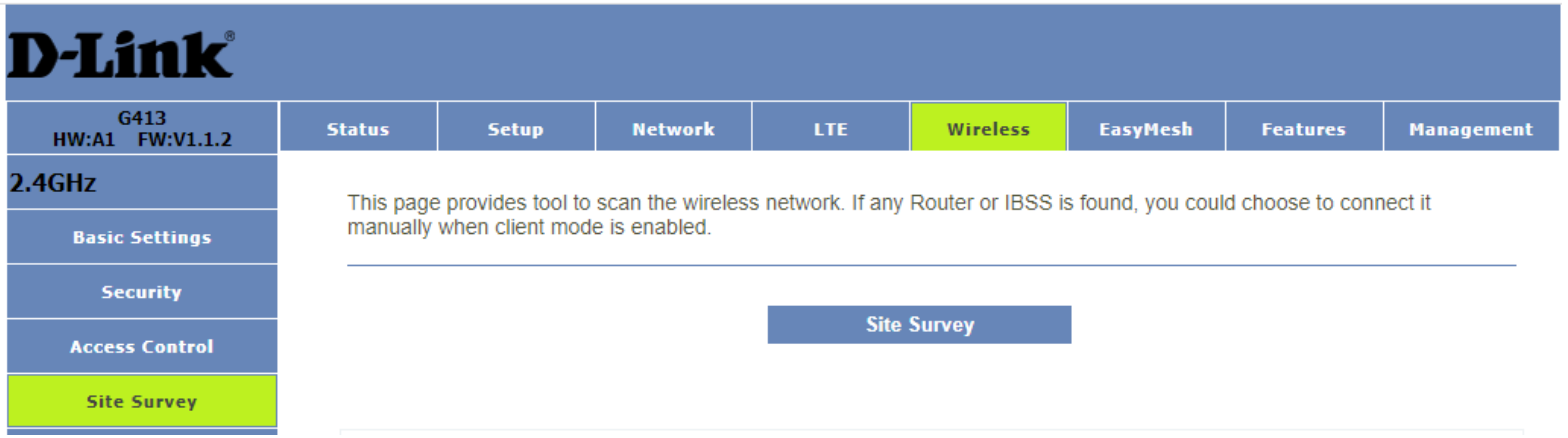
2.4Ghz Access Control

If you choose 'Allowed Listed', only those clients whose wireless MAC addresses are in the access control list will be able to connect to your Router. When 'Deny Listed' is selected, these wireless clients on the list will not be able to connect the Router.



2.4Ghz Site Survey

This page provides tool to scan the wireless network. If any Router or IBSS is found, you could choose to connect it manually when client mode is enabled.

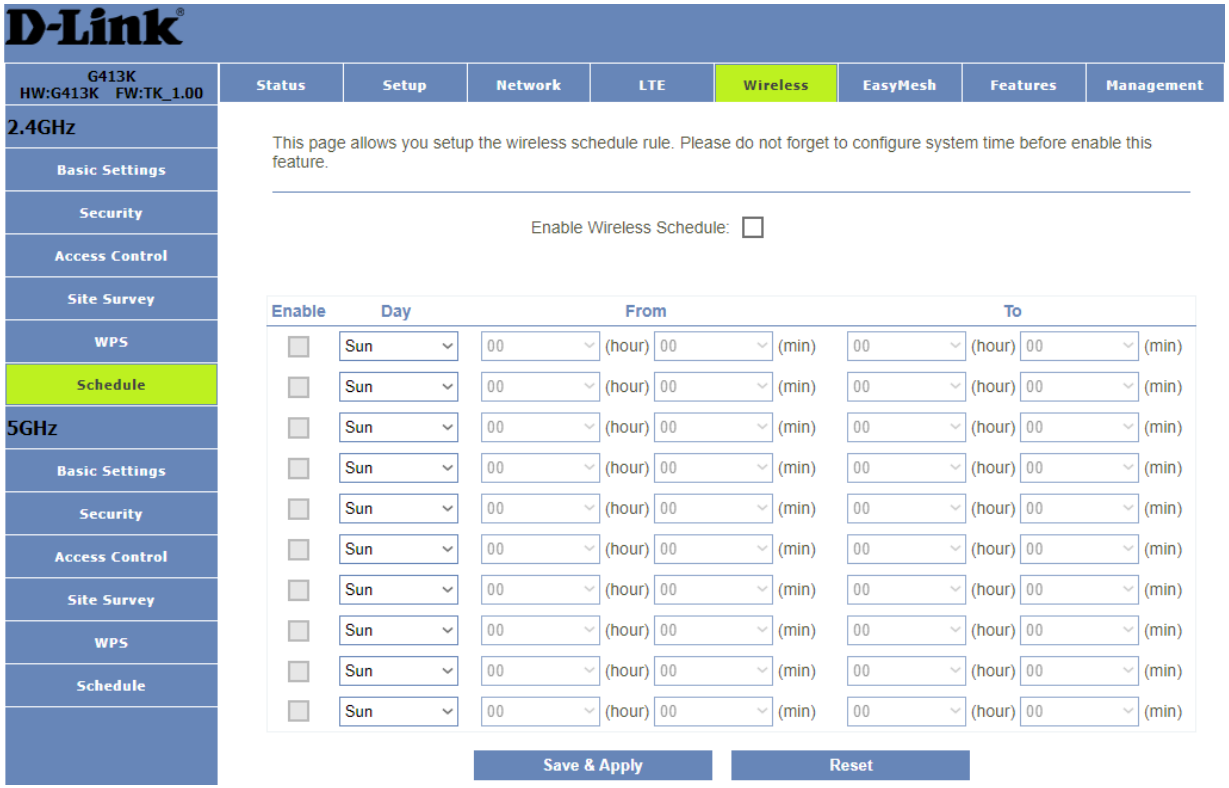


2.4Ghz WPS

This page allows you to change the setting for WPS (Wi-Fi Protected Setup). Using this feature could let your wireless client automatically synchronize its setting and connect to the Router in a minute without any hassle.

2.4Ghz Schedule

This page allows you setup the wireless schedule rule. Please do not forget to configure system time before enable this feature.



5Ghz Basic Settings:

You can config the parameters for wireless LAN clients which may connect to your Router. Here you may change wireless encryption settings as well as wireless network parameters.

Disable Wireless LAN Interface: Enable if you want to turn off the 5GHz Wi-Fi.
Country or Region: Select your Country.
Band: Select the band of your 5GHz Wi-Fi.
Mode: Select the mode of your 5GHz Wi-Fi, Client or AP (Access Point).
SSID: Change the Wi-Fi name that appears on end devices.
Channel Width: Select the bandwidth of your 5GHz Wi-Fi, 20MHz or 40MHz.
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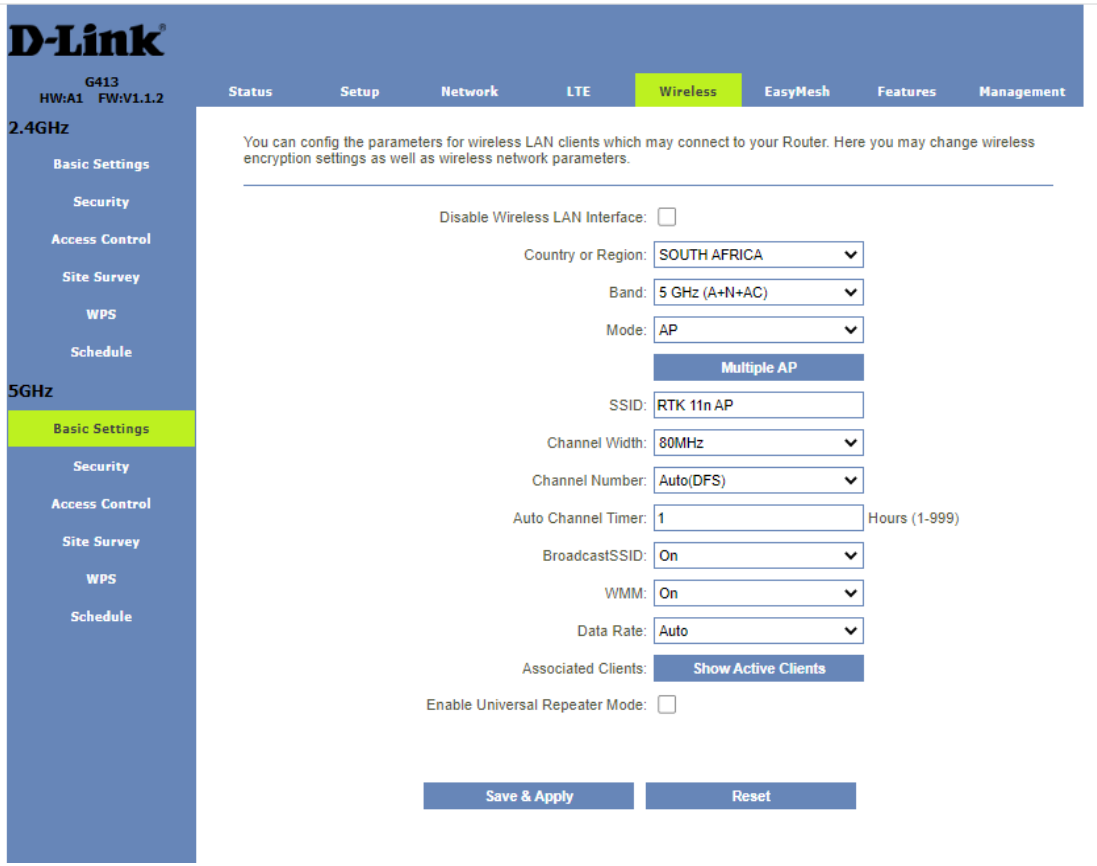

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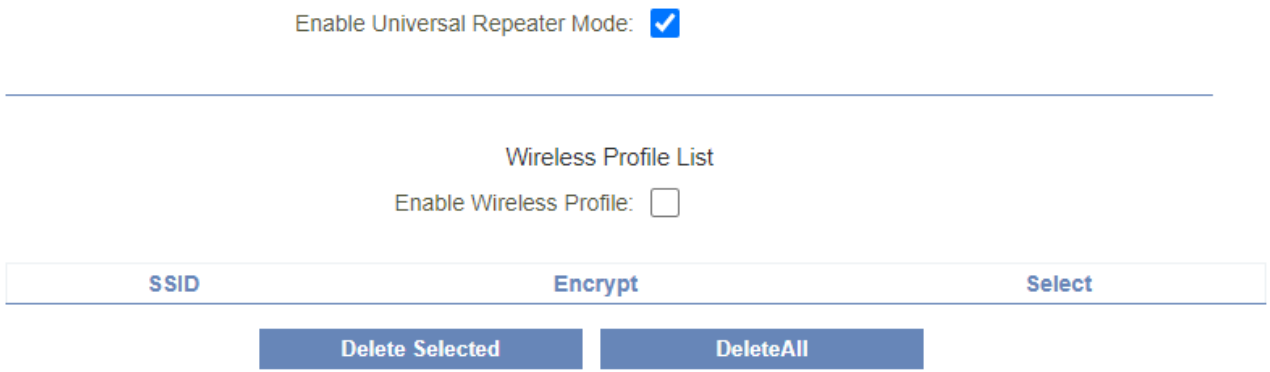

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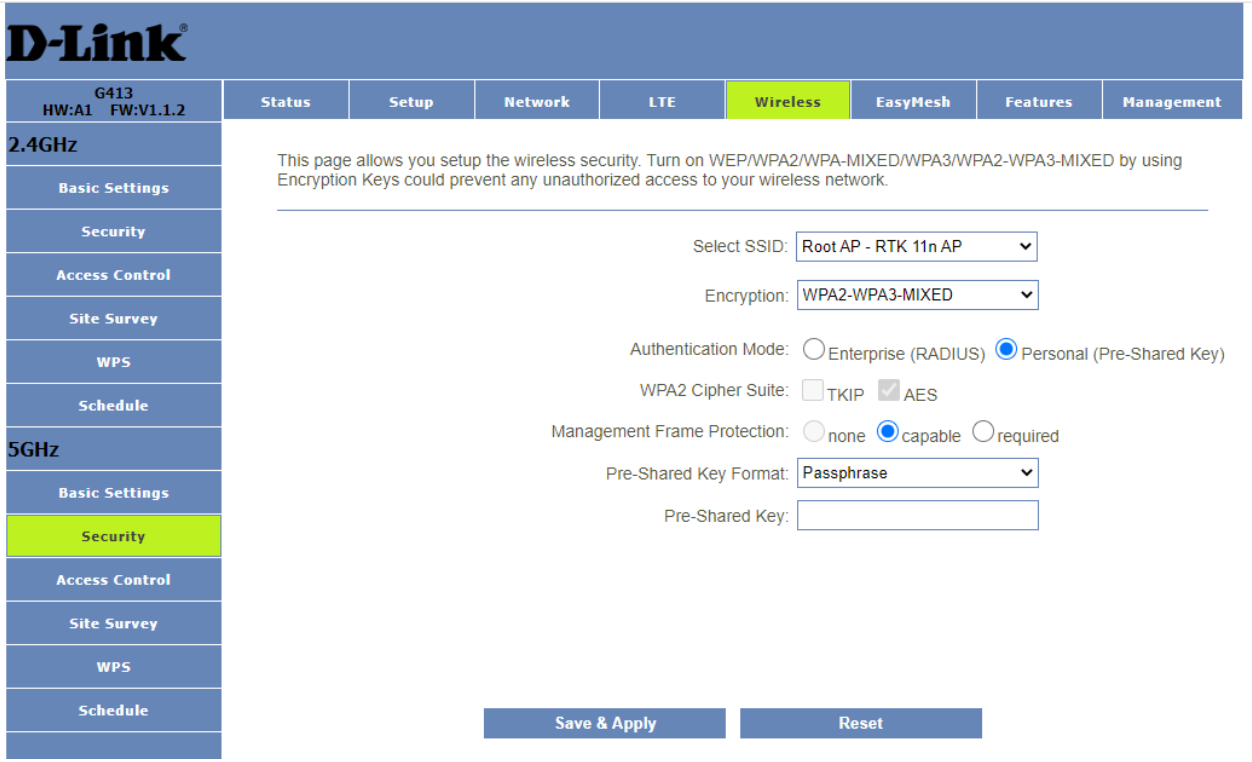
Select SSID: Select your SSID.
Encryption: Select the encryption type.
Authentication Mode: Select your authentication method Enterprise or pre-shared key.
WPA2 Cipher Suite: Select between TKIP or AES.
Management Frame Protection: Provides integrity protection for both unicast and broadcast management frames.
Pre-Shared Key Format: Select the format of your pre-shared key.
Pre-Shared Key: Select your pre-shared key (Wi-Fi password).



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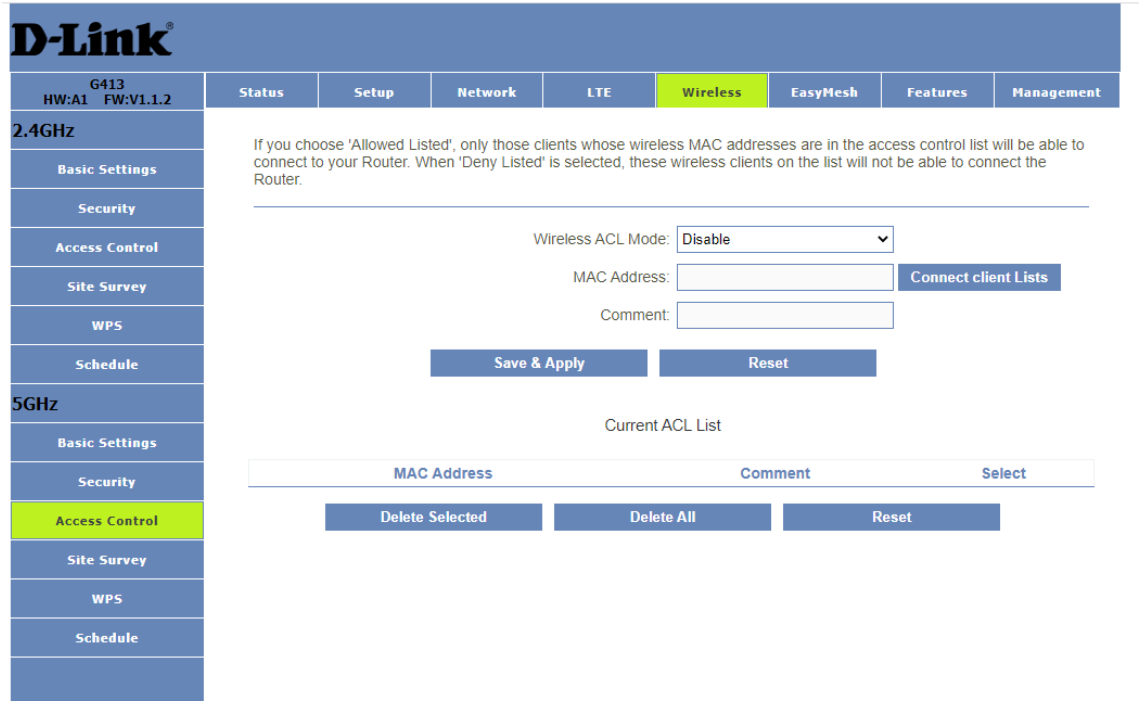

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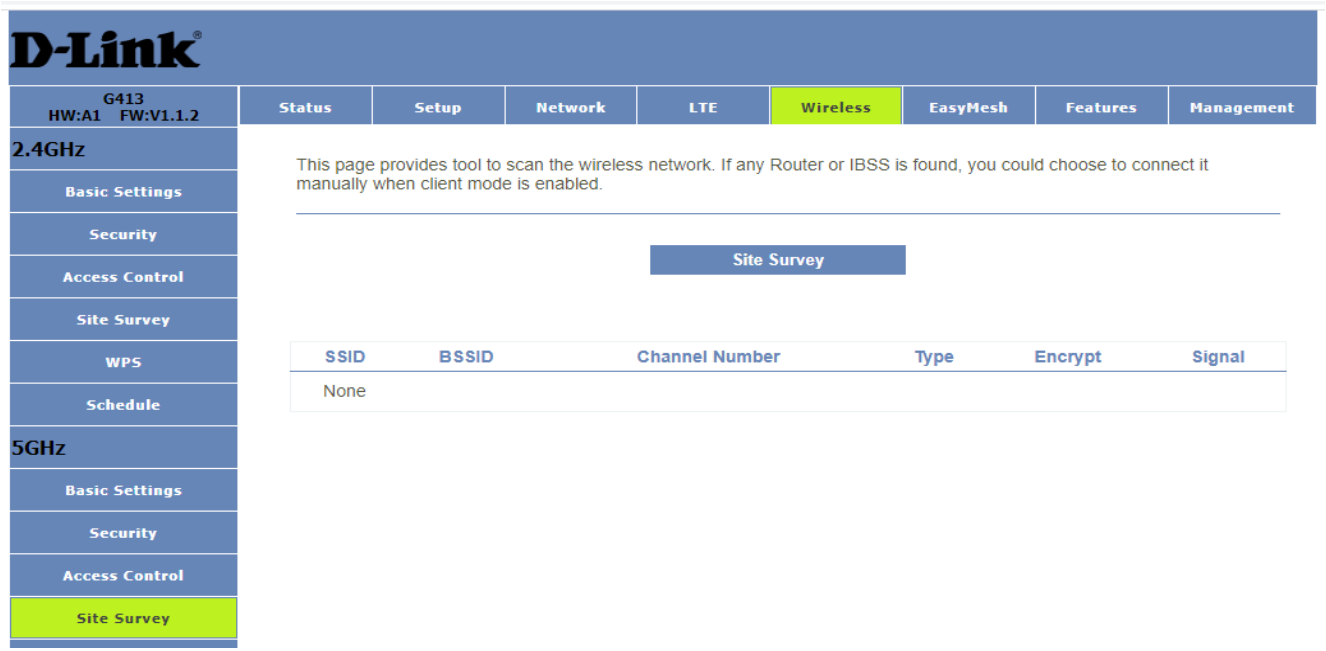
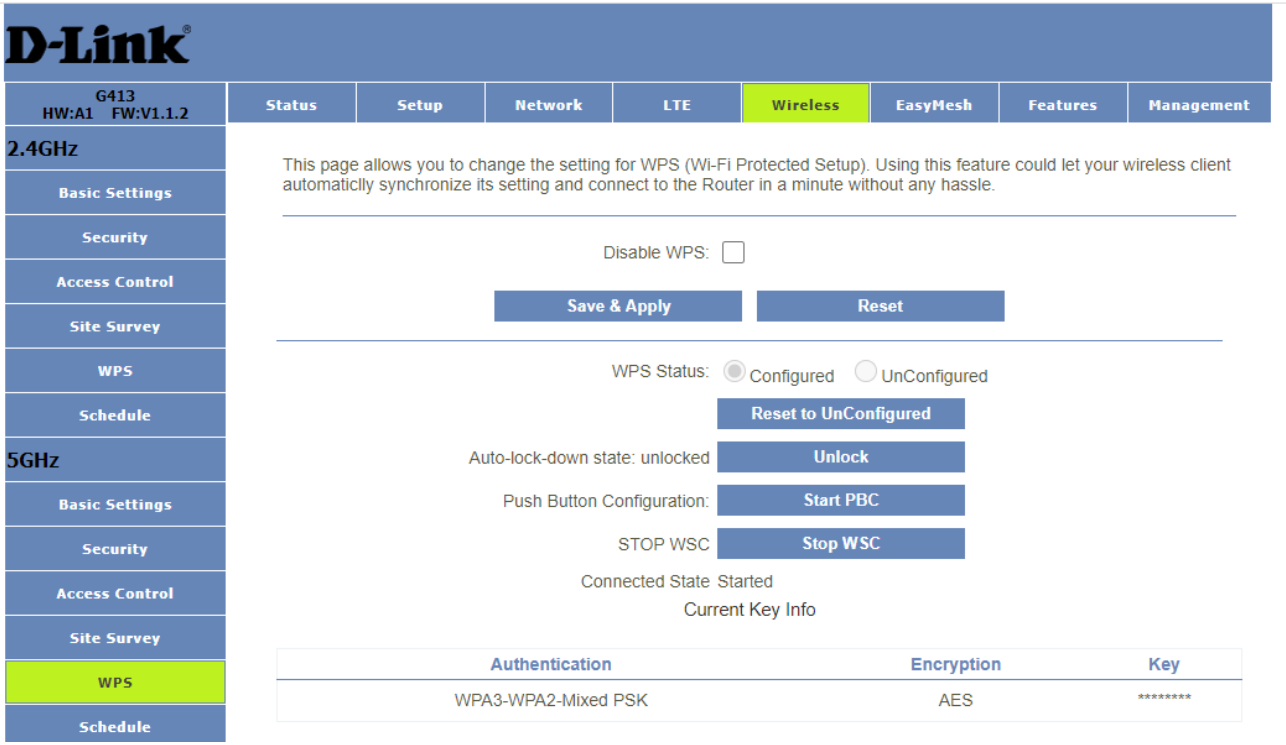


5Ghz WPS

This page allows you to change the setting for WPS (Wi-Fi Protected Setup). Using this feature could let your wireless client automatically synchronize its setting and connect to the Router in a minute without any hassle.

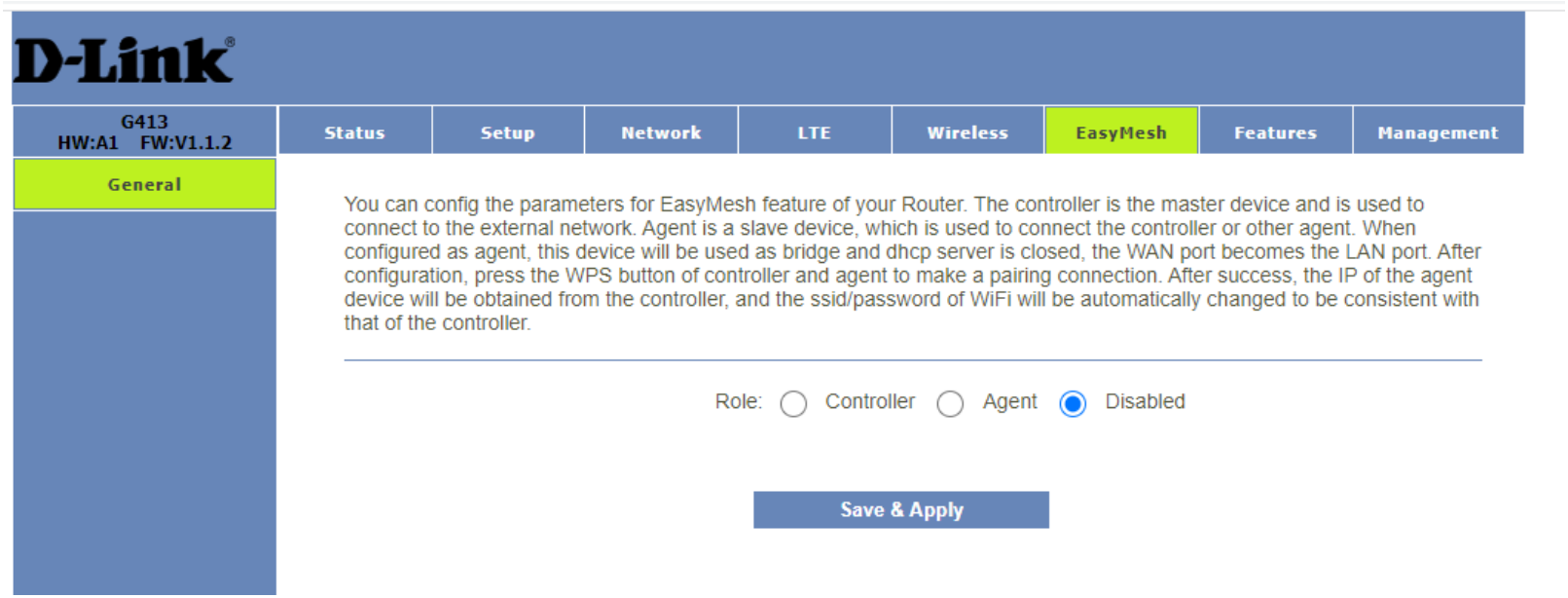


5Ghz Schedule

This page allows you setup the wireless schedule rule. Please do not forget to configure system time before enable this feature.

EasyMesh

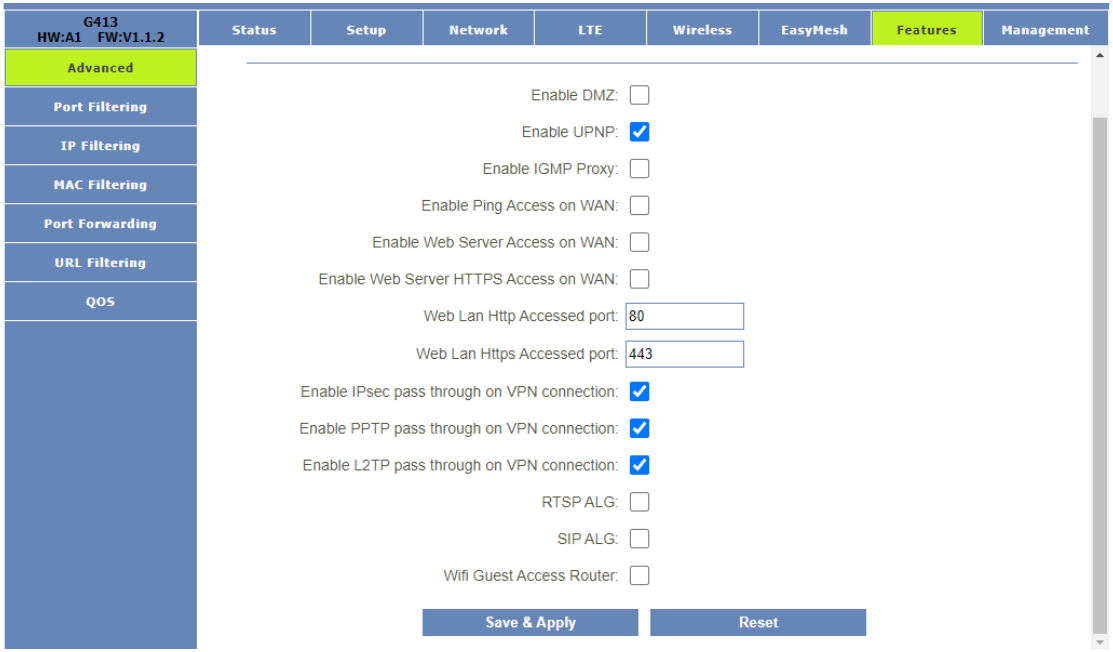
You can config the parameters for EasyMesh feature of your Router. The controller is the master device and is used to connect to the external network. Agent is a slave device, which is used to connect the controller or other agent. When configured as agent, this device will be used as bridge and DHCP server is closed, the WAN port becomes the LAN port. After configuration, press the WPS button of controller and agent to make a pairing connection. After success, the IP of the agent device will be obtained from the controller, and the SSID/password of WIFI will be automatically changed to be consistent with that of the controller.



Features

Advanced

Your router's high-performance firewall feature continuously monitors Internet traffic, protecting your network and connected devices from malicious Internet attacks.

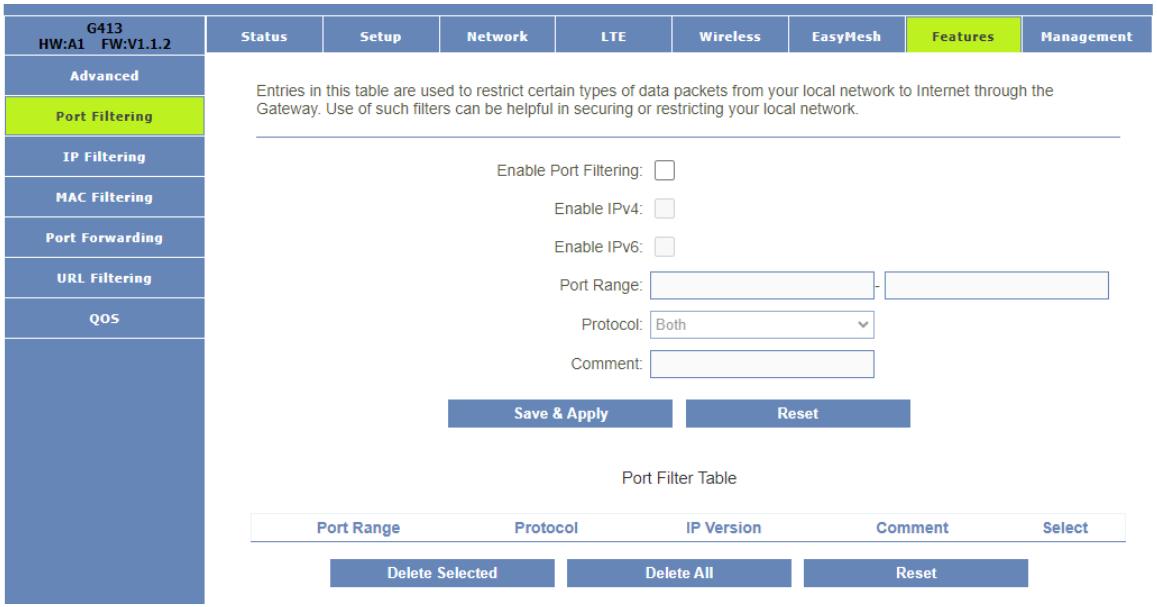


Enable DMZ: Enable demilitarized zone.
Enable UPNP: Enable Universal Plug and Play.
Enable IGMP Proxy: Enable Internet Group Management Protocol.
Enable Ping Access on WAN: Enable the ping command on WAN connection.
Enable Web Server Access on WAN: Enable web server access on WAN connection.
Enable Web Server HTTPS Access on WAN: Allows HTTPS web access.
Web Lan HTTP Accessed port: Set access port for HTTP.
Web Lan Https Accessed port: Set access port for HTTPS.
Enable IPsec pass through on VPN connection: Allow IPsec VPN passthrough.
Enable PPTP pass through on VPN connection: Allow PPTP VPN passthrough.
Enable L2TP pass through on VPN connection: Allow L2TP VPN passthrough.
RTSP ALG: Enable real time streaming protocol.
SIP ALG: Enable to prevent some of the problems caused by router firewalls by inspecting VoIP traffic (packets) and if necessary, modifying it.
Wifi Guest Access Router: Enable if you want to use guest network

Port Filtering

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

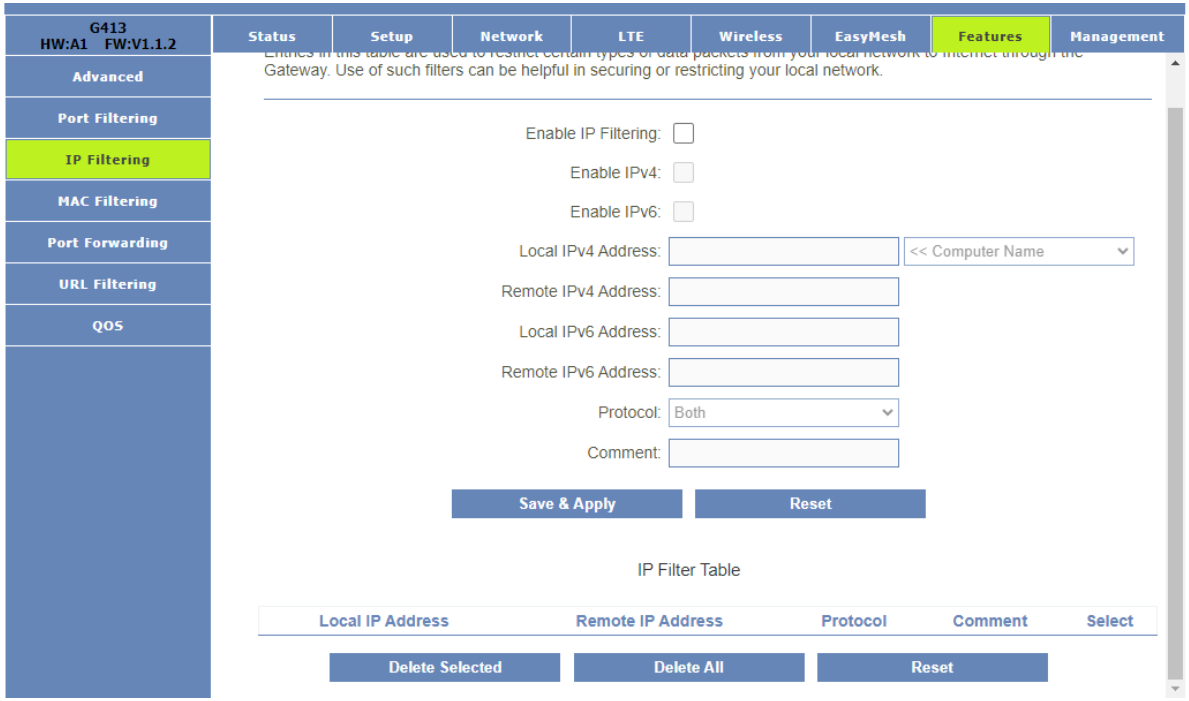
Enable Port Filtering: Enable the port filtering feature.
Enable IPv4: Select if you are using IPv4.
Enable IPv6: Select if you are using IPv6.
Port Range: Select your ports or port range you want to filter.
Protocol: Select between UDP/TCP or both.
Comment: Leave a comment to identify your port filtering rule.



IP Filtering

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

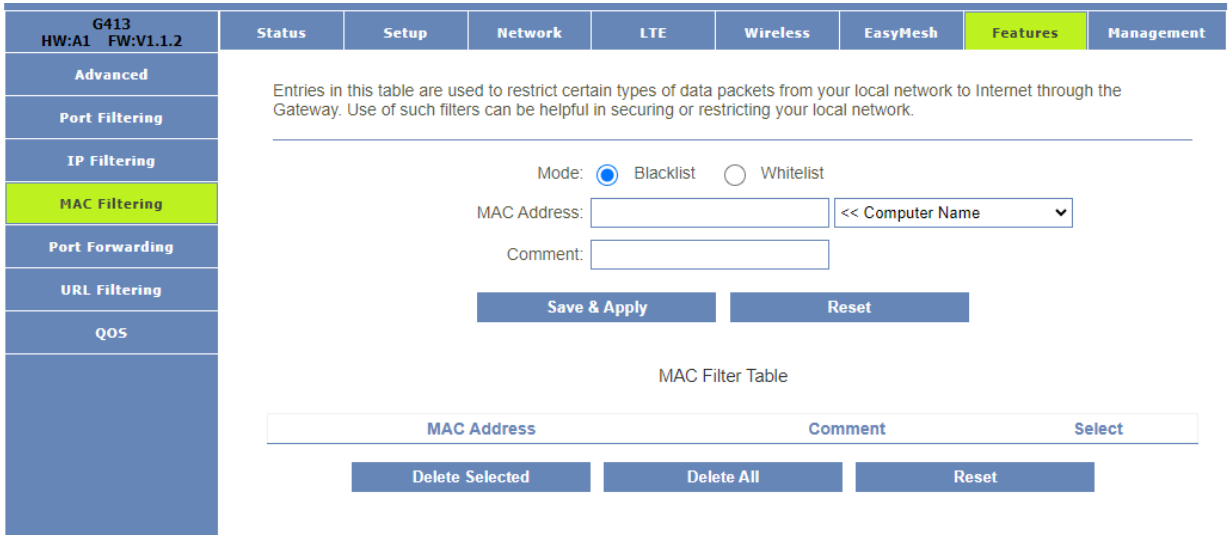
Enable IP Filtering: Enable the IP filtering feature.
Enable IPv4: Select if you are using IPv4.
Enable IPv6: Select if you are using IPv6.
Local IPv4 Address: Enter your local IPv4 address.
Remote IPv4 Address: Enter your remote IPv4 address.
Local IPv6 Address: Enter your local IPv6 address.
Remote IPv6 Address: Enter your remote IPv6 address.
Protocol: Select between UDP/TCP or both.
Comment: Leave a comment to identify your IP filtering rule.



MAC Filtering

The mac filtering is used to block or allow specific devices via their mac addresses on your network.

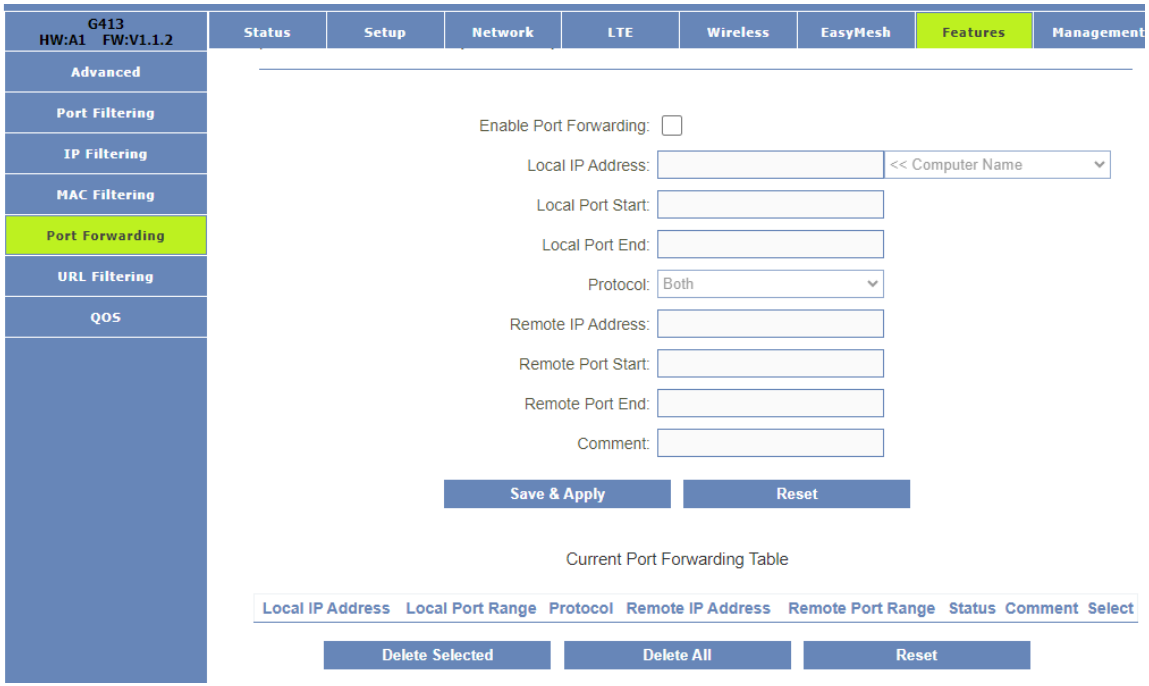
Mode: Use Whitelist to allow specific devices and use Blacklist to block.
MAC Address: Enter the mac address of the device you want to block or allow.
Comment: Leave a comment to identify your mac filtering rule.



Port Forwarding

Entries in this table allow you to automatically redirect common network services to a specific machine behind the NAT firewall. These settings are only necessary if you wish to host some sort of server like a web server or mail server on the private local network behind your Gateway's NAT firewall.

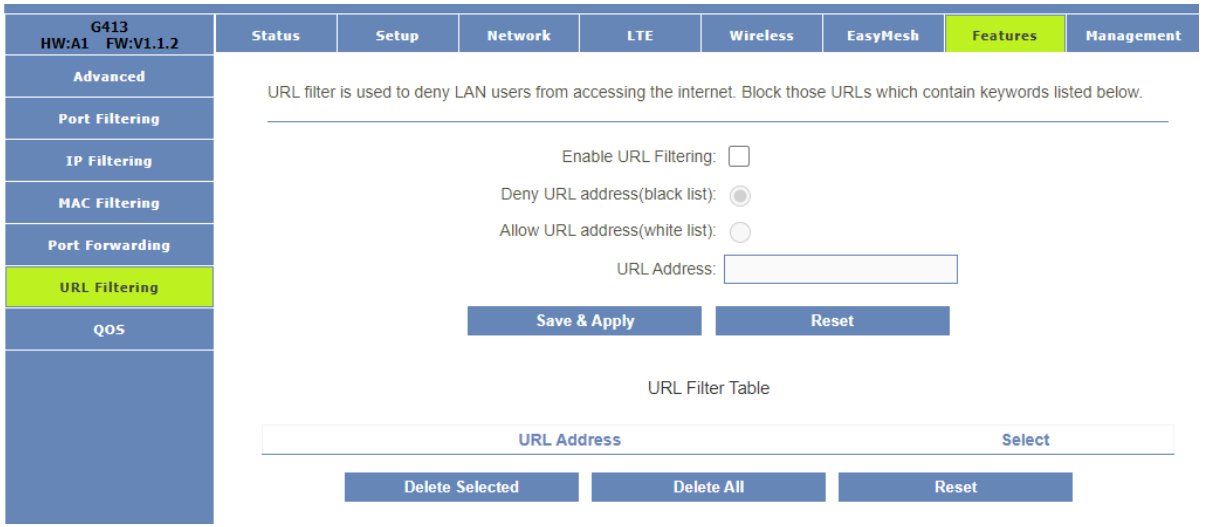
Enable Port Forwarding: Enable the feature.
Local IP Address: Enter the local IP address of the device you want to forward to.
Local Port Start: Enter the start local port number of the ports you want to forward.
Local Port End: Enter the end local port number of the ports you want to forward.
Protocol: Select between UDP/TCP or both.
Remote IP Address: Enter the remote IP address of the device you want to forward to.
Remote Port Start: Enter the start remote port number of the ports you want to forward.
Remote Port End: Enter the end remote port number of the ports you want to forward.
Comment: Leave a comment to identify your port forwarding rule.



URL Filtering

URL filter is used to deny LAN users from accessing the internet. Block those URLs which contain keywords listed below.

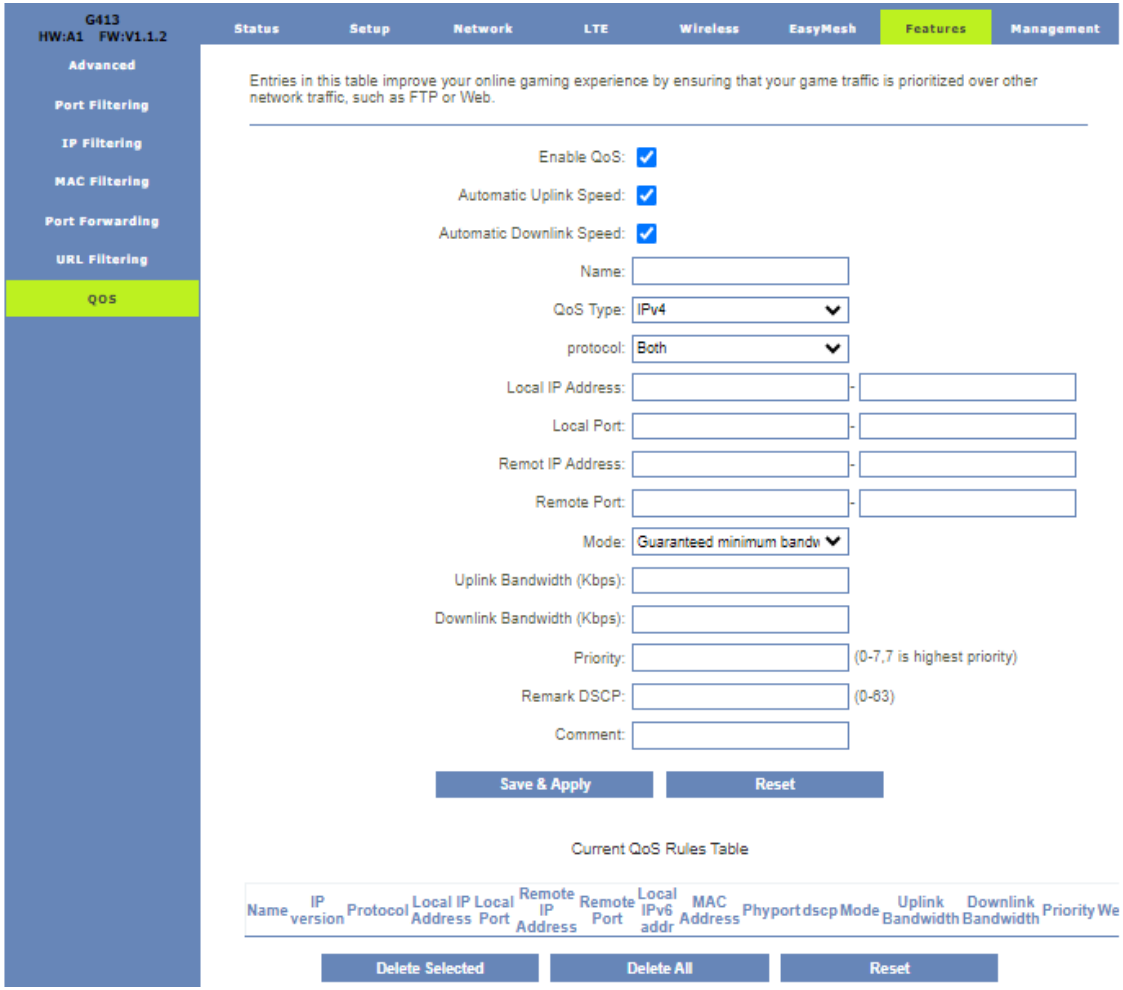
Enable URL Filtering: Enable the URL filtering feature.
Deny URL address (black list): Select if you want to block URL addresses.
Allow URL address (white list): Select if you want to allow URL addresses.
URL Address: Enter the URL address you want to allow or block.



QOS

Entries in this table improve your online gaming experience by ensuring that your game traffic is prioritized over other network traffic, such as FTP or Web.

Enable QoS: Enable the QOS feature.
Automatic Uplink Speed: Select if you want to use auto uplink speed and unselect if you want to set the uplink speed manually.
Automatic Downlink Speed: Select if you want to use auto downlink speed and unselect if you want to set the speed manually.
Name: Enter a name for the QOS rule.
QOS Type: Select the type of QOS you want to use IPv4, IPv6, MAC, DSCP or PHYPORT.
Protocol: Select between UDP/TCP or both.
Local IP Address: Enter the local IP address or range of IP addresses for your QOS rule.
Local Port: Enter the local port or range of ports for your QOS rule.
Remote IP Address: Enter the remote IP address or range of IP addresses for your QOS rule.
Remote Port: Enter the remote port number of the ports you want to forward.
Mode: Select between Guaranteed minimum bandwidth or guaranteed maximum bandwidth.
Uplink Bandwidth (Kbps): Select your uplink speed in Kbps.
Downlink Bandwidth (Kbps): Select your downlink speed in Kbps.
Priority: Select your priority level 0-7,7 is highest priority.
Remark DSCP: Set your DSCP remark number 0-63.
Comment: Leave a comment to identify your QOS rule.

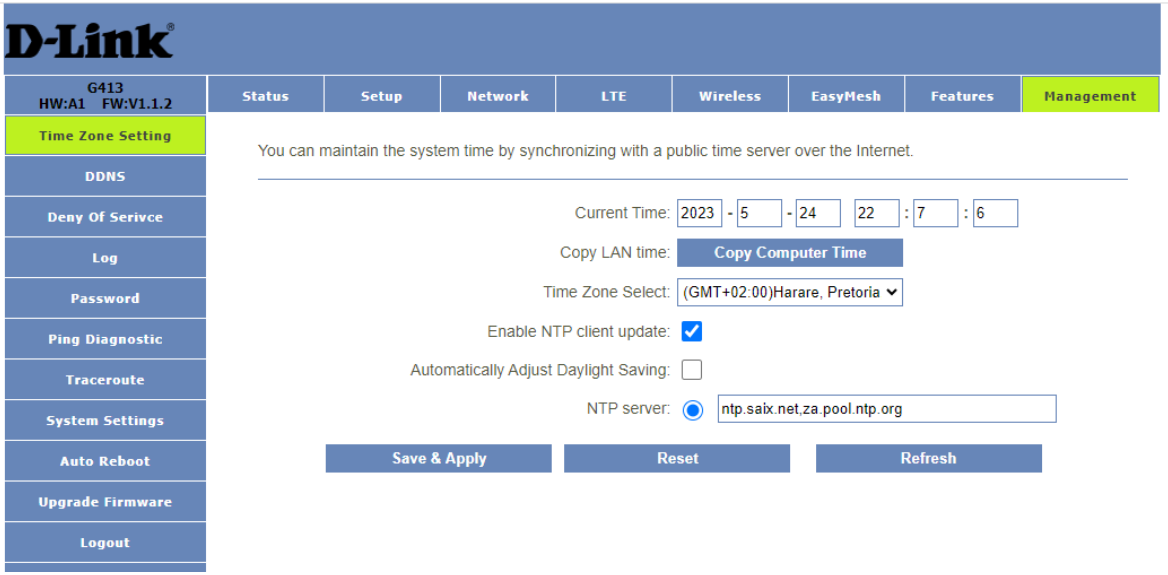


Management

Time Zone Setting

You can maintain the system time by synchronizing with a public time server over the Internet.

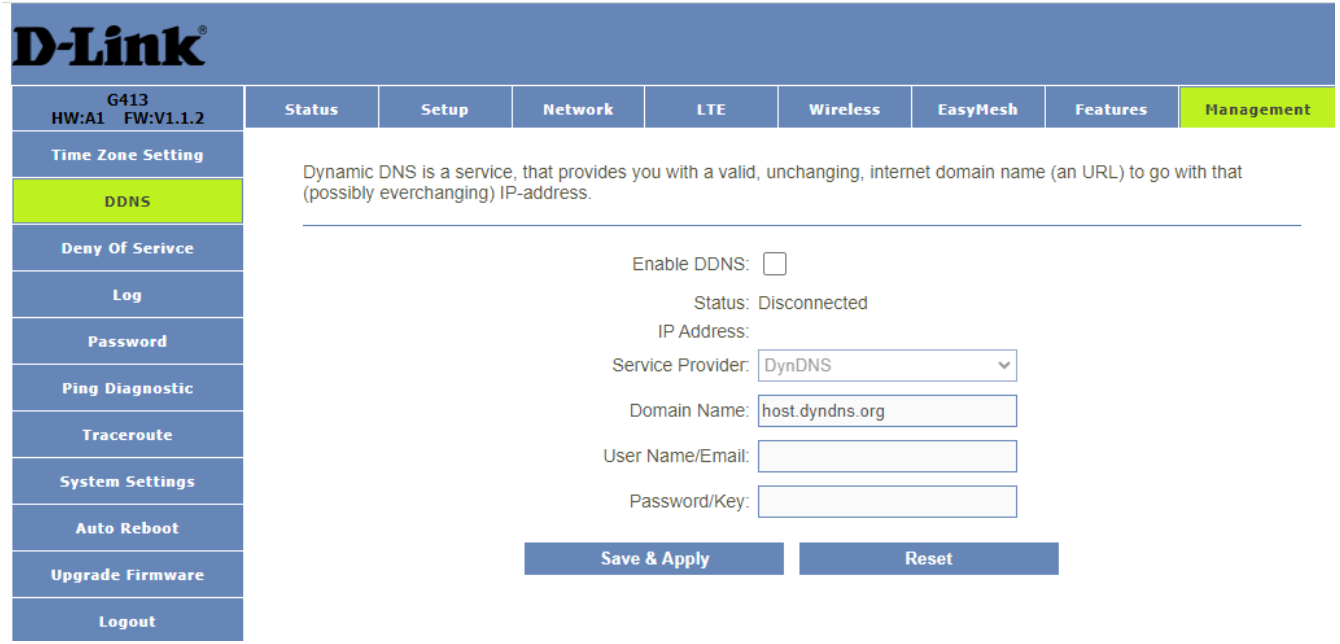
Current Time: Set your current time Year-Month-Day-Hour-Minute-Seconds.
Copy LAN time: Select if you would like to use LAN time (computer time).
Time Zone Select: Select your time zone.
Enable NTP client update: Enable to automatically update time via NTP server.
Automatically Adjust Daylight Saving: Select if your country makes use of daylight savings time.
NTP server: Enter the server address of your NTP server.



DDNS

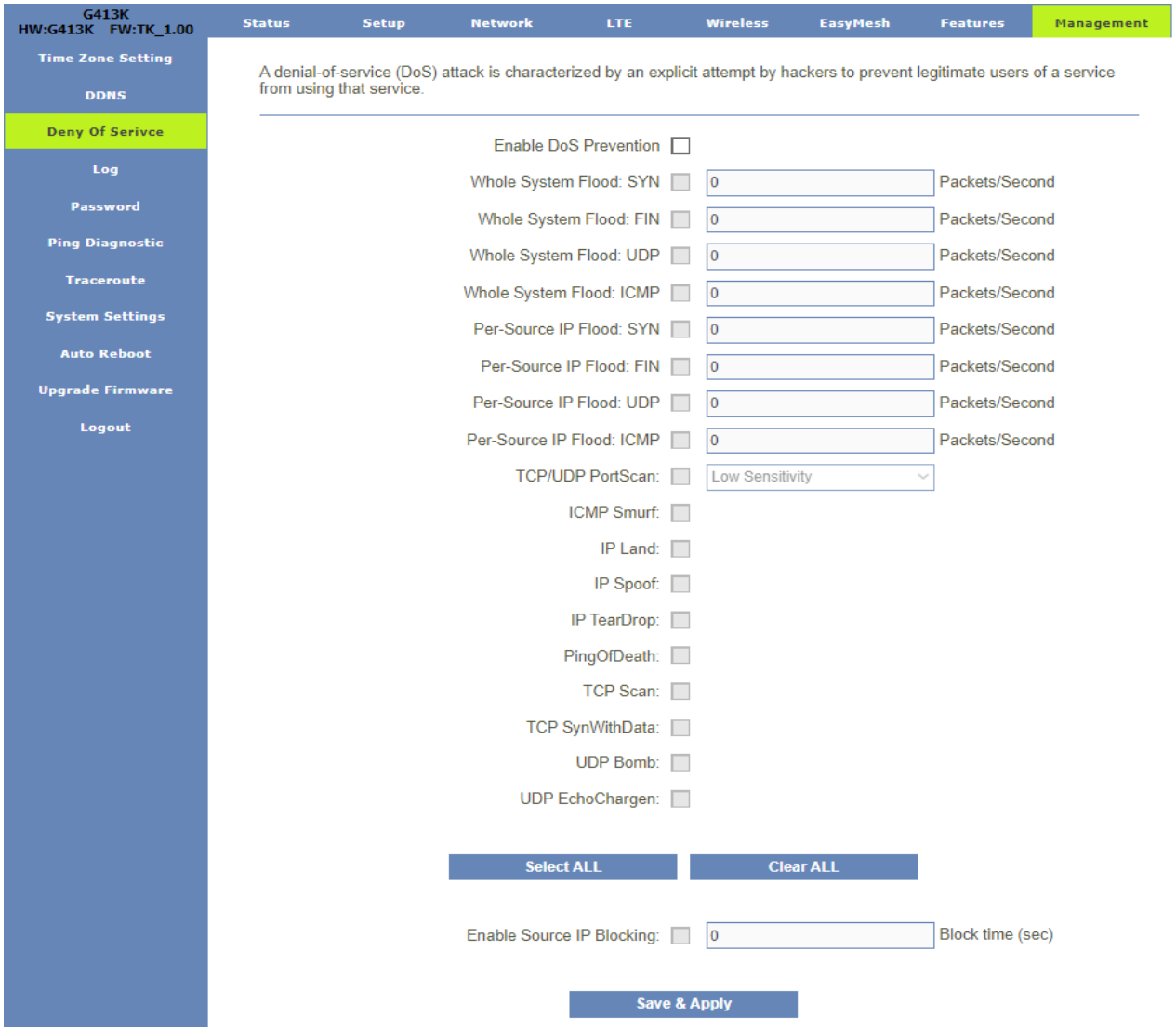
Dynamic DNS is a service, that provides you with a valid, unchanging, internet domain name (an URL) to go with that (possibly everchanging) IP-address.

Enable DDNS: Enable to use DDNS service.
Status: Shows current status of DDNS account.
IP Address: Will show your IP address.
Service Provider: Select which DDNS service provide you have a account with DynDNS, No-IP, TZO or FreeDNS.
Domain Name: Enter the domain name as provided by your DDNS provider.
User Name/Email: Enter the username or email address of the DDNS account.
Password/Key: Enter the password of your DDNS account.



Deny of Service

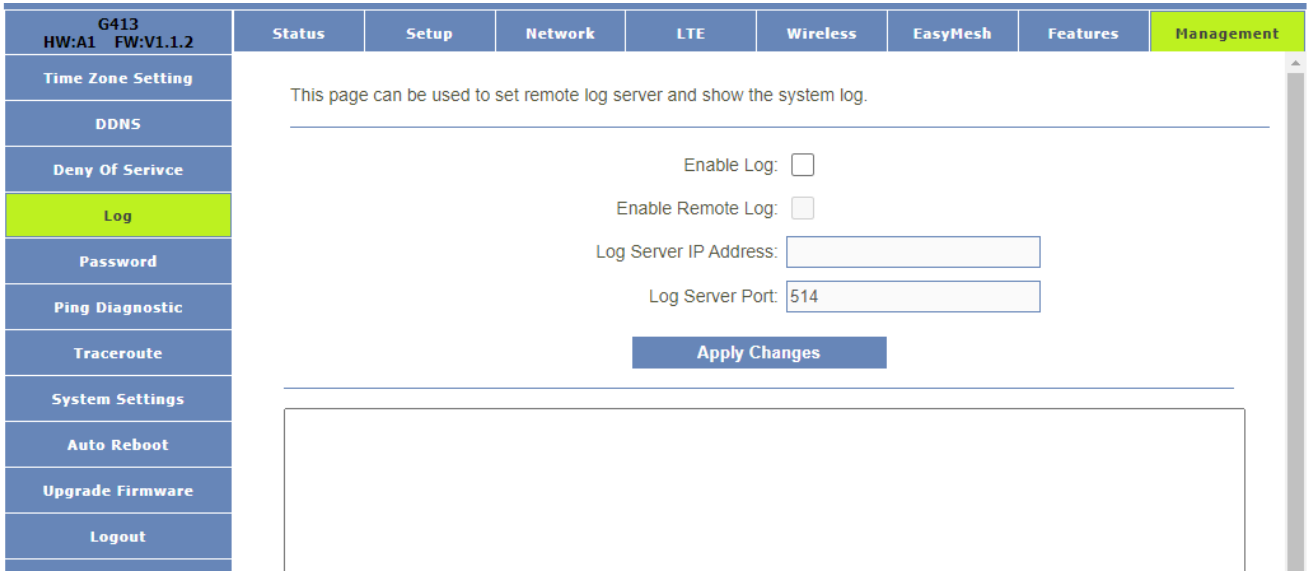
A denial-of-service (DoS) attack is characterized by an explicit attempt by hackers to prevent legitimate users of a service from using that service.



Log

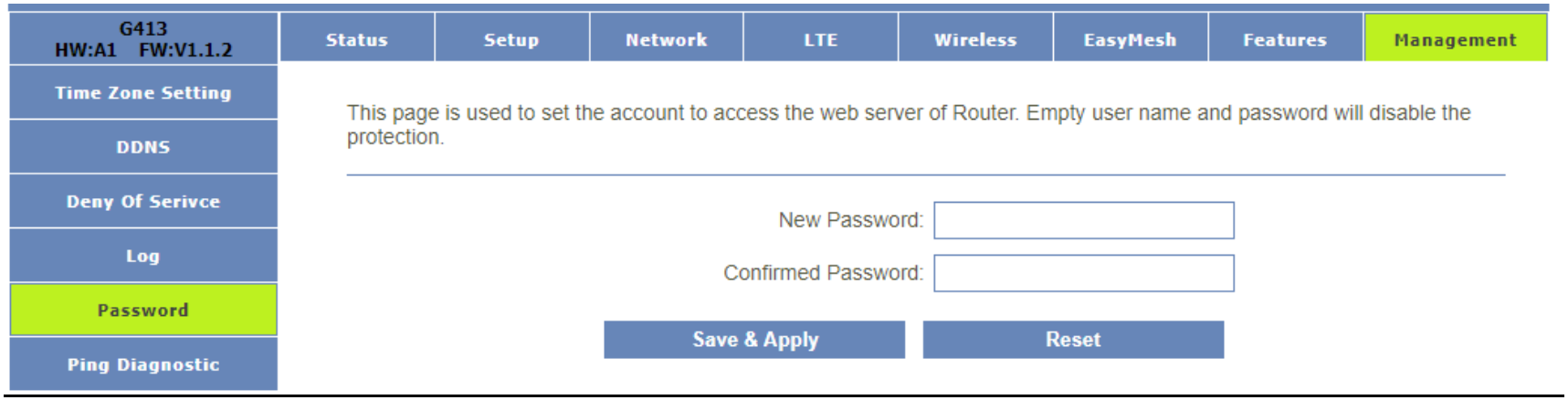
This page can be used to set remote log server and show the system log.

Enable Log: Enable to enable log service.
Enable Remote Log: Enable to enable remote log service.
Log Server IP Address: Enter the IP address of your remote server.
Log Server Port: Enter the port number of your remote server.



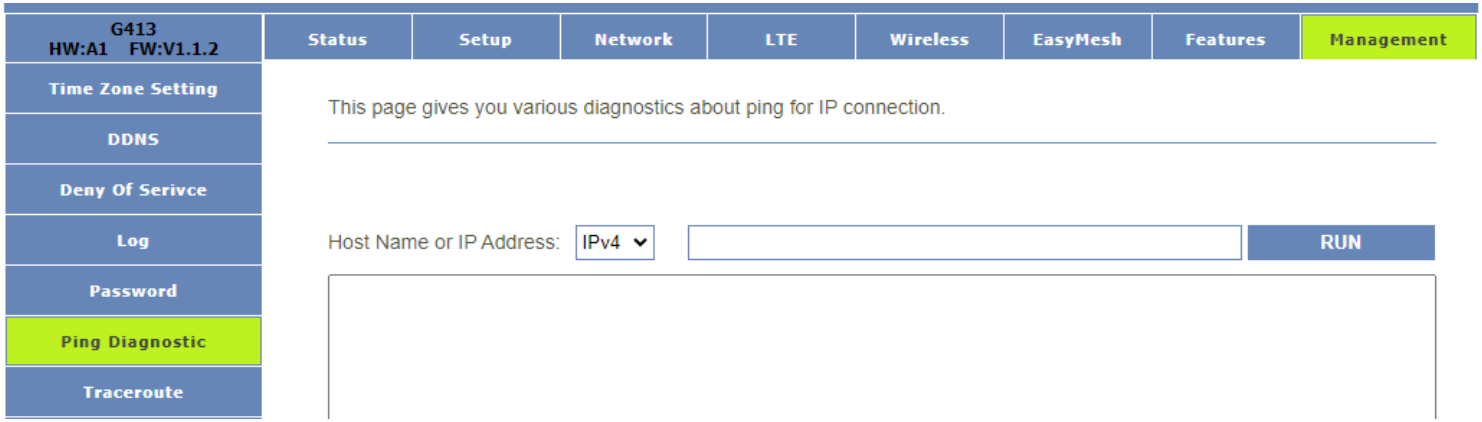
Password

This page is used to set the account to access the web server of Router. Empty user name and password will disable the protection.



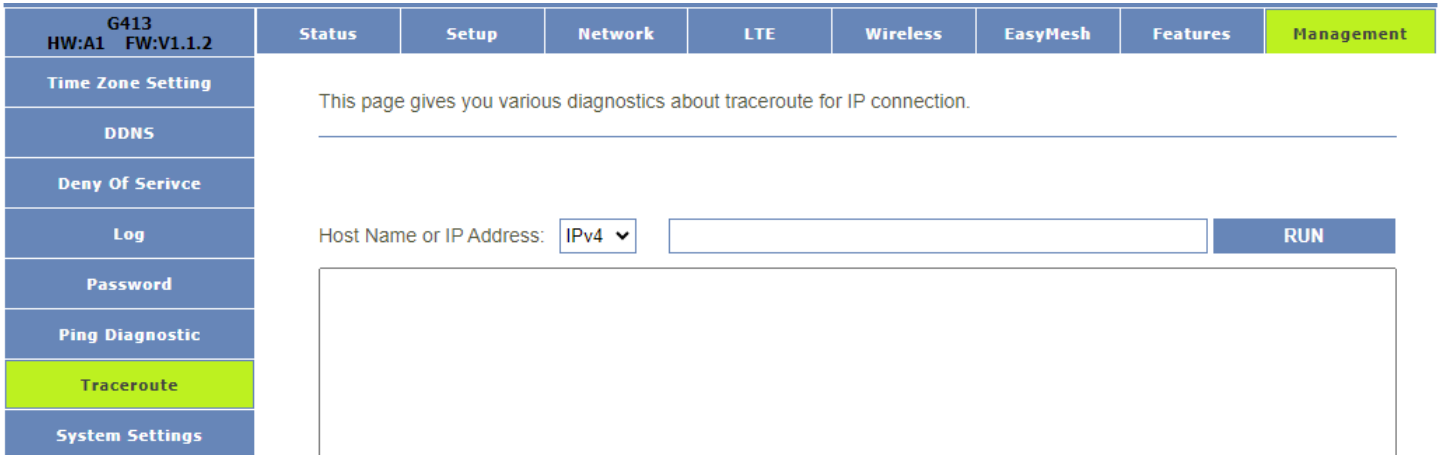
Ping Diagnostic

This page gives you various diagnostics about ping for IP connection.



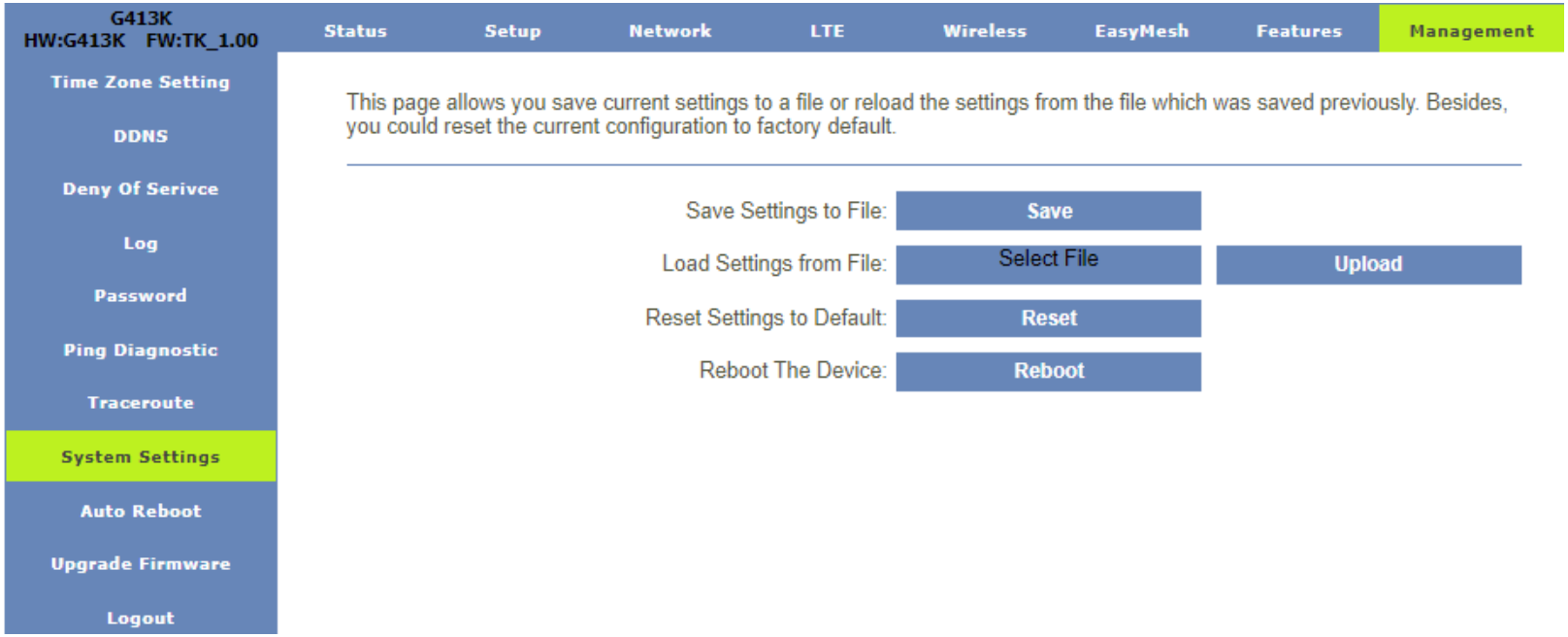
Traceroute

This page gives you various diagnostics about traceroute for IP connection.



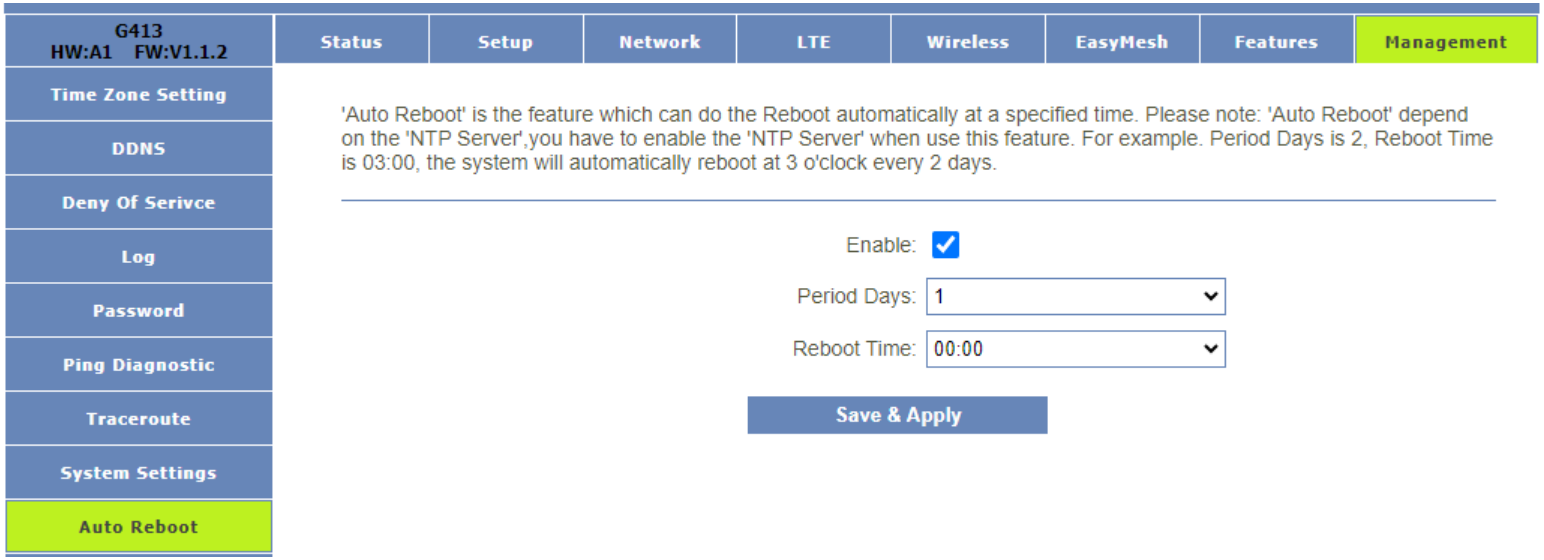
System Settings:

This page allows you save current settings to a file or reload the settings from the file which was saved previously. Besides, you could reset the current configuration to factory default.



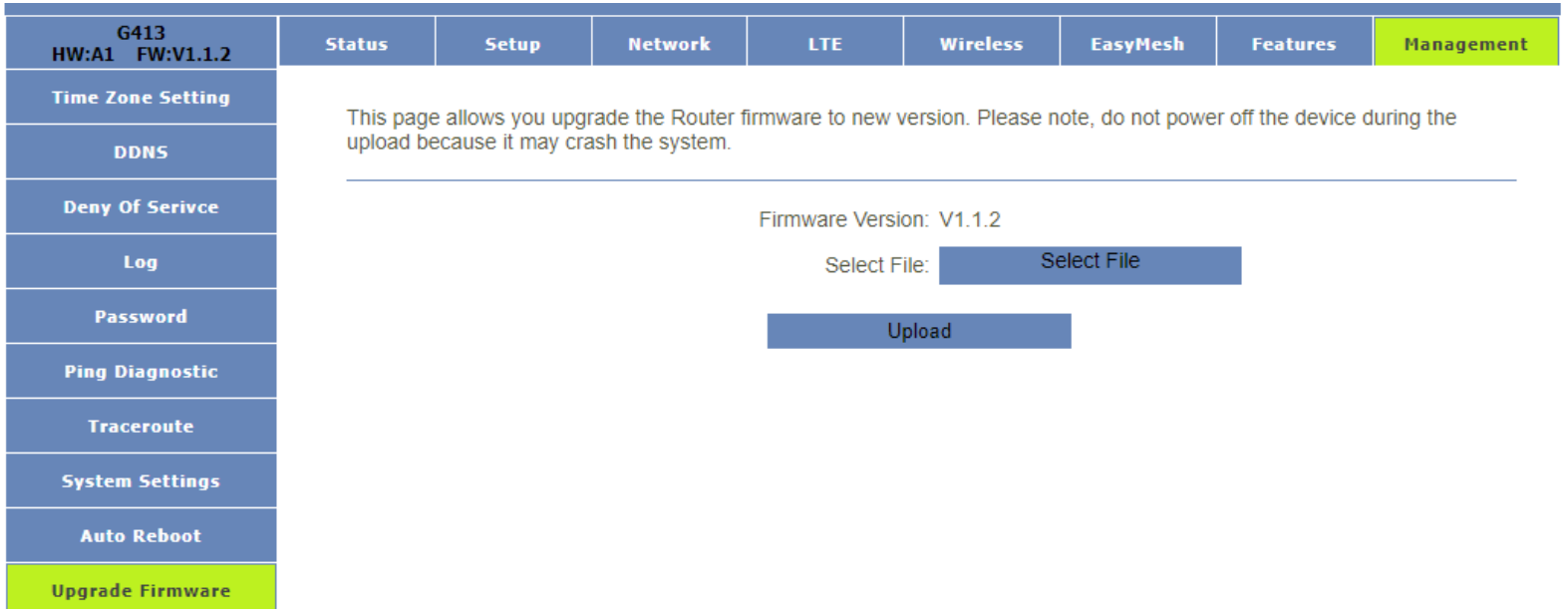
Auto Reboot

'Auto Reboot' is the feature which can do the Reboot automatically at a specified time. Please note: 'Auto Reboot' depend on the 'NTP Server', you have to enable the 'NTP Server' when use this feature. For example. Period Days is 2, Reboot Time is 03:00, the system will automatically reboot at 3 o'clock every 2 days.



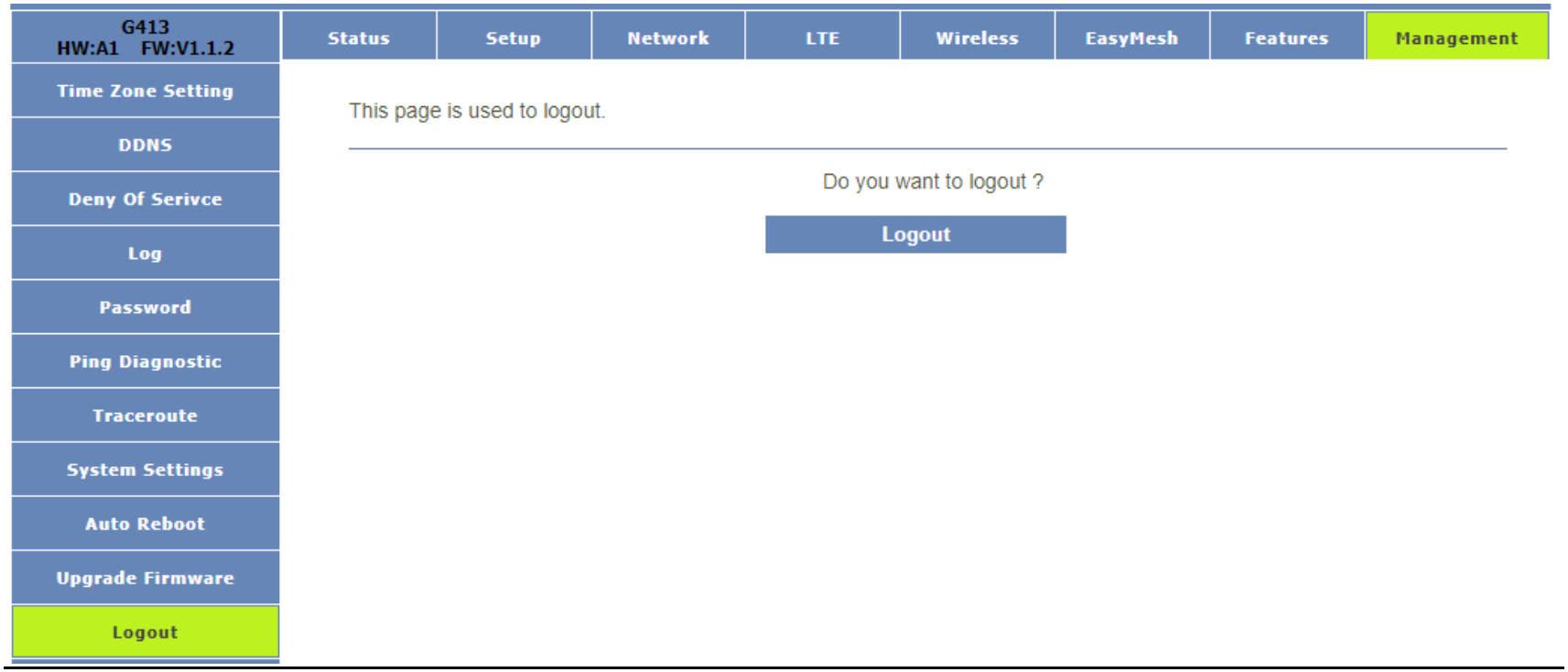
Upgrade Firmware

This page allows you upgrade the Router firmware to new version. Please note, do not power off the device during the upload because it may crash the system.



Logout

This page is used to logout of the web GUI.



Connect a Wireless Client to your Router

Windows® 10

When connecting to the G413K wirelessly for the first time, you will need to input the wireless network name (SSID) and Wi-Fi password (security key) of the device you are connecting to. If your product has a Wi-Fi configuration card, you can find the default network name and Wi-Fi password here. Otherwise refer to the product label for the default Wi-Fi network SSID and password, or enter the Wi-Fi credentials set during the product configuration.

1. To join an existing network, locate the wireless network icon in the taskbar, next to the time display and click on it.

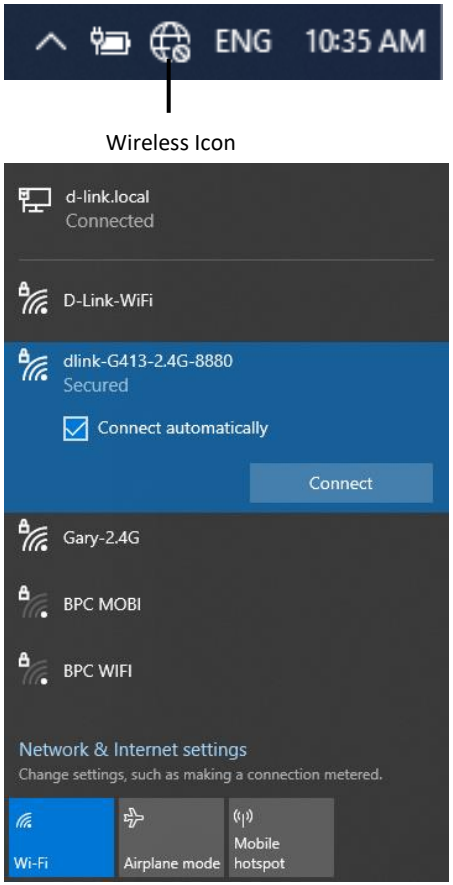
2. Clicking on this icon will display a list of wireless networks which are within range of your computer. Select the desired network by clicking on the SSID.

3. To connect to the SSID, click **Connect.**

4. To automatically connect with the router when your device next detects the SSID, click the **Connect Automatically** check box**.**

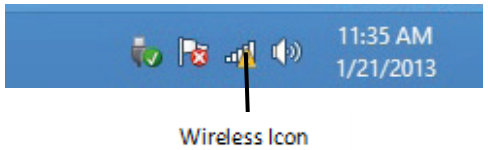
5. You will then be prompted to enter the Wi-Fi password (network security key) for the wireless network. Enter the password into the box and click **Next** to connect to the network. Your computer will now automatically connect to this wireless network when it is detected.

6. You can also use Wi-Fi Protected Setup (WPS) to connect to the router.
   Press the WPS button on your D-Link device and you will be automatically connected.



Windows® 8

It is recommended that you enable wireless security (WPA/WPA2) on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the security key (Wi-Fi password) being used.



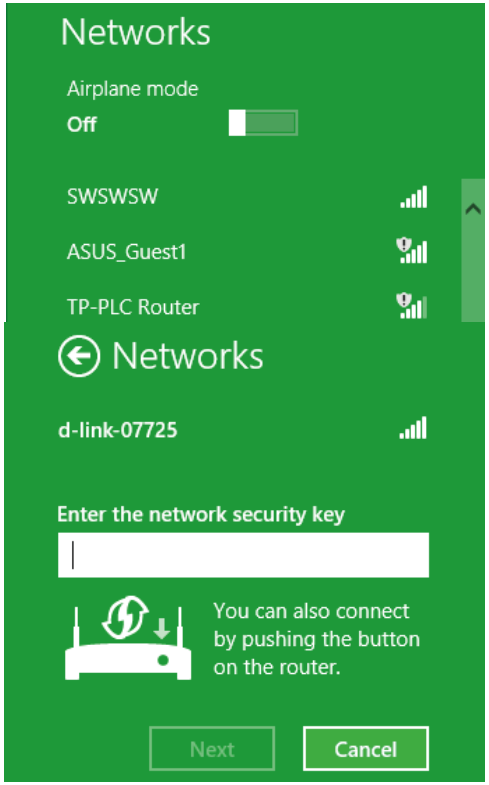
1. To join an existing network, locate the wireless network icon in the taskbar next to the time display.

2. Clicking on this icon will display a list of wireless networks that are within connecting proximity of your computer. Select the desired network by clicking on the network name.

3. You will then be prompted to enter the network security key (Wi-Fi password) for the wireless network. Enter the password into the box and click **Next**.

4. If you wish to use Wi-Fi Protected Setup (WPS) to connect to the router, you can also press the WPS button on your router during this step to enable the WPS function.

5. When you have established a successful connection to a wireless network, the word **Connected** will appear next to the name of the network to which you are connected to.



Windows® 7

It is recommended that you enable wireless security (WPA/WPA2) on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the security key or passphrase being used.

1. Click on the wireless icon in your system tray (lower-right corner).

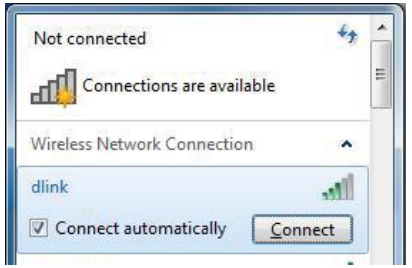
Wireless Icon

2. The utility will display any available wireless networks in your area.

3. Highlight the wireless connection with Wi-Fi name (SSID) you would like to connect to and click the **Connect** button.

If you get a good signal but cannot access the Internet, check your TCP/IP settings for your wireless adapter. Refer to the Networking Basics section in this manual for more information.

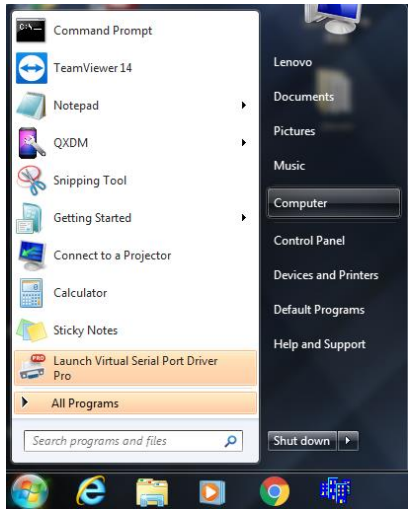
4. The following window appears while your computer tries to connect to the router.



WPS

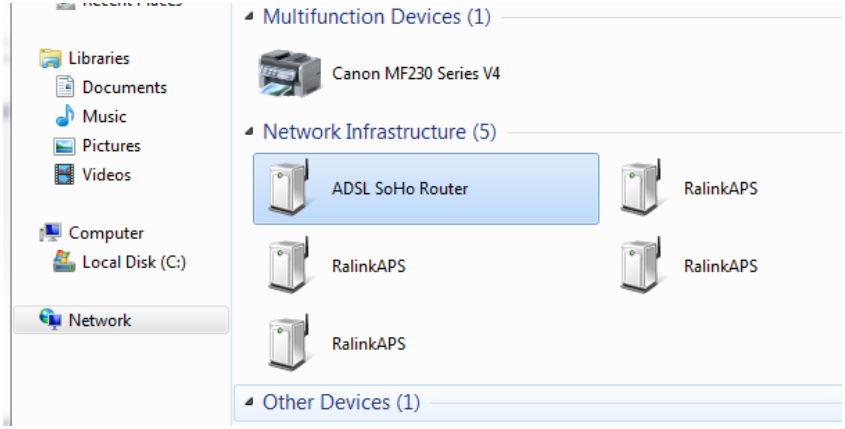
The WPS feature of the G413K can be configured using WindowsR 7 and up.
Carry out the following steps to use WindowsR 7 to configure the WPS feature:

1. Click the **Start** button and select **Computer** from the Start menu.

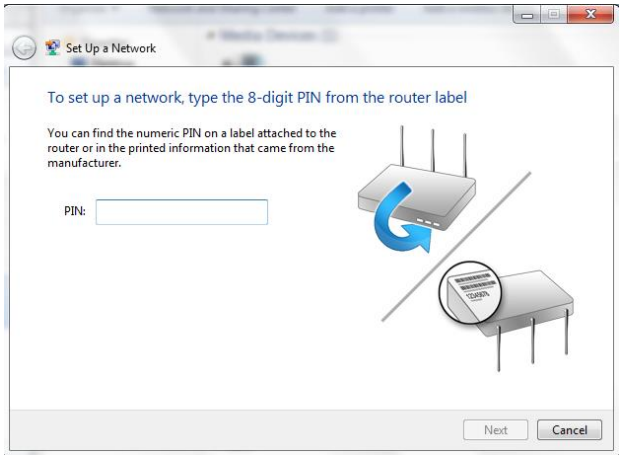


2. Click **Network** on the left side.

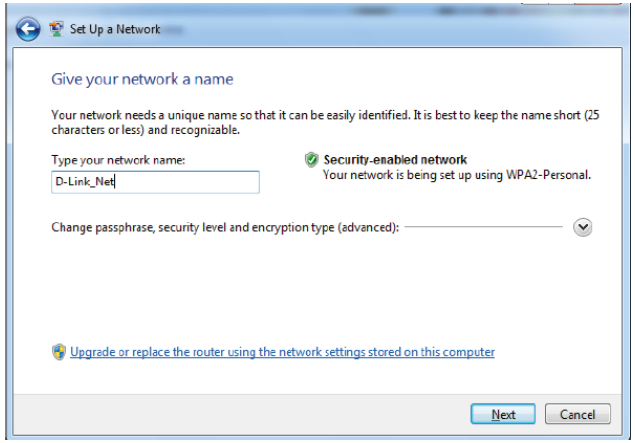
3. Double-click the G413K (Will be displayed as RAlinkAPS).



4. Input the WPS PIN number (on the router label) in the **Setup** > **Wireless Setup** menu in the Router's Web UI) and click **Next**.

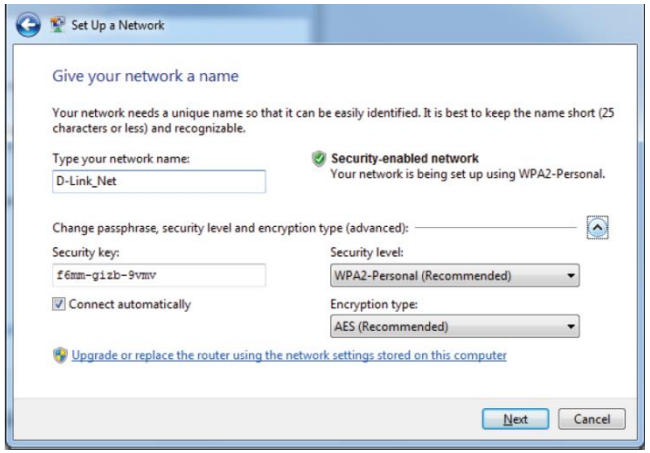


5. Type a name to identify the network.



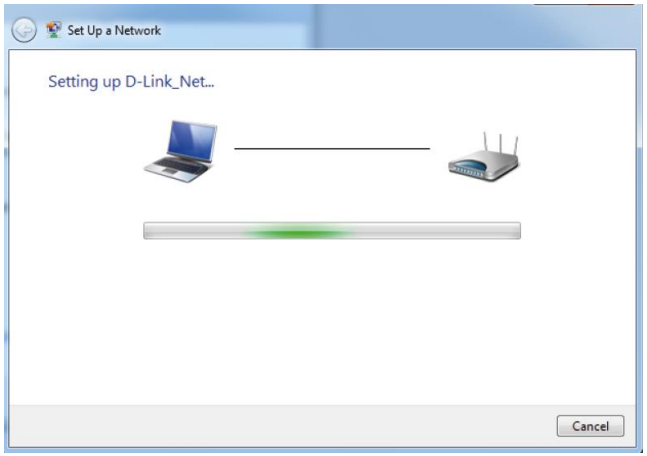
6. To configure advanced settings, click the Arrow icon.

Click **Next** to continue.



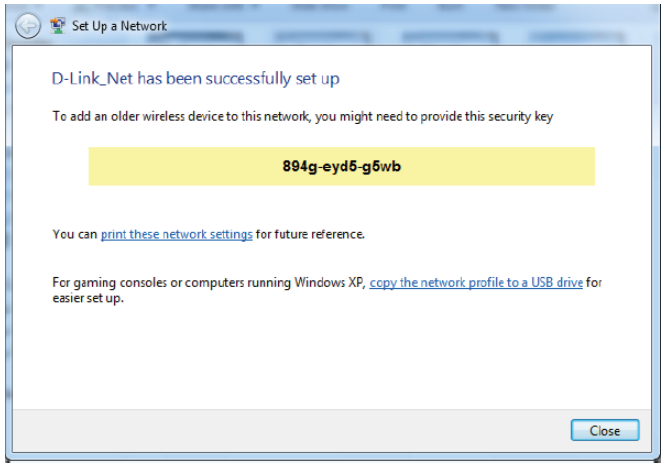
7. The following window appears while the G413K is being configured.

Wait for the configuration to complete.



8. The following window informs you that WPS on the G413K has been set up successfully.

Make a note of the security key as you may need to provide this security key if adding an older wireless device to the network in the future.



9. Click **Close** to complete WPS setup.

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the G413K. Read the following descriptions if you are having problems. The examples below are illustrated in WindowsR XP. If you have a different operating system, the screenshots on your computer will look similar to these examples.

1. Why can't I access the web-based configuration utility?

When entering the IP address of the D-Link router (**10.0.0.2** for example), make sure you are not connected to a website, you don't have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
  - Microsoft Internet ExplorerR 10 or higher
  - Microsoft EDGE Browser 20 or higher
  - Mozilla Firefox 11 or higher
  - Google™ Chrome 17 or higher
  - Apple Safari 5 or higher
- Verify physical connectivity by checking for solid LAN lights on the device. If you do not get a solid LAN light, try using a different cable, or connect to a different port on the device. If the computer is turned off, the link light may not be on.
- Disable any Internet security software running on the computer. Software firewalls such as ZoneAlarm, BlackICE, Sygate, Norton Personal Firewall, and WindowsR XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.
- Configure your Internet settings:
  - Go to **Start** > **Settings** > **Control Panel**. Double-click the **Internet Options** Icon. From the **Security** tab, click the button to restore the settings to their defaults.
  - Click the **Connection** tab and set the dial-up option to Never Dial a Connection. Click the LAN Settings button. Make sure nothing is checked. Click **OK**.
  - Go to the **Advanced** tab and click the button to restore these settings to their defaults. Click **OK** three times.
  - Close your web browser (if open) and open it.

- Access the web management. Open your web browser and enter the IP address of your D-Link router in the address bar. This should open the login page for your web management.

- If you still cannot access the configuration, unplug the power to the router for 10 seconds and plug back in. Wait about 30 seconds and try accessing the configuration. If you have multiple computers, try connecting using a different computer.

2. What can I do if I forgot my password?

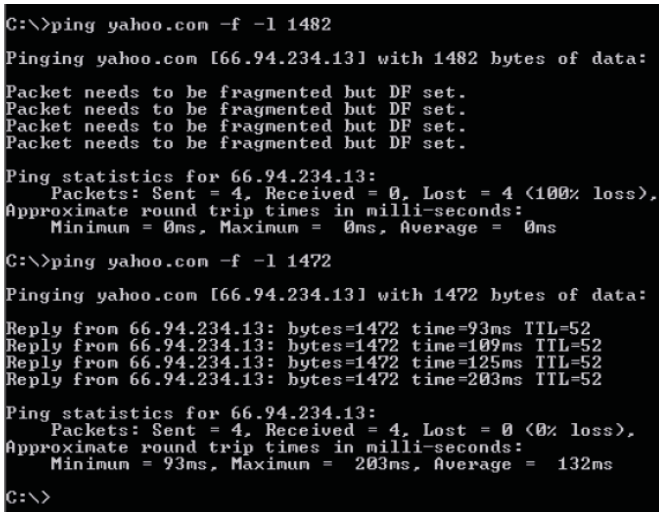
If you forgot your password, you must reset your router. This process will change all your settings back to the factory defaults.

To reset the router, locate the reset button (hole) on the rear panel of the unit. With the router powered on, press and hold the the rest button down for 20-25 seconds. Release the button and the router will go through its reboot process. Wait about 30 seconds to access the router. The default IP address is **10.0.0.2**. When logging in, the default username is admin and the default password it admin.

3. Why can't I connect to certain sites or send and receive emails when connecting through my router?

If you are having a problem sending or receiving email, or connecting to secure sites such as eBay, banking sites, and Hotmail, we suggest lowering the MTU in increments of ten (Ex. 1492, 1482, 1472, etc).

To find the proper MTU Size, you'll have to do a special ping of the destination you're trying to go to. A destination could be another computer, or a URL.



- Click on **Start** and then click **Run**.
- Windows® 95, 98, and Me users type in **command** (WindowsR NT, 2000, XP, VistaR, 7, 8.x, and 10 users type in **cmd**) and press **Enter** (or click **OK**).
    - Once the window opens, you'll need to do a special ping.
      Use the following syntax: **ping [url] [-f] [-l] [MTU value]**
      Example: **ping yahoo.com -f -l 1472**

You should start at 1472 and work your way down by 10 each time. Once you get a reply, go up by 2 until you get a fragmented packet.

Take that value and add 28 to the value to account for the various TCP/IP headers. For example, let's say that 1452 was the proper value, the actual MTU size would be 1480, which is the optimum for the network we're working with (1452+28=1480).

Once you find your MTU, you can now configure your router with the proper MTU size.

To change the MTU rate on your router follow the steps below:

- Open your browser, enter the IP address of your router (10.0.0.) and click **OK**.
- Enter your username (admin) and password (blank by default). Click **OK** to enter the web configuration page for the device.
- Click on **Setup** and then click **Network > WAN Settings**.
- To change the MTU, enter the number in the MTU field and click **Save Settings** to save your settings.
- Test your email. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business, or public access wireless networks. Strictly adhering to the IEEE standard, the D-Link wireless family of products will allow you to access the data you want, when, and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

A wireless local area network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people work, and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards. Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A wireless router is a device used to provide this link.

What is Wireless?

Wireless or Wi-Fi technology is another way of connecting your computer to the network without using wires. Wi-Fi uses radio frequency to connect wirelessly so you have the freedom to connect computers anywhere in your home or office network.

Why D-Link Wireless?

D-Link is the worldwide leader and award winning designer, developer, and manufacturer of networking products. D-Link delivers the performance you need at a price you can afford. D-Link has all the products you need to build your network.

How does wireless work?

Wireless works similarly to how cordless phones work, through radio signals that transmit data from one point A to point B. But wireless technology has restrictions as to how you can access the network. You must be within the wireless network range area to be able to connect your computer. There are two different types of wireless networks: Wireless Local Area Network (WLAN), and Wireless Personal Area Network (WPAN).

Wireless Local Area Network (WLAN)

In a wireless local area network, a device called an Access Point (AP) connects computers to the network. The access point has a small antenna attached to it, which allows it to transmit data back and forth over radio signals. With an indoor access point the signal can travel up to 100m. With an outdoor access point the signal can reach out up to 50km to serve places like manufacturing plants, industrial locations, university and high school campuses, airports, golf courses, and many other outdoor venues.

Wireless Personal Area Network (WPAN)

Bluetooth is the industry standard wireless technology used for WPAN. Bluetooth devices in WPAN operate in a range up to 30 feet away.

Compared to WLAN the speed and wireless operation range are both less than WLAN, but in return it doesn't use nearly as much power. This makes it ideal for personal devices, such as mobile phones, PDAs, headphones, laptops, speakers, and other devices that operate on batteries.

Who uses wireless?

Wireless technology has become so popular in recent years that almost everyone is using it, whether it's for home, office, business, D-Link has a wireless solution for it.

Home Uses/Benefits

- Gives everyone at home broadband access
- Surf the web, check email, instant message, etc.
- Gets rid of the cables around the house
- Simple and easy to use

Small Office and Home Office Uses/Benefits

- Stay on top of everything at home as you would at office

- Remotely access your office network from home
- Share Internet connection and printer with multiple computers
- No need to dedicate office space

Where is wireless used?

Wireless technology is expanding everywhere, not just at home or office. People like the freedom of mobility and it's becoming so popular that more and more public facilities now provide wireless access to attract people. The wireless connection in public places is usually called "hotspots".

Using a D-Link USB adapter with your laptop, you can access the hotspot to connect to the Internet from remote locations like: airports, hotels, coffee shops, libraries, restaurants, and convention centres. A wireless network is easy to setup, but if you're installing it for the first time it could be quite a task not knowing where to start. That's why we've put together a few setup steps and tips to help you through the process of setting up a wireless network.

Tips

Here are a few things to keep in mind, when you install a wireless network.

Centralize your router or access point

Make sure you place the router/access point in a centralized location within your network for the best performance. Try to place the router/access point as high as possible in the room, so the signal gets dispersed throughout your home. If you have a two-story home, you may need a repeater to boost the signal to extend the range.

Eliminate Interference

Place home appliances such as cordless telephones, microwaves, and televisions as far away as possible from the router/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

Security

Don't let your next-door neighbours or intruders connect to your wireless network. Encrypt your wireless network by turning on the WPA or WEP security feature on the router. Refer to the product manual for detail information on how to set it up.

Wireless Modes

There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.
- **Ad-hoc** – Directly connecting to another computer for peer-to-peer communication using wireless network adapters on each computer, such as two or more G413K wireless network USB adapters.

An Infrastructure network contains an access point or wireless router. All the wireless devices, or clients, will connect to the wireless router or access point.

An Ad-hoc network contains only clients, such as laptops with wireless USB adapters.
All the adapters must be in Ad-hoc mode to communicate.

Networking Basics

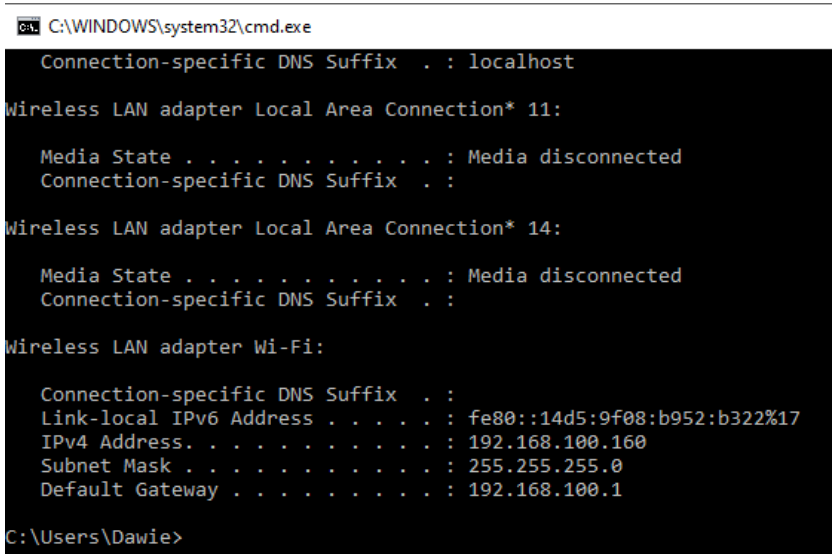
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start** > **Run**. In the run box type ***cmd*** and click **OK.** (WindowsR 7/VistaR users type *cmd* in the **Start Search** box.)

At the prompt, type ***ipconfig*** and press **Enter**.

This will display the IP address, subnet mask, and the default gateway of your adapter.

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your router. Some firewall software programs may block a DHCP request on newly installed adapters.



Statically Assign an IP address

If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

Step 1

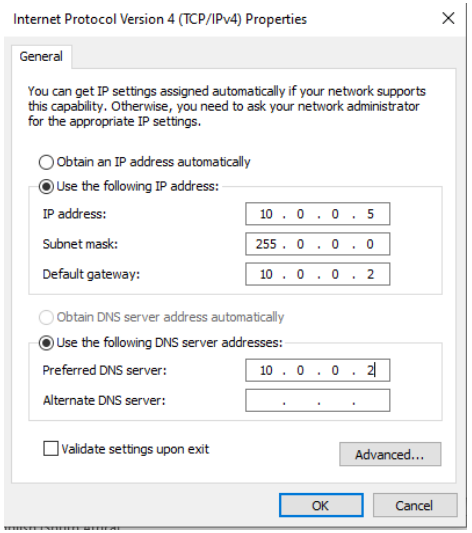
Windows® 7- Click on Start > Control Panel > Network and Internet > Network and Sharing Center > Change Adaptor Options
Windows® 8,10 - Click on Start > Search for Control Panel > Network and Internet > Network and Sharing Center > Change adaptor settings.

Step 2

Right-click on the **Local Area Connection/ Ethernet** which represents your network adapter and select Properties.

Step 3

Highlight **Internet Protocol version 4 (TCP/IP)** and click **Properties.**



Step 4

Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

Example: If the router´s LAN IP address is 10.0.0.2, make your IP address 10.0.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network. Set the Default Gateway the same as the LAN IP address of your router (I.E. 10.0.0.2).

Set Primary DNS the same as the LAN IP address of your router (10.0.0.2). The Secondary DNS is not needed or you may enter a DNS server from your ISP.

Step 5

Click **OK** twice to save your settings.

Wireless Security

This section will show you the different levels of encryption you can use to help protect your data from intruders. The G413K offers the following types of security:

- WPA3 (Pre-Shared Key)
- WPA2 (Wi-Fi Protected Access 2)
- WPA2-PSK (Pre-Shared Key)
- WPA (Wi-Fi Protected Access)
- WPA-PSK (Pre-Shared Key)

What is WPA?

WPA (Wi-Fi Protected Access), is a Wi-Fi standard that was designed to improve the security features of WEP (Wired Equivalent Privacy).

The 2 major improvements over WEP:

- Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and by adding an integrity-checking feature, ensures that the keys haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard (AES) instead of TKIP.
- User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more robust public-key encryption system to ensure that only authorized network users can access the network.

WPA-PSK/WPA2-PSK uses a passphrase or key to authenticate your wireless connection. The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?*&_) and spaces. This key must be the exact same key entered on your wireless router or access point.

WPA/WPA2 incorporates user authentication through the Extensible Authentication Protocol (EAP). EAP is built on a more robust public key encryption system to ensure that only authorized network users can access the network.

Technical Specifications

Device Interfaces

- 4 x RJ-45 Gigabit Ethernet LAN ports
- 1 x RJ-45 Gigabit Ethernet WAN port
- 2.4 GHz and 5 GHz wireless for 802.11 a/b/g/n/ac

Antenna Types

- 4 external fixed antennas

Standards

- IEEE 802.11a
- IEEE 802.11b
- IEEE 802.11g
- IEEE 802.11n
- IEEE 802.11ac
- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3ab
- IEEE 802.3az
- IEEE 802.3x
- IEEE 802.11e
- IEEE 802.1p

Wi-Fi Encryption

- WPA™ - Personal/Enterprise
- WPA2™ - Personal/Enterprise
- WPA3™ - Personal/Enterprise
- Wi-Fi Protected Setup (WPS) PIN/PBC

Power

- Input: 100 to 240 V AC, 50/60 Hz
- Output: 12 V DC, 1,5A

Operating Temperature

- 0 to 40 °C (32 to 104 °F)

Storage Temperature

- -20 to 80 °C (-4 to 176 °F)

Operating Humidity

- 5% to 85% maximum (non-condensing)

Certifications

- CE

Dimensions

- 280 x 250 x 48 mm (11.02 x 9.84 x 1.88 in)

Weight

- 475.7 g (1.05 lbs)

Regulatory Information

CE EMI Class A Warning

This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

CE

	Frequency Band(s) Frequenzband Fréquence bande(s) Bandas de Frecuencia Frequenza/e Frequentie(s)	Max. Output Power (EIRP) Max. Output Power Consommation d'énergie max. Potencia máxima de Salida Potenza max. Output Max. Output Power
5 GHz	5.15 – 5.25 GHz	200mW
	5.25 – 5.35 GHz	200Mw
	5.47 – 5.725 GHz	1W
2.4 GHz	2.4 – 2.4835 GHz	100 mW