CONNECT ROUTE

The Connect Router is a 3G/4G wireless router with high-performance and stability, to meet with the requirementsof wireless network connection for maritime users.

Connect Route User Manual

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Catalogue

Chapter 1 General Product Introduction

1.1 Brief Product Introduction

The Connect Route is a marine grade wireless router which offers a solution for 4G network connection with cable or wirelessly. It is equipped with high-performance QCA9563, @775MHz SoC, with dual 4G/3G/2G modules as well as dual SIM card slots. It has 4 gigabit LAN ports and 1 gigabit WAN port, dual band, 2x2 MIMO, IEEE802.11b/g/n and IEEE802.11ac compliable offering up to 1166Mbps Wi-Fi speed(11n 300M+11ac 866M). It supports 60 devices online at the same time.

It has four full-band external 4G antennas, and two high-gain external Wi-Fi antennas, one built-in GPS/BDS module and one external antenna accordingly, and one built-in watchdog chipset to ensure a stable operation of the device.

The Connect Route is widely applied in fields like Smart Traffic, Smart Manufacturing, Smart business, offering highly reliable data transmission.

4G Features:

- Support dual 4G LTE modules
- Support CAT4 (download 150Mbps, upload 50Mbps) or CAT6 (download 300Mbps, upload 50Mbps)

WIFI Features:

- Dual band 2.4G & 5G
- 11n 2x2 + 11ac 2x2，300Mbps（2.4G）+866Mbps（5G）
- High-gain dual-band external antennas

Software and Hardware Features:

- Built-in dual 4G LTE CAT4 or CAT6 modules
- eSIM is supportable
- Built-in 128MB NAND-Flash for user’s storage
- 1*USB2.0, support external USB modem
- 1*Micro SD/TF card, maximum 128GB storage
- Built-in GPS/BDS module
- Built-in Watchdog chipset

- Built-in RTC module
- Support RS232 or RS485 serial port (RJ45 port type).
- Powered by 12V or 48V DC power supply, or with POE power input (802.3at).
- Support 802.3af POE-Out (using 48V DC power in).
- Automatically shifting between wireless 4G connection and Ethernet cable connection to keep devices always online.

Other Features:

- Iron enclosure supports stable operation under a temperature from -20 to 55 °C.
- Powered by Qualcomm chipset, which has high performance and reliability, low failure rate.
- Flexible installation, on desk, wall mounting or DIN-rail mounting (equipped with 35mm rail buckle to match a 35mm rail).

1.2 Technical Specifications

Items	Description
Model No.	Connect Route
CPU	Qualcomm QCA9563，@755MHz
WiFi Chipset	Qualcomm QCA9563 (2.4G) + Qualcomm QCA9886 (5G)
Flash	16MB Nor-FLASH 128MB NAND-FLASH
RAM	128MB DDR
3G/4G module	Support 2x 4G LTE CAT4 or CAT6） 2x micro SIM(3FF) card slot, e-SIM is optional
4G antenna	External full-band antenna (700M ~ 2.7GHz)
WiFi	2.4G+5G dual-band concurrent 802.11b/g/n 2x2 MIMO + 802.11a/n/ac2x2 MU-MIMO
WiFi wireless transmit	2.4GHz 300Mbps 5GHz 866Mbps
WIFI antenna	External dual-band high gain antennas
Wi-Fi Power Output	2.4GHz: 19dBm (11n MCS7 HT40) Max 5GHz: 19dBm (11ac MCS9 HT80) Max (Output power of the antenna interface, excluding antenna gain)
Wi-Fi Receive Sensitivity	-94dBm (Maximum)
Global Positioning System	Built-in GPS/(BDS) module, external antenna
Watchdog	Internal Watchdog chip
RTC	Internal RTC Module
Ethernet Port	5x 10/100/1000Mbps Ethernet port (1x WAN + 4x LAN)
Console	RS232 or RS485 serial console port (RJ45 connector)
USB port	1x USB2.0 Type-A

MicroSD	1x MicroSD (TF) Slot, support maximum 128GB
LED Indicator	Power, PoE output, System, WAN, LAN, 2.4G Wi-Fi, 5G Wi-Fi, 4G Modem #1 signal strength、 4G Modem #2 signal strength (Each 4G module has 3 LED indicate the signal strength)
Reset Button	Press the button more than 8 seconds to reset the device to factory settings.
Power Input	12V/3A or 48V/1A DC input or PoE input (802.3at)
Power Output	Support PoE output (802.3af) when 48V/1A input
Enclosure	Metallic housing case with ground-screws.
Dimension	240*145*40mm (L*W*H, exclude Antenna size)
Weight	1360g (net weight)
Power Consumption	Maximum 11W (Exclude power consumption of external device connected by USB port)
Temperature	Operation Temperature: -20~55°C； **(**Support extended operating temperature: Powered by PSU -20~60°C; Powered by POE -40~70° Limited operation time and may cause performance degradation) Storage Temperature: -40 ~ 70°C

1.3 Appearance and dimension

Dimension:240*145*40mm（L*W*H，External Antenna not included）

Front view:

Back view:

1.4 Package list

Items	Qty
Connect Route	1
Dual-band WIFI antenna	2
4G antenna	4 or 2 (If selectCAT6module, it needs 4x External 4G antenna; If select CAT4 module, it needs 2x External 4G antennas)
GPS antenna	1
Power adapter	1
Ethernet cable	1
35mm DIN rail	1
User guide	1

- Dual-band WIFI antenna (inner hole)

- 4G antenna (inner needle)

- GPS antenna

- Power adapter

This picture is for 48V/1A power adapter, 12V/3A power adapter is optional.

- Ethernet cable

- 35mm DIN rail buckle

- Quick-start guide

Product quick installation guide, including the download links to other documents or tools.

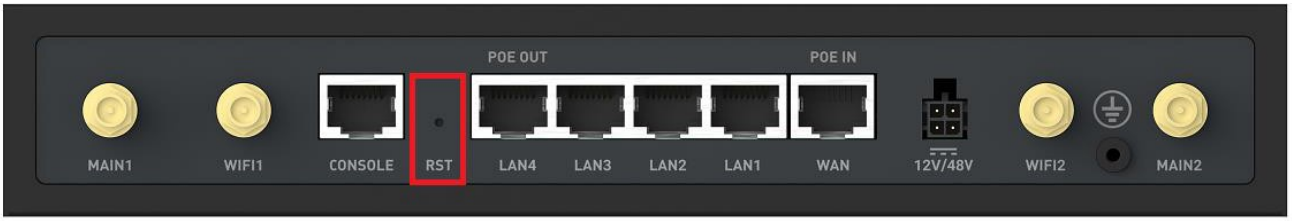
Note： If the items above are missing or damaged, please feel free to contact info@seatronx.com.

Chapter 2 Hardware installation

2.1 LED light indicator

Item	Mark	Color	Description
Power	PWR	Green	Off: Powered off On: Powered on
PoE output	PoE OUT	Green	Off: No PoE output On: LAN4 port provides PoE output
System	SYS	Red	Off: System is running normally. Blinking: Operation System fault (E.g. both WAN port and 4G are not connected)
Ethernet port	WAN LAN1~LAN4	Green	Off: No connection. On: Proper connection. Blinking: Port has data traffic.
2.4G WIFI	2.4G	Green	Off: WIFI is off. On: WIFI is on. Blinking: WIFI has data traffic.
5G WIFI	5G	Green	Off: WIFI is off On: WIFI is on. Blinking: WIFI has data traffic
4G signal status	SIM1 SIM2	Green * 3	Off: No signal 1 Green Light on: Poor signal 2 Green Light on: Medium signal 3 Green Light on: Good signal

2.2 Reset button

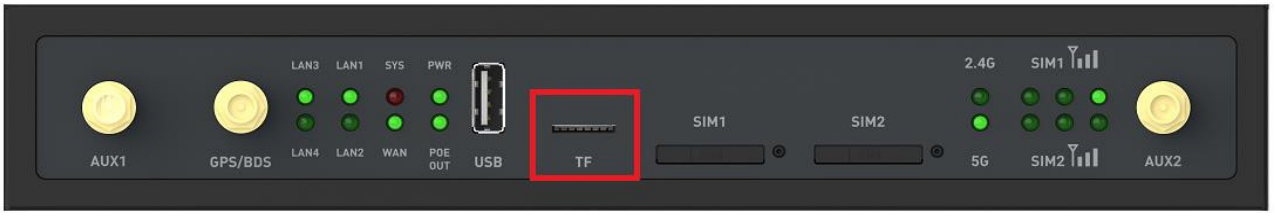


- Press and hold the reset button 8 seconds with a needle after powered on.
- The device will be restarted, and reset to factory settings.

2.3 USB port

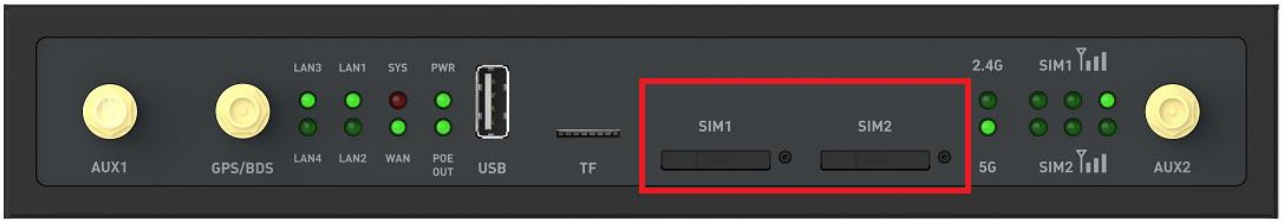
- USB2.0 Type-A port.
- Maximum transmission rate: 480Mbps
- Output voltage/current: 5V/500mA.

2.4 Micro-SD card slot



- Push-Push Micro SD（TF）card slot
- With foolproof setting.
- Size of Micro SD card: 15*11mm.
- Max 128GB Micro SD card supportable.

2.5 SIM card slot



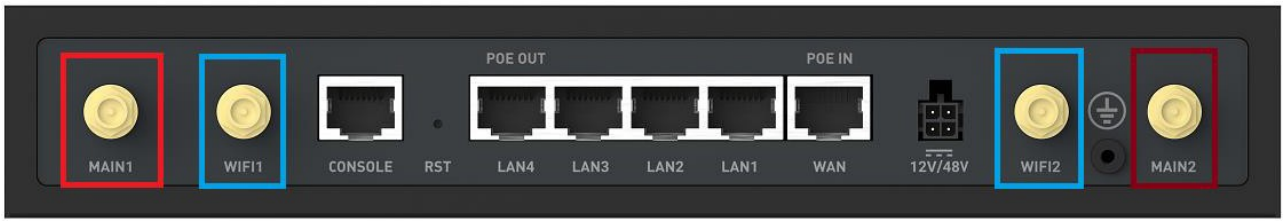
Insert or remove SIM card

- Press the button which next to the SIM card slot with a needle to pop up the SIM card tray.
- Insert or remove the SIM card.
- Standard size of SIM card should be 25*15mm.
- With foolproof setting.
- Press in the SIM card tray.
- Finished.

Note:

- Keep the SIM card away from electromagnetic field to avoid info. damaging of SIM card.
- Do not bend or scratch SIM card.
- Make sure to power off device when insert or remove SIM card.

2.6 Install antennas



Install 4G antennas.

- SMA type (inner needle), full-band antenna, support 700MHz to 2.7GHz.
- Install external 4G antenna on the 4G antenna interface and tighten it.
- MAIN1 and AUX1 antennas (marked red in above picture) match 4G module 1. MAIN2 and AUX2 antennas (marked deep red in above picture) match 4G module 2.

Install Wi-Fi antennas.

- SMA type (inner hole), dual-band antenna, supports 2.4GHz and 5GHz
- Install external WIFI antenna on the WIFI antenna interface (marked blue in above picture) and tighten it.

Install GPS/BDS antenna optional.

- SMA type (inner needle).
- Install GPS/ BDS antenna on the GPS/BDS antenna interface (marked green in above picture) and tighten it.

2.7 Install the device

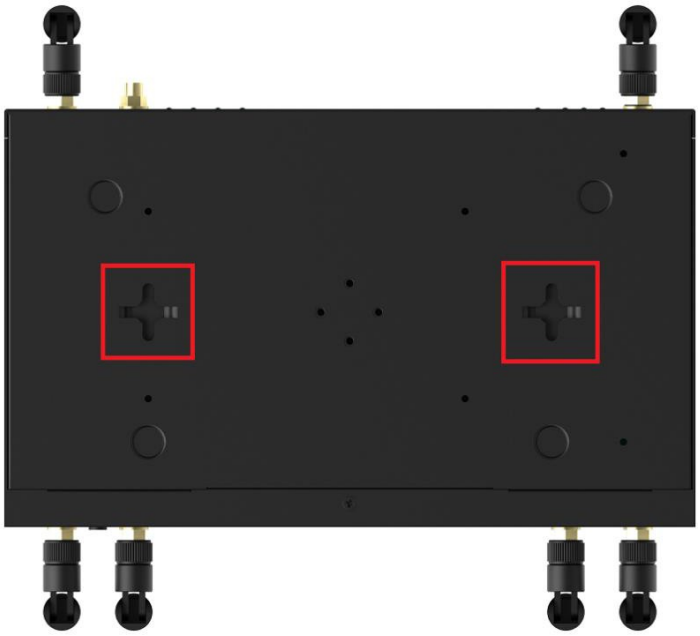
It supports placing on desk, wall-mounted and 35mm DIN-rail installation

2.7.1 Place on desk

- Place device on clean and flat desktop

- Adjust the position of device and ensure that the left and right sides have a more than 20mm space to radiate heat.

2.7.2 Wall Mounting



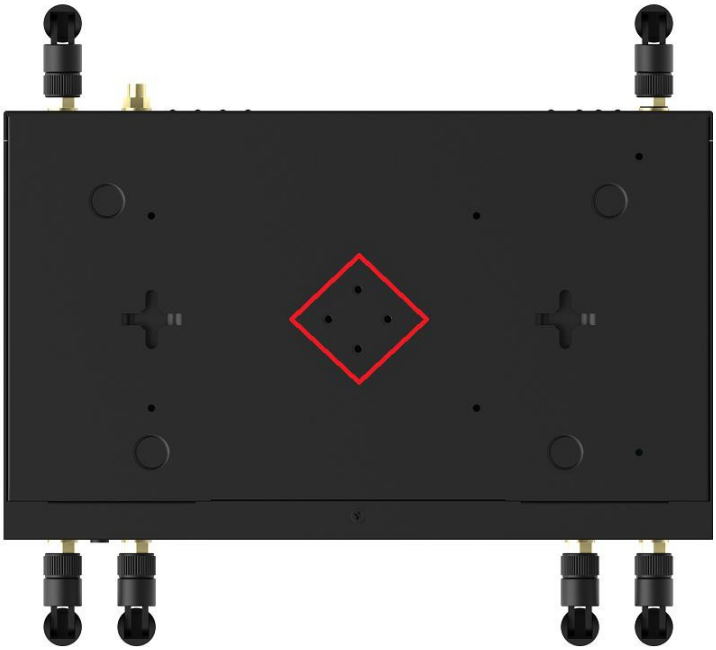
Steps as below:

- Install two fixing screws on the load plane (wall or cabinet).
- The distance of two wall mounting holes is 140mm, and the head diameter of fixed screw isϕ5-ϕ7.3mm. It is recommended to use M3~M3.5 self-tapping countersunk screw.
- Hang the wall hole (on the back of device) in the two fixing screws.

Note**:**

- Select firm and smooth load plane which could support the weight of the device and its related accessories.
- Ensure good stability and ground connection of wall-mounted carrier.
- Do not place the device in humid environment to prevent water vapor or moisture.

2.7.3 DIN-Rail Mounting



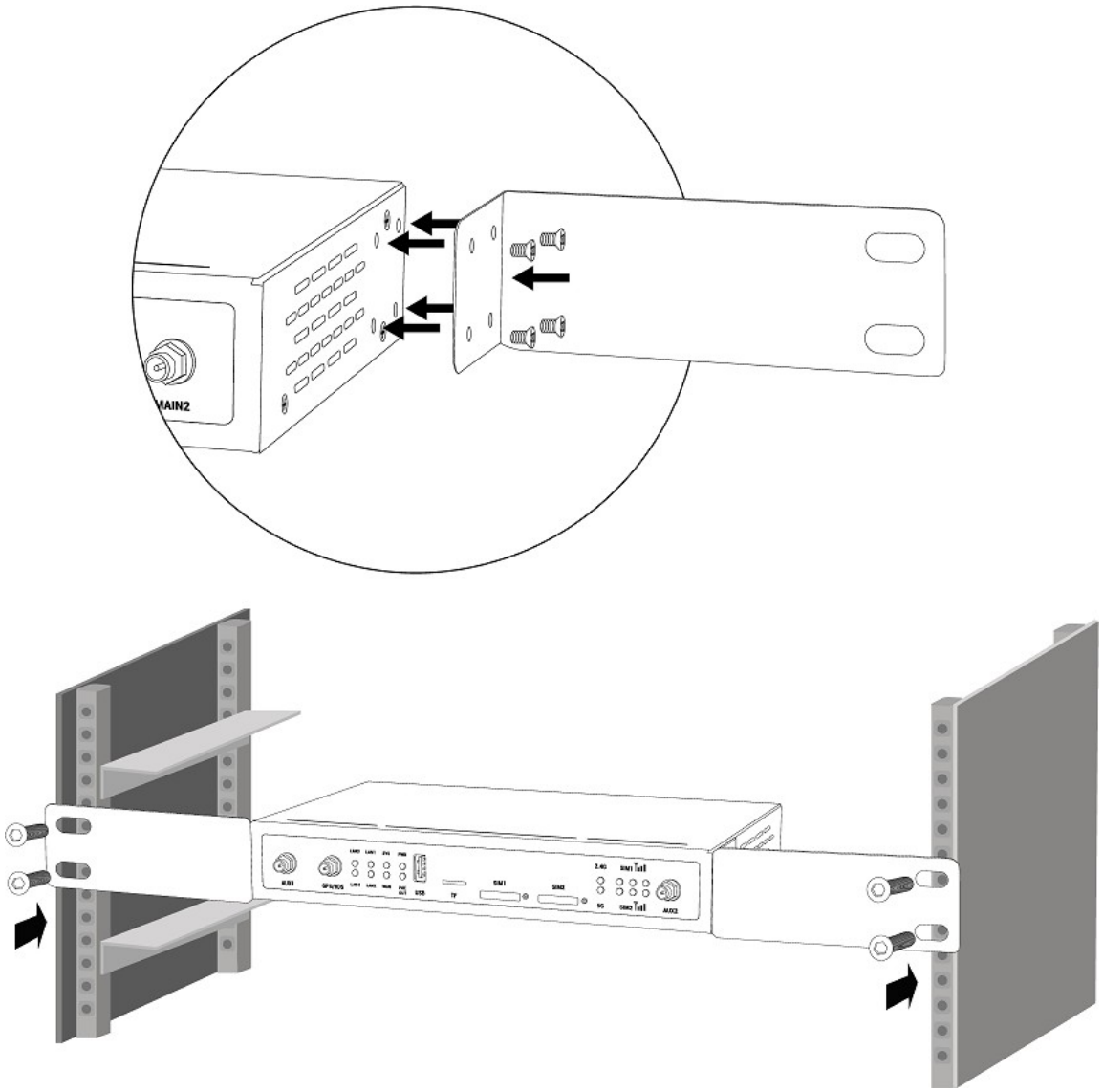
Steps as below:

- Fix the 35mm rail buckle on the bottom of device by using 4pcs M3*5mm countersunk screws.
- Then install the device on the 35mm DIN rail.

Note:

- Select standard DIN rail bracket.

2.7.4 Cabinet Installation



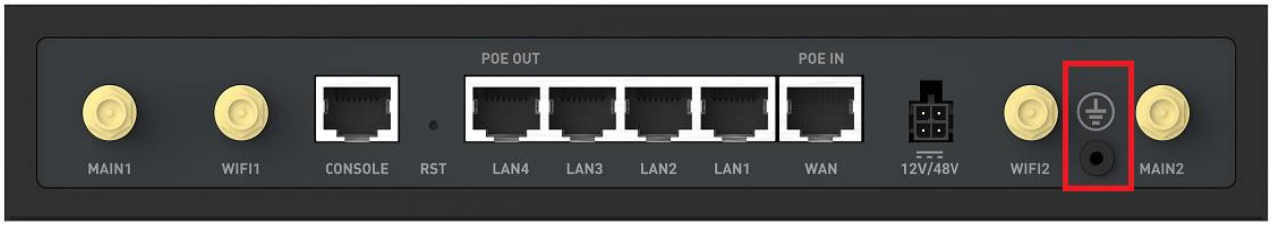
Steps as below:

- Fix the two Hanging Ears on the two sides of the device by using 8pcs M3*5mm countersunk screws.
- Then install the device on the 19’ standard cabinet.

Note:

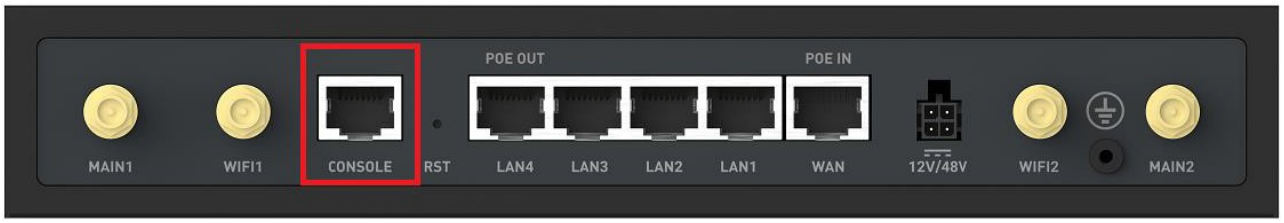
- The Handing Ears and screws are optional accessories, please contact with our sales team.

2.8 Ground wire installation

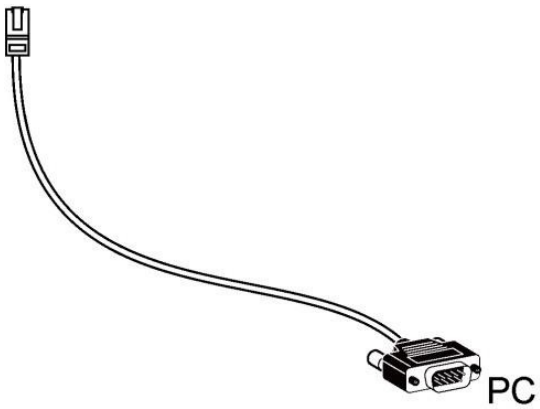


- Ground wire of the device helps prevent the effects of electromagnetic interference.
- Connect the device with ground wire before powering on.
- Remark: Ground wire should be installed on the well-grounded surface such as metal plates.

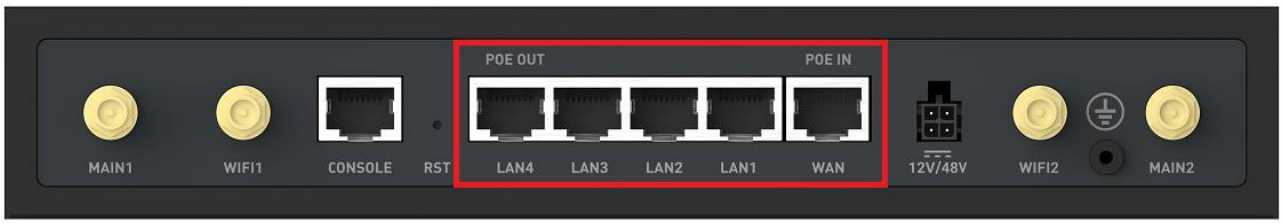
2.9 Console port connection



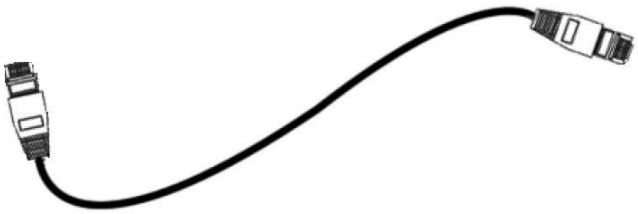
- The device could be debugged through console port.
- Using the following serial cable, one end is RJ45 connector for console port.
- The other end is 9-pin RS232 port for serial part of PC.



2.10 Ethernet cable connection



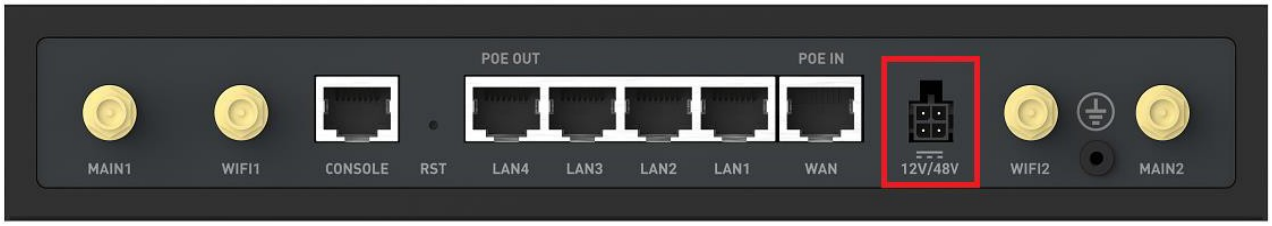
- There are 1 WAN port and 4 LAN ports of the device.
- WAN port is connected to the main router or modem, LAN port is connected to LAN devices.
- Plug the Ethernet cable to LAN port and PC by using the Ethernet cable in accessory box.



2.11 Power Supply connection

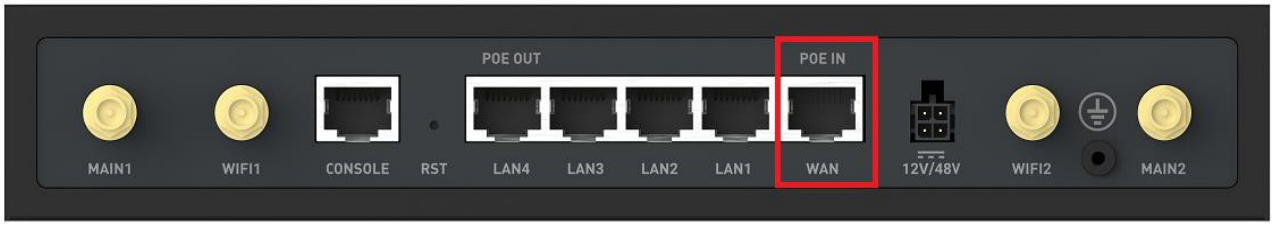
The device could be powered in 2 methods. Powered by DC power adapter or PoE Ethernet cable.

2.11.1 Powered by DC adapter



- There are two options of power adapter: 48V/1A or 12V/3A
- The AC port of power adapter is plugged into power outlet, 90~264V AC input supportable.
- The DC port of power adapter is plugged into DC power port.
- The port of DC power is 4 pin (1 and 2 are ground, 3 and 4 are power).

2.11.2 Powered by PoE Ethernet cable

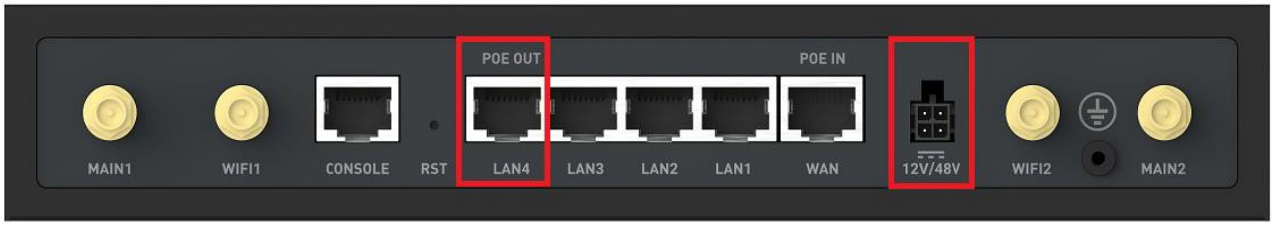


- WAN port supports POE power supply
- Support 802.3at standard protocol, max receiving power is 25.5W.

Note:

- Please use standard PoE power-supply equipment to avoid insufficient or instable power supply.

2.11.3 POE output



- When using 48V/1A DC power adapter, LAN4 port supports PoE output to LAN device.
- Support 802.3af standard protocol with 15.4W output.

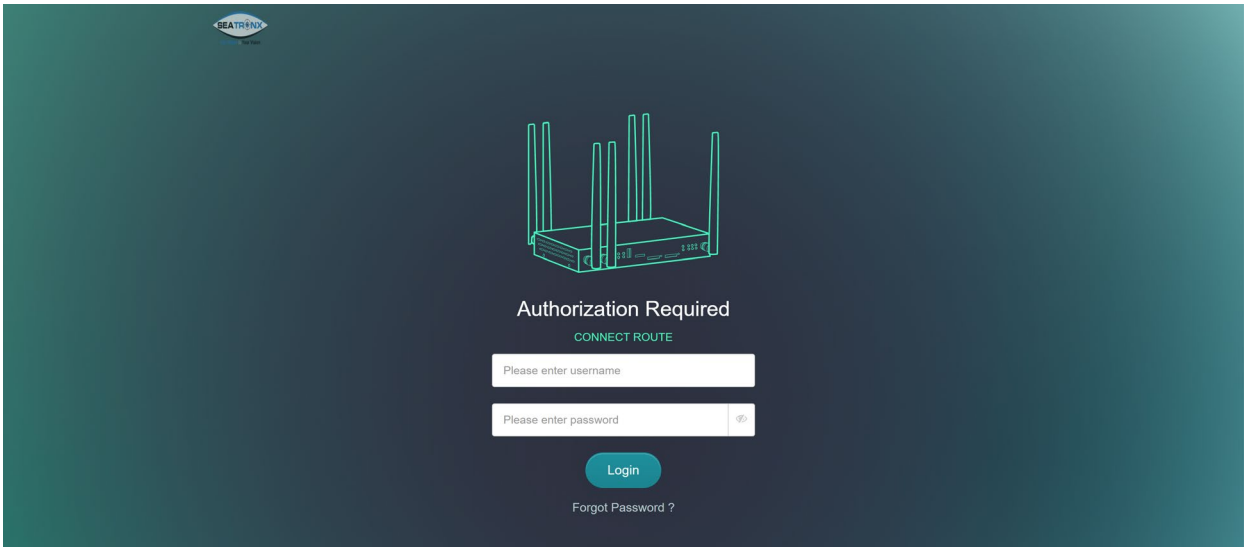
Note:

- When using 12V/3A DC power adapter or PoE power supply via WAN, the device can't support LAN4 PoE output due to the limitation of power capacity.

Chapter 3 Login Web UI

3.1 Login

Connect PC to device LAN port and it will get IP address automatically assigned by the device. Input IP address (Factory default IP address is 192.168.8.1) into browser, then it will show as follow.

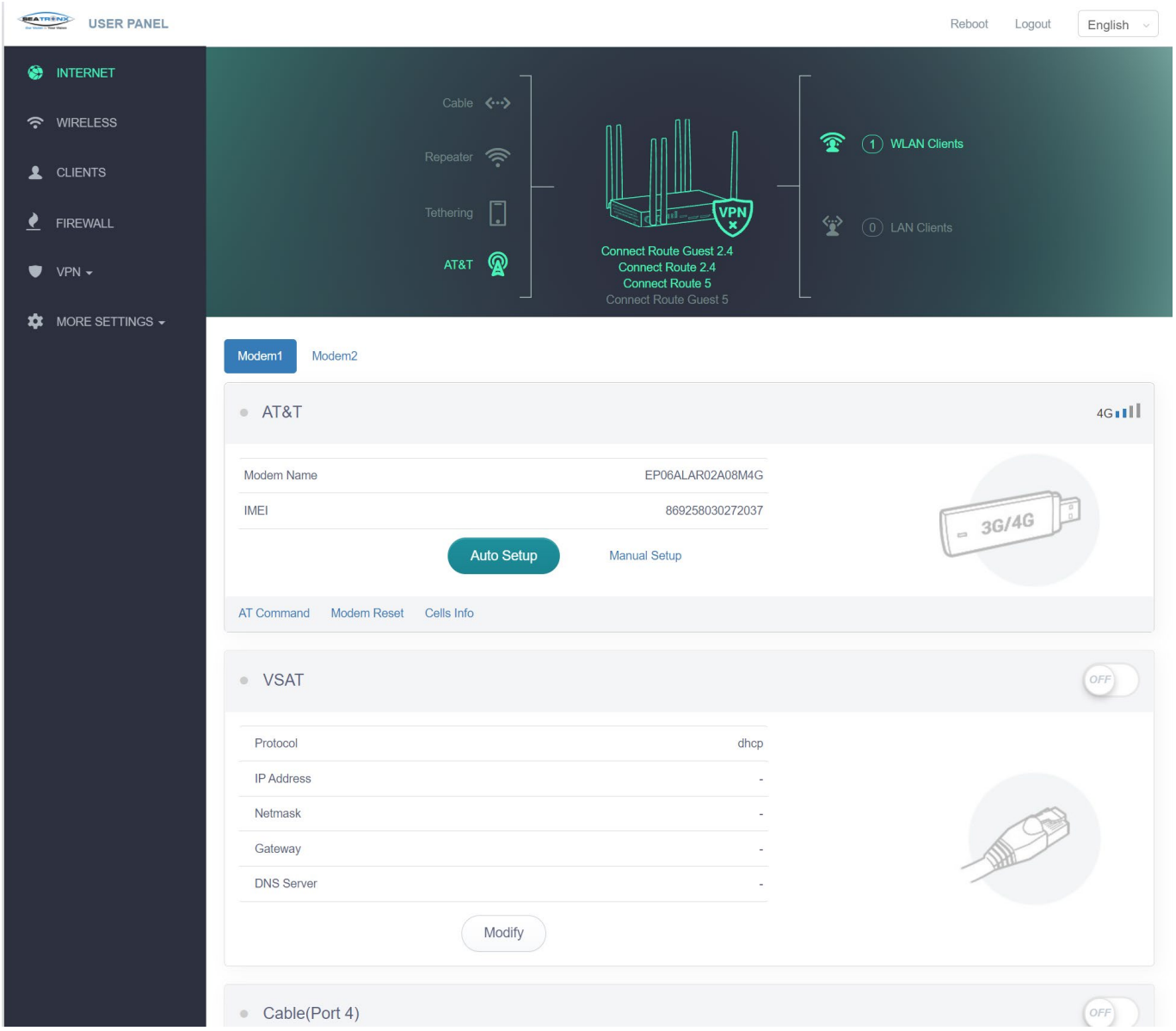


3.2 User Login

To log into the user interface the credentials to log in are User Name = user and Password = user. This will bring you to the user interface and menus to allow you to switch WAN interfaces and make user authorized modifications to the device. Only authorized Seatronx dealers are allowed to access the administrative pages inside of the router to ensure no changes can be made that would make the device inoperable. Please contact Seatronx for this login information and please have your device serial number ready.

3.3 Admin Panel

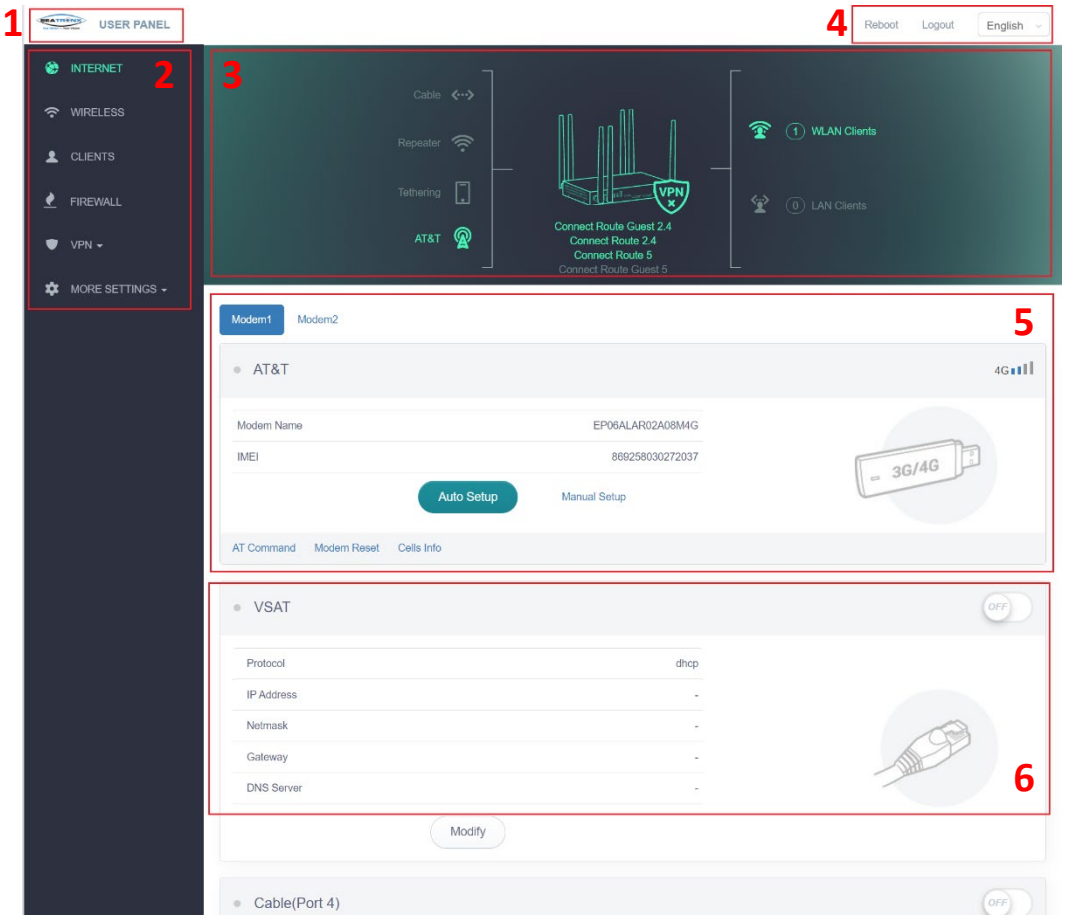
The User Panel and Admin Panel are not that different the only features that are available to the admin and not the user interface are the ones to change the IP address of the router and load extra applications and features into the router. There is no need for an end user to gain access to the administrative login for typical use of the device.



Chapter 4 Device Configuration

4.1 Network

4.1.1 Brief introduction



1: Landing Page Login Type (User/Admin)

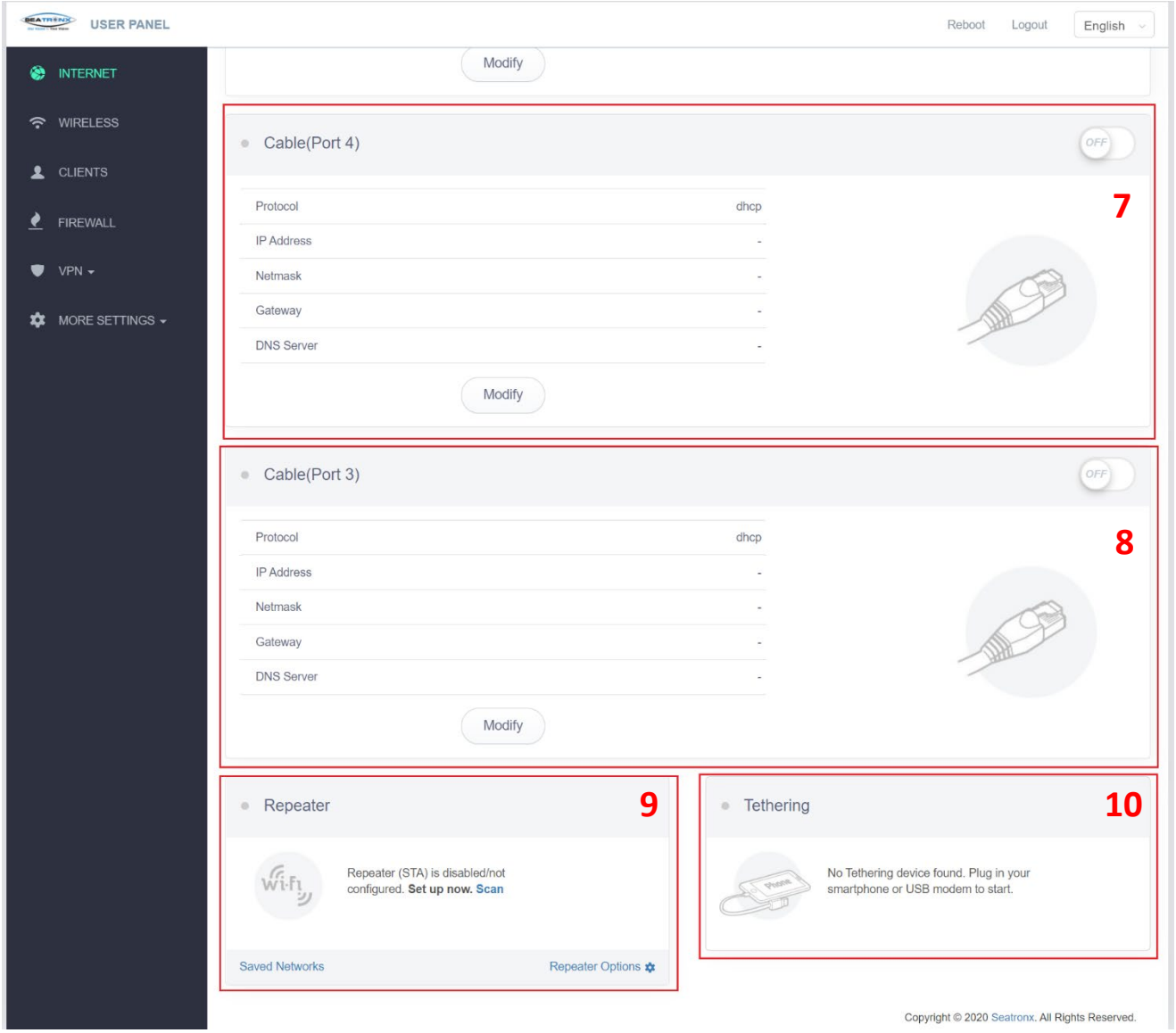
2: Menu

3: Status display Bar

4: Restart/Logout/Language Selection Menu

5: 34/4G Modem Control

6: WAN 1 Cable Input Control



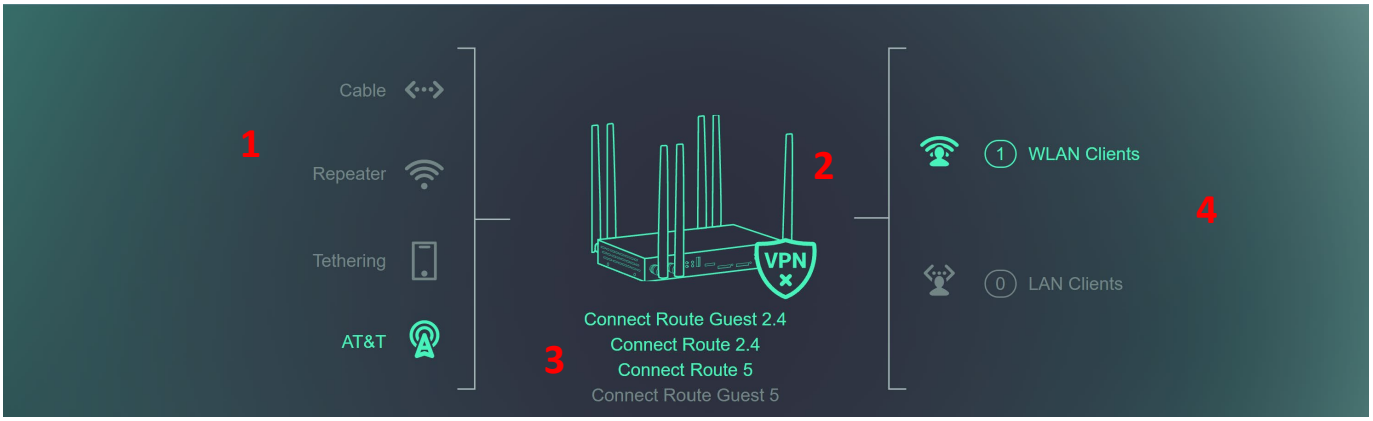
7: WAN 2 Cable Input Control

8: WAN 3 Cable Input Control

9: Wi-Fi Repeater Control

10: USB Tethering Control

4.1.2 Status



1. Networking status

   Cable, Repeater, Tethering, 3G/4G Modem networking.
   Gray indicates no connection.
   Green indicates successful connection.

2. VPN connection status

3. Wireless SSID status

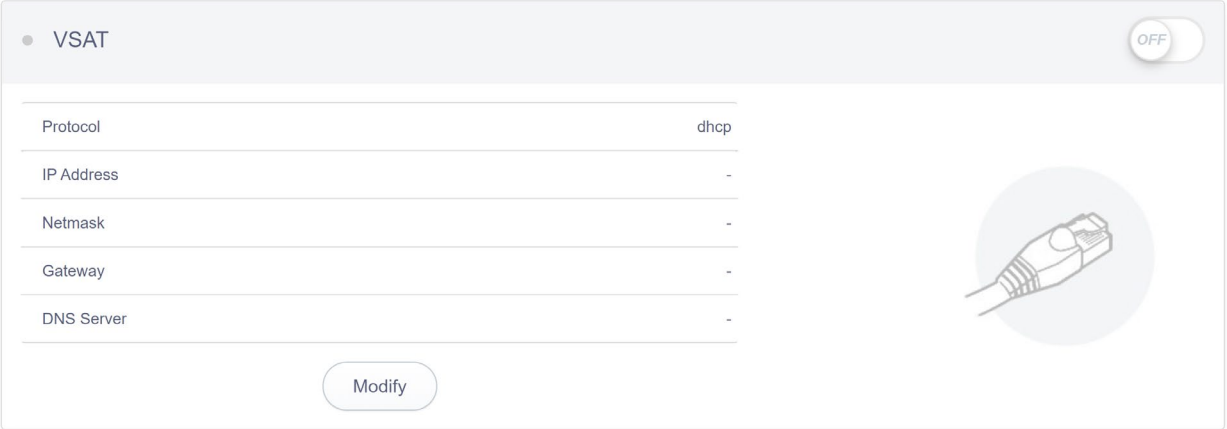
   2.4G/5G SSID/ Guest SSID are displayed, gray indicates disable, and green indicates enabled.

4. Number of Clients

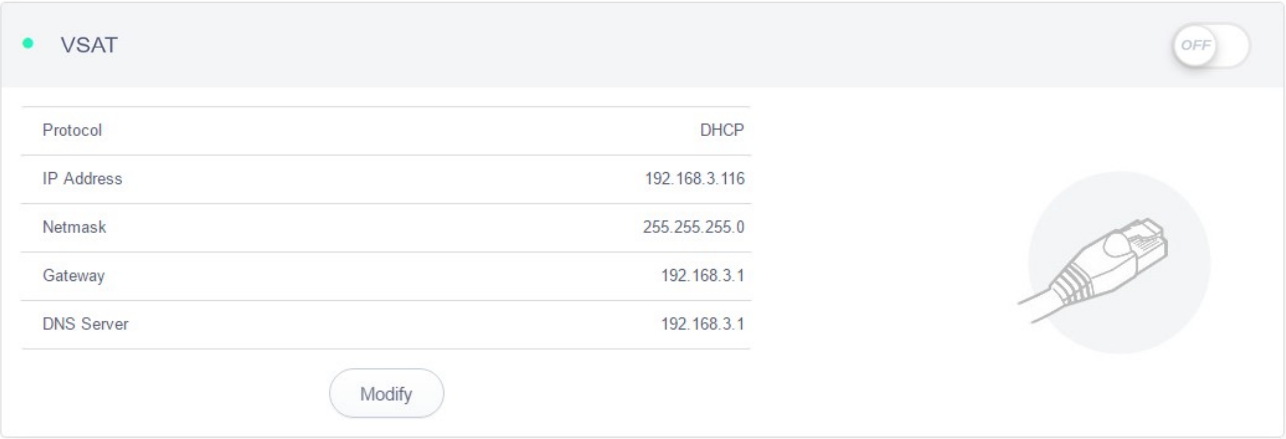
   Displays the number of wireless and wired clients online.

4.1.3 WAN Cable Internet Connection

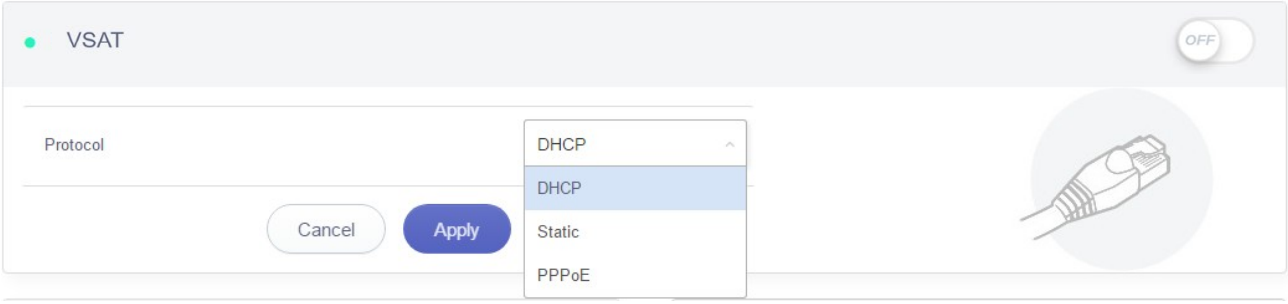
Before setting cable connection, it will show as below:



Plug Ethernet cable, showing as below:

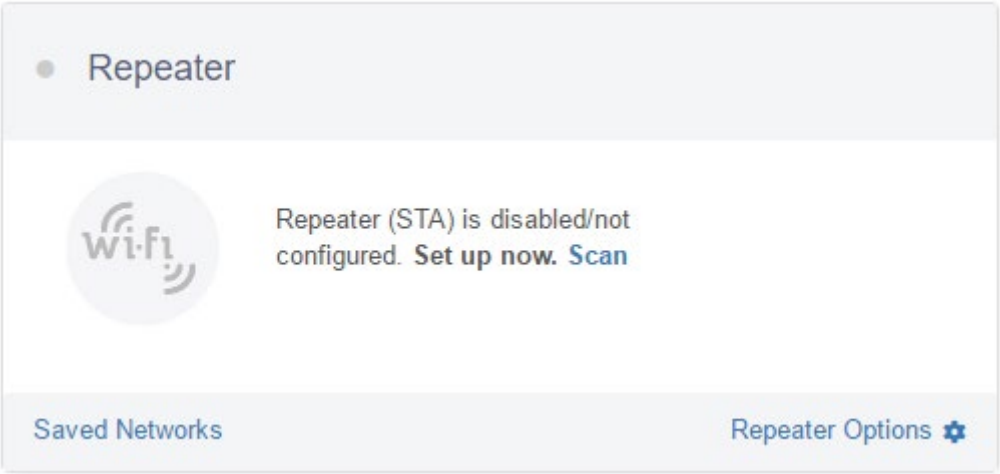


Click 'modify' to change the way of network connection, DHCP/Static/PPPOE as below:



4.1.4 Repeater

Before setting, it will show as below:



Scan: Scan the surrounding hot spots

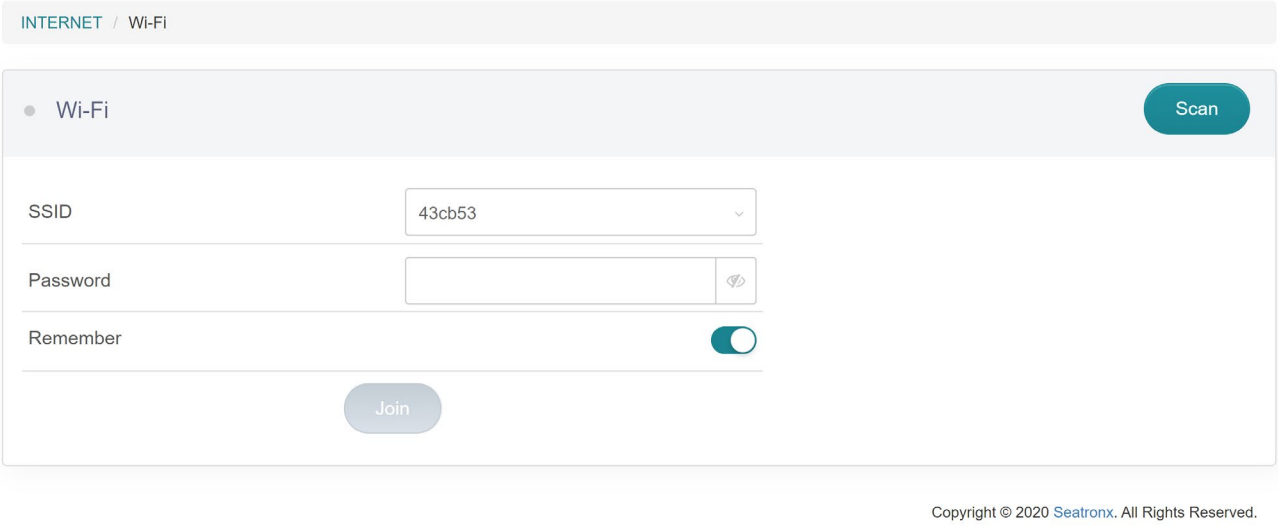
Existing network: It will save wireless hot spots connected previously

Repeater Options: Turn on or off its auto connection function

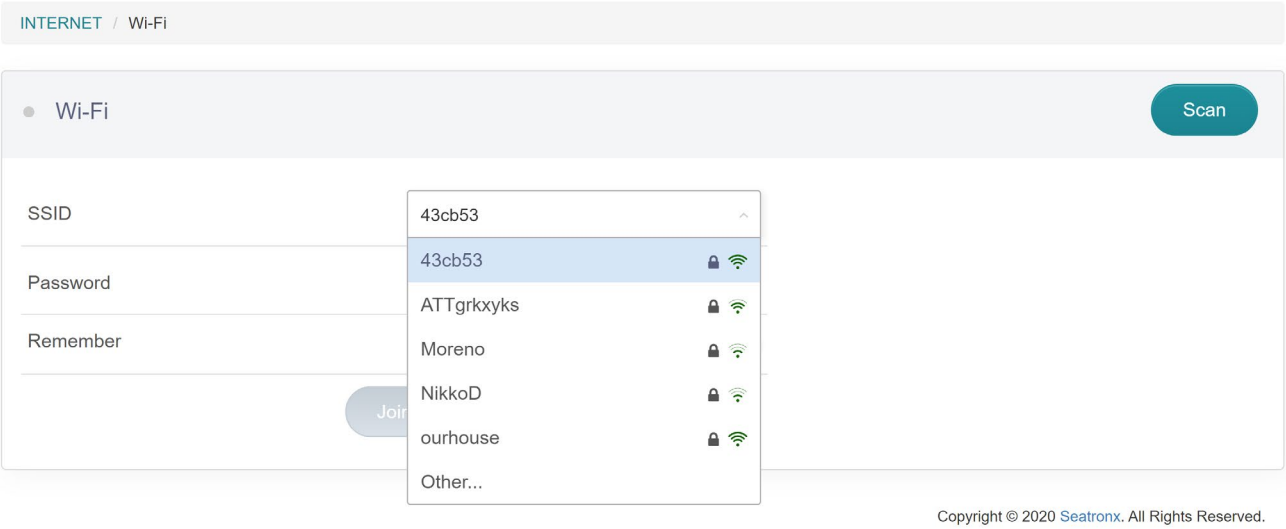
4.1.4.1 Scan

Click 'Scan' and it will show as below:

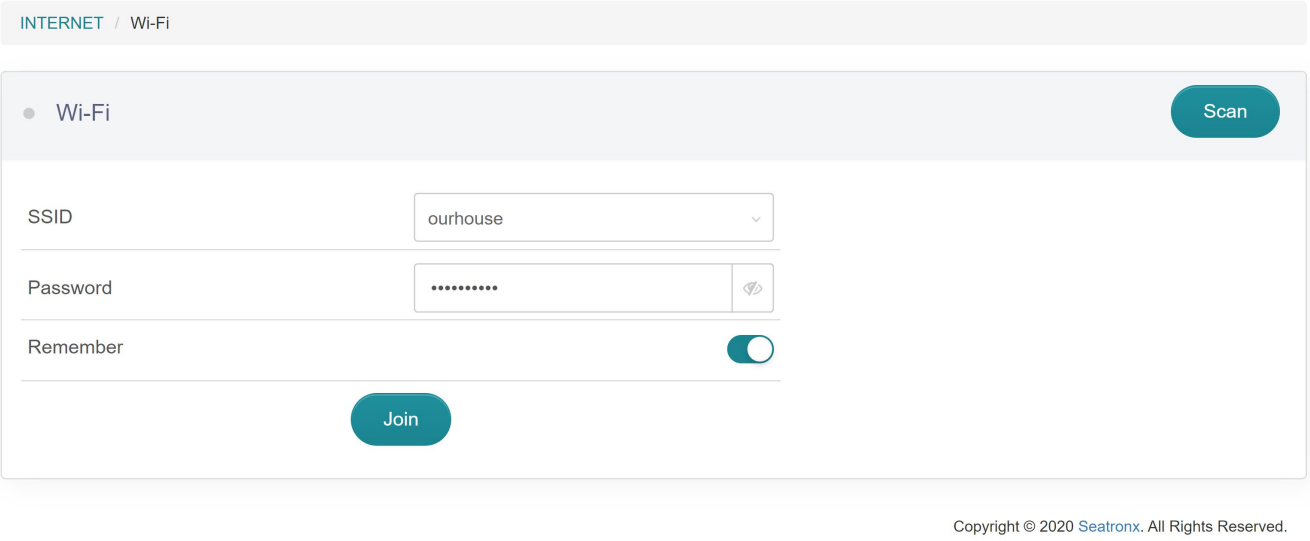
Finish scan it will show as below:



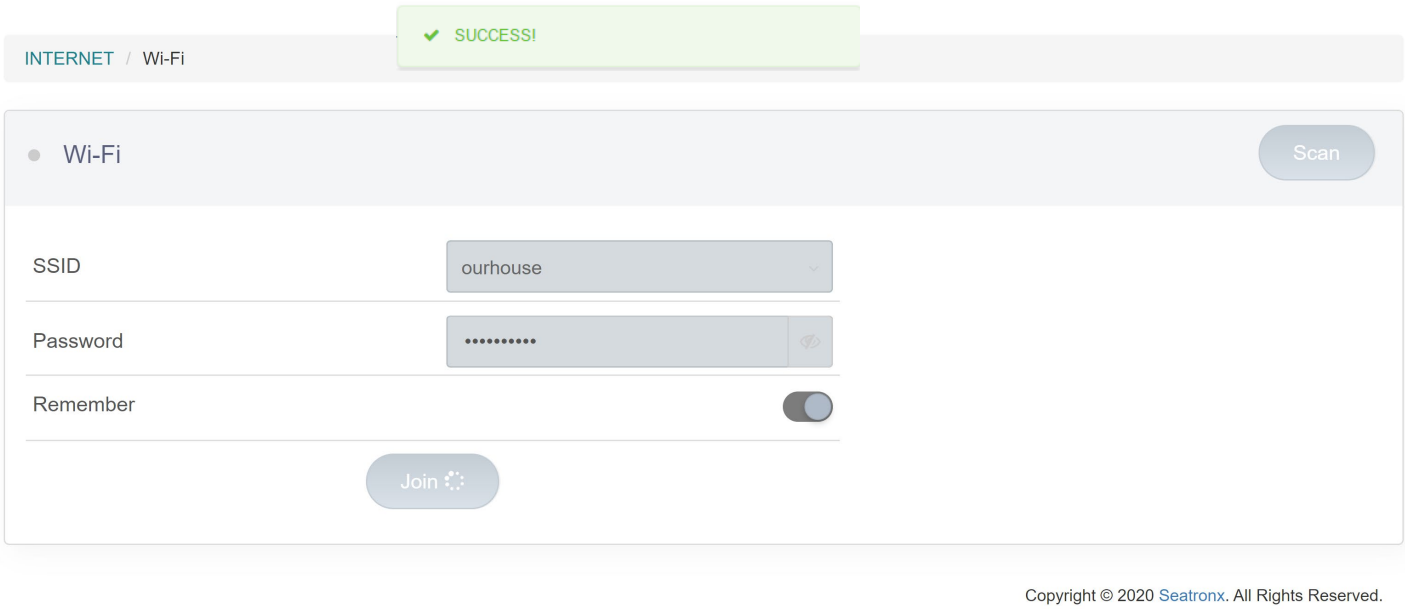
Click drop-down arrow to choose SSID, showing as below:



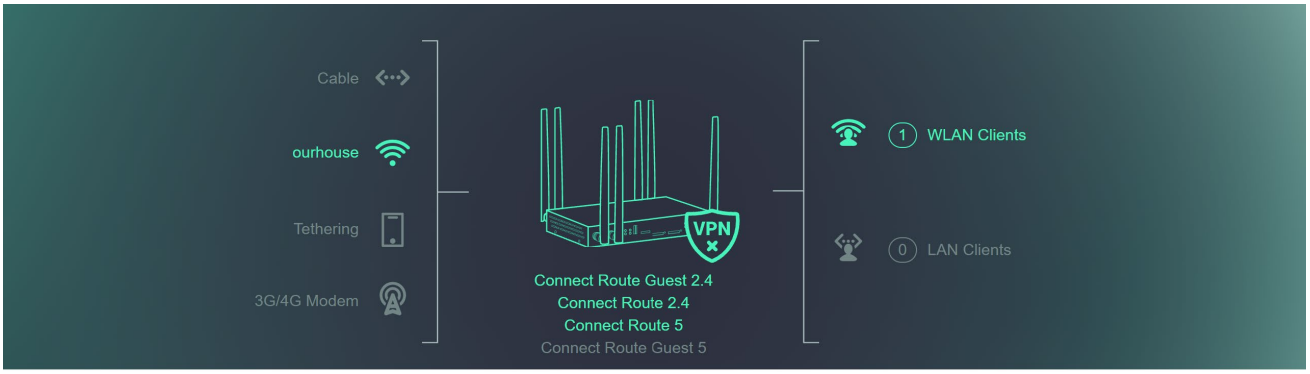
Choose the SSID, input password, turn on network saving function, then add, showing as below:

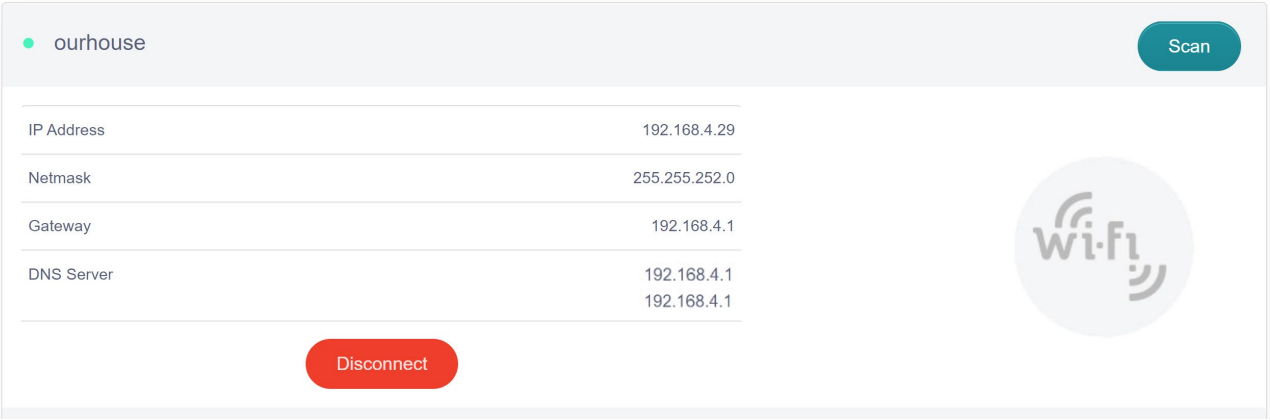


After successful connection it will pop-up as below:



Wait 5s， it will enter into admin panel. Status bar will show the SSID connected, showing as below:

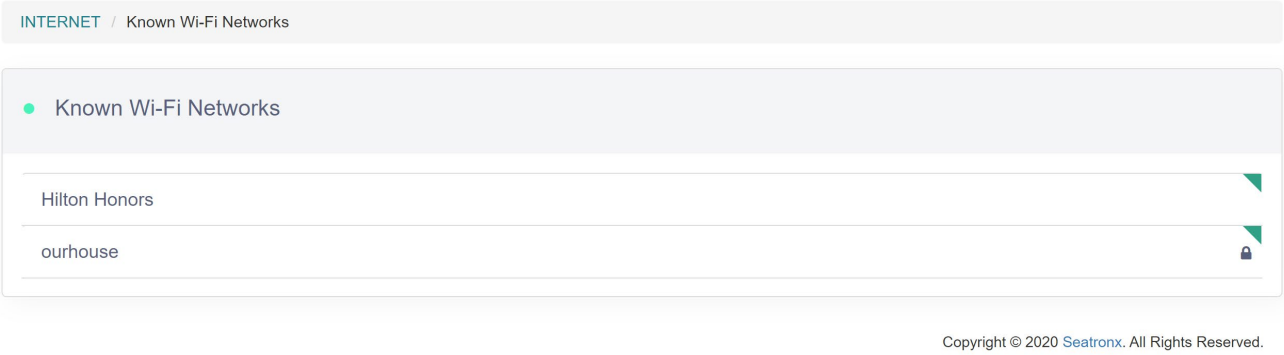




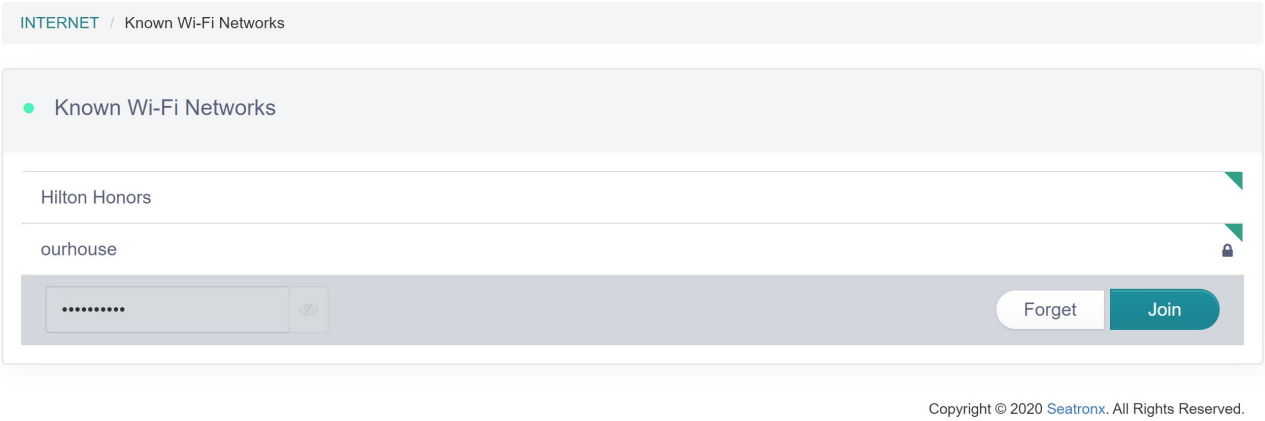
SSID, IP address, subnet mask, gateway, DNS server will be displayed.

4.1.4.2 Existing Network

Click existing network, it will display the list as below:

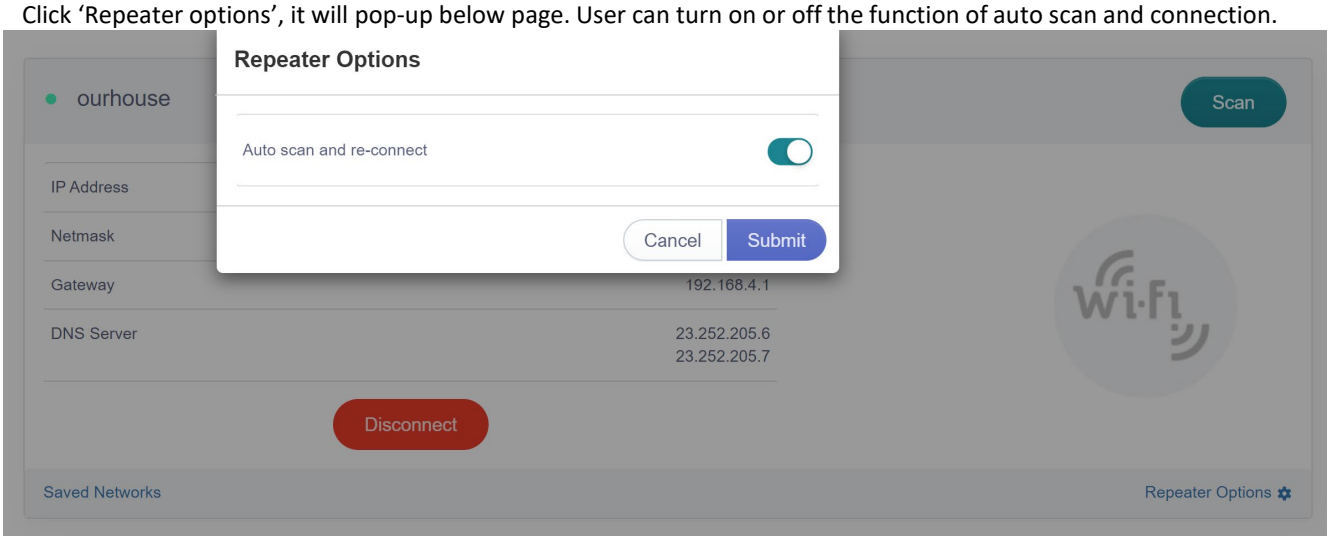


Click SSID, user can click forget or add to re-connect this SSID, showing as below:



4.1.4.3 Repeater Options

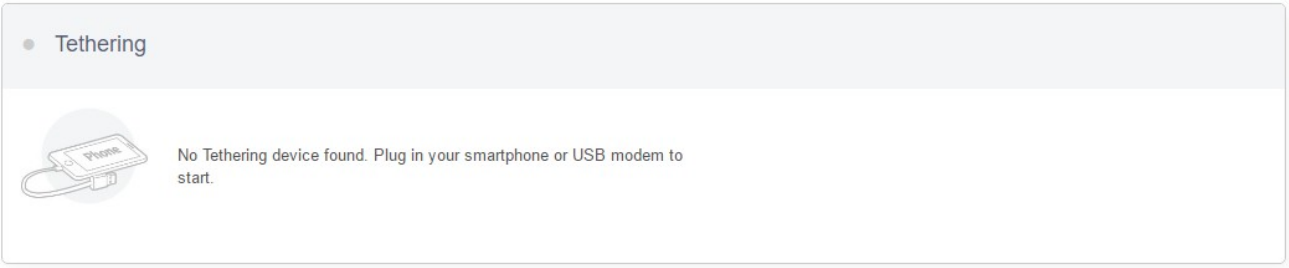
Click 'Repeater options', it will pop-up below page. User can turn on or off the function of auto scan and connection.



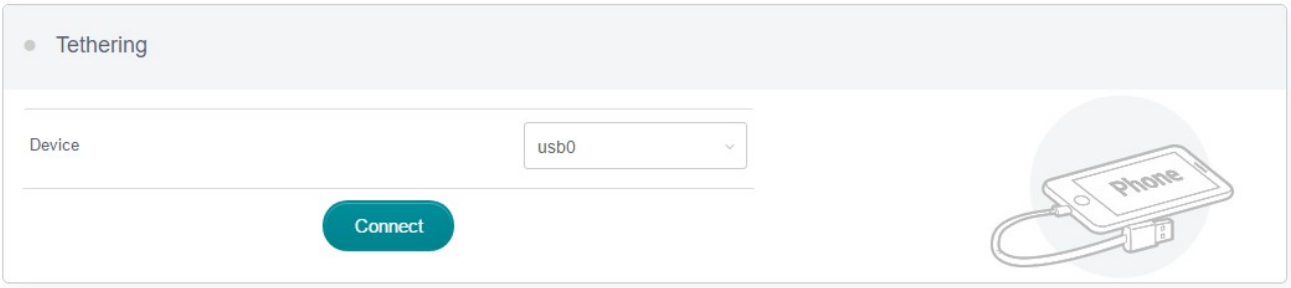
Auto scan and connection: It enables auto switching to available SSID.

4.1.5 Tethering

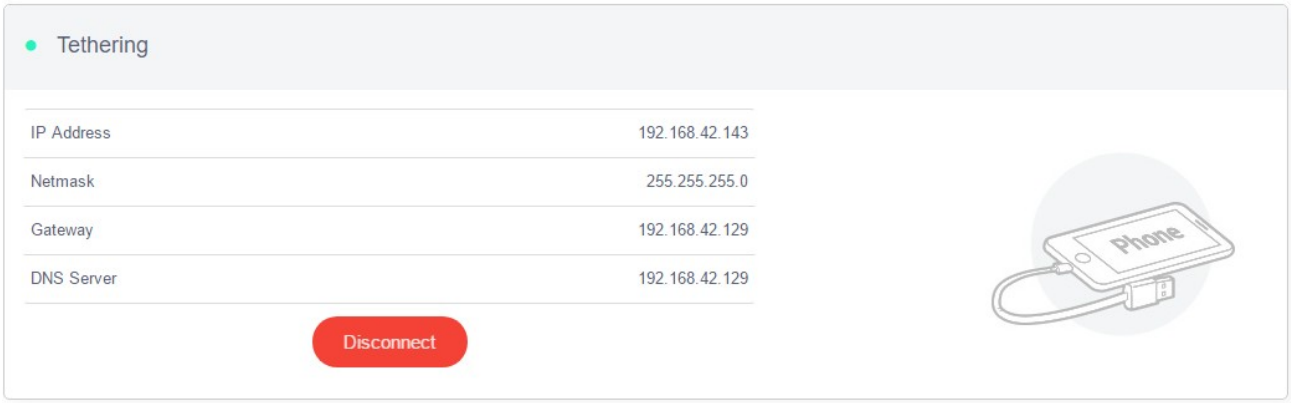
Disconnection will display as below:



Use original USB cable to connect phone and the device, then turn on USB network sharing of the phone, showing as below:

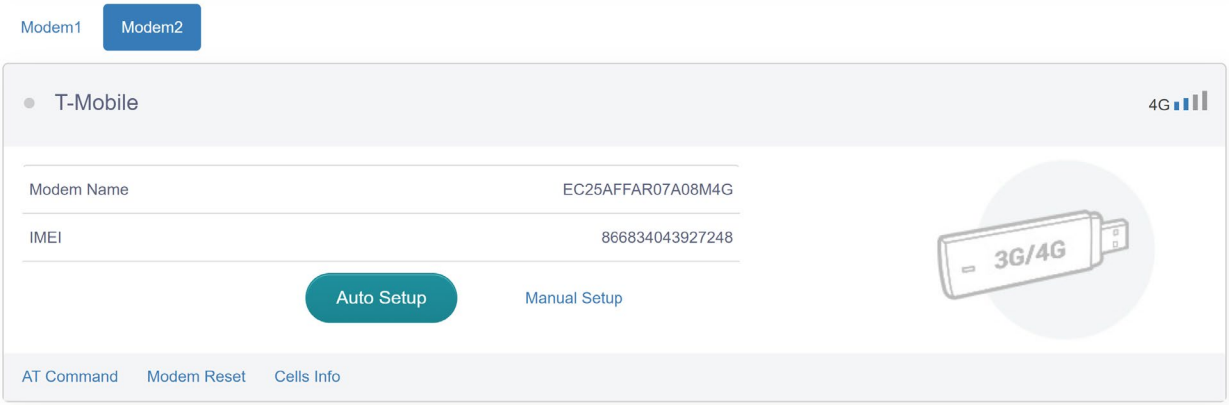


It will display as below after successful connection:

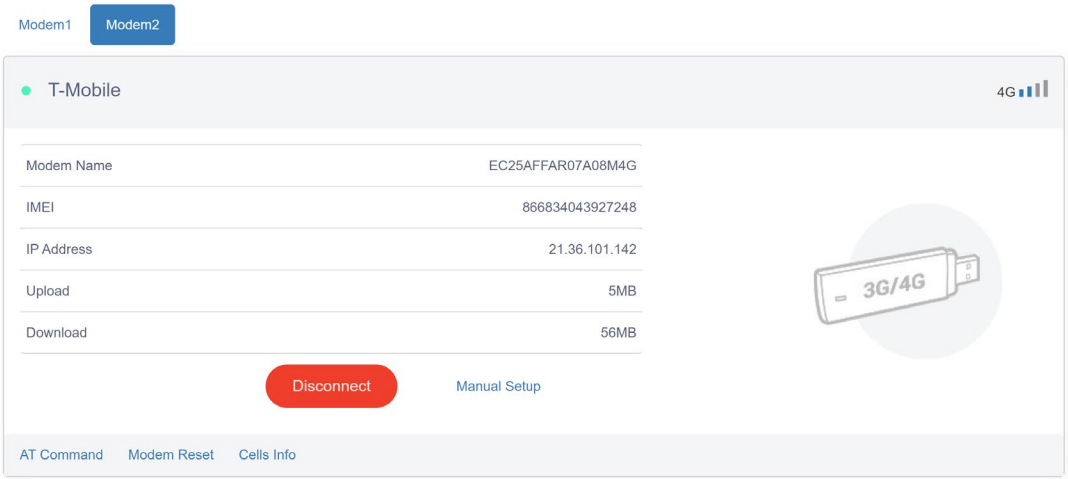


4.1.6 3G/4G Modem

Before 4G module setting, it will show as below:

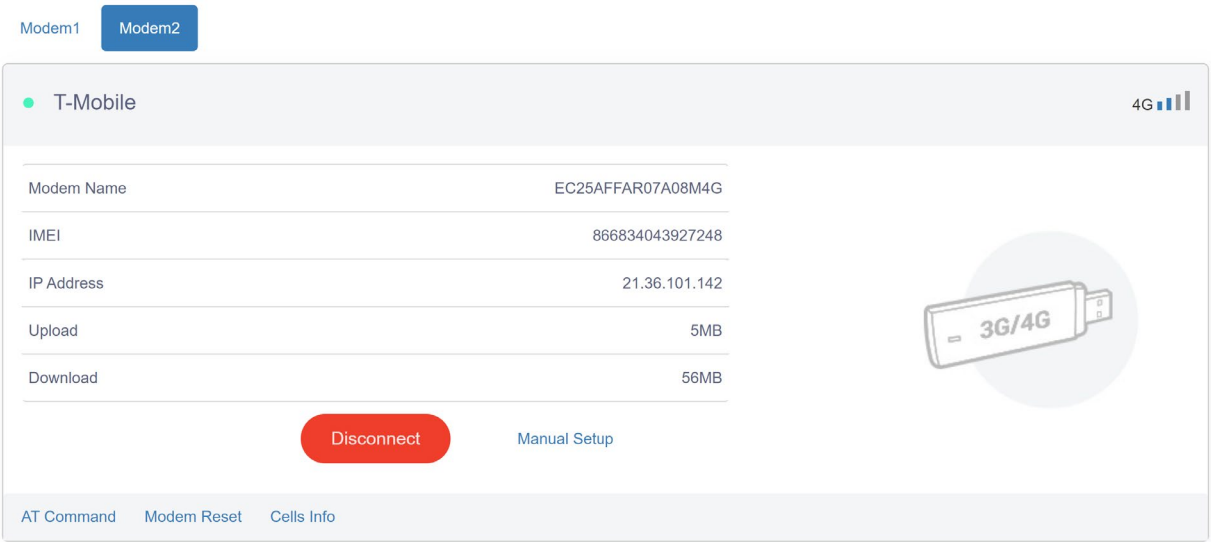


Click ‘Auto setting’, after successful connection it will show as below:

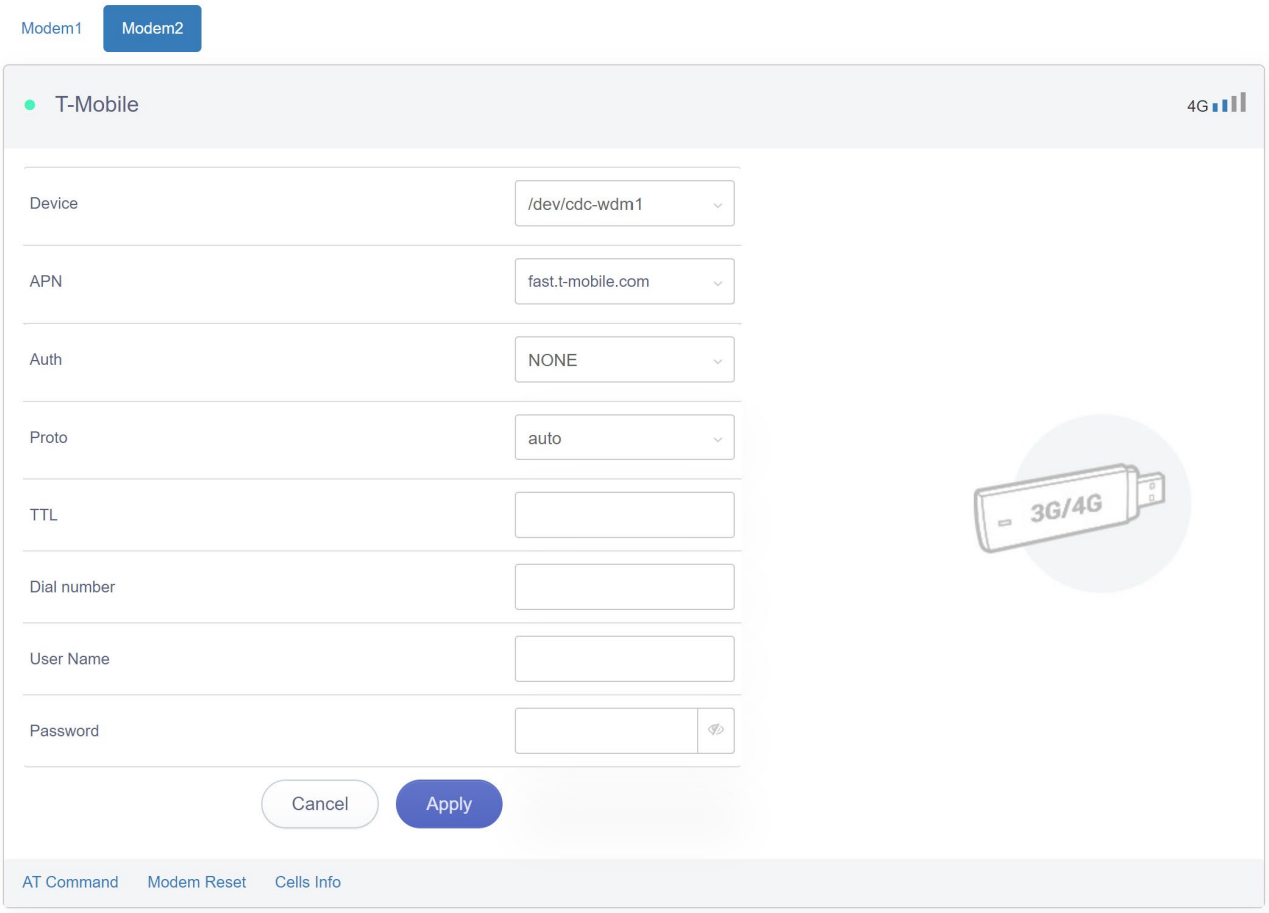


4.1.6.1 Manual Setting

Click 'Manual Setup' to choose dialing device and APN, showing as below:

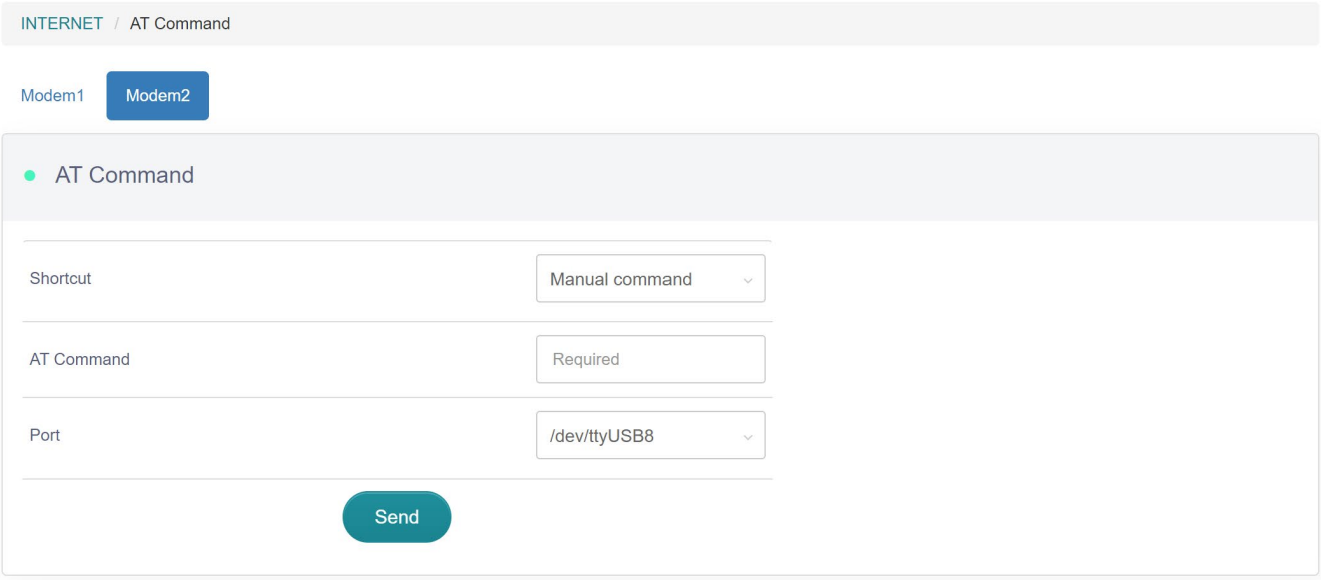


Click 'More' to get more setting options as follows:



4.1.6.2 AT command

Click 'AT command' and enter into interface as follows:



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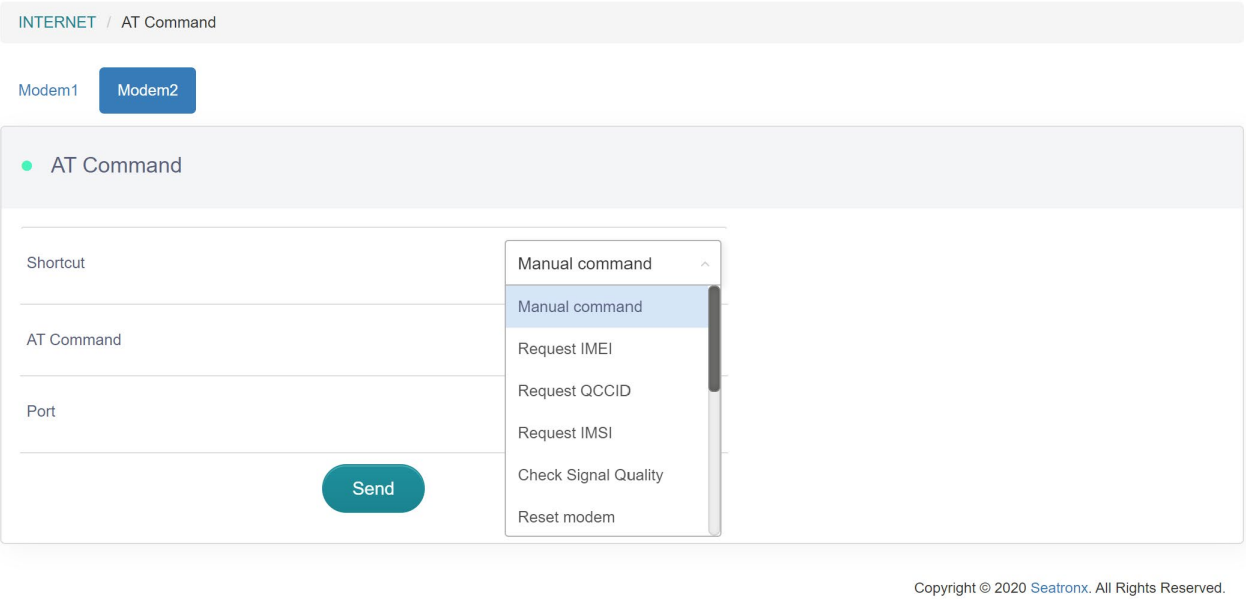
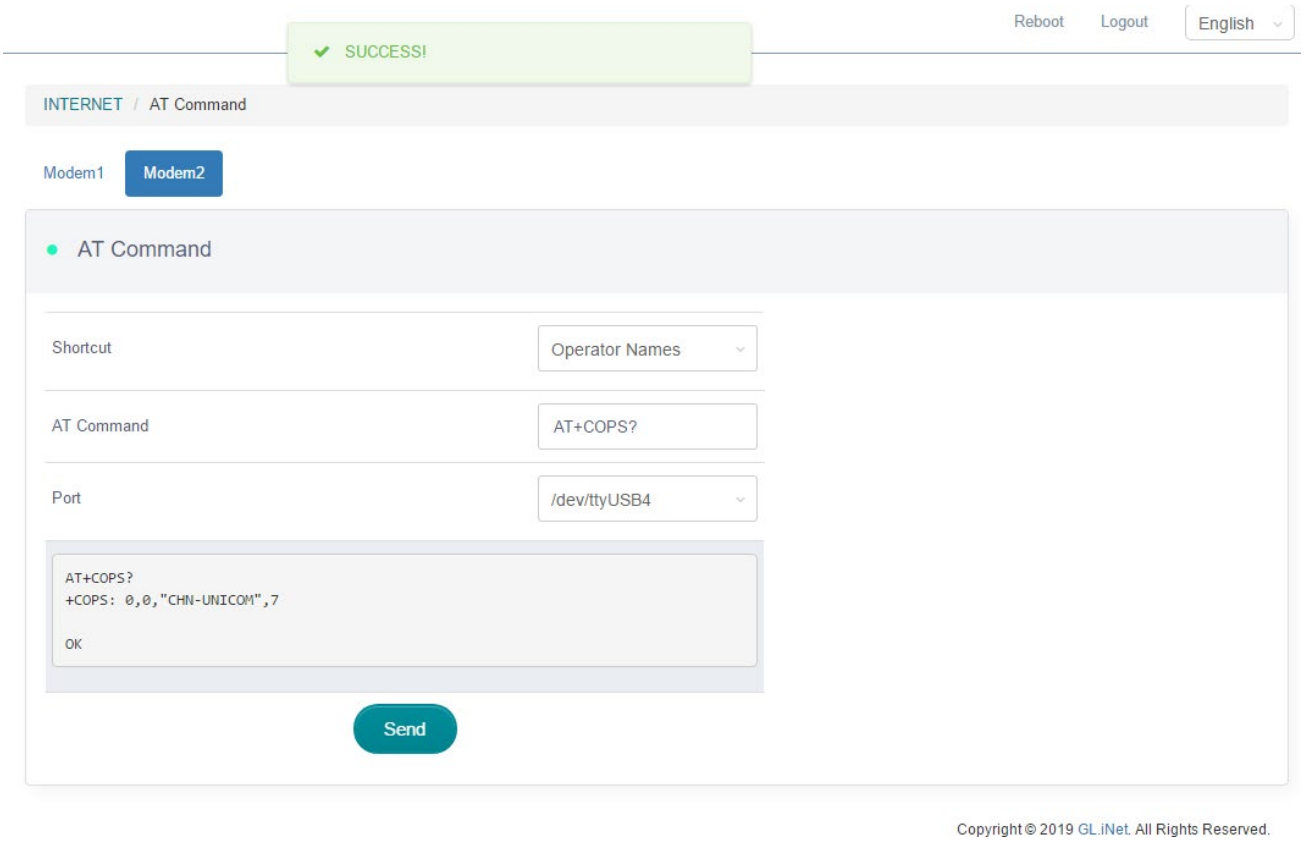
Click on the drop-down menu to display the packaged instructions as follows:



Select Request IMEI and click send, successfully read as follows:



Reboot Logout English

SUCCESS!

INTERNET / AT Command

Modem1 Modem2

AT Command

Shortcut	Request IMEI
AT Command	AT+GSN
Port	/dev/ttyUSB8

```
AT+GSN
866834043927248

OK
```

Send

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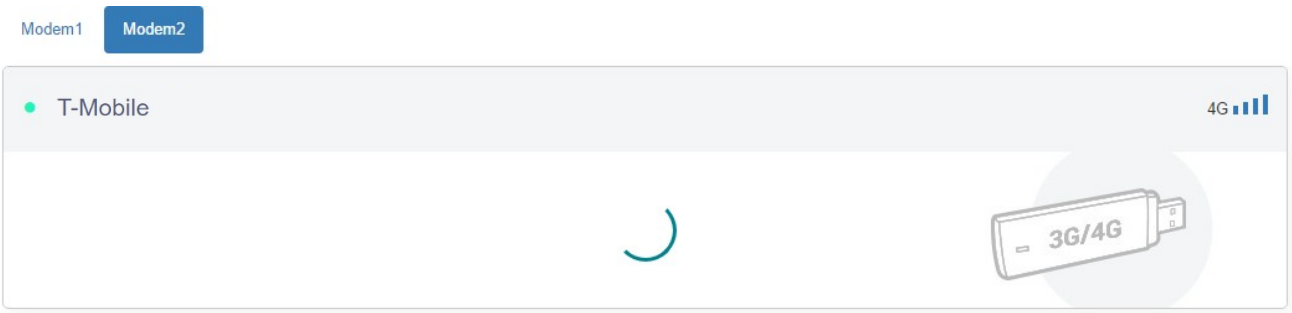
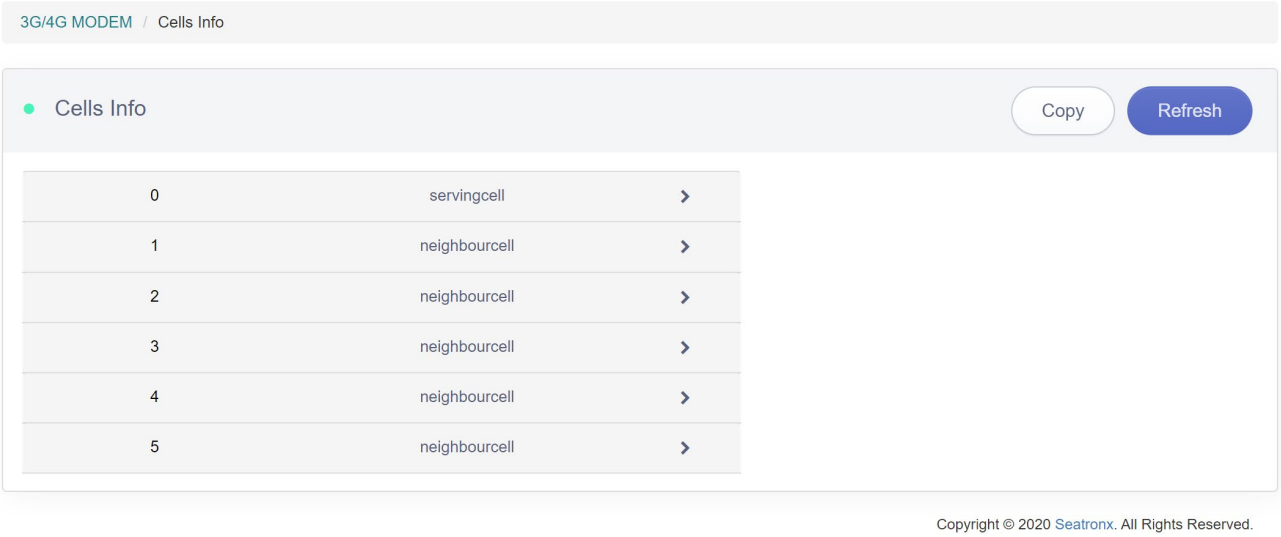
4.1.6.3 Reset Module

Clicking ‘Reset module’ to proceed reset. It will take about 25s, showing as below:



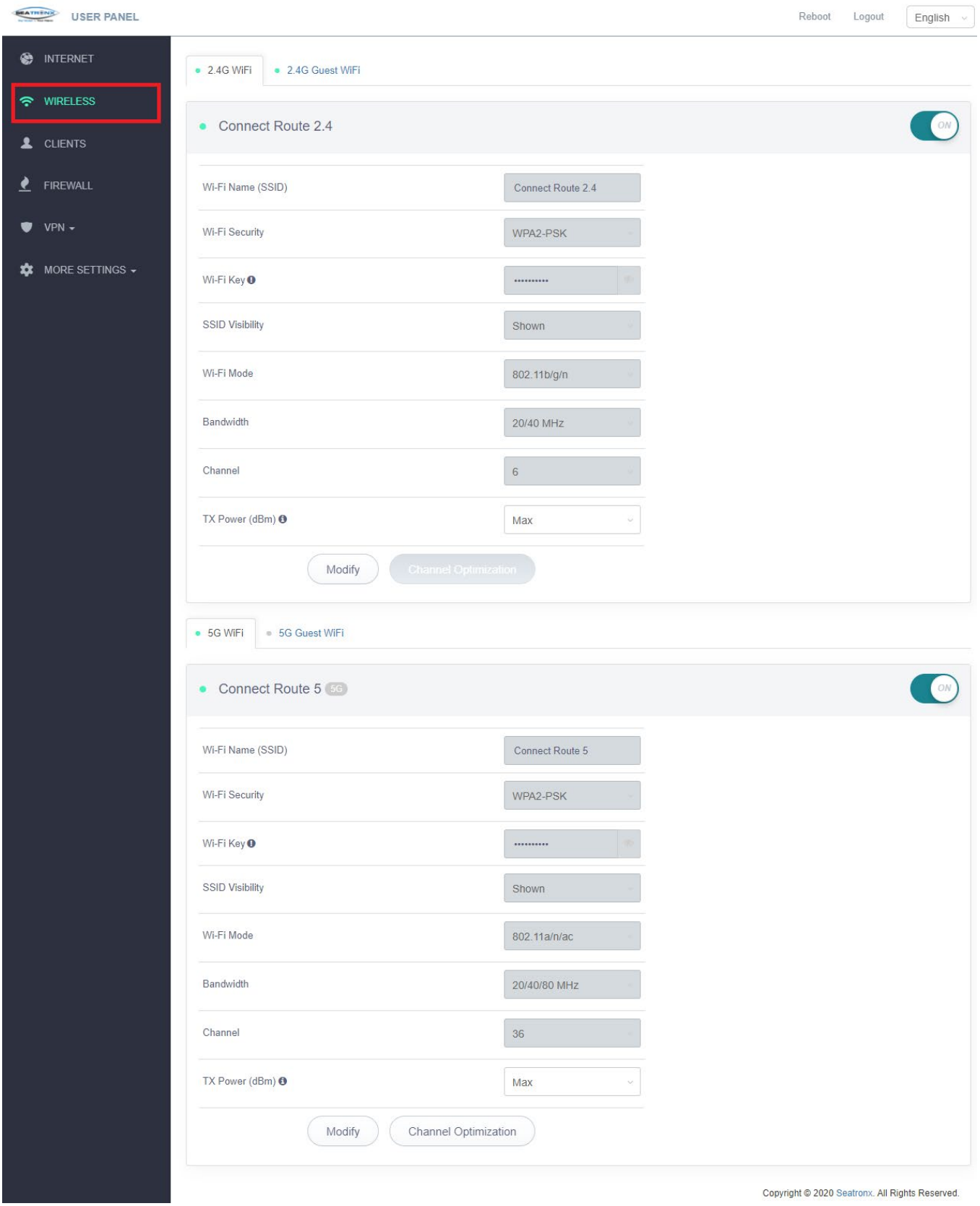
4.1.6.4 Cells Info

Click ‘Cells Info” to view the modem cell information. It supports copy and refresh functions,showing as below:



4.2 Wireless

Click ‘Wireless’ to enter into Wi-Fi management interface as follows:


USER PANEL
Reboot
Logout
English
INTERNET
WIRELESS
CLIENTS
FIREWALL
VPN
MORE SETTINGS
2.4G WiFi
2.4G Guest WiFi
Connect Route 2.4
ON
Wi-Fi Name (SSID)
Connect Route 2.4
Wi-Fi Security
WPA2-PSK
Wi-Fi Key
Shown
SSID Visibility
Wi-Fi Mode
802.11b/g/n
Bandwidth
20/40 MHz
Channel
6
TX Power (dBm)
Max
Modify
Channel Optimization
5G WiFi
5G Guest WiFi
Connect Route 5
5G
ON
Wi-Fi Name (SSID)
Connect Route 5
Wi-Fi Security
WPA2-PSK
Wi-Fi Key
Shown
SSID Visibility
Wi-Fi Mode
802.11a/n/ac
Bandwidth
20/40/80 MHz
Channel
36
TX Power (dBm)
Max
Modify
Channel Optimization
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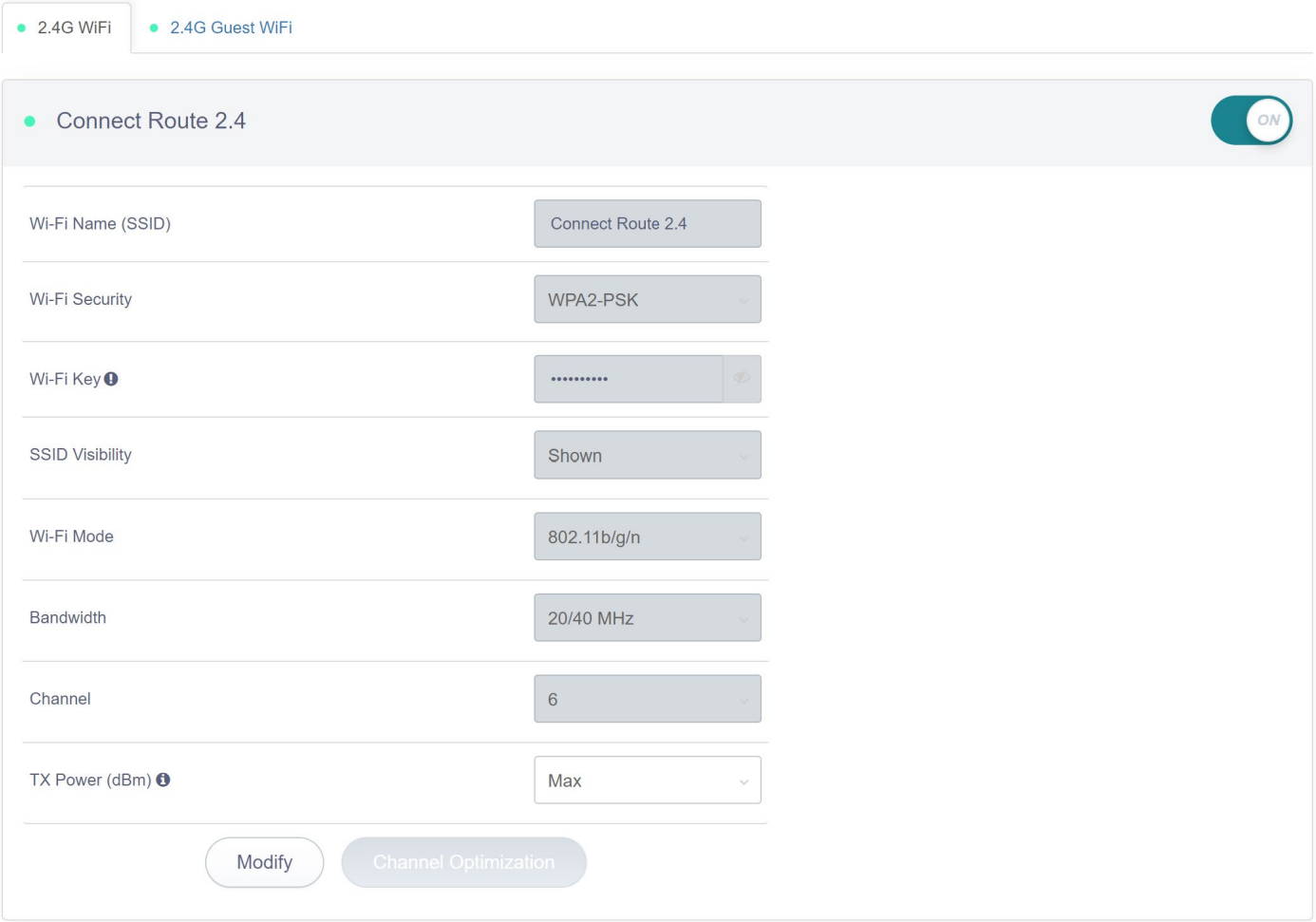
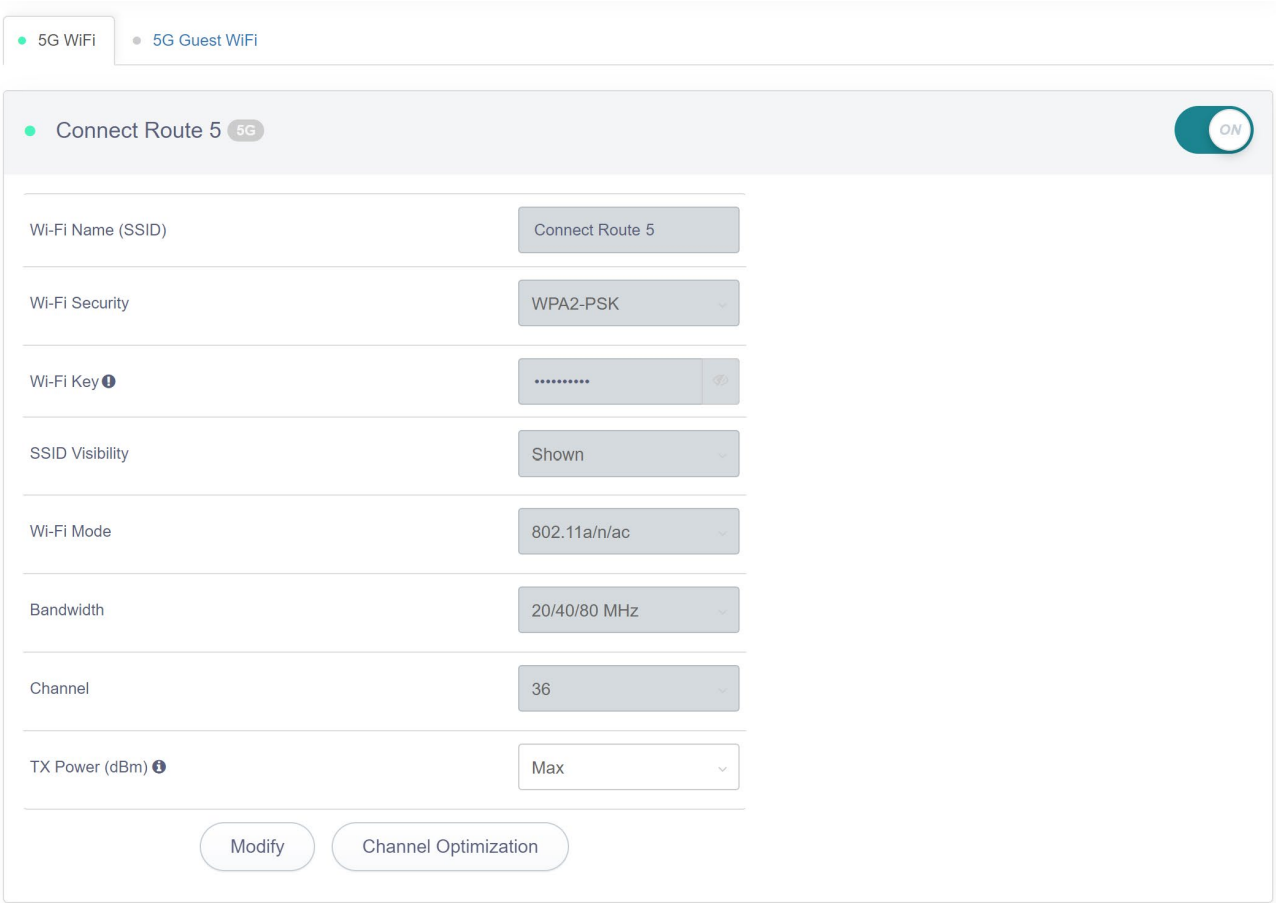
4.2.1 2.4G & 5G WiFi

Click 'Wireless' and enter into 2.4G/5G Wi-Fi management interface in default as follows:





Wireless Network Name (SSID): Wireless SSID

Wireless network security: wireless encryption method

Wireless network password: wireless password

SSID visibility: whether to hide the SSID or not

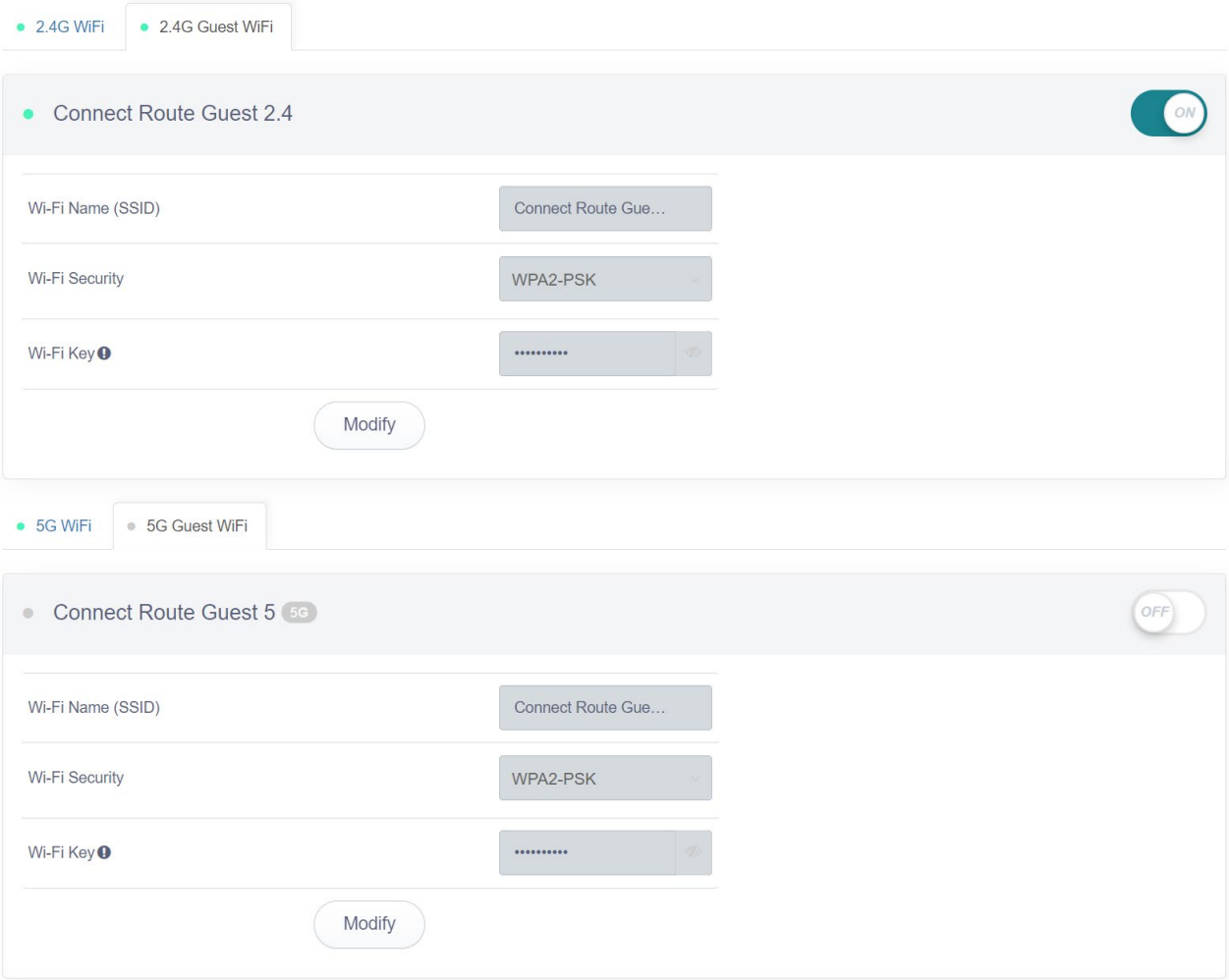
Channel: channel settings

Rate: Rate settings

Transmit power: transmit power settings

4.2.2 2.4G & 5G Guest Wi-Fi

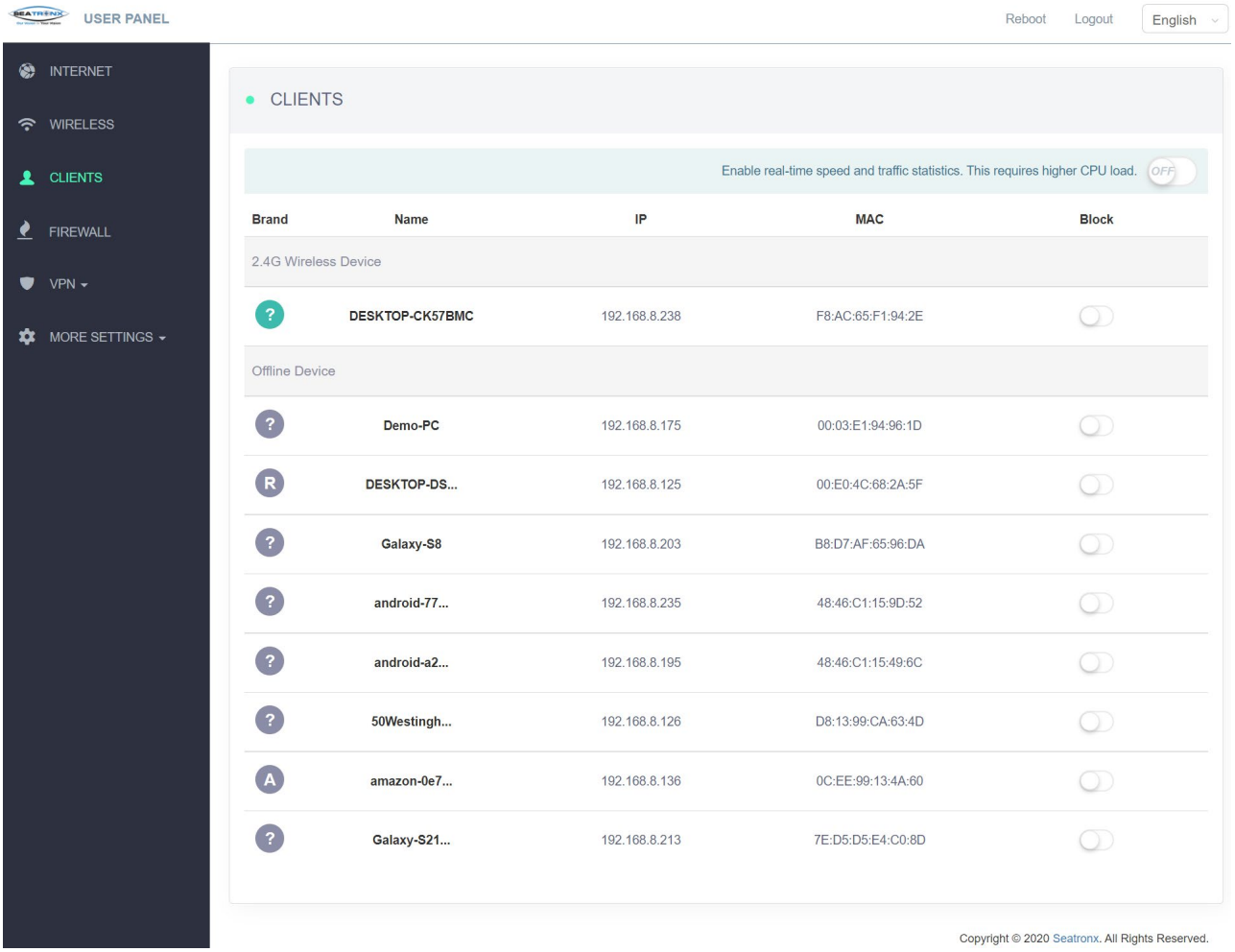
Click '2.4G Guest Wi-Fi' to display as follows:



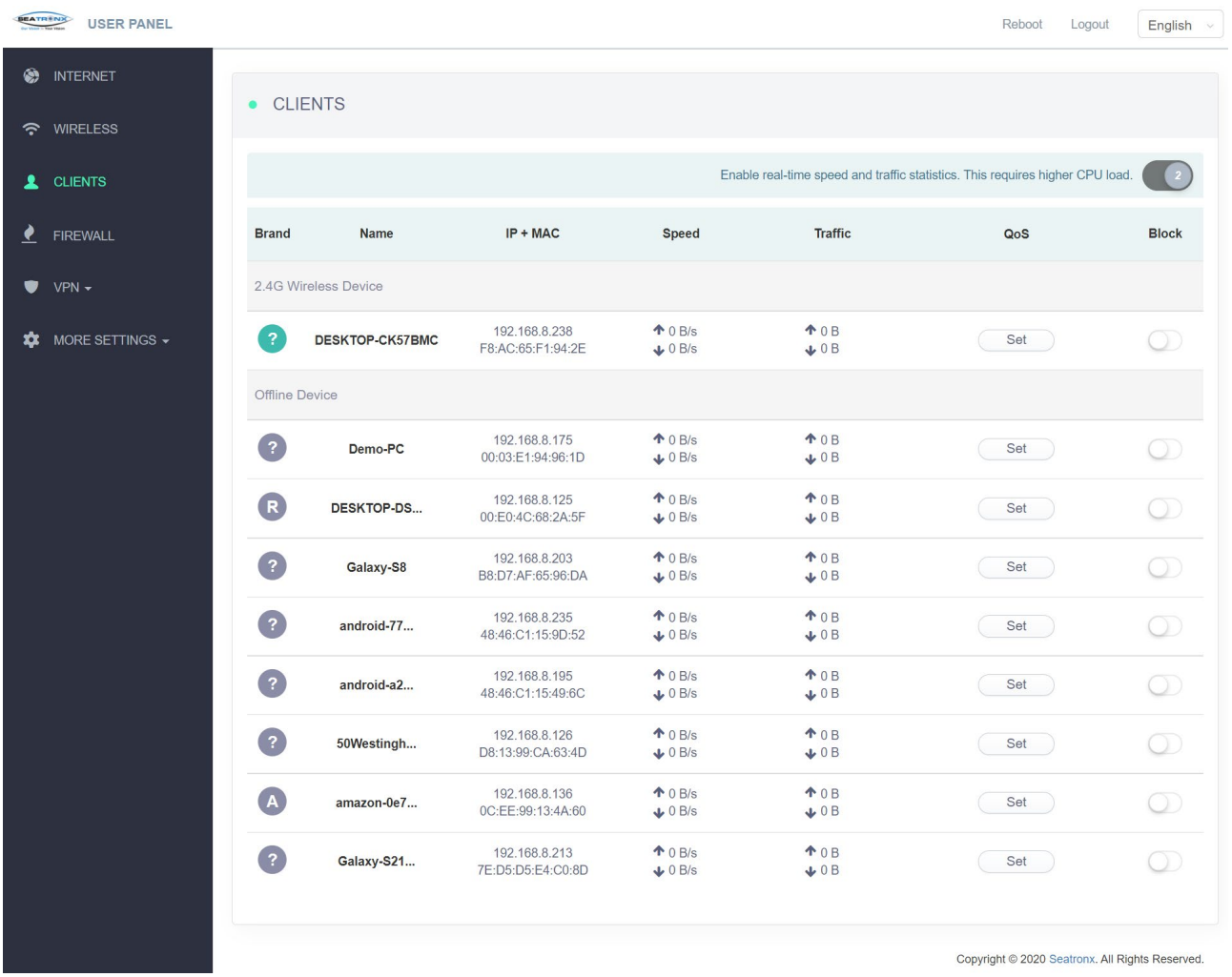
Guest Wi-Fi is turned off in default. Modification of wireless network name, wireless network security, and wirelessnetwork password is supportable.

4.3 Client

Click ‘Client’ and it will display the turn-off of traffic statistics as below:



Turn on traffic statistics which supports QoS as follows:


USER PANEL
Reboot
Logout
English
INTERNET
WIRELESS
CLIENTS
FIREWALL
VPN
MORE SETTINGS
CLIENTS
Enable real-time speed and traffic statistics. This requires higher CPU load.
Brand
Name
IP + MAC
Speed
Traffic
QoS
Block
2.4G Wireless Device
DESKTOP-CK57BMC
192.168.8.238
F8:AC:65:F1:94:2E
0 B/s
0 B/s
0 B
0 B
Set
Offline Device
Demo-PC
192.168.8.175
00:03:E1:94:96:1D
DESKTOP-DS...
192.168.8.125
00:E0:4C:68:2A:5F
Galaxy-S8
192.168.8.203
B8:D7:AF:65:96:DA
android-77...
192.168.8.235
48:46:C1:15:9D:52
android-a2...
192.168.8.195
48:46:C1:15:49:6C
50Westingh...
192.168.8.126
D8:13:99:CA:63:4D
amazon-0e7...
192.168.8.136
0C:EE:99:13:4A:60
Galaxy-S21...
192.168.8.213
7E:D5:D5:E4:C0:8D
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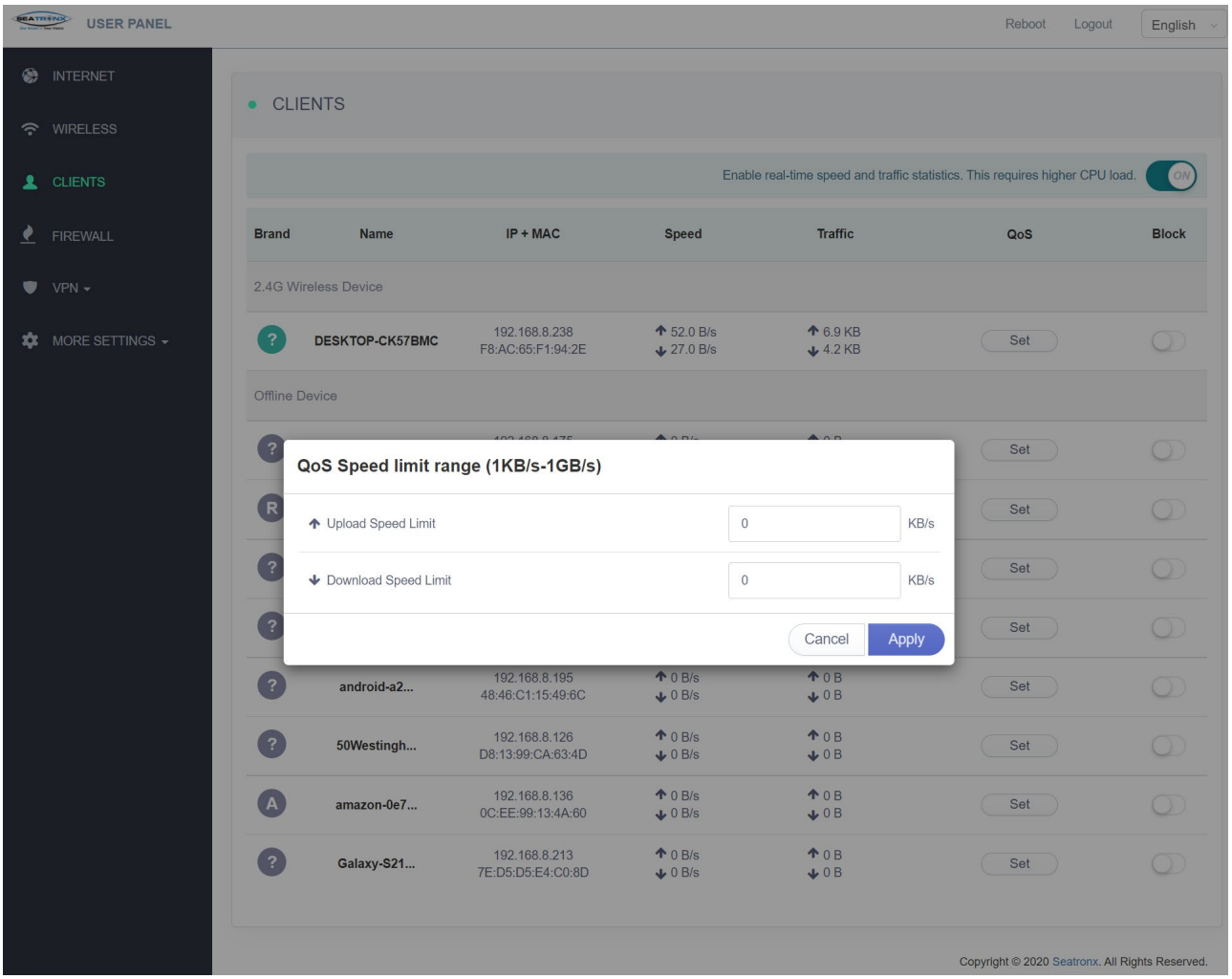
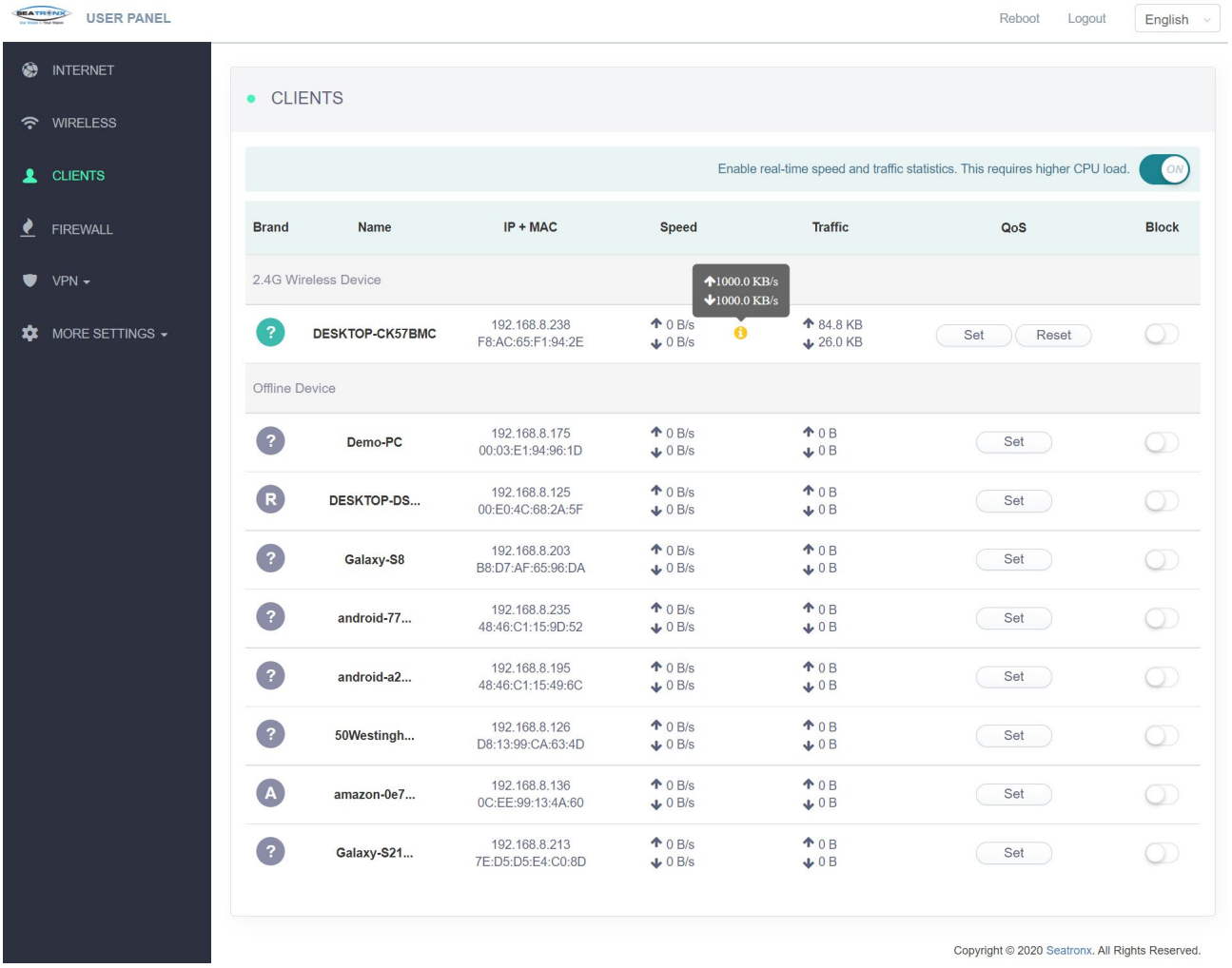
Click "Settings" to QOS settings page. Upload and download rate can be limited, showing as below



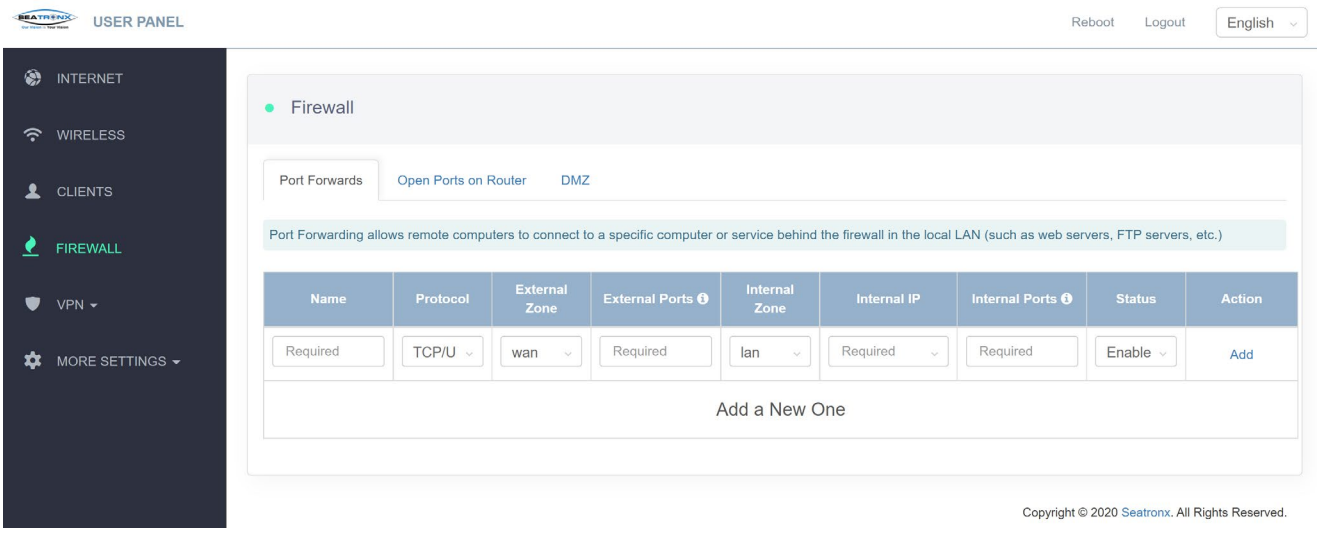
The speed limit value can be checked. Click Reset to cancel speed limit, showing as below:



Note: It is not recommended to keep traffic statistics on as it will increase CPU load.

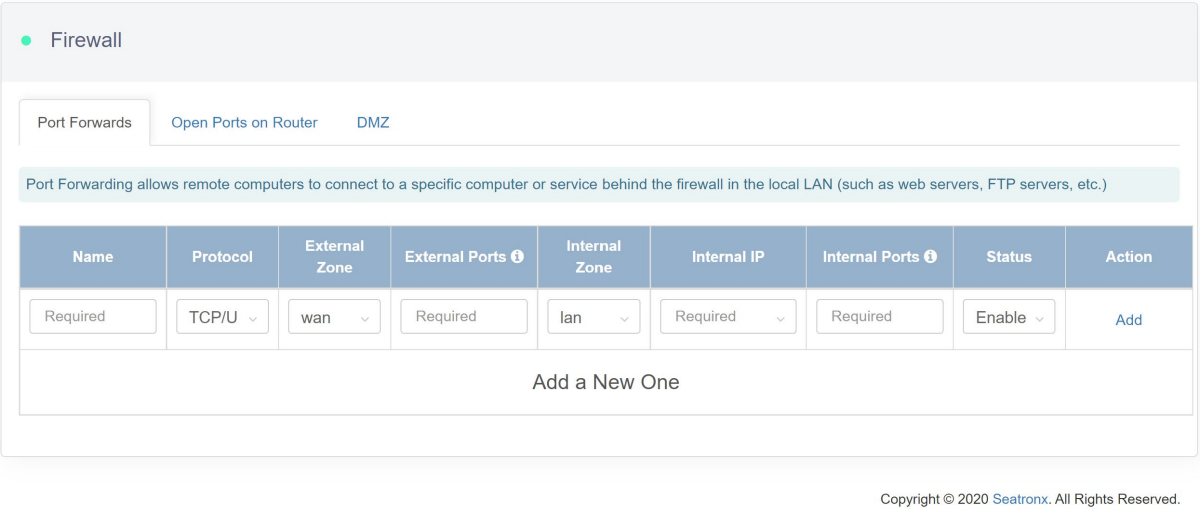
4.4 Firewall

Click 'Firewall', showing as below:



4.4.1 Port Forwarding

Click 'Firewall', then access to port forwarding interface in default, showing as below:



Name: The rule name

Internal IP: IP address assigned by LAN device

External Ports: Support to input a range

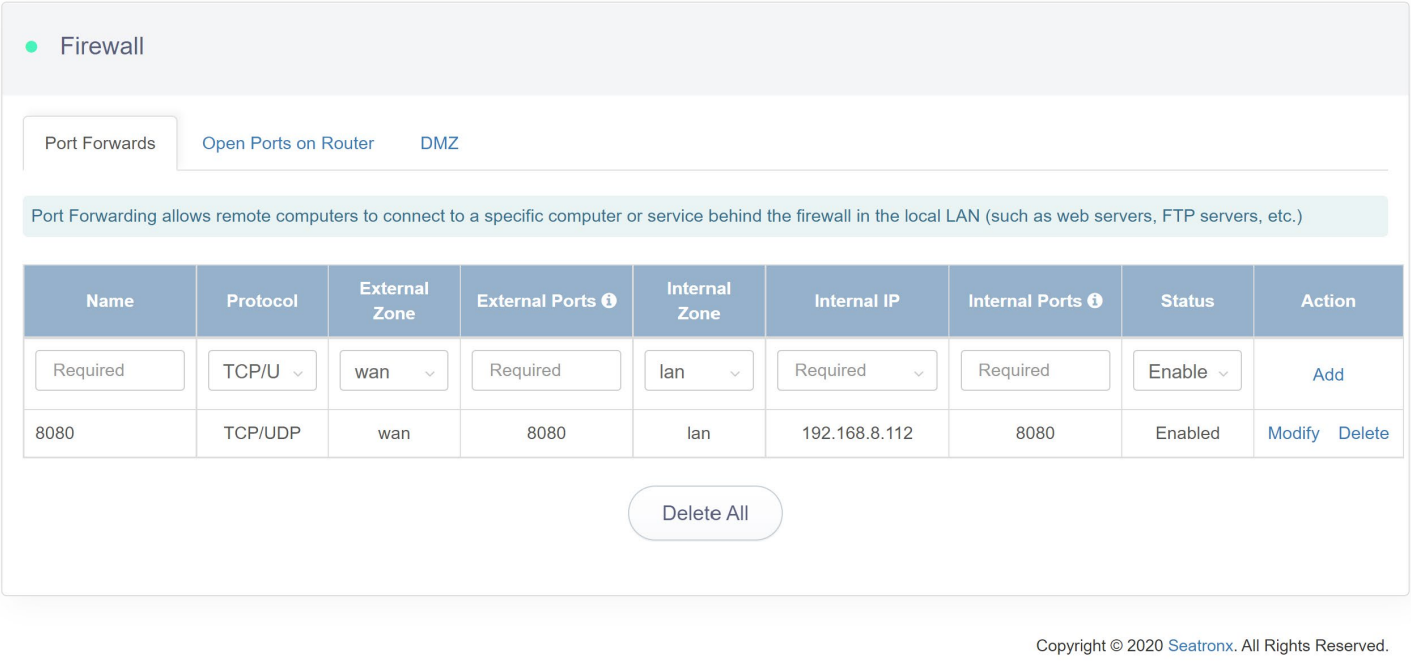
Internal Ports: The listening port of LAN device

Protocols: TCP, UDP, TCP/UDP

Status: Rule status, supports enable and disable

Operation: Add the rules set currently

Following operations are supportable:



Add: Add rules set currently

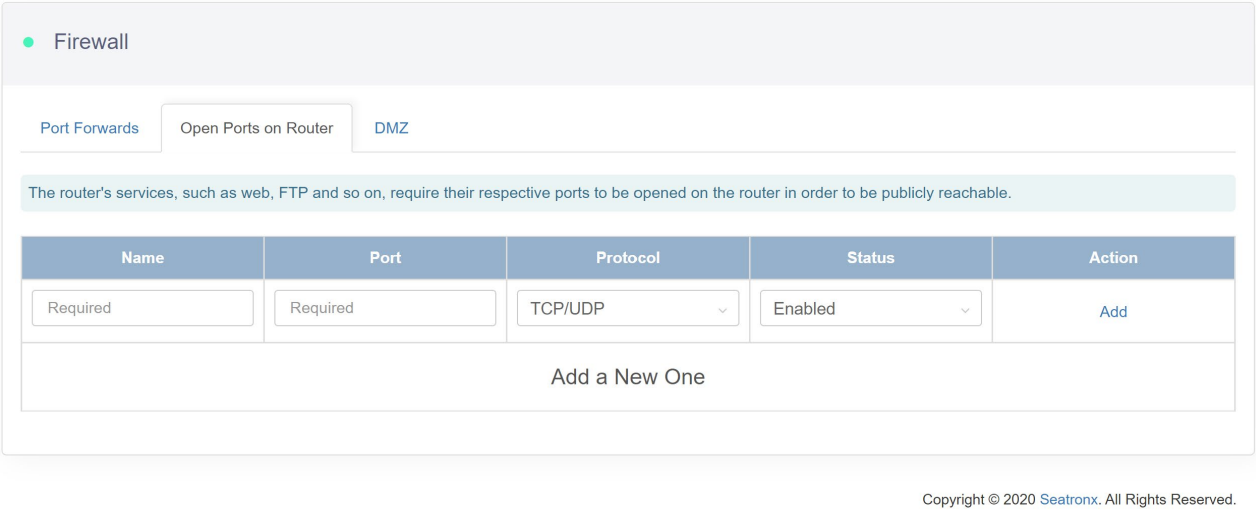
Modify: Modify the rules

Delete: Delete the current rules

Delete All: Delete All Rules

4.4.2 Turn on Ports

Click 'Turn on router ports', then enter into management interface, showing as below:



Name: The rule Name

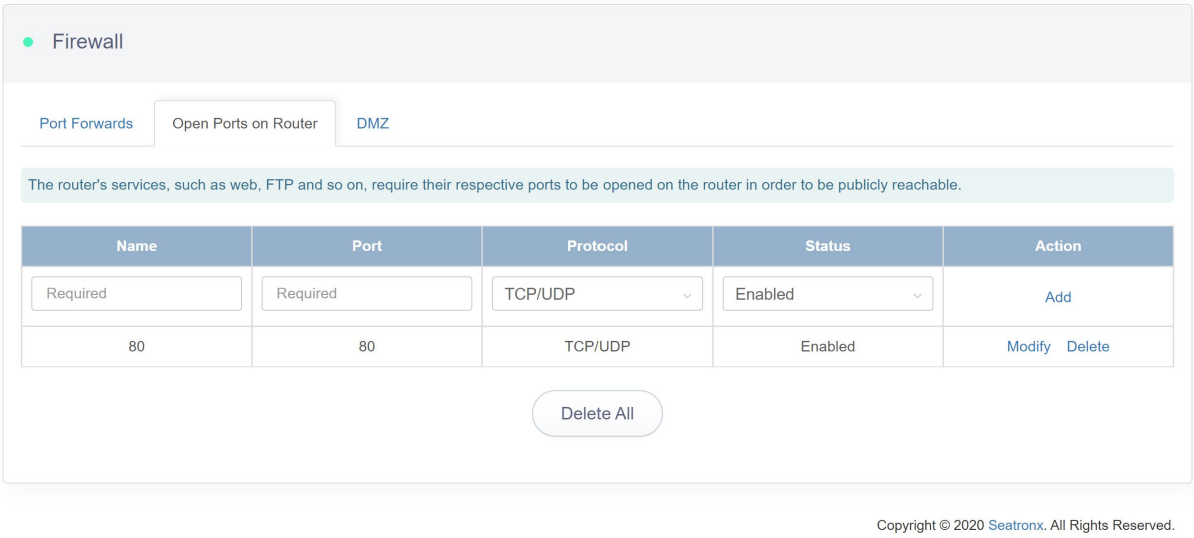
Port: Router ports to be turn on

Protocols: TCP, UDP, TCP/UDP

Status: Rule status, supports enable and disable

Operation: Add the rules set currently

Following operations are supportable:



Add: Add rules set currently

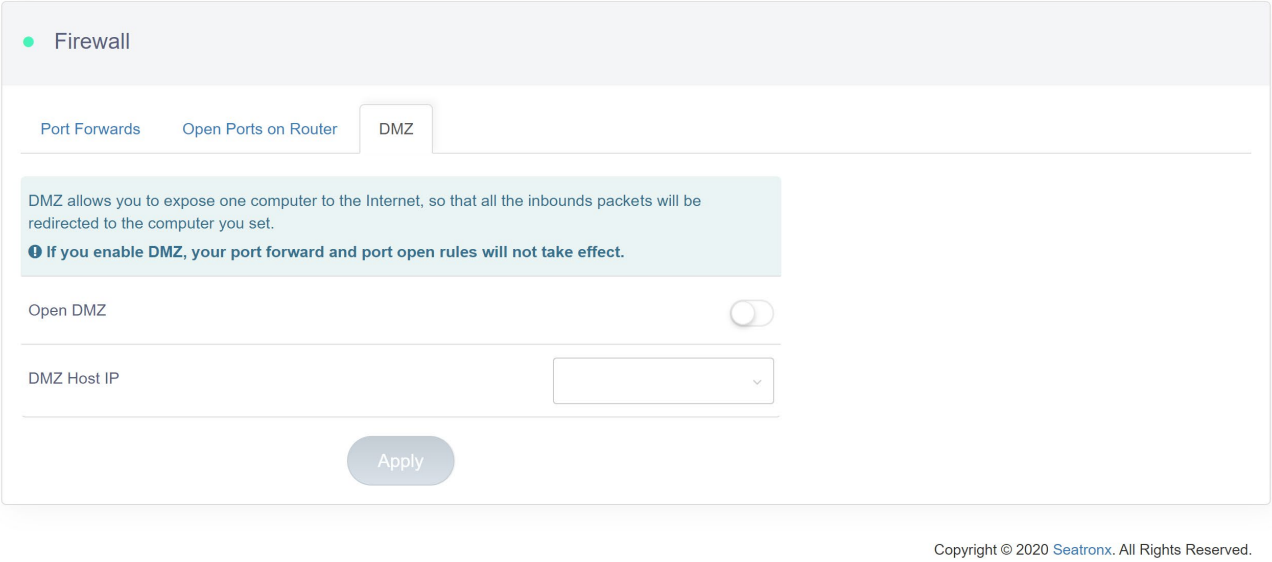
Modify: Modify the rules

Delete: Delete the current rules

Delete All: Delete All Rules

4.4.3 DMZ

Click 'DMZ', then enter into DMZ setup interface, showing as below:



Turn on DMZ: The switch is turned off in default

DMZ host IP: Support manual input and select existing IP, just click the drop-down arrow

Turn on DMZ, showing as below:

Turn on the switch, input or select the DMZ host IP, then click on application.