Data Transfer Unit Model: V519

4G/3G Industrial Router

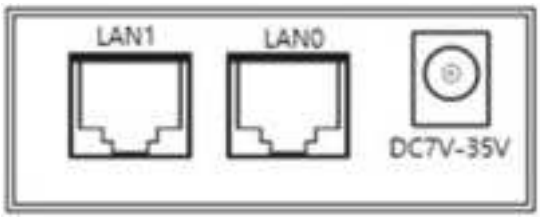
4G/3G Serial Server

User Manual

Model：V519

Data Transfer Unit Model: V519

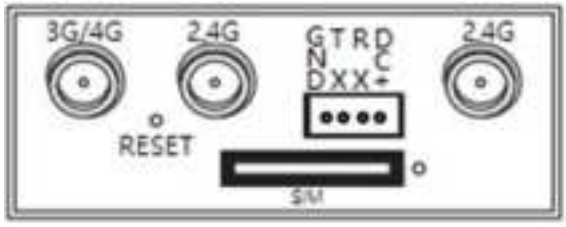
1. Interface



Front

1) RJ45 Jack: LAN0
2) RJ45 Jack: LAN1
3) DC Jack: DC7V~35V wide voltage, DC12V is better and recommended.

Description: LAN0 can be used as WAN under regular router mode;
DC: 2.1mm Standard Round Interface, 7V~35V, Internal:+, Outside: -



Back

1) 3G/4G/WIFI Antenna: SMA external rotation internal hole interface.
2) RESET: press for >5s when it's powered on, SYS indicator will flash quickly and it'll reboot. Then all settings will be reset to the default factory settings.
3) Serial Port: 4PIN PH2.0mm, GND/TX/RX/DC+ from left to right, DC+ can be used power supply to power on the router.
4) SIM card slot: Self-locking slot, press the white button on your left side and it will pop out.

Description for Indicator

Name	Status	Description
(SYS)	Indicator On	Powered and connected properly
	Flash Quickly	Abnormal connection; 3G/4G dialing; system reset indicator, press for >5s and it'll flash quickly, then the router will reboot.
3G/4G	Green	Connected successfully, good signal
	Red	Connected successfully, bad signal
	Off	Failed to connect to 3G/4G module or abnormal
LAN0、LAN1	On	RJ45 is connected
	Off	RJ45 is out of connection

Description for Serial Port:

GND	TX	RX	DC+

Currently UART1 can only be used as RS232, it's GND/TX/RX/DC+ from left to right. But for data transmission, only GND/TX/RX will be used, respectively connecting them to the 5PIN, 2PIN, 3PIN of computer's serial port to establish serial communication. DC+ works as input and output connector of power supply. (E.g.: when input is 12V, then the output voltage is 12V too.)

Description for Antenna Port:

There're three SMA antenna ports, that is 3G/4G and 2x WiFi antenna ports. Users can select the appropriate antennas. Theoretically, the higher gain the antenna has, the better transmitting and receiving effect of WiFi it will be. For 3G/4G antenna, it's recommended to use 3-5dB antenna. But for WiFi antenna, it depends on your requirement and coverage and supports max. 15dB.

2. Preparation

2.1 Connection

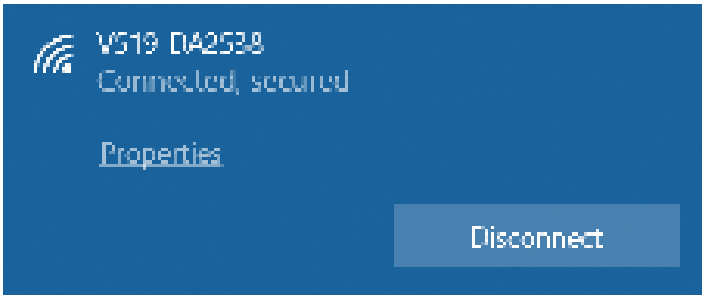
Correctly insert SIM card and power on the router with DC12V adapter.

2.2 Configure IP for PC

Before accessing the router from browsers, it's recommended for you to set your PC as "Obtain an IP address automatically" and "Obtain DNS server address automatically", then it will get an IP address automatically by router. If you would like to set one assigned address for your PC, it's necessary to set it in the same network segment of LAN0 of router (the default IP address for LAN0: 192.168.8.1, subnet mask: 255.255.255.0).

2.3 Connected to WiFi

Check whether there's WiFi hotspot started with V519-XXXXXX(SSID), then click "connect" and enter password (87654321 by default) to establish wireless connection.



2.4 Confirm whether PC is well connected to the router

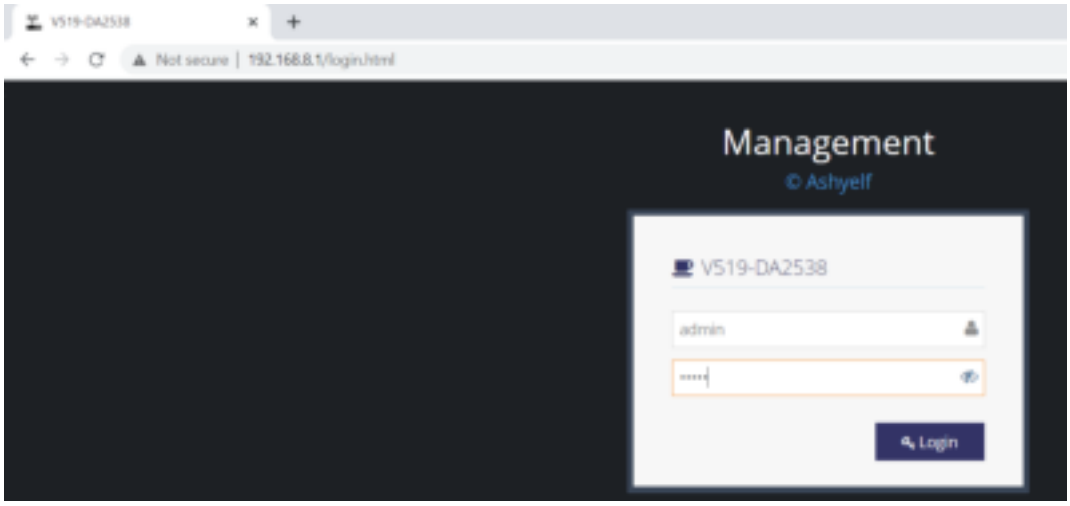
After obtaining IP address, please execute PING command to double confirm whether PC is well connected to the router. Take Windows as example: WIN+R →Enter "cmd" → Enter "ping 192.168.8.1", if it's shown like the below photo, then it means the PC is well connected to the router:

```
C:\Users\Gordon>ping 192.168.8.1

Pinging 192.168.8.1 with 32 bytes of data:
Reply from 192.168.8.1: bytes 32 time 3ms TTL 64
Reply from 192.168.8.1: bytes 32 time 6ms TTL 64
Reply from 192.168.8.1: bytes 32 time 3ms TTL 64
Reply from 192.168.8.1: bytes 32 time 2ms TTL 64
```

2.5 Access router from browser

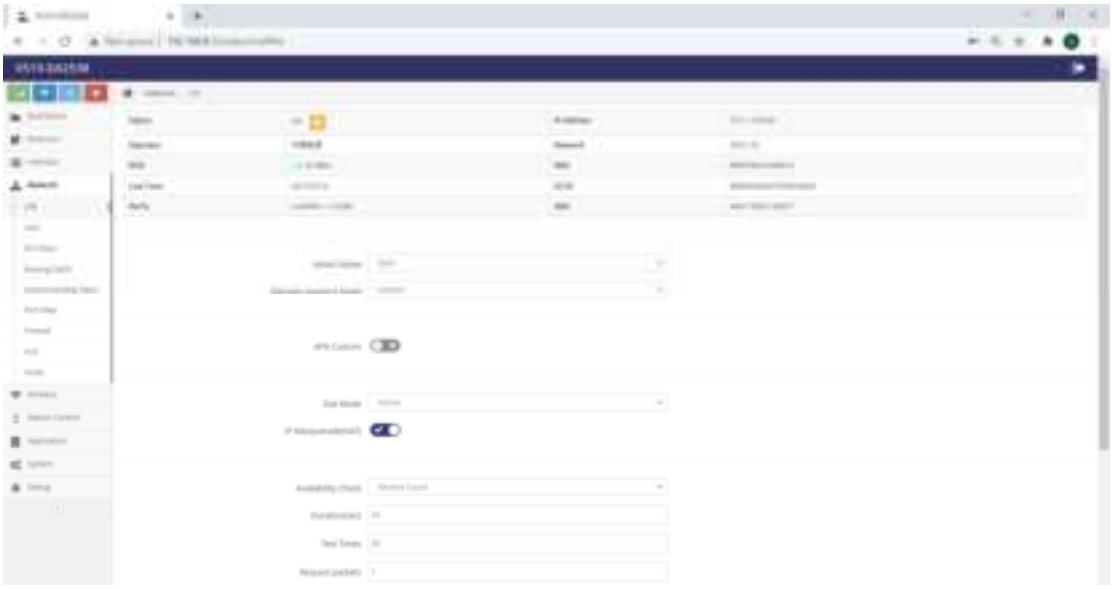
- Start a browser like Chrome, Firefox, Edge etc.
- Enter http://192.168.8.1 in the address column
- Enter username and password (admin by default) and it's shown as below:



- After login, you will be able to configure and manage this router.

3. Dashboard

In this page, it's easier to view the status of router. Click the registered courier and you will see the detailed information of 4G as below:



4. Interface

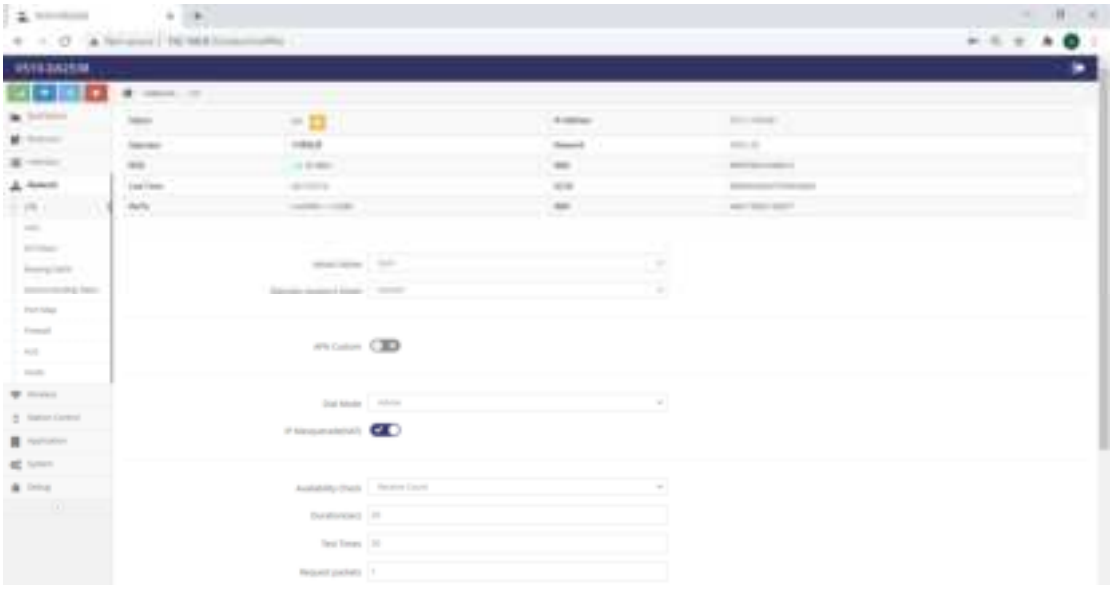
In this page, it's easier to view status of 4G LTE, LAN, Switch as below:

5. Network

5.1 LTE

In this page, it allows users to configure LTE. By default, it's LTE Gateway mode for V519, just inserting 4G/3G SIM card, later router will auto recognize and register to corresponding network of 4G/3G. You can also configure and

select ISP.



5.2 Custom APN

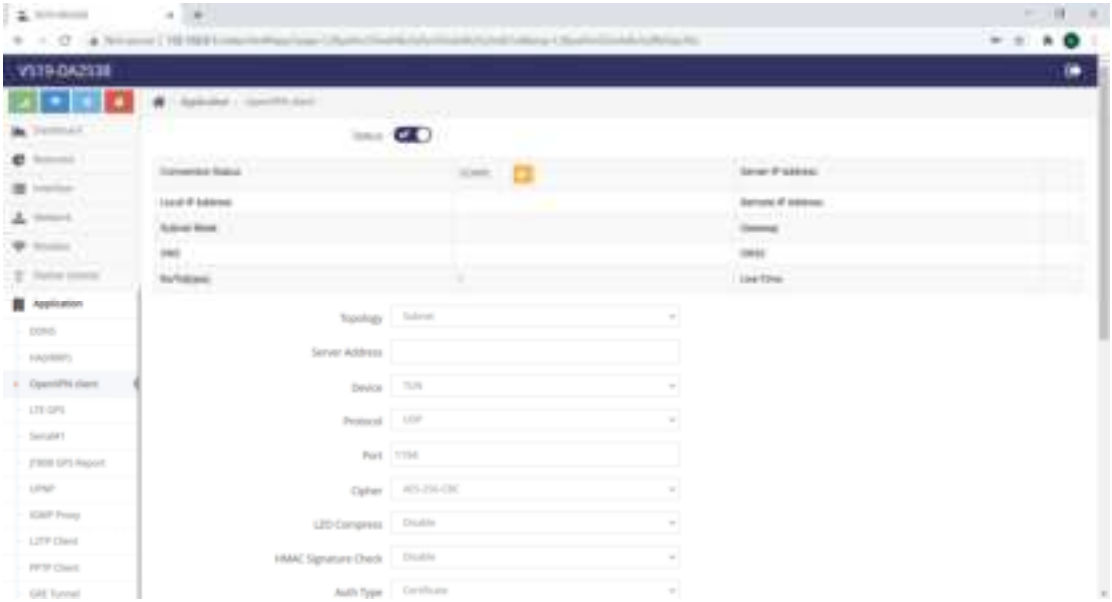
Please enter the APN information provided by ISP. The APN information of the domestic three ISPs for your reference as below:

ISP	3G/4G	APN	Dial Number	User	Password
China Mobile	TD-SCDMA TD-LTE, GSM	cmnet	*99#	blank	blank
China Unicom	WCDMA FDD-LTE, GSM	3gnet	*99#	blank	blank
China Telecom 4G	FDD-LTE	ctnet	*99#	card	card
China Telecom 3G/2G	CDMA2000, EVDO	ctnet	#777	card	card

6. Application

6.1 VPN Client

OpenVPN, L2TP, PPTP, GRE tunnel and other VPN protocols are supported. Before setting, please try to obtain the related parameters of VPN server first.

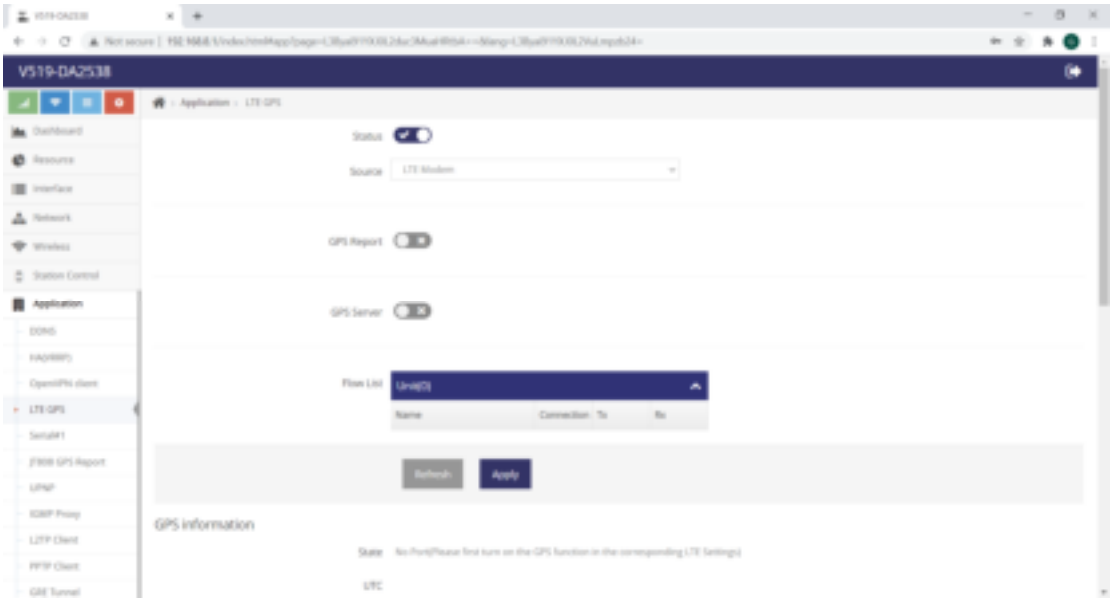


6.2 LTE GPS

LTE GPS is one of optional features because it uses the GPS built-in the 4G modules. If it's required to enable GPS, please go to Network-->LTE-->GPS and enable GPS. If it positions successfully, you will see the map below.

6.2.1 GPS Data Upload

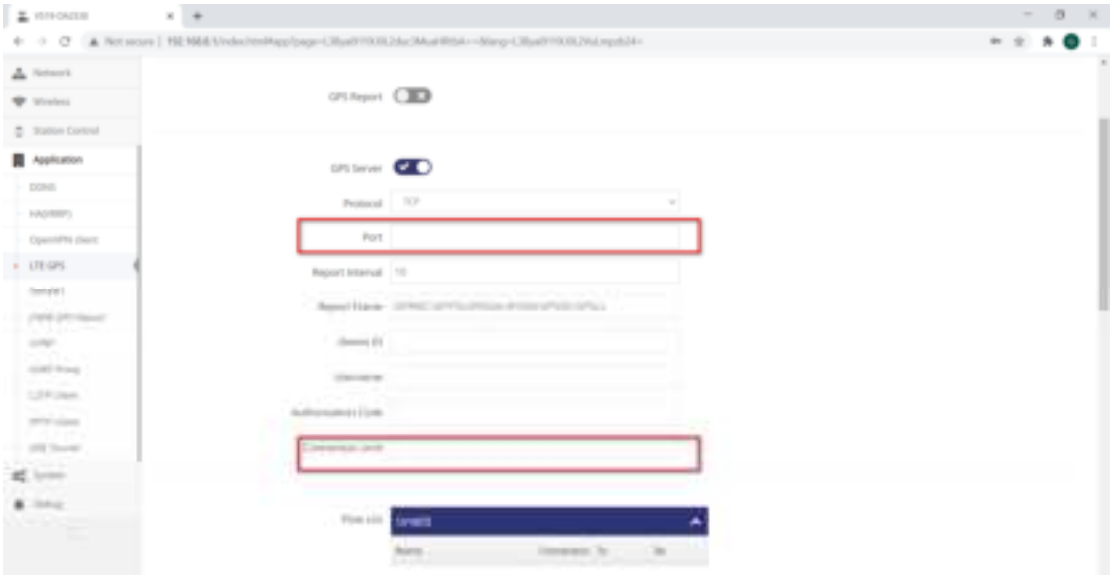
It allows users to upload GPS data to the assigned server:



6.2.2 GPS Server

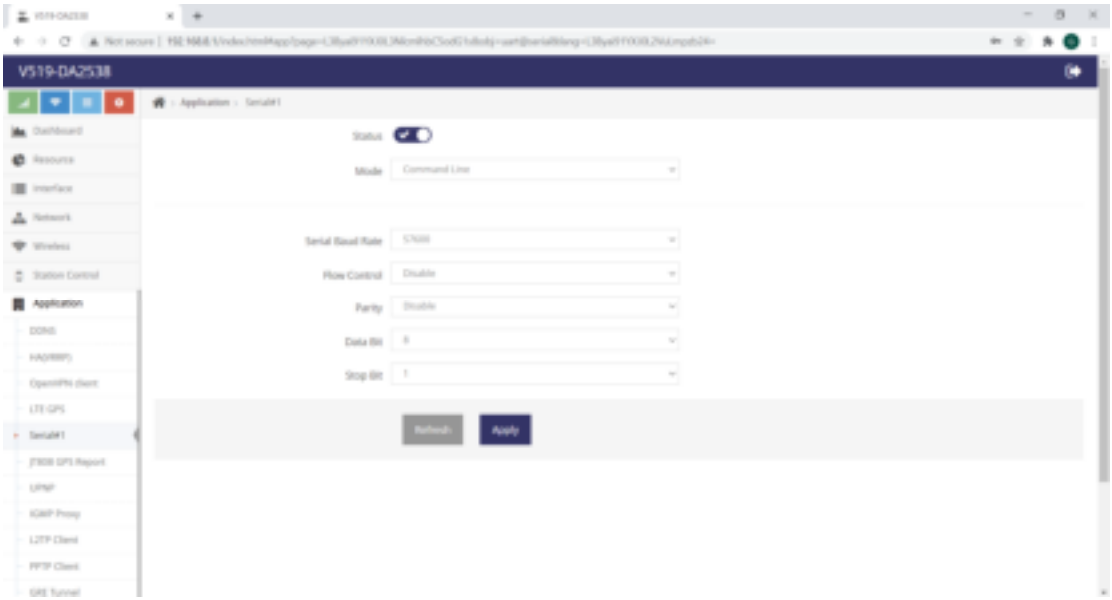
Once enabled, GPS data will be broadcasted via the assigned port. But for the terminal connected to the router, all you have to do is to open the

corresponding port to get the GPS information.



6.3 Serial Port

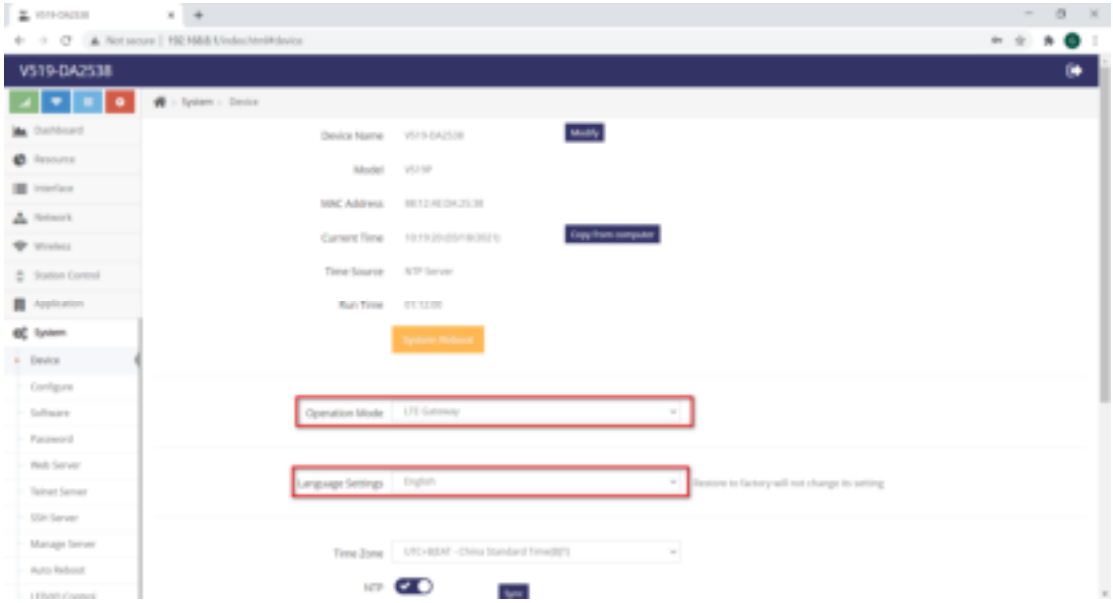
Only 1ch RS232 can be supported. RS485 can be customized if required. The serial port can also be worked as GPS positioning, terminal command line, ModBus, data transparent transmission.



7. System

7.1 Device

In this page, it allows users to change operation mode and system language.



7.1.1Operation Mode

5x operation modes can be selected: LTE Gateway (By Default), Gateway, 2.4G WISP, AP, Mix. Please see below photo:

1. **LTE Gateway**
   By default, it's LTE Gateway mode, all you have to do is to insert 3G/4G SIM card, then the router will auto recognize and register to the corresponding network of 3G/4G. You can also custom and select your ISP.
2. **Gateway**
   When you're ready to use "Gateway" mode (standard wireless router mode), the WAN port of router should be connected to the modem via ethernet cable to dial.

1) Obtain an IP address automatically

Please go to System->Device->Operation Mode->Select "Gateway"->Confirm, then the router will reboot. Later please access the router from browser again, and go to Network->LAN-> Select "DHCP" from dropdown list of Dial Mode ->Click "Confirm" and then the router will obtain an IP address automatically from ISP.

2) Manually Set IP

Please go to System->Device->Operation Mode->Select "Gateway"->Confirm,

then the router will reboot. Later please access the router from browser again, and go to Network->LAN->Select "Static IP" from dropdown list of Dial Mode ->Enter IP address, Subnet Mask, Gateway, DNS and other parameters you get from ISP->Click "Confirm"

3) PPPoE

Please go to System->Device->Operation Mode->Select "Gateway"->Confirm, then the router will reboot. Later please access the router from browser again, and go to Network->LAN-> Select "PPPoE" from dropdown list of Dial Mode ->Enter username, password and other parameters you get from ISP->Click "Confirm"

3. 2.4G WISP

1) Please go to System->Device->Operation Mode->2.4G WISP;
2) Click "Scan" and it'll pop up one dialog window of all searched wireless network, select one and enter username, password if required to connect.

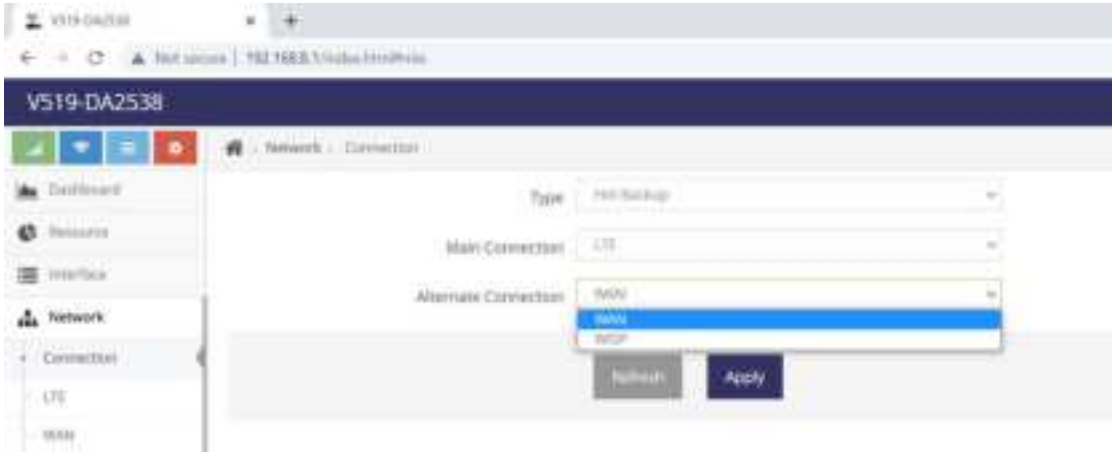
4. AP (Access Point)

Please go to System->Device->Operation Mode->Select "AP"->Confirm. Try to connect the WAN port of V519 to the LAN port of the primary router via ethernet cable, then it can turn your wired network into wireless network.

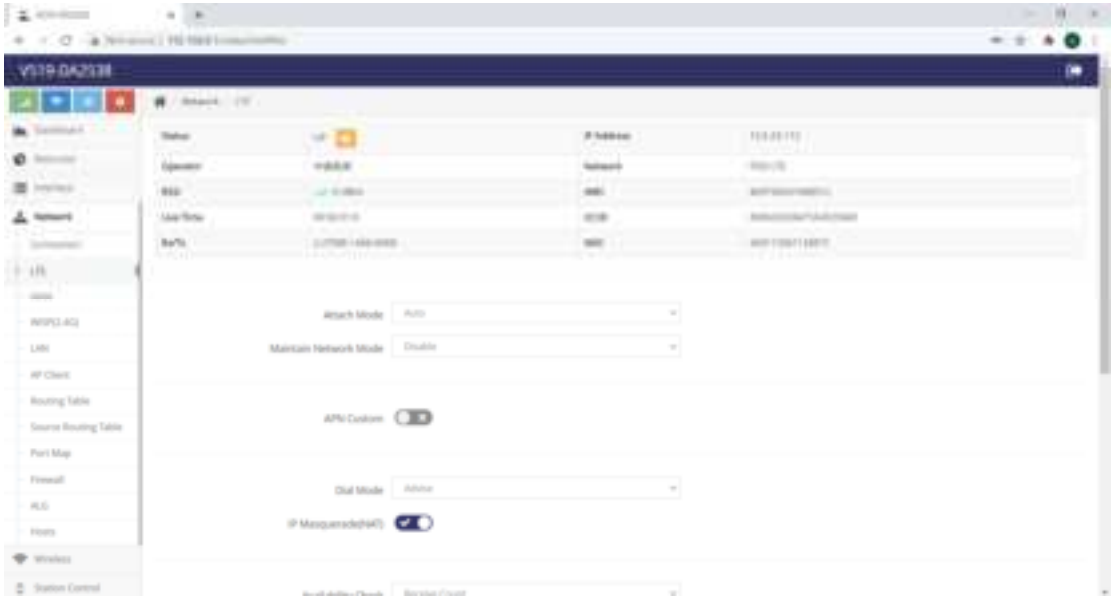
5. Mix

In the Mix mode, it supports 4G, wired, wireless backup. When it's failed to connect to network for main connection, the router will auto switch to the backup module to make sure the router can connect to the Internet normally.

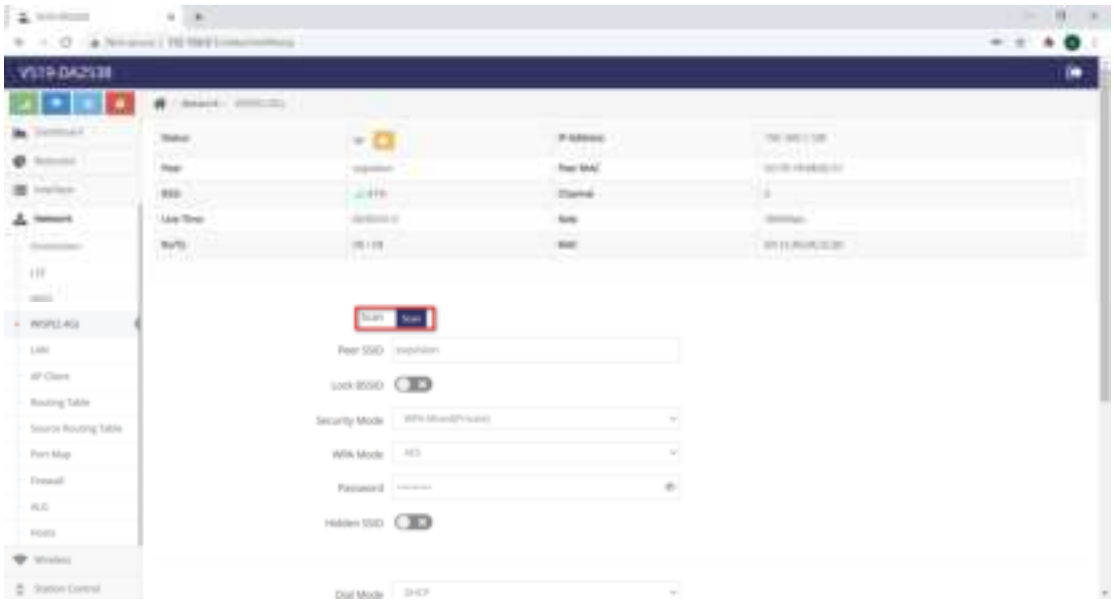
1) Go to System->Device->Operation Mode->Select "Mix"
2) After rebooting, go to Network->Connection->Set Main Connection as "LTE" and Alternate Connection as "WAN":



3) Enter the corresponding parameters, click "confirm" and the router will reboot;
4) Insert SIM card and set parameters of 4G, and connected to 4G successfully.



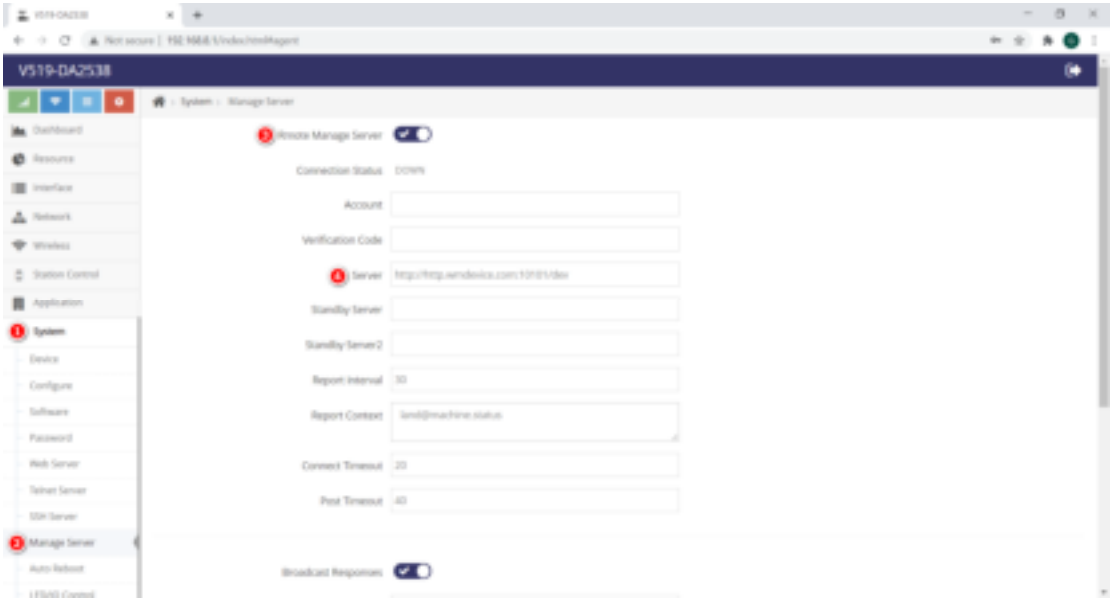
5) Set wireless connection and enter related parameters:



6) Click “Interface” and you’ll see it’s all connected to 4G and WiFi:

7.6 Manage Server

In this page, it allows users to configure parameters of remote management server. After configuration, the router can be connected to the remote server, through remote server, it's okay to configure the router. But for remote management server, the customized integration protocol will be required. Please contact your seller for more details.



FCC Caution.

§ 15.19 Labelling requirements.
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

§ 15.21 Information to user.
Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

§ 15.105 Information to the user.
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

RF warning for Mobile device:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated withminimum distan ce 20cm between the radiator & your body.