
Data Transfer Unit

Model: V519

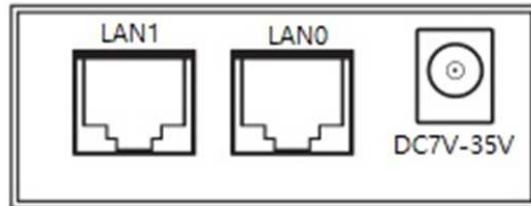
4G/3G Industrial Router

4G/3G Serial Server

User Manual

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1. Interface

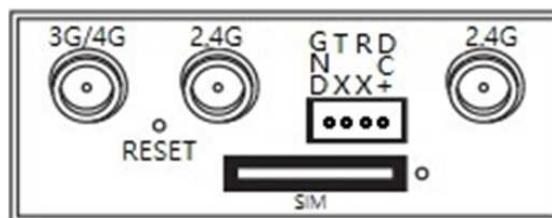


Front

- 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:

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GND	TX	RX	DC+
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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

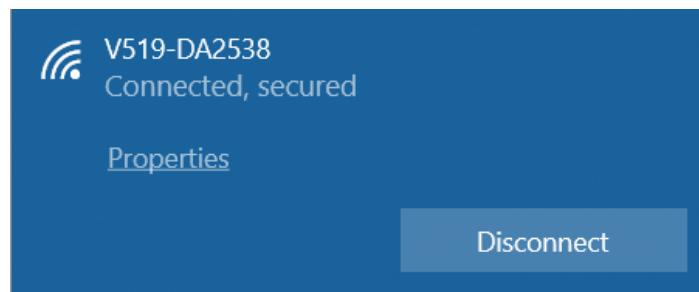
Correctly insert SIM card and power on the router with DC12V adapter.

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:

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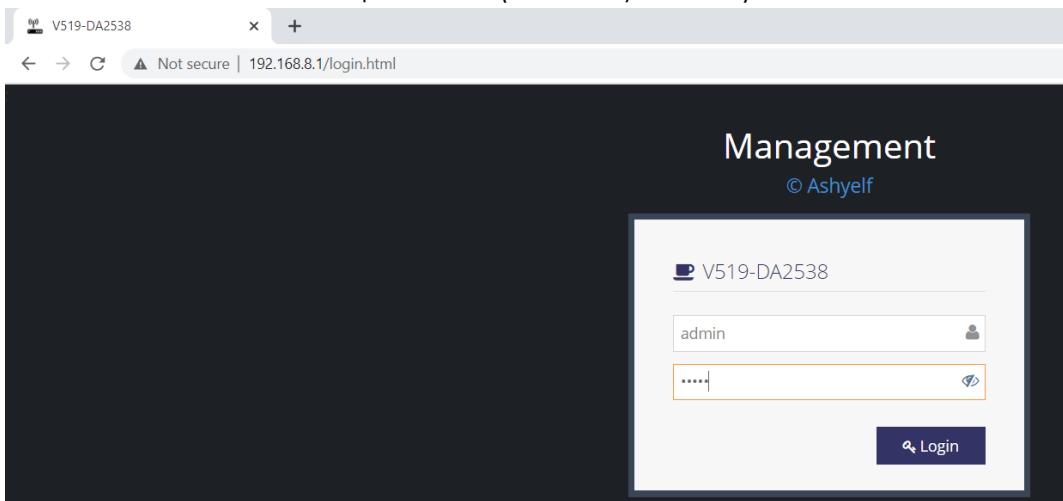
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```
C:\Users\Gordon>ping 192.168.8.1
```

```
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
```

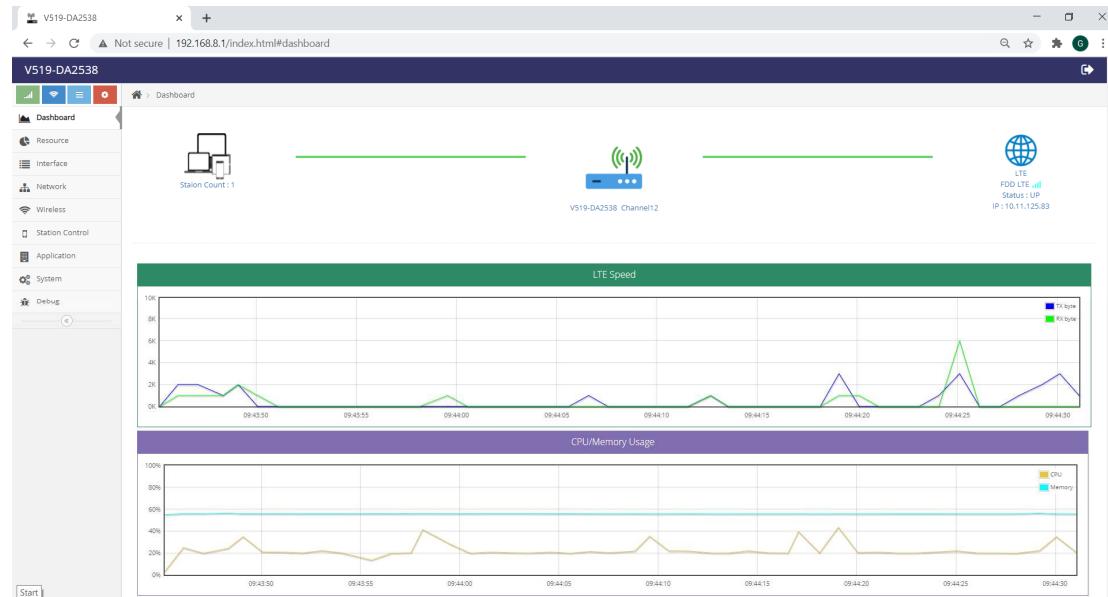
2.5 Access router from browser

- 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



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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:

Status		IP Address	
Operator	中国电信	Network	FDD LTE
RSSI	-51dBm	IMEI	869756047488512
Live Time	00:12:37:0	ICCID	89860320847554925840
Rx/Tx	4.42MB / 1.12MB	IMSI	460115061128571

Configuration Options:

- Attach Mode: Auto
- Maintain Network Mode: Disable
- APN Custom:
- Dial Mode: Advise
- IP Masquerade(AT):

Availability Check	
Duration(sec)	20
Test Timer	30
Request packets	1

4. Interface

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

LTE	
Status	UP
Operator	中国电信
Network	FDD LTE
RSSI	-51dBm CSQ:29 RSSI:-55dBm
RSRP/RSRQ	-109dBm / -12dB
SINR/SNR	-19.0dB
Band	LTE BAND 3
IP Address	10.11.125.83
Subnet Mask	255.255.255.248
Gateway	10.1.1.25.84
DNS	202.96.134.33
DNS2	202.96.128.166
Rx/Tx	4.75MB / 1.24MB
Live Time	00:14:05:0
VID/PID	27c/0125
IMEI	869756047488512
IMSI	460115061128571
PLMN	46011
ICCID	89860320847554925840

LAN	
Status	DOWN
MAC	88:12:4E:DA:25:38
IP Address	
Subnet Mask	
Rx/Tx	

Switch	
LAN	DOWN
WAN	DOWN

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

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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:

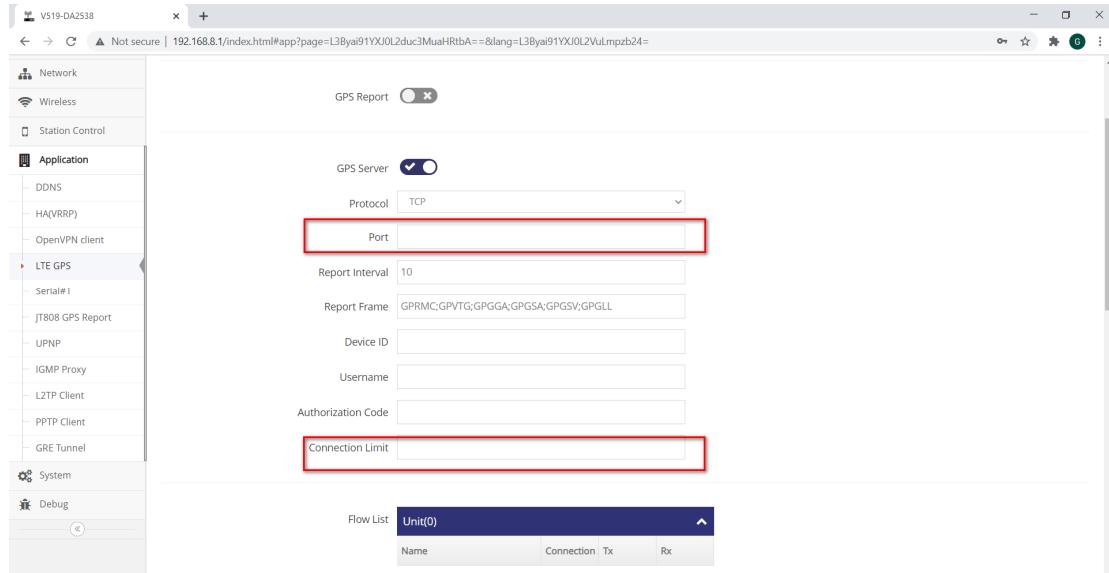
6.2.2 GPS Server

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

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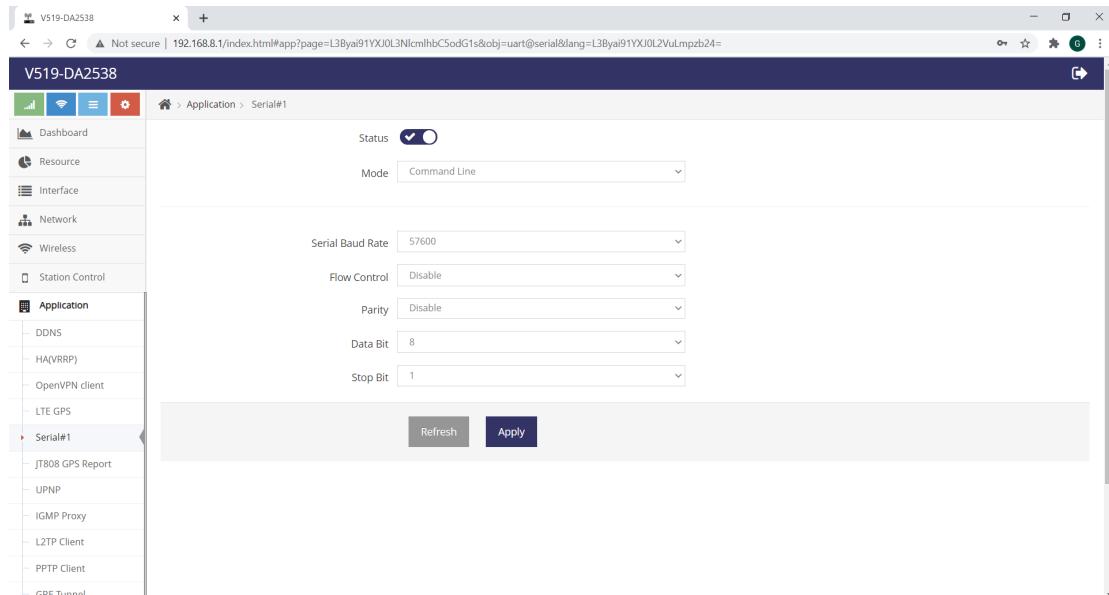
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corresponding port to get the GPS information.



6.3 Serial Port

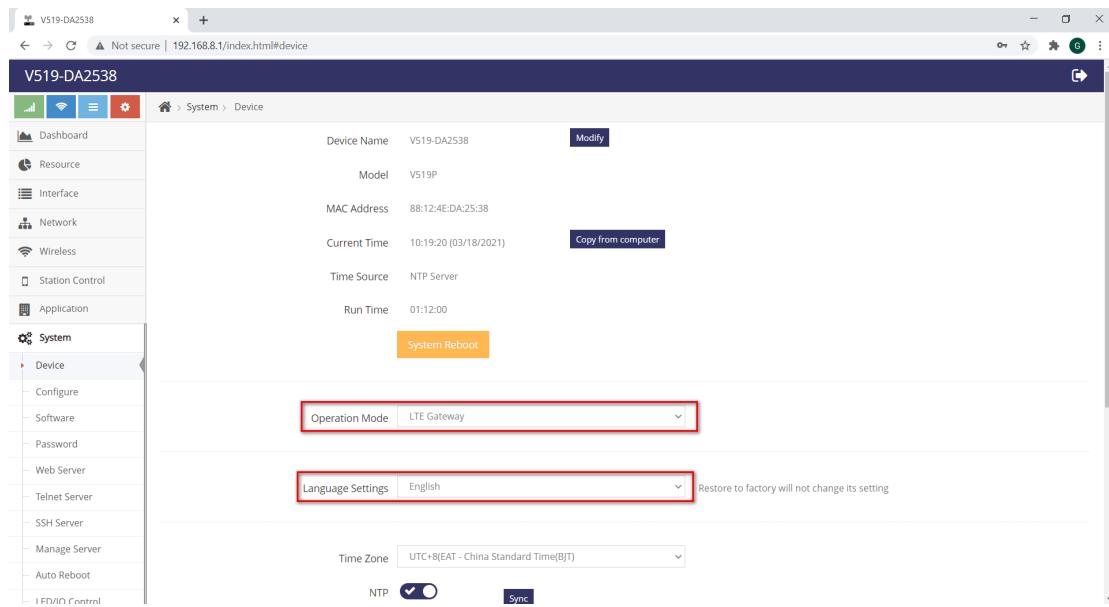
Only 1ch RS232 can be supported. RS485 can be customized if required. The serial port can also be worked as GPS positioning, terminal command line, ModBus, data transparent transmission.



7. System

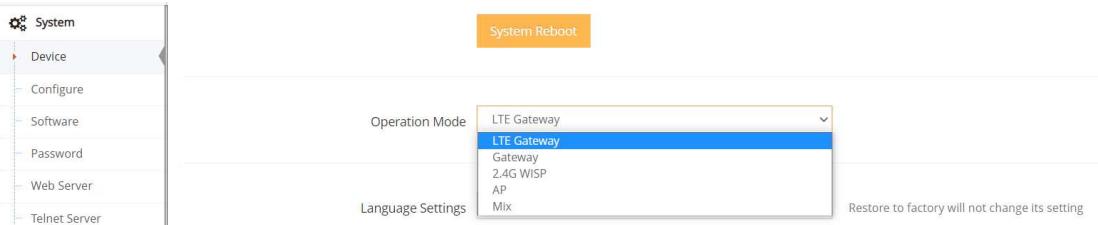
7.1 Device

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



7.1.1 Operation 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,

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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.

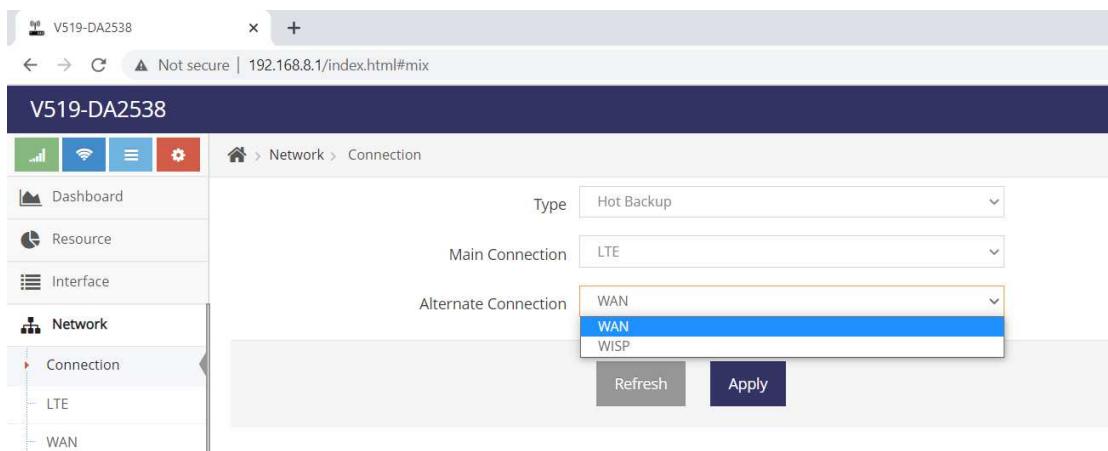
4. AP (Access Point)

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.

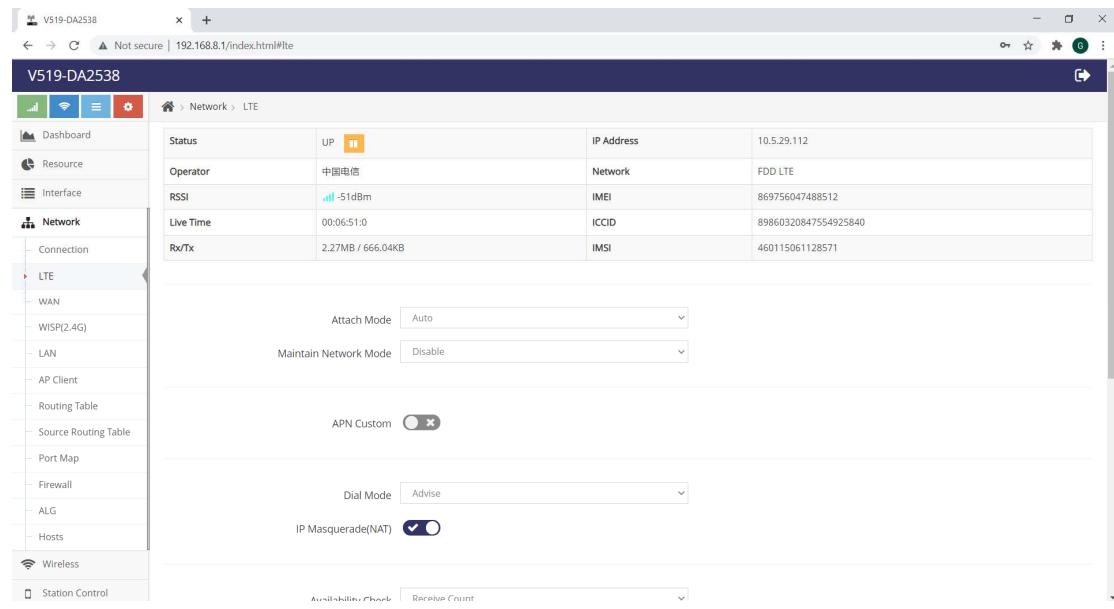
- 1) Go to System->Device->Operation Mode->Select “Mix”
- 2) After rebooting, go to Network->Connection->Set Main Connection as “LTE” and Alternate Connection as “WAN”:



- 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.

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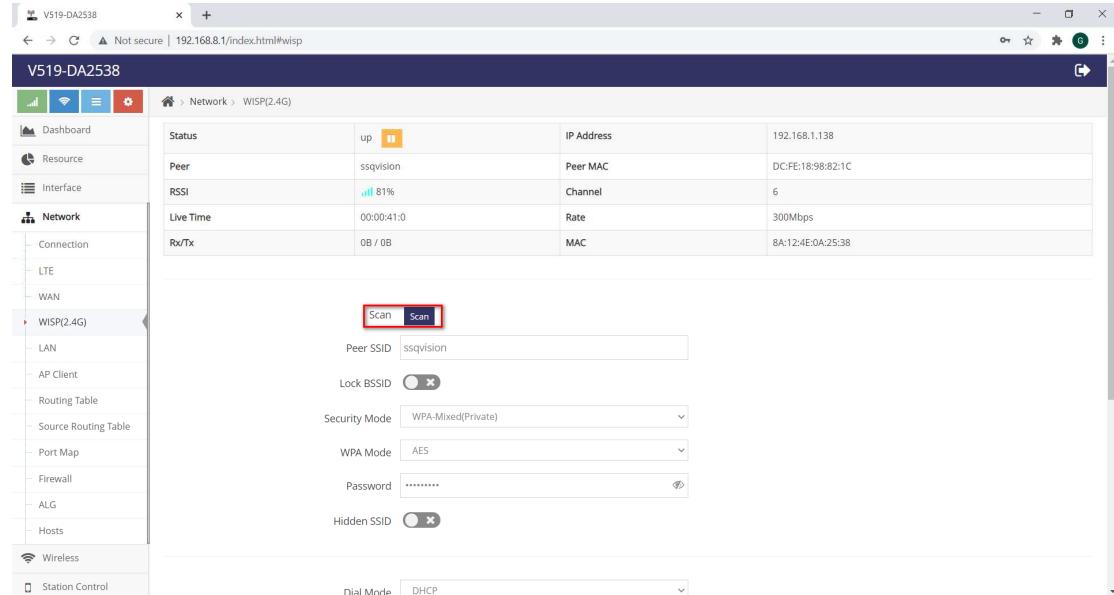
The screenshot shows the LTE network configuration page. The left sidebar has 'LTE' selected under 'Network'. The main table shows the following data:

Status	UP	IP Address	10.5.29.112
Operator	中国电信	Network	FDD LTE
RSSI	-51dBm	IMEI	869756047488512
Live Time	00:06:51:0	ICCID	89860320847554925840
Rx/Tx	2.27MB / 666.04KB	IMSI	460115061128571

Below the table are several configuration options:

- Attach Mode: Auto
- Maintain Network Mode: Disable
- APN Custom: Off
- Dial Mode: Advise
- IP Masquerade(NAT): On

5) Set wireless connection and enter related parameters:



The screenshot shows the WISP(2.4G) network configuration page. The left sidebar has 'WISP(2.4G)' selected under 'Network'. The main table shows the following data:

Status	up	IP Address	192.168.1.138
Peer	ssqvision	Peer MAC	DC:FE:18:98:82:1C
RSSI	81%	Channel	6
Live Time	00:00:41:0	Rate	300Mbps
Rx/Tx	0B / 0B	MAC	8A:12:4E:0A:25:38

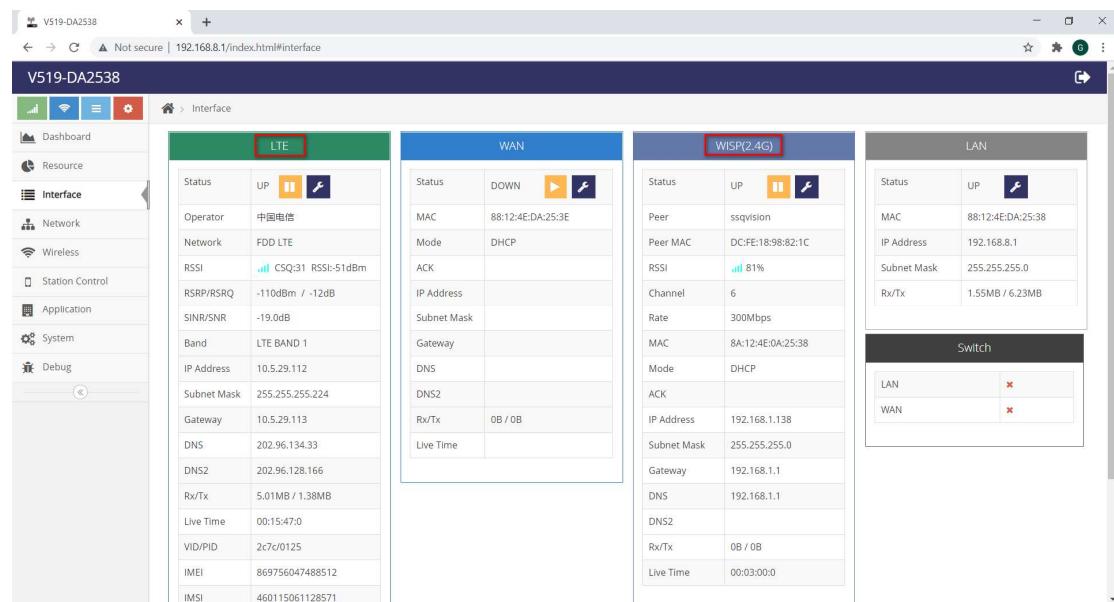
Below the table are configuration options:

- Scan: Scan (button)
- Peer SSID: ssqvision
- Lock BSSID: On
- Security Mode: WPA-Mixed(Private)
- WPA Mode: AES
- Password: (redacted)
- Hidden SSID: On

6) Click "Interface" and you'll see it's all connected to 4G and WiFi:

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The screenshot shows the 'Interface' section of the V519-DA2538 management interface. It displays network status for four interfaces: LTE, WAN, WISP(2.4G), and LAN. The LTE interface is highlighted with a red box. The WAN, WISP(2.4G), and LAN interfaces are also highlighted with red boxes. The 'Switch' section is shown below the LAN table.

LTE	
Status	UP
Operator	中国电信
Network	FDD LTE
RSSI	CSQ:31 RSSI:-51dBm
RSRP/RSRQ	-110dBm / -12dB
SINR/SNR	-19.0dB
Band	LTE BAND 1
IP Address	10.5.29.112
Subnet Mask	255.255.255.224
Gateway	10.5.29.113
DNS	202.96.134.33
DNS2	202.96.128.166
Rx/Tx	5.01MB / 1.38MB
Live Time	00:15:47:0
VID/PID	2c7c/0125
IMEI	869756047488512
IMSI	460115061128571

WAN	
Status	DOWN
MAC	88:12:4E:DA:25:3E
Mode	DHCP
ACK	
IP Address	
Subnet Mask	
Gateway	
DNS	
DNS2	
Rx/Tx	0B / 0B
Live Time	

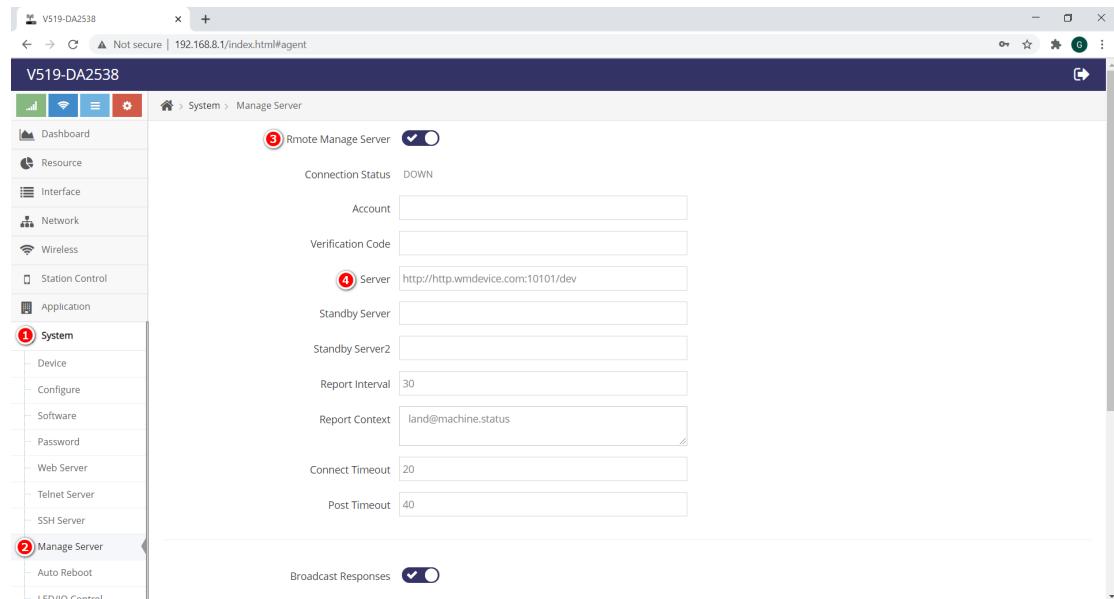
WISP(2.4G)	
Status	UP
Peer	ssqvision
Peer MAC	DC:FE:18:98:82:1C
RSSI	81%
Channel	6
Rate	300Mbps
MAC	8A:12:4E:0A:25:38
Mode	DHCP
ACK	
IP Address	192.168.1.138
Subnet Mask	255.255.255.0
Gateway	192.168.1.1
DNS	192.168.1.1
DNS2	
Rx/Tx	0B / 0B
Live Time	00:03:00:0

LAN	
Status	UP
MAC	88:12:4E:DA:25:38
IP Address	192.168.8.1
Subnet Mask	255.255.255.0
Rx/Tx	1.55MB / 6.23MB

Switch	
LAN	✗
WAN	✗

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.



The screenshot shows the 'Manage Server' configuration page under the 'System' section. The 'Remote Manage Server' toggle is turned on. The 'Connection Status' is shown as 'DOWN'. The configuration fields include: Account (empty), Verification Code (empty), Server (http://http.wmdevice.com:10101/dev), Standby Server (empty), Standby Server2 (empty), Report Interval (30), Report Context (land@machine.status), Connect Timeout (20), and Post Timeout (40). The 'Broadcast Responses' toggle is also turned on.

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 with minimum distance 20cm between the radiator & your body.
