



UCY-I500

Industrial Grade 5G WiFi6 Dual Band Wireless Router

User Manual

- Support 5G NR Sub-6 Cellular Network
- Rugged Industrial Enclosure, Anti-Interference, External Antenna
- Gigabit Ethernet Ports and Serial Interface with Pass-through
- Standard 48V PoE Power / 12V DC Power Input
- 3000Mbps Dual Band WiFi6 802.11ax
- Support Remote Management and Upgrade

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Product Description

UCY I500 is an industrial grade 5G WIFI6 dual-band wireless router, that integrates multiple functions such as new 5G cellular broadband Internet access, high speed WIFI transmission, serial port pass-thru transmission, and backend remote management. It is based on MT7981 chipset solution with 2x2 802.11ax that support data transfer rate up to 3000Mbps and enable to build a stable high-speed wireless network. In addition, UCY I500 has high-performance wireless characteristics, which can obtain larger wireless coverage area and better wall penetration performance. UCY I500 supports the wireless access of up to hundreds of wireless terminals that satisfy with the application scenario requirements of high-density wireless terminals. At the same time, UCY I500 also has good compatibility and supports the access of most wireless terminals on the market. Users can use mobile phones, tablets or laptops to connect conveniently. It provides more processing performance, richer interfaces and higher network connection speed than ordinary industrial routers.

This product is suitable for different application scenarios, such as vehicle WIFI, video transmission, PLC remote control, intelligent express cabinet, video surveillance, 5G coverage, etc.

Product Features

Wi-Fi6 (IEEE 802.11ax) Standard

- 802.11ax, as the latest generation of IEEE 802.11 Wi-Fi standard, can increase user access capacity and bandwidth in high-density access scenarios, reduce service delays, and enhance user experience.
- Support 2.4GHz and 5GHz dual-frequency UL/DL MU-MIMO, enabling router to send data to multiple terminals at the same time, and the utilization rate of wireless spectrum resources is higher than predecessor 802.11ac.
- Support 1024QAM modulation, data transmission efficiency is increased by 40% compared with 802.11ac (256QAM).
- Support UL/DL OFDMA technology, use different subcarriers to transmit data to multiple terminals at the same time, reduce delay and improve network efficiency.
- Support spatial multiplexing technology, through the BSS coloring mechanism (BSS coloring) so that AP and terminal can distinguish overlapping BSS (basic service set), to minimize co-channel interference.
- Support target wake time* mechanism, allowing AP and terminal to negotiate sleep and wake time, reducing conflicts between terminals and unnecessary wake-up times, saving terminal power, and improving battery life.

Multi-User Uplink and Downlink-multiple Input and Multiple Output Technology (MU-MIMO)

Support MU-MIMO technology, support up to 4 spatial streams, 2.4GHz frequency band supports 2 spatial streams, 5GHz frequency band supports 2 spatial streams, through DL/UL MU-MIMO technology, AP can send data to multiple terminals at the same time, The utilization rate of wireless spectrum resources has been doubled, increasing the number of access users and bandwidth, and improving user experience in high-density access scenarios.

High-Speed Access

Supports 160MHz bandwidth. The increase in bandwidth has increased the available data sub-carriers and expanded the transmission channel; in addition, the use of 1024QAM modulation, MU-MIMO and other technologies makes the 5GHz single frequency band rate up to 2.4Gbps, and the whole machine rate is up to 3Gbps.

5GHz Priority

The AP supports both 2.4GHz and 5GHz dual-band access. By controlling the terminal to preferentially access the 5GHz frequency band, dual-frequency end users in the 2.4GHz frequency band are migrated to the 5GHz frequency band, reducing the load and interference on the 2.4GHz frequency band, and improving user experience.

Industrial Design

- Based on Qualcomm IPQ5018 Chipset Solution
- Wide voltage input design: 9 ~ 36V
- Industrial grade software and hardware watchdog design, trouble free and reliable operation in power station, transportation, and industrial control environment application
- Industrial grade EMC electromagnetic compatibility and radiation performance, passed the GB/T17626.5-2008 Level 4 test standard
- Industrial grade components, working temperature: -40 ~ +60°C
- Industrial enclosure, suitable for extreme environments
- Fan-less heat dissipation technology effectively reduces the failure rate of the equipment
- SIM card protection design
- Meet the trouble-free and reliable operation under vibration and shock environment

Rugged, Stable and Reliable

- Apply complete anti-disconnection mechanism that to ensure the end data terminal is always online
- The product passed EMC test requirements
- The Ethernet interface built-in 1.5KV electromagnetic isolation protection GB/T17626.5-2008 (Level 4)
- SIM/UIM interface built-in 1.5KV ESD protection GB/T17626.5-2008 (Level 4)
- Built-in reserve phase protection and overvoltage protection for the power interface

High Speed Cellular Network

- Support 5G SA (Standalone) and NSA (Non-Standalone) network
- Backward compatible with 4G Cat18(UL)/Cat20(DL) or Cat12(UL)/Cat13(DL)*
- Support Band Lock, Base Station Lock
- Support SIM PIN Code Lock
- Support Network Mode Lock

LED Description

LED Type	State	Description
PWR	Long bright	Normal power input
	No Light	Abnormal power input
SYS	Long bright	System exception
	No Light	System exception
	Blinking Light	System startup
2.4G	Long bright	WIFI On
	No Light	WIFI Off
	Blinking Light	Data In/Out
5.8G	Long bright	WIFI On
	No Light	WIFI Off
	Blinking Light	Data In/Out
NET	Long bright	Internet Connected
	No Light	Not Connected / Abnormal
Signal	Long bright	Strong signal in 3 grids, moderate signal in 2 grids, weak signal in 1 grid
	No Light	No signal

Quick Start

Mounting Accessories

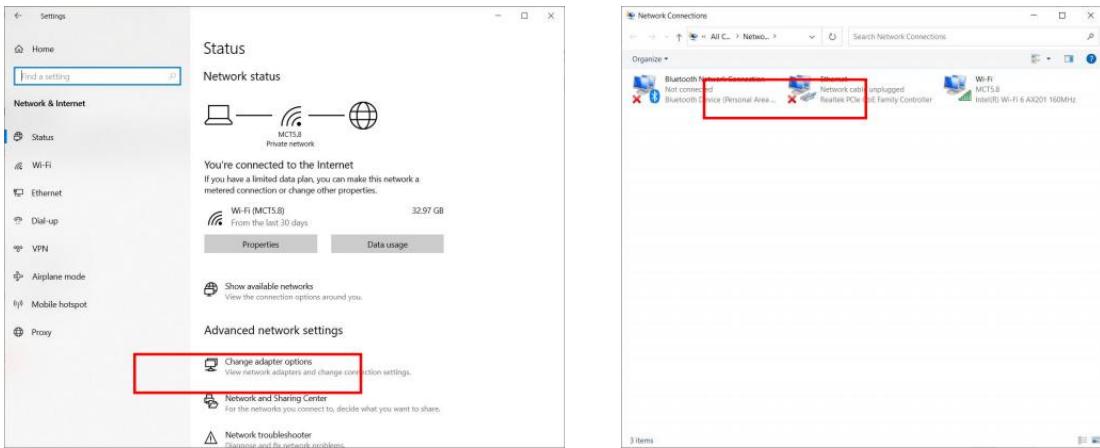
Insert the WiFi antenna, cellular network antenna, and SIM card according to the interface instructions, connect them to a 9-36V DC power supply, observe the indicator light SYS flashing, and the router starts normally.



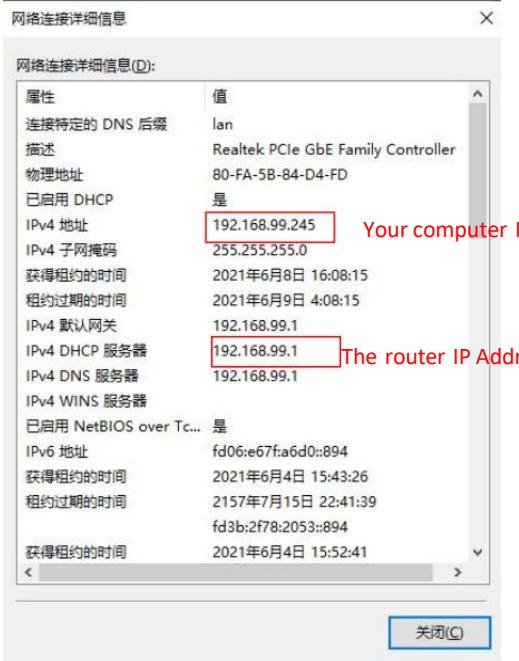
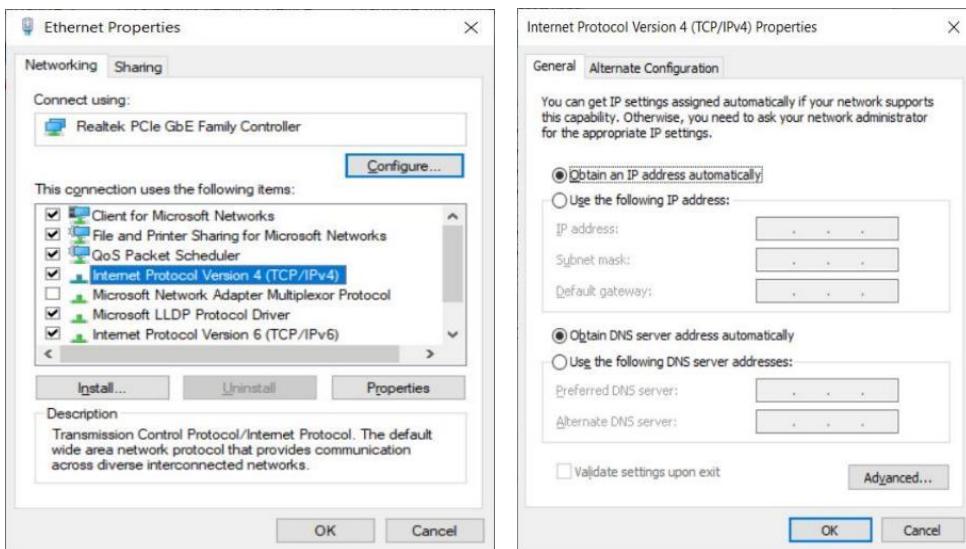
Note: Please do not remove or insert the SIM card with power on, otherwise the SIM card may be damaged.

Connect to the Internet

Correctly set your computer network configuration, now take win10 operating system as an example, use it to open "Settings\Network & Internet\Change Adapter Options" in Control Panel. Double-click the "Ethernet" connection icon.



In the pop-up dialog box, click "Properties", select "Internet Protocol Version 4 (TCP/IPv4)", and then click the "Properties" button; select "Obtain an IP address automatically". After clicking OK to save, the computer will automatically obtain the IP address assigned by the router.



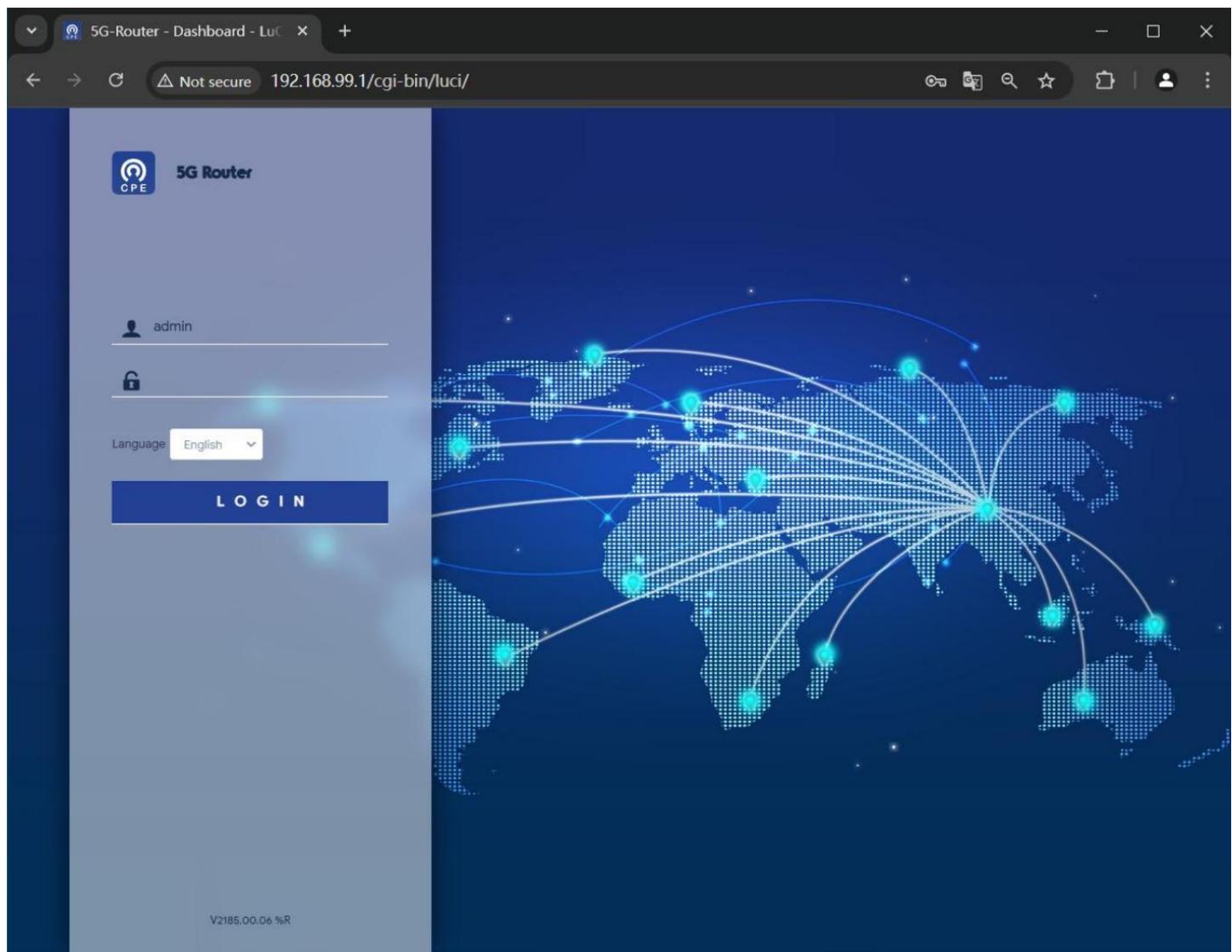
Login to the router

Open a web browser, key in <http://192.168.99.1> in the address bar and press Enter;

Default Username: admin

Default Password: admin

It is recommended to use Google Chrome or Mozilla Firefox browser.



Software Function Column Display

5G Router

- Dashboard**
- System**
 - System
 - Administration
 - Realtime Graphs
 - ACL Settings
 - Backup / Flash
 - Firmware
 - Reboot
- Services**
 - Remote Manager
 - uHTTPd
 - Dynamic DNS
 - UPnP
 - Watchcat
 - Policy Routing
 - MWAN3 Helper
 - SNMPD
 - ser2net
 - Network Shares
- WiFi**
 - 2.4GHz
 - 5.8GHz
- Network**
 - Interfaces
 - DHCP and DNS
 - Hostnames
 - Static Routes
 - SQM QoS
 - Diagnostics
 - Firewall
 - Cellular
 - Load Balancing
- VPN**
 - IPsec
 - OpenVPN
- [Logout](#)

REFRESHING

Internet

IPv4 Internet	IPv6 Internet
Connected: YES	Connected: YES
Uptime: 0h 32m 42s	Uptime: 0h 32m 22s
Protocol: DHCP client	Protocol: DHCPv6 client
IPv4: 10.79.87.42	IPv6 prefix: -
GatewayV4: 10.79.87.1	GatewayV6: fe80::4086:3bff:fe27:a6fa
DNSv4:	DNSv6:
120.196.165.7.221.179.38.7	2409:8057:2000::8,2409:8057:2000:4::8

System

Hostname: 5G-Router
Uptime: 0h 35m 21s
Local Time: 2025-02-05 08:12:41
Kernel Version: 5.4.238
Model: Cellular Router
Architecture: ARMv8 Processor rev 4
Firmware Version: V2185.00.06
MEM Usage: 78.82%
CPU Usage: 3.96%
Load Average: 1.03, 1.03, 0.98

DHCP Devices

Hostname	IP Address	MAC
DESKTOP-gongkai	192.168.99.208	AA:80:38:39:45:68

Cellular

Device: RM500U-CN	(E/A/U)RFCN: 152650
Software Version: RM500UCNAAR01A18M2G_01.001.01.001	BWUL/BWDL: -/-
IMEI: 868227050435833	(T/L/R)AC(hex): 1425A1
IMSI: 460003462287941	CELLID(hex): C1E9DA003
ICCID: 8980000192288007422	Cell PCI: 660
SIM: READY	RSSI: -
Network Desc: NR5G-SA	SINR/ECIO: 20
PLMN: 46000	RSRP: -68
Network/band: 28	RSRQ: -5

Page Function Introduction Dashboard

On the Dashboard page, you can see basic information such as the firmware version number, cellular network information, and network connection status of the router.

5G Router

Dashboard

- System >
- Services >
- WiFi >
- Network >
- VPN >
- Logout

Internet

IPv4 Internet	IPv6 Internet
Connected: YES	Connected: YES
Uptime: 0h 15m 35s	Uptime: 0h 15m 15s
Protocol: DHCP client	Protocol: DHCPv6 client
IPv4: 10.79.87.42	IPv6 prefix: -
GatewayV4: 10.79.87.1	GatewayV6: fe80::4086:3bff:fe27:a6fa
DNSv4: 120.196.165.7.221.179.38.7	DNSv6: 2409:8057:2000::8,2409:8057:2000:4::8

System

Hostname: 5G-Router
Uptime: 0h 18m 14s
Local Time: 2025-02-05 07:55:34
Kernel Version: 5.4.238
Model: Cellular Router
Architecture: ARMv8 Processor rev 4
Firmware Version: V2185.00.06
MEM Usage: 78.11%
CPU Usage: 4.49%
Load Average: 1.00, 1.00, 0.76

DHCP Devices

Hostname	IP Address	MAC
DESKTOP-gongkai	192.168.99.208	AA:80:38:39:45:68

Cellular

Device: RM500U-CN	(E/A/U)RFCN: 152650
Software Version: RM500UCNAAR01A18M2G_01.001.01.001	BWUL/BWDL: /-
IMEI: 868227050435833	(T/L/R)AC(hex): 1425A1
IMSI: 460003462287941	CELLID(hex): C1E9DA003
ICCID: 8980000192288007422	Cell PCI: 660
SIM: READY	RSSI: -
Network Desc: NR5G-SA	SINR/ECIO: 19
PLMN: 46000	RSRP: -68
Network/band: 28	RSRQ: -6

Introduction to System Functions

System

Generic

General settings

Here you can configure the basic aspects of your device like its hostname or the timezone.

The screenshot shows the 5G Router web interface. The left sidebar has a 'System' section selected. The main content area is titled 'System Properties' with tabs for 'General Settings' (selected), 'Logging', 'Time Synchronization', and 'Language and Style'. Under 'General Settings', there are fields for 'Local Time' (2025-02-05 07:57:35), 'Sync' buttons for 'SYNC WITH BROWSER' and 'SYNC WITH NTP-SERVER', 'Hostname' (5G-Router), 'Description' (optional short description), 'Notes' (optional free-form notes), and a 'Timezone' dropdown set to 'UTC'. A status bar at the top right says 'REFRESHING'.

Logging

Configure system log related information here.

The screenshot shows the 5G Router web interface. The left sidebar has a 'System' dropdown open, with 'Logging' selected. The main content area is titled 'System Properties' under the 'Logging' tab. It includes fields for 'System log buffer size' (64 kB), 'External system log server' (0.0.0.0), 'External system log server port' (514), 'External system log server protocol' (UDP), 'Write system log to file' (/tmp/system.log), 'Log output level' (Debug), and 'Cron Log Level' (Debug). At the bottom are 'SAVE & APPLY', 'SAVE', and 'RESET' buttons.

Time Synchronization

Configure NTP time synchronization related information here.

The screenshot shows the 5G Router web interface. The left sidebar has a 'System' dropdown open, with 'Time Synchronization' selected. The main content area is titled 'System Properties' under the 'Time Synchronization' tab. It includes a checkbox for 'Enable NTP client' (checked) and a checkbox for 'Provide NTP server' (unchecked). Below is a section for 'Use DHCP advertised servers' (checked) with a list of NTP server candidates: 0.openwrt.pool.ntp.org, 1.openwrt.pool.ntp.org, 2.openwrt.pool.ntp.org, and 3.openwrt.pool.ntp.org. At the bottom are 'SAVE & APPLY', 'SAVE', and 'RESET' buttons.

Language and Style

Configure the page language and theme style here.

REFRESHING

System

Here you can configure the basic aspects of your device like its hostname or the timezone.

System Properties

General Settings Logging Time Synchronization Language and Style

Language English

Design Argon

SAVE & APPLY SAVE RESET

V2186.00.06 %R

System Log

View the router's system log here.

```

Mon Apr 17 13:19:30 2023 user.info kernel: [ 7.847831] block: ext4 not configured
Mon Apr 17 13:19:30 2023 user.info kernel: [ 7.852492] mount: root switching to jffs2 overlay
Mon Apr 17 13:19:30 2023 kern.warn kernel: [ 7.860168] overlayfs: upper fs does not support tmppfile.
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 7.866114] overlays: 'vino' feature enabled using 32 upper inode bits.
Mon Apr 17 13:19:30 2023 user.debug kernel: [ 7.874740] urandom-seed: Seeding with letcusrandom seed.
Mon Apr 17 13:19:30 2023 user.info kernel: [ 7.923582] proc - early-
Mon Apr 17 13:19:30 2023 user.info kernel: [ 7.926532] proc - watchdog -
Mon Apr 17 13:19:30 2023 user.info kernel: [ 8.080515] random: jhm: uninitialized urandom read (4 bytes read)
Mon Apr 17 13:19:30 2023 user.info kernel: [ 8.080516] random: crng: uninitialized urandom read (4 bytes read)
Mon Apr 17 13:19:30 2023 user.info kernel: [ 8.441801] proc - watchdog -
Mon Apr 17 13:19:30 2023 user.info kernel: [ 8.476077] proc - ubus -
Mon Apr 17 13:19:30 2023 kern.notice kernel: [ 8.521713] random: ubusd: uninitialized urandom read (4 bytes read)
Mon Apr 17 13:19:30 2023 user.info kernel: [ 8.531905] proc - init -
Mon Apr 17 13:19:30 2023 user.info kernel: [ 8.728054] unrgd: v1.0.2 started.
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.730136] random: urandom: 22 random warning(s) missed due to ratelimiting
Mon Apr 17 13:19:30 2023 user.info kernel: [ 8.798334] kmodload: loading kernel modules from letcmodules.dl
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.839323] RPC: Registered named UNIX socket transport module.
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.845254] RPC: Registered udp transport module.
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.849960] RPC: Registered tcp transport module.
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.854458] RPC: Registered tcp NFSv4.1 backchannel transport module.
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.860272] NET: Registered protocol family 15
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.872371] ip: registered protocol family 2
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.877944] tun: Universal TUN/TAP device driver, 1.6
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.897310] l2tp: core L2TP core driver, V2.0
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.902454] l2tp: netlink-L2TP netlink interface
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.908905] gre: GRE over IPv4 demultiplexor driver
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.914886] [ip_gre]: GRE over IPv4 tunneling driver
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.922162] [ip_gre]: GRE over IPv6 tunneling driver
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.923716] ip: registering kernel (copyright (C) 1995 okir@monad.swb.de).
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.984276] GACT: probability on
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.987976] Mirroredirect action on
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 8.998671] qdisc classifier
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 9.001318] input device check on
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 9.005010] Actions classifier
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 9.010700] ubcone: registered new interface driver cdc_wdm
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 9.023740] ubcone: registered new interface driver qmi_wwan_q
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 9.032847] ubcone: registered new interface driver cdc_ether
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 9.040122] ubcone: registered new interface driver cdc_ncm
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 9.055691] Current mapfilter version: v3.0.1.2
Mon Apr 17 13:19:30 2023 kern.warn kernel: [ 10.073426] mt_wifi module license 'Proprietary' tainted kernel.
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 10.074000] mt_wifi: module is unsigned and tainted due to kernel tainted
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 10.315843] commlnra[0]:commlnra[0]:commlnra_pwr_ondrv=[3]
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 10.315843] commlnra[0]:commlnra[0]:commlnra_pwr_ondrv=[3]
Mon Apr 17 13:19:30 2023 kern.debug kernel: [ 10.494929] D132mAdic Type:0x9740C0m
Mon Apr 17 13:19:30 2023 kern.debug kernel: [ 10.494931] D132mSKU Type:300000m
Mon Apr 17 13:19:30 2023 kern.info kernel: [ 10.153349] commlnra[(opfunr_power_on_internal+24)] [Connlnra Pwr On] BT=[0] FM=[0] GPS=[0] WF=[1] CONNLNRA=[1]
Mon Apr 17 13:19:30 2023 kern.err kernel: [ 10.167651] WiFi@C12L1.get_dbg_setting_by_profile() 4310: debug level setting<INDEX0_debug_level> not found!
Mon Apr 17 13:19:30 2023 kern.err kernel: [ 10.167651] WiFi@C12L1.get_dbg_setting_by_profile() 4313: debug option setting<INDEX0_debug_option> not found!
Mon Apr 17 13:19:30 2023 kern.debug kernel: [ 10.171771] WiFi@C12L1.get_dbg_setting_by_profile() 4317: runtime I/O mapping not provided by arch
Mon Apr 17 13:19:30 2023 kern.debug kernel: [ 10.201559] mt7981_init()=>
Mon Apr 17 13:19:30 2023 kern.debug kernel: [ 10.201561] mt7981_init()=>

```

Kernel Log

View the router's kernel log here.

```

[ 0.000000] Booting Linux on physical CPU 0x0000000000 [0x410fd034]
[ 0.000000] Linux version 5.4.238 (frank@ce7f95ed8ec2) (gcc version 8.4.0 (OpenWrt GCC 8.4.0 r16847-f8282da11e)) #0 SMP Mon Apr 17 13:15:36 2023
[ 0.000000] Machine model: MovingComm 5G Router IS00
[ 0.000000] On node 0 totalpages: 4492
[ 0.000000] DMA32 zone: 1024 pages used for memmap
[ 0.000000] DMA32 zone: 0 pages reserved
[ 0.000000] DMA32 zone: 0 pages for direct I/O
[ 0.000000] DMA32 zone: 0 pages in large I/O zeroth DT
[ 0.000000] psci: probing for conduit method from DT
[ 0.000000] psci: PSCIv1.1 detected in firmware
[ 0.000000] psci: Using standard PSCI v2.0 function IDs
[ 0.000000] psci: MIGRATE_INFO_TYPE not supported.
[ 0.000000] psci: SMC Calling Convention v1.0
[ 0.000000] psci: SMC Enabled, pagesize 0x4096 r192 d29672 u81920
[ 0.000000] pcpu-alloc: s44056 c8192 229672 u81920 alloc=204096
[ 0.000000] pcpu-alloc: [0] o [0] i
[ 0.000000] Detected VPIPT-i cache on CPU0
[ 0.000000] CPU feature: GICv3 system register CPU interface
[ 0.000000] CPU feature: kernel page size isolation disabled by kernel configuration
[ 0.000000] Built 1 zonelists, mobility grouping on. Total pages: 63568
[ 0.000000] Kernel command line: console=ttyS0,115200n1 loglevel=8 earlycon=uart8250,mmio32.0x11002000
[ 0.000000] Dentry cache hash table entries: 32768 (order: 5, 131072 bytes, linear)
[ 0.000000] Inode cache hash table entries: 16384 (order: 5, 131072 bytes, linear)
[ 0.000000] Memory block size: 23040 (25832 available) (6724 kernel code, 448K rdata, 1944K rodata, 448K init, 291K bss, 27712K reserved, 0K cma-reserved)
[ 0.000000] rcu: Hierarchical RCU implementation
[ 0.000000] rcu:  CONFIG_RCU_FANOUT set to non-default value of 32.
[ 0.000000] RCU CPU fanout limit: 32 (RCU_LOCAL_FANOUT) of scheduler-enlistment delay is 25 jiffies.
[ 0.000000] NR_IRQS: 24 - IRQ 54 free allocated IRQs: 0
[ 0.000000] GICv3: GIC: Using split FDI/Deactivate mode
[ 0.000000] GICv3: 640 SPIS implemented
[ 0.000000] GICv3: 0 Extended SPIS implemented
[ 0.000000] GICv3: Distributor has no Range Selector support
[ 0.000000] GICv3: No interrupt remapping
[ 0.000000] GICv3: no VLP support, no direct LPI support
[ 0.000000] GICv3: CPU0: found redistributor 0 region 0x0000000000080000
[ 0.000000] arch_timer: cp15 timer(s) running at 73.000MHz (phys).
[ 0.000000] clocksource: arch_sys_counter: mask: 0xffffffff max_cycles: 0x2ff99eaeb, max_idle_ns: 440795202429 ns
[ 0.000000] clocksource: arch_sys_counter: mask: 0xffffffff max_cycles: 56, max_idle_ns: 13M427: resolution: 76ns, wraps every 439804651110ns
[ 0.000000] Calibration done. Stop timebase value calculated using timer frequency: 26.00 BogoMIPS (ipj+52000)
[ 0.032330] Mount-cache hash table entries: 512 (order: 0, 4096 bytes, linear)
[ 0.030494] Mountpoint-cache hash table entries: 512 (order: 0, 4096 bytes, linear)
[ 0.039093] ASID allocator initialized with 65536 entries
[ 0.047720] smmu: SMU: Initial RBC0 implementation.
[ 0.049720] smmu: Bringing up secondary CPUs
[ 0.054590] Detected VPIPT-i cache on CPU0
[ 0.054617] GICv3: CPU0: found redistributor 1 region 0x00000000000c0a0000
[ 0.054639] CPU0: Booted secondary processor 0x0000000001 [0x410fd034]
[ 0.054701] armv7l/armv7l: Rebuilt userland route 2/2048

```

Administration

Router Password

Change the administrator password for accessing the device.

Router Password	SSH Access	SSH-Keys
Changes the administrator password for accessing the device		
<input type="password"/>	<input type="password"/>	<input type="button" value="SAVE"/>
V2186.00.06 %R		

SSH Access

Change information about SSH access and SCP services.

The screenshot shows the 'SSH Access' configuration page for a 'Dropbear Instance'. The left sidebar is titled '5G Router' and includes a 'System' dropdown menu with options like Dashboard, Administration, Realtime Graphs, ACL Settings, Backup / Flash Firmware, and Reboot. Under 'Services', there are links for WiFi, Network, VPN, and Logout.

The main content area has tabs for Router Password, SSH Access (which is selected), and SSH-Keys. The 'SSH Access' tab contains fields for 'Interface' (set to 'unspecified'), 'Port' (set to '2020'), 'Password authentication' (checked), 'Allow root logins with password' (checked), and 'Gateway Ports' (unchecked). Buttons at the bottom include 'ADD INSTANCE' (blue), 'SAVE & APPLY' (blue), 'SAVE' (blue), and 'RESET' (red).

SSH-Keys

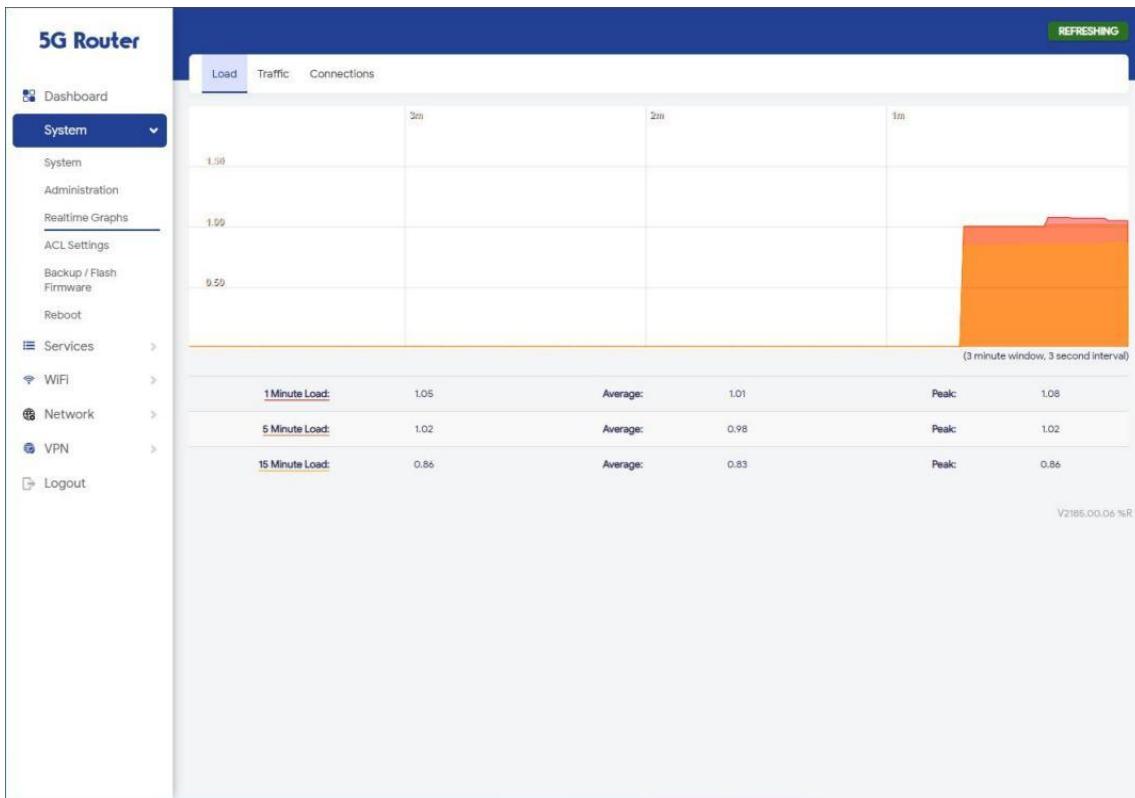
Change the public key file for SSH access.

The screenshot shows the 'SSH-Keys' configuration page. The left sidebar is identical to the previous screenshot. The main content area has tabs for Router Password, SSH Access, and SSH-Keys (which is selected). A message states: 'Public keys allow for the passwordless SSH logins with a higher security compared to the use of plain passwords. In order to upload a new key to the device, paste an OpenSSH compatible public key line or drag a .pub file into the input field.' Below this, it says 'No public keys present yet.' and features a text input field labeled 'Paste or drag SSH key file...' and a blue 'ADD KEY' button. The bottom right corner shows the text 'V21B6.00.06 %R'.

Realtime Graphs

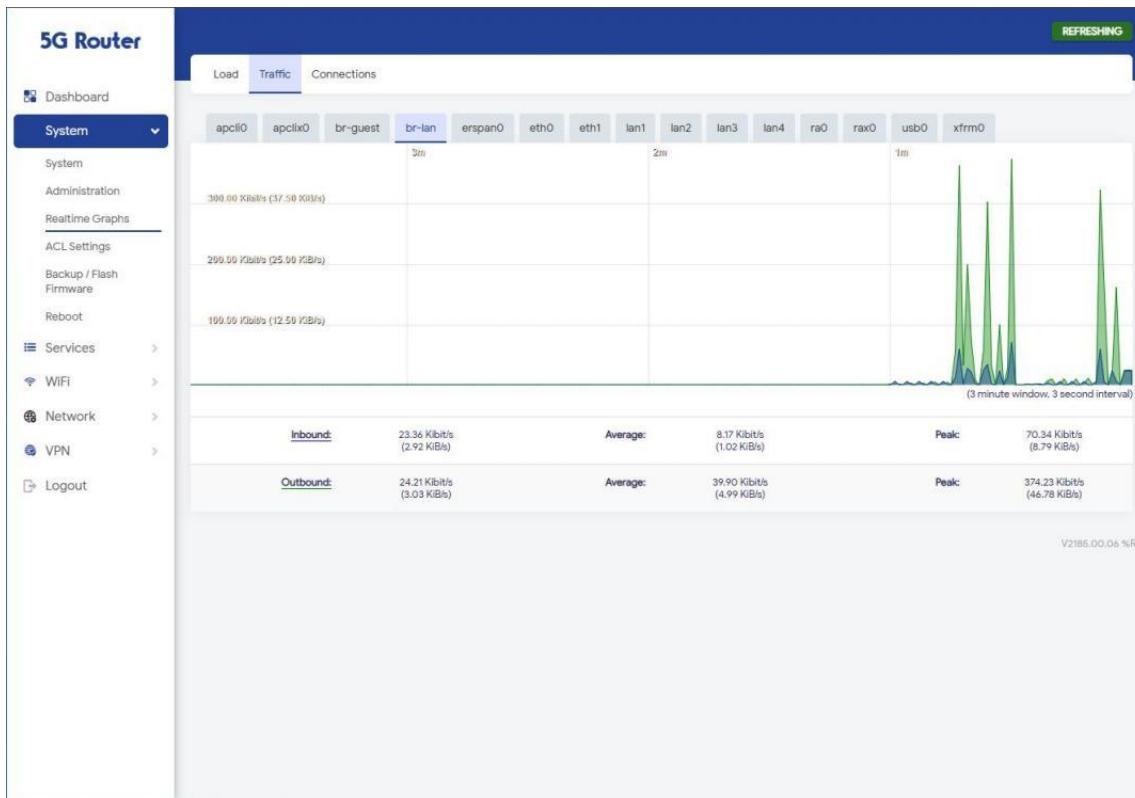
Load

Displays the CPU load for the last 1 minute, 5 minutes, and 15 minutes.



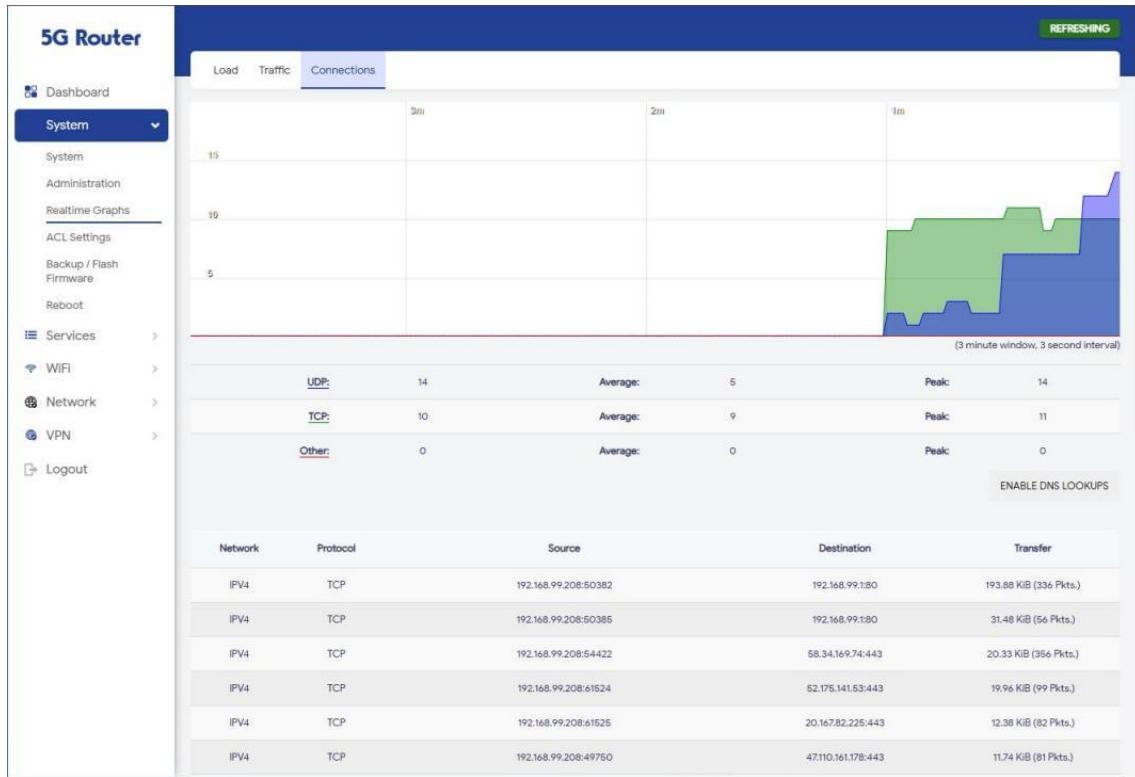
Traffic

Displays the traffic usage of the interface.



Connections

Displays the connectivity of network traffic.



ACL Settings

Configure accounts and permissions for the router administration page.

LuCI Logins

Login name	Session timeout	Read access	Write access	
root	300s	FULL	FULL	<button>EDIT</button> <button>DELETE</button>
admin	300s	FULL	FULL	<button>EDIT</button> <button>DELETE</button>
administrator	300s	FULL	FULL	<button>EDIT</button> <button>DELETE</button>

ADD

SAVE & APPLY ▾ **SAVE** **RESET**

V2186.00.06 %R

Backup / Flash Firmware Flash operations

Actions

Backup, restore factory settings, restore backup configuration and upgrade firmware can be performed.

The screenshot shows the 'Actions' tab selected in the top navigation bar. On the left, a sidebar menu is open under the 'System' category, showing options like Dashboard, System, Administration, Realtime Graphs, ACL Settings, Backup / Flash Firmware, Reboot, Services, WiFi, Network, VPN, and Logout.

In the main content area, the 'Backup' section is displayed. It includes a note: 'Click "Generate archive" to download a tar archive of the current configuration files.' Below this are two buttons: 'Download backup' and 'GENERATE ARCHIVE'.

The 'Restore' section follows, with a note: 'To restore configuration files, you can upload a previously generated backup archive here. To reset the firmware to its initial state, click "Perform reset" (only possible with squashfs images).'. It contains two buttons: 'Reset to defaults' and 'PERFORM RESET' (in red), and another button 'Restore backup' with 'UPLOAD ARCHIVE...' next to it. A small note below says: 'Custom files (certificates, scripts) may remain on the system. To prevent this, perform a factory-reset first.'

The 'Save mtblock contents' section is shown next, with a note: 'Click "Save mtblock" to download specified mtblock file. (NOTE: THIS FEATURE IS FOR PROFESSIONALS!)'. It has a dropdown 'Choose mtblock' set to 'BL2' and a button 'SAVE MTBLOCK'.

The 'Flash new firmware image' section is at the bottom, with a note: 'Upload a sysupgrade-compatible image here to replace the running firmware.' It has a 'Image' input field and a 'FLASH IMAGE...' button.

Configuration

A list of configuration files and directories to save when upgrading the system.

The screenshot shows the 'Actions' tab selected in the top navigation bar. The sidebar menu is identical to the previous screenshot.

The main content area is titled 'Flash operations' and has a sub-section titled 'Configuration'. It contains a note: 'This is a list of shell glob patterns for matching files and directories to include during sysupgrade. Modified files in /etc/config/ and certain other configurations are automatically preserved.' Below this is a button 'Show current backup file list' with 'OPEN LIST...' next to it.

A code block shows shell glob patterns:

```
## This file should contain your platform's proprietary files
## and directories that need to be preserved during OpenWRT sysupgrade.
# /etc/example.conf
/etc/wireless/
```

At the bottom right of the main content area is a 'SAVE' button.

Reboot

Restart the system on your device.

The screenshot shows the 5G Router web interface. The left sidebar has a dark blue header with "5G Router" and a light blue footer with "Logout". The main menu under "System" includes "Dashboard", "Reboot", "Administration", "Realtime Graphs", "ACL Settings", "Backup / Flash", "Firmware", "Reboot", "Services", "WiFi", "Network", "VPN", and "Logout". The "Reboot" item is currently selected. The right panel has a dark blue header with "Reboot" and a light blue footer with "V2185.00.06 %R". It contains the text "Reboots the operating system of your device" and a red "PERFORM REBOOT" button.

Service Function Introduction

Remote Manager

Configure information about the remote management server.

5G Router

Dashboard

System

Services

- Remote Manager
- uHTTPd
- Dynamic DNS
- UPnP
- Watchcat
- Policy Routing
- MWAN3 Helper
- SNMPD
- ser2net
- Network Shares

WiFi

Network

VPN

Logout

Remote Manager

Enable

Server Address

Port

The range is 1000 to 65535

GPS Latitude

GPS Longitude

SAVE & APPLY **SAVE** **RESET**

V2185.00.06 %R

This screenshot shows the 'Remote Manager' configuration page within the 5G Router's web-based management interface. The left sidebar navigation bar includes links for Dashboard, System, Services (with Remote Manager selected), Dynamic DNS, UPnP, Watchcat, Policy Routing, MWAN3 Helper, SNMPD, ser2net, Network Shares, WiFi, Network, VPN, and Logout. The main content area is titled 'Remote Manager' and contains fields for enabling the feature, specifying a server address and port, and providing GPS coordinates. Action buttons at the bottom allow saving changes.

uHTTPd

uHTTPd

General Settings

Configure the general settings for uHTTPd.

The screenshot shows the '5G Router' interface with the 'Services' menu open, specifically the 'uHTTPd' section. The 'General Settings' tab is selected. Under 'HTTP listeners (address:port)', two entries are listed: '0.0.0.0:80' and '[:]80'. Under 'HTTPS listener (address:port)', two entries are listed: '0.0.0.0:443' and '[:]443'. A checkbox 'Redirect all HTTP to HTTPS' is unchecked. A checkbox 'Ignore private IPs on public interface' is checked. Below these are fields for 'HTTPS Certificate (DER or PEM)' pointing to '/ETC/UHTTPD.CRT (535 B)' and 'HTTPS Private Key (DER or PEM)' pointing to '/ETC/UHTTPD.KEY (241 B)'. Buttons for 'SAVE & APPLY', 'SAVE', and 'RESET' are at the bottom.

Self-signed Certificate

Configure information about self-signed certificates.

The screenshot shows the '5G Router' interface with the 'Services' menu open, specifically the 'uHTTPd' section. The 'Self-signed Certificate' tab is selected. The 'uHTTPd Self-signed Certificate Parameters' section contains fields for 'Valid for # of Days' (730), 'Length of key in bits' (2048), 'Server Hostname' (OpenWrt), 'a.k.a CommonName', 'Organization', 'Location' (Unknown), 'State' (Somewhere), and 'Country' (ZZ). Buttons for 'SAVE & APPLY', 'SAVE', and 'RESET' are at the bottom.

Dynamic DNS

Information

Configure general settings for dynamic DNS.

Global Settings

Configure advanced settings for dynamic DNS.

UPnP

Activates UPnP

UPnP allows clients in the local network to automatically configure the router.

The screenshot shows the 5G Router's web-based management interface. On the left, a sidebar menu lists various services: Dashboard, System, Services (with UPnP selected), Remote Manager, uHTTPd, Dynamic DNS, UPnP (selected), Watchcat, Policy Routing, MWAN3 Helper, SNMPD, ser2net, Network Shares, WiFi, Network, VPN, and Logout. The main content area is titled "Active UPnP Redirects" and contains a table with columns: Protocol, External Port, Client Address, Host, Client Port, and Description. A message at the top of the table says, "UPnP allows clients in the local network to automatically configure the router." Below the table are buttons for "SAVE & APPLY", "SAVE", and "RESET". At the bottom right of the main area, there is a small text "V21B5.00.06 %R".

Settings

General Settings

Configure the general settings for UPnP.

The screenshot shows the "Universal Plug & Play" settings page. The sidebar menu is identical to the previous screenshot. The main content area is titled "Universal Plug & Play" and contains tabs for "General Settings" (selected) and "Advanced Settings". Under "General Settings", there are several configuration options with checkboxes: "Start UPnP and NAT-PMP service" (unchecked), "Enable UPnP functionality" (checked), "Enable NAT-PMP functionality" (checked), "Enable secure mode" (checked), "Allow adding forwards only to requesting ip addresses" (disabled), "Enable IGv1 mode" (checked), and "Advertise as IGv1 device instead of IGv2" (disabled). Under "Advanced Settings", there are fields for "Downlink" (set to 1024, with a note "Value in KByte/s, informational only"), "Uplink" (set to 512, with a note "Value in KByte/s, informational only"), and "Port" (set to 5000).

Advanced Settings

Configure advanced settings for UPnP.

ACL

ACLs specify which external ports may be redirected to which internal addresses and ports.

Watchcat

Here you can set up several checks and actions to take in the event that a host becomes unreachable.

Watchcat

Here you can set up several checks and actions to take in the event that a host becomes unreachable. Click the **Add** button at the bottom to set up more than one action.

Name	Mode	Period	Host To Check	Check Interval	Ping Packet Size	Force Reboot Delay	Interface	Name of ModemManager Interface	Unlock Modem Bands
cfg01e014	ping_reboot	6h	8.8.8.8	30s	standard	30	none	unspecified	No

ADD

SAVE & APPLY • **SAVE** **RESET**

SNMPD

Configure SNMP related information.

net-snmp's SNMPD

SNMPD is a master daemon/agent for SNMP, from the net-snmp project. Note, OpenWrt has mostly complete UCI support for snmpd, but this LuCI applet only covers a few of those options. In particular, there is very little help or validation. See /etc/config/snmpd for manual configuration.

Agent settings

The address the agent should listen on Eg: UDP:161, or UDP:10.5.4.3:161 to only listen on a given interface

AgentX settings

Delete this section to disable agents **DELETE**

The address the agent should allow agentX connections to

com2sec security

PUBLIC

secname

ser2net

Settings

Configure the general settings for ser2net.

The screenshot shows the 5G Router web interface. The left sidebar has a 'Services' dropdown open, with 'ser2net' selected. The main content area is titled 'Ser2Net Settings -- Global' and contains the following sections:

- Global switch**: Enabled (checkbox checked).
- Control port**:
 - Enabled (checkbox unchecked).
 - Binding address: localhost.
 - Control port: 2000.
- Default settings**:
 - Baud rate: 115200.
 - Data bits: 8.

Proxies

TCP server, combined with RS485 or RS232 serial port, enables transparent transmission between TCP client and serial port.

5G Router

Dashboard System > Services ▾

- Remote Manager
- uHTTPD
- Dynamic DNS
- UPnP
- Watchcat
- Policy Routing
- MWAN3 Helper
- SNMPD
- ser2net**
- Network Shares
- WiFi
- Network
- VPN
- Logout

Ser2Net Settings -- Proxies

Proxies Settings

Name	Enabled	Service port	Protocol	Timeout	Device	Baud rate	Data bits	Parity	Stop bits
RS232	No	5000	raw	0	/dev/ttys1	115200	8	none	1
RS485	No	5001	raw	0	/dev/ttys2	115200	8	none	1

ADD

SAVE & APPLY ▾ | SAVE | RESET | V2185.00.06 %R

Network Shares

General Settings

Configure general settings for SMB.

5G Router

Dashboard

System >

Services ▾

- Remote Manager
- uHTTPd
- Dynamic DNS
- UPnP
- Watchcat
- Policy Routing
- MWAN3 Helper
- SNMPD
- ser2net
- Network Shares**
- WiFi
- Network
- VPN
- Logout

Network Shares

Ksmbd/Kmod Version 3.4.5

General Settings **Edit Template**

Interface: **unspecified** Listen only on the given interface or, if unspecified, on lan

Workgroup: **WORKGROUP**

Description: **Ksmbd on OpenWrt**

Allow legacy (insecure)

protocols/authentication: Allow legacy smb(v1)/Lanman connections, needed for older devices without smb(v2.1/3) support.

Shared Directories

Please add directories to share. Each directory refers to a folder on a mounted device.

Name	Path	Browse-able	Read-only	Force Root	Allowed users	Allow guests	Inherit owner	Hide dot files	Create mask	Directory mask
<i>This section contains no values yet</i>										

ADD

SAVE & APPLY ▾ **SAVE** **RESET**

V2185.00.06 %R

Edit Template

Edit the template used to generate ksmbd settings.

The screenshot shows the 5G Router web interface. The left sidebar has a 'Services' dropdown open, with 'Network Shares' selected. The main content area is titled 'Network Shares' and shows the 'Ksmbd/Kmod Version 3.4.5' configuration page. It includes tabs for 'General Settings' (selected) and 'Edit Template'. A note says 'Edit the template that is used for generating the ksmbd configuration.' Below is a code block for the global section of the smb.conf template:

```
[global]
netbios name = |NAME|
server string = |DESCRIPTION|
workgroup = |WORKGROUP|
interfaces = |INTERFACES|
bind interfaces only = yes
ipc timeout = 20
deadtime = 15
map to guest = Bad User
smb2 max read = 64K
smb2 max write = 64K
smb2 max trans = 64K
cache read buffers = no
cache trans buffers = no
```

A note below the code block states: 'This is the content of the file /etc/ksmbd/smb.conf.template' from which your ksmbd configuration will be generated. Values enclosed by pipe symbols ('|') should not be changed. They get their values from the 'General Settings' tab.'

The 'Shared Directories' section asks to add directories to share. A table header is shown:

Name	Path	Browse-able	Read-only	Force Root	Allowed users	Allow guests	Inherit owner	Hide dot files	Create mask	Directory mask
------	------	-------------	-----------	------------	---------------	--------------	---------------	----------------	-------------	----------------

A message 'This section contains no values yet' is displayed above the 'ADD' button.

At the bottom right are buttons: 'SAVE & APPLY' (blue), 'SAVE' (grey), and 'RESET' (red).

WiFi Function Introduction

2.4GHz and 5.8GHz

The settings for 2.4G and 5.8G WiFi are the same. Taking 2.4G WiFi settings as an example.

Overview

2.4G WiFi overview.

The screenshot shows the 5G Router's web-based management interface. On the left, a sidebar menu includes options like Dashboard, System, Services, WiFi (selected), Network, VPN, and Logout. The main content area is titled "Wireless Overview" and displays information for the MT7981.1.1 interface. It shows the interface is an AP (Work mode: AP) with SSID: ISOO_2.4G and Channel: 6. The BSSID is listed as a6:80:38:3a:c4:18. The second interface, ap0:0, is a STA (Status: Disconnected). A small note at the bottom right indicates a battery level of V2186.00.06 %R.

General Control

Configure the parameters for 2.4GHz wireless network.

The screenshot shows the "General Control" tab selected in the top navigation bar. The main content area is titled "WiFi 2.4G Settings" and is used to configure parameters for the 2.4GHz wireless network. The configuration fields include:

- Enable: Checked (checkbox)
- SSID: ISOO_2.4G
- Hide ESSID: Unchecked (checkbox)
- Wireless Mode: HE_2G mode
- Authentication Method: WPA2-PSK
- WPA Encryption: AES
- WPA Pre-Shared Key: (redacted)
- Rekey Method: Disable rekey
- HT Bw: 20/40 MHZ
- Radio Channel: 2437MHz (Channel 6)
- Extension Channel: Above
- max sta connection number: (redacted)

Guest Network

Configure the parameters for 2.4GHz wireless network.

5G Router

Dashboard System Services WiFi Network VPN Logout

Overview General Control Guest Network **Bridge** Access Control Radius Settings Advanced Settings

WiFi 2.4G Guest Settings

Configure the params of 2.4G wireless for Guest AP

Enable Need to add SSID to save this

SUBMIT V2185.00.06 %R

This screenshot shows the 'Guest Network' tab selected in the navigation bar. The main content area is titled 'WiFi 2.4G Guest Settings' with the sub-instruction 'Configure the params of 2.4G wireless for Guest AP'. It features an 'Enable' checkbox which is unchecked and a note 'Need to add SSID to save this'. A 'SUBMIT' button is located in the bottom right corner, along with a footer status 'V2185.00.06 %R'.

Bridge

Configure the params of 2.4G wireless for Operation Mode.

5G Router

Dashboard System Services WiFi Network VPN Logout

Overview General Control Guest Network **Bridge** Access Control Radius Settings Advanced Settings

WiFi 2.4G Bridge Settings

Configure the params of 2.4G wireless for Operation Mode

Wireless Operation Mode: AP-Client+AP
Wireless AP-Client Role: WAN(Wireless ISP)
Wireless Channel: 6
Remote SSID:
APcli Bssid:
Authentication Method: NONE
WPA Encryption: NONE
WPA Pre-Shared Key:

WIFI-SCAN SUBMIT V2185.00.06 %R

This screenshot shows the 'Bridge' tab selected in the navigation bar. The main content area is titled 'WiFi 2.4G Bridge Settings' with the sub-instruction 'Configure the params of 2.4G wireless for Operation Mode'. It contains several configuration fields: 'Wireless Operation Mode' set to 'AP-Client+AP', 'Wireless AP-Client Role' set to 'WAN(Wireless ISP)', 'Wireless Channel' set to '6', 'Remote SSID' and 'APcli Bssid' fields, 'Authentication Method' set to 'NONE', 'WPA Encryption' set to 'NONE', and a password field for 'WPA Pre-Shared Key'. At the bottom are 'WIFI-SCAN' and 'SUBMIT' buttons, along with a footer status 'V2185.00.06 %R'.

Access Control

Control access by setting up a MAC address list to determine whether the device is allowed to connect.

The screenshot shows the 5G Router web interface. On the left is a sidebar with the following navigation:

- Dashboard
- System
- Services
- WiFi** (selected)
- 2.4GHz
- 5.8GHz
- Network
- VPN
- Logout

The main content area has a blue header bar with tabs: Overview, General Control, Guest Network, Bridge, Access Control (selected), Radius Settings, and Advanced Settings.

WiFi 2.4G MAC Filter Settings

Control access by setting up a MAC address list to determine whether the device is allowed to connect

Filter Rules: REJECT

MAC List:

SUBMIT

V2185.00.06 %R

Radius Settings

Configure the params of 2.4G wireless for Operation Mode.

The screenshot shows the 5G Router web interface. On the left is a sidebar with the following navigation:

- Dashboard
- System
- Services
- WiFi** (selected)
- 2.4GHz
- 5.8GHz
- Network
- VPN
- Logout

The main content area has a blue header bar with tabs: Overview, General Control, Guest Network, Bridge, Access Control, Radius Settings (selected), and Advanced Settings.

WiFi 2.4G Ridius Settings

Configure the params of 2.4G wireless for Operation Mode

RADIUS Server: 0

RADIUS Port: 1812

RADIUS Key:

SUBMIT

V2185.00.06 %R

Advanced Settings

Configure the advanced params of 2.4G wireless.

The screenshot shows the 5G Router web interface. The left sidebar has a 'WiFi' dropdown menu with '2.4GHz' selected. The main content area is titled 'WiFi 2.4G Settings' and includes a sub-instruction 'Configure the advanced params of 2.4G wireless'. It contains several configuration fields:

- HT Spatial Streams TX: 2T
- HT Spatial Streams RX: 2R
- Enable Energy Saving Green AP:
- Set AP Clients Isolated:
- Preamble Type: Short
- Fragmentation Threshold: 2346 [256..2346]
- RTS Threshold: 2347 [1,2347]
- DTIM Interval: 1 [1,255]
- Beacon interval: 100

Introduction to Network Functions

Interfaces

Interfaces

View and configure device interfaces.

5G Router

REFRESHING

Interfaces Devices Global network options

Interfaces

Interface Type	Device Name	Protocol	MAC Address	Uptime	TX (B)	RX (B)	Actions	
GUEST	br-guest	Static address	A8:80:38:3A:C4:1B	0h 50m 39s	0 B (0 Pkts.)	0 B (0 Pkts.)	RESTART STOP EDIT DELETE	
LAN	br-lan	Static address	A8:80:38:3A:C4:1B	0h 50m 39s	2.36 MB (13284 Pkts.)	15.23 MB (16026 Pkts.)	IPv4: 192.168.99.1/24 IPv6: fd60:492d:2587:1/60	RESTART STOP EDIT DELETE
WAN	lan4	DHCP client	A8:80:38:3A:C4:1A	0h 50m 39s	0 B (0 Pkts.)	0 B (0 Pkts.)	RESTART STOP EDIT DELETE	
WAN6	lan4	DHCPv6 client	A8:80:38:3A:C4:1A	0h 50m 39s	0 B (0 Pkts.)	0 B (0 Pkts.)	RESTART STOP EDIT DELETE	
WISP2	apcl9	DHCP client	A8:80:38:3A:C4:1A	0h 50m 39s	0 B (0 Pkts.)	0 B (0 Pkts.)	Information: Not started on boot RESTART STOP EDIT DELETE	
WISP6	apcl9	DHCPv6 client	A8:80:38:3A:C4:1A	0h 50m 39s	0 B (0 Pkts.)	0 B (0 Pkts.)	Information: Not started on boot RESTART STOP EDIT DELETE	
WISP5	apcl9	DHCP client	A8:80:38:3A:C4:1A	0h 50m 39s	0 B (0 Pkts.)	0 B (0 Pkts.)	Information: Not started on boot RESTART STOP EDIT DELETE	
WISP56								

Devices

View and configure physical information of device interfaces.

5G Router

REFRESHING

Interfaces Devices Global network options

Devices

Device	Type	MAC Address	MTU	Actions
br-lan	Bridge device	A8:80:38:3A:C4:1B	1500	<button>CONFIGURE...</button> <button>RESET</button>
lan2	Network device	A8:80:38:3A:C4:1B	1500	<button>CONFIGURE...</button> <button>RESET</button>
lan4	Network device	A8:80:38:3A:C4:1A	1500	<button>CONFIGURE...</button> <button>RESET</button>
br-guest	Bridge device	-	-	<button>CONFIGURE...</button> <button>RESET</button>
apclio	Network device	AE:80:38:3A:C4:18	1500	<button>CONFIGURE...</button> <button>RESET</button>
apclix0	Network device	A2:80:38:3A:C4:18	1500	<button>CONFIGURE...</button> <button>RESET</button>
erspan0	Network device	00:00:00:00:00:00	1450	<button>CONFIGURE...</button> <button>RESET</button>
eth0	Network device	2A:C8:89:02:31:16	1500	<button>CONFIGURE...</button> <button>RESET</button>
eth1	Network device	6E:9A:3A:2F:9D:70	1500	<button>CONFIGURE...</button> <button>RESET</button>
lan1	Network device	2A:C8:89:02:31:16	1500	<button>CONFIGURE...</button> <button>RESET</button>
lan3	Network device	2A:C8:89:02:31:16	1500	<button>CONFIGURE...</button> <button>RESET</button>

Interfaces Services WiFi Network VPN Logout

DHCP and DNS

General Settings

Configure general settings for DHCP and DNS.

5G Router

DASHBOARD

SYSTEM

SERVICES

WIFI

Network

- Interfaces
- DHCP and DNS**
- Hostnames
- Static Routes
- SQM QoS
- Diagnostics
- Firewall
- Cellular
- Load Balancing

VPN

Logout

DHCP and DNS

Dnsmasq is a combined [DHCP-Server](#) and [DNS-Forwarder](#) for [NAT](#) firewalls

Server Settings

General Settings Resolv and Hosts Files TFTP Settings Advanced Settings Static Leases

Domain required

Don't forward DNS-Requests without DNS-Name

Authoritative

This is the only DHCP-Server in the local network.

Local server /lan/

Local domain lan

Local domain suffix appended to DHCP names and hosts file entries

Log queries

Write received DNS requests to syslog

DNS forwardings /example.org/10.1.2.3 +

List of DNS servers to forward requests to

Addresses /router.local/192.168.0.1 +

List of domains to force to an IP address.

Rebind protection

Discard upstream RFC1918 responses

REFRESHING

TFTP Settings

Configure the general settings for the TFTP server.

5G Router

DASHBOARD

SYSTEM

SERVICES

WIFI

Network

- Interfaces
- DHCP and DNS**
- Hostnames
- Static Routes
- SQM QoS
- Diagnostics
- Firewall
- Cellular
- Load Balancing

VPN

Logout

DHCP and DNS

Dnsmasq is a combined [DHCP-Server](#) and [DNS-Forwarder](#) for [NAT](#) firewalls

Server Settings

General Settings Resolv and Hosts Files **TFTP Settings** Advanced Settings Static Leases

Enable TFTP server

TFTP server root /

Root directory for files served via TFTP

Network boot image pxelinux.0

Filename of the boot image advertised to clients

REFRESHING

SAVE & APPLY **SAVE** **RESET**

V2185.00.06 %R

Advanced Settings

Configure advanced settings for DHCP and DNS.

DHCP and DNS

Dnsmasq is a combined [DHCP-Server](#) and [DNS-Forwarder](#) for [NAT](#) firewalls

Server Settings

- General Settings
- Resolv and Hosts Files
- TFTP Settings
- Advanced Settings**
- Static Leases

Suppress logging Suppress logging of the routine operation of these protocols

Allocate IP sequentially Allocate IP addresses sequentially, starting from the lowest available address

Filter private Do not forward reverse lookups for local networks

Filter useless Do not forward requests that cannot be answered by public name servers

Localise queries Localise hostname depending on the requesting subnet if multiple IPs are available

DNSSEC

DNSSEC check unsigned Requires upstream supports DNSSEC; verify unsigned domain responses really come from unsigned domains

Expand hosts Add local domain suffix to names served from hosts files

No negative cache Do not cache negative replies, e.g. for not existing domains

Static Leases

Static leases are used to assign fixed IP addresses and symbolic hostnames to DHCP clients.

DHCP and DNS

Dnsmasq is a combined [DHCP-Server](#) and [DNS-Forwarder](#) for [NAT](#) firewalls

Server Settings

- General Settings
- Resolv and Hosts Files
- TFTP Settings
- Advanced Settings
- Static Leases**

Static leases are used to assign fixed IP addresses and symbolic hostnames to DHCP clients. They are also required for non-dynamic interface configurations where only hosts with a corresponding lease are served.

Use the **ADD** button to add a new lease entry. The **Hostname** identifies the host, the **IPv4 address** specifies the fixed address to use, and the **Hostname** is assigned as a symbolic name to the requesting host. The optional **Lease time** can be used to set non-standard host-specific lease time, e.g. 12h, 3d or infinite.

Hostname	MAC-Address	IPv4-Address	Lease time	DUID	IPv6-Suffix (hex)
This section contains no values yet					
ADD					

Active DHCP Leases

Hostname	IPv4 address	MAC address	Lease time remaining
DESKTOP-gongkai (DESKTOP-gongkai.lan)	192.168.99.208	AA:80:38:39:45:68	11h 10m 57s

Active DHCPv6 Leases

Host	IPv6 address	DUID	Lease time remaining
There are no active leases			

Buttons: **SAVE & APPLY** • **SAVE** • **RESET**

Hostnames

Configure the association information between the host name and IP address.

5G Router

Dashboard >

System >

Services >

WiFi >

Network >

- Interfaces
- DHCP and DNS
- Hostnames**
- Static Routes
- SQM QoS
- Diagnostics
- Firewall
- Cellular
- Load Balancing

VPN >

Logout

Hostnames

Host entries

Hostname	IP address
This section contains no values yet	

ADD

SAVE & APPLY ▾ **SAVE** **RESET**

V2185.00.06 %R

This section contains no values yet

Hostname IP address

ADD

SAVE & APPLY ▾ SAVE RESET

V2185.00.06 %R

Static Routes

Overview

View local ARP tables and routing tables.

5G Router

Network

Routes

The following rules are currently active on this system.

ARP

	IPv4 address	MAC address	Interface
1	192.168.99.10	AA:80:38:39:45:68	lan
2	192.168.99.208	AA:80:38:39:45:68	lan
3	10.79.87.1	42:86:3B:27:A6:FA	wwan

Active IPv4-Routes

Network	Target	IPv4 gateway	Metric	Table	Protocol
wwan	0.0.0.0/0	10.79.87.1	4	main	static
wwan	10.79.87.0/24	-	4	main	static
lan	192.168.99.0/24	-	0	main	kernel

IPv6 Neighbours

IPv6 address	MAC address	Interface
--------------	-------------	-----------

Active IPv6-Routes

Network	Target	Source	Metric	Table	Protocol
---------	--------	--------	--------	-------	----------

Setting

Static IPv4 Routes

Static IPv4 routes specify over which interface and gateway a certain host or network can be reached.

5G Router

Network

Routes

Routes specify over which interface and gateway a certain host or network can be reached.

Static IPv4 Routes

Interface	Disable	Target	IPv4-Netmask	IPv4-Gateway	Metric	On-Link route
This section contains no values yet						

ADD

SAVE & APPLY **SAVE** **RESET**

Static IPv6 Routes

Static IPv6 routes specify over which interface and gateway a certain host or network can be reached.

5G Router

Network > **Static Routes**

Static IPv6 Routes

Interface	Disable	Target	IPv6-Gateway	Metric	On-Link route
This section contains no values yet					

ADD **SAVE & APPLY** **SAVE** **RESET**

V2185.00.06 %R

SQM QoS

Configure the priority of network traffic.

5G Router

Network > **SQM QoS**

Smart Queue Management

With SQM you can enable traffic shaping, better mixing (Fair Queueing), active queue length management (AGM) and prioritisation on one network interface.

Queues

Name	Enable this SQM instance.	Download speed (ingress)	Upload speed (egress)	Queueing discipline	Queue setup script	ECN (ingress)	Hard queue limit (egress)	Link layer
eth1	No	85000	10000	cake	piece_of_cake.qos	ECN	none	none

ADD **SAVE & APPLY** **SAVE** **RESET**

V2185.00.06 %R

Diagnostics

You can determine the network status of the router through this page.

5G Router

Dashboard

System

Services

WiFi

Network

- Interfaces
- DHCP and DNS
- Hostnames
- Static Routes
- SQM QoS
- Diagnostics**
- Firewall
- Cellular
- Load Balancing

VPN

Logout

Network Utilities

openwrt.org IPV4 PING openwrt.org IPV4 TRACEROUTE openwrt.org NSLOOKUP

```
PING openwrt.org (64.226.122.113): 56 data bytes
64 bytes from 64.226.122.113: seq=0 ttl=42 time=363.074 ms
64 bytes from 64.226.122.113: seq=2 ttl=42 time=281.982 ms
64 bytes from 64.226.122.113: seq=3 ttl=43 time=401.857 ms
64 bytes from 64.226.122.113: seq=4 ttl=43 time=361.624 ms

--- openwrt.org ping statistics ---
5 packets transmitted, 4 packets received, 20% packet loss
round-trip min/avg/max = 281.982/352.134/401.857 ms
```

V2185.00.06 %R

5G Router

Dashboard

System

Services

WiFi

Network

- Interfaces
- DHCP and DNS
- Hostnames
- Static Routes
- SQM QoS
- Diagnostics**
- Firewall
- Cellular
- Load Balancing

VPN

Logout

Network Utilities

openwrt.org IPV4 PING openwrt.org IPV4 TRACEROUTE openwrt.org NSLOOKUP

```
traceroute to openwrt.org (64.226.122.113), 30 hops max, 46 byte packets
1 10.79.87.1 2.886 ms
2 *
3 172.21.1.1 29.285 ms
4 *
5 183.233.75.153 36.635 ms
6 221.183.146.177 29.774 ms
7 221.183.167.38 43.925 ms
8 221.183.92.214 36.402 ms
9 221.183.92.198 36.271 ms
10 223.120.14.253 237.937 ms
11 223.120.10.226 320.663 ms
12 195.66.231.145 318.742 ms
13 *
14 *
15 *
16 *
17 *
18 64.226.122.113 273.903 ms
```

V2185.00.06 %R

5G Router

The screenshot shows the 5G Router web interface. On the left is a sidebar with navigation links: Dashboard, System, Services, WiFi, Network (selected), VPN, and Logout. The Network section is expanded, showing sub-links: Interfaces, DHCP and DNS, Hostnames, Static Routes, SQM QoS, Diagnostics (underlined), Firewall, Cellular, and Load Balancing. The main content area has a blue header "Network Utilities". It contains three tabs: IPV4 PING (selected), IPV4 TRACEROUTE, and NSLOOKUP. Each tab has an input field with "openwrt.org" and a dropdown menu. Below the tabs is a table with two rows of network information. The first row shows "Server: 127.0.0.1" and "Address: 127.0.0.1#53". The second row shows "Name: openwrt.org", "Address 1: 64.226.122.113", and "Address 2: 2a03:b0c0:3:d0::1a51:c001". In the bottom right corner of the main area, there is a small text "V2185.00.06 %R".

Server:	127.0.0.1
Address:	127.0.0.1#53
Name:	openwrt.org
Address 1:	64.226.122.113
Address 2:	2a03:b0c0:3:d0::1a51:c001

Firewall

Status

IPv4 Firewall

Display IPv4 firewall rules.

5G Router

Status General Settings Port Forwards Traffic Rules NAT Rules Custom Rules REFRESHING

Firewall Status

HIDE EMPTY CHAINS SHOW RAW COUNTERS RESET COUNTERS RESTART FIREWALL

IPv4 Firewall **IPv6 Firewall**

Table: Filter

Chain INPUT (Policy: ACCEPT , 0 Packets, 0 B Traffic)

Pkts.	Traffic	Target	Prot.	In	Out	Source	Destination	Options	Comment
4.19 K	307.85 KB	ACCEPT	all	lo	*	0.0.0.0/0	0.0.0.0/0	-	-
10.67 K	1.76 MB	input_rule	all	*	*	0.0.0.0/0	0.0.0.0/0	-	Custom input rule chain
9.89 K	1.53 MB	ACCEPT	all	*	*	0.0.0.0/0	0.0.0.0/0	ctstate RELATED,ESTABLISHED	-
83	4.32 KB	syn_flood	tcp	*	*	0.0.0.0/0	0.0.0.0/0	tcp flags:0x17/0x2	-
0	0 B	zone_vpn_input	all	xfrm0	*	0.0.0.0/0	0.0.0.0/0	-	-
675	233.35 KB	zone_lan_input	all	br-lan	*	0.0.0.0/0	0.0.0.0/0	-	-
0	0 B	zone_wan_input	all	lan4	*	0.0.0.0/0	0.0.0.0/0	-	-
10	400 B	zone_wan_input	all	usb0	*	0.0.0.0/0	0.0.0.0/0	-	-
0	0 B	zone_wan_input	all	apclix9	*	0.0.0.0/0	0.0.0.0/0	-	-
0	0 B	zone_wan_input	all	apclix9	*	0.0.0.0/0	0.0.0.0/0	-	-

IPv6 Firewall

Display IPv6 firewall rules.

5G Router

Status General Settings Port Forwards Traffic Rules NAT Rules Custom Rules REFRESHING

Firewall Status

HIDE EMPTY CHAINS SHOW RAW COUNTERS RESET COUNTERS RESTART FIREWALL

IPv4 Firewall **IPv6 Firewall**

Table: Filter

Chain INPUT (Policy: ACCEPT , 0 Packets, 0 B Traffic)

Pkts.	Traffic	Target	Prot.	In	Out	Source	Destination	Options	Comment
668	51.23 KB	ACCEPT	all	lo	*	::/0	::/0	-	-
264	52.24 KB	input_rule	all	*	*	::/0	::/0	-	Custom input rule chain
113	40.26 KB	ACCEPT	all	*	*	::/0	::/0	ctstate RELATED,ESTABLISHED	-
0	0 B	syn_flood	tcp	*	*	::/0	::/0	tcp flags:0x17/0x2	-
0	0 B	zone_vpn_input	all	xfrm0	*	::/0	::/0	-	-
0	0 B	zone_lan_input	all	br-lan	*	::/0	::/0	-	-
0	0 B	zone_wan_input	all	lan4	*	::/0	::/0	-	-
151	11.98 KB	zone_wan_input	all	usb0	*	::/0	::/0	-	-
0	0 B	zone_wan_input	all	apclix9	*	::/0	::/0	-	-
0	0 B	zone_wan_input	all	apclix9	*	::/0	::/0	-	-

General Settings

The firewall creates zones over your network interfaces to control network traffic flow.

Enable SYN-flood protection

Drop invalid packets

Input	Output	Forward
accept	accept	reject

Routing/NAT Offloading

Experimental feature. Not fully compatible with QoS/QoS.

Software flow offloading

Software based offloading for routing/NAT

Zones

Zone ⇒ Forwardings	Input	Output	Forward	Masquerading
vpn ⇒ lan	accept	accept	accept	<input type="checkbox"/> EDIT DELETE
lan ⇒ vpn	accept	accept	accept	<input type="checkbox"/> EDIT DELETE
wan ⇒ REJECT	reject	accept	reject	<input checked="" type="checkbox"/> EDIT DELETE
guest ⇒ wan	reject	accept	reject	<input type="checkbox"/> EDIT DELETE

Port Forwards

Port forwarding allows remote computers on the Internet to connect to a specific computer or service within the private LAN.

Status General Settings Port Forwards Traffic Rules NAT Rules Custom Rules

Firewall - Port Forwards

Port forwarding allows remote computers on the Internet to connect to a specific computer or service within the private LAN.

Port Forwards

Name	Match	Action	Enable
This section contains no values yet			

[ADD](#)

[SAVE & APPLY](#) [SAVE](#) [RESET](#)

V2186.00.06 %R

Traffic Rules

Port forwarding allows remote computers on the Internet to connect to a specific computer or service within the private LAN.

5G Router

Name	Match	Action	Enable
Allow-DHCP-Renew	Incoming IPv4, protocol UDP From wan To this device ,port 68	Accept input	<input checked="" type="checkbox"/>
Allow-Ping	Incoming IPv4, protocol ICMP From wan To this device	Accept input	<input checked="" type="checkbox"/>
Allow-IGMP	Incoming IPv4, protocol IGMP From wan To this device	Accept input	<input checked="" type="checkbox"/>
Allow-DHCPv6	Incoming IPv6, protocol UDP From wan To this device ,port 546	Accept input	<input checked="" type="checkbox"/>
Allow-MLD	Incoming IPv6, protocol ICMP From wan , IP fe80::10 To this device	Accept input	<input checked="" type="checkbox"/>
Allow-ICMPv6-Input	Incoming IPv6, protocol ICMP From wan To this device Limit matching to 1000 packets per second	Accept input	<input checked="" type="checkbox"/>
Allow-ICMPv6-Forward	Forwarded IPv6, protocol ICMP From wan To any zone Limit matching to 1000 packets per second	Accept forward	<input checked="" type="checkbox"/>
Allow-IPSec-ESP	Forwarded IPv4 and IPv6, protocol IPSEC-ESP From wan To lan	Accept forward	<input checked="" type="checkbox"/>

NAT Rules

NAT rules allow fine grained control over the source IP to use for outbound or forwarded traffic.

5G Router

Name	Match	Action	Enable
This section contains no values yet			

ADD

SAVE & APPLY **SAVE** **RESET**

V2185.00.06 %R

Custom Rules

Custom rules allow you to execute arbitrary iptables commands which are not otherwise covered by the firewall framework.

The screenshot shows the 5G Router's Network > Firewall section. The 'Custom Rules' tab is selected. A text area contains a shell script for custom iptables rules:

```

# This file is interpreted as shell script.
# Put your custom iptables rules here, they will
# be executed with each firewall (re-)start.

# Internal ucl firewall chains are flushed and recreated on reload, so
# put custom rules into the root chains e.g. INPUT or FORWARD or into the
# special user chains, e.g. input_wan_rule or postrouting_lan_rule.
iptables -t mangle -A FORWARD -m dscp --dscp-class BE -j MARK --set-mark 0
iptables -t mangle -A FORWARD -m dscp --dscp-class CS2 -j MARK --set-mark 2
iptables -t mangle -A FORWARD -m dscp --dscp-class CS4 -j MARK --set-mark 4
iptables -t mangle -A FORWARD -m dscp --dscp-class CS6 -j MARK --set-mark 6

```

A 'SAVE' button is at the bottom right, and the footer shows 'V2185.00.06 %R'.

Cellular Information

Cellular's information for sim and Modem's information.

The screenshot shows the 5G Router's Network > Cellular section. The 'Information' tab is selected. It displays a table of cellular information:

Manufacturer	Quetel	Band	28
Model	RM500U-CN	Mode	NR5G-SA
Software Version	RM500UCNAAR01A18M2G_01.001.01.001	MCC/MNC	460/00
IMEI	868227050435833	Cell ID	C1E9DA003
SIM	READY	PhyCellID	660
IMSI	460003462287941	(E)arfcn	152650
ICCID	B9B60000192288007422	(L)TAC	1425A1
Operator	CMCC	(S)indev	-
RSRP	-67	RSRQ	-4
SINR	20	RSSI	-

A 'REFRESHING' button is at the top right, and the footer shows 'V2185.00.06 %R'.

Setting General Settings

Configure the general settings for the cellular.

The screenshot shows the 5G Router web interface. The left sidebar has a 'Network' section expanded, with 'Cellular' selected. The main content area is titled 'Cellular Setting' and contains tabs for 'General Settings' and 'SIM Settings'. Under 'General Settings', there are fields for MTU (1500) and Pminn (locked). Under 'SIM Settings', there are fields for IMS (unchecked), NAT Mode (unchecked), and a note about Net mode. At the bottom are 'SAVE & APPLY', 'SAVE', and 'RESET' buttons.

SIM Settings

Configure the general settings for the SIM.

The screenshot shows the 5G Router web interface. The left sidebar has a 'Network' section expanded, with 'Cellular' selected. The main content area is titled 'Cellular Setting' and contains tabs for 'General Settings' and 'SIM Settings'. Under 'SIM Settings', there are dropdowns for APN (Auto), PIN, PDP Context (1), PDP Type (IPV4/VI6), and Authentication Type (NONE). At the bottom are 'SAVE & APPLY', 'SAVE', and 'RESET' buttons.

Lock Bands

Cellular's information for sim and Modem's information.

The screenshot shows the '5G Router' interface with the 'Network' menu selected. The main content area is titled 'Lock Bands' with the sub-instruction 'Lock The Cellular Modem's band and frequency'. It contains two sections: 'NR5G Bands' and 'LTE Bands', each with a series of checkboxes for selecting bands. Below these are fields for 'Current Lock (E)arfnc' (set to 152650) and 'Current Lock PCID' (set to 660). At the bottom are 'SAVE & APPLY', 'SAVE', and 'RESET' buttons.

Net Select

Selection network mode of the cellular such as Automatic or WCDMA only or LTE only and NR5G only.

The screenshot shows the '5G Router' interface with the 'Network' menu selected. The main content area is titled 'Selection of network' with the sub-instruction 'Selection network mode of the cellular such as Automatic GSM only or WCDMA only LTE only and so on'. A dropdown menu labeled 'Network Selection' is open, showing options: NR5G Only (selected), Automatic, WCDMA Only, LTE Only, and NR5G Only. At the bottom are 'SAVE & APPLY', 'SAVE', and 'RESET' buttons.

Load Balancing

Overview

Display the gateway exit interface activation status.

5G Router

REFRESHING

Overview Globals Interfaces Members Policies Rules Notification Detail Diagnostics troubleshooting

Interface: wwan6 Status: No Tracking Uptime: 0h:55m:15s

Interface: wisp56 Status: No Tracking

Interface: wwan Status: No Tracking Uptime: 0h:55m:35s

Interface: wisp26 Status: No Tracking

Interface: wan Status: No Tracking

Interface: wisp5 Status: No Tracking

Interface: wisp2 Status: No Tracking

Interface: wan6 Status: No Tracking

V21B5.00.06 %R

Logout

Interfaces

View and configure general settings for the load balancing interface.

5G Router

Overview Globals Interfaces Members Policies Rules Notification Detail Diagnostics troubleshooting

MWAN - Interfaces

There are currently 8 of 60 supported interfaces configured

WARNING: Interface wwan6 has no default route in the main routing table

WARNING: Interface wwan6 has a duplicate metric 4 configured

WARNING: Interface wisp56 has no default route in the main routing table

WARNING: Interface wisp56 has a duplicate metric 3 configured

WARNING: Interface wisp26 has no default route in the main routing table

WARNING: Interface wisp26 has a duplicate metric 2 configured

WARNING: Interface wan has no default route in the main routing table

WARNING: Interface wisp5 has no default route in the main routing table

WARNING: Interface wisp2 has no default route in the main routing table

WARNING: Interface wan2 has no default route in the main routing table

mwan3 requires that all interfaces have a unique metric configured in /etc/config/network

Names must match the interface name found in /etc/config/network

Names may contain characters A-Z, a-z, 0-9, _, and no spaces

Interfaces may not share the same name as configured members, policies or rules

Name	Enabled	Tracking method	Tracking reliability	Ping interval	Interface down	Interface up	Metric	EDIT	DELETE
wan	No	ping	2	10s	5	2	—	<button>EDIT</button>	<button>DELETE</button>
wan6	No	ping	2	10s	5	2	—	<button>EDIT</button>	<button>DELETE</button>
wisp2	No	ping	2	10s	5	2	2	<button>EDIT</button>	<button>DELETE</button>
wisp26	No	ping	2	10s	5	2	2	<button>EDIT</button>	<button>DELETE</button>
wisp5	No	ping	2	10s	5	2	3	<button>EDIT</button>	<button>DELETE</button>
wisp56	No	ping	2	10s	5	2	3	<button>EDIT</button>	<button>DELETE</button>

Members

View and configure the number of hops and weights for load balancing members.

5G Router

Name	Interface	Metric	Weight	Actions
wan_m1_w3	wan	1	3	<button>EDIT</button> <button>DELETE</button>
wisp2_m2_w3	wisp2	2	3	<button>EDIT</button> <button>DELETE</button>
wisp5_m3_w3	wisp5	3	3	<button>EDIT</button> <button>DELETE</button>
wwan_m4_w3	wwan	4	3	<button>EDIT</button> <button>DELETE</button>
wan6_m1_w3	wan6	1	3	<button>EDIT</button> <button>DELETE</button>
wisp26_m2_w3	wisp26	2	3	<button>EDIT</button> <button>DELETE</button>
wisp56_m3_w3	wisp56	3	3	<button>EDIT</button> <button>DELETE</button>
wwan6_m4_w3	wwan6	4	3	<button>EDIT</button> <button>DELETE</button>

ADD

Policies

View and configure traffic policies for load balancing members.

5G Router

Name	Members assigned	Last resort	Actions
wan_only	wan_m1_w3 wan6_m1_w3	unreachable (reject)	<button>EDIT</button> <button>DELETE</button>
wisp2_only	wisp2_m2_w3 wisp26_m2_w3	unreachable (reject)	<button>EDIT</button> <button>DELETE</button>
wisp5_only	wisp5_m3_w3 wisp56_m3_w3	unreachable (reject)	<button>EDIT</button> <button>DELETE</button>
wwan_only	wwan_m4_w3 wwan6_m4_w3	unreachable (reject)	<button>EDIT</button> <button>DELETE</button>
failover	wan_m1_w3 wisp2_m2_w3 wisp5_m3_w3 wwan_m4_w3	unreachable (reject)	<button>EDIT</button> <button>DELETE</button>
failover6	wan6_m1_w3 wisp26_m2_w3 wisp56_m3_w3 wwan6_m4_w3	unreachable (reject)	<button>EDIT</button> <button>DELETE</button>

ADD

Rules

Rules specify which traffic will use a particular policy.

5G Router

- Dashboard
- System
- Services
- WiFi
- Network**
 - Interfaces
 - DHCP and DNS
 - Hostnames
 - Static Routes
 - SQM QoS
 - Diagnostics
 - Firewall
 - Cellular
 - Load Balancing
- VPN
- Logout

MWAN - Rules

Rules specify which traffic will use a particular MWAN policy
 Rules are based on IP address, port or protocol
 Rules are matched from top to bottom
 Rules below a matching rule are ignored
 Traffic not matching any rule is routed using the main routing table
 Traffic destined for known (other than default) networks is handled by the main routing table
 Traffic matching a rule, but all WAN interfaces for that policy are down will be blackholed
 Names may contain characters A-Z, a-z, 0-9, _ and no spaces
 Rules may not share the same name as configured interfaces, members or policies

Name	Source address	Source port	Destination address	Destination port	Protocol	Policy assigned	
default_rule_v4	—	—	0.0.0.0/0	—	all	failover	
default_rule_v6	—	—	::/0	—	all	failover	
<input type="text"/> ADD							

SAVE & APPLY **SAVE** **RESET**

V2185.00.06 %R

Diagnostics

Determine the network status of the load balancing interface.

The screenshot shows the 5G Router management interface. The left sidebar has a 'Network' section selected, containing options like Interfaces, DHCP and DNS, Hostnames, Static Routes, SQM QoS, Diagnostics, Firewall, Cellular, and Load Balancing. The 'Load Balancing' option is underlined, indicating it's the active section. The main content area is titled 'MWAN Status - Diagnostics'. It features two dropdown menus: 'Interface' set to 'wan' and 'Task' set to 'Ping default gateway'. A large blue 'EXECUTE' button is centered below these fields. In the top navigation bar, the 'Diagnostics' tab is highlighted in blue, while other tabs like Overview, Globals, Interfaces, Members, Policies, Rules, Notification, Detail, troubleshooting, and a small 'Detail' link are also present.

Introduction to VPN Functions

IPSec

Status

Check the status of IPSec.

The screenshot shows the 5G Router web interface. The left sidebar has a 'VPN' dropdown menu with 'IPsec' selected. The main content area is titled 'strongSwan Status'. It contains two sections: 'Stats' and 'Security Associations (SAs)'. The 'Stats' section displays system information: Version 5.9.2, Uptime 9 Hours, 25 Seconds, Daemon charon, Active IKE_SAs 0, and Half-Open IKE_SAs 0. The 'Security Associations (SAs)' section is currently empty.

Settings

Remote Configuration

Define Remote IKE Configurations.

The screenshot shows the 5G Router web interface. The left sidebar has a 'VPN' dropdown menu with 'IPsec' selected. The main content area is titled 'strongSwan Configuration'. It contains four tabs: 'Remote Configuration' (selected), 'Tunnel Configuration', 'Encryption Proposals', and 'General Settings'. The 'Remote Configuration' tab shows a table for defining Remote IKE Configurations. One entry is listed: H3C, Enabled Yes, Gateway (Remote Endpoint) 192.168.188.179, Crypto Proposal phase_1_settings, and Tunnel H3C_Tun. Buttons for 'EDIT' and 'DELETE' are shown next to the entry. At the bottom are 'SAVE & APPLY', 'SAVE', and 'RESET' buttons. A footer note at the bottom right indicates V2185.00.06 %R.

Tunnel Configuration

Define Connection Children to be used as Tunnels in Remote Configurations.

5G Router

Dashboard System Services WiFi Network **VPN** IPsec OpenVPN Logout

strongSwan Configuration

Configure strongSwan for secure VPN connections.

Remote Configuration Tunnel Configuration Encryption Proposals General Settings

Tunnel Configuration

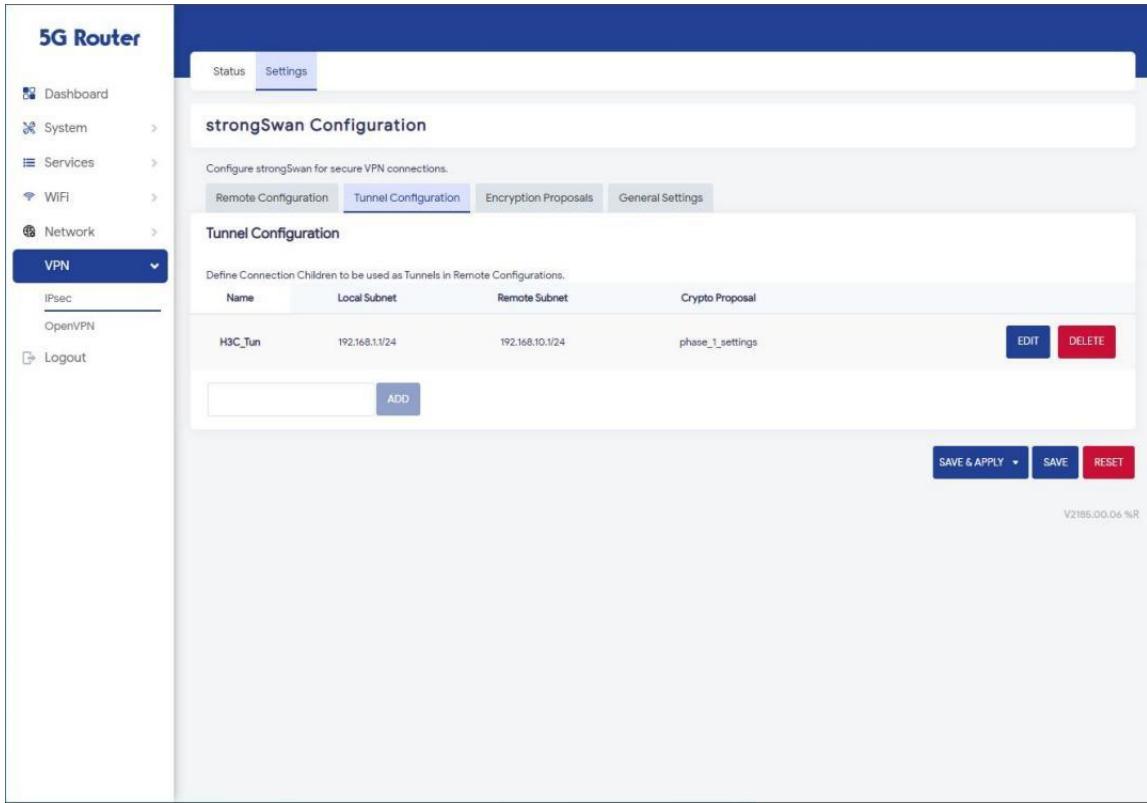
Define Connection Children to be used as Tunnels in Remote Configurations.

Name	Local Subnet	Remote Subnet	Crypto Proposal
H3C_Tun	192.168.1.1/24	192.168.10.1/24	phase_1_settings

ADD EDIT DELETE

SAVE & APPLY SAVE RESET

V2185.00.06 %R



Encryption Proposals

Configure Cipher Suites to define IKE (Phase 1) or ESP (Phase 2) Proposals.

5G Router

Dashboard System Services WiFi Network **VPN** IPsec OpenVPN Logout

strongSwan Configuration

Configure strongSwan for secure VPN connections.

Remote Configuration Tunnel Configuration Encryption Proposals General Settings

Encryption Proposals

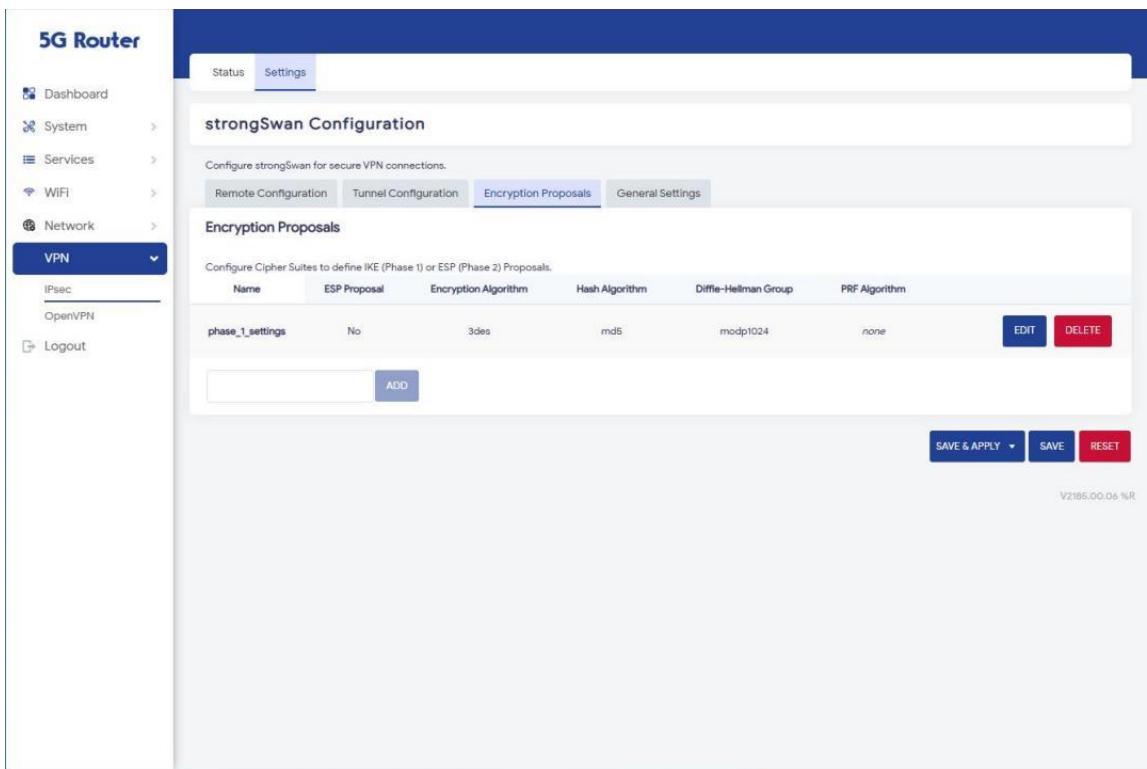
Configure Cipher Suites to define IKE (Phase 1) or ESP (Phase 2) Proposals.

Name	ESP Proposal	Encryption Algorithm	Hash Algorithm	Diffie-Hellman Group	PRF Algorithm
phase_1_settings	No	3des	md5	modp1024	none

ADD EDIT DELETE

SAVE & APPLY SAVE RESET

V2185.00.06 %R



General Settings

Configure the general settings for IPSec.

5G Router

Status Settings

strongSwan Configuration

Configure strongSwan for secure VPN connections.

Remote Configuration Tunnel Configuration Encryption Proposals General Settings

General Settings

Zone: **vpn** xfrm0: (empty) xfrm0_s: [edit]

Firewall zone that has to match the defined firewall zone

Listening Interfaces: **wan:** wan: [edit] wisp2: [edit] wisp26: [edit] ... [edit]

Interfaces that accept VPN traffic

Debug Level: **0**

Trace level: 0 is least verbose, 4 is most

SAVE & APPLY SAVE RESET

V2185.00.06 %R

This screenshot shows the configuration interface for the strongSwan VPN component of a 5G Router. The 'General Settings' tab is active. Key configuration parameters shown include the firewall zone ('vpn'), listening interfaces ('wan:', 'wisp2:', 'wisp26:'), and the debug level (set to 0). The interface is clean and modern, with a dark header and light-colored cards for configuration sections. Navigation tabs like 'Status' and 'Settings' are at the top, and a sidebar on the left provides access to other router functions like Dashboard, System, Services, WiFi, Network, and Logout.

OpenVPN

View and configure instances of OpenVPN.

OpenVPN

OpenVPN instances

Below is a list of configured OpenVPN instances and their current state

Name	Enabled	Started	Start/Stop	Port	Protocol
custom_config	<input type="checkbox"/>	no	START	-	-
sample_server	<input type="checkbox"/>	no	START	1194	udp
sample_client	<input type="checkbox"/>	no	START	-	udp

Template based configuration

Instance name: Select template ... **ADD**

OVPN configuration file upload

Instance name: Choose File: No file chosen **UPLOAD**

Buttons: **SAVE & APPLY**, **SAVE**, **RESET**

V2105.00.06 %R

Introduction to Exit Function

Click to log out of the management page and log in directly.

Typical Application

APN/VPDN Dedicated Network Card

When the user's SIM card uses a dedicated network interface card with APN function, the router can be modified according to the following configuration to enable the router to dial up and connect to the private network normally.

1. In Network > Cellular > Settings > SIM Settings, fill in the APN or VPDN parameters provided by the operator in the corresponding location, and click "Save and Apply".

The screenshot shows the 5G Router web interface. The left sidebar has a 'Network' section selected, which is currently expanded to show 'Cellular' as the active tab. The main content area is titled 'Cellular Setting' and contains fields for APN (set to 'Auto'), PIN, PDP Context (set to '1'), PDP Type (set to 'IPV4/V6'), Authentication Type (set to 'PAP/CHAP'), PAP/CHAP username ('admin'), and PAP/CHAP password ('*****'). At the bottom right are three buttons: 'SAVE & APPLY' (blue), 'SAVE' (orange), and 'RESET' (yellow).

2. Check the network by ping to a specify ip address via the network diagnosis page to determine whether the connection is normal and working.

The screenshot shows the 'Network Utilities' section of the 5G Router web interface. On the left, a sidebar menu is visible with the following items:

- Dashboard
- System
- Services
- WiFi
- Network** (selected)
- Interfaces
- DHCP and DNS
- Hostnames
- Static Routes
- SQM QoS
- Diagnostics** (underlined)
- Firewall
- Cellular
- Load Balancing
- VPN
- Logout

The main content area is titled 'Network Utilities' and contains the following interface elements:

- A search bar with the value '8.8.8.8'.
- A dropdown menu labeled 'IPV4 PING' with a downward arrow.
- A text input field containing 'openwrt.org'.
- A dropdown menu labeled 'IPV4 TRACEROUTE' with a downward arrow.
- A text input field containing 'openwrt.org'.
- A blue button labeled 'NSLOOKUP'.

The results of a ping test to 8.8.8.8 are displayed:

```

PING 8.8.8.8 (8.8.8.8): 56 data bytes
64 bytes from 8.8.8.8: seq=0 ttl=50 time=63.248 ms
64 bytes from 8.8.8.8: seq=1 ttl=50 time=69.222 ms
64 bytes from 8.8.8.8: seq=2 ttl=50 time=84.899 ms
64 bytes from 8.8.8.8: seq=3 ttl=50 time=124.576 ms
64 bytes from 8.8.8.8: seq=4 ttl=50 time=84.301 ms

--- 8.8.8.8 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 63.248/85.249/124.576 ms

```

In the bottom right corner of the main content area, there is a small text 'V2185.00.06 %R'.

WIFI Relay / Repeater

The wireless repeater function is to use the router's WIFI as the wireless client terminal to connect to another existing WIFI hotspot. This solution can use the network of the other router or hotspot to reduce the use of cellular traffic. The specific configuration is as follows:

1. WiFi > 2.4GHz or 5.8GHz > Bridge, select "AP-client+AP" for operation mode, select "WAN (wireless ISP)" for AP-client role, click "Scan" to search for surrounding wireless networks.

5G Router

Overview General Control Guest Network **Bridge** Access Control Radius Settings Advanced Settings

WiFi 2.4G Bridge Settings

Configure the params of 2.4G wireless for Operation Mode

Wireless Operation Mode: AP-Client+AP

Wireless AP-Client Role: WAN(Wireless ISP)

Wireless Channel: 6

Remote SSID:

APcli Bssid:

Authentication Method: NONE

WPA Encryption: NONE

WPA Pre-Shared Key:

WIFI-SCAN

SUBMIT

V2185.00.06 %R

2. Select the hotspot you want to connect to, and click "Choose This". The router will automatically fill in the parameters of the hotspot into the column field according. If the hotspot has a password, you need to manually fill in the password and click "SUBMIT".

5G Router

SSID	Channel	BSSID	Security	RSSI	Action
goodak	6	18:2A:57:4A:31:84	WPA2PSK/AES	68	Choose This
I2100-test	1	A8:80:38:3B:FC:64	WPA2PSK/AES	91	Choose This
LTE-2G-3AC388	1	A8:80:38:3A:C3:88	WPA2PSK/TKIPAES	100	Choose This
3AC38	1	AA:80:38:3A:C3:88	WPAPSKWPA2PSK/AES	100	Choose This
LTE-410DA8	1	A8:80:38:41:0D:A8	WPAPSKWPA2PSK/TKIPAES	18	Choose This
Movingcomm-2.4GHz	1	A8:80:38:31:0F:D6	WPAPSKWPA2PSK/TKIPAES	26	Choose This
LTE-2G-46AD70	1	A8:80:38:46:AD:70	WPA2PSK/AES	100	Choose This
test	1	A8:80:38:3A:91:34	WPAPSKWPA2PSK/TKIPAES	0	Choose This
MCT2.4	1	A8:80:38:42:5F:78	WPA2PSK/AES	70	Choose This
LTE-2G-39D9C	1	AA:80:38:39:D9:C8	OPEN/NONE	63	Choose This
铁壳4G-唐	1	A8:80:38:3D:4E:88	WPAPSKWPA2PSK/TKIPAES	23	Choose This
TLXN	1	B8:F8:83:86:D2:0F	WPAPSKWPA2PSK/AES	2	Choose This
305	1	98:EE:CA:56:04:FC	WPA2PSK/AES	10	Choose This
sge009	3	A8:80:38:30:63:04	WPA2PSK/AES	20	Choose This
ChinaNet-WrtG	4	F0:16:28:5F:3D:A7	WPAPSKWPA2PSK/TKIPAES	0	Choose This
MCT2.4	4	A8:80:38:3A:C2:44	WPA2PSK/AES	26	Choose This
MCT2.4	5	A8:80:38:46:35:30	WPA2PSK/AES	57	Choose This
NIS-HomeAP	6	A8:80:38:46:35:48	WPA2PSK/AES	100	Choose This
NIS-HomeAP-3528	6	A8:80:38:46:35:28	WPA2PSK/AES	100	Choose This
NIS-HomeAP	6	A8:80:38:46:35:2C	WPA2PSK/AES	5	Choose This
NIS-HomeAP	6	A8:80:38:46:35:4C	WPA2PSK/AES	24	Choose This
ChinaNet-A3nN	6	6C:38:45:A3:73:FD	WPAPSKWPA2PSK/AES	0	Choose This
ChinaNet-E1x	7	F0:92:B4:9D:2D:39	WPAPSKWPA2PSK/TKIPAES	26	Choose This

Bridge

SUBMIT

V2185.000 %R

5G Router

Wireless Operation Mode	AP+Client+AP
Wireless AP-Client Role	WAN(Wireless ISP)
Wireless Channel	1
Remote SSID	MCT2.4
APcll Bssid	A8:80:38:42:5F:78
Authentication Method	WPA2-PSK
WPA Encryption	AES
WPA Pre-Shared Key

Bridge

WIFI SCAN

SUBMIT

3. When the router is connected to a hotspot, the STA in the WiFi overview will display the status as connected. In the router's overview menu, the IP address of the higher-level WiFi hotspot obtained can be seen, and the router's relay is connected normally.

4. Perform packet ping to the gateway address of the uplink network via the network diagnostics page to determine whether or not the connection is normal.

The screenshot shows the 'Network Utilities' section of the 5G Router web interface. On the left, a sidebar menu is visible with the following items:

- Dashboard
- System
- Services
- WiFi
- Network** (selected)
- Interfaces
- DHCP and DNS
- Hostnames
- Static Routes
- SQM QoS
- Diagnostics** (selected)
- Firewall
- Cellular
- Load Balancing
- VPN
- Logout

The main content area is titled 'Network Utilities' and contains four tabs: 'IPV4 PING', 'IPV4 TRACEROUTE' (selected), 'openwrt.org', and 'NSLOOKUP'. Below these tabs, the output of a ping command is displayed:

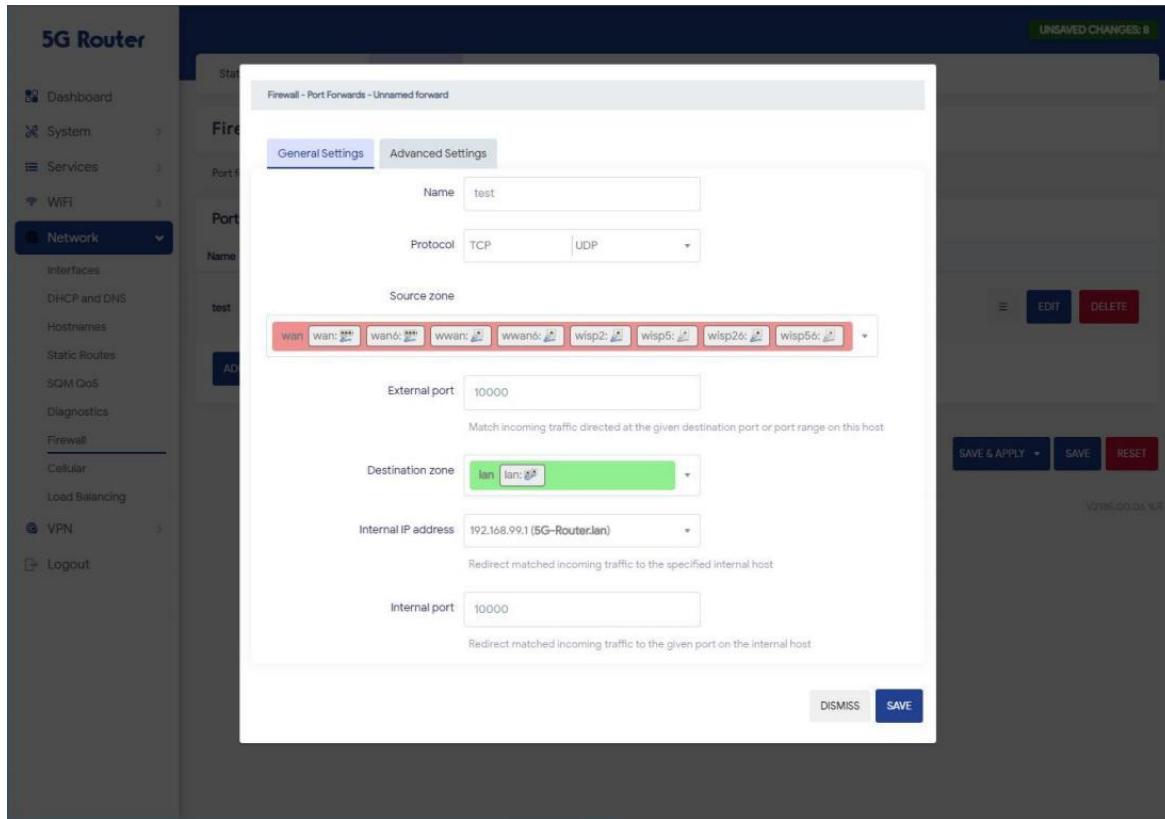
```
PING 192.168.188.254 (192.168.188.254): 56 data bytes
64 bytes from 192.168.188.254: seq=0 ttl=64 time=1.876 ms
64 bytes from 192.168.188.254: seq=1 ttl=64 time=8.774 ms
64 bytes from 192.168.188.254: seq=2 ttl=64 time=3.761 ms
64 bytes from 192.168.188.254: seq=3 ttl=64 time=2.077 ms
64 bytes from 192.168.188.254: seq=4 ttl=64 time=7.967 ms

--- 192.168.188.254 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 1.876/4.891/8.774 ms
```

In the bottom right corner of the main content area, the text 'V2185.00.06 %R' is displayed.

Port Mapping

"Port Forwards" can be found in the firewall page. You can map the port that needs to be translated and forwarded to the corresponding intranet IP, and click "SAVE & APPLY" to apply the configuration.



Name	Match	Action	Enable
test	Incoming IPv4 From: wan To: this device .port 10000	Forward to: lan IP 192.168.99.1 port 10000	<input checked="" type="checkbox"/>

Serial Passthrough

1. First enable the Ser2Net function, the router enables the TCP server, and records the address and port of the router.

5G Router

Dashboard System Services > Services Remote Manager uHTTPd Dynamic DNS UPnP Watchcat Policy Routing MWAN3 Helper SNMPD ser2net Network Shares WiFi Network VPN Logout

Settings Proxies LEDs

Ser2Net Settings -- Global

Global and Control Port and Serial Port Default value Settings.

Global switch

Enabled

Control port

Enabled Binding address localhost The network to listen from. Control port 2000 The TCP port to listen on.

Default settings

Baud rate 115200 The speed the device port should operate at. Data bits 8

5G Router

Dashboard System Services > Services Remote Manager uHTTPd Dynamic DNS UPnP Watchcat Policy Routing MWAN3 Helper SNMPD ser2net Network Shares WiFi Network VPN Logout

Settings Proxies LEDs

Ser2Net Settings -- Proxies

UNSAVED CHANGES: 1

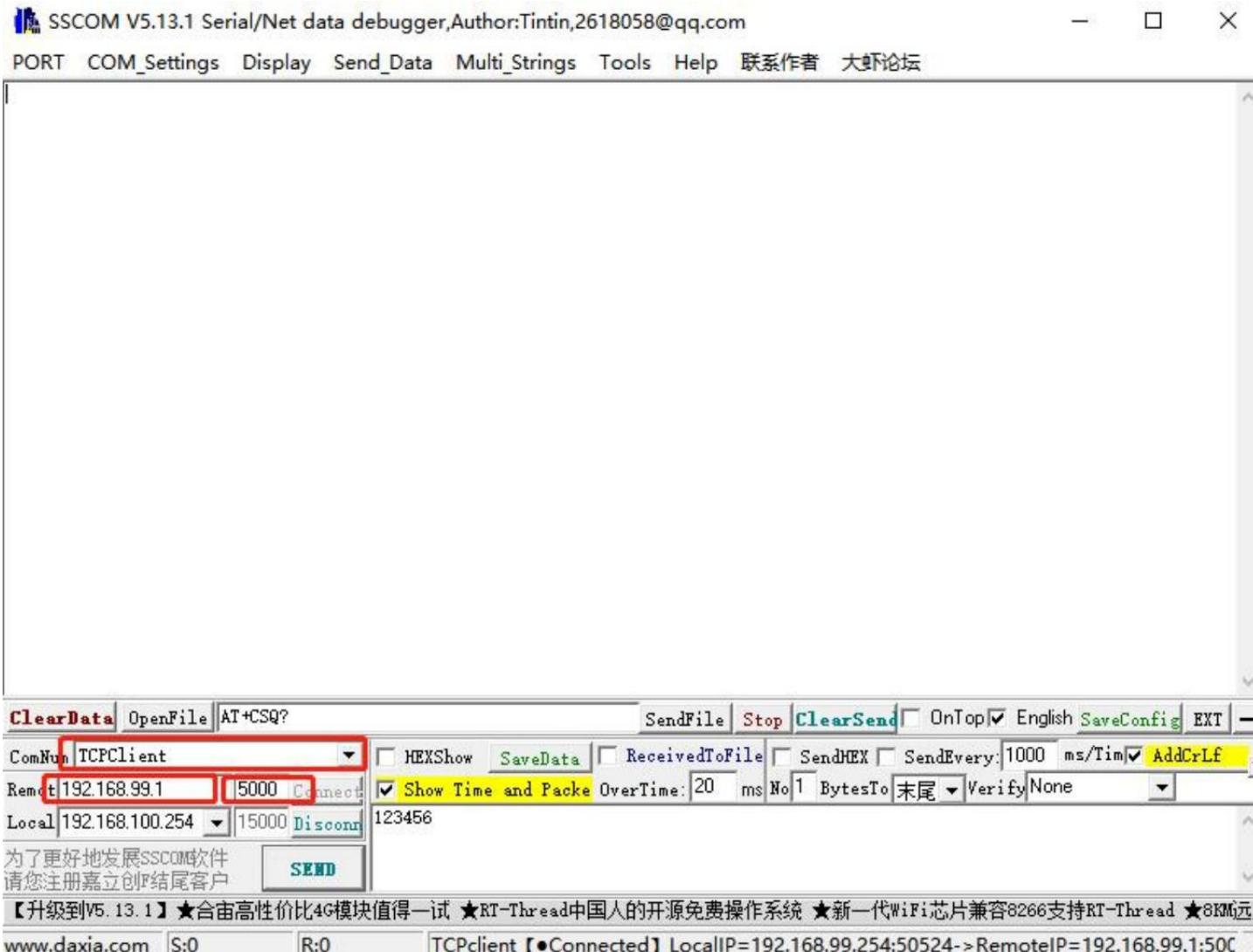
Proxies Settings

Name	Enabled	Service port	Protocol	Timeout	Device	Baud rate	Data bits	Parity	Stop bits	EDIT	DELETE
RS232	Yes	5000	raw	0	/dev/ptyS1	115200	8	none	1	<button>EDIT</button>	<button>DELETE</button>
RS485	No	5001	raw	0	/dev/ptyS2	115200	8	none	1	<button>EDIT</button>	<button>DELETE</button>

ADD

SAVE & APPLY SAVE RESET V2185.00.06 %R

2. Open the serial port tool, select the TCP client side, and fill in the router IP and port to connect to the TCP server here.



3. According to the baud rate of the serial port to set the baud rate information. Connect the RS232 connection to the RS232 serial port.

5G Router

UNSAVED CHANGES: 1

Dashboard System Services Services Remote Manager uHTTPd Dynamic DNS UPnP Watchcat Policy Routing MWAN3 Helper SNMPD ser2net Network Shares WiFi Network VPN Logout

Ser... Settings Ser2Net Settings -- Proxies - RS232

Name	Service port	Protocol	Timeout	Device	Actions
RS232	5000	Raw	0	/dev/ttyS1	<button>EDIT</button> <button>DELETE</button>
RS485					<button>EDIT</button> <button>DELETE</button>

Baud rate: 115200
The speed the device port should operate at.

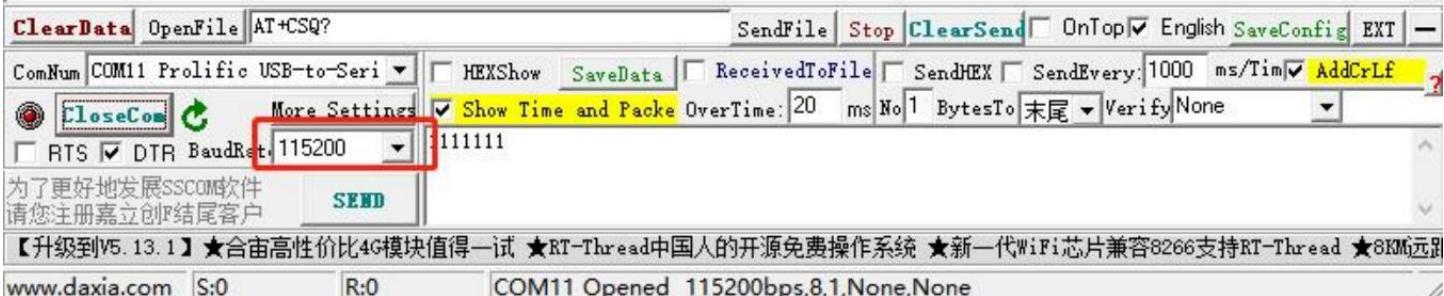
Data bits: 8

Parity: None

Stop bits: 1

Use RTS and CTS lines:

SAVE & APPLY SAVE RESET



4. After that, you can send data to each other between tcp client and the serial port.

