

MEM-G86 User Manual





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1. Overview



Wireless 4G LTE Router supports WIFI 3G with CE/RoHs

MEM -G86 is a wireless 4G Lte router, which provides a solution for yunzhiruantong's device to access 4G network.

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- Hardware/Software Watchdog
- 1 WAN port and 1 LAN port
- APN&VPN (PPTP/L2TP), PPPOE

General Details | Parameter | Inquiry | **Download**

Figure 1 Download Page

1.1. Brief introduction

MEM-G86 Industrial 4G LTE router supports WAN, LAN, WLAN and 4G interface. User can access to 3G/4G network by WLAN interface or Ethernet interface.

1.2. Product feature

- 1 wired LAN ports, 1 wired WAN ports (WAN ports can be switched to LAN ports).
- 2.4G WIFI wireless 802.11 b/g/n
- LED communication indicators
- Configure device by webpage
- Support one button to restore factory settings.
- The wired net ports support 10/100Mbps rate.
- Support VPN Client (PPTP/L2TP/IPSEC/GRE/OPENVPN/SSTP) and supports VPN encryption and static IP functions.
- Support APN automatic checking network, 2/3/4G system switching, SIM information display, support APN/VPDN special network card.
- Support for wired wireless multi network simultaneous online and multi network intelligent switching backup function.
- Support remote upgrade and remote monitoring.
- Support Dynamic Domain Name System (DDNS), Static Routing, PPPOE, DHCP, Static IP Function



- Support mandatory portal (WIFIDOG), this function needs to be customized according to customer needs.
- Support the firewall, NAT, DMZ host, access control black-and-white list, IP speed limit, NTP, MAC speed limit.
- Support SMS AT command
- Support external hardware watchdog design to ensure system stability.

1.3. Hardware introduction

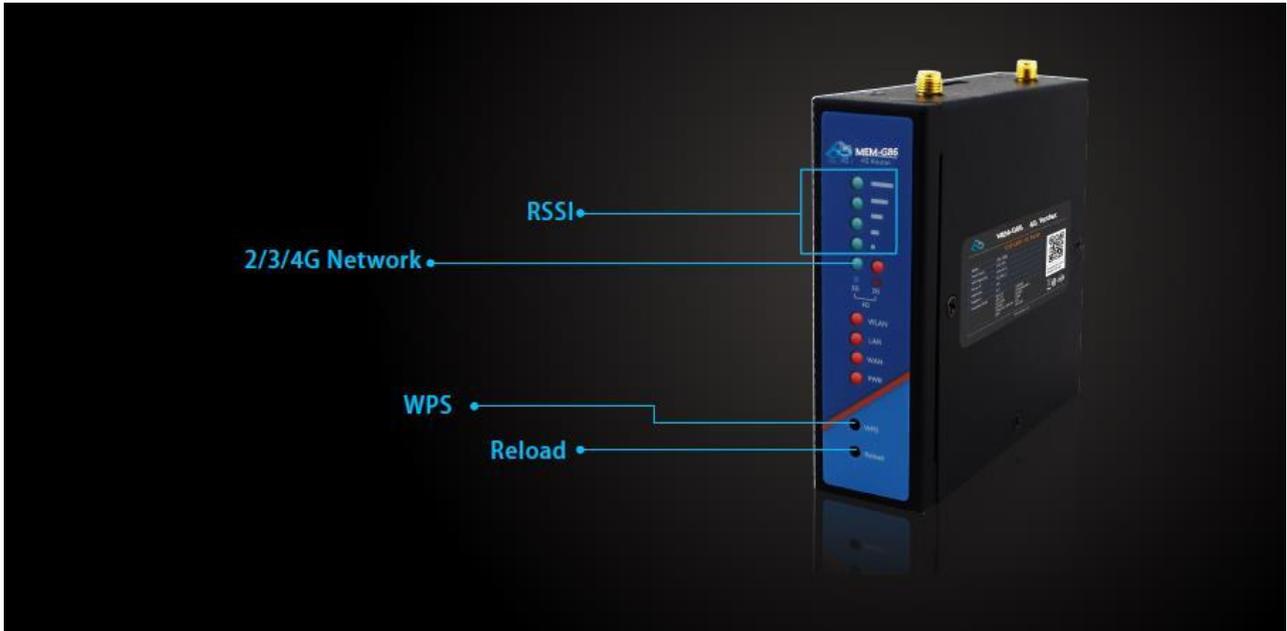


Figure 1 LED

LED	Function	
RSSI	The more green LEDs lighten, the signal is stronger.	
2G	2G:On 3G:Off	2G network accessing
	2G:Off 3G:On	3G network accessing
3G	2G:On 3G:On	4G network accessing
	On: Wi-Fi enabled	Off: Wi-Fi disabled
WLAN	Blink: LAN port working	Off: LAN port not working
LAN	Blink: WAN/LAN port working	Off: WAN/LAN port not working
WAN	On: Power on	Off: Power off
PWR	Button Function	
WPS	Reserved	
Reload	Restore default settings	

Figure 3 LED functions

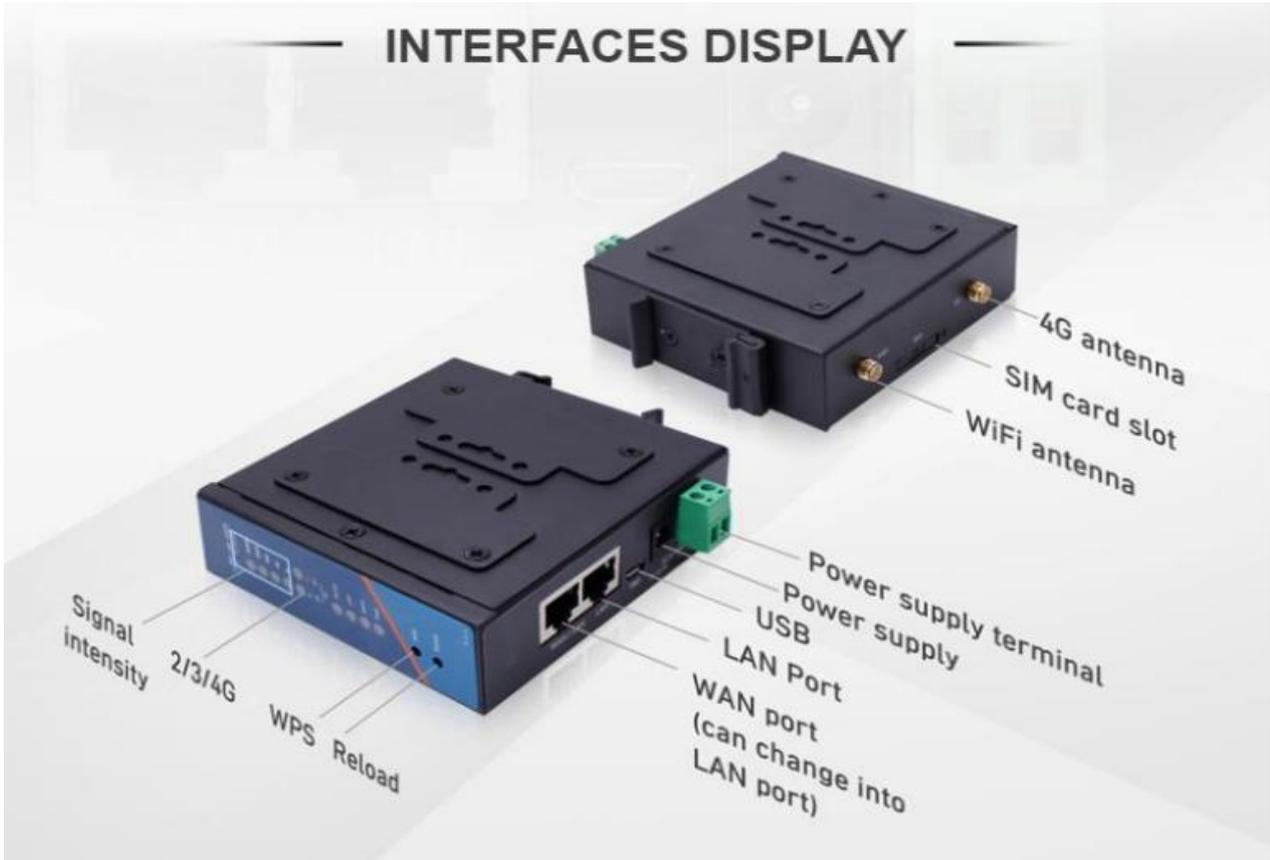


Figure 4 Interface

1.4. 2G/3G/4G Band

MEM-G86 has different band model to support different area. To check if the MEM-G86 works in specific country, please check which 3G/4G technology and band is used in this country and operator. Then please contrast our form of different model.

Model	Carrier/Region	2G/3G/4G Bands
MEM-G86	Europe/International (EMEA, Korea Thailand,India) (HongKong)	FDD:B1/2/3/5/7/8/20 TDD:B38/40/41 HSPA/UMTS: B1/2/5/8 GSM/EDGE: B2/3/5/8
MEM-G86	Southeast Asia	FDD:B1/2/3/5/7/8/20 TDD:B38/40/41 HSPA/UMTS: B1/2/5/8 GSM/EDGE: B2/3/5/8
MEM-G86--AU	Australia Taiwan New Zeland Latin America	FDD:B1/2/3/5/7/8/28 TDD:B38/40/41 HSPA/UMTS: B1/2/5/8 GSM/EDGE: B2/3/5/8
MEM-G86-A	AT&T,T-Mobile/North America	FDD:B2/4/12 WCDM:B2/4/5

2. Product Functions

This chapter introduces the functions of MEM-G86, as the following diagram shown, you can get an overall knowledge of it.



Figure 12 Product function

2.1. Install procedure

- Connect the 4G antenna and Wi-Fi antenna to the router. (Longer one is 3G/4G antenna and Shorter one is Wi-Fi antenna.)
- Plug the SIM card in socket.
- Power on the module by power adaptor and check the LED status.
- Connect PC or mobile to the MEM-G86 router via LAN interface or Wi-Fi interface.
- Log in Web Server of router. (Default IP address of router is 192.168.1.1, either the username and password is "root".)
- Configure APN parameters according to SIM card. Some SIM card APN can be recognized automatically.(Network->APNSET)
- Configure other parameters according to user applications.

2.2. APN

APN configuration by Web Server as follow:

The screenshot shows the 'APN Settings' web interface. On the left, a navigation menu has 'APNSET' selected. The main area has tabs for 'APN', 'LTE Config', and 'SIM Info'. The 'APN' tab is active, displaying configuration fields: APNAddress (CMIOTAH.C.BJ), Username, Password, AuthType (PAP), Check Registered (Seconds) (30), WAN Priority (wanfirst), Reference Mode (Custom), and Reference Address (8.8.8.8). A 'Save & Apply' button is at the bottom right. Red arrows indicate the flow from the menu to the fields and then to the save button.

Figure 13 APN configuration

To choose the network type, please configure the LTE configuration.

The screenshot shows the 'LTE Config' web interface. At the top are tabs for 'APN', 'LTE Config', and 'SIM Info'. The 'LTE Config' tab is active, showing 'Mode(Please Select 2/3/4G, When selecting auto, default 4G>3G>2G)' and 'Priority(When selecting auto, default 4G>3G>2G)', both set to 'AUTO'. A 'Save & Apply' button is at the bottom right. A red box highlights the Mode and Priority settings.

Figure 14 LTE configuration

2.2.1. Create a VPN client

User can set VPN client configuration by Web Server as follow:

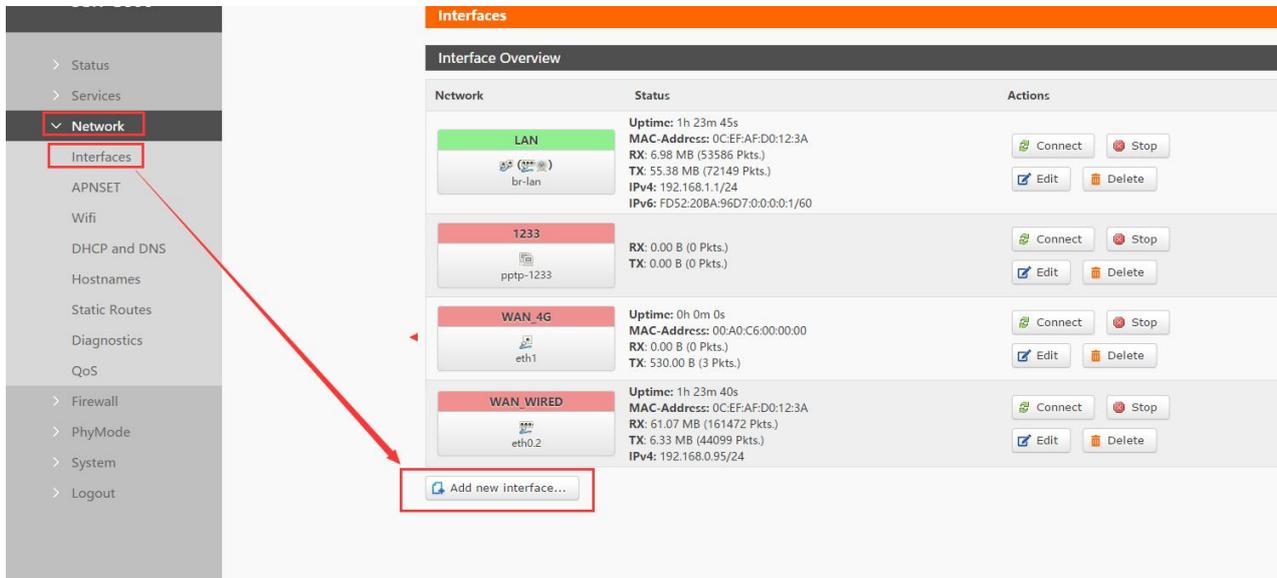


Figure 15 VPN Client

2.3. Networking mode

2.3.1. WAN+LAN+4G

In this networking mode, user can access internet through WAN interface and 4G interface. WAN interface has higher priority than 4G interface to ensure communication and save 4G flows. When WAN interface occurs problems, router can change to 4G interface to connect internet. In this mode, user can also connect to router through WIFI.

To achieve this mode, user don't need to change the router's parameters. Just connect the cable to router and insert SIM card, then power the router.

Application diagram as follow:



Figure 16 WAN+LAN+4G networking

2.3.2. LAN+LAN+4G

In this networking mode, two devices can connect to router through LAN and access the Internet by 4G network. User can achieve this by Web Server as follow:

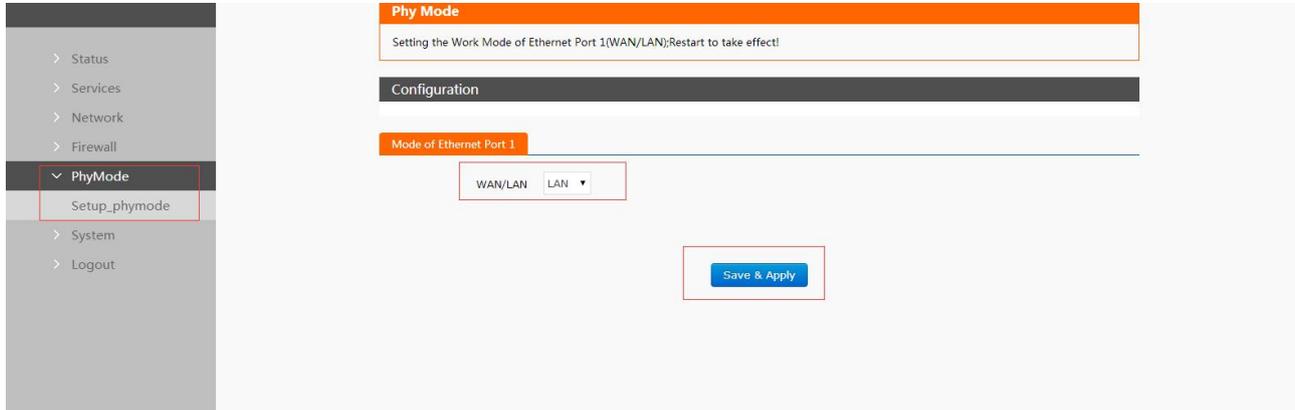
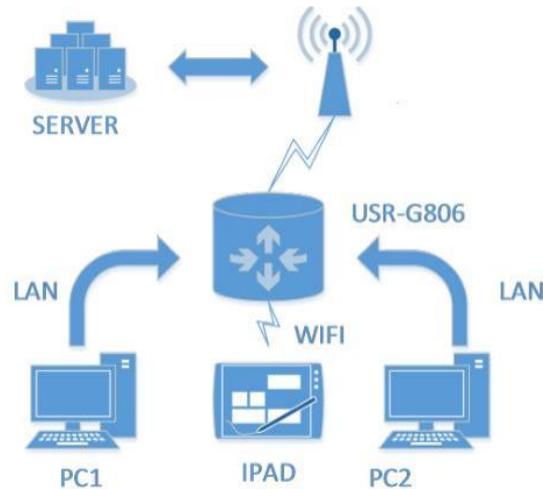


Figure 17 Switch WAN/LAN interface

Application diagram as follow:



2.4. Common functions

2.4.1. 4G interface

MEM-G86 supports one 4G interface to access internet. Functional diagram as follow:

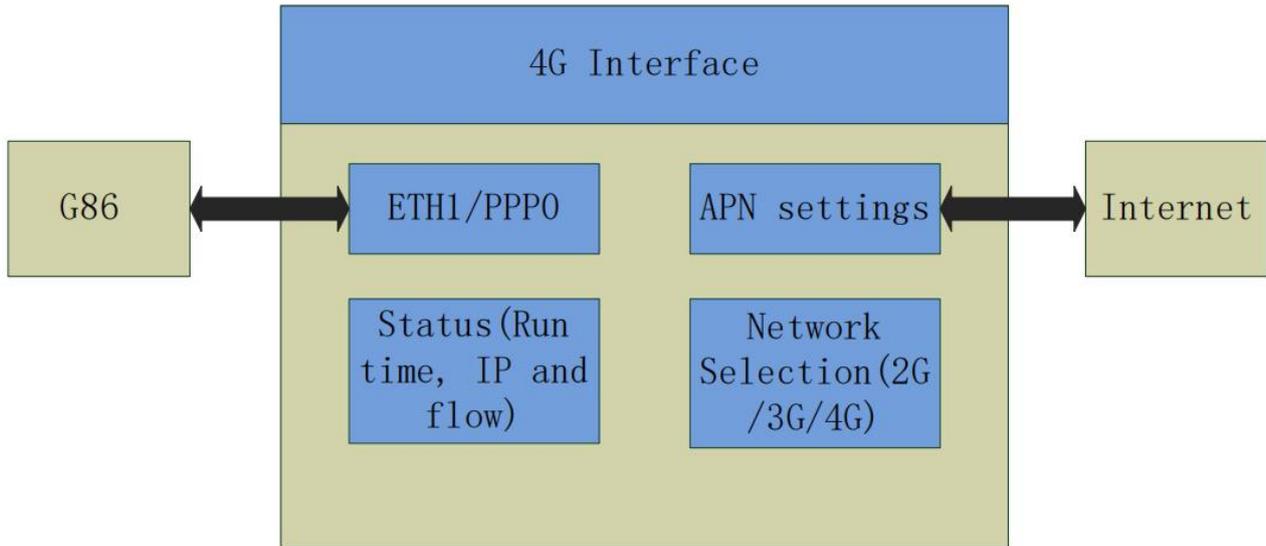


Figure 19 4G interface

User can configure 4G interface by Web Server as follow:

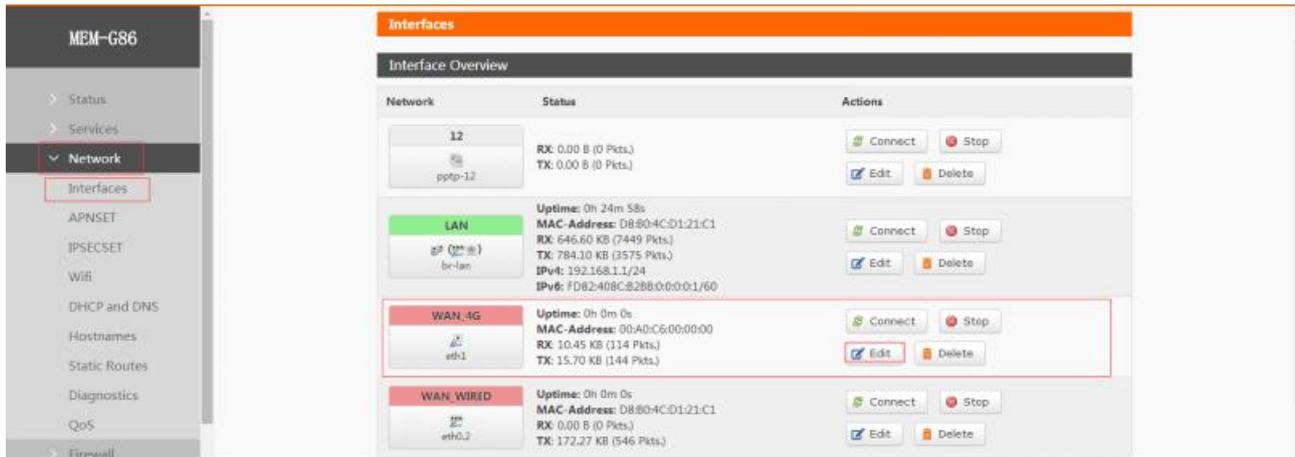


Figure 20 4G interface

2.4.2. LAN interface

G86 supports two LAN interface (one is WAN/LAN interface).

Default settings: One LAN interface (WAN/LAN used as WAN interface; IP address: 192.168.1.1; Subnet mask: 255.255.255.0; Open DHCP function).

User can configure LAN interface by Web Server as follow:

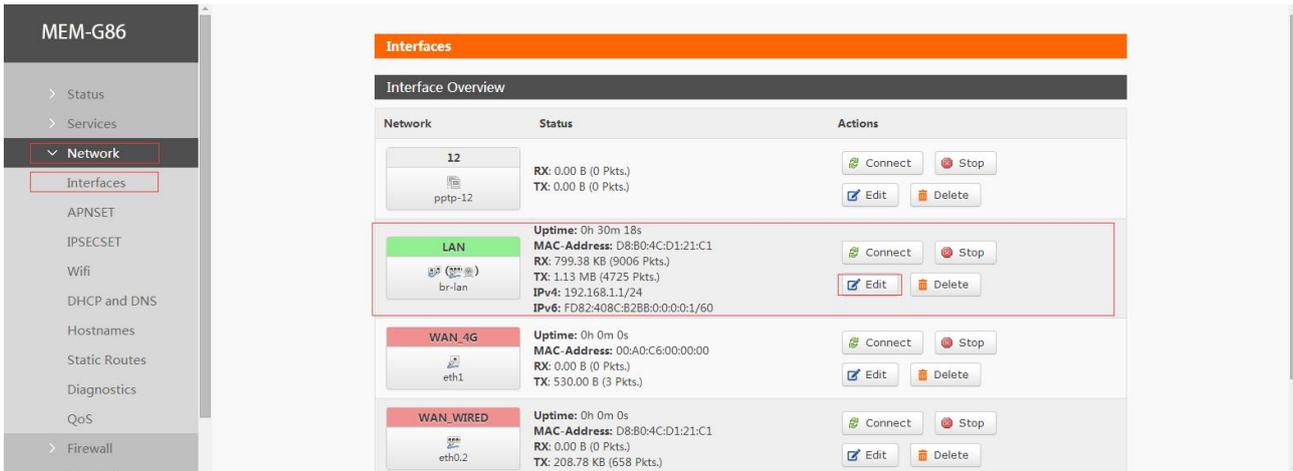


Figure 21 LAN interface

2.4.2.1. DHCP Function

DHCP default range of distribution is from 192.168.1.100 to 192.168.1.250 and default address lease time is 12 hours. Address range and lease time can be changed.

After you enter Web Server LAN interface, you can find 'DHCP Server' on Web Server as follow:

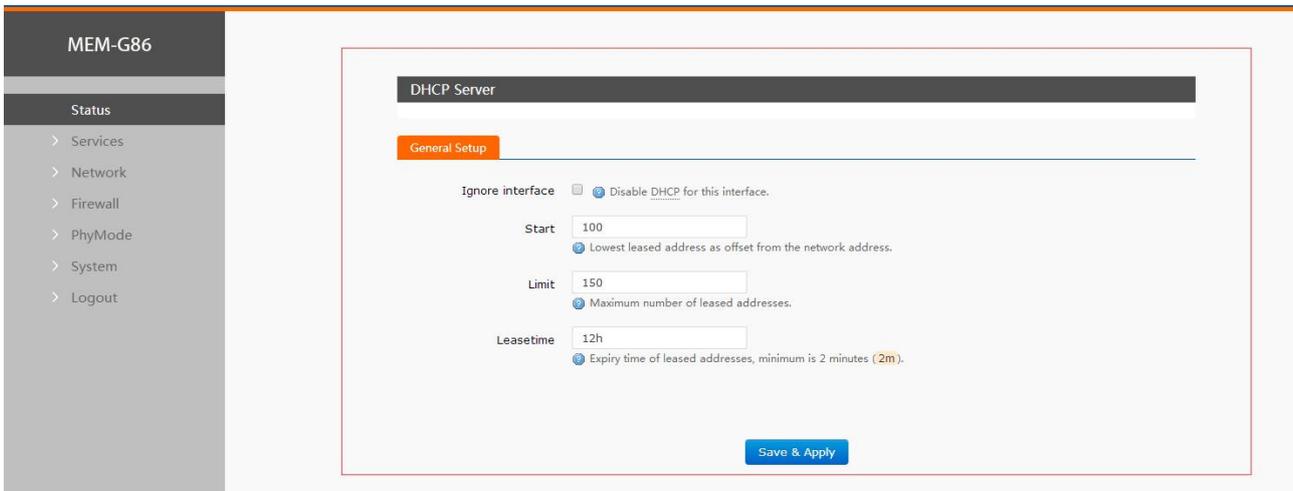


Figure 22 DHCP function

2.4.3. WAN interface

G86 supports one WAN interface and WAN interface can switch between WAN/LAN interface. WAN interface supports DHCP and Static IP, and default setting is DHCP

User can configure WAN interface by Web Server as follow:

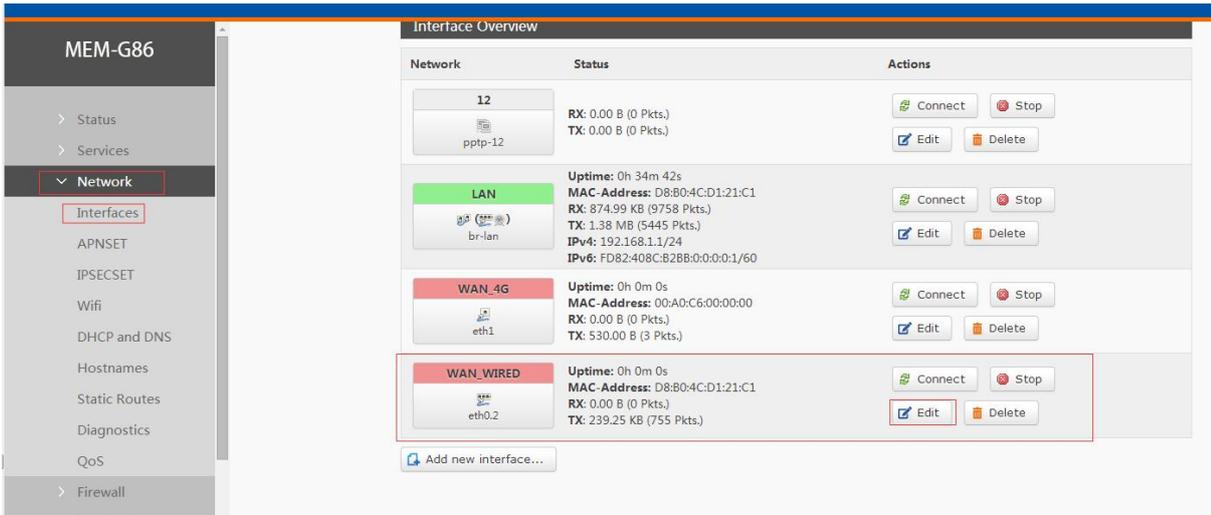


Figure 23 WAN interface

2.4.4. WLAN interface

G86 supports at most 24 STA device connection.

Default parameters as follows:

SSID	MEM-G86-XXXX(XXXX is MAC)
Channel	Auto
Bandwidth	40MHz
Encryption Mode	WPA2-PSK

Figure 24 WALN default parameters

WLAN interface on Web Server as follow:

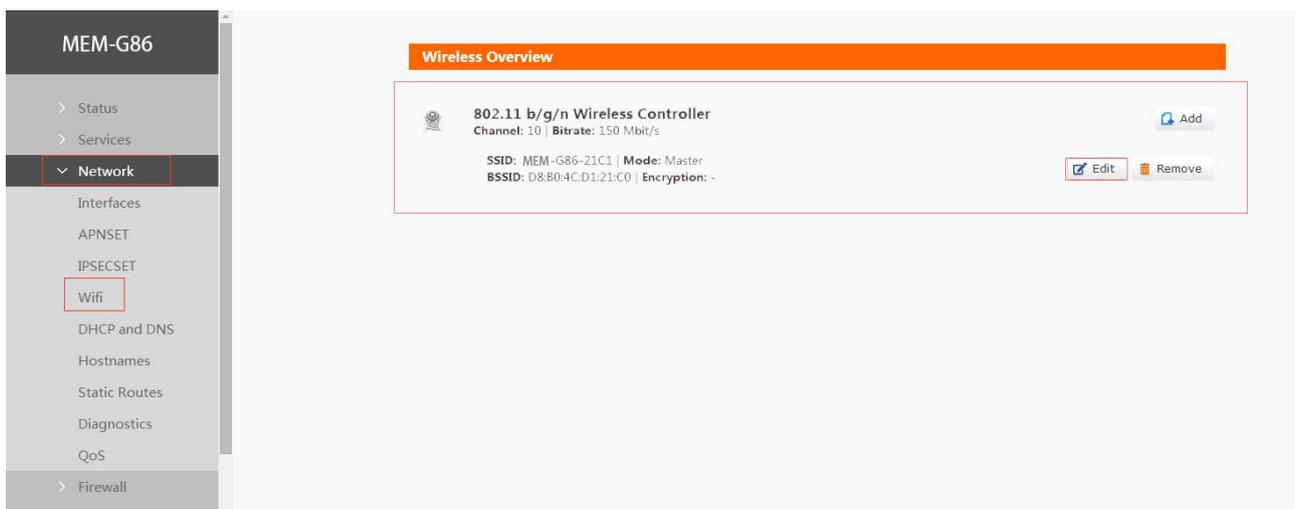


Figure 25 WLAN interface

After clicking “Edit” and entering WLAN interface configuration web, user can change follow parameters.

User can configure SSID on Web Server as follow:

The screenshot shows the 'Interface Configuration' page for the 'Wireless Security' tab. The 'ESSID' field is highlighted with a red box and contains the value 'MEM-G86-21C1'. Other visible fields include 'Mode' (Access Point), 'Network' (lan, wan_4g, wan_wired), and 'Hide ESSID'.

Figure 26 Configure SSID

User can configure password on Web Server as follow:

The screenshot shows the 'Interface Configuration' page for the 'Wireless Security' tab. The 'Key' field is highlighted with a red box and contains a masked password. Other visible fields include 'Radio on/off' (on), 'Network Mode' (802.11b/g/n), 'Channel' (auto), and 'Band Width' (40MHz).

Figure 27 Configure password

Other settings on Web Server as follow:

The screenshot shows the 'Wireless Network: Master * MEM - G86-21C1 * (ra0)' page. The 'Device Configuration' tab is selected, and the 'Advanced Settings' sub-tab is active. The 'Status' field is highlighted with a red box and displays 'Mode: Master | SSID: MEM -G86-21C1 | BSSID: D8:80:4C:D1:21:C0 | Channel: 10 | Bitrate: 150.0 Mbit/s'. Other visible fields include 'Radio on/off' (on), 'Network Mode' (802.11b/g/n), 'Channel' (auto), and 'Band Width' (40MHz).

Figure 28 Other settings

User can close WLAN interface by changing ‘Radio on/off’ into off.

2.4.5. Network Diagnosis

User can use network diagnosis function by Web Server as follow:

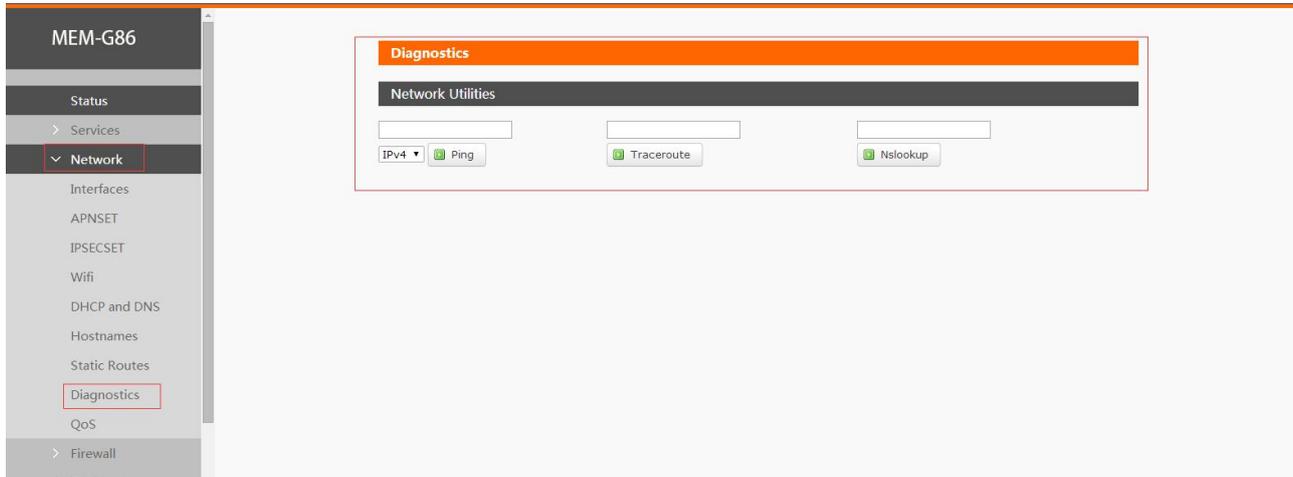


Figure 29 Network diagnosis

- Ping: User can do PING test to a specific address in G86.
- Traceroute: Can acquire routing path to visit a specific address.
- Nslookup: Can analyse DNS into IP address

2.4.6. Module Name and Time Zone

G86 default module name is MEM-G86 and default Time Zone is Beijing time zone.

User can configure module name and Time Zone by Web Server as follow:

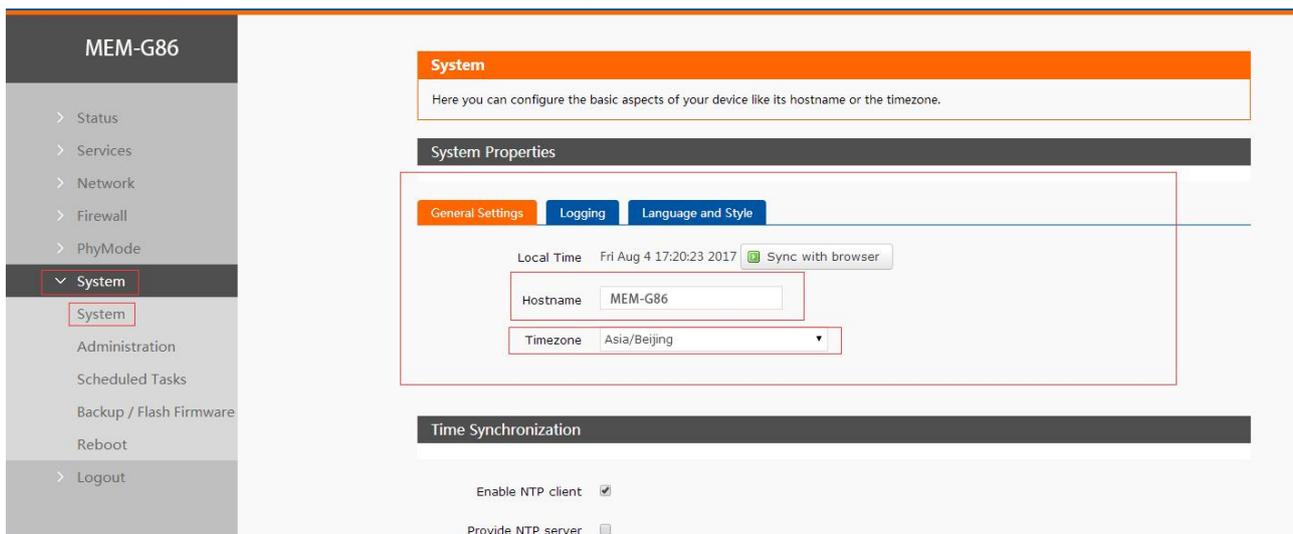


Figure 30 Module name and Time Zone

2.5. Basic Functions

2.5.1. Web Server Password

Default password is root, this password is used to enter Web Server

User can change password by Web Server as follow:

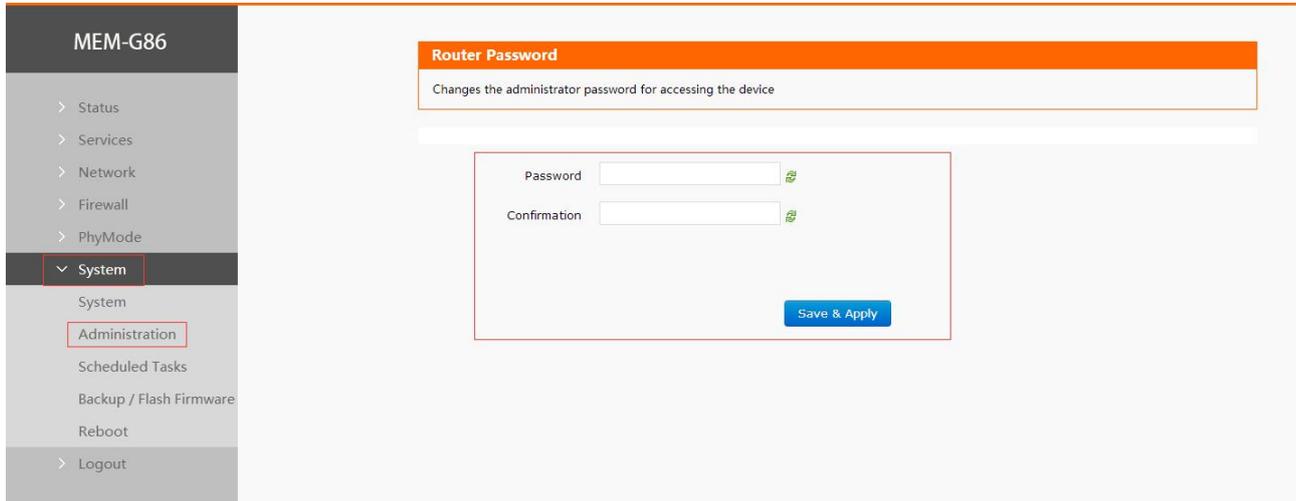


Figure 31 Change Web Server password

2.5.2. Restore

Hardware restore: Press Reload button over 5 seconds and release, G806 will restore default settings and reset.

User can restore default settings by Web Server as follow:

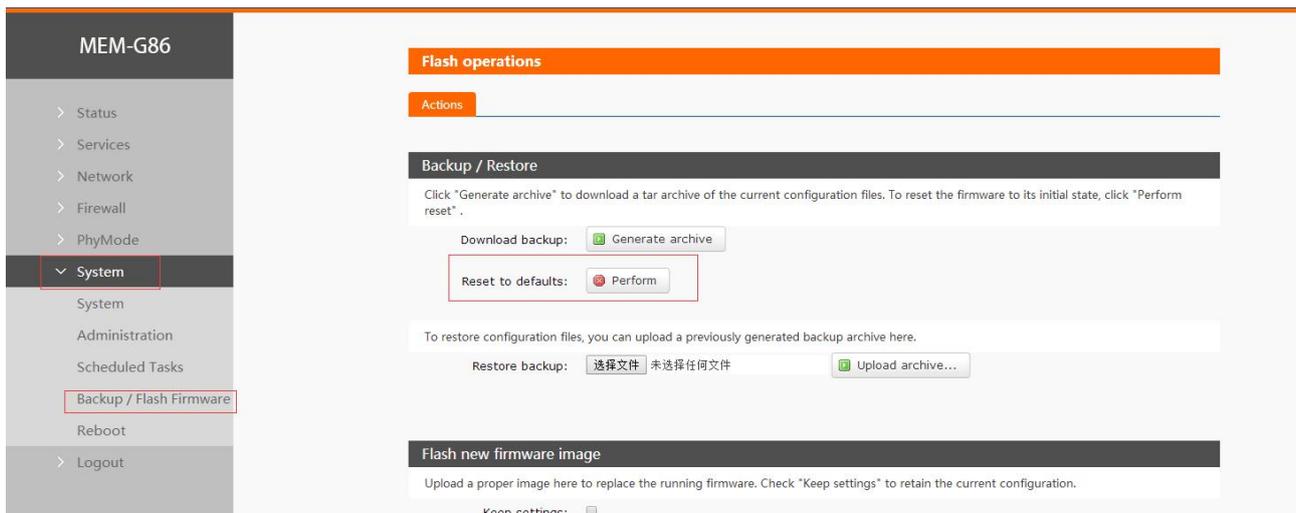


Figure 32 Restore default settings

2.5.3. Upgrade Firmware Version

Upgrade by Web Server as follow:

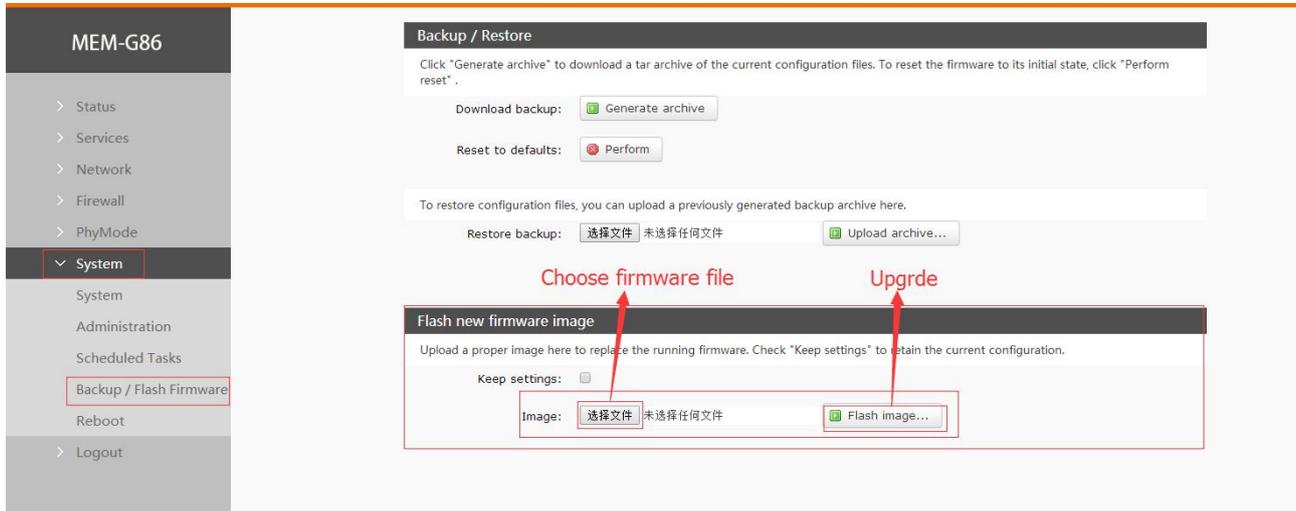


Figure 33 Upgrade firmware version

Note:

- The whole upgrade process will last about 1 minute, user can enter Web Server after about 1 minute.
- User can choose saving settings.
- User should keep powering up and LAN/WIFI connection during the whole upgrade process.

2.5.4. Reset

Reset time is about 40~60 seconds.

Reset by Web Server as follow:

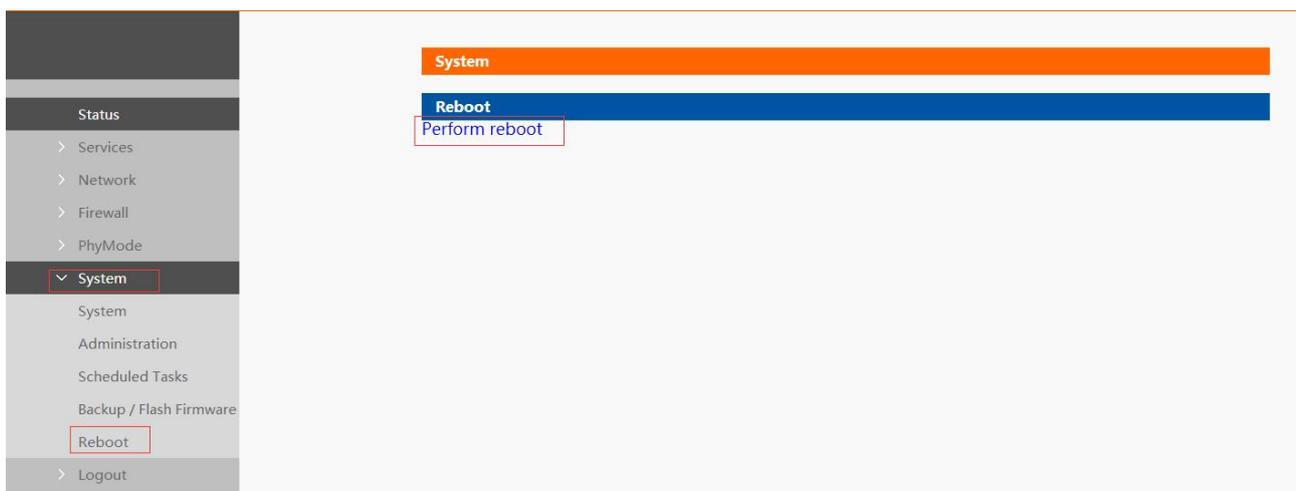


Figure 34 Reset module



3. Web Server

When user need to configure the G86, user can connect PC to USR-G86 through LAN interface or WLAN, then open Web Server

Default parameters of G86 as follows:

SSID	MEM-G86-XXXX
IP Address	192.168.1.1
User name	root
Password	root

Figure 35 Default parameters

Take default parameters as example: User can connect PC to SSID USR-G806-XXXX. Then open browser and enter 192.168.1.1, log in with User name and Password(both are root), user can enter Web Server.

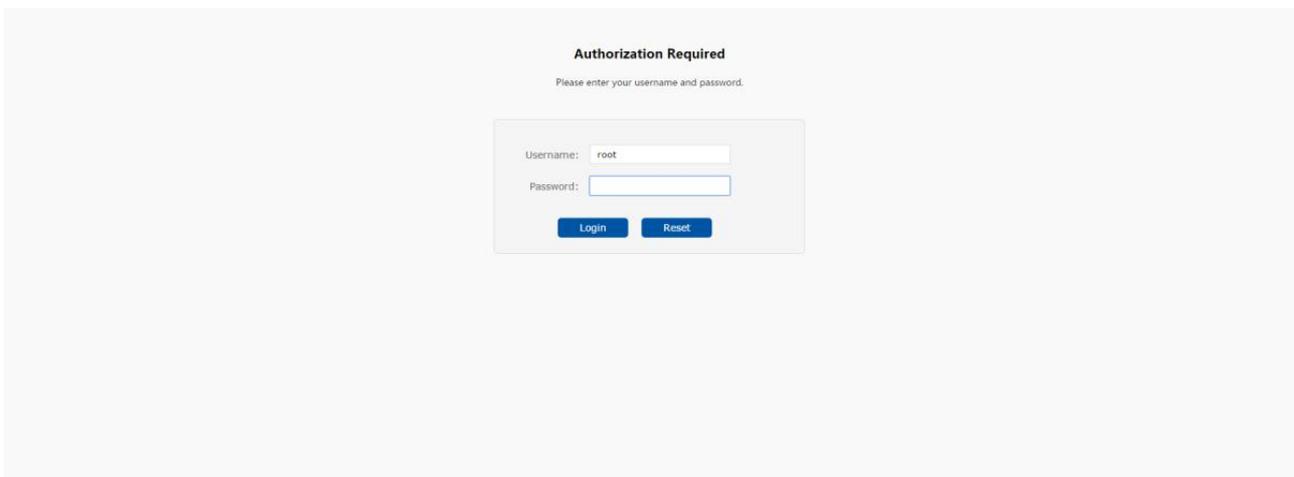


Figure 36 Web Server login web

User can change the language between Chinese/English in the top right corner.

4. Disclaimer

This document provides the information of MEM-G86 products, it hasn't been granted any intellectual property license by forbidding speak or other ways either explicitly or implicitly. Except the duty declared in sales terms and conditions, we don't take any other responsibilities. We don't warrant the products sales and use explicitly or implicitly, including particular purpose merchant-ability and marketability, the tort liability of any other patent right, copyright, intellectual property right. We may modify specification and description at any time without prior notice.



5. Updated History

2017-08-02 V1.0.4.1 established based on Chinese version V1.0.4.

2017-11-09 V1.0.4.2 updated. Modified some words to standards and corrected spelling/grammatical mistakes.

Optimized whole manual arrangement. Changed related pictures to new G86 pictures.

2018-01-05 V1.0.4.3 updated. Changed related pictures to normal G86 version pictures.

Optimized whole manual

arrangement. Divided G86 user manual into normal version and G86 version.

2019-06-10 V1.0.4.4 updated. Modify band frequency.