Ruijie Networks – Innovation Beyond Networks

RG-MTFI Implementation Cookbook (V1.1)

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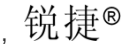
RGOS®,RGNOS®,

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1 Preface

Audience

- Network Engineers
- Network Administrator

Obtain Technical Assistance

- Ruijie Networks Websites: http://www.ruijienetworks.com
- Ruijie Service Portal: http://case.ruijienetworks.com

Welcome to report error and give advice in any Ruijie manual to Ruijie Service Portal

Related Documents

- Ruijie Wireless Products Datasheet: http://www.ruijienetworks.com/service/doc.aspx

Revision History

Date	Change contents	Reviser
2017.10	Initial publication V1.0	Ruiji International TAC
2018.1	Added WEB UI configuration	Ruiji International TAC

2 Contents

3 Product Introduction

3.1 Product Overview

Ruijie RG-MTFi-M520 exclusively offers you an in-vehicle wireless system and entertainment hub - all in one easy-to-use platform. Onboard with simultaneous dual-SIM link aggregation, the RG-MTFi-M520 transforms 3G/4G to wireless connectivity with ease. The device implements the latestLTE solution supporting advanced communication systems such as TD-LTE, FDD-LTE, TD-SCDMA and WCDMA for streamlined LTE applications on the ride. Featuring the leading 2X2 MIMO technology and 802.11ac standard, the RG-MTFi-M520 supports access rates of up to 300Mbps for 2.4GHzand 867Mbps for 5GHz for the best-in-class user experience on the go.

The RG-MTFi-M520 also transforms your automotive Wi-Fi network into a revenue-generating entertainment asset. Just get connected and passengers can enjoy a variety of multimedia resources via the RG-MTFi-M520. The built-in hard disk enables multimedia resource to be stored locally - no extra costs on downloading from the 3G/4G network. The entertainment features attract passengers to use the Wi-Fi service onboard and customized advert push will be delivered when they log in to the network. Multiple users login authentications can be created includes social media accounts, voucher etc. The RG-MTFi-M520 gains you more passenger loyalty and engagement. More passengers, more business revenue.

The RG-MTFi-M520 offers value-added applications including GPS, VPN, power failure alert, real-time clock (RTC) and more. The industrial-grade device supports power supply from the vehicle (9 to 36V DC). All power connectors, internal modules and components are shock and vibration proof. The RG-MTFi-M520 truly delivers stable and high-performance network connectivity on the go.

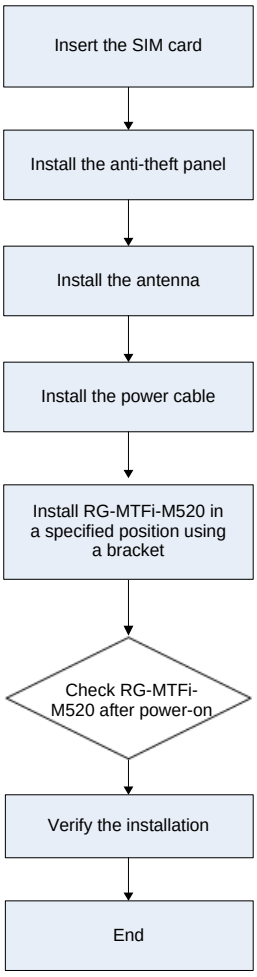
RG-MTFi-M520

4 Quick Start

4.1 Hardware Installation

Before installation, ensure that:

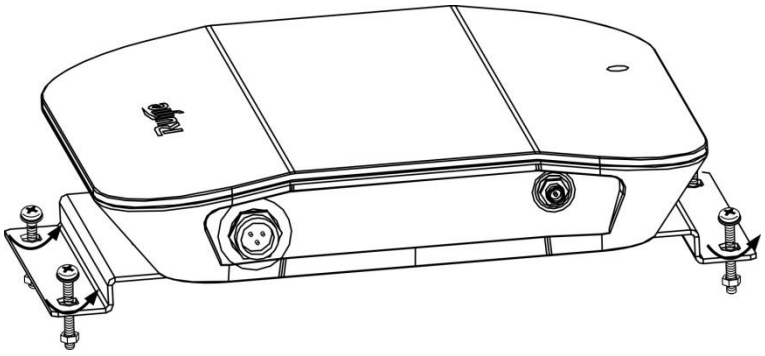
- Sufficient airflow is available for the device.
- Temperature and humidity requirements for the device are met.
- The power supply is properly deployed and power requirements are met.
- There is sufficient space for installing the device.
- Install RG-MTFi-M520 to a mounting bracket. The following figure shows the installation procedure.



4.1.1 Installing the Host

Installation using a mounting bracket: Install the host in a specified position using the mounting bracket, and fasten the host using M5 screws and nuts, as shown in the following figure.

Figure 4-1 Installation Using a Mounting Bracket



Caution:

- Before installing the mounting bracket, attach the two rubber dampers in the accessories to the rear of RG-MTFi-M520.
- Match the screws with screw holes, so as to fasten all components.
- Fasten all screws to prevent RG-MTFi-M520 from vibrating or falling off.

Remarks:

1. For RG-MTFi-M520 with a single 3G/4G module, insert the SIM card into SIM Card-1 slot with adapter. For RG-MTFi-M520 with dual 3G/4G modules, insert the SIM cards into SIM Card-1 slot and SIM Card-2 slot with adapters.
2. To prevent SIM card from missing, fasten the anti-theft panel to the front panel using four M3 hexagon socket-head screws after the SIM card is inserted.
3. The following figure shows appearance of the anti-theft panel

Figure 4-2 Anti-theft Panel

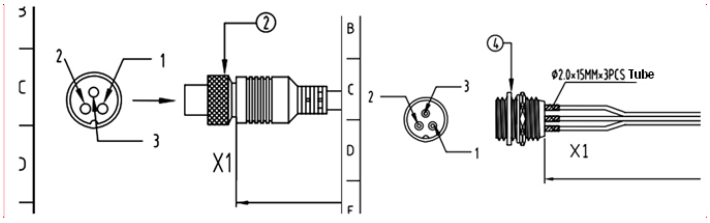
4.1.2 Installing the Antenna

Screw the antennas delivered with RG-MTFi-M520 into corresponding antenna connectors on the rear panel, and make sure that the antennas are fastened. The antennas are provided with 3M adhesive, and may be attached near the window.

4.1.3 Installing the Power Cable

Connect the DC aviation plug to RG-MTFi-M520 properly, and fasten the aviation plug by rotating the nut.

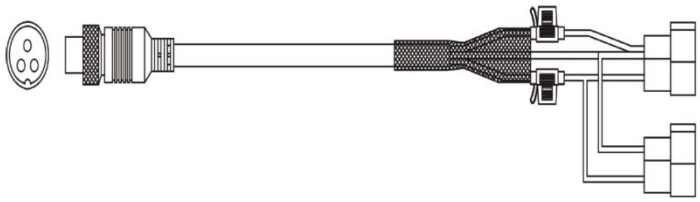
Figure 4-3 Connecting the DC Aviation Plug to RG-MTFi-M520



Left: DC aviation plug Right: Aviation plug on RG-MTFi-M520

The following figure shows the power cable of RG-MTFi-M520 with two types of vehicle-mounted connector terminals. Select a connector terminal according to actual requirements, remove the stopple of the terminal, and properly connect the terminal to a matched terminal in the vehicle (VCC/yellow, ACC/red, and GND/black should be correspondingly connected). Do not remove the stopple of the other unused terminals to prevent exposing metal wires.

Figure 4-4 Power Cable of RG-MTFi-M520



Caution:

1. Make sure that output of the power supply and power fall within an available range before the connection, and use the multimeter to check whether the vehicle power supply is 12 V or 24 V and whether the vehicle power cable is properly connected.
2. Adopt the solid state connection mode for the power cable adapter to avoid tension.
3. Conduct cabling management in hidden positions in a neat and artistic way, and apply protective cover over the cables.
4. Improper connection of the ACC may lead to a risk of losing system files.

Adapter (Available for tests only)

Select an adapter with a voltage within the required range. Specific requirements are as follows:
Input voltage: 100–240 V AC; input current: ≥ 1 A
Output voltage: 9–36 V DC; output current: ≥ 2 A

4.1.4 Power-On and Begin to Use

- Power supply and antenna verification

Check whether the power cable on the rear panel is properly connected.
Check whether the antennas are properly connected.

- Power-off

Power off RG-MTFi-M520 before maintenance to avoid damage to the SIM card, the hard disk, and the radio frequency (RF) module.

After RG-MTFi-M520 is powered on, if PWR is steady on green, it indicates that RG-MTFi-M520 runs properly. If the indicator 3G/4G starts blinking, it indicates that a 3G/4G network is connected. If the indicator WiFi starts blinking, it indicates that WiFi is enabled.

The following figure shows installation of the power cable and antenna.

Figure 4-5 AP with Single Module and External GPS Antenna

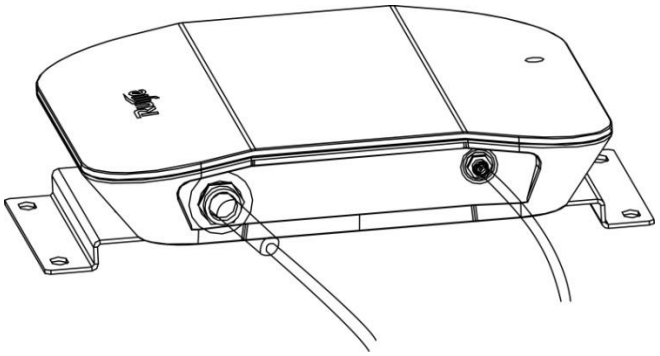


Figure 4-6 Single 3G/4G Module and Six External Antennas

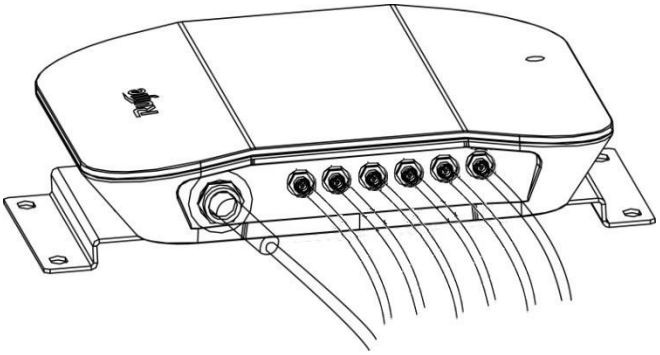


Figure 4-7 Dual 3G/4G Modules and Three External Antennas

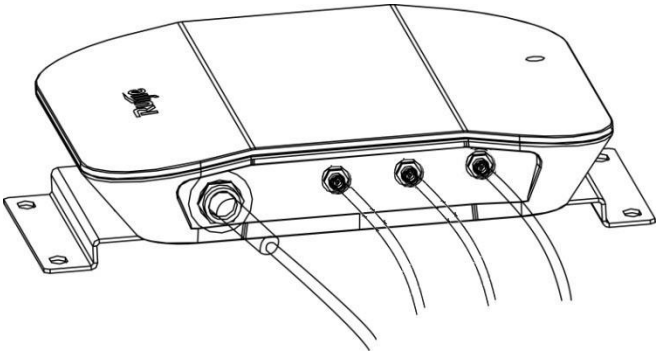
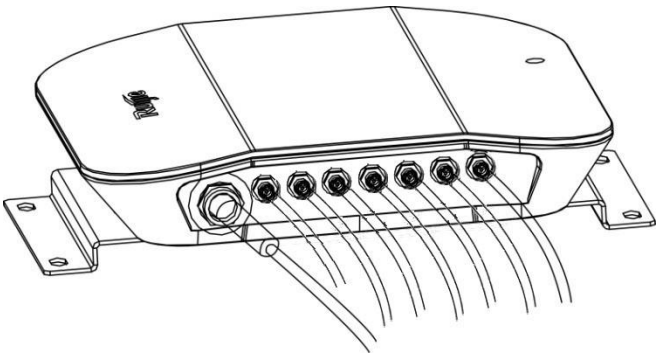


Figure 4-8 Dual 3G/4G Modules and Seven External Antennas

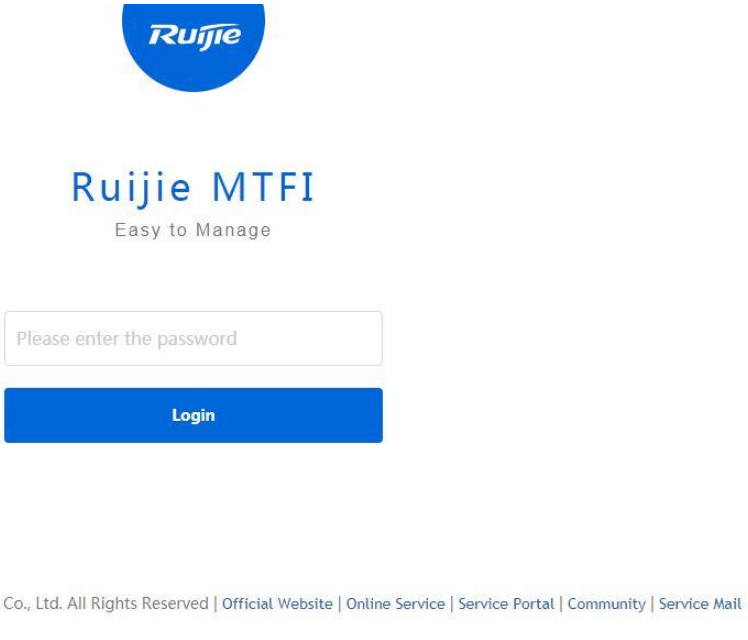


For more detals about the device installation, please refer to *RG-MTFI-M520 Installation Guide.*

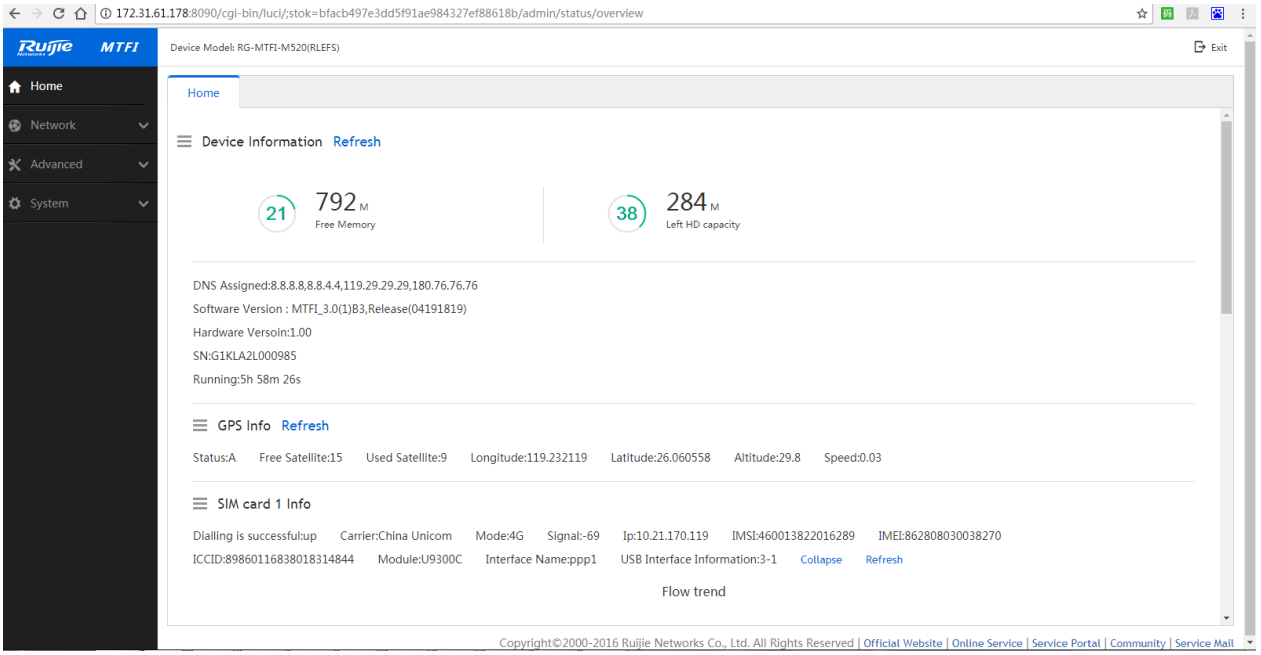
4.2 Configuration

4.2.1 Device Configuration

After powering up the device, use default wired connection IP 192.168.1.1:8888 or default wireless connection IP 192.168.0.1:8888 to access the device configuration web page. The default SSID is **MTFi-M**, and default password is **admin-mtfi**.

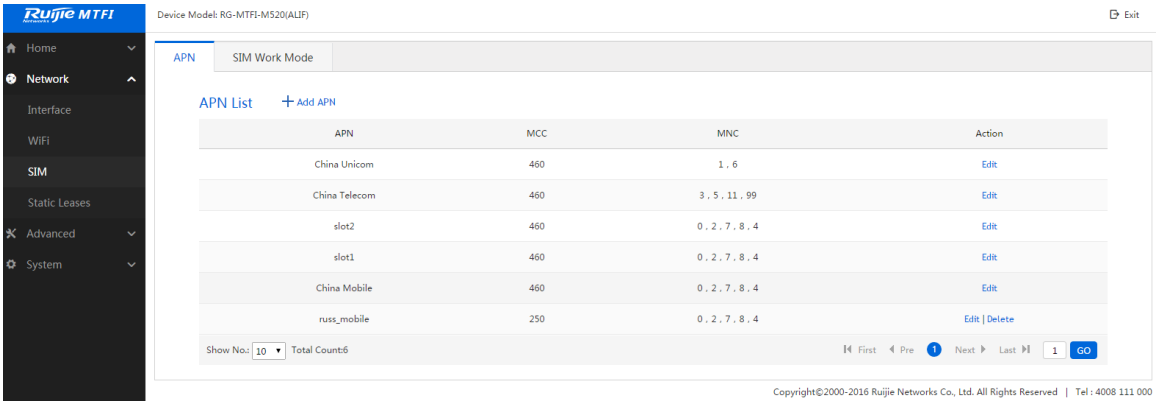


After login into the configuration website, you are able to check the device current operating status in the home page. Please check if the SIM cards are dialing up successfully.



If the SIM cards keep dialing up failed, please check if the SIM card data service can work normally in a cell phone or if all the necessary antennas are connected properly with the device. If still have issue please check whether the related SIM APN information is in the device built-in APN list or if the information is accurate by following steps:

Step 1 Login into the device configuration page and navigate to Network >SIM > APN.

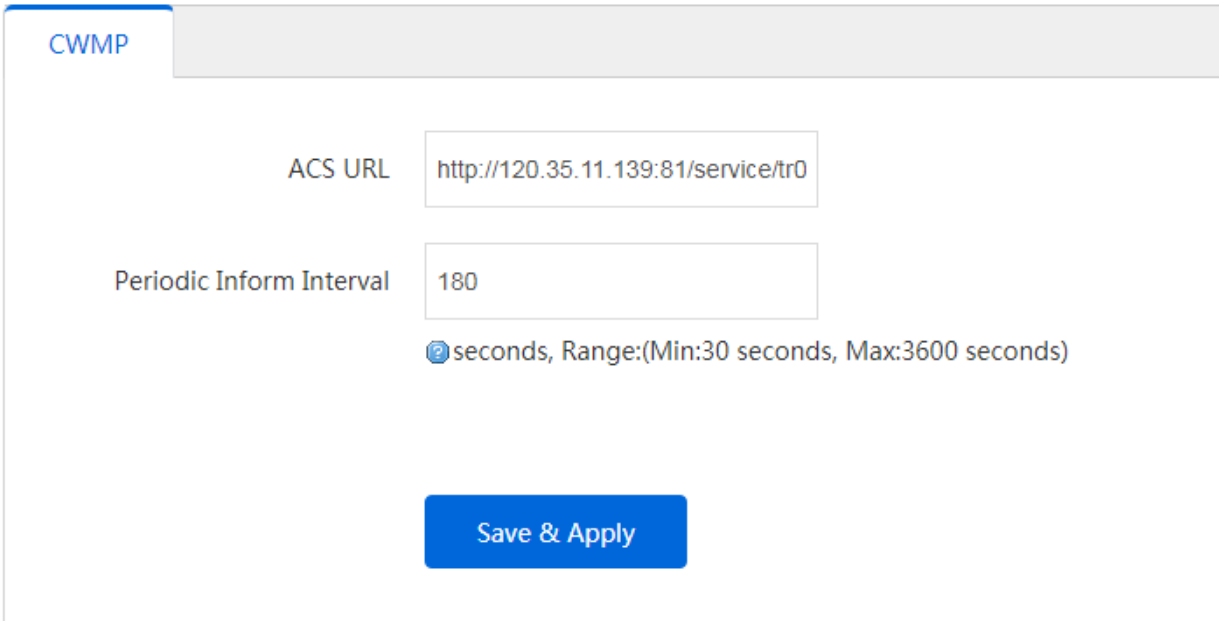


Step 2 Please check if the inserted SIM cards carriers' APN information records already exist in the list. If yes, please click 'Edit to check if the default built-in information such as APN, username, password, MCC, MNC etc. is accurate. Modify any if necessary. If there is no record in the list, please click Add APN to create a new APN record for your SIM cards.

Step 3 After any modification or adding a new record, please reboot the device to make the related changes effective.

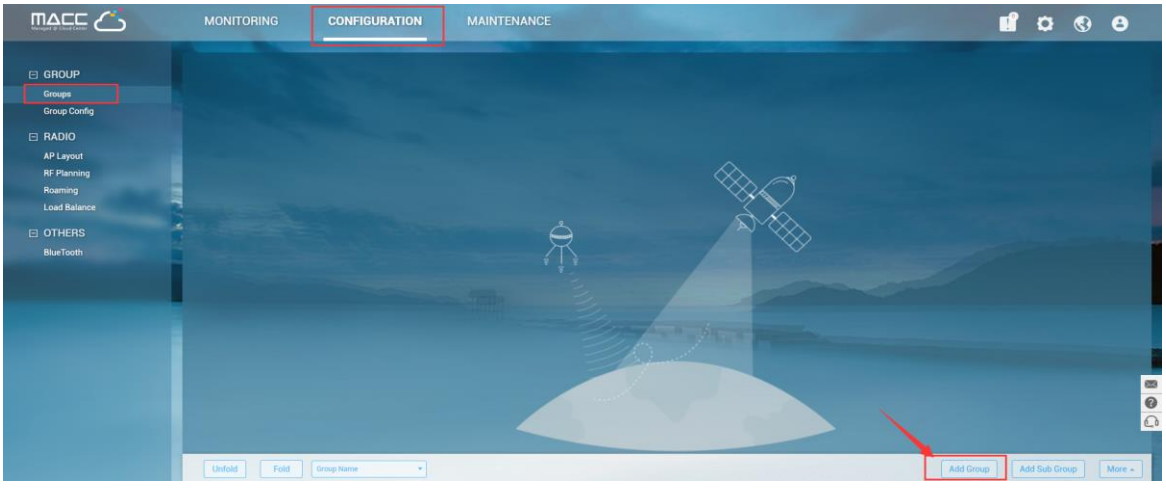
Usually after you input the accurate APN information and reboot the device, the SIM cards should dial up successfully.

- Besides the SIM APN configuration, you are also able to configure the network interfaces, wireless network etc. at Network section, configure speed limit per user, ACL, static routing etc. at Advanced section, and configure system time, password, upgrade etc. at System section.
- You are also able to configure the ACS URL at Advanced > CWMP to make your device manageable via a cloud AC platform. The ACS URL is directed to Ruijie public cloud AC platform, MACC-BASE, which is "http://cloud.ruijienetworks.com/service/tr069servlet" by default.

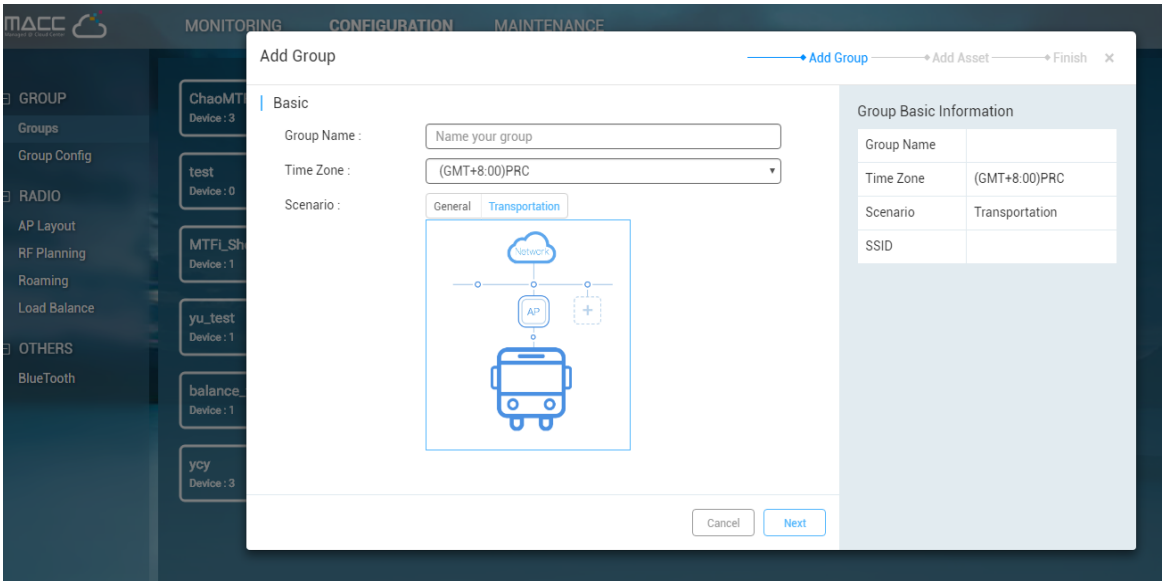


4.2.2 MACC Configuration

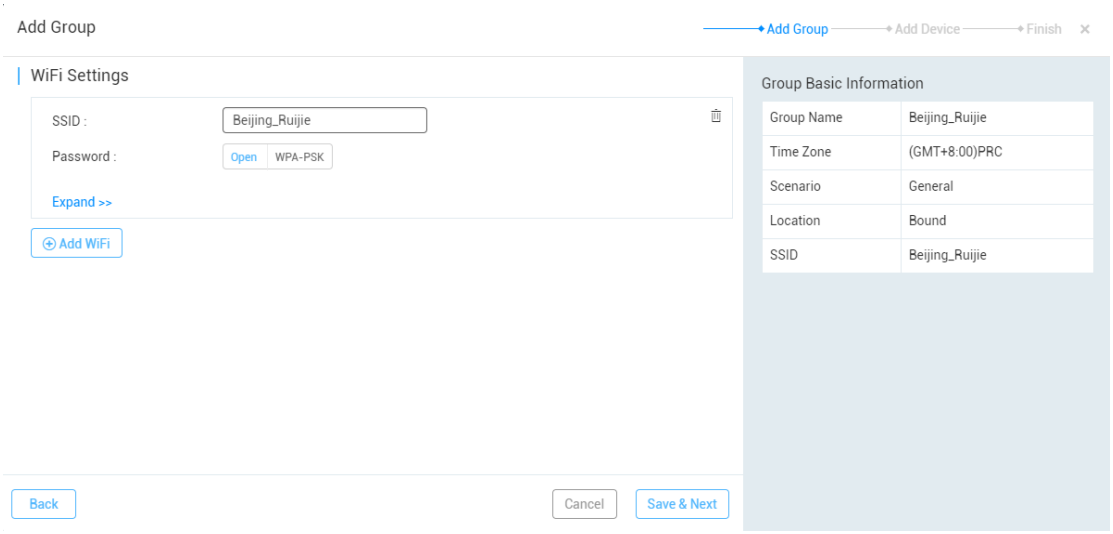
1. Choose "**CONFIGURATION->Groups**" on MACC, then click **Add Group** to create a group.



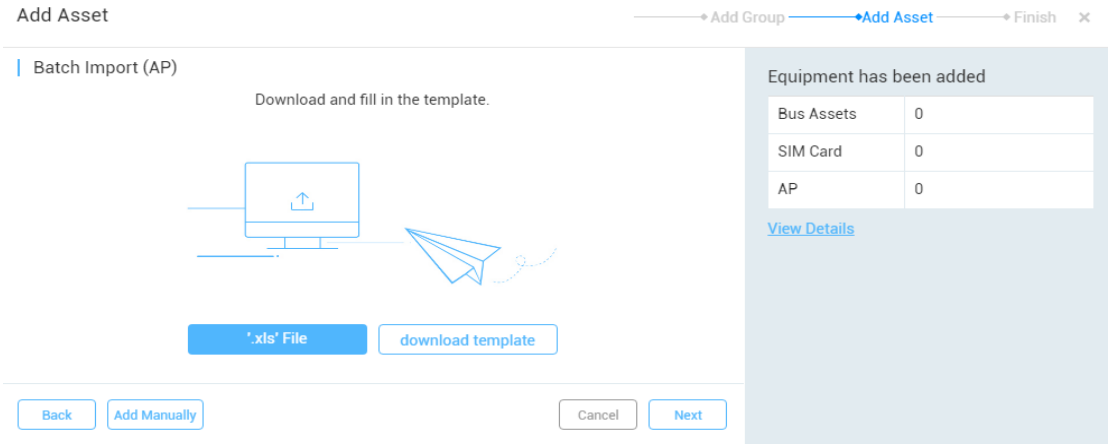
2. Fill in the basic info for this group, choose 'Transportation' and click **Next**.



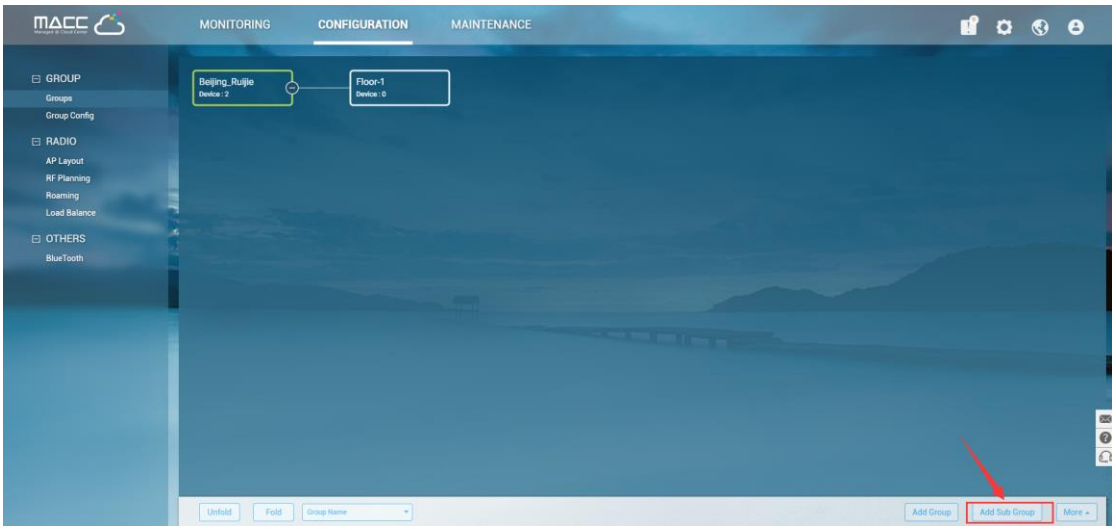
3. Create SSID for this group if needed, and click **Save&Next**.



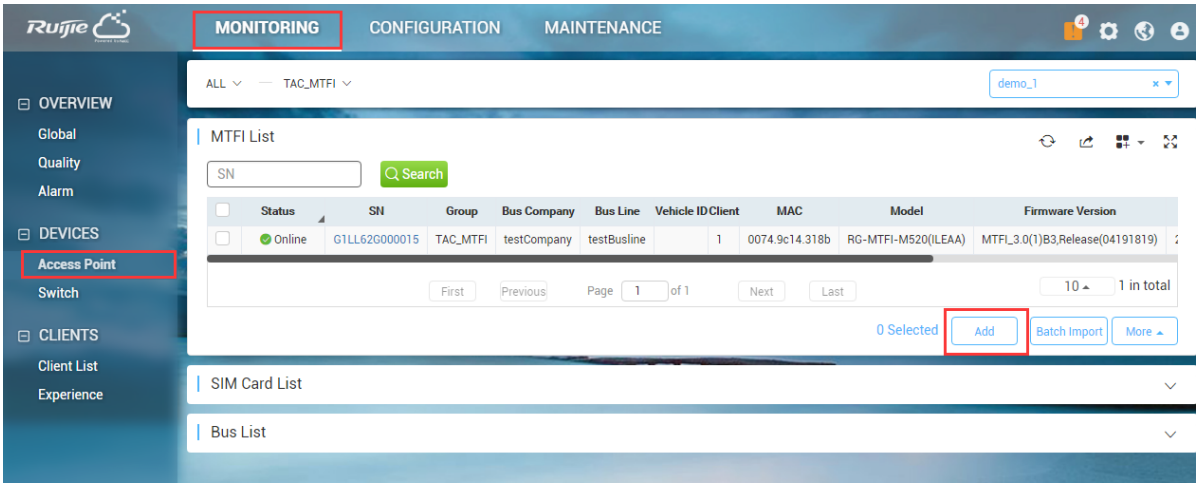
4. Add bus assets, SIM card information, AP into this group if necessary, and click Save&Next.



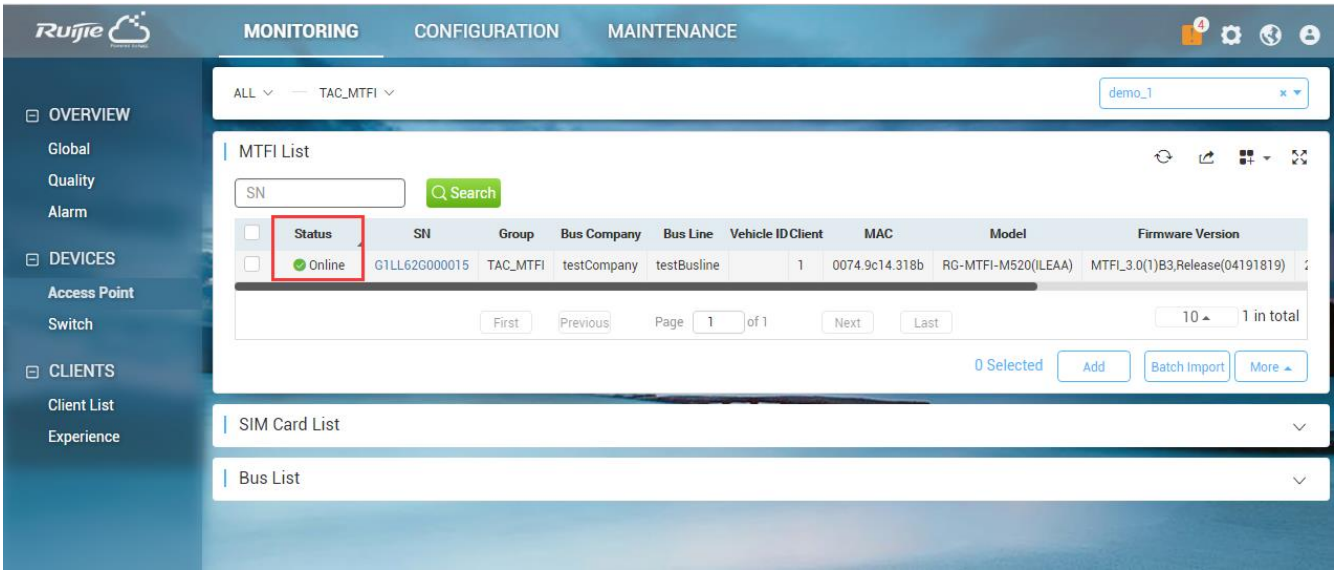
5. Click Save&Next to finish the process. And follow the same steps as above to create sub-group.



6. Choose "**Monitoring->Devices->Access Points→Add**" to add the device's SN



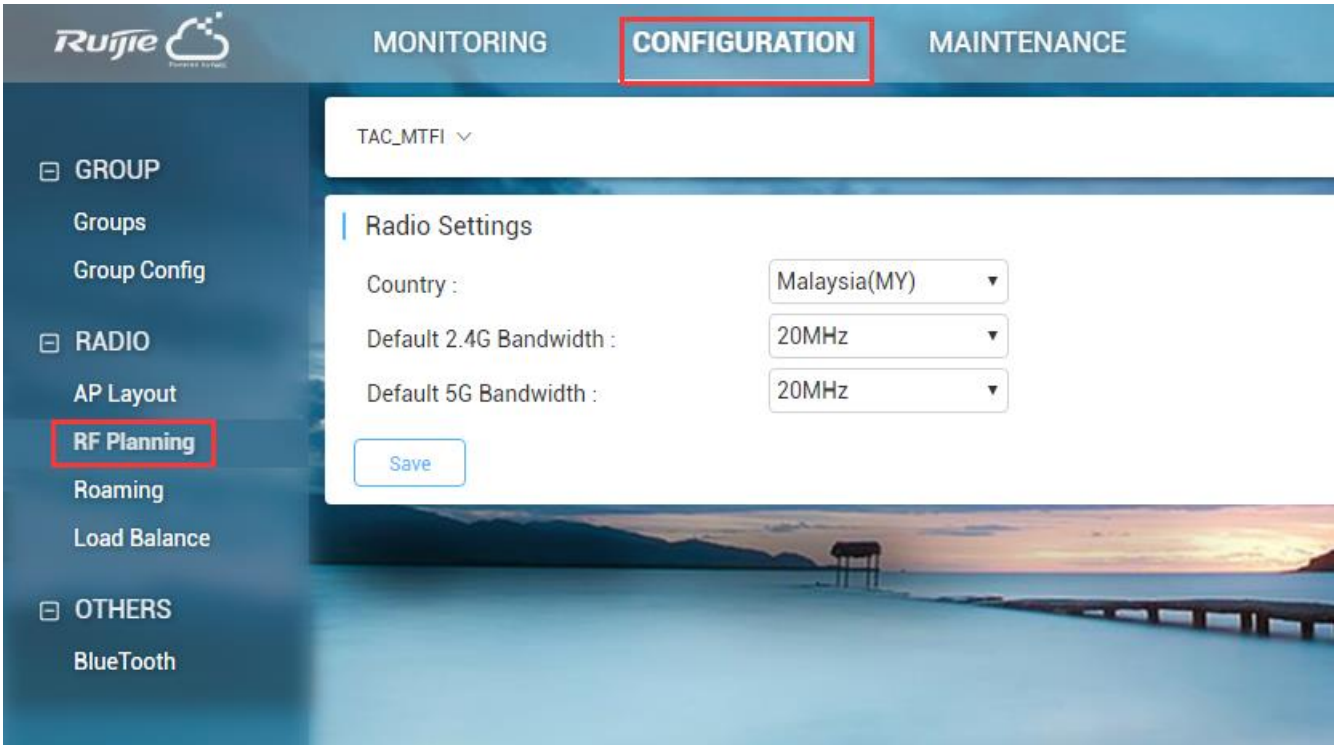
7. The status will be "online" after you successfully adding the Device.



5 Features

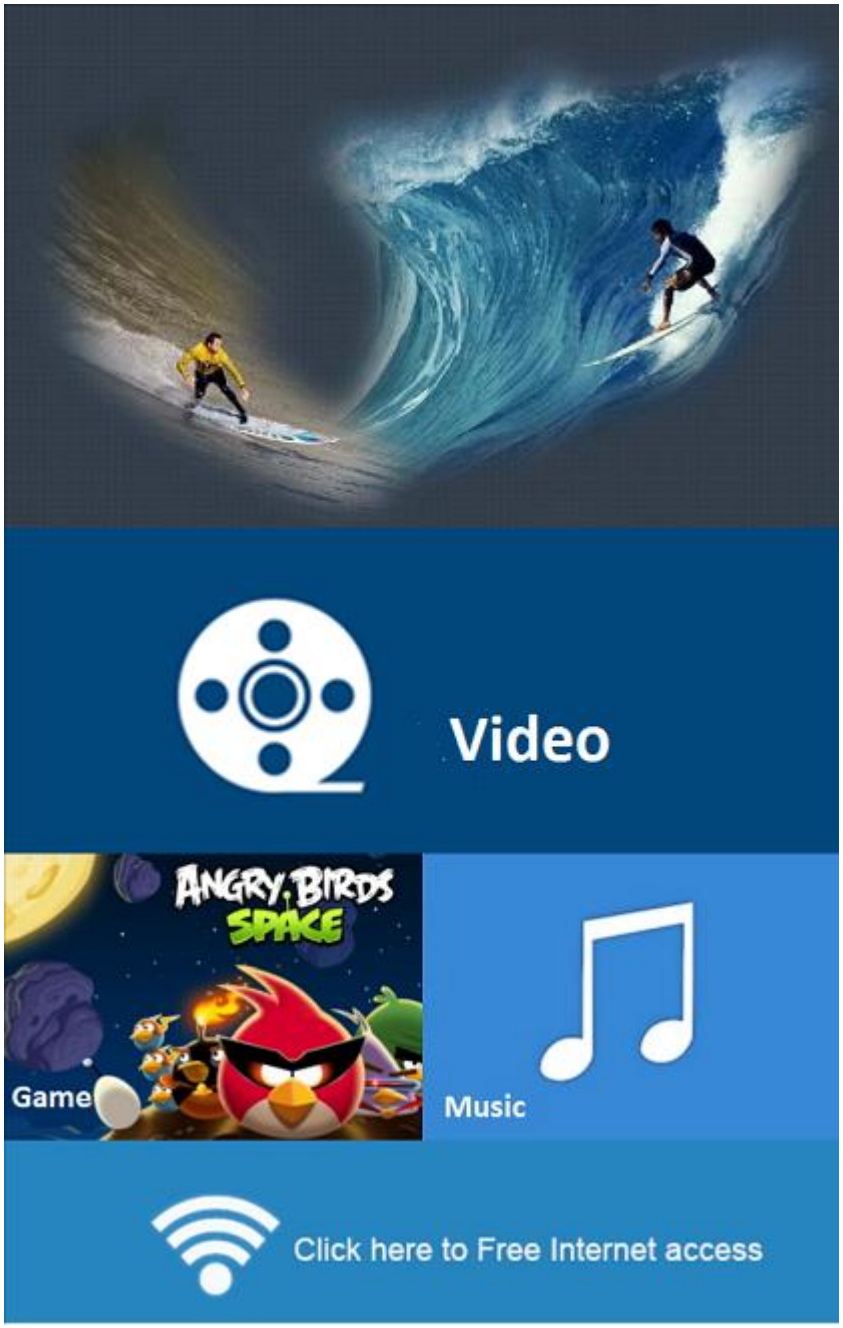
5.1 Radio Setting

Choose ***CONFIGURATION*** → ***RF PLANING*** to set the MTFI's Radio.



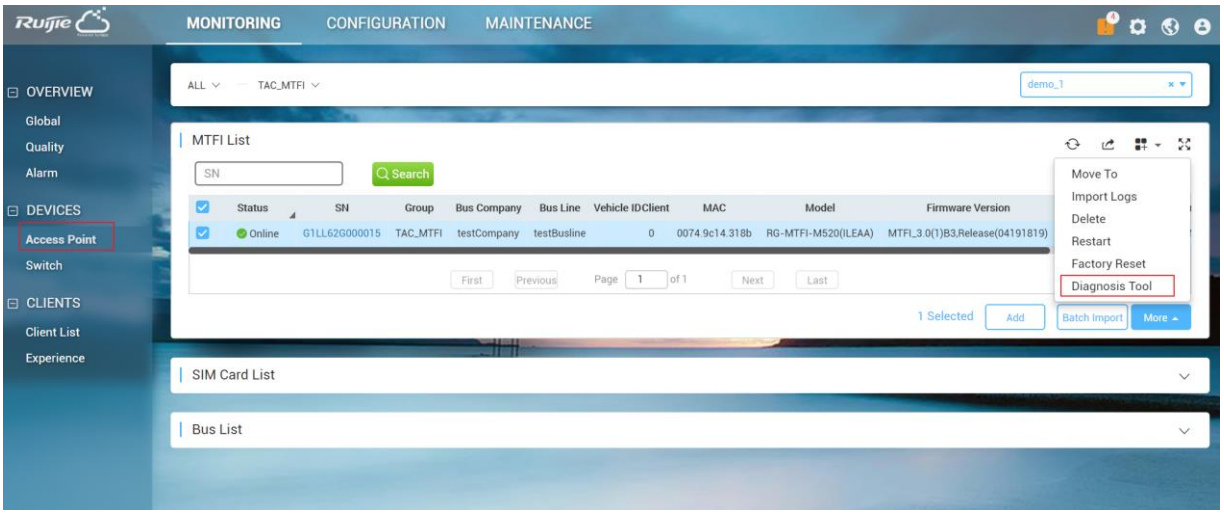
5.2 Local Authentication

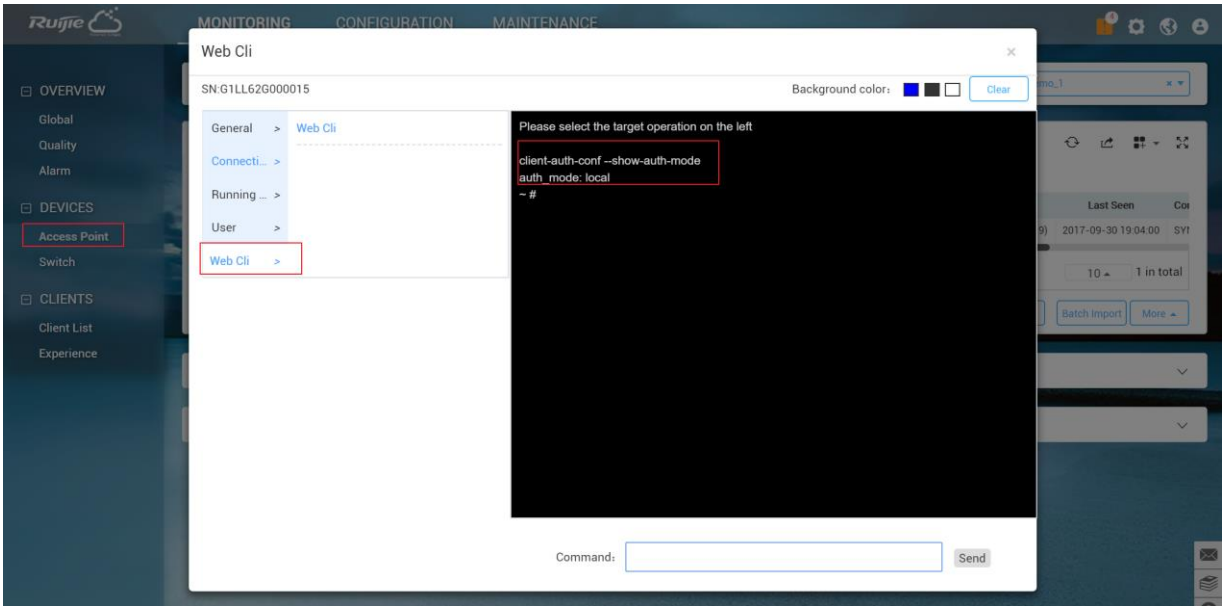
The Local Authentication function is enabled by default. After the STA connecting to the SSID, the following authentication page will pop up:



Users need to click the "**Click here to Free Internet access**" button to get access to the Internet.

We may use the command "***client-auth-conf --show-auth-mode***" to check if local authentication is enable; if not, we could use the command "***client-auth-conf --auth-mode on***" to turn it on.



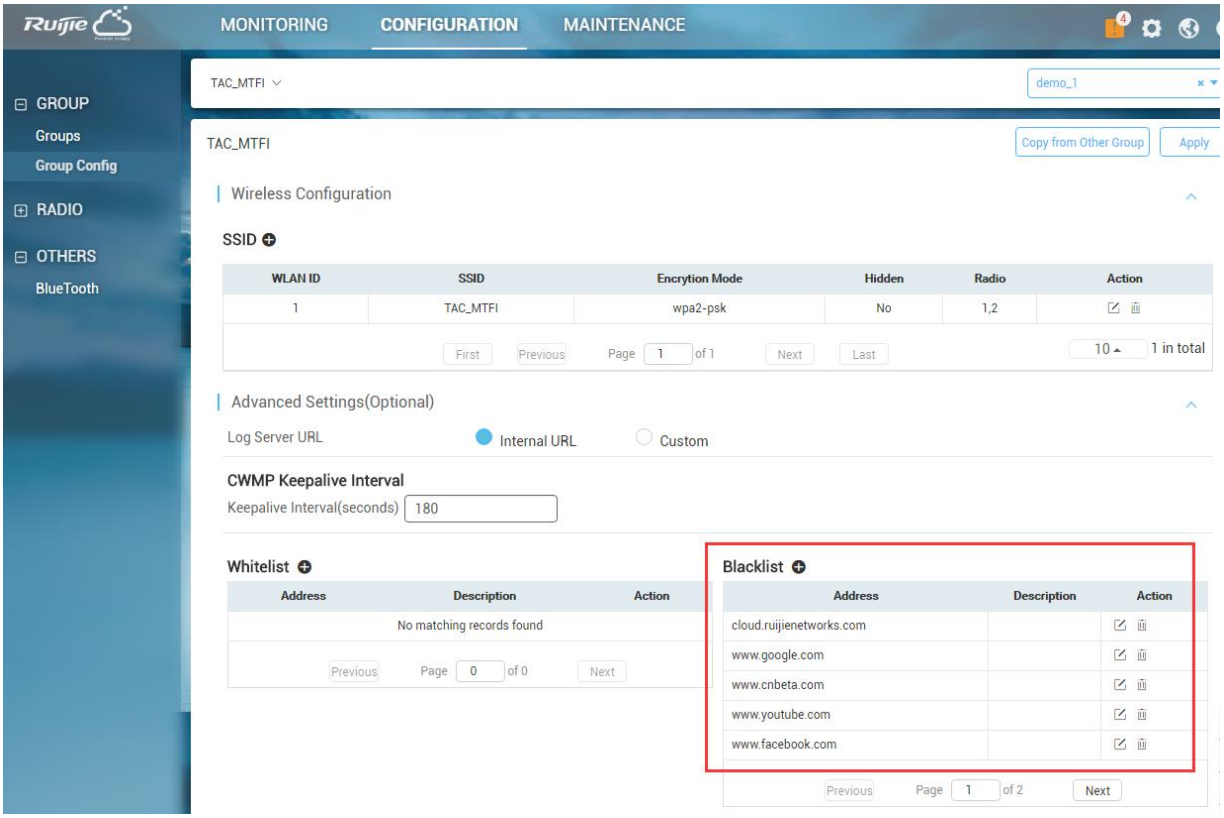


Correspondingly, we may use the command "***client-auth-conf --auth-mode off***" to turn it off.

5.3 Web URL Blocking

1. URL blocking will take effect only if the local authentication or social media authentication is enabled.

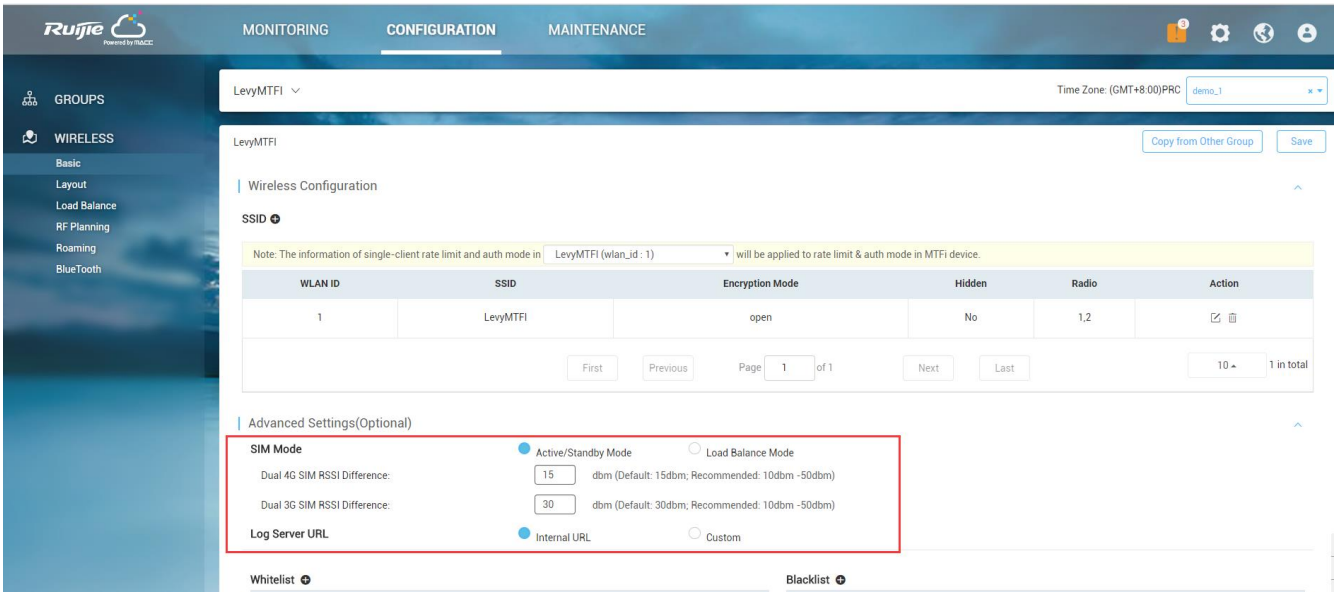
2. Add blacklist on the group config page



3. After adding the Blcaklist, users won't be able to access the related websites.

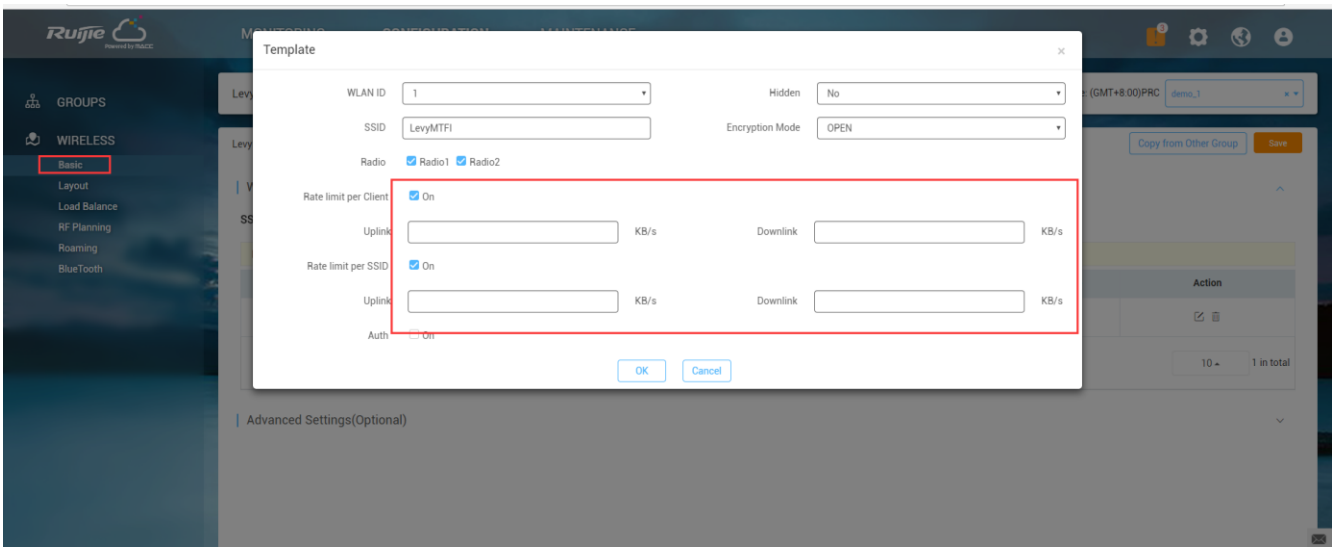
5.4 SIM Load balance

We can plug in two SIM card and we can set up the mode of these two cards, one mode is Active/Standby and the other mode is Load Balance mode.



5.5 Rate Limit

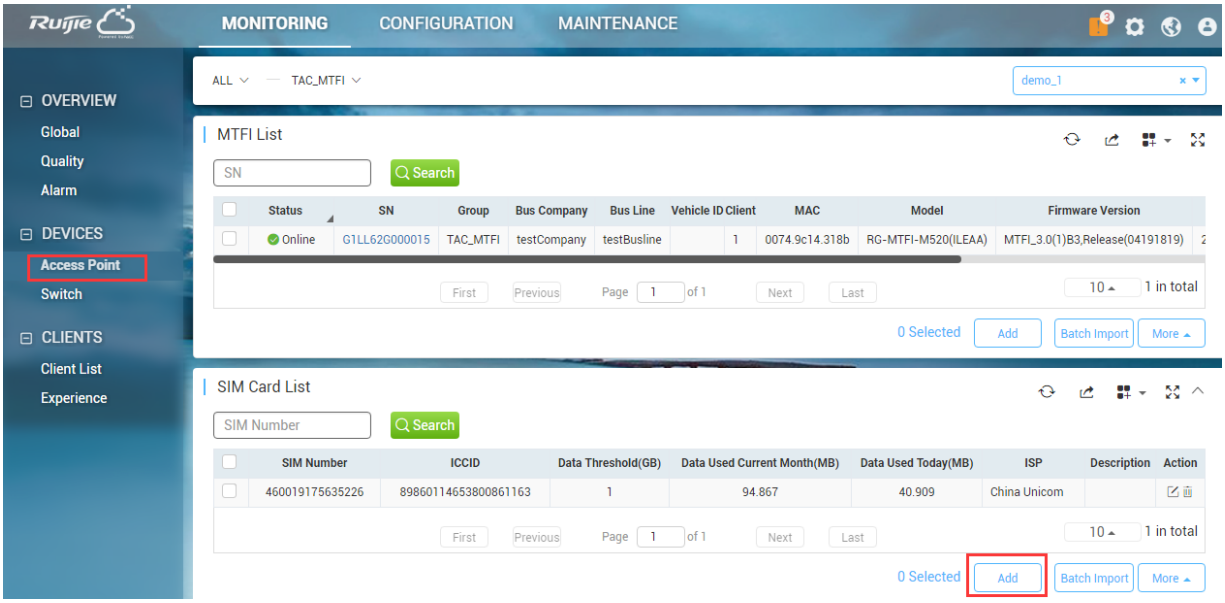
The download speed rate of MTFI is limited at 50KBps by default, and you can configure the speed through EWeb interface.



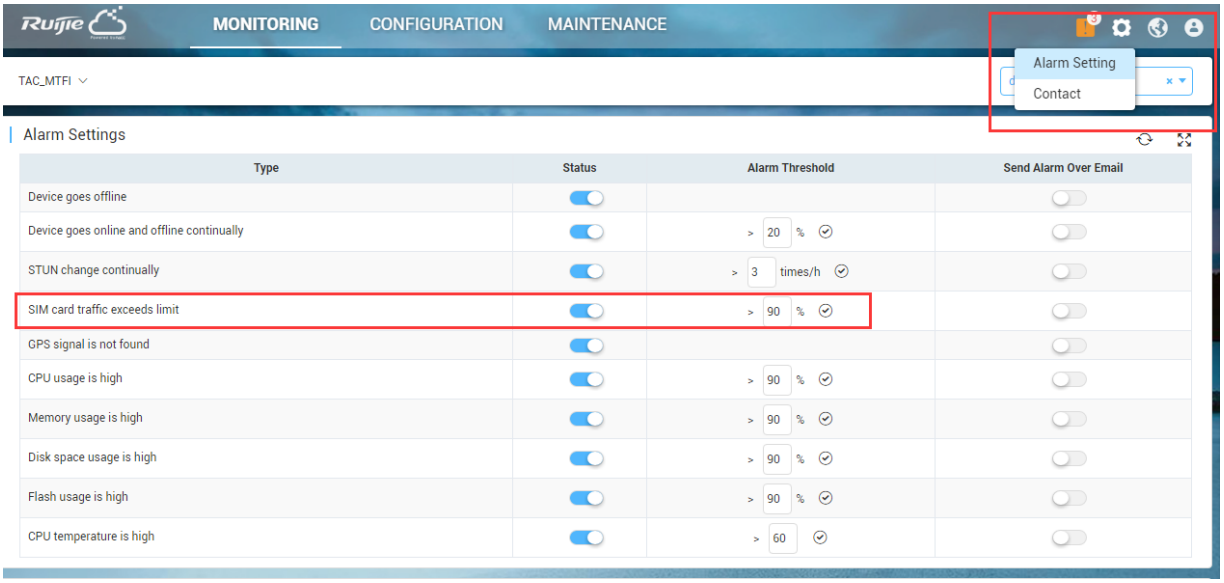
5.6 Date Threshold Alarm

We can set a Data Threshold for a SIM card. An alarm will be triggered when the data usage hit the threshold.

1. Add SIM cards on devices list and set data threshold (SIM info could be found on the homepage of MTFi web management page)



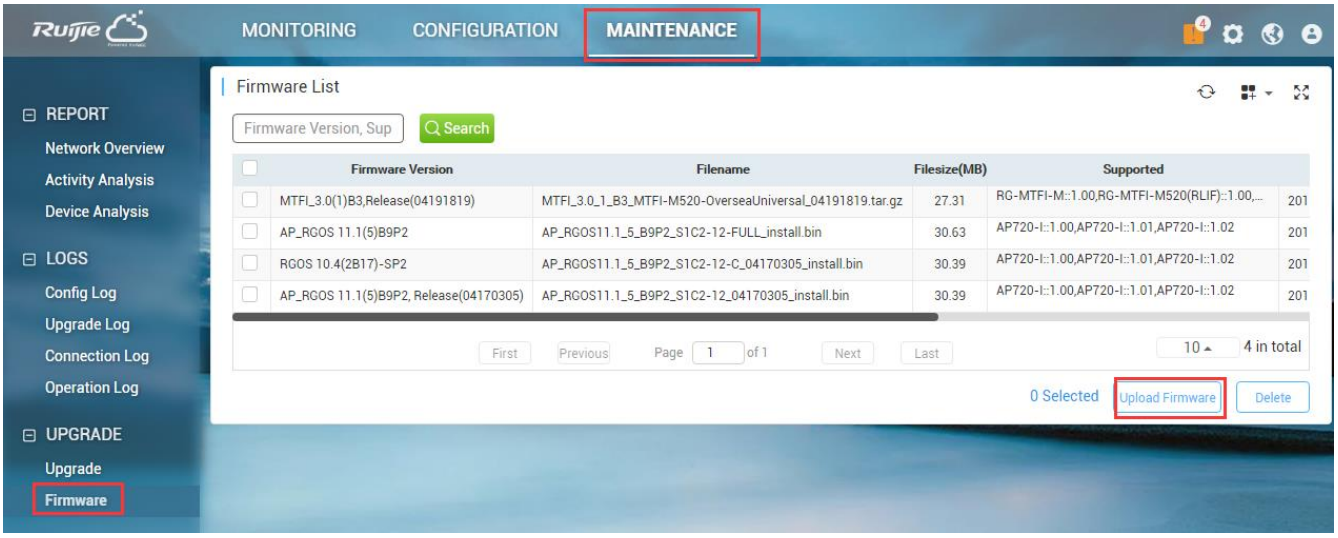
2. Enable the alarm setting



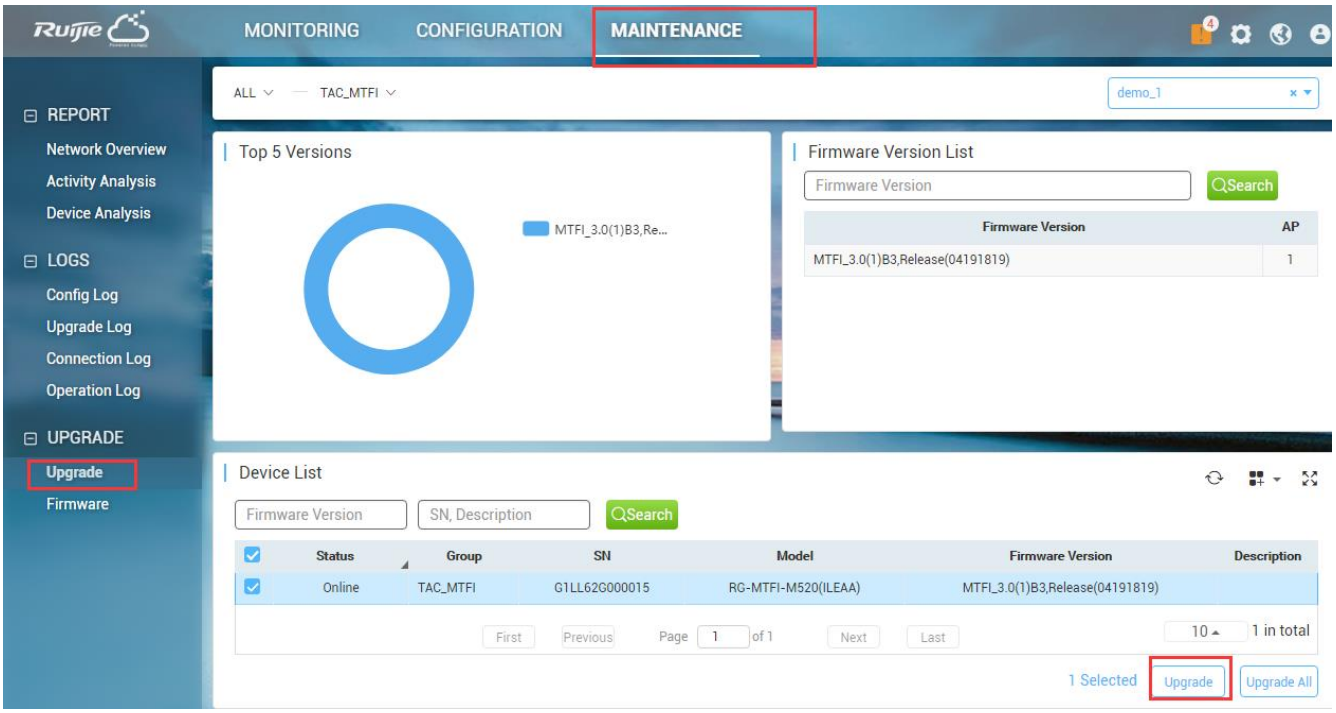
6 Maintaince

6.1 Firmware Upgrade

1. Choose "***MAINTENANCE→UPGRADE→Firmware→ Upload Firmware***" to upload the MTFi's firmware to MACC



2. Choose "***MAINTENANCE→UPGRADE→Upgrade***" and select a device to upgrade the firmware.



6.2 Local Content Update

Some models of MTFi supports using USB flash to update local content. The USB flash should be formatted into FAT, NTFS or EXT file system. USB flash drive can contain multiple partitions, while the updating process only scans the first partition.

Updating Steps:

1. Create or obtain from Ruijie for 'web' folder, which content are MTFi local media resource. Copy this 'web' folder into the root directory of the USB flash drive.

2. Create a file named ‘web.conf’ in the USB flash drive first partition root directory, input the local media resource file folder name in web.conf, which is ‘web’ in this example.
3. Save all files, input USB flash drive into MTFi, starts updating. The updating is finished after the system LED stop flashing quickly.