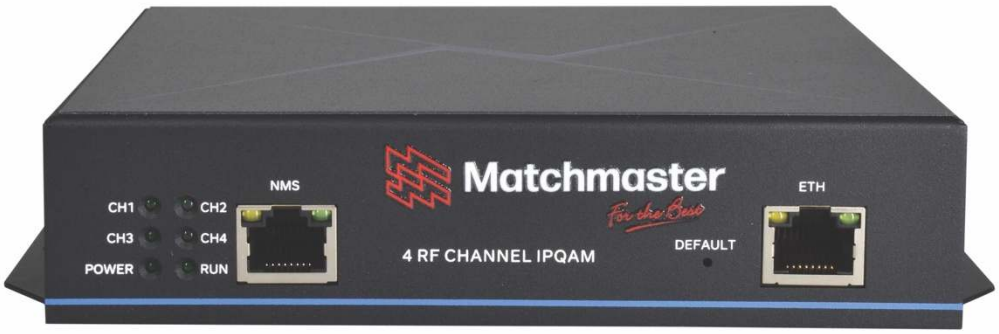
14MM-IP-DVBT
IP COFDM MODULATOR



User Manual

PREFACE

Thank you for choosing our products.

This manual details the product's performance, installation and operation methods. Please read this manual before use.

Matchmaster Communications Pty Ltd does not assume any responsibility for any loss caused by breach of safety.

Receiving inspection

Open the equipment box and check the contents of the box against the product packing list. If the packing list does not match the actual item, please contact us.

Read the instruction manual

Please read the instruction manual and follow all instructions.

1. Power supply
   The power supply used by this unit must conform to the indicated power supply and be grounded. Unplug the power cord when not using the unit for a long time
2. Working environment
   Keep the equipment working in a ventilated, dry place. Avoid overheating, humidity, dust, and heat
3. Equipment cleaning
   Unplug the power cord before cleaning the unit. Do not use liquid cleaner or spray cleaner.
4. Power cable protection
   Pay special attention to safety protection for plugs, sockets and power cords
5. Overload
   Be careful not to overload the power supply on the outlet. Be careful when using an extension cord or an integrated outlet as this may cause electric shock and fire.
6. lightning
   In order to prevent damage caused by lightning, please use this equipment in the lightning protection device, which can effectively prevent damage caused by lightning or grid fluctuations.
7. Foreign matter or liquid intrusion
   Do not insert foreign objects into the machine, and do not spill any kind of liquid into the machine.
8. Accessory
   Do not use accessories that are not recommended by the manufacturer, which may cause danger
9. Transportation
   When transporting the machine, the original packaging of the product should be used to avoid damage. Do not place heavy objects on the machine or step on the machine. Otherwise, personal injury will occur and the machine will be damaged.
10. Maintenance
    Do not open the case to repair yourself to avoid personal injury or serious damage to the

machine.

During the warranty period, if the product is damaged due to natural causes and disassembled without authorization, no free warranty will be given.

Table of Contents

1 Device panel operation interface

1.1. Device Connection

➢ **Device Connection Instructions**

(1) Output the IP line from the computer or switch and connect it to the NMS port of 14MM-IP-DVBT.

(2) Connect the ETH port of the 14MM-IP-DVBT with the IP cable of the network streaming IP.

(3) The RF OUT of 14MM-IP-DVBT is connected to the RF MATV network or TV/STB

(4) Connect the power supply, the DC 12V/2A port is connected to the power supply.

➢ **Log in to the device server**

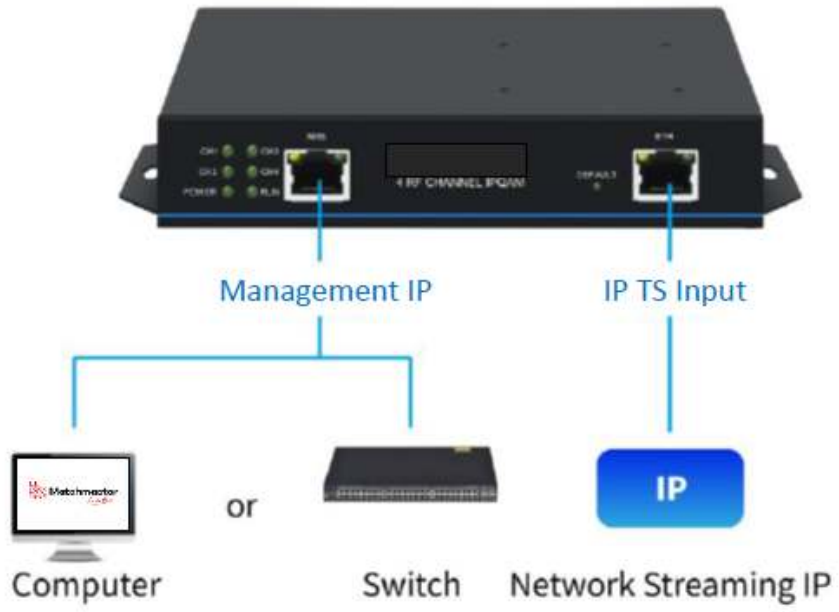
(1) Enter 192.168.1.30, Google Chrome browser is recommended.

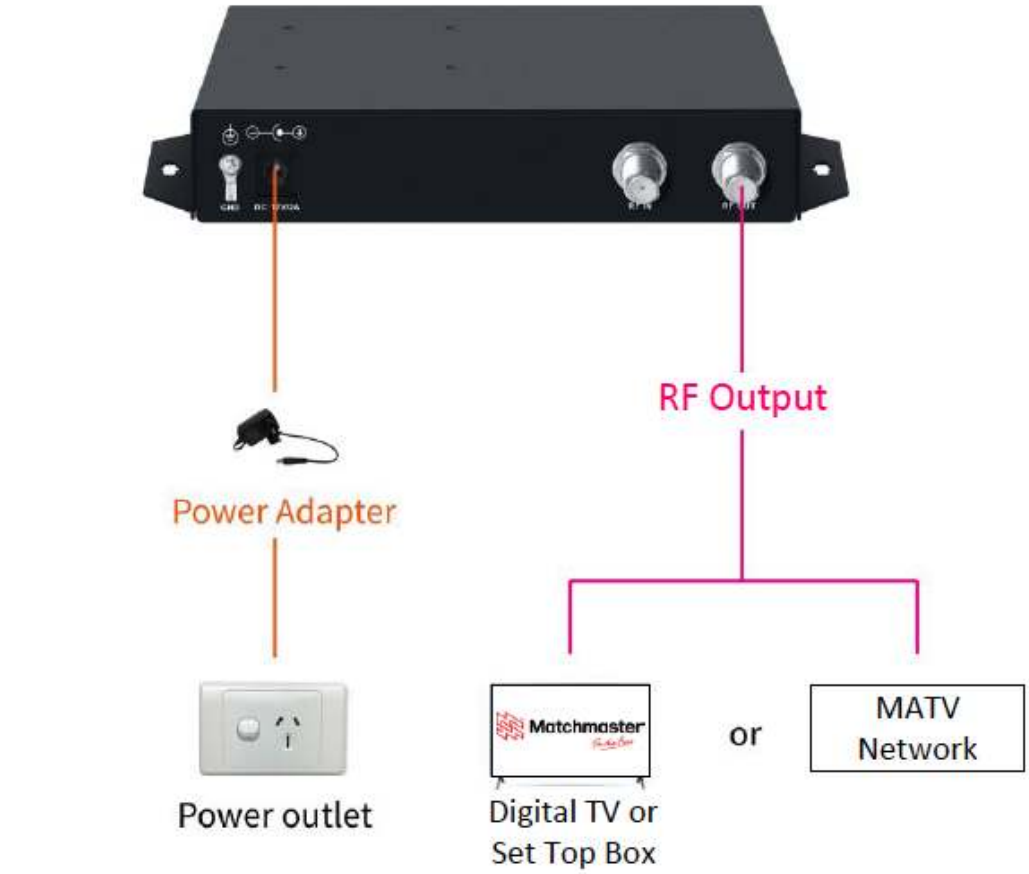
(2) Check the [System Status] modulation format and RF channel frequency on the web page.

(3) Click [TS Parameter] - [Input Address] to add an input IP address and port, click Submit.

(4) Forward the program on the program source.

(5) Search the frequency found in [System Status] on the TV or set-top box.





1.2. Device panel button definition

➢ **Front Panel:**

① CH1-CH4: Signal lights of the forwarded channel, each light represents a different channel;

RUN: running light;

POWER: power light;

② NMS: management port;

③ DEFAULT: Press and hold for more than 10s to restore factory settings;
④ ETH: signal source input port;

➢ **Back panel:**
① GND: ground wire
② DC 12V/2A: power interface
③ RF IN: Coaxial output port, attenuation 20DB.
④ RF OUT: coaxial output port;

1.3. Preparation before operation

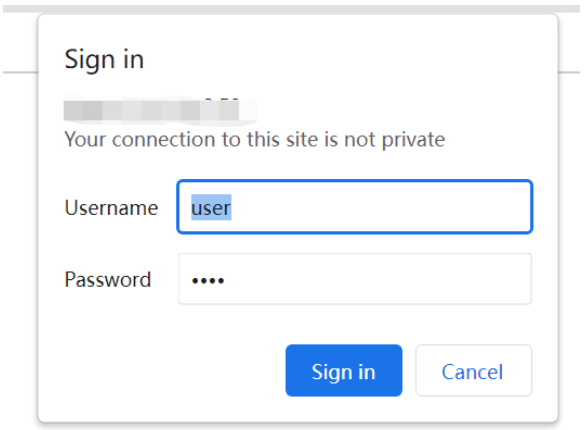
➢ Connect the NMS network port to the PC network port.
➢ Power the device

Login interface

➢ Open the browser and enter the device IP address in the address bar (generally default: 192.168.1.30). After confirmation, the following is displayed:
➢ Enter the username and password, the default is: user
➢ Click to login

Attention:

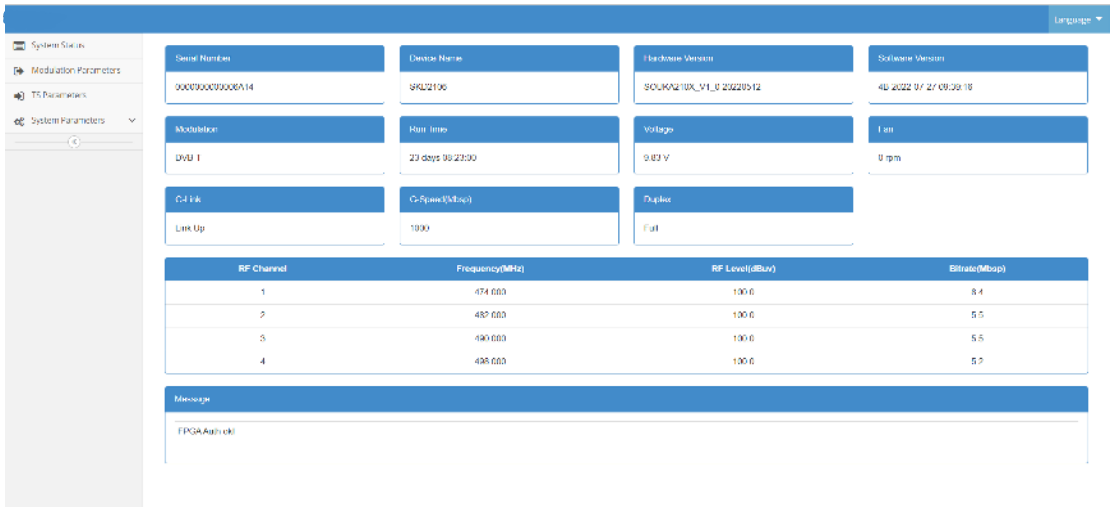
1. If the connection is not available, check if the PC and device are on the same network segment. If not, add a new network segment in the advanced TCP/IP settings of the PC.
2. If you still can't connect after following the above operation, or forget to log in to the IP address, please operate the front panel of the device to restore the factory defaults.



2 Built-in web management software operation

2. 1 Equipment status

After logging in to the device web page, the current system status is displayed as follows:



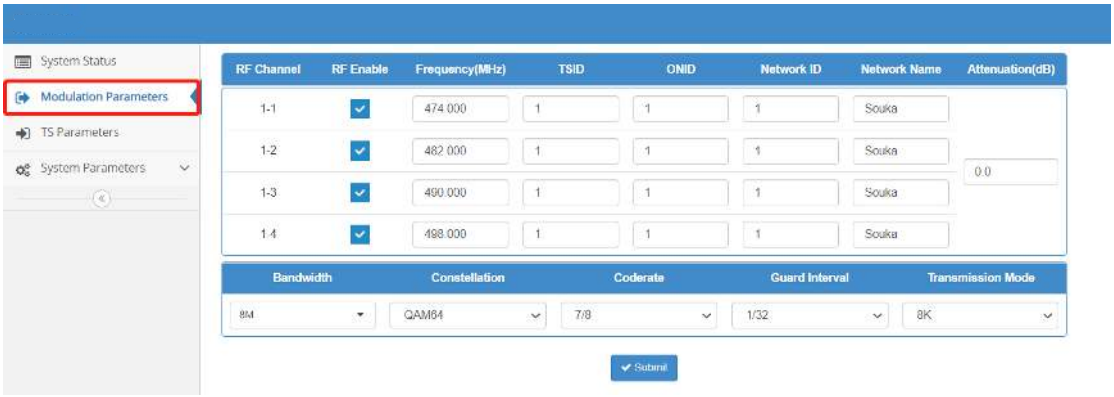
- **Serial number:** the unique identification of each device;
- **Device name:** 14MM-IP-DVBT
- **Hardware version:** Display the hardware version number for easy inspection;
- **Software version:** display the software version number for easy inspection;
- **Modulation Format:** Displays the modulation format-DVB-T
- **Running time:** display the time from the beginning of the equipment to the current time;
- **Voltage:** Displays the current operating voltage of the device;
- **Fan:** Display the current speed of the fan running;
- **Connection Status:** Display the connection status of the device;

- **Connection Speed:** The connection speed shows the location
- **Duplex:** full duplex;
- **RF channel:** 4, display basic information of each channel;
- **Frequency:** Displays the frequency of each channel
- **Output Level:** Displays the output level of each channel
- **Bit rate:** Display the bit rate of each channel
- **Status Information:** Display device status information.

- **System Language:** Divided into Simplified Chinese and English. Language switching is possible.

2. 2 Modulation parameter modification

Different standards correspond to different modulation parameter pages.



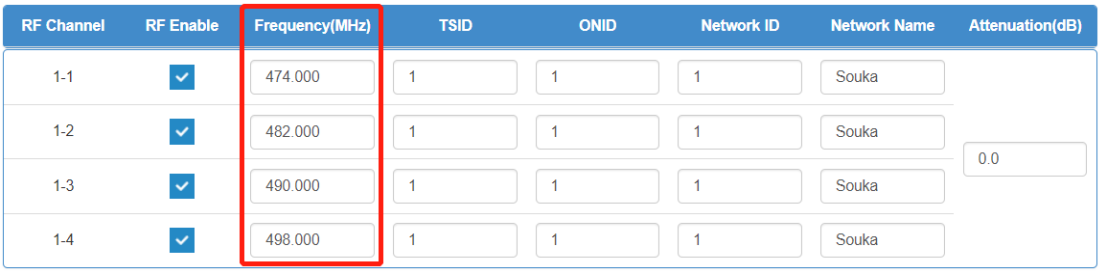
- **RF Enable:**

After checking, the RF channel takes effect, and the RF channel can be controlled by the enable switch. As shown in the red box below.

RF Channel	RF Enable	Frequency(MHz)	TSID	ONID	Network ID	Network Name	Attenuation(dB)
1-1	☑	474.000	1	1	1	Souka	
1-2	☑	482.000	1	1	1	Souka	0.0
1-3	☑	490.000	1	1	1	Souka	
1-4	☑	498.000	1	1	1	Souka	

- **Frequency:**

Each frequency is different, and the number is 8 apart from each other; as shown in the red box in the figure below.



➢ **TSID:**

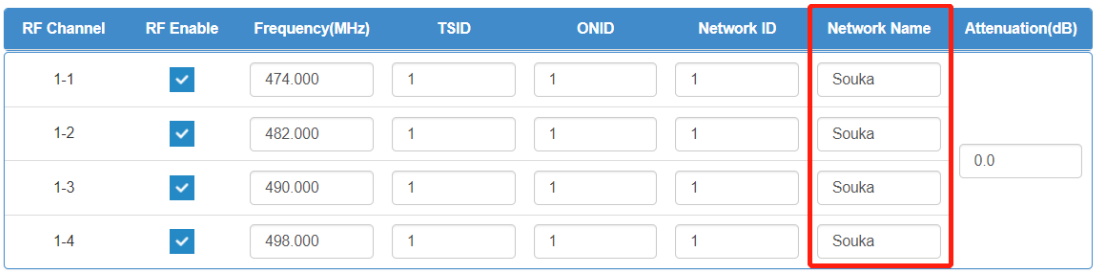
The modification range is 1-65535, and the TSID identification can be modified according to actual needs. As shown below.

➢ **ONID:**

The modification range is 0-65535, and the ONID can be modified according to actual needs. As shown below.

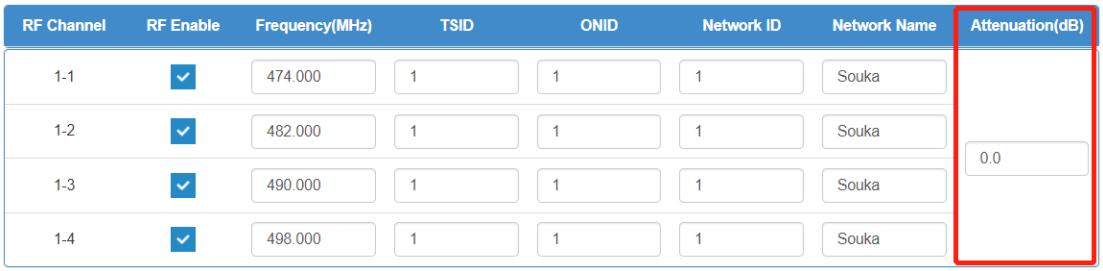
➢ **Network ID:** The modification range is 0-65535, and the network number identification can be modified according to actual needs. As shown below.

➢ **Network name:** The maximum word length is 32 bytes, which can be changed according to your actual needs.



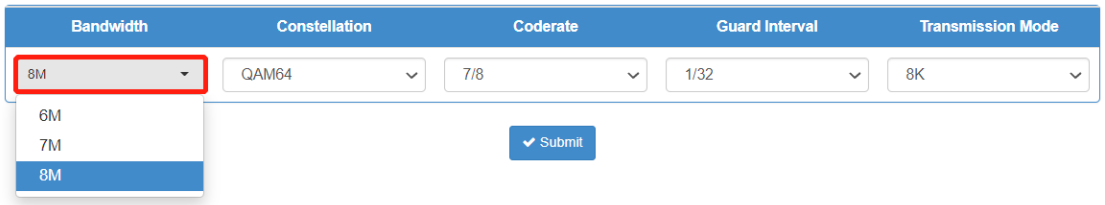
➢ **Adjust the level:**

adjust when the TV program signal is not good, 0 is the default value. The setting range is 0-20, and the maximum can only be changed to 20.



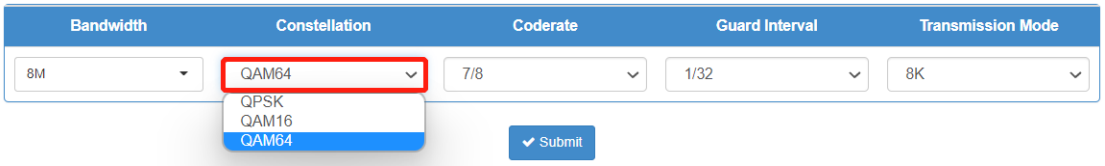
➢ **Bandwidth:**

You can click the red box below to modify the bandwidth. as the picture shows.



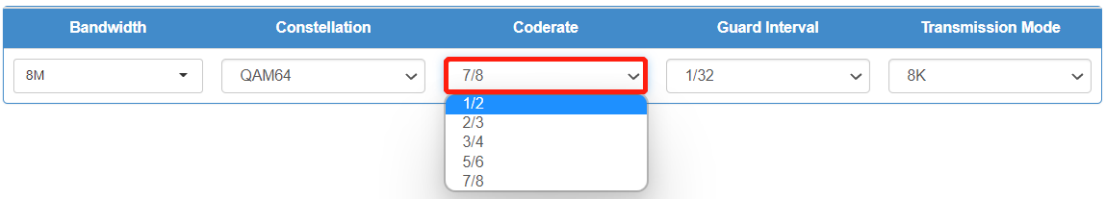
➢ **Constellation diagram modification:**

Click the option in the red box in the figure below, and select the Constellation parameter as QAM64 or QAM256, as shown in the figure below.



➢ **Coderate**

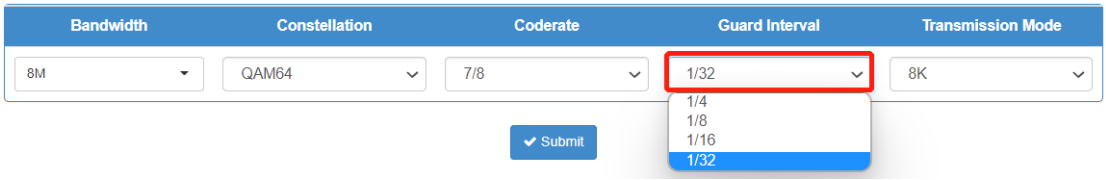
Click the option in the red box in the figure below to select the appropriate bit rate, as shown in the figure below.



➢ **Guard interval:**

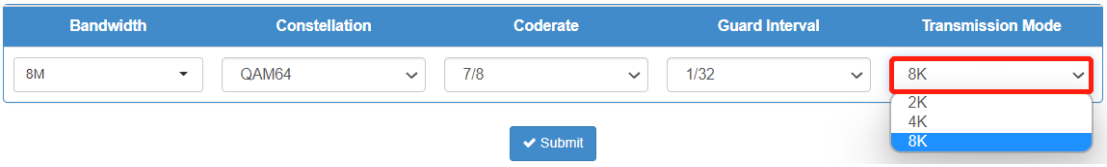
Click the option in the red box in the figure below to select the appropriate guard interval, as

shown in the figure below.



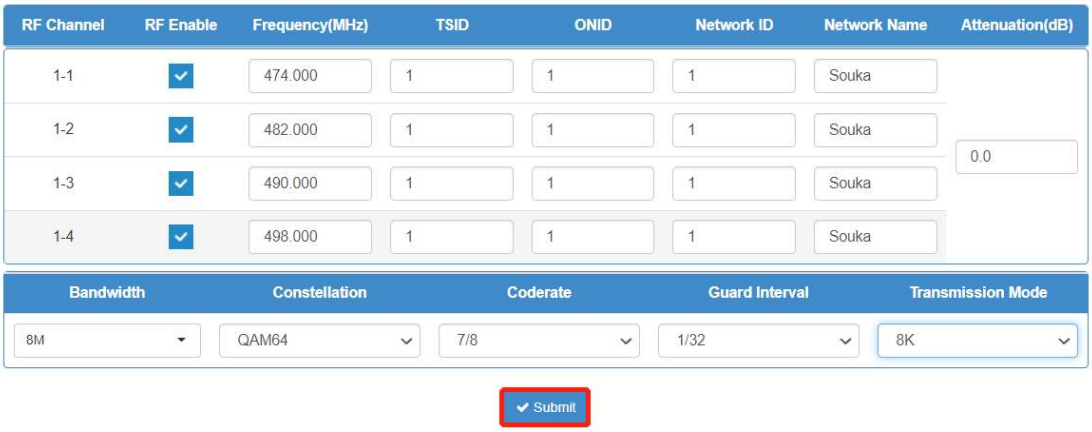
➢ **Transmission Mode:**

Click the option in the red box in the figure below to select the appropriate transmission mode, as shown in the figure below.



➢ **Submit:**

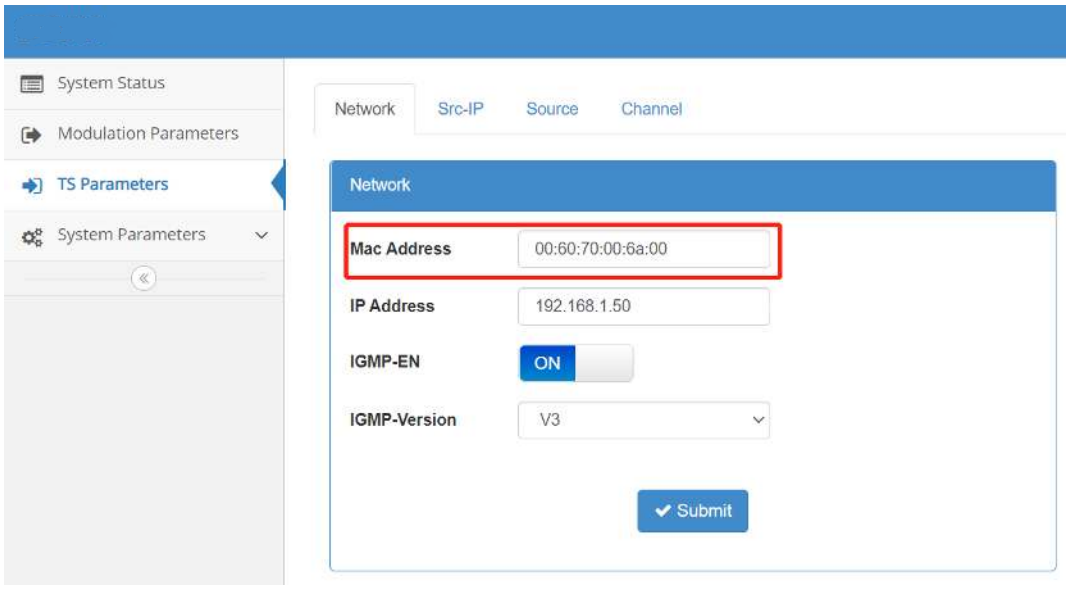
After each modification of the data, you need to submit the button to take effect.



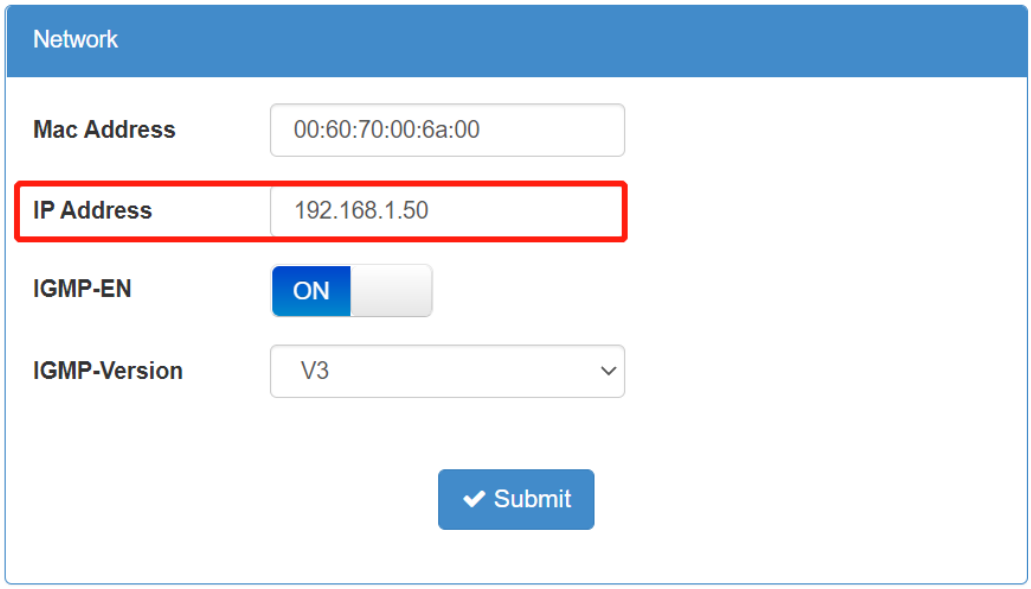
2. 3 TS parameters

2.3.1 Network Configuration

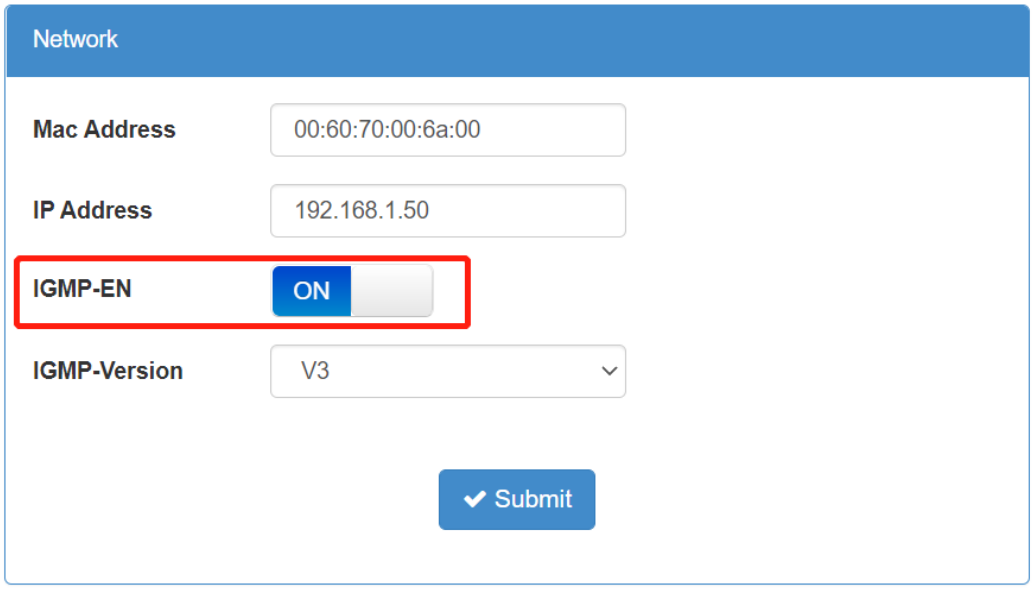
➢ **Mac Address:** Change the Mac address according to the actual device needs.



- **IP address:** Change the IP address according to the actual device needs



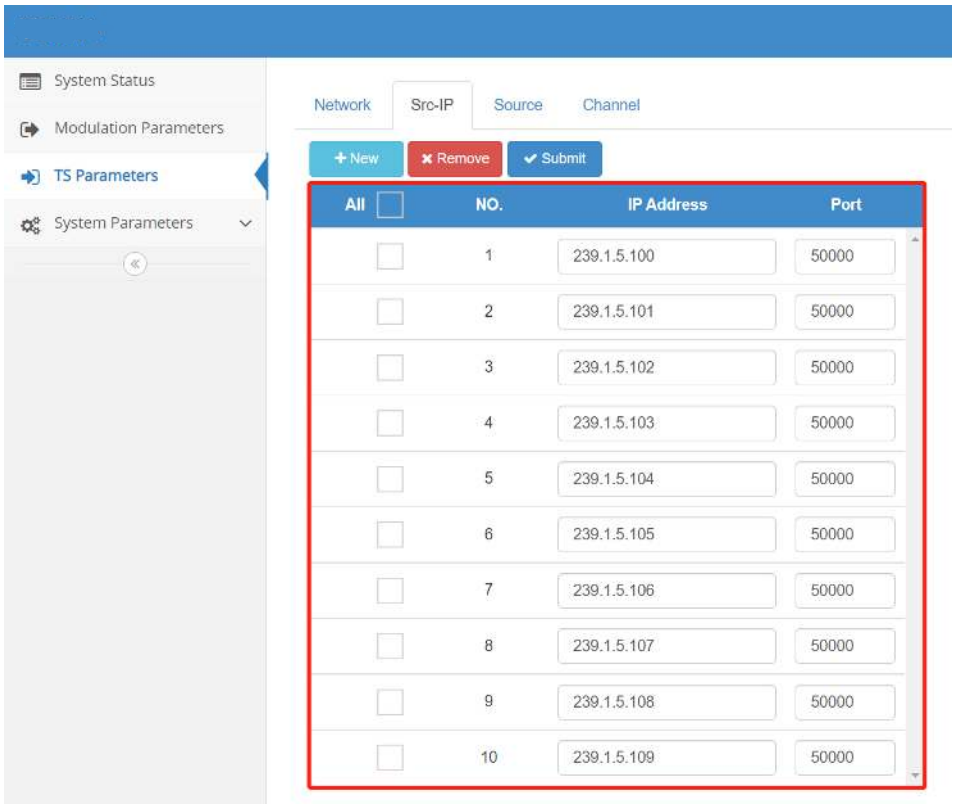
- **IGMP switch:** A switch that controls IGMP.



➢ **IGMP version:** can be changed to V2 or V3.

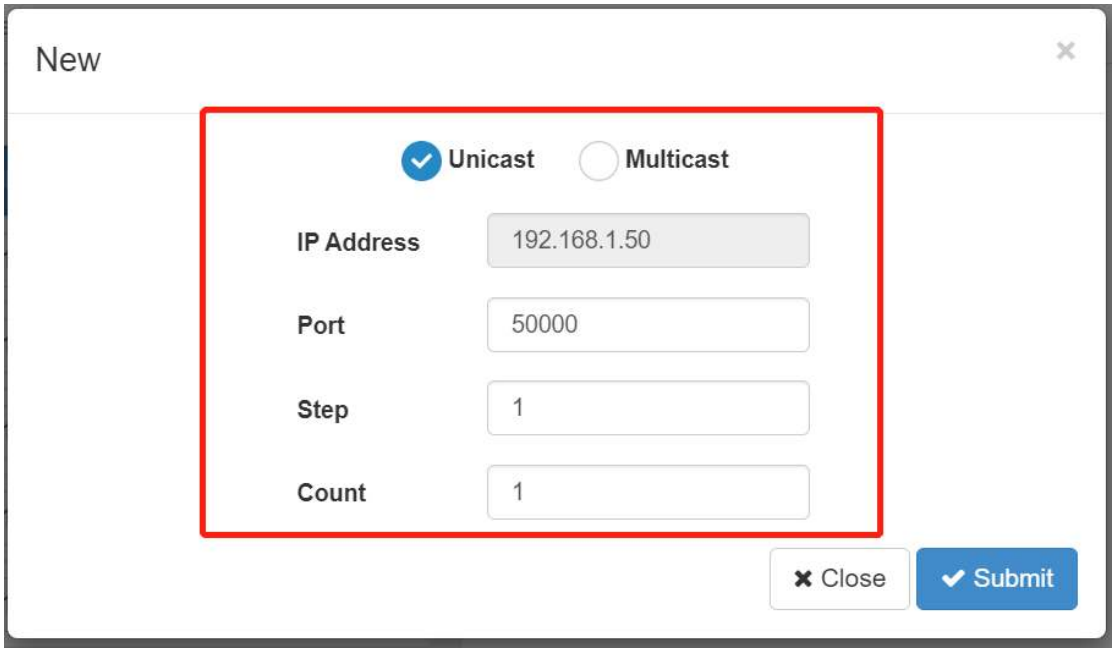
2.3.2 Enter address

The existing IP address and port information is displayed in the red box. If you need to modify the IP address or port, you can directly modify it in the form and click the [Submit] button to take effect.

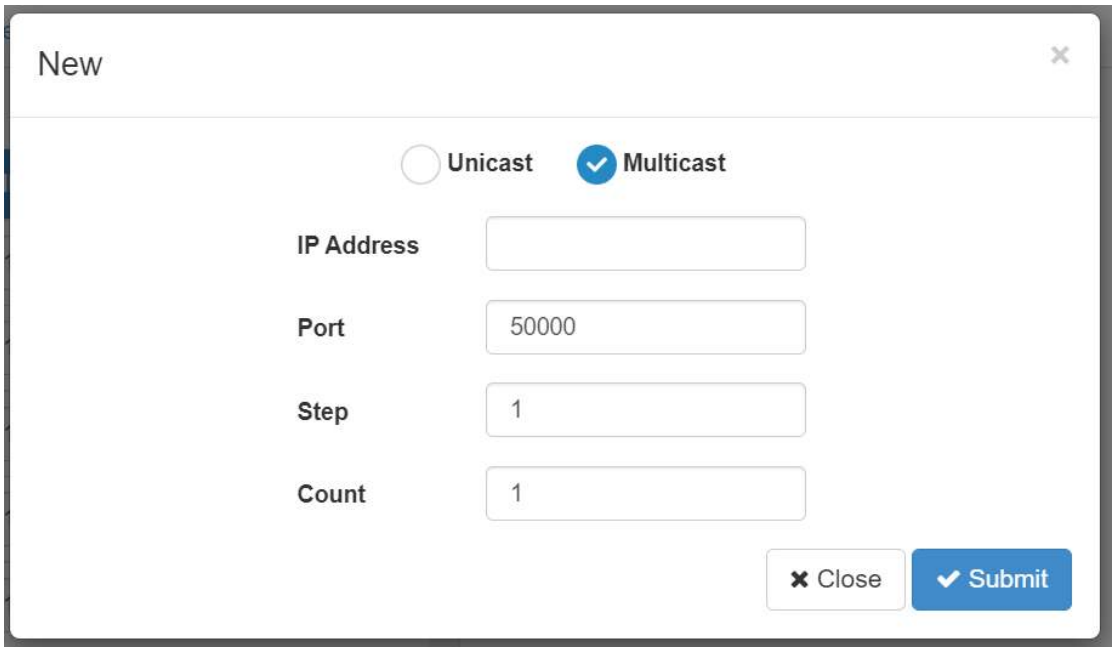


Add program input address

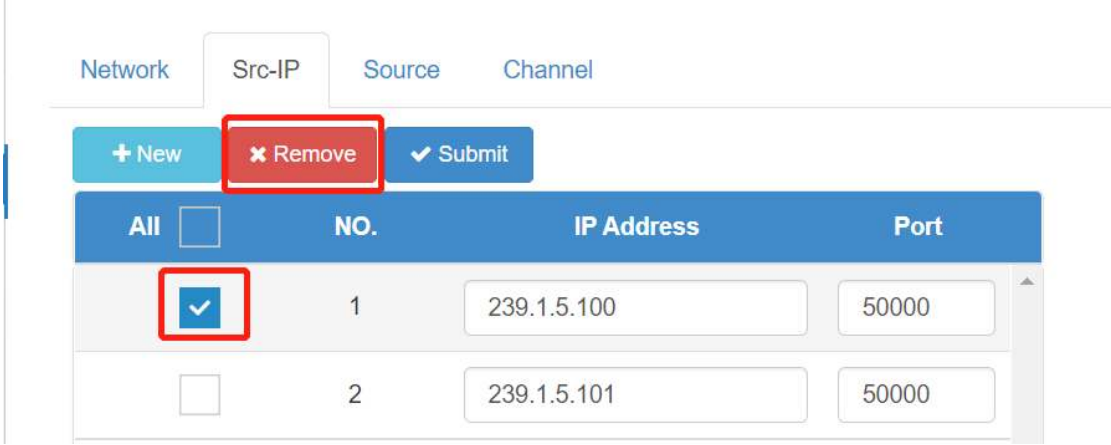
1. Unicast:



2. Multicast:

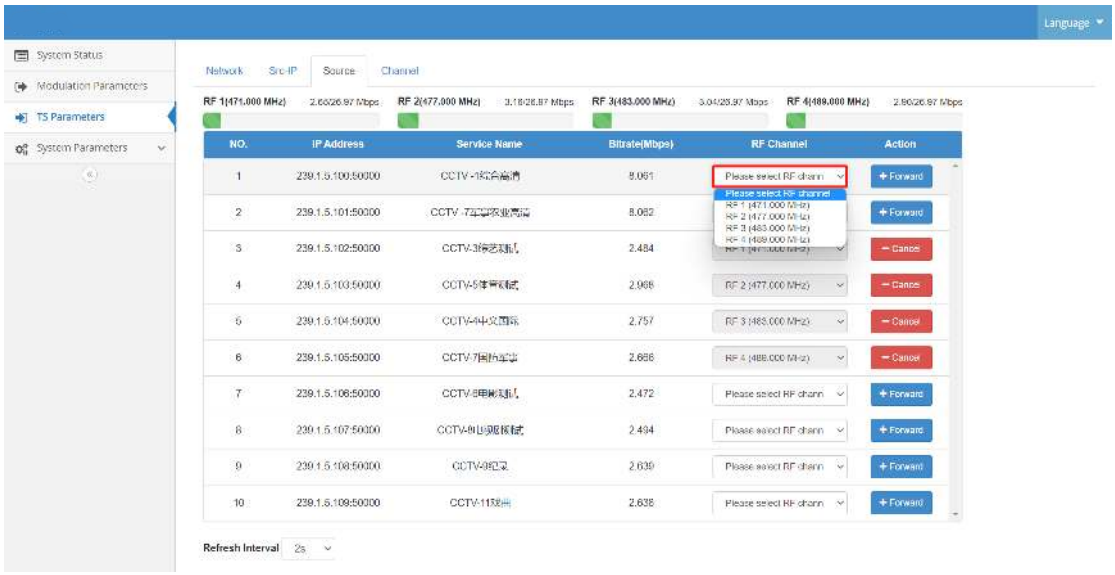


➢ Delete output address: Check the output address to be deleted, and then click the [Delete] button.

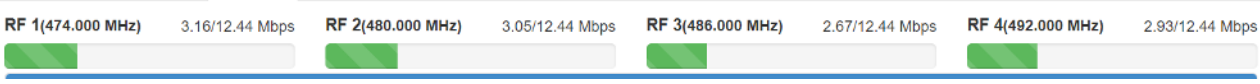


2.3.3 Program Source

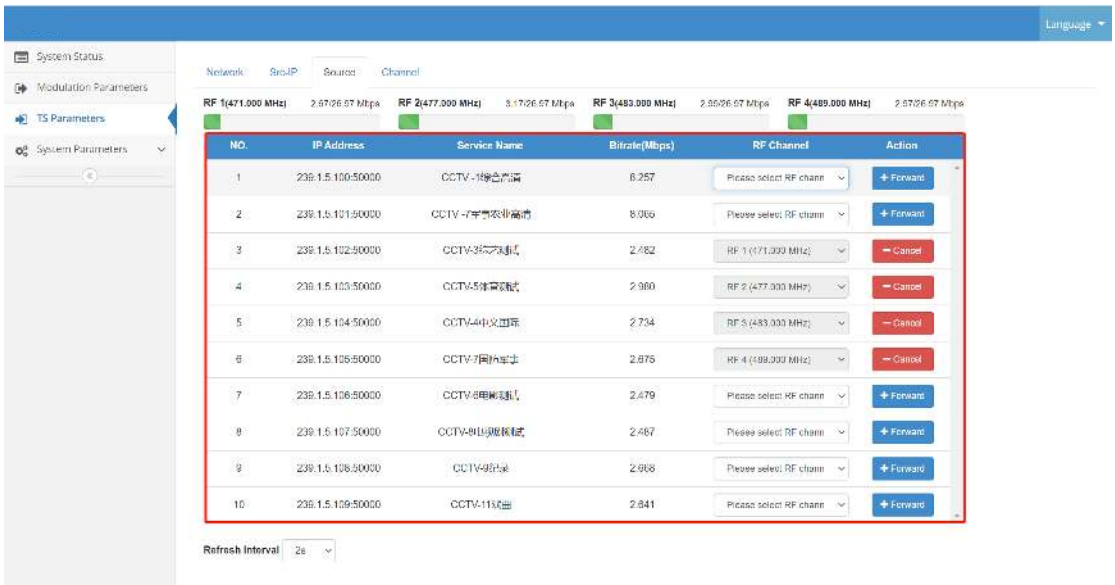
Select RF channel: The RF channel must be set in [Modulation Parameters]. After selecting one of the channels, the program can be forwarded (click the [forward] button). After clicking forward, the button will turn into a red cancel button. At this time, it is impossible to change the RF channel.



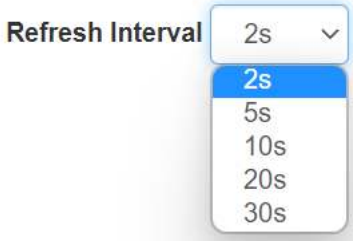
➢ Bit rate display of each channel



➢ Program source list



➢ Refresh time setting: Set the refresh interval of the program source address.



2.3.4 Channel

➢ List of successfully forwarded program channels

➢ In the channel list, you can modify the [Main Channel Number] and [Sub Channel Number]. After the changes are completed, click the [Submit] button to take effect.

All	RF Channel	IP Address(S)	Service Name(S)	Major Num.(D)	Minor Num.(D)	Short Name	Long Name	Bitrate(Mbps)	Action
	2-1 (477.000 MHz)	239.1.5.103:50000	CCTV-5体育测试	2	1	CCTV-5体育测试	CCTV-5体育测试	2.995	Edit
	3-1 (483.000 MHz)	239.1.5.104:50000	CCTV-4中文国际	3	1	CCTV-4中文国际	CCTV-4中文国际	2.759	Edit
	4-1 (489.000 MHz)	239.1.5.105:50000	CCTV-7国防军事	4	1	CCTV-7国防军事	CCTV-7国防军事	2.640	Edit

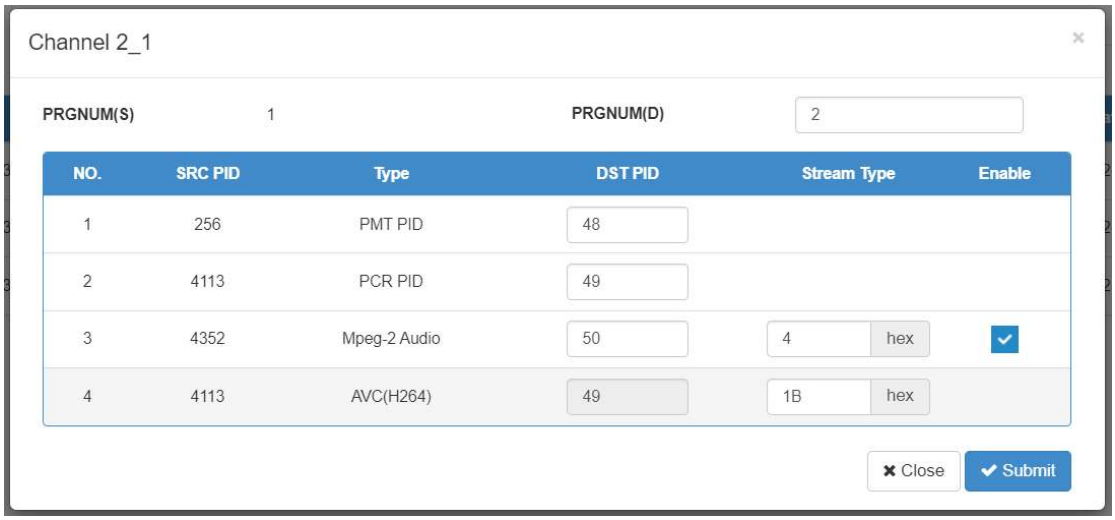
➢ In the channel list, you can modify the [Short Name] and [Long Name]. After the modification is completed, click the [Submit] button to take effect.

All	RF Channel	IP Address(S)	Service Name(S)	Major Num.(D)	Minor Num.(D)	Short Name	Long Name	Bitrate(Mbps)	Action
	2-1 (477.000 MHz)	239.1.5.103:50000	CCTV-5体育测试	2	1	CCTV-5体育测试	CCTV-5体育测试	2.980	Edit
	3-1 (483.000 MHz)	239.1.5.104:50000	CCTV-4中文国际	3	1	CCTV-4中文国际	CCTV-4中文国际	2.724	Edit
	4-1 (489.000 MHz)	239.1.5.105:50000	CCTV-7国防军事	4	1	CCTV-7国防军事	CCTV-7国防军事	2.671	Edit

➢ Edit button, click the edit button at the bottom,

All	RF Channel	IP Address(S)	Service Name(S)	Major Num.(D)	Minor Num.(D)	Short Name	Long Name	Bitrate(Mbps)	Action
	2-1 (477.000 MHz)	239.1.5.103:50000	CCTV-5体育测试	2	1	CCTV-5体育测试	CCTV-5体育测试	2.987	Edit

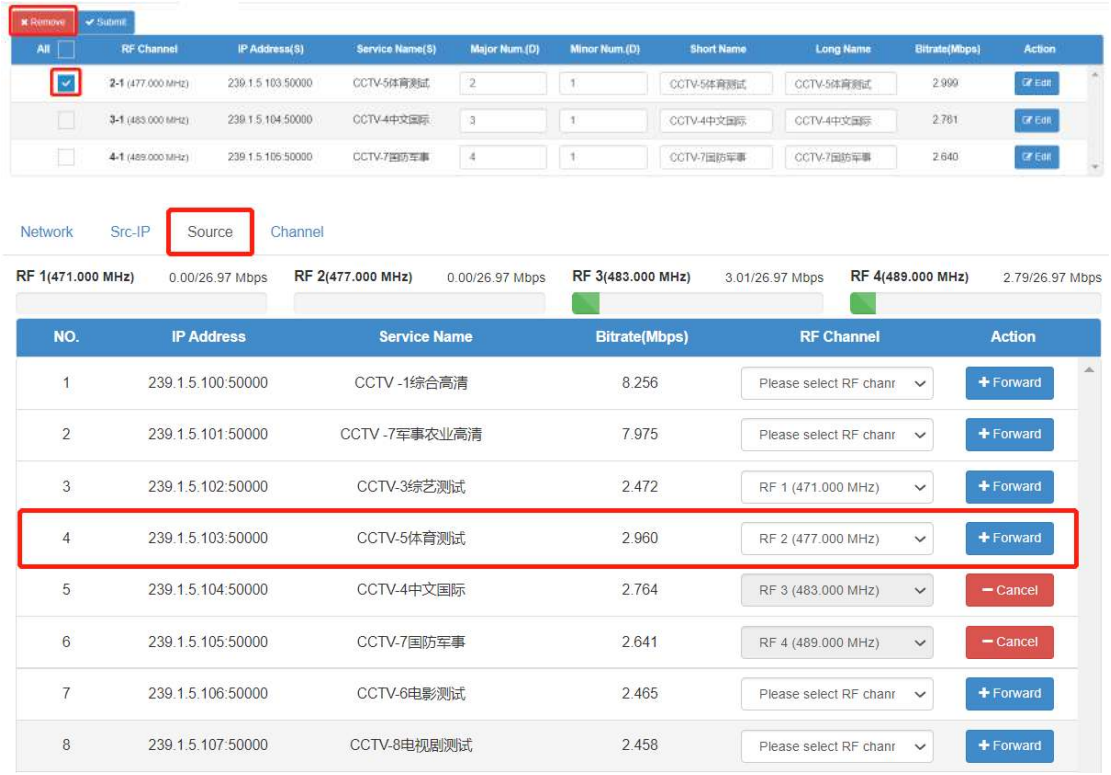
➢ Edit page, you can modify the content of the program information.



➢ Delete

Check the program channel to be deleted, click the [Delete] button, and the program channel will be successfully deleted in the program list.

The deleted channel is displayed as unforwarded in the program source list.



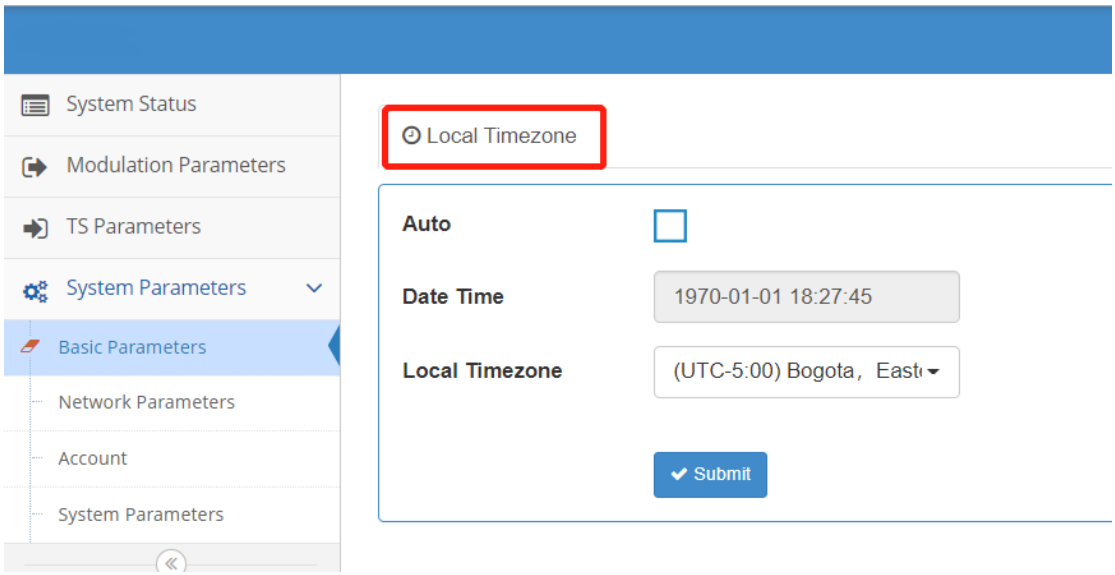
2. 4 System Configuration

2.4.1 Basic parameters

Time zone:

- **Automatic time adjustment:** If automatic time adjustment is required, select the check box of automatic time adjustment.
- **Date and Time:** The date and time cannot be set after automatic time adjustment is selected. If automatic time adjustment is not checked, you can manually set the date and time.
- **Time Zone:** Select the corresponding time zone.

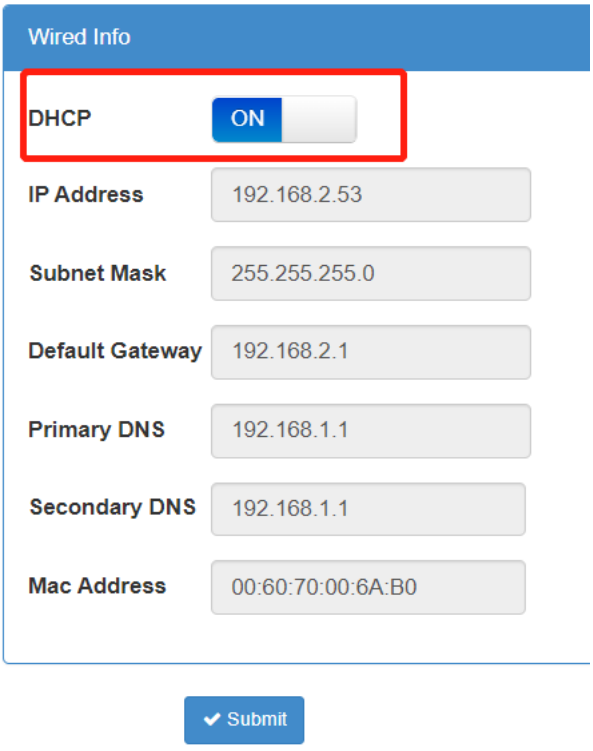
Select the corresponding time zone and click the [Submit] button to complete the time zone setting.



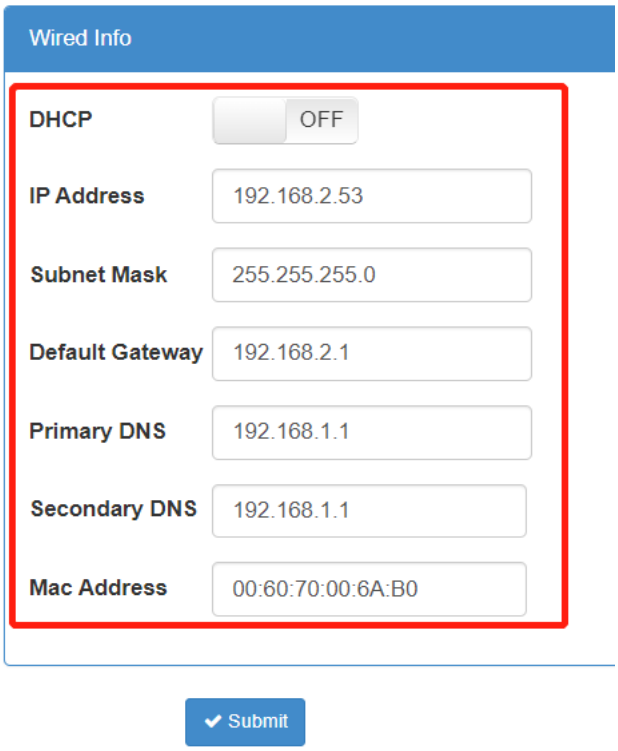
2.4.2 Network parameters

Wired information:

- Check Automatically obtain, other information in the form will be obtained automatically and cannot be modified manually.



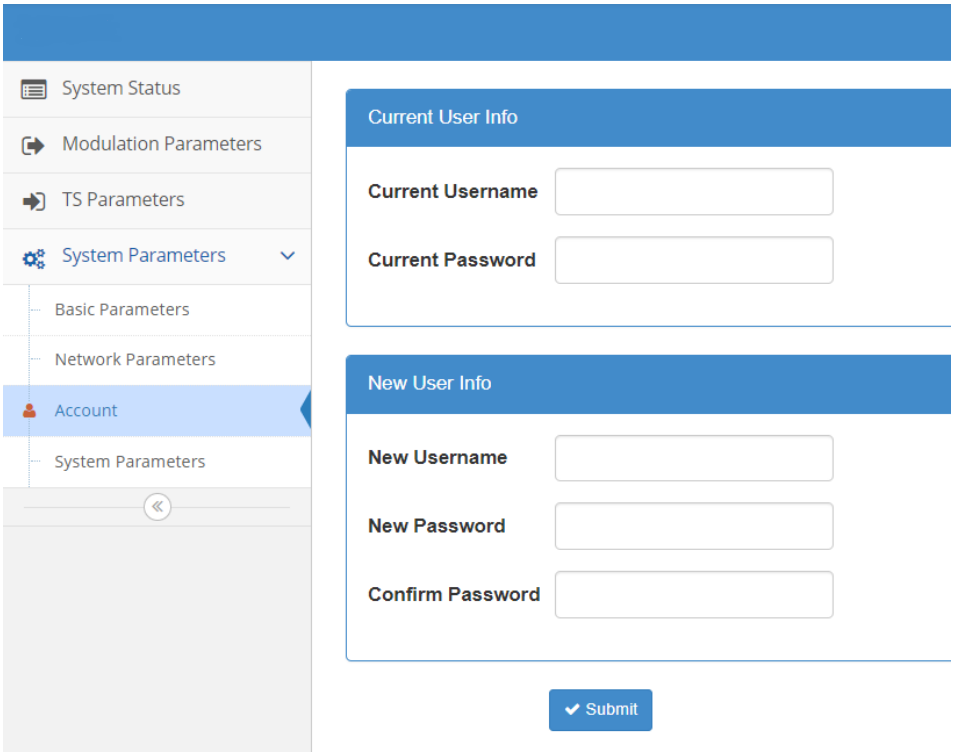
- If automatic acquisition is not checked, the information in the form can be filled in according to actual needs. After filling it out, click the Submit button.



2.4.3 Account

Reset the new username and password.

Operation steps: first fill in the user name and password in the initial information, and then fill in the new user name and password. Only when the initial user name and initial password are entered correctly, the password can be changed.

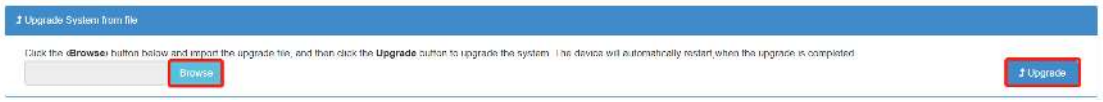


2.4.4 System Parameters

Click the "System Parameters" tab in the red box on the left side of the figure below, and the right page will switch to the system configuration page, as shown below:

➢ **Upgrade System from fle**

Click the [Browse] button to select the local upgrade file. Click the [Upgrade] button to upgrade the device.

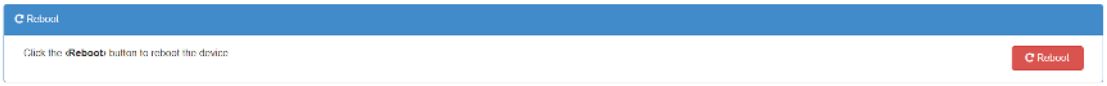


➢ **Restore to factory stings**

Click the [Restore] button to restore the device to its factory settings.

➢ **Reboot**

Click the [Reboot] button to restart the device.



➢ **Export Settings**

Click the [Backup] button to pack all the setting information into a file, and export and backup to the computer

➢ **Import Settings**

Click the [Restore] button to import the device into the previous backup file and restore the device

to the previous setting state.

3 Equipment operation precautions

The quality assurance system of the company's products includes equipment testing and inspection of operating procedures to ensure the reliability of product quality. Before the products leave the factory, the company has adopted all possible measures. The indicators of light, electricity and machinery of the products have reached the published standards. In use, in order to prevent possible potential problems, the following precautions should be strictly followed to carry out related operations.

3. 1 Precaution

- Place the equipment at an ambient temperature of 0~45°C. Other conditions meet the required operating range.
- Ensure that the rear panel heat sink is well ventilated, ensure that all jacks are unblocked
- Check that the power supply voltage is within the specified range and all connections are correct
- Check if the RF level change is within its allowable range
- Check if the connection of each signal line is loose.
- Please do not switch the machine frequently (the switch time is at least 10 seconds apart)

3. 2 The case to unplug the power supply

- Power cord or outlet is damaged
- If any liquid is injected into the device
- The chassis hole drops into any debris, causing an internal short circuit
- Water or soak
- Collision or internal damage
- Do not use this machine for a long time
- If the preset is restored and the power is turned on, the device still does not work properly.
- The device needs repair

3. 3 Common fault

- No signal: Please check that the modulation standard of the device is consistent with the received standard.

- Missing program: Please check if there is a channel conflict, whether the video signal input is normal, restart the device.

This article is subject to change without notice. If you have any questions, please contact our sales department directly.

4. Performance Parameters

Physical Parameter		
Size	176(W)*123(D)*36(H)mm	
Operating Temperature, Humidity	-10℃-45℃、40%-70%	
Storage Temperature, Humidity	-40℃-70℃、40%-95%	
IP Input Parameters		
Input Interface	1 Gigabit RJ45 Interface	
Input Format	Support unicast /multicast protocol, support UDP, IGMP V2/V3 single program stream (SPTS)	
Modulation Parameters		
DVB-T/T2	Adjustment Standard	DVB-T COFDM
	Bandwidth	6/7/8MHz
	Modulation Constellation	QAM64, QPSK, QAM16, QAM64
	Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
	Guard Interval	1/32, 1/16, 1/8, 1/4
	Transmission Mode	2K,4K,8K
	MER	≥40dB
	RF Frequency Range	50-999.999MHz Min Step1KHz
	Output Impedance	75 Ohm
	Output Level	≥100dBuV(0-31.5dB Modulation Range, 0.5dB Step)
	Out-of-band Rejection	≥60dB
Power	Supply Voltage	DC12V
	Max Current	2000mA