We Focus · We Deliver

M100 Dispatch Microphone Console User Guide

Contents

1. Preface

1.1 Audience

This manual is intended to provide clear operating instructions for those responsible for configuring and managing the M100 Dispatch Microphone Console. By carefully reading and consulting this manual, to help the audience solve the setting and deployment issues of the M100 Dispatch Microphone Console.

1.2 Revision History

Document Version	Applicable Firmware Version	Update Content	Update Date
1.0.0	1.0.0	Added operating instructions for Firmware version v1.0.0.	2023.7.5

2. Overview

2.1 Product Overview

The M100 Dispatch Microphone Console is a versatile and high-performance SIP-enabled device for seamless communication. It features 30 programmable fast keys that can be used for paging, intercom, music playback, outbound phone calls, and emergency alarm activation. With multicast and peer-to-peer technology, it serves as a standalone serverless console for individual and group paging, internal calls, and more. The console also allows users to save music and prerecorded messages in the local storage TF card, ensuring reliable and efficient communication capabilities. The M100 Dispatch Microphone Console is ideal for a wide range of industries, including emergency services, schools, transportation, and hospitality, thanks to its advanced features and reliable performance.

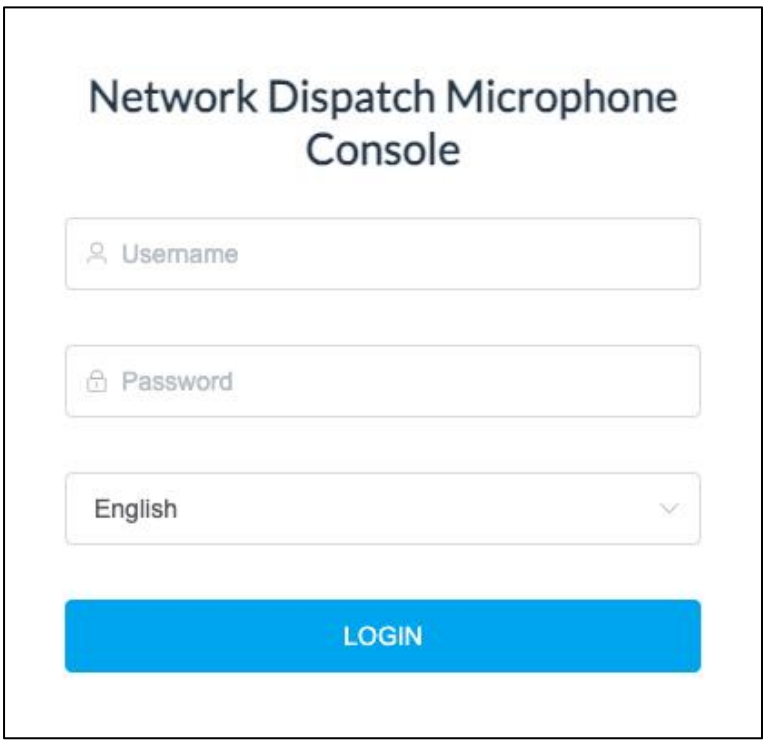
2.2 Product Specifications

M100 Specifications	
Speaker Components	φ45mm full frequency
Sensitivity	95±3dB / 1W / 1m
Max Sound Pressure Level	100dB
Rated Power:	8Ω 3W
Microphone Sensitivity	36±2dB
Microphone Max Sound Pressure Level	110dB
Microphone Impedance	680Ω
LCD Display Size	4.3 inches
LCD Display Resolution	480p*272p

3. Login the Device

3.1 Accessing the Web GUI

M100 obtains the IP address through DHCP by default, please ensure that there is an available DHCP server in your LAN (if DHCP fails to obtain an address, it will use a static IP address: 192.168.1.101), press the "RST" button on the back of the device and the IP address will be displayed on the screen, enter the IP address in the browser to access the Web Graphical User Interface.



After entering the correct username and password, you can log in to the device's web management interface.

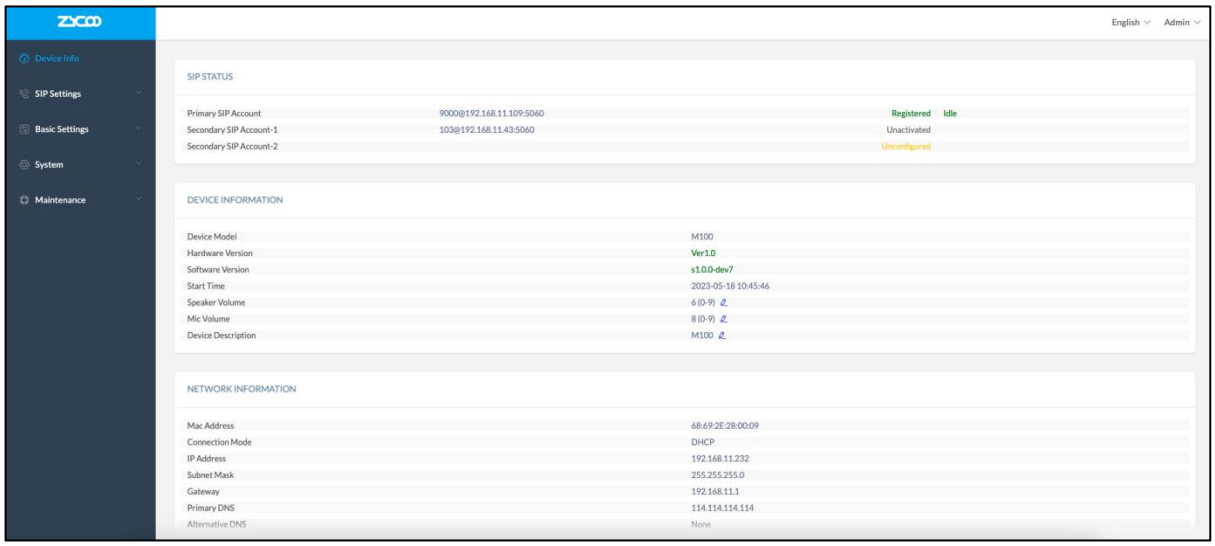
Default username: admin

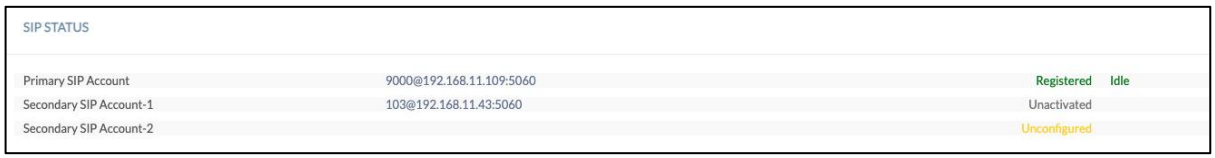
Default password: admin

For the safety purpose, it is recommended to change the default password on the first login, please go to **System --> Password Settings** page to change the password.

3.2 Device Info

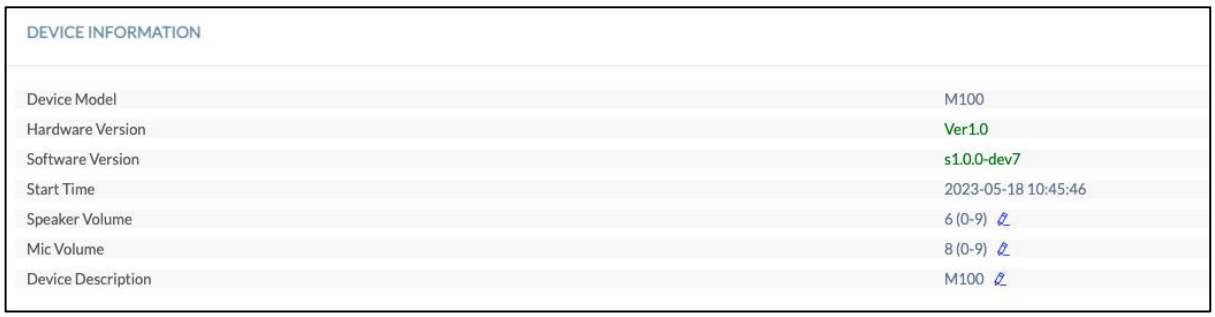
After successful login, you will see the information interface of the device, and you can view the basic information of the device.





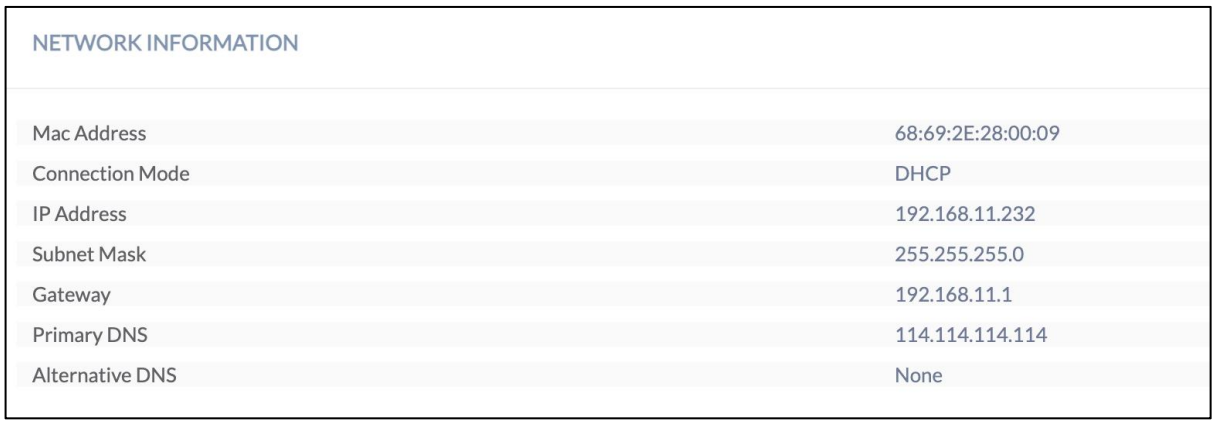
SIP Status

- **SIP Account:** Display the SIP number configured on this device.
- **SIP Server:** Display the SIP server (ZYCOO IP Audio Center or IP PBX) address.
- **Register Status:** Display the SIP number registration status.



Device Information

- **Device Model:** Displays the model of the device.
- **Hardware Version:** Displays the hardware version number of the device.
- **Software Version:** Display the system version number of the device.
- **Start Time:** Displays the last time the device was started up.
- **Speaker Volume:** Displays the current volume of the device.
- **Mic Volume:** Displays the current device microphone input volume.
- **Device Description:** Remark the device information. The description will be displayed in a browser tab. After the Device Description is set, the description will be displayed in the browser tab, which is convenient for distinguishing different terminals when there are many terminal configuration pages.



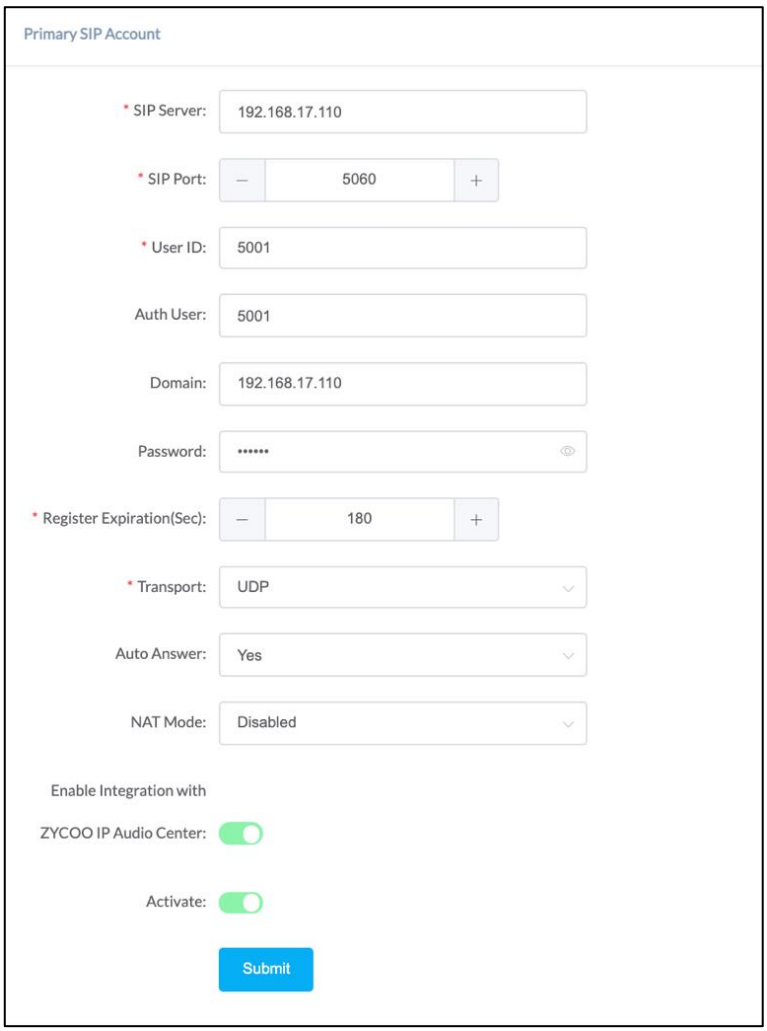
Network Information

- **Mac Address:** Display the MAC address of the current device.
- **Connection Mode:** Display the network acquisition method of the device, DHCP (dynamic acquisition) or STATIC (static configuration).
- **IP Address:** The current IP address of the device.
- **Subnet Mask:** The current subnet mask of the device.
- **Gateway:** The gateway address currently used by the device.
- **Primary DNS:** The primary domain name server address used by the device.
- **Alternative DNS:** The secondary domain name server address used by the device.

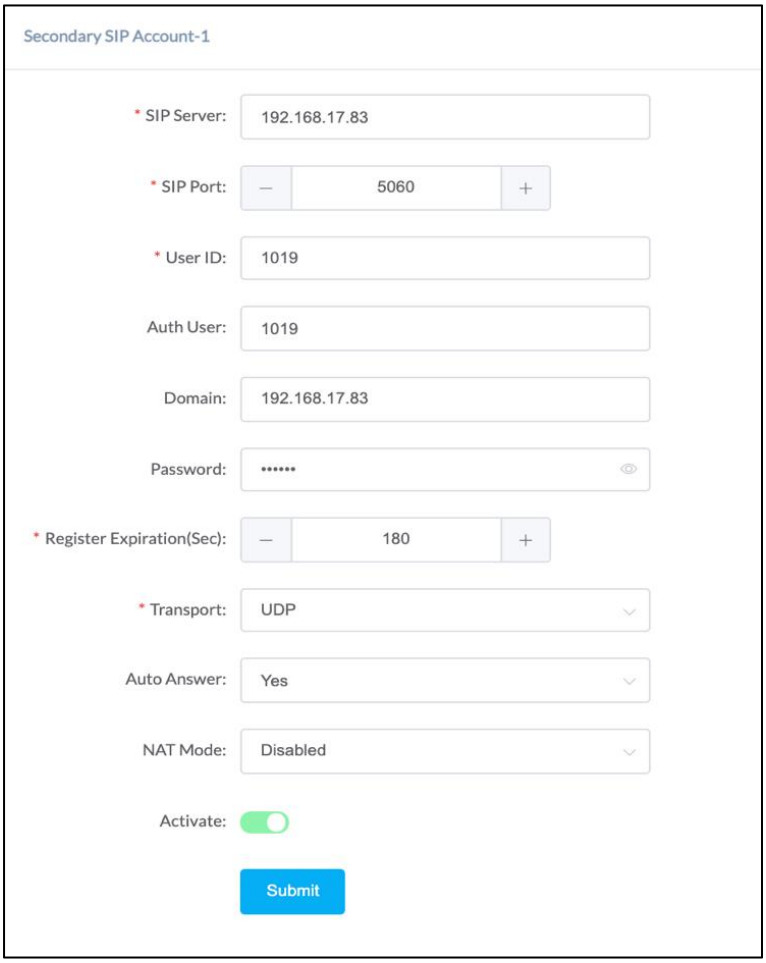
4. SIP Settings

4.1 SIP Account Settings

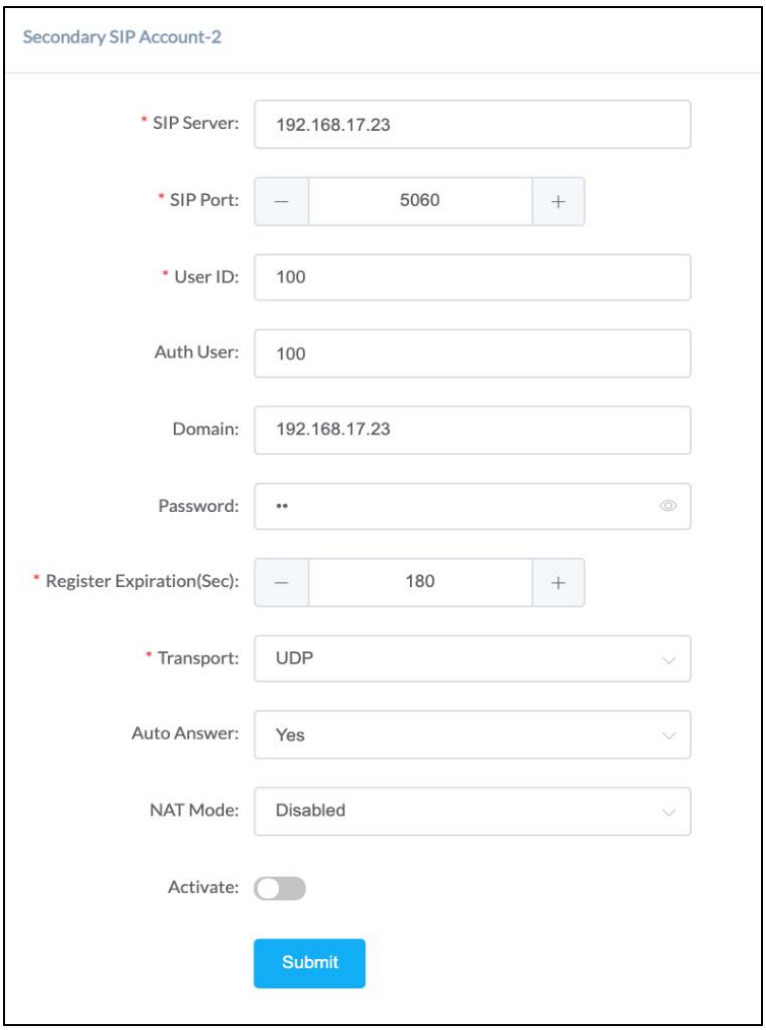
There are three (3) SIP accounts under the SIP Settings, one (1) primary and two (2) secondary for the use of different SIP accounts to proceed with various tasks. If the current device needs to cooperate with the ZYCOO IP Audio Center, please turn on the 'Enable Integration with ZYCOO IP Audio Center' option. After any one of the SIP accounts has successfully registered, the UP/Down page buttons on the M100 will turn on with green light. If there is no SIP account registration, the UP/Down page buttons will be shown as red lights. Please go to **SIP Settings --> Primary SIP Account / Secondary SIP Account-1 / Secondary SIP Account-2**



Primary SIP Account



Secondary SIP 1 Account



Secondary SIP 2 Account

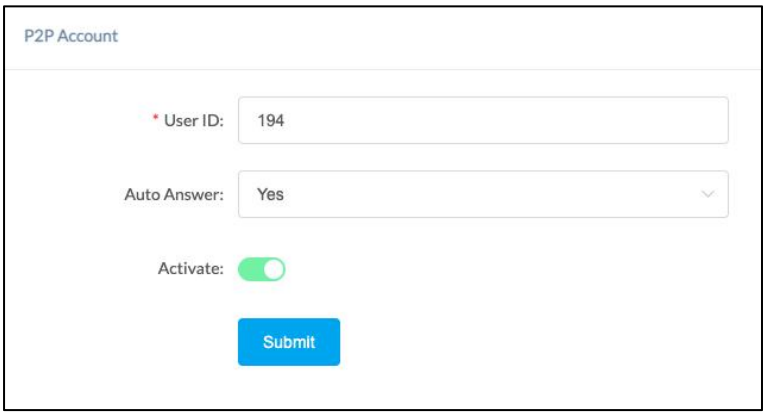
- **SIP Server:** Enter the IP address or domain name of the SIP server.
- **SIP Port:** Default SIP port is 5060. If the SIP server uses another port number as the SIP port, please modify this setting.
- **User ID:** The SIP account number provided by the SIP server.
- **Auth User:** Enter the authorized SIP account's username.
- **Domain:** Enter the SIP Domain.
- **Password:** Authorized SIP account password.
- **Register Expiration (sec):** SIP register expiration time, the default expiration time is 180 seconds.
- **Transport:** Set up the transport protocol, there are UDP, TCP, TLS options to choose.

- **Auto Answer:** Yes/No/Answer Delay, default in the Yes option.
- **NAT Mode:** Select the NAT mode and fill out the corresponding data. STUN, TURN, and ICE modes are supported.
- **Enable Integration with ZYCOO IP Audio Center:** This option is disabled by default. If you need to connect and use it with ZYCOO IP Audio Center, please enable this option. Only the main SIP account has this option.
- **Activate:** Enable/Disable the SIP register feature.

4.2 P2P Account Settings

P2P stands for Peer to Peer. In a P2P network, the peers are connected to each other via the Internet, files can share, or peers can call each other directly between systems on the network without the need for a central server.

After configuring the P2P account, it can be used with the Outgoing Call feature in **Basic Settings --> I/O Settings**, or use the Outgoing API in **Basic Settings ---> API Settings** to make a P2P call.



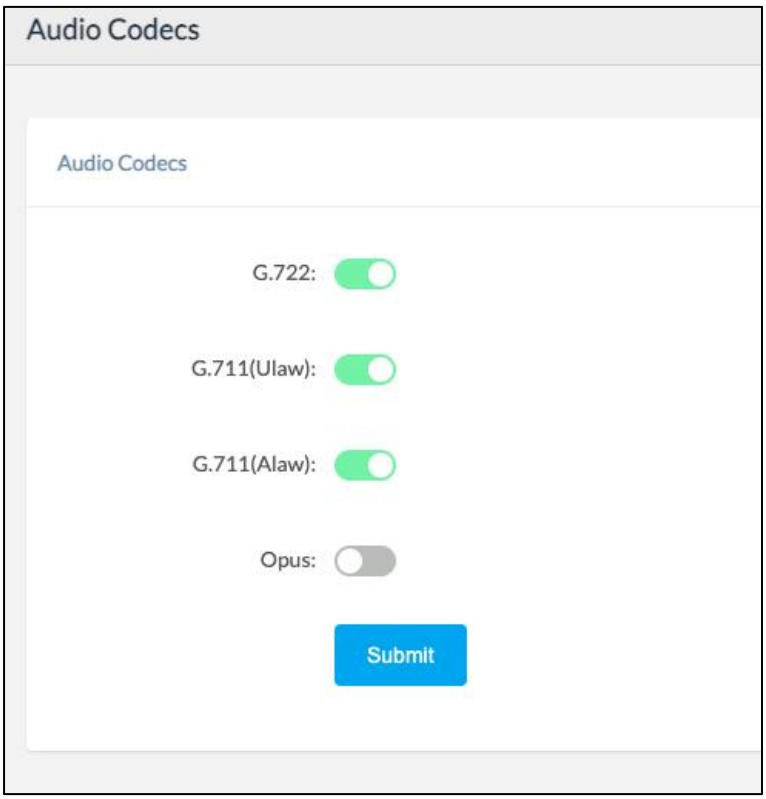
P2P Account

- **User ID:** The User ID will be displayed as the outgoing number when calling out, or the number that another device needs to dial.
- **Auto Answer:** Yes/No/Answer Delay, default in the Yes option.
- **Activate:** Enable/Disable the P2P feature.

4.3 Audio Codecs

M100 supports 4 audio codecs: G.722 (wideband codec), G.711(Ulaw), G.711(Alaw), and Opus.

To enable or disable an audio codec/codecs, please go to **SIP Settings --> Audio Codecs** page.

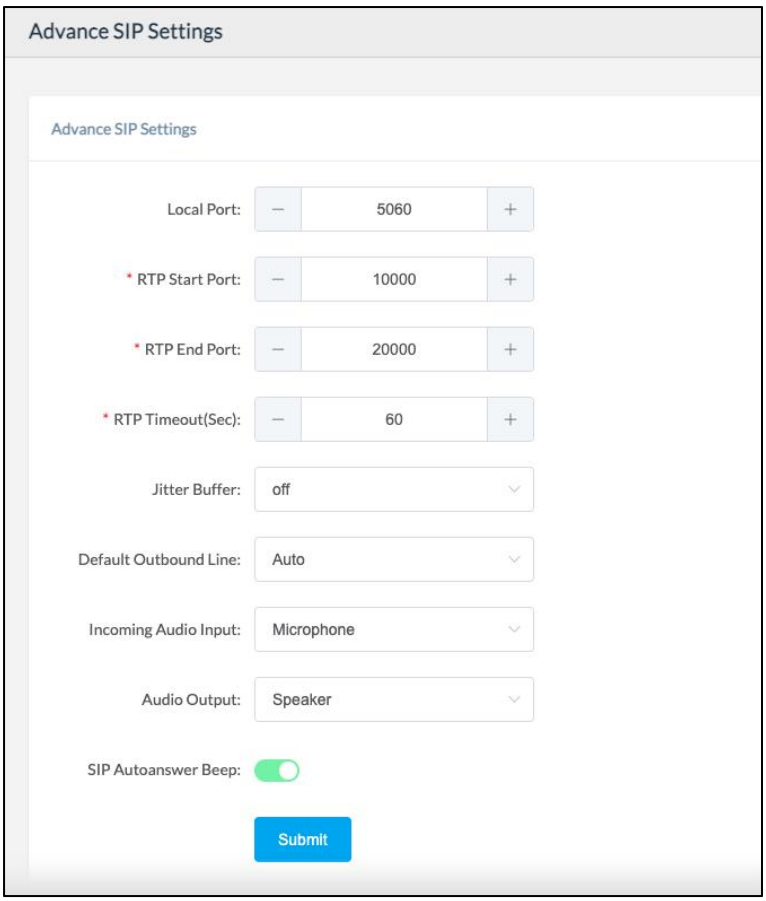


Please keep at least one codec enabled and supported by the SIP server, otherwise, SIP paging will not work.

4.4 Advance SIP Settings

Configure some advanced parameters of the SIP protocol.

Please go to **SIP Settings --> Advance SIP Settings**.



Advance SIP Settings

- **Local Port:** This setting represents the port used to receive SIP packets.
- **RTP Start Port:** This setting represents the starting RTP port that will use for media sessions.
- **RTP End Port:** This setting represents the end RTP port that the system will use for media sessions.
- **RTP Timeout (sec):** This setting means that within a specific time range, if the system does not receive the RTP stream, the call will end.
- **Jitter Buffer:** This setting represents the Jitter buffer where voice packets can be collected, stored, and sent to the voice processor in even intervals. Three options are provided, off/adaptive/fixed. A fixed jitter buffer adds a fixed delay to voice packets. An adaptive jitter buffer can adjust based on the delays in the network.
- **Default Outbound Line:** The default line to use for dialing calls from the dial pad.

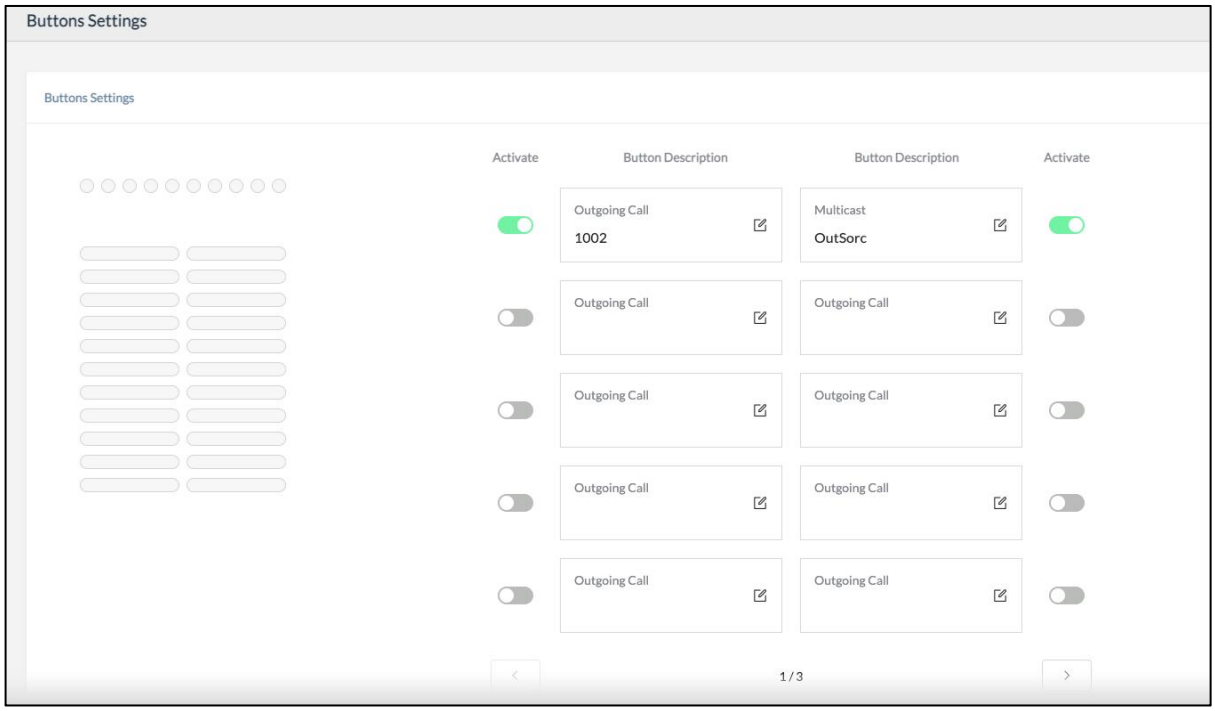
- **Incoming Audio Input:** The audio input interface which used for answering incoming calls by default.
- **Audio Output:** The audio output interface which used for incoming and outgoing calls by default.
- **SIP Autoanswer Beep:** Enable/Disable. This setting represents the ringtone beep when a call comes and only applies when the SIP Autoanswer feature is enabled.

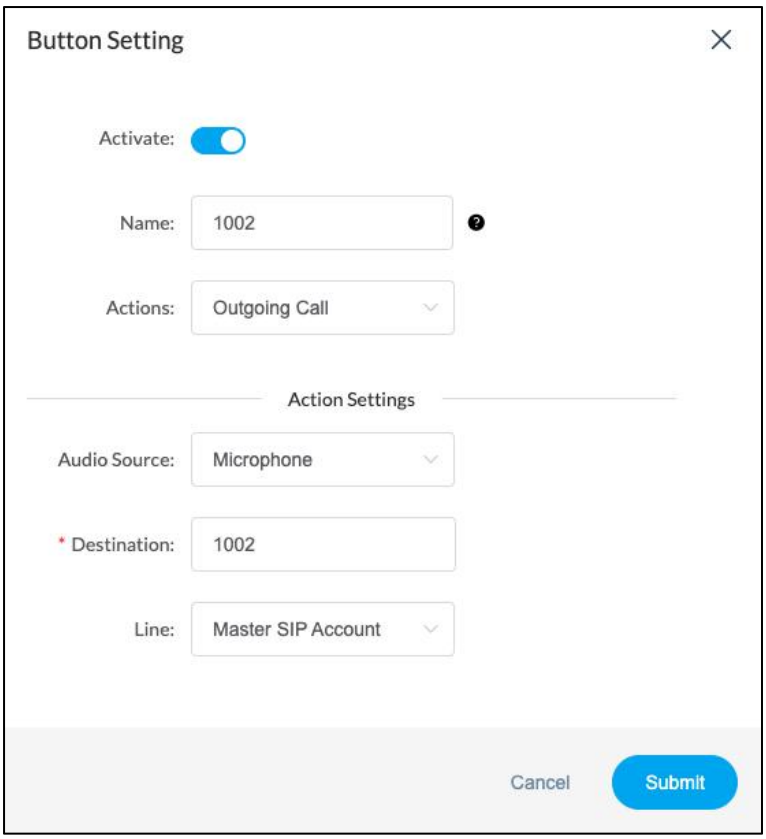
5. Basic Settings

5.1 Buttons Settings

Configure some actions for the buttons on the M100 device, including Outgoing Call, HTTP request, DTMF request, Relay control, and Multicast.

Click **Basic Settings--->Buttons Setting** to enter the buttons settings page.





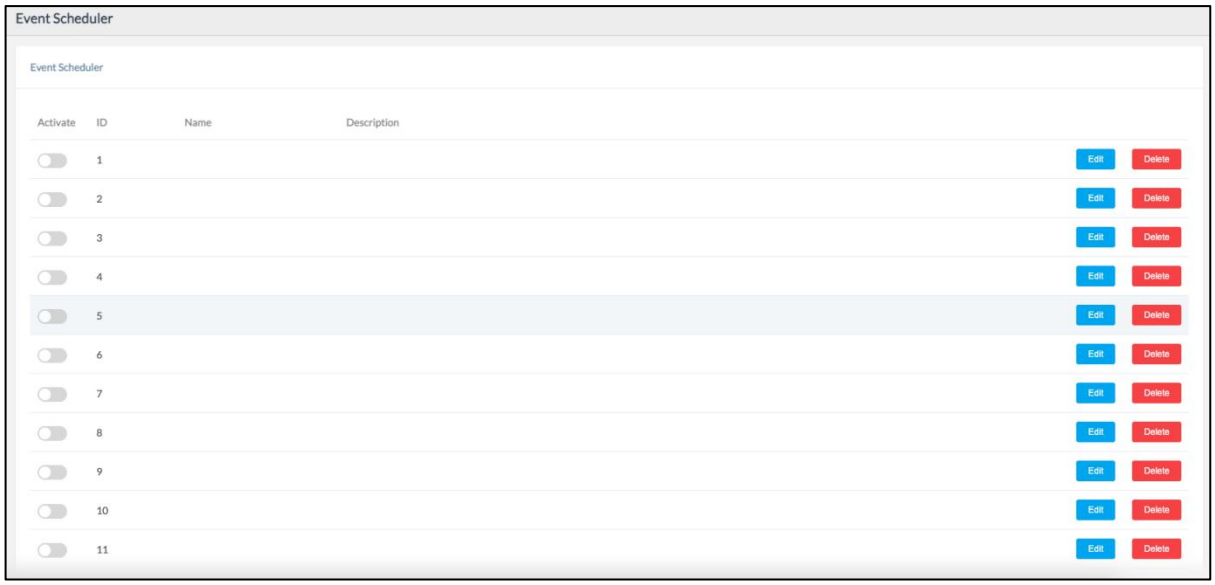
Button Settings

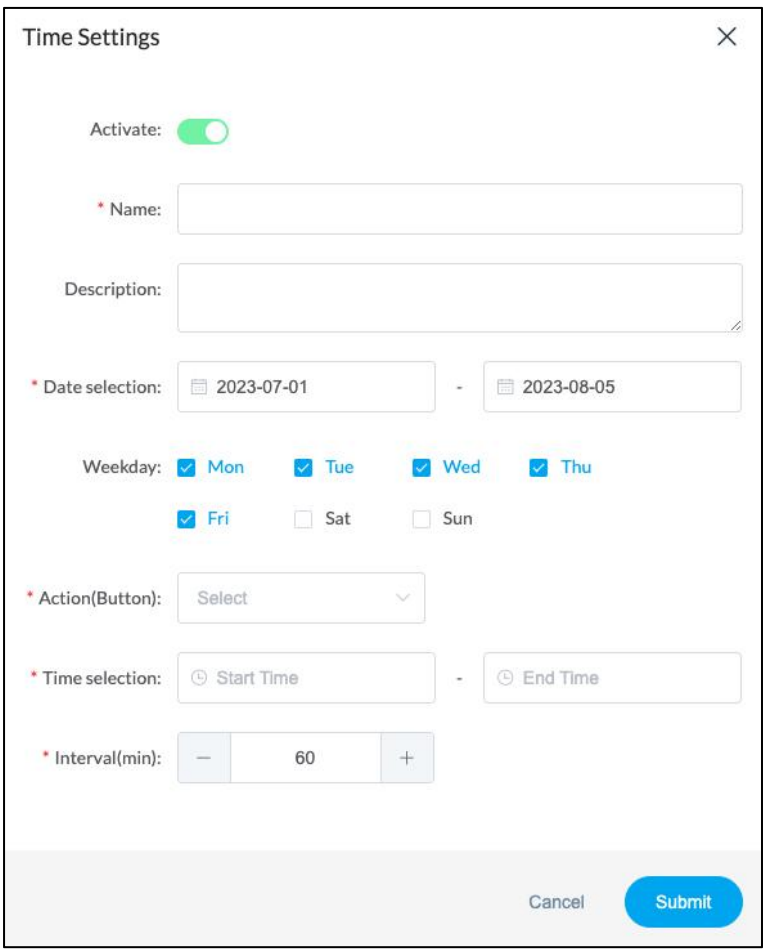
- **Activate:** Activate/deactivate the fast key.
- **Name:** Set the fast key name, which will be displayed on the device screen.
- **Actions:** Set the fast key action. (Including Outgoing Call, HTTP request, DTMF request, Relay control, and Multicast)
- **Audio Source:** Input settings for the audio source, including Microphone and Audio Input.
- **Destination:** Set the destination number for outgoing calling.
- **Line:** Set the specific line for outgoing calling.

5.2 Event Scheduler

The event scheduler can edit up to 12-time plans, you can click the corresponding option to edit or delete them. Before you edit/create an event scheduler, please go to the **Basic Settings--->Buttons Setting** page and activate an empty button to use as the corresponding button for the event.

Click **Basic Settings ---> Event Scheduler** to enter the event scheduler page.



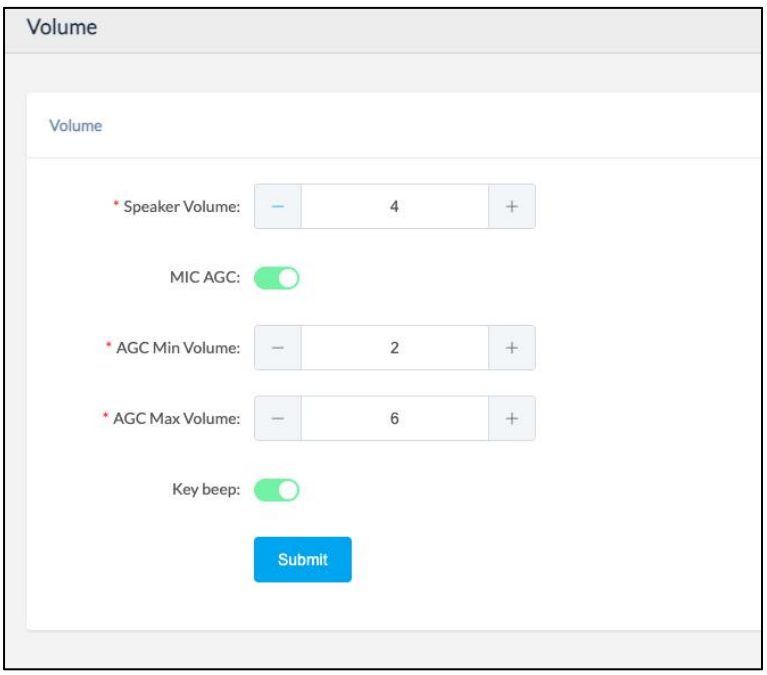


Time Settings

- **Activate:** Activate/Deactivate the schedule.
- **Name:** Set the name of the schedule.
- **Description:** Comment information for the time schedule.
- **Date Selection:** Set the date range for the time schedule.
- **Weekday:** Set the execution week day in the date range.
- **Action (Button):** Select the programmed button that you activated to execute the scheduled action.
- **Time Selection:** Set the specific time period for executing the action.
- **Interval(min):** Set the interval time for performing actions.

5.3 Volume Settings

M100's volume level can be adjusted from its web management interface, on the **Basic Settings --> Volume** page.



Volume Settings

- **Speaker Volume:** The default speaker volume is 7, adjustable range is 0 ~ 9.

- **MIC AGC:** When this setting is enabled, the system will automatically adjust the microphone volume according to the environment. Users are able to adjust the microphone volume manually when this setting is disabled.
- **AGC Min Volume:** This setting represents the minimum value of the automatic gain control.
- **AGC Max Volume:** This setting represents the maximum value of the automatic gain control.
- **Key Beep:** Enable/Disable the beep sound from the key button.

Note: It is recommended the volume level setting not exceed 7 under POE power supply mode, otherwise it may cause the device to restart.

5.4 I/O Settings

This page is used to configure configuration parameters related to security linkage, such as: sensor settings, trigger settings, relay settings and other related configurations. Please go to the **Basic Settings --> I/O Settings** page.

Sensor Settings

• **Sensor Detection:** Enable/Disable the input detection switch.

• **Trigger Mode:** Select the trigger mode as rising edge trigger or falling edge trigger.

• **Dial Number:** Enable/Disable the trigger dial number switch.

• **Number:** Set the number to dial automatically when triggered and its the corresponding line selection.

• **Trigger Audio:** Enable/Disable the trigger audio switch. (only one of the

Trigger Audio and Dial Number options can be enabled)

• **Audio File:** Set the audio file to be played automatically and the number of times to repeat when triggered.

Trigger Settings

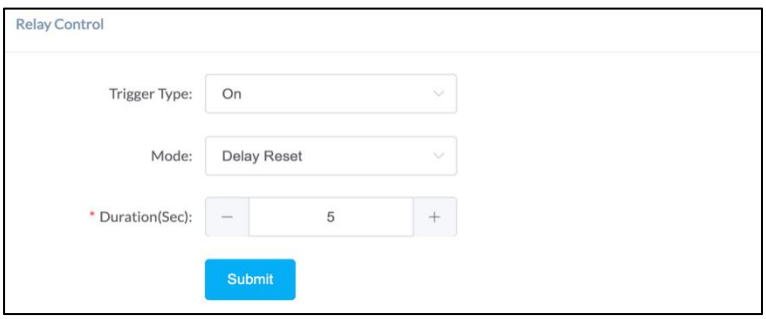
• **Trigger by Input Signal:** Enable/Disable the input trigger switch.

• **Trigger by DTMF Signal:** Enable/Disable the DTMF signal to trigger the change of the output port status (when enabled, it will be triggered after pressing the configured DTMF trigger number during a call).

• **DTMF:** Set the button number to be used when DTMF is triggered.

• **Trigger by Call Status:** Enable/Disable to trigger the output port state change through the call state change.

• **Event:** Set the corresponding call state, you can choose 【Outgoing】, 【Incoming】, 【Incoming/Outgoing】, 【Answer】 and 【Hangup/end】.



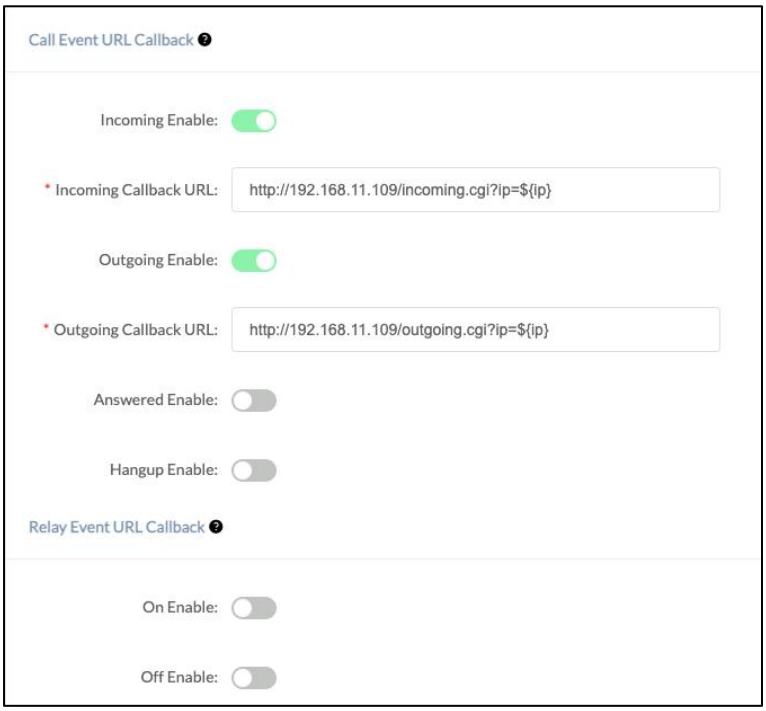
Relay Control

- **Trigger Type:** This setting represents the responses by the triggers, there are 'On', 'Fast Flashing', and 'Slow Flashing' options to choose from.
- **Mode:** This setting represents the reset mode after the trigger is responded, there are 'Delay Reset' and 'Hang-up Reset' options to choose from.
- **Duration (sec):** This setting is only available if the reply control mode is on Delay Reset, it represents the time duration when the configure interface status changed.

5.5 API Settings

This page is used to configure the API interface of the device. Through the API interface, you can realize device linkage, call control, relay control, and play sound by using the changing status of the call and/or relay.

Please go to **Basic Settings --> API Settings**.



Call Event URL Callback & Relay Event URL Callback

When the call status changes, it will trigger an HTTP GET request to call a URL address. Within the URL address, you may use variables to identify some current information.

For example:

${ip}: The current IP address of the device

${mac}: The current MAC address of the device

${ua}: The account of the current call

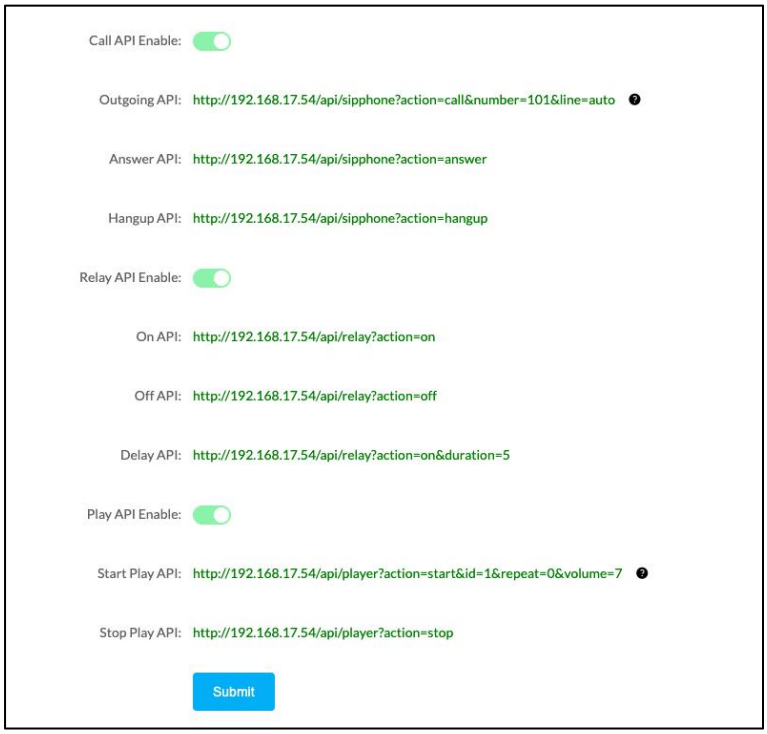
${number}: The number of the current call

When the relay status changes, it will trigger an HTTP GET request to call a URL address. Within the URL address, you may use variables to identify some current information.

For example:

${ip}: The current IP address of the device

${mac}: The current MAC address of the device



API Settings

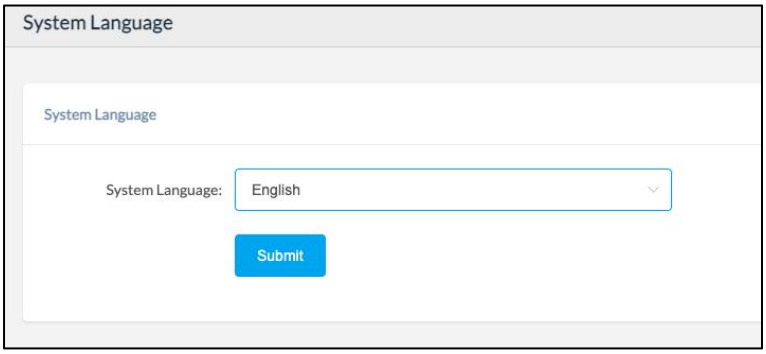
Using the API interface to realize features such as device linkage, call control, relay control, and play sound by the systems.

Note: Authentication and encryption are not used in the API interface, so please pay attention to the security of the network environment when opening and using these API interfaces.

5.6 System Language

The language of local voice prompts, like IP address announcements, can be set on **Basic Settings --> System Language** page.

Currently, only Chinese and English are provided.

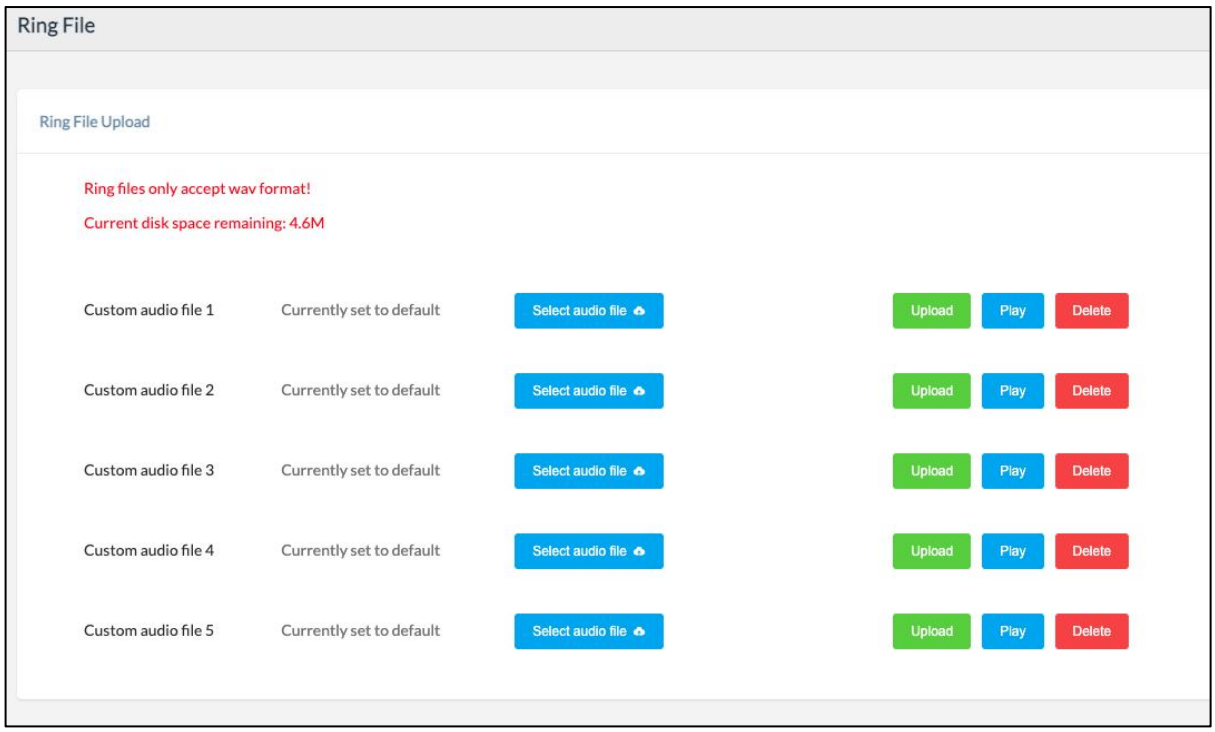


5.7 Ring File

The Ring File section allows users to upload 4.6M audio files to the endpoint and use them as ringtones or play API audio files. Click **Basic Settings --> Ring File** to enter the custom ringtone management page.

Click the "Select Audio File" button to select the local audio file to be uploaded, and then click the "Upload" button to upload.

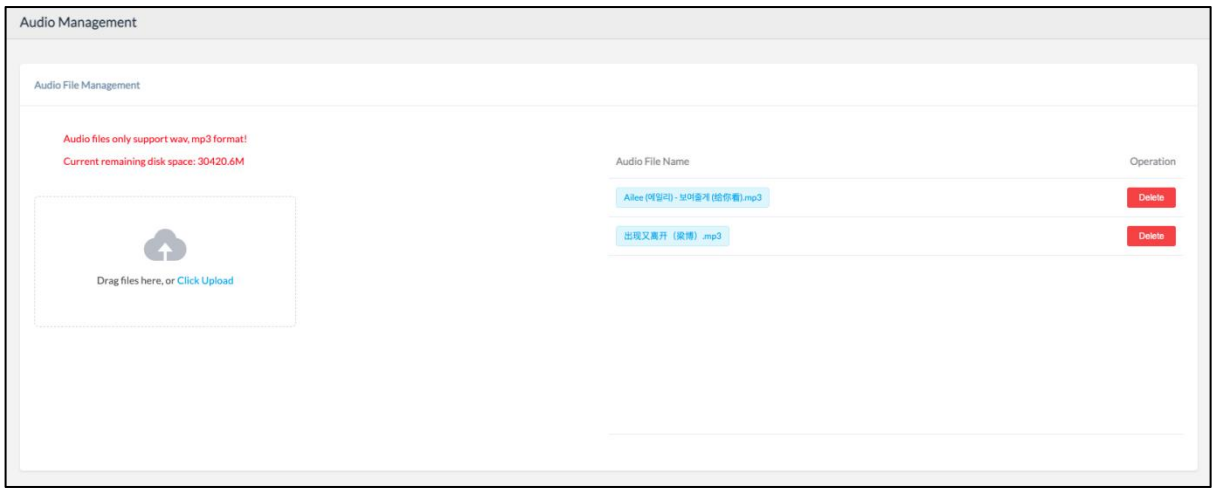
Click "Play" to play the audio file and test the audio. Click "Delete" to delete the audio file.



5.8 Audio Management

The Audio Management interface is used to manage the music files of the external TF card, and its audio can be used in the audio source ---> audio input in the button settings. The audio file format only supports wav and mp3 formats.

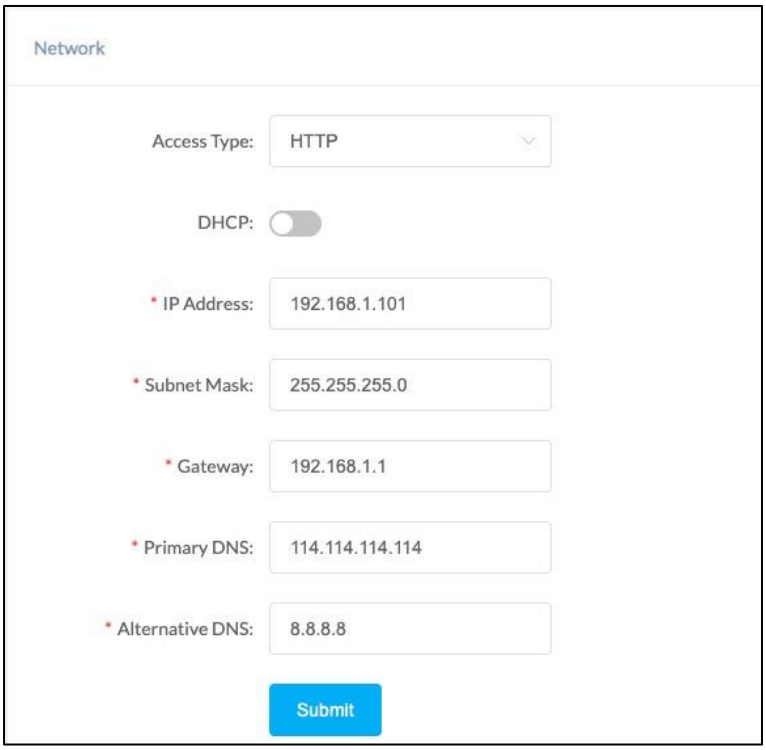
Click **Basic Settings ---> Audio Management** to enter the audio file management page. Click the "Click Upload" button to select the local audio file to be uploaded. Click the "Delete" button to delete the audio file.


Audio Management
Audio File Management
Audio files only support wav, mp3 format!
Current remaining disk space: 30420.6M
Drag files here, or Click Upload
Audio File Name
Operation
Delete
Delete

6. System Settings

6.1 Network

M100 uses DHCP to dynamically obtain IP addresses by default. To change the IP assignment from DHCP to Static IP, please go to **Settings --> Network** page. Turn the DHCP switch button off to show the network parameter settings.



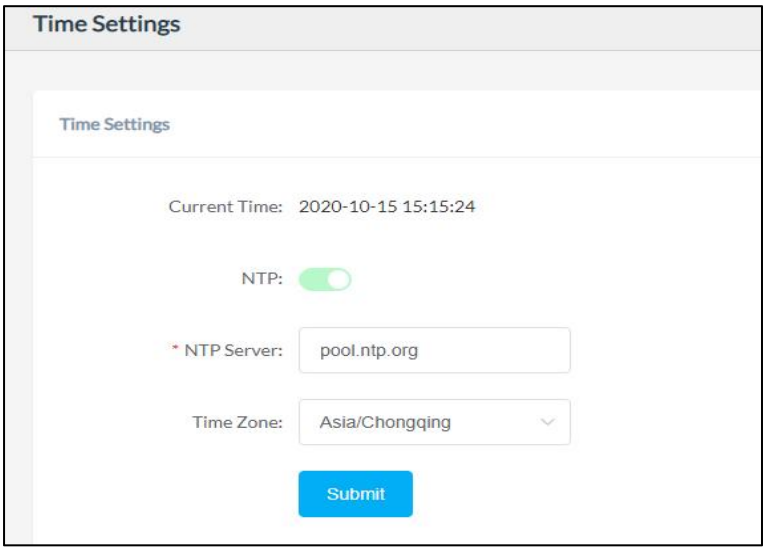
Network Configuration

- **Access Type:** Specify the access method of the website, which currently supports HTTP and HTTPS.
- **IP Address:** Enter a vacant IP address within your LAN.
- **Subnet Mask:** Enter the subnet mask of your LAN.
- **Gateway:** Enter the default gateway of your LAN, this is essential for the device when the IP Audio Center or other SIP server is installed outside the LAN.
- **Primary DNS:** Enter an effective primary DNS server address.

- **Alternative DNS:** Enter an alternative DNS server address, when the primary DNS fails, alternative DNS will be used.

6.2 Time

M100 obtains the time from the network time servers using NTP, to change the NTP settings please go to **Settings --> Time** page.



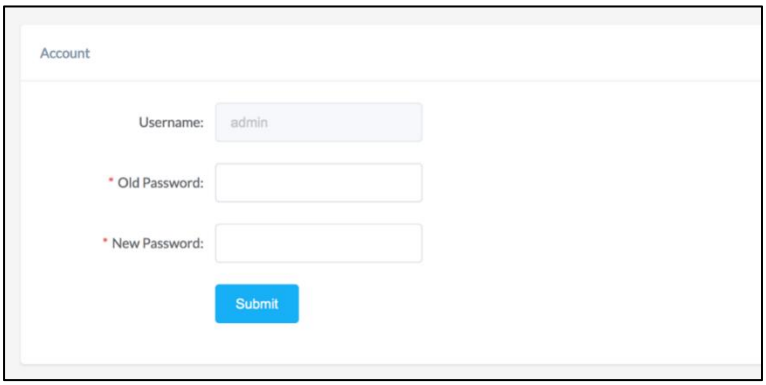
Time Settings

- **Activate:** Activate/deactivate the fast key.
- **Name:** Set the fast key name, which will be displayed on the device screen.
- **Current Time:** Display the current system time of the device.
- **NTP:** Enable/Disable using NTP to obtain the time.
- **NTP server:** The network time server used to obtain the time.
- **Time Zone:** Set the time zone used by the device.

Note: This device does not support independent battery power supply to store time, so the time can only be obtained through the network. In addition, the wrong system time will not affect the normal work of the device.

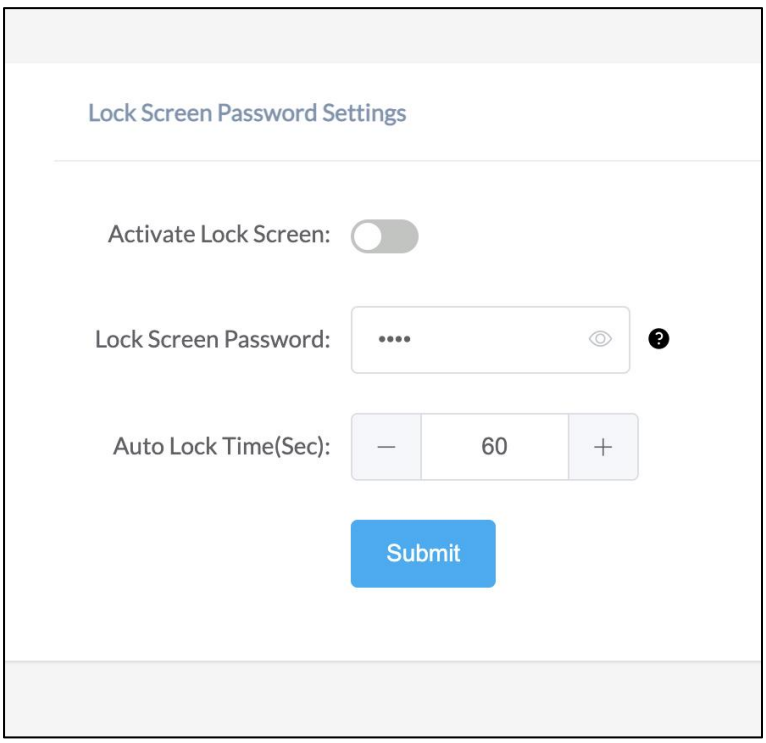
6.3 Password Settings

Change the login password of the web management interface and the lock screen password of the device. Please go to **Settings --> Password Settings**.



Web Password Settings

- **Old Password:** This setting represents the current user password.
- **New Password:** This setting represents the new password user would like to set up.



Lock Screen Password Settings

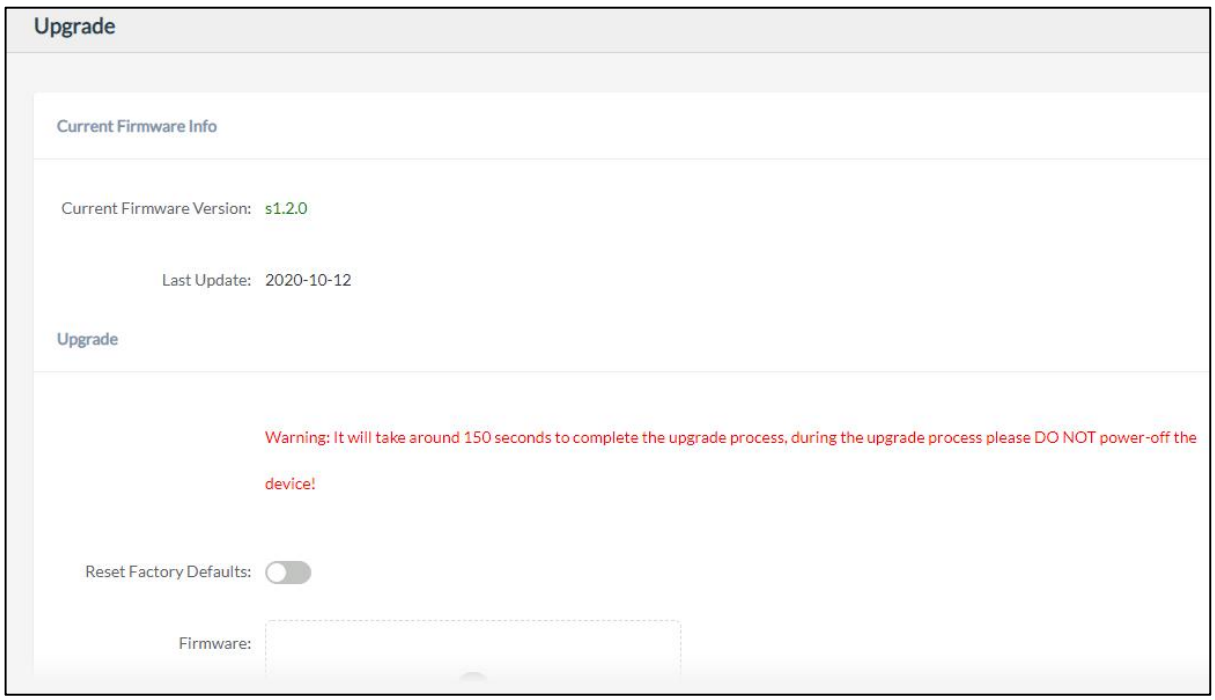
• **Activate Lock Screen:** Turn the lock screen function on or off.

• **Lock Screen Password:** Set the lock screen password, the lock screen password is 4 digits, which can be numbers, asterisks and pound signs.

• **Auto Lock Time:** Set the auto-lock time when there is no operation in standby.

6.4 Upgrade

To upgrade the device's firmware, please go to **System --> Upgrade** page.



Upgrade Settings

• **Current Firmware Version:** Displays the version currently used by the system.

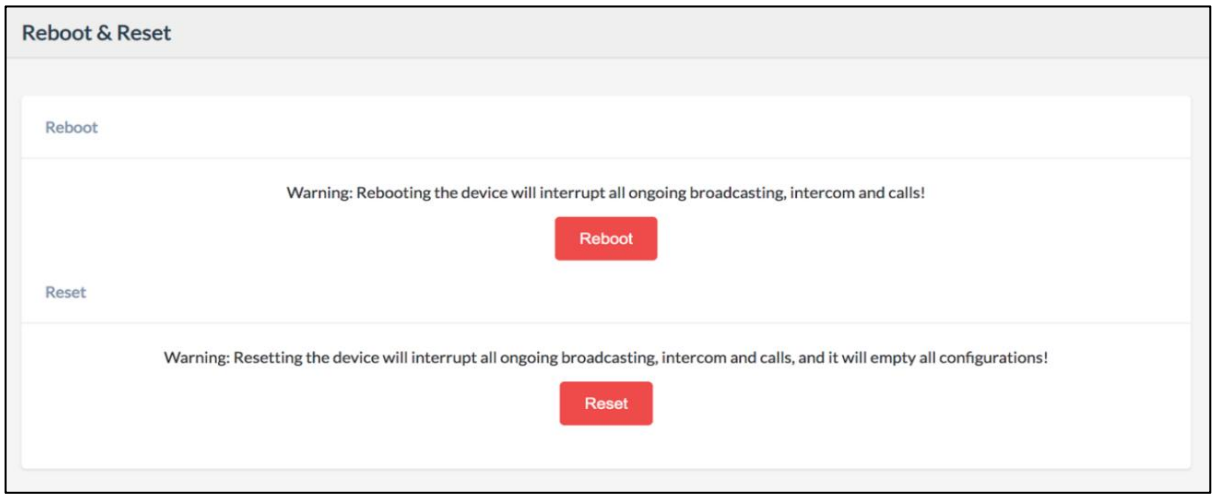
• **Last Update:** Displays the last system updating time.

• **Reset Factory Defaults:** Specify whether to restore factory settings when upgrading.

• **Firmware:** Click to select the firmware that needs to be used to upgrade the current device.

6.5 Reboot & Reset

M100 can be rebooted and reset from the web management interface on the **System --> Reboot & Reset** page.



Reboot & Reset Settings

Users can restart the device without power failure on this page. The restart process takes about 10 seconds. After the restart is complete, refresh the page to log in again.

If you need to restore the factory settings of the M100, you can reset it through this page or you can press and hold the RST button for more than 10 seconds and release it. After hearing the broadcast voice, the device will enter the state of restoration. The key will flash once. After restarting, the pop-up window disappears, and the device is restored successfully.

Note: Restoring factory settings will erase all user settings, please operate with caution!

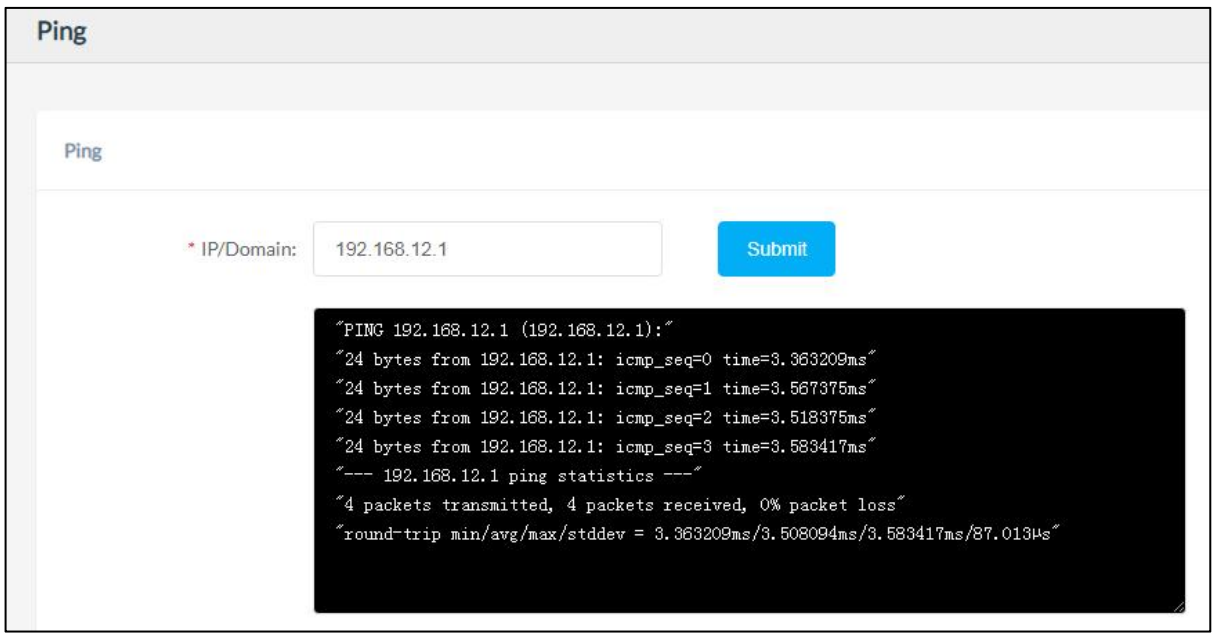
Reboot Schedule

When the Reboot Schedule feature is Enabled, you can set up the automatic reboot daily, weekly, or monthly at a specified time.

7. Maintenance

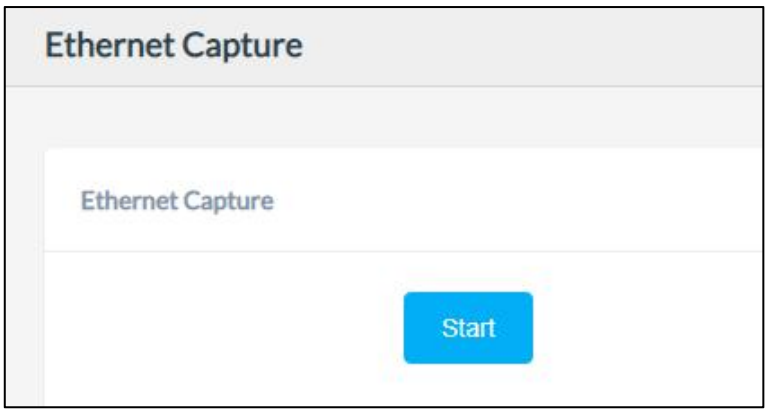
7.1 Diagnostic

Ping is a network administration utility or tool used to test connectivity on an IP network. Input other devices' IP addresses and click on the submit button to trace the network route.



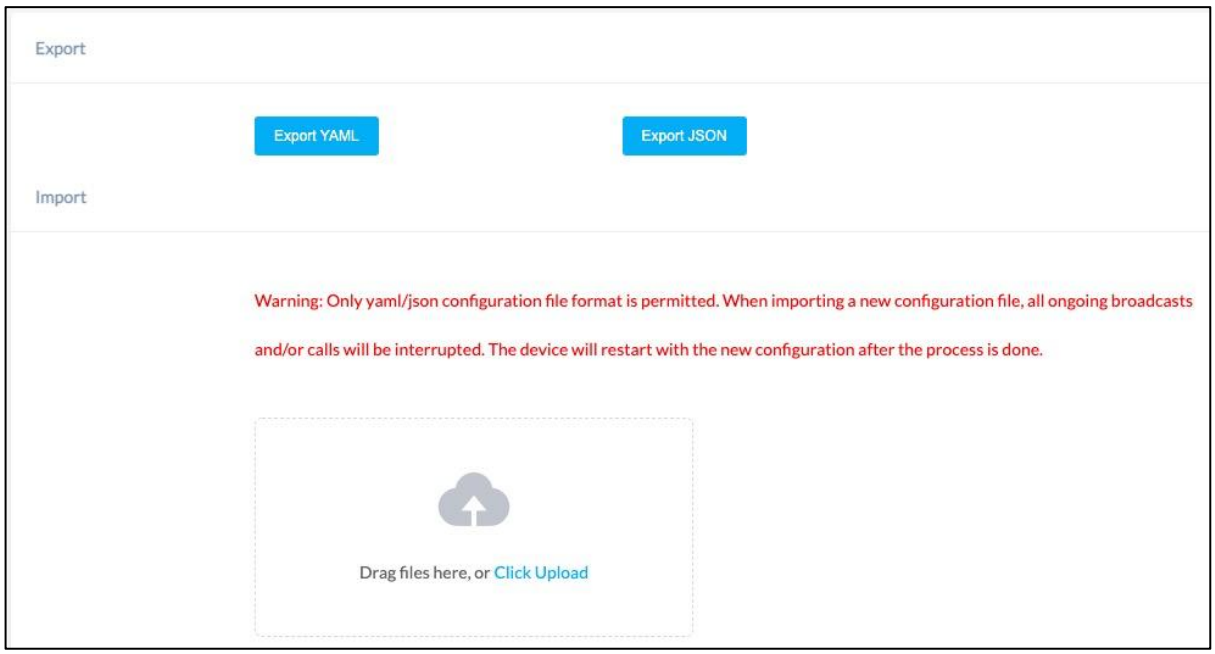
7.2 Ethernet Capture

The purpose of the Ethernet capture tool is to capture Ethernet network packets and store them in a standard Wireshark-compatible packet capture '.pacp' file for immediate viewing and data analysis.



7.3 Import/Export

This page is used to import and export the current configuration of the device, and you may use this configuration file to backup and/or recover. Both YAML and JSON formats are supported.

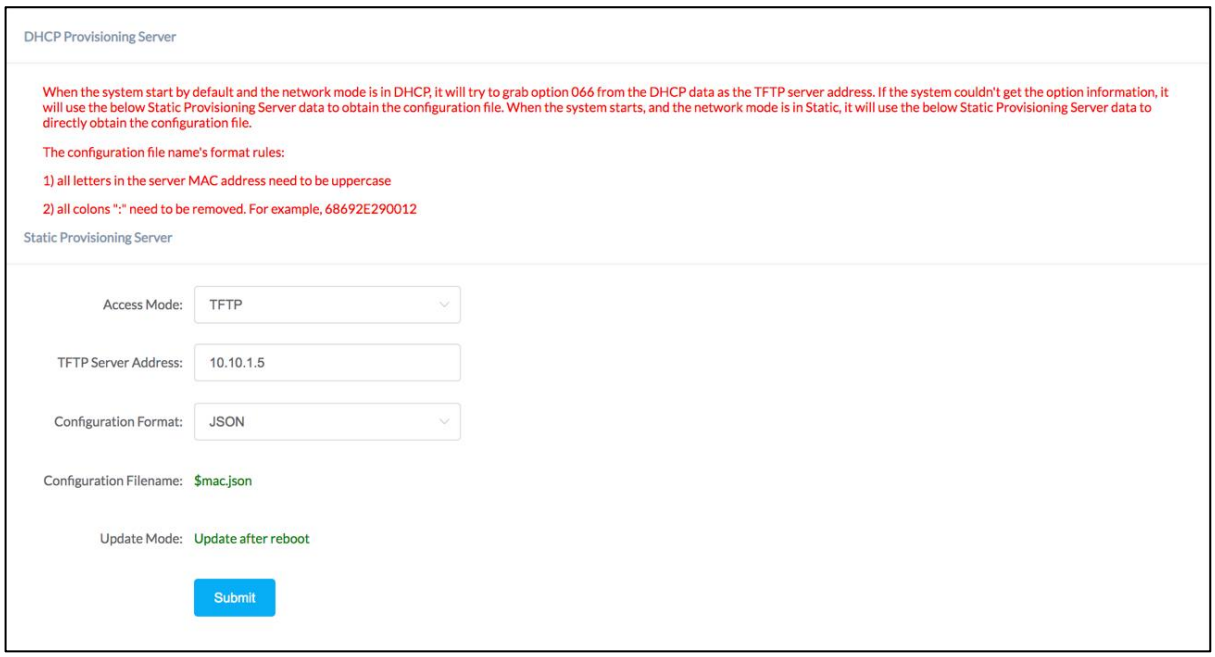


7.4 Auto Provisioning

The system is supporting DHCP Option 066 and static TFTP/HTTP two auto provisioning methods.

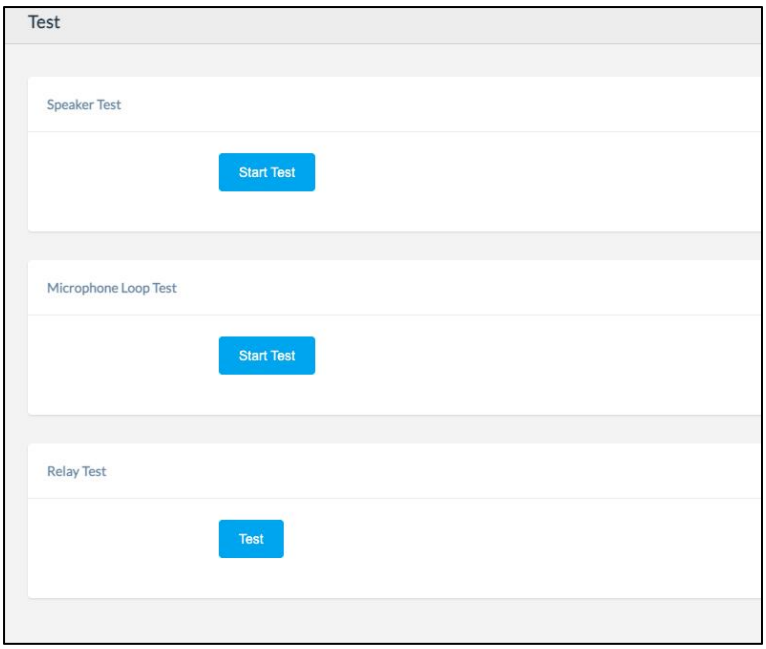
When the system starts by default and the network mode is in DHCP, it will try to grab option 066 from the DHCP data as the TFTP server address. If the system couldn't get the option information, it will use the below Static Provisioning Server data to obtain the configuration file. When the system starts, and the network mode is in Static, it will use the below Static Provisioning Server data to directly obtain the configuration file.

The configuration file name's format rules:
1) all letters in the server MAC address need to be uppercase.
2) all colons ":" need to be removed. For example, 68692E290012.



7.5 Test

The detection feature provides an option for the user to check whether the speaker, microphone and relay will work functionally before registering it to the server.



Test Settings

• **Speaker Test:** Click on the Start Test button, and the speaker will play a ringtone to test whether the speaker is working. If the speaker is working functionally, you should hear the voice back.

• **Microphone Loop Test:** Click on the Start Test button, then start speaking to the device. Relay Test: Click: On the Test button, then start using the relay device to test whether the device is working.

• **Relay Test:** Click on the Test button and the device will output signals to the relay for testing.

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