

**ALF-VS31-UH**



## Main Feature:

- Supports 3 camera sources connection, 1x USB 3.0, 1x USB 2.0, 1x HDMI 1.4
- HDMI input can be any HDMI source like laptop, document camera
- Seamless switching between 3 input sources
- Mix videos from 3 input sources
- Mixed layout can be defined in the web like picture in picture, side by side, big and small. -1x HDMI 2.0 output for local monitor, 1x USB-C (UVC/UAC) output for PC
- Enable mute video/audio to video conferencing or live broadcasting
- Audio I/O and mixer through the web
- Controllable by LAN & RS-232
- PoE supported, saving additional PSU
- Cost-effective, reliable and simple to install (no driver required)
- Compact and slim housing design with only 18mm height



## Table of contents

- 1. Overview ..... 5
- 2. Part List ..... 9
- 3. Parameter ..... 9
- 4. Default Configuration ..... 10
- 5. Video conferencing software connection..... 11
- 6. Video function switching instructions ..... 11
  - 6.1 Single Screen Display ..... 11
  - 6.2 Dual Screen Display ..... 12
    - 6.2.1 PBP Mode..... 12
    - 6.2.2 PIP Mode ..... 13
  - 6.3 Mute UVC output..... 14
- 7. Home Page ..... 16
- 8. Web Page..... 17
  - 8.1 Network settings..... 18
    - 8.1.1 Ethernet Network Configuration ..... 18
  - 8.2 Display settings ..... 20
    - 8.2.1 Preview..... 20
    - 8.2.2 HDMI Resolution..... 21
    - 8.2.3 Layout..... 21
    - 8.2.4 UVC Output (Video Mute) ..... 23
    - 8.2.5 Customize Home screen ..... 24
  - 8.3 Audio settings ..... 24
  - 8.4 System settings ..... 28
    - 8.4.1 Date & Time..... 28
    - 8.4.2 Language ..... 29
    - 8.4.3 Configuration file ..... 31
    - 8.4.4 Auto Standby ..... 32
    - 8.4.5 Login Password ..... 33
    - 8.4.6 Developer tools ..... 35
    - 8.4.7 Factory reset..... 36



8.5 Firmware Updates.....	38
8.6 About Device .....	40
9. Mechanical Diagram .....	41



## Cleaning

Clean the unit with a soft, dry clean cloth or slightly wet with water and neutral liquid soap only, then dry it with a clean cloth. Be careful that water never gets into the unit through any hole. Never use alcohol, benzene, solvents or abrasive substances to clean this unit.



### WARNING:

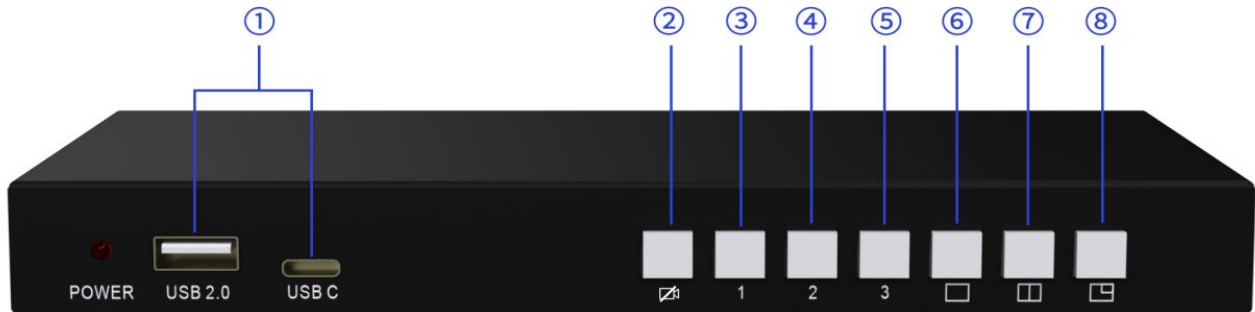
This product must not be discarded, under any circumstance, as unsorted urban waste. Take to the nearest electrical and electronic waste treatment center.

## 1. Overview

The ALF-VS31-UH is a USB and HDMI source switcher and mixer, it enables seamless switching between 3 sources (1x USB 3.0, 1x USB 2.0, 1x HDMI), and mixing 2 of them into 1 image, it provides one HDMI output for the local monitor, and one USB-C output for the PC to do web conferencing or live broadcasting.

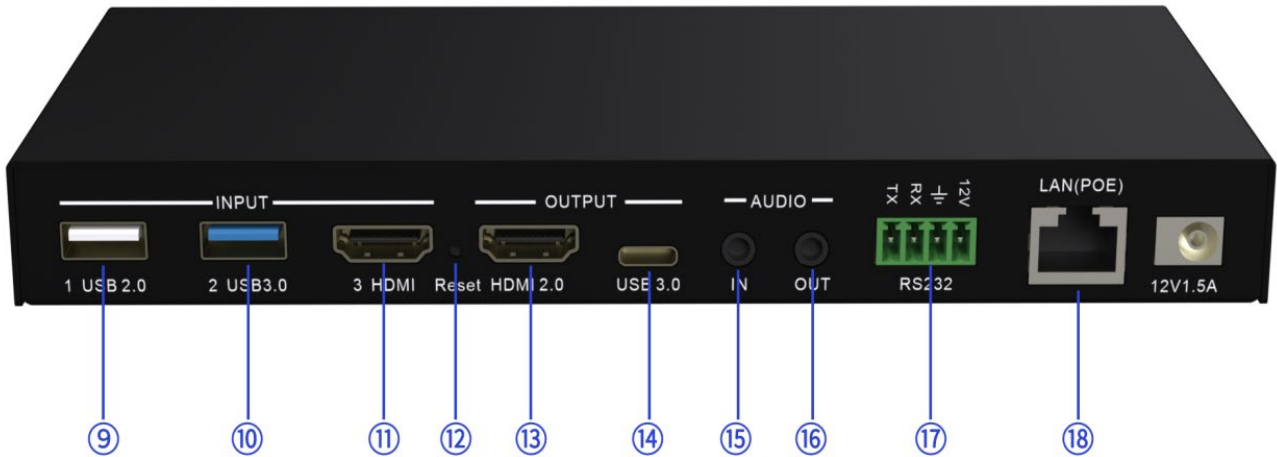
This cost-effective and easy-to-use solution could be ideal for remote education, collaborative meetings, webinars or live streaming where there are multiple cameras from different angles or need capture HDMI content to the remote together with cameras.

### Front Panel:



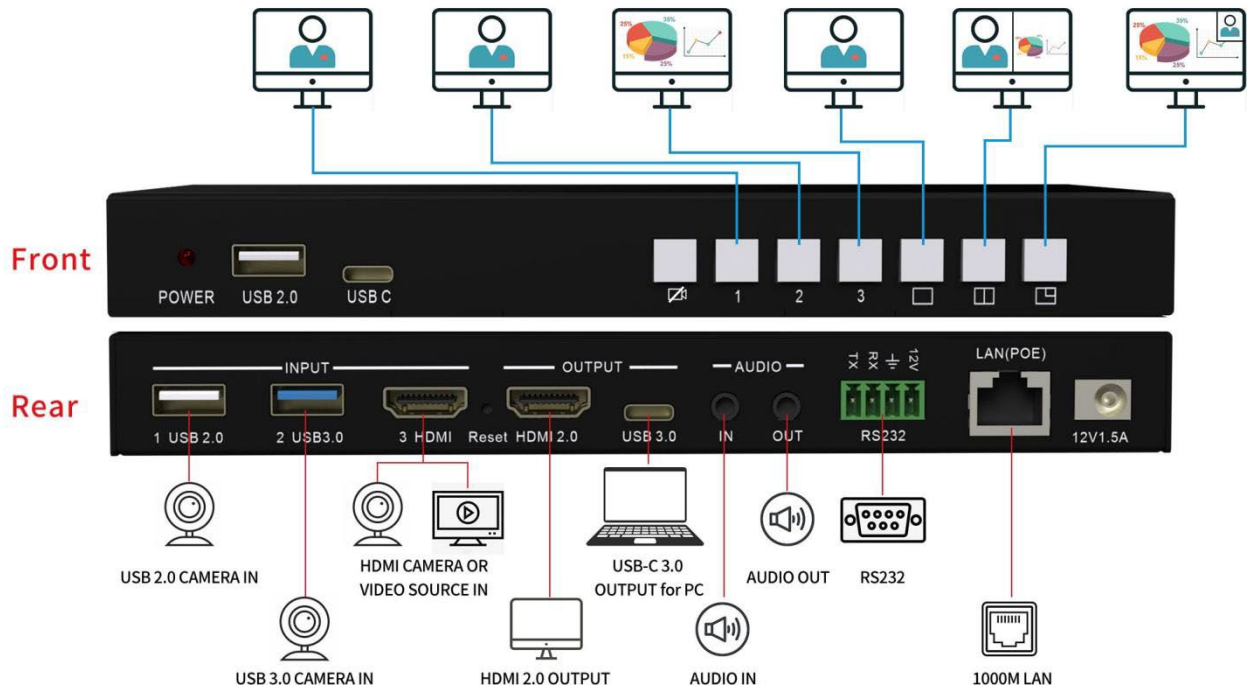
ID	Name	Description
1	USB 2.0 & USB C PORT	Reserved for future use
2	Video Mute Button	Mute UVC output
3	Video 1 Button	Switch the source from USB 2.0
4	Video 2 Button	Switch the source from USB 3.0
5	Video 3 Button	Switch the source from HDMI
6	Single Video Button	Single view layout
7	PBP Mode Button	Side by side layout
8	PIP Mode Button	Big & small layout

## Real Panel:



ID	Name	Description
9	1 USB 2.0 INPUT	1x USB 2.0 camera
10	2 USB 3.0 INPUT	1x USB 3.0 camera
11	3 HDMI INPUT	1x HDMI camera or video source
12	Reset button	Reset
13	HDMI 2.0 OUTPUT	1x HDMI 2.0 output for screen
14	USB 3.0 OUTPUT	1x USB-C output for PC
15	IN AUDIO	1x line in
16	OUT AUDIO	1x line out
17	RS232	1x RS232 for control
18	LAN(POE)	1x 1000M LAN for control

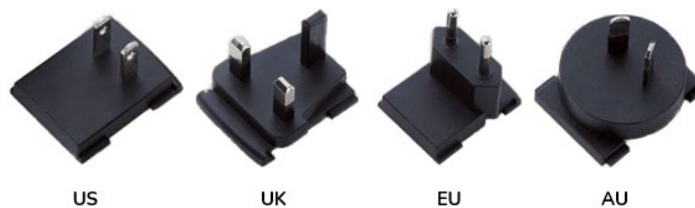
**System Diagram:**



## Power Supply:

### >> Local Power Source

Plug the power connector to the power adapter to the power input connector of the ALF-VS31-UH. Choose the appropriate power plug (US, UK, EU or AU) to be installed on the power adapter.



### >> Power over Ethernet

If the LAN Ethernet switcher supports PoE (Power over Ethernet), LAN port can be used to power up the VS31-UH instead of using the external power adapter.



## 2. Part List

>> 4P Phoenix terminal male head\*1 >> Mounting ear\*2

>> Screw\*4 >> Power adapter\*1

## 3. Parameter

Specification	
<b>OUTPUT</b>	
HDMI output	1x HDMI 19-pin female connector
Format Compliance	HDMI1.4 / HDMI2.0
HDCP	HDCP1.4 / HDCP2.2
USB Interface	Type C x1, UVC and UAC
Video Output Resolution	HDMI: 3840x2160@60Hz, 3840x2160@30Hz, 1920x1080@60Hz, 1280x720@60Hz Type C: 1920x1080@30Hz, 1280x720@30Hz etc.
Analog Audio Output	HDMI, USB, Jack (analog input)
<b>INPUT</b>	
HDMI Input	1x HDMI 19-pin female connector
Format Compliance	HDMI1.4
HDCP	HDCP1.4
USB interface	Rear: USB 3.0, Type A x1; USB2.0, Type A x1 Front: USB 2.0, Type A x1, Type C x1
Video Input Resolution	HDMI: 1920x1080@60Hz, 1280x720@60Hz USB 3.0: 1920x1080@30Hz, 1280x720@30Hz etc. USB 2.0: 1920x1080@30Hz, 1280x720@30Hz etc.
Audio Input	HDMI, USB, Jack (analog input)
<b>CONTROL</b>	
Control connectors	3.5mm Phoenix terminal / RS232 interface
LAN port	RJ45 x1: 1000Mbps, POE option (802.3af)
Control method	Web GUI, Telnet, RS232, Key
Dimension (W x D x H)	180mm x 95mm x 18mm
Weight	1KG
Operating Temperature	0° C to +45° C
storage Temperature	0° C to +60° C
Relative humidity	20%~ 85% RH (no condensation)
DC Power	12V
Power Consumption	15W(MAX)
Power adapter	AC100~240v 50/60Hz 12V/1.5A adapter with two plug-ins, US, Europe



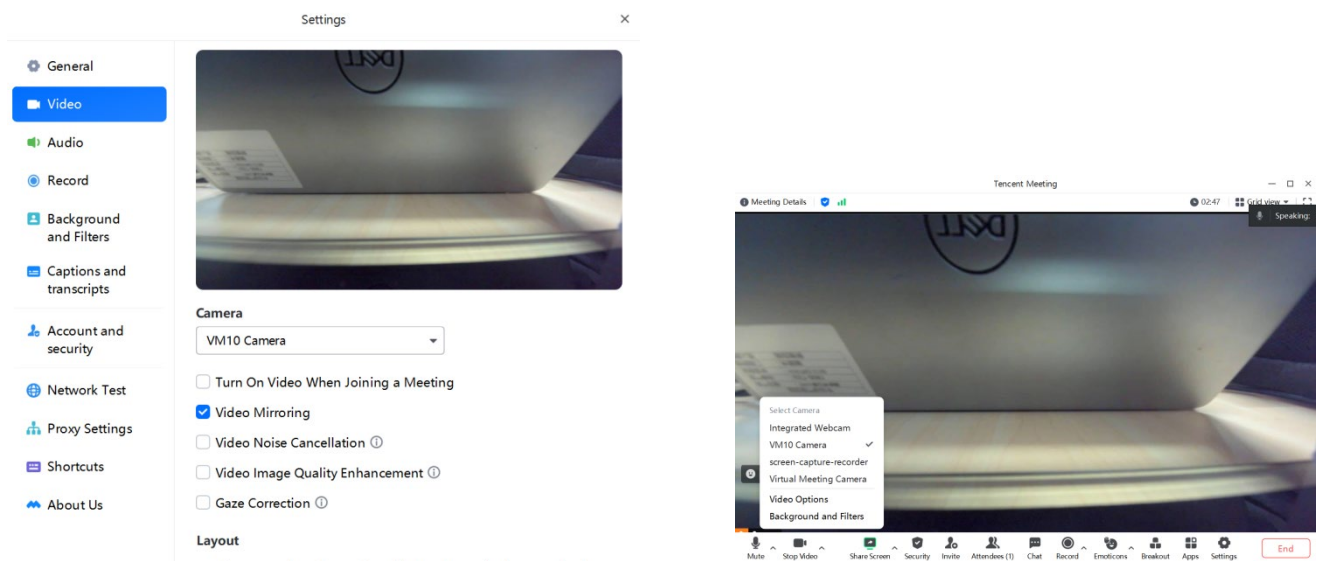
## 4. Default Configuration

- **Network settings**
  - Ethernet Network Configuration
    - >> DHCP, Enable;
    - >> Wired Authentication Status, Disconnected from the network;
  
- **Display Settings**
  - Preview
  - HDMI Resolution
    - >> Auto
  
  - Layout
    - >> Signal Source, USB 1
  
  - UVC Output (Video Mute)
    - >> Mute Output OFF
  
  - Customize Home screen
  
- **Audio Setting**
  - >> Speaker, USB 1
  - >> Microphone, USB 1
  
  - Volume Setting
    - >> Speaker, HDMI Out
    - >> Microphone, USB 1 & USB 2 & HDMI In & Line In
  
- **System Settings**
  - Date & Time
    - >> Use 24-hours' time format
    - >> Set date & time, Use time server(online)
    - >> Time zone, (GMT+02:00) Amsterdam
  
  - Language
    - >> Home screen language, English (United States)
    - >> Web-GUI language, English
  
  - Configuration file
  - Auto Standby
    - >> Never
  
  - Login Password
  - Developer tools

- Factory reset
- **Firmware Updates**
  - Automatic upgrades  
>> ON
- **About Device**

## 5. Video conferencing software connection

Launch video conference client (such as Zoom, Microsoft Teams, etc.) to use the camera connected to the VS31-UH device, select the camera name VS31-UH Camera. Refer to the following figure:





### Note:

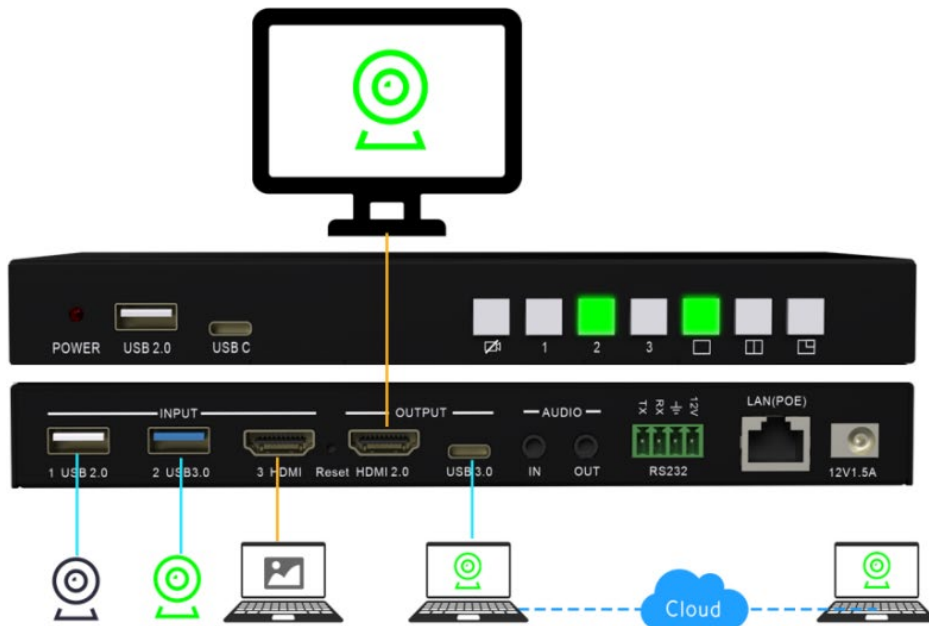
the HDMI output will show the default homepage without camera activated, it will sync the video image once camera source is selected during video conferencing.




## 6. Video function switching instructions

### 6.1 Single Screen Display

By pressing the button  to enter Single Screen mode, press the button  to select the

video source you want to output as shown in the following example:





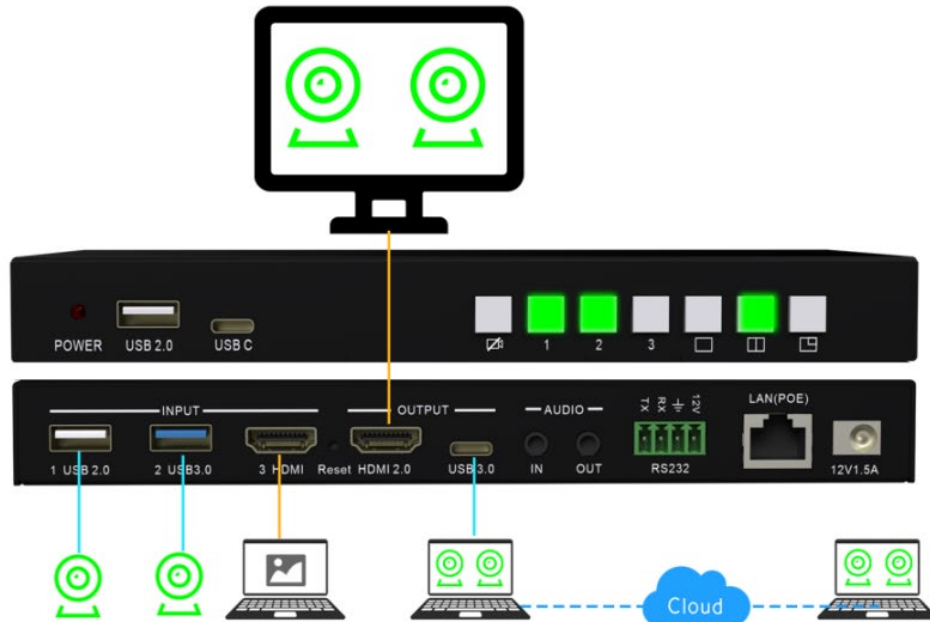
When the Single Screen control button is pressed and lights up green , USB 2 port  control button lights up green, the Single Screen video signal source is output USB 2 




- Press the USB 1 port control button and then light up green, it will switch Single Screen video signal source to USB 1 port.
- Press the HDMI 3 port control button and then light up green, it will switch Single Screen video signal source to HDMI 3 port.

## 6.2 Dual Screen Display

### 6.2.1 PBP Mode


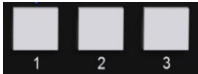
By pressing the button  to enter PBP mode, press the button  to select two video sources you want to output as shown in the following example:

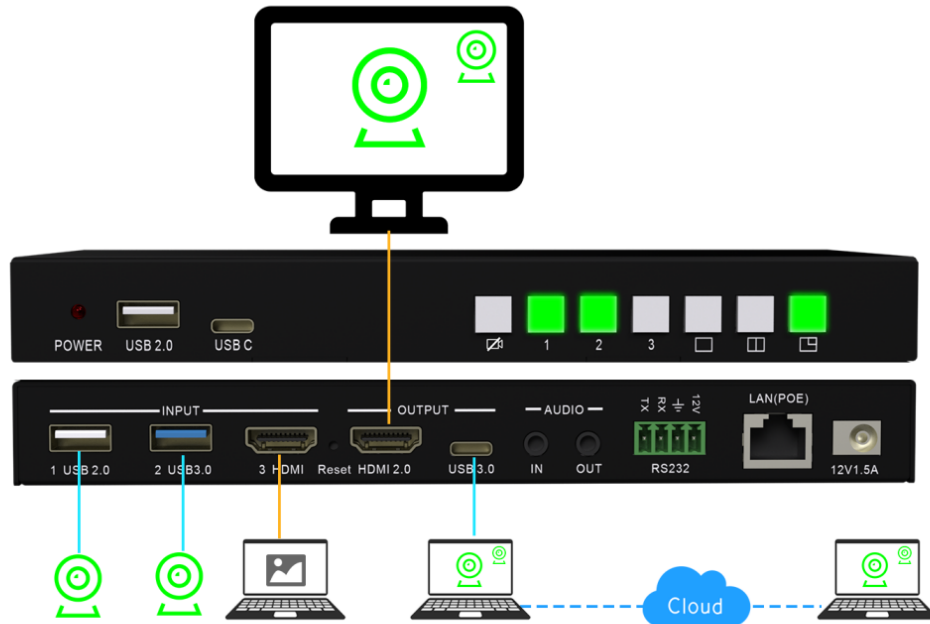


When the green lights of PBP control button  is on, USB 1 and USB 2 control button  light up green, the PBP video signal source is output USB 1 and USB 2 

- Press the USB 1 and HDMI 3 control button and then light up green, it will switch PBP video signal source to USB 1 and HDMI 3.
- Press the USB 2 and HDMI 3 control button and then light up green, it will switch PBP video signal source to USB 2 and HDMI 3.
- During the PBP on display, press the PBP control button again, it will swap the left and the right video source display from each other.

## 6.2.2 PIP Mode

By pressing the button  to enter the PIP mode, press the button  to select two video sources you want to output as shown in the following example:

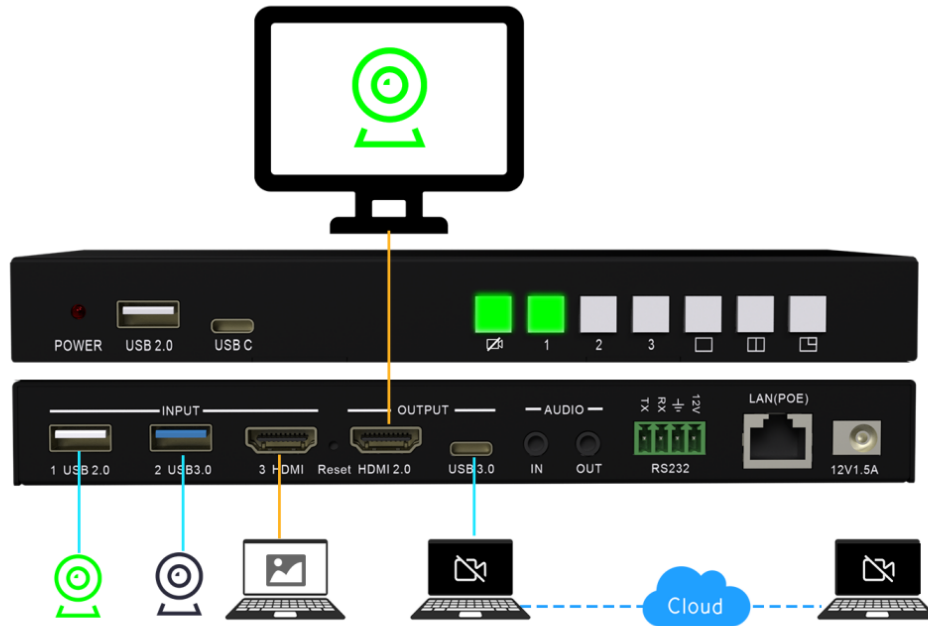


When the green lights of PIP control button  is on, USB 1 and USB 2 control button  light up green, the PIP video signal source is output USB 1 and USB 2 

- Press the USB 1 and HDMI 3 control button and then light up green, it will switch PIP video signal source to USB 1 and HDMI 3.
- Press the USB 2 and HDMI 3 control button and then light up green, it will switch PIP video signal source to USB 2 and HDMI 3.
- During the PIP on display, press the PIP control button again, it will swap the large and the small video source display from each other.

### 6.3 Mute UVC output

By pressing the button  to enter the Mute UVC output as shown in the following example:

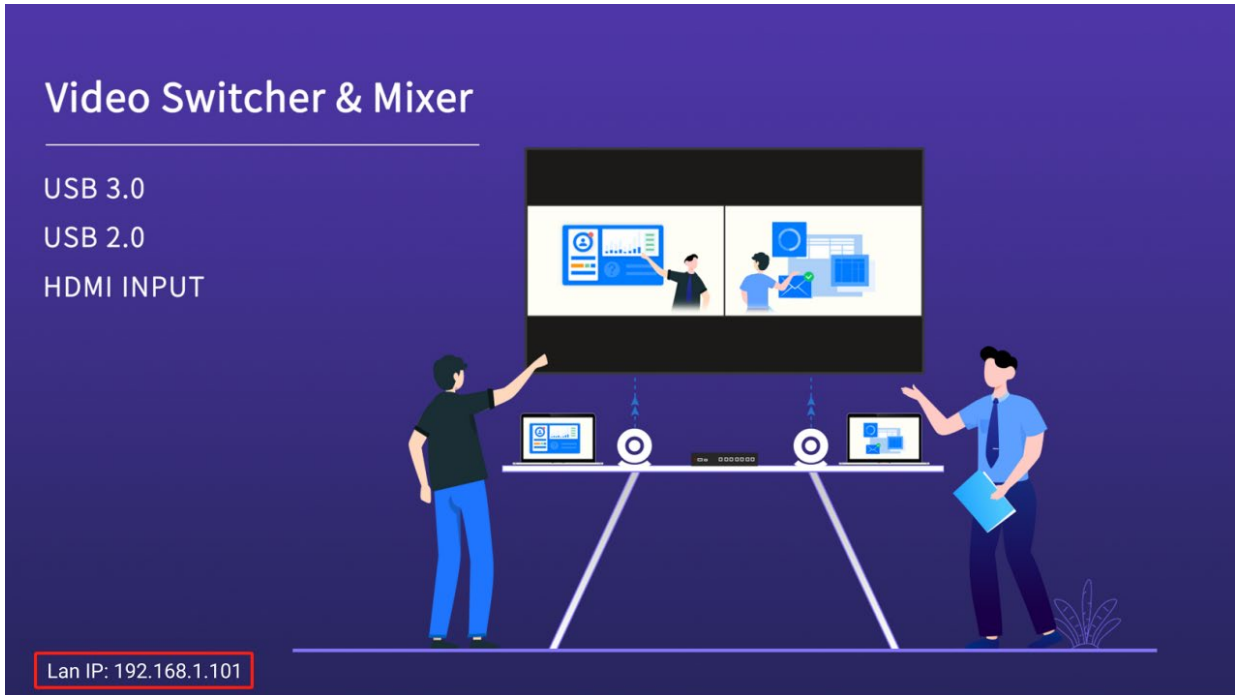


When the green lights of video mute button  is on, USB 1 port control button  lights up green. You can still see the camera image from HDMI connected monitor, however both PC and remote conference participant can't see the camera image, which are blocked 

**Note:**

This function can be used to debug the local camera device before the meeting, so that the remote participants will not be able to see the process of debugging the local camera.

## 7. Home Page



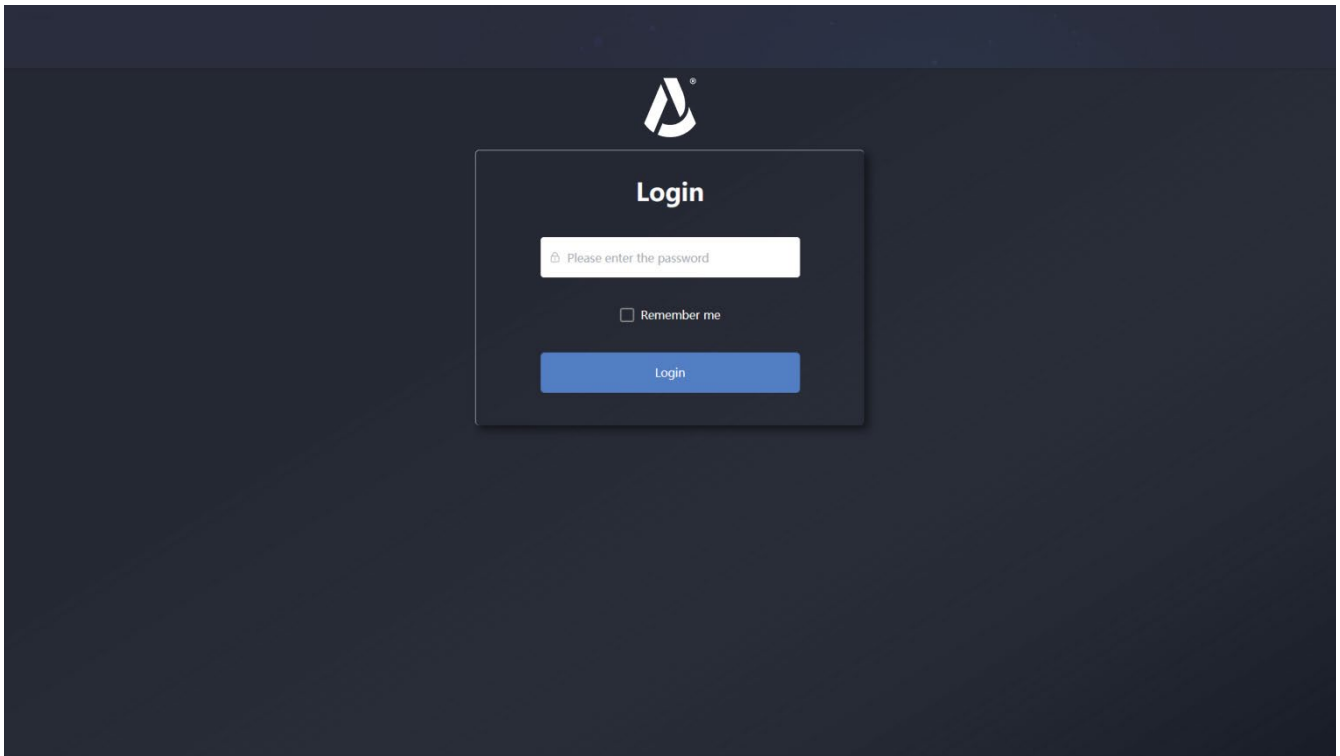
### Attention:

You can access the web management page through this IP address. Also, you can use Telnet function via this kind of IP as below photo example IP 192.168.3.89 showed:

```
Telnet 192.168.3.89
Welcome to WMedia telnet
input 'help' to see command list
WMedia>help
  help      show all commands, help xxx to show comand detail help
  standby  wakeup device or set device standby time
  uvc      UVC Output On/Off
  layout    layout control
  uac      Uac Control
OK
WMedia>help standby
  standby set xxx      set auto standby time, xxx can be off, 1M 5M 10M 15M 30M, 1M = 1 minute
  standby sleep        if ScreenOn, set stand by now
  standby wakeup       if sleeping, wake up
  for example: standby set lmin
OK
WMedia>_
```



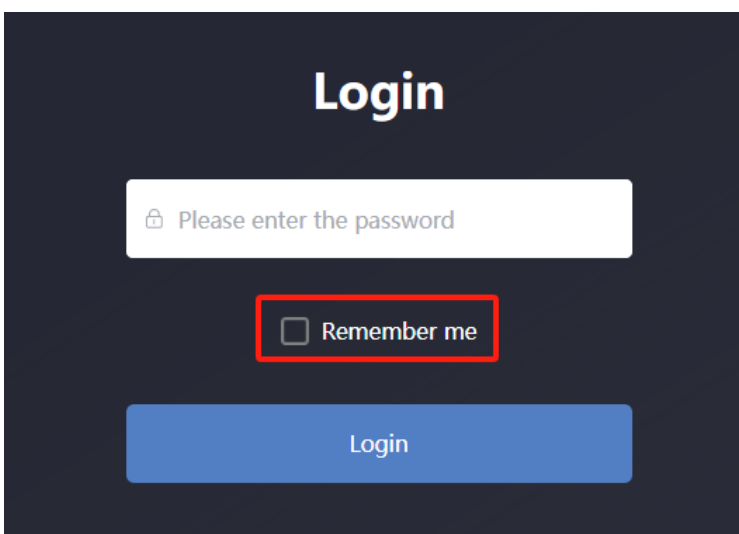
## 8. Web Page



The login page will be shown when enter the IP that showed on the home page. The default password is admin.

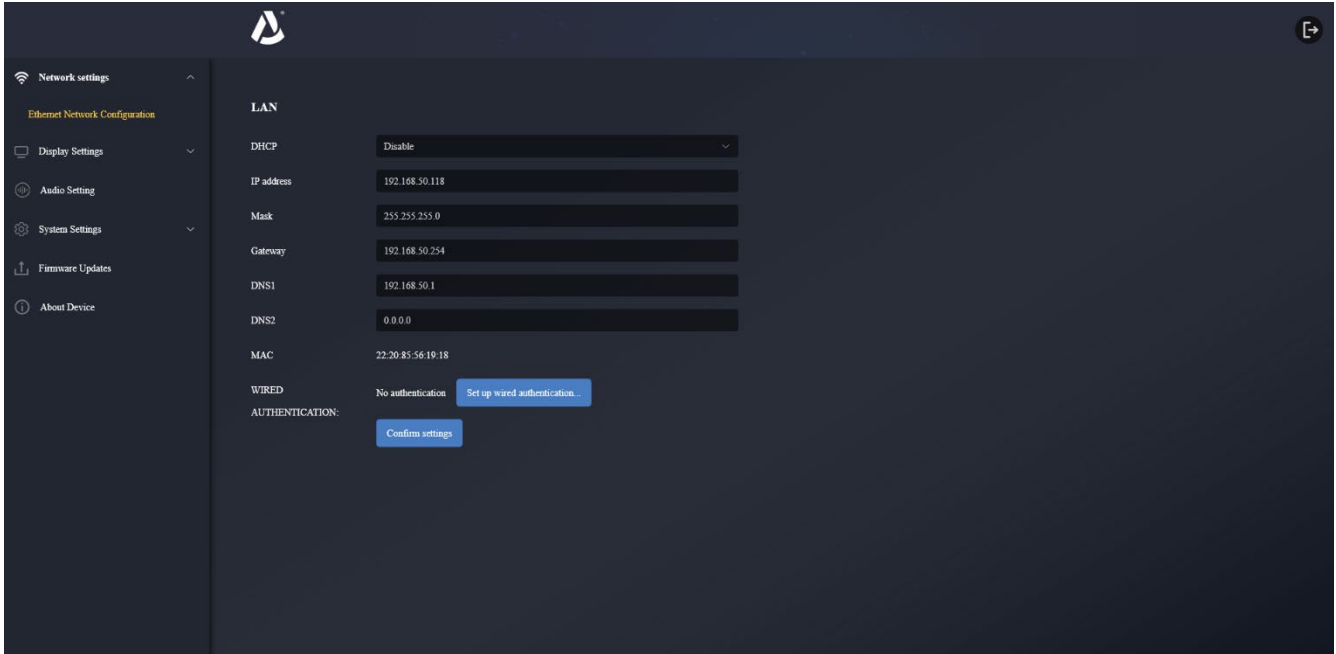
**Note:**

It doesn't need to enter the password again when you ticked on the Remember me after the first-time login.



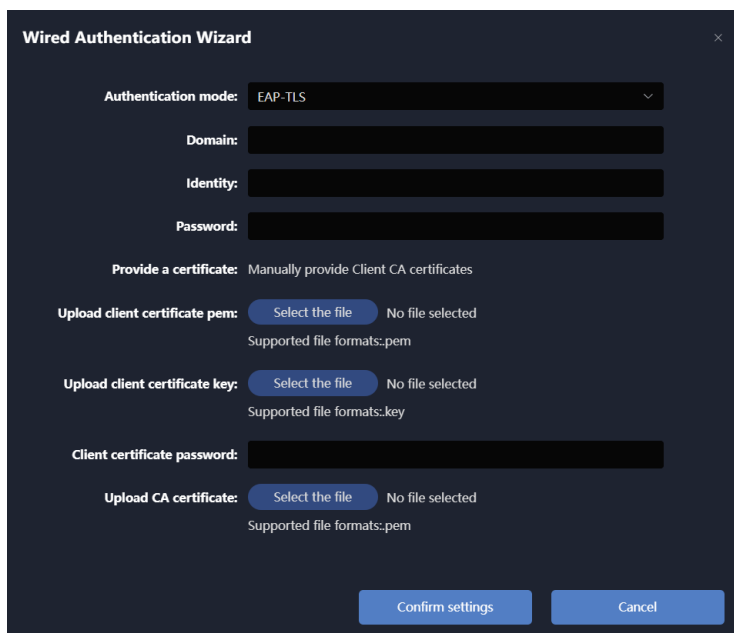
## 8.1 Network settings

### 8.1.1 Ethernet Network Configuration



Here you can set to automatically obtain the LAN IP or manually. The DHCP function is turned on by default. The Wired Authentication Status has the following four states:

- **EAP-TLS**



- **EAP-TTLS**

**Wired Authentication Wizard** ✕

Authentication mode: EAP-TTLS ▼

Domain:

Identity:

Password:

Upload CA certificate: Select the file No file selected  
Supported file formats:.pem

Confirm settings Cancel

## ● PEAP

**Wired Authentication Wizard** ✕

Authentication mode: PEAP ▼

Domain:

Identity:

Password:

Upload CA certificate: Select the file No file selected  
Supported file formats:.pem

Confirm settings Cancel

## ● No Authentication

**Wired Authentication Wizard** ✕

Authentication mode: No authentication ▼

When this configuration is saved, no authentication mechanism will be applied to the wired interface.

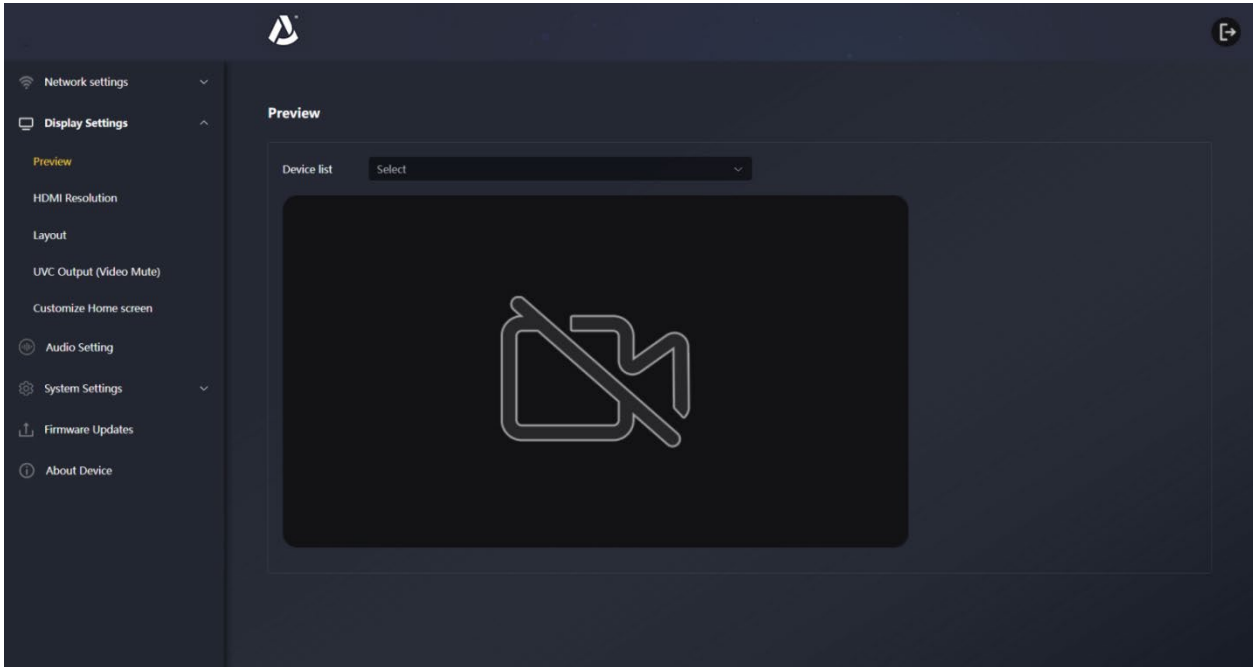
Confirm settings Cancel

### Note:

The default is No Authentication, which means no authentication is required. The LAN network with network cable can be plug-and-play.

## 8.2 Display settings

### 8.2.1 Preview

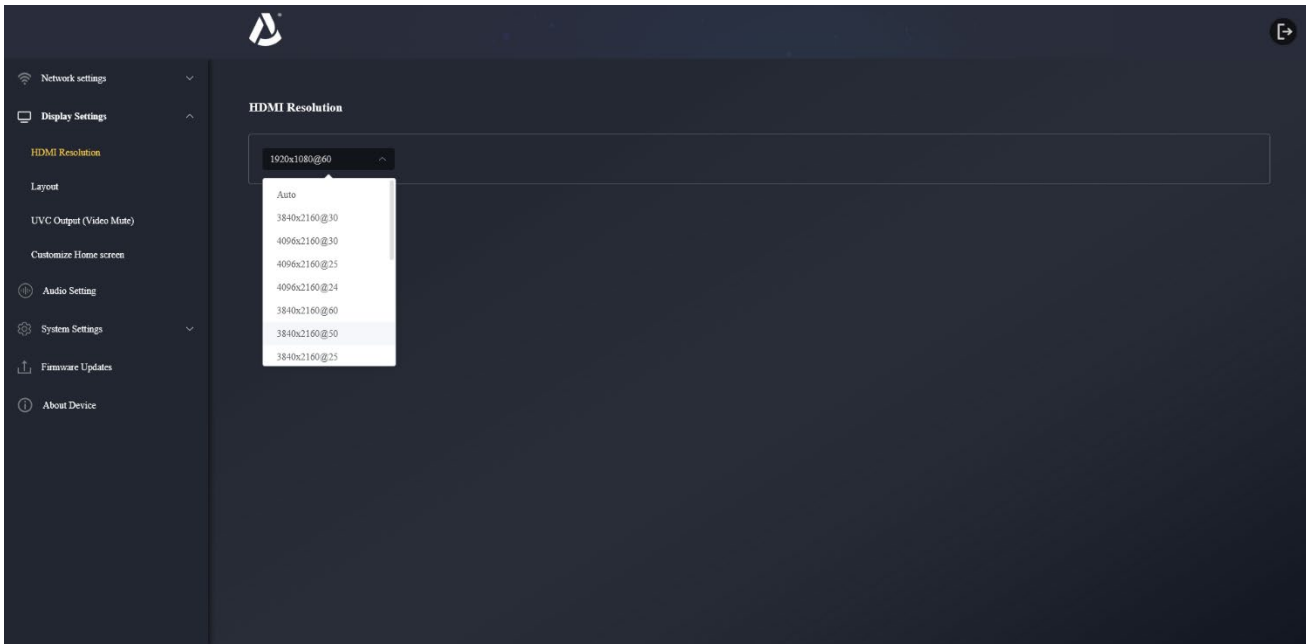


Here you can search for signals connected to the three Input interfaces and preview them, including camera signals and computer HDMI signals.

 **Attention:**

If the camera is occupied by video conferencing software or the computer system camera, the video output test and preview will not be possible here, and the following red font error will be prompted.

## 8.2.2 HDMI Resolution



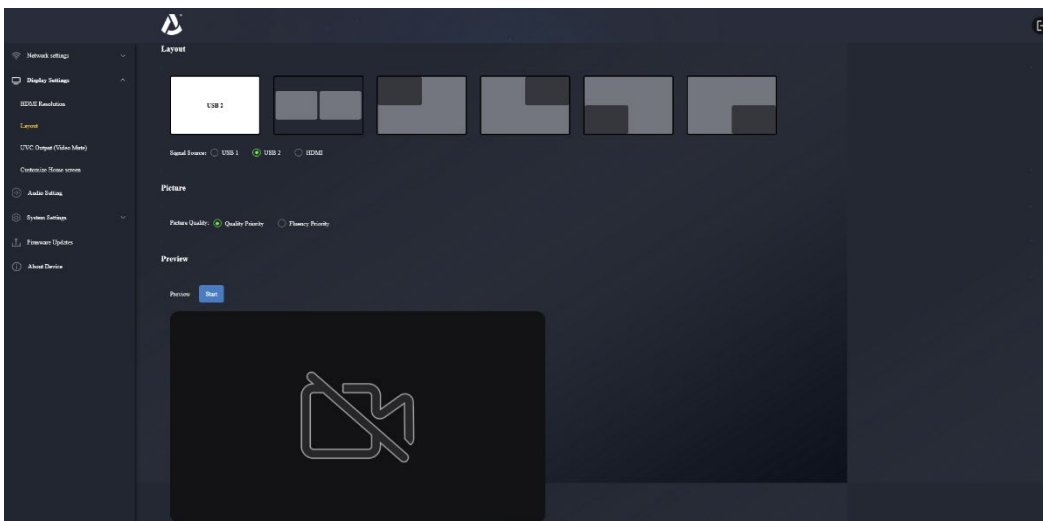
The default mode is Auto. The resolution in the drop-down list is the resolution that the monitor is connected to and can use.

### Note:

If the display only supports 1080P, the 4K output resolution will not appear in the above resolution list.

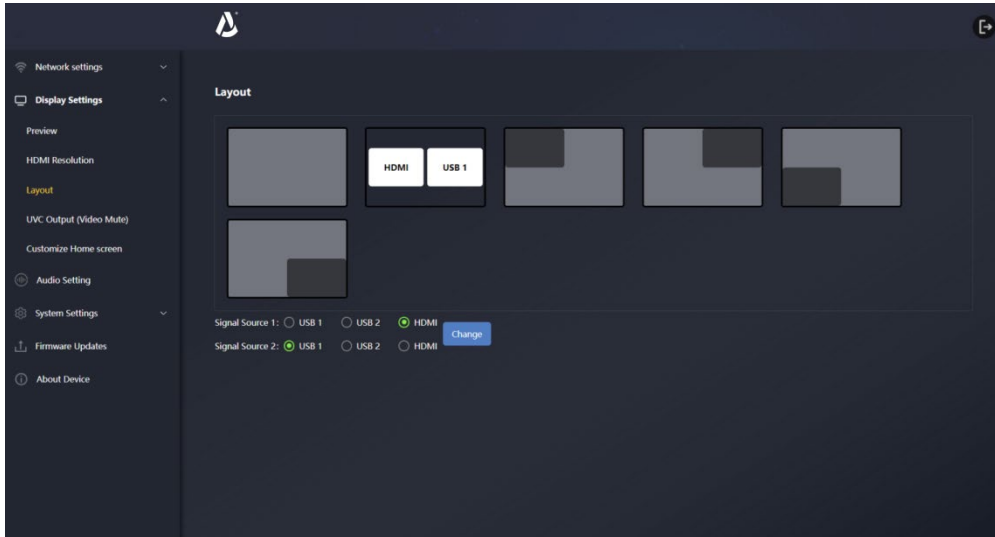
## 8.2.3 Layout

### ● Single Screen



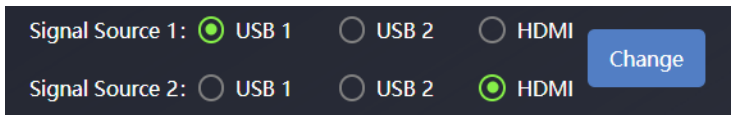
Single Screen mode, you can select the corresponding signal input source for single-screen output display. Simply click the Signal Source with the mouse. When the green button of the corresponding interface lights up, the signal input source is output and displayed on the screen.

## ● PBP Mode

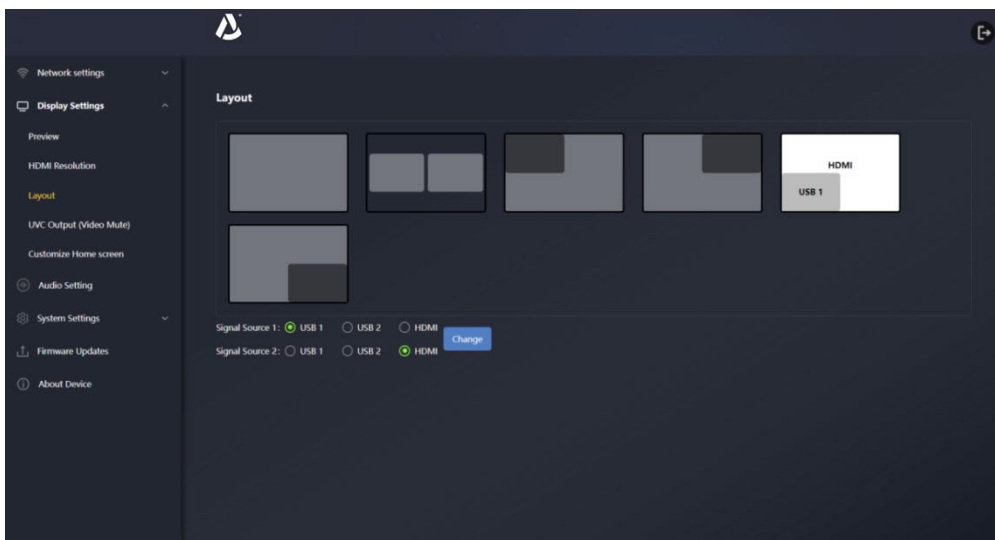


In PBP mode, you can select two signal sources at the same time and then they will be output and displayed on the same screen in the same proportion, one on the left and one on the right. You can directly click Signal Source 1 and Signal Source 2 with the mouse. When the green button of the corresponding interface lights up, this signal input source is output and displayed on the screen.

After clicking the "Change" button, Signal Source 1 and Signal Source 2 will be swapped as below photo showed:

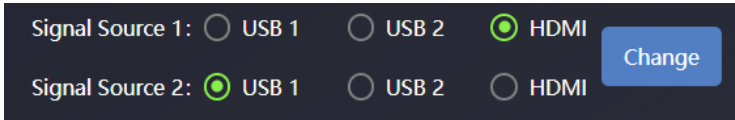


## ● PIP Mode

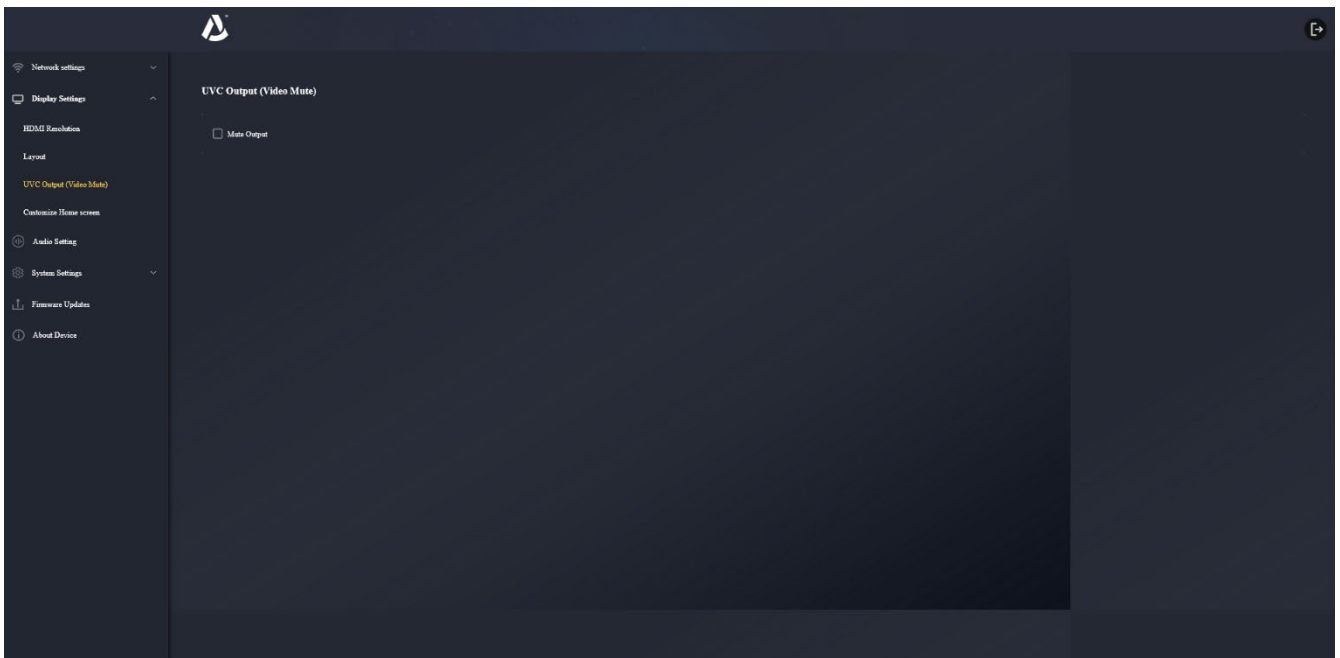



In PIP mode, you can select two signal sources at the same time and then display them on the same screen, one large and one small. You can directly click Signal Source 1 and Signal Source 2 with your mouse. When the green button of the corresponding interface lights up, this signal input source is being output to the screen. Layout 3-6 are all PIP modes with the small window in different position.

After clicking the "Change" button, Signal Source 1 and Signal Source 2 will be swapped as below photo showed:

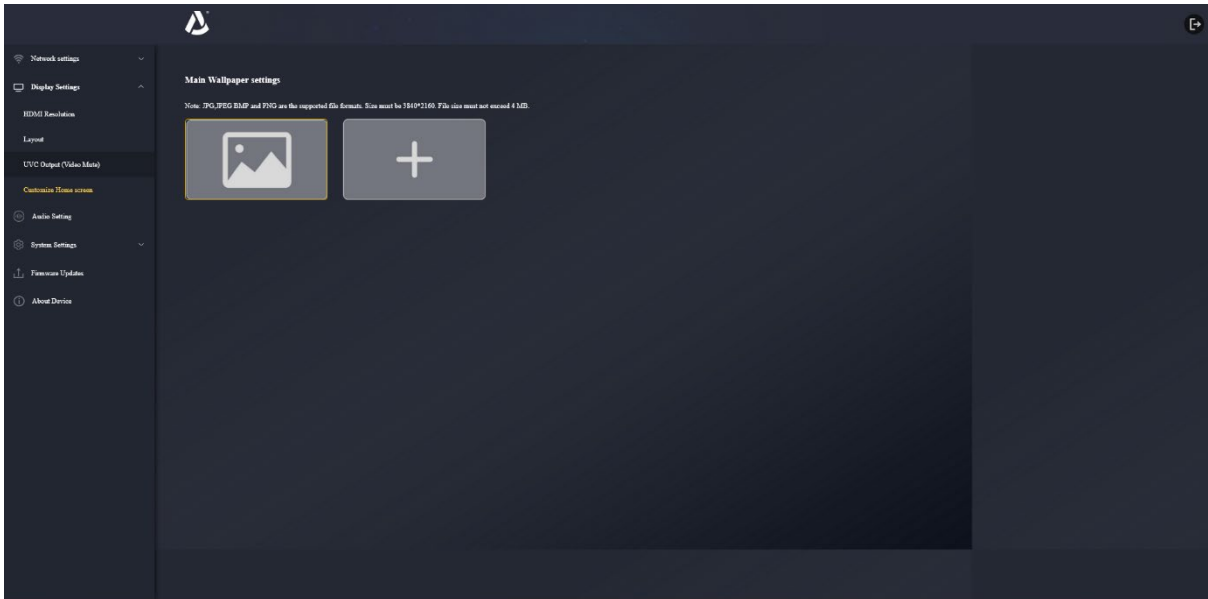


## 8.2.4 UVC Output (Video Mute)



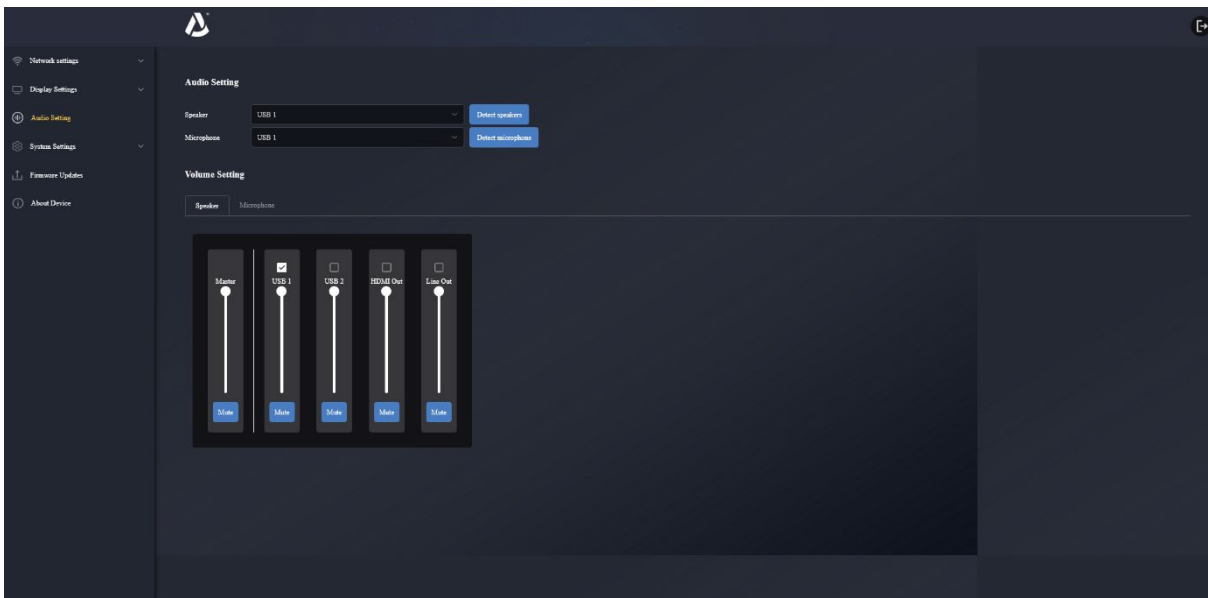
This feature is the same as "Mute UVC Output" button  in the front panel. It is turned off by default.

## 8.2.5 Customize Home screen



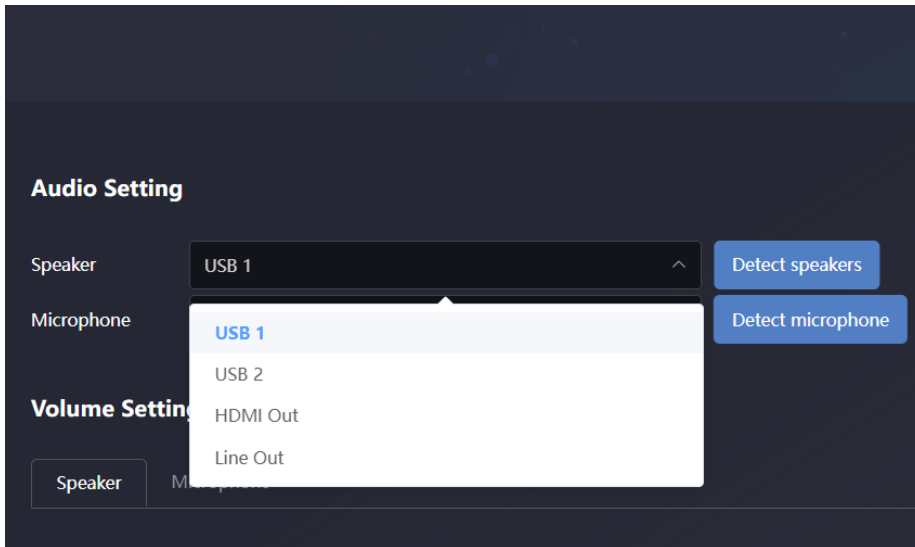
When the device is started, the boot screen will be displayed. Users can change the background image of the main page by themselves. Select an image (supports jpg, bmp, png, gif image formats, resolution is 1920 \* 1080P) to change. Of course, users can also return to the original main interface every time.

## 8.3 Audio settings



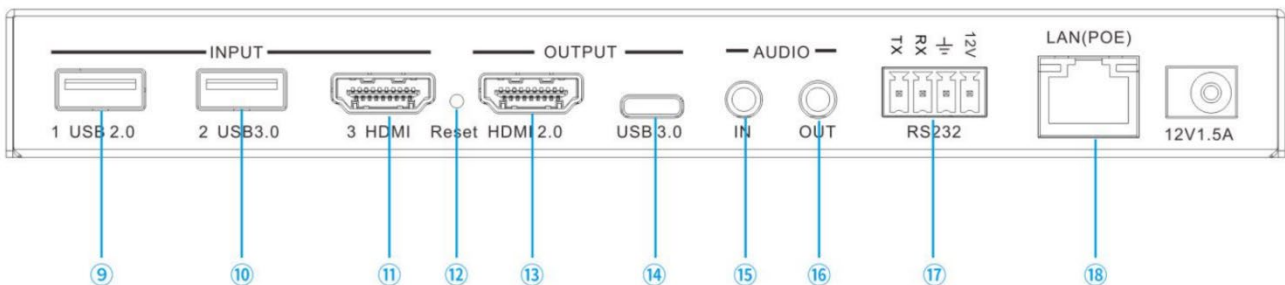
Here you can test whether the speakers and microphones that connected to the device are available or not. You can also select which available speaker output and corresponding volume adjustment, and select which available microphone input and corresponding volume adjustment.

1. In the Speaker drop-down options, you can test the following four options. After selecting the corresponding option, click the "Detect speakers" button to test whether it is available and can output sound.



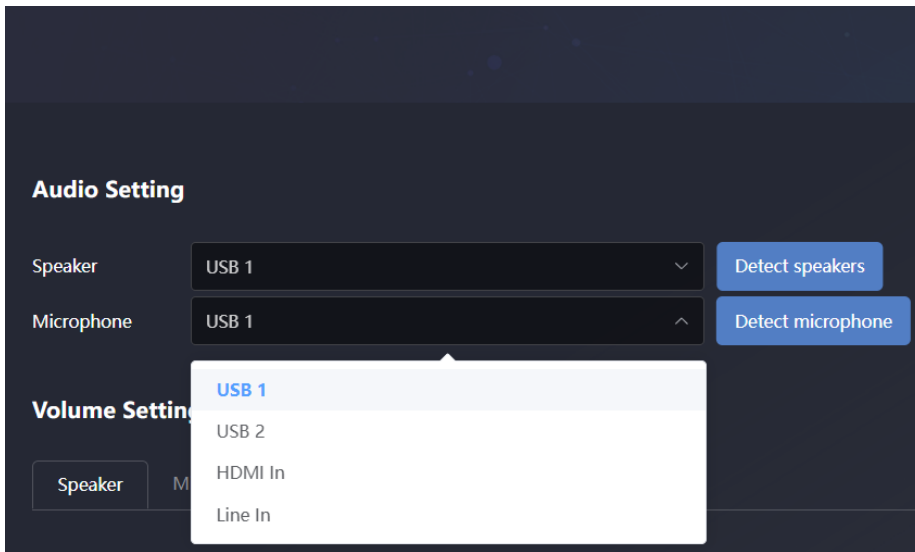
As below device interface diagram showed:

- >> USB 1 corresponds to the audio output of ⑨
- >> USB 2 corresponds to the audio output of ⑩
- >> HDMI Out corresponds to the audio output of ⑬
- >> Line Out corresponds to the audio output of ⑯



Device Interface Diagram


2. In the Microphone drop-down option, you can test the following four options. After selecting the corresponding one, click the button "Detect microphone" to test whether it is available and can input sound.




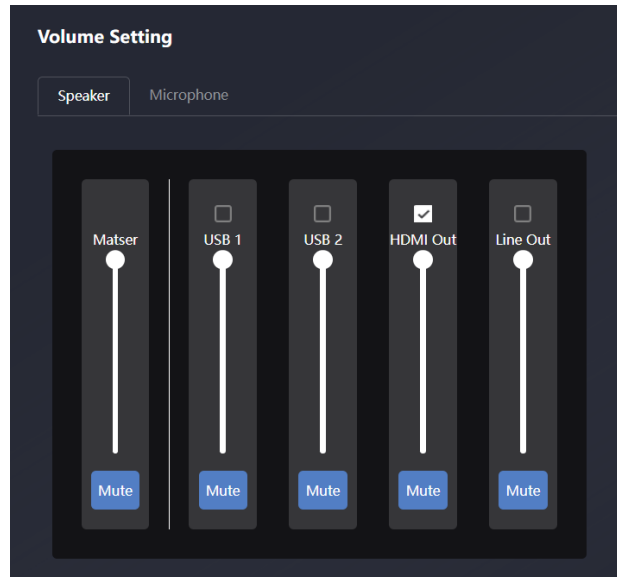
As above device interface diagram showed:

- >> USB 1 corresponds to the audio input of ⑨
- >> USB 2 corresponds to the audio input of ⑩
- >> HDMI In corresponds to the audio input of ⑪
- >> Line In corresponds to the audio input of ⑮

- Volume Setting > Speaker

As below example shown, HDMI OUT is checked by default  HDMI Out, so the speaker output is currently HDMI OUT port. The volume bar below can adjust the volume of this HDMI OUT speaker output port.

The volume bar below Master can adjust the speaker output volume of the ticked one, which has a multiplication effect. For example, in the current example of the HDMI OUT port, when you click the "Mute" button, a red background frame will appear , indicates that the function is enabled.




- Volume Setting > Microphone

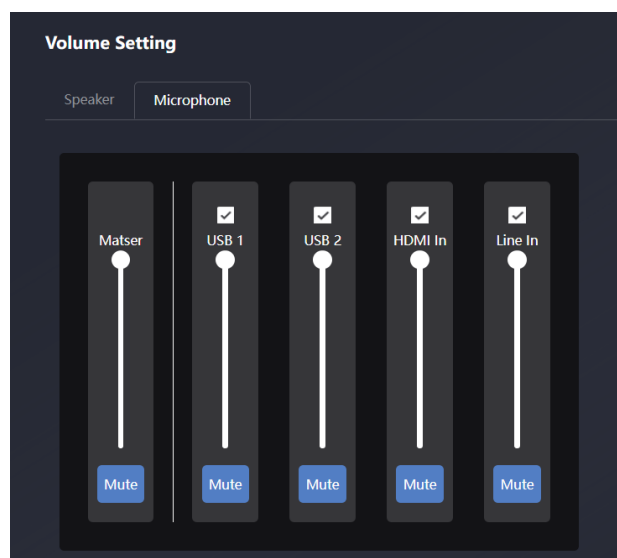
As shown in the following example, all are currently checked by default



There is a volume bar under the corresponding microphone input port to adjust the sound volume. If it

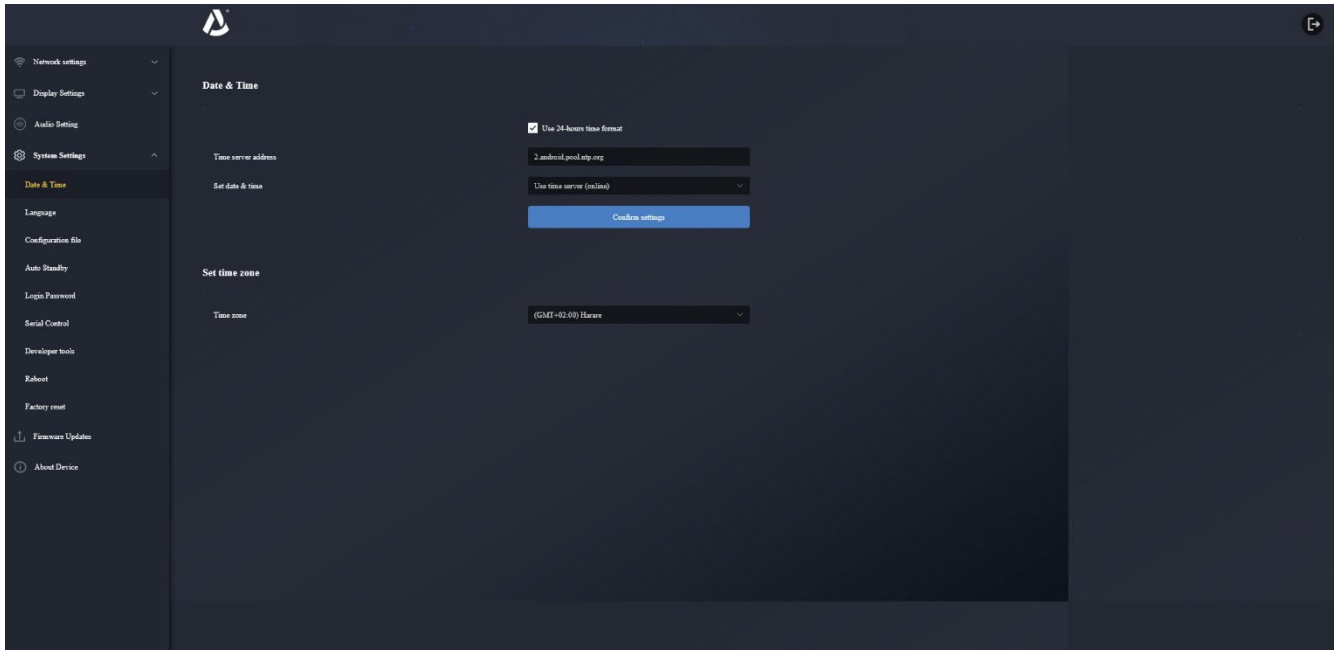
is ticked, it means the current function is enabled.

The volume bar under Master can adjust the microphone input volume of the ticked microphone source, which has a multiplicative effect. When you click the "Mute" button to take effect, a red background frame will appear , indicates that the function is enabled



## 8.4 System settings

### 8.4.1 Date & Time



>> Use 24-hours' time format is enabled by default.

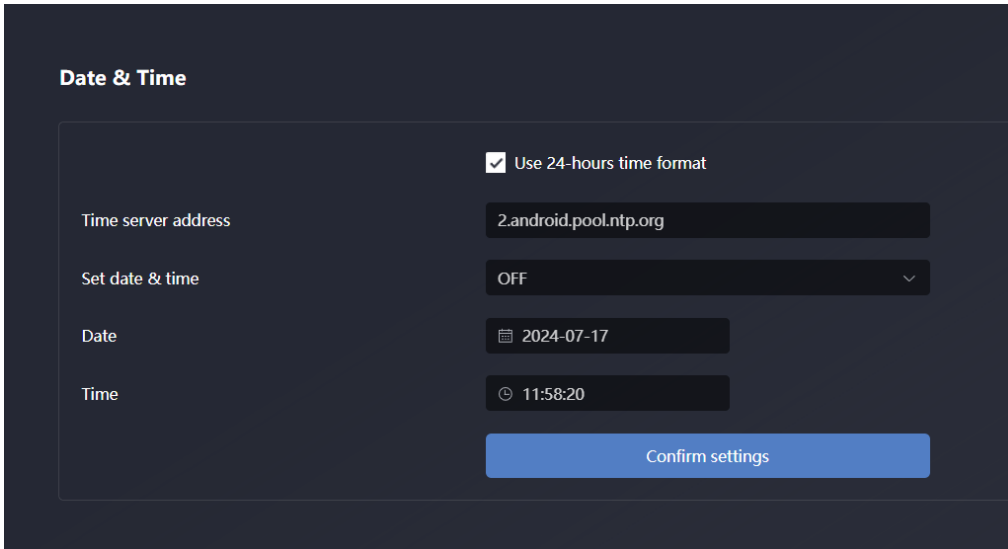
>> Time server address is synchronized to the Google server 2.android.pool.ntp.org of the Android platform by default.

#### Note:

If you have your own server, you can also set it here to synchronize the time with your own server address

>> Set date & time, there are two modes:

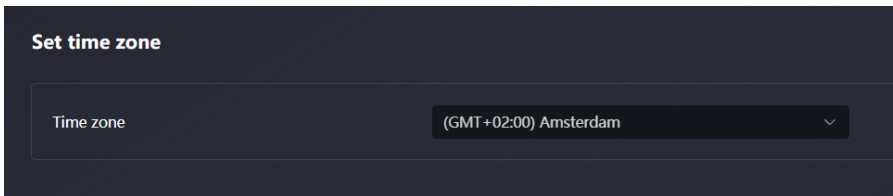
- Use time server(online)
  - This function is enabled by default
- OFF
  - Here you can manually set the time and date you want

**Note:**

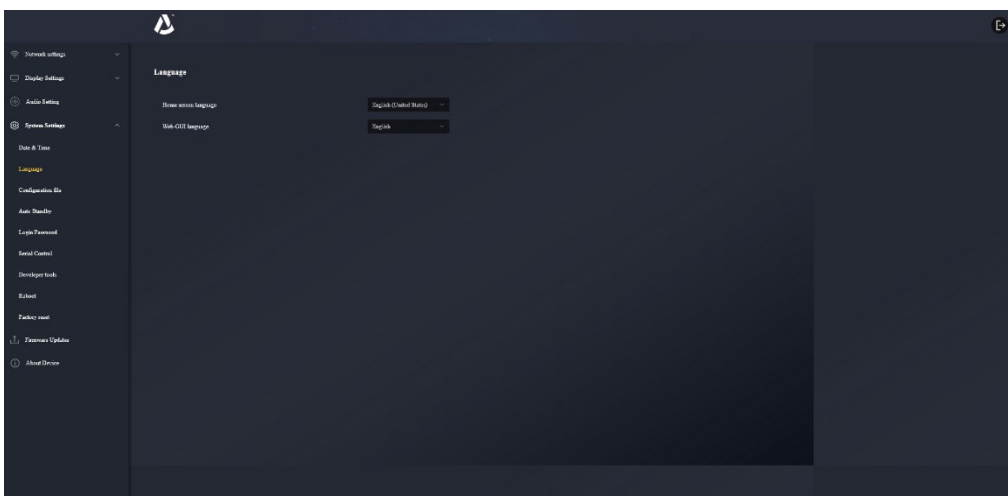
It needs to re-login the web client automatically to take effect when Set date & time from OFF to Use time server(online)

## &gt;&gt; Set time zone

Here you can manually set the desired time zone. After syncing to the Internet time, it will be displayed in local time. The default time zone is (GMT+02:00) Amsterdam

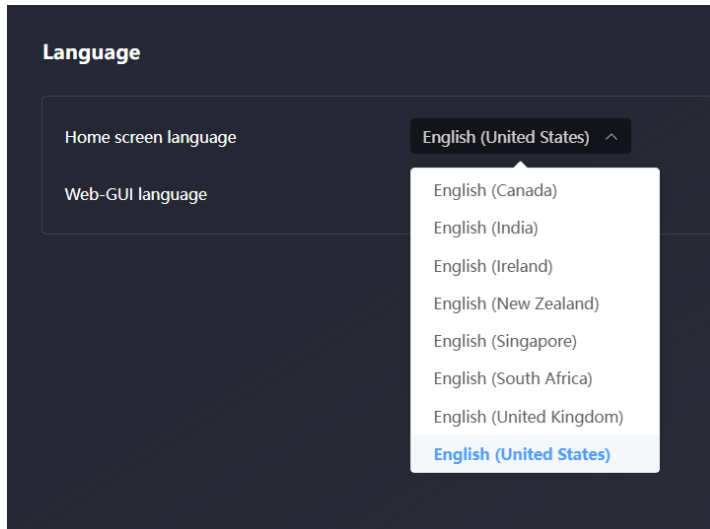


## 8.4.2 Language



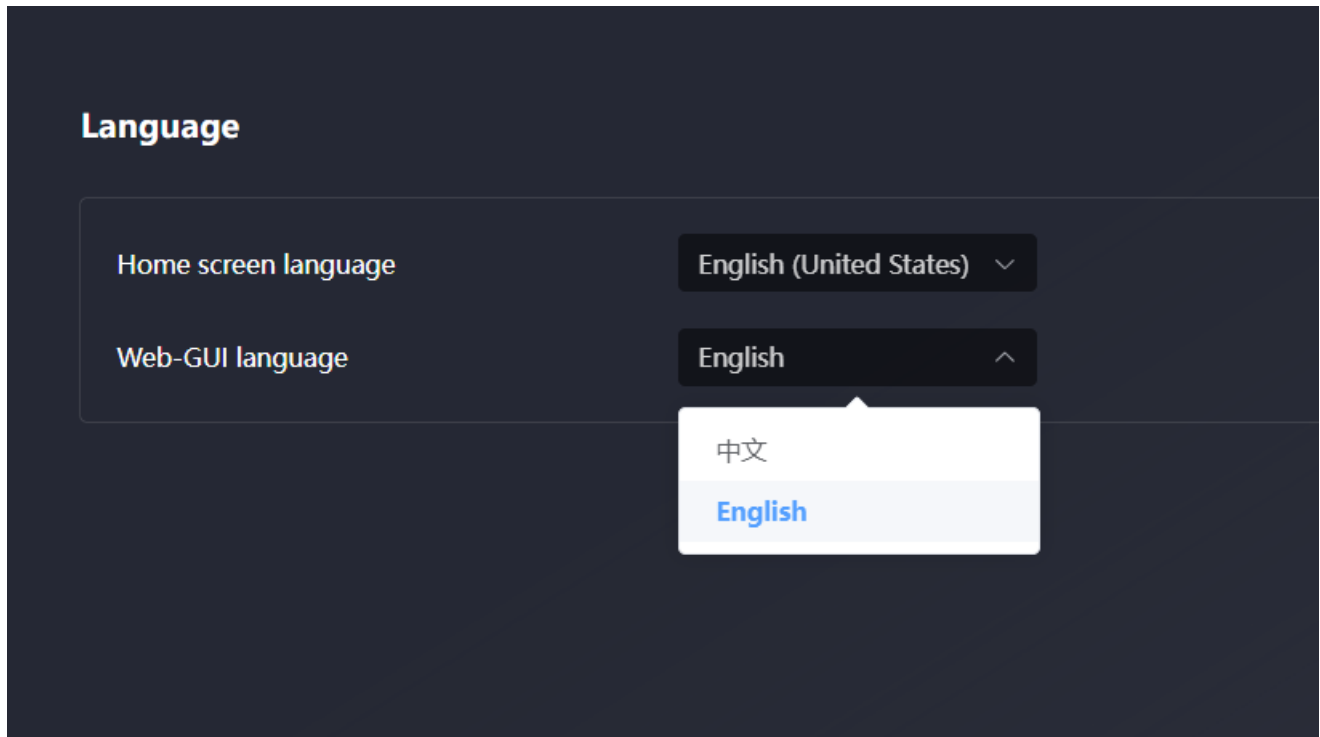
Here you can choose and define the language you want to display on the home page and web client.

- Home screen language



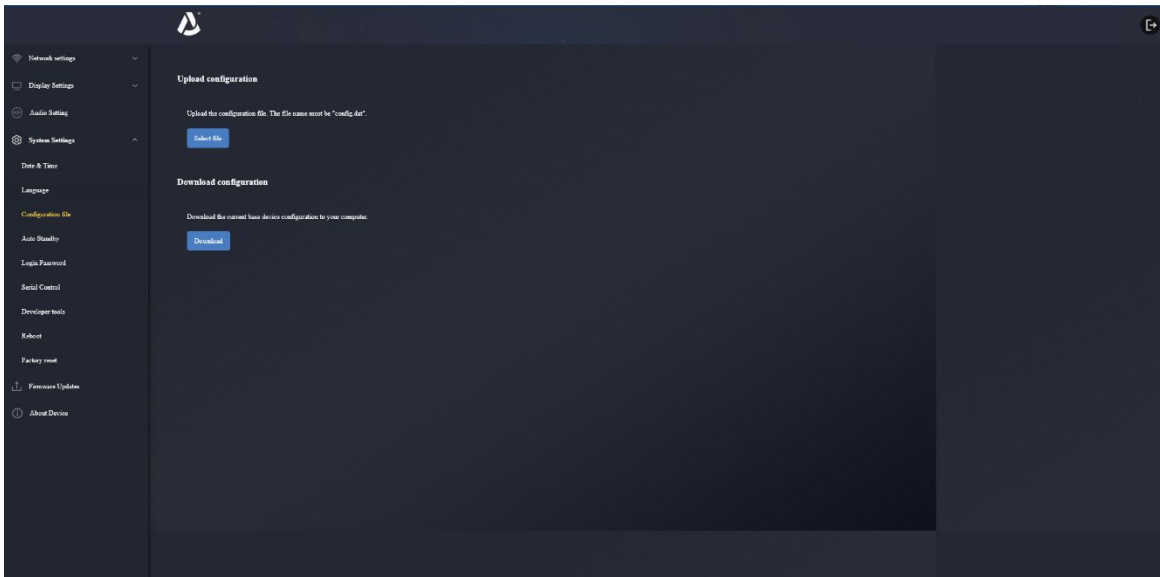
Here is to set the language displayed on the Home Page, which supports the languages of many countries around the world;

- Web-GUI language

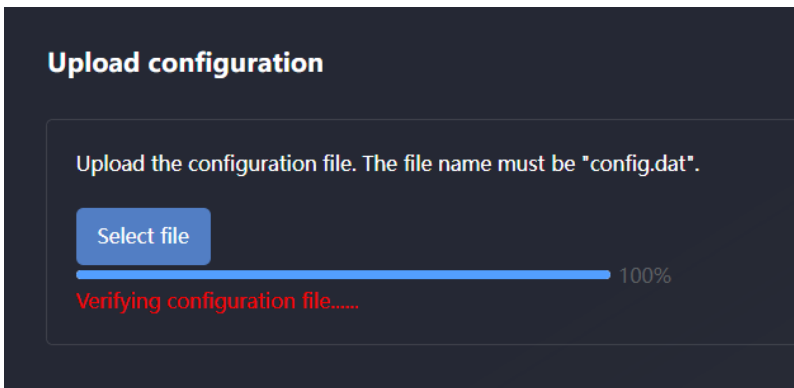


Here is to set the language displayed on the web side, currently English and Chinese are supported;

## 8.4.3 Configuration file

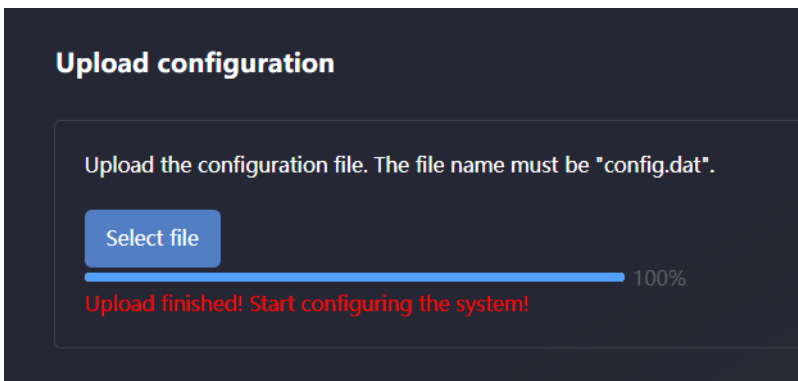


### ● Upload configuration



Here you can upload the previously saved configuration file Config.dat. Click the button "Select file" to load the Config.dat file you want to upload, as shown in the following figure:

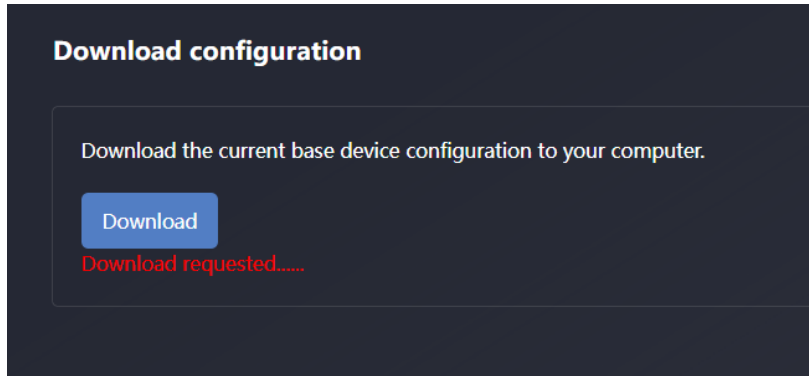
After Upload is completed



**Note:**

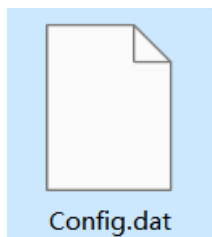
After uploading and configuring, it needs to re-login automatically to the web page to take effect

- Download configuration

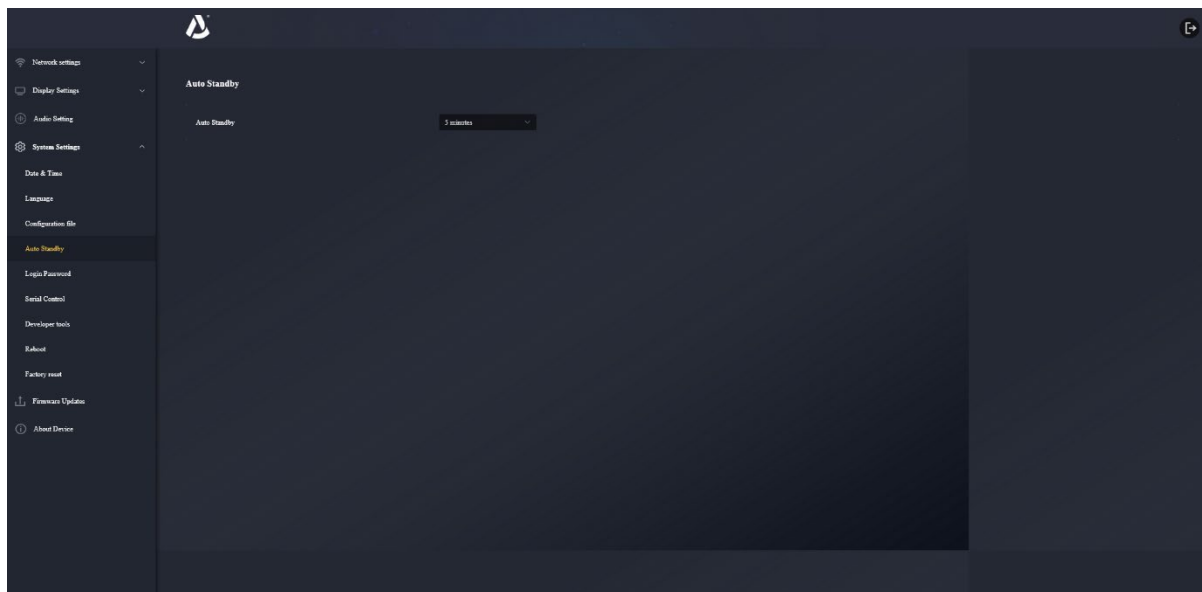


Here you can download the configuration file Config.dat for the current web settings. Click the "Download" button as shown below.

After the download is complete, there will be the following Config.dat file



## 8.4.4 Auto Standby



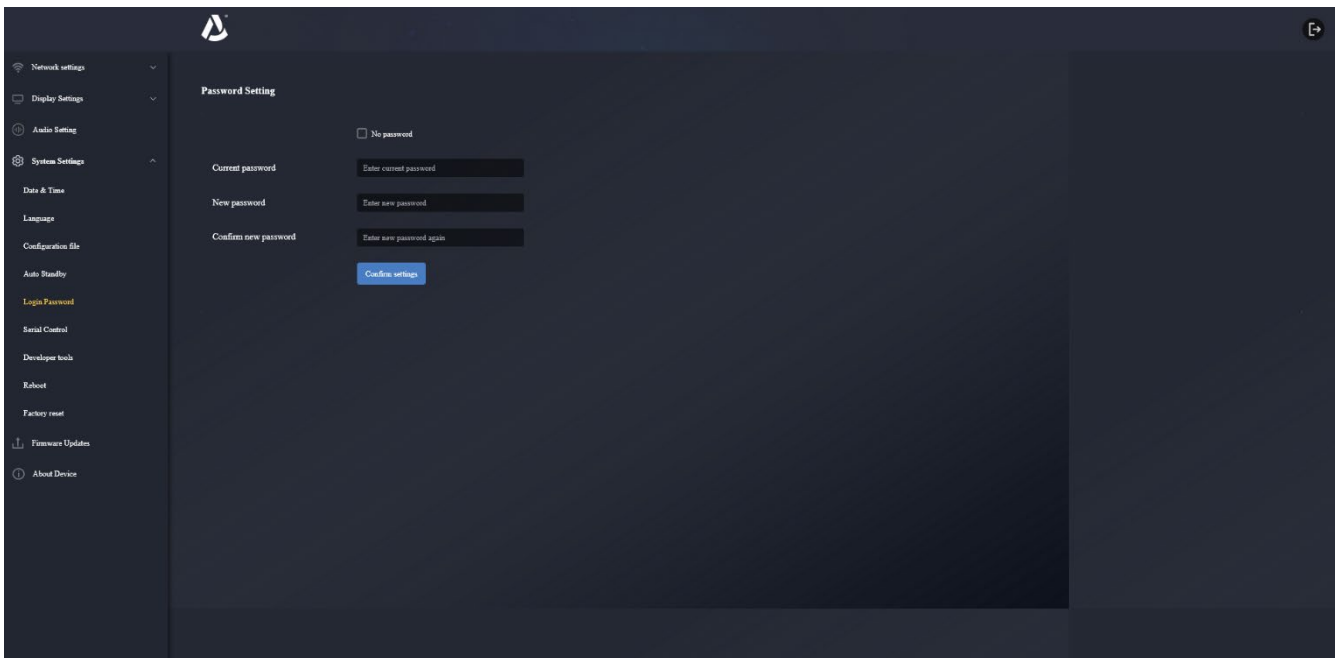
Here you can set the standby time interval:

- Never: always on-screen display
- 1 minutes: enter standby mode after 1 minute
- 5 minutes: enter standby mode after 5 minutes
- 10 minutes: enter standby mode after 10 minutes
- 15 minutes: enter standby mode after 15 minutes
- 30 minutes: enter standby mode after 30 minutes

**Note:**

The default standby time setting is Never. The device will wake up automatically when the video conferencing software calls the camera.

## 8.4.5 Login Password



The default login web page password is admin.

You can change your password here and the minimum required password is 5 characters. Otherwise, the following error message will appear:

**Password Setting**

No password

Current password

New password   
Password must be at least 5 characters.

Confirm new password   
Password must be at least 5 characters.

[Confirm settings](#)

After ticking No password, enter the current login password for confirming, no password is required to enter the web in the future.

**Password Setting**

No password

Current password

[Confirm settings](#)

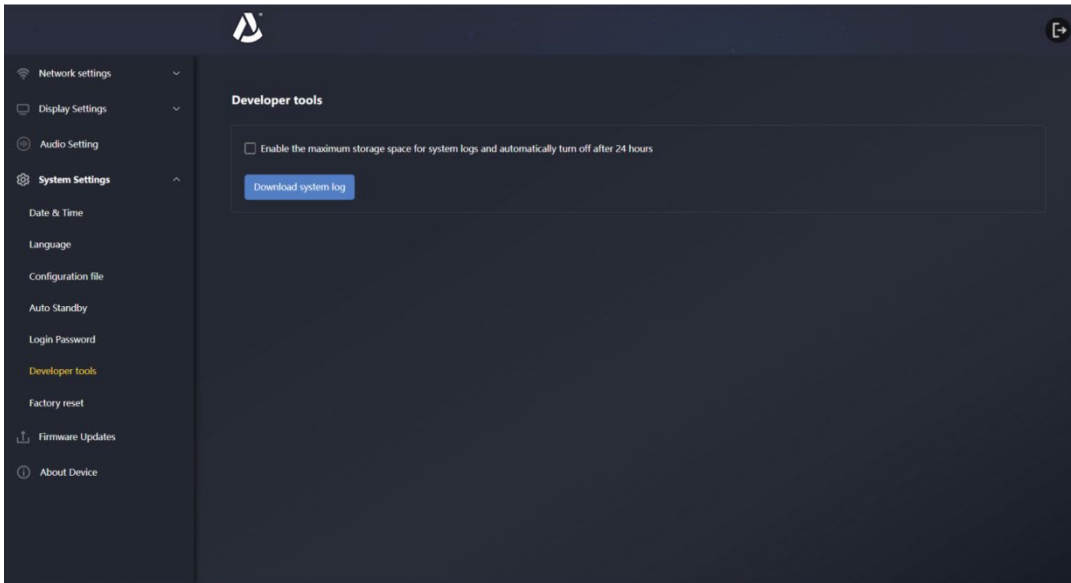
After click the button Confirm settings

**Password Setting**

No password

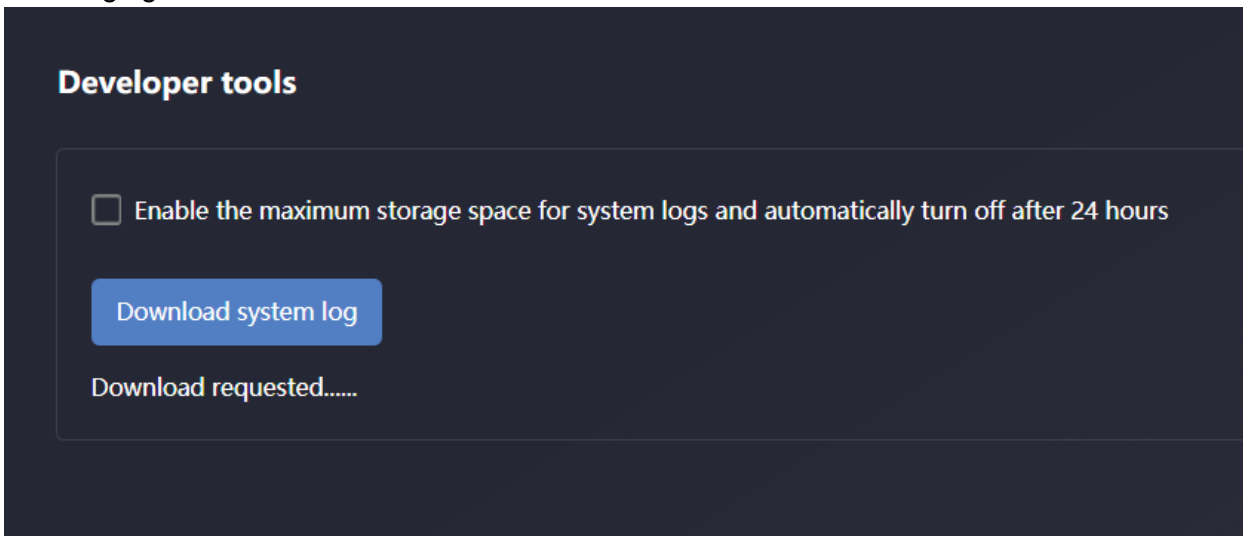
[Confirm settings](#)

## 8.4.6 Developer tools

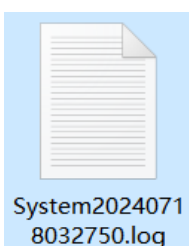


Here you can capture some abnormalities during the operation of the device, the capture the log that can be used for further analysis.

Click the button “Download system log” to request to download the log file, as shown in the following figure:

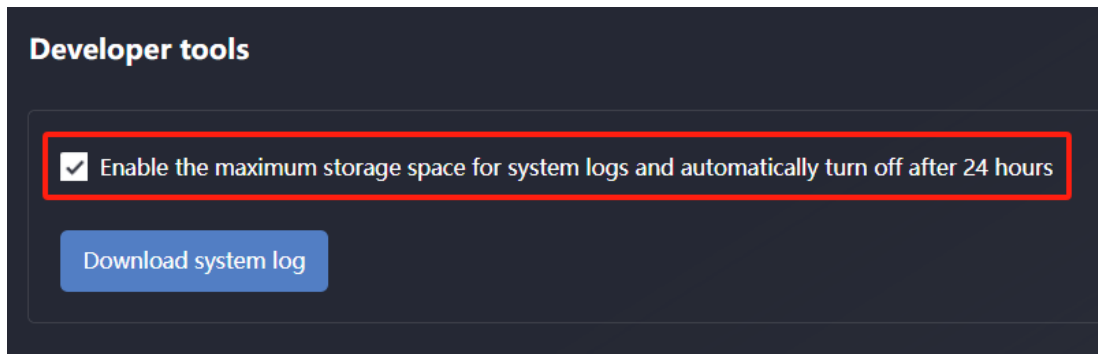


The downloaded log file is shown in the figure below:

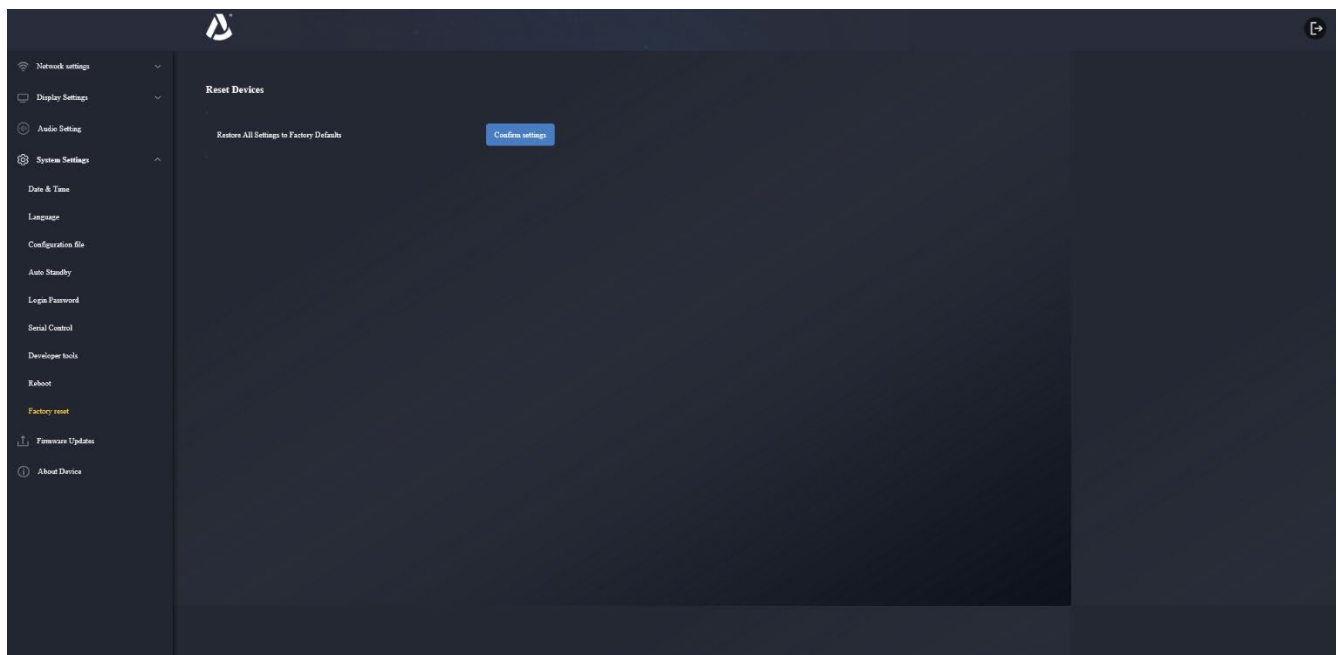


**Note:**

More log content will be captured during 24-hour period when ticked “Enable the maximum storage space for system logs and automatically turn off after 24 hours”. It means richer log content will be captured.



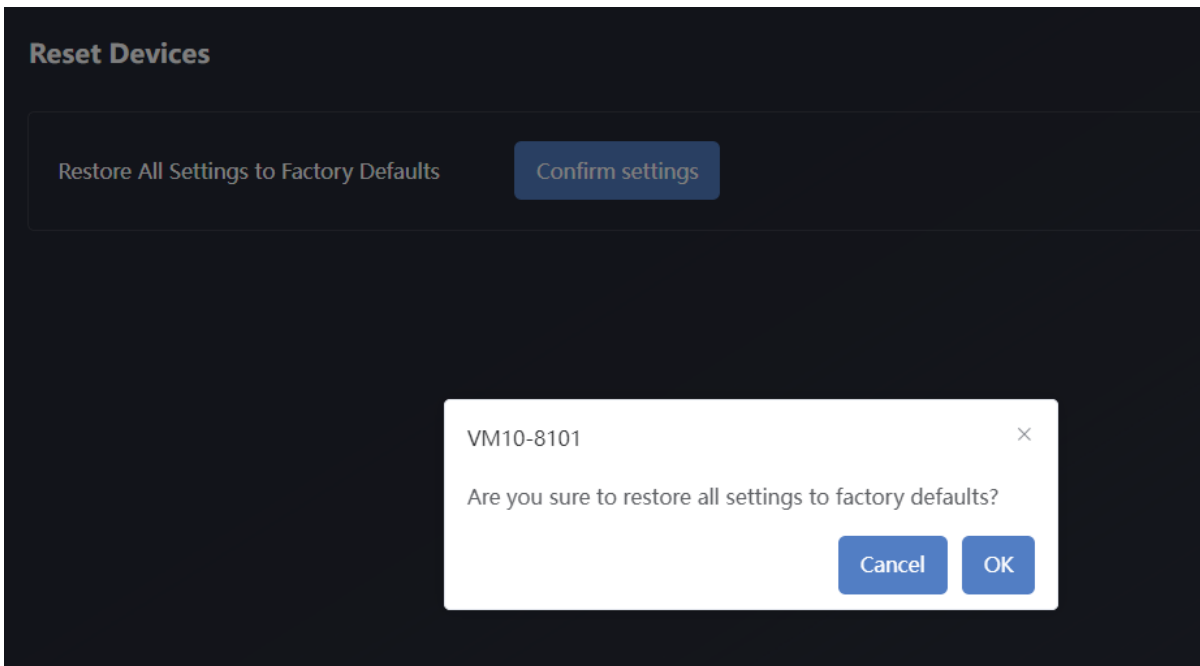
## 8.4.7 Factory reset



Here you can restore the device to factory settings.

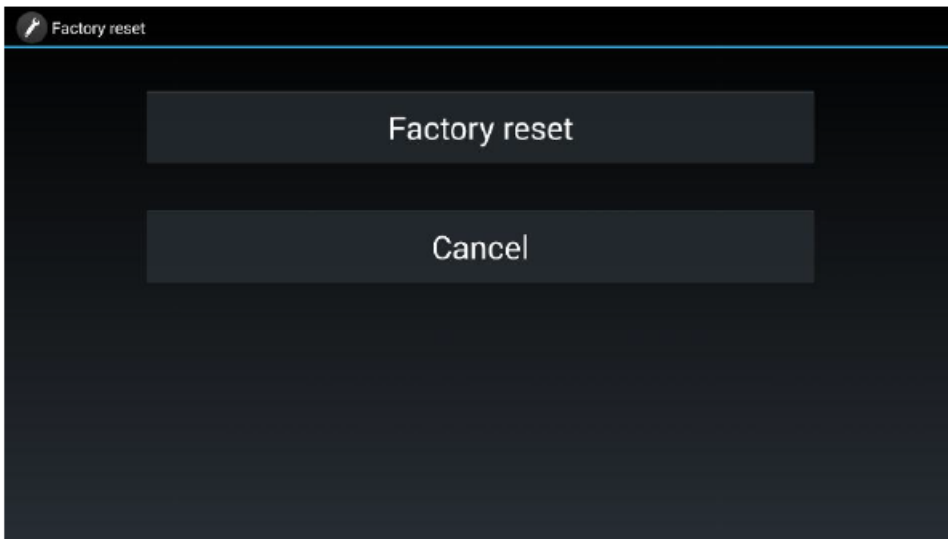
When the device encounters some problems that cannot be solved conventionally, you can restore the factory settings to eliminate some faults.

Click the "Confirm settings" button to enter the following page. After clicking the "OK" button, the device begins to enter the factory settings restoration process.

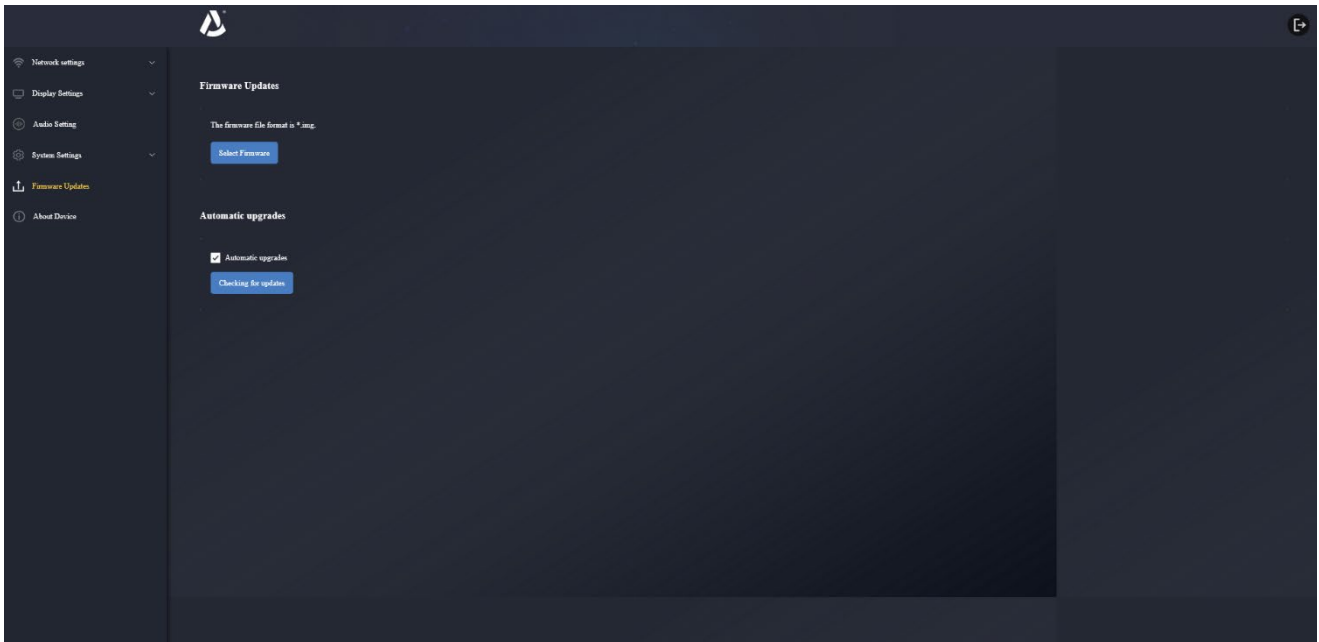
**Note:**

>> After restoring the factory settings, the relevant settings will be restored to the factory default state and need to be reset.

>> There is a reset button on the back panel of the device. Use a pointed object (such as an unbent paper clip) to press this button for at least 2 seconds until the "Factory Reset" page appears as shown below.



## 8.5 Firmware Updates



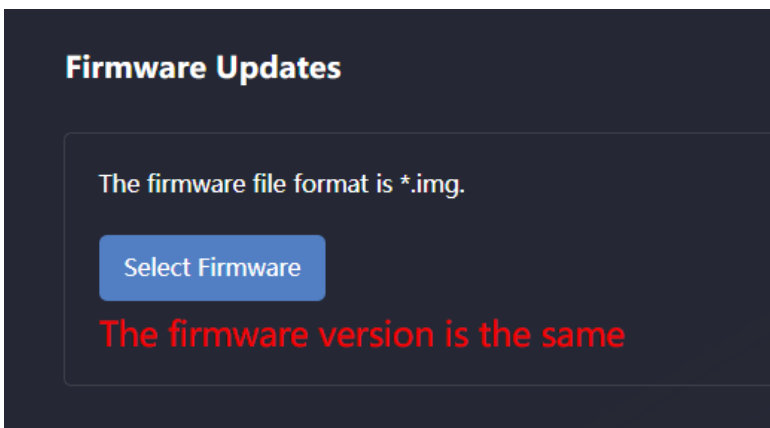
Here you can upgrade the device's firmware. There are manual upgrade operations and automatic upgrade settings. Be careful not to have power outages during the upgrade process, otherwise the device may be damaged.

- Firmware Updates

Click the "Select Firmware" button to load the firmware program file to be manually updated.

**Note:**

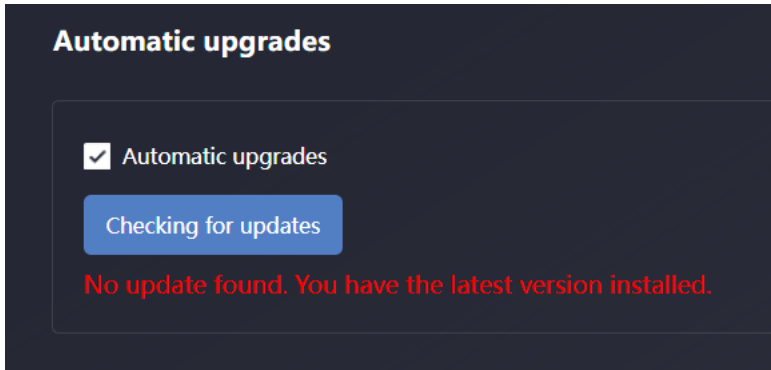
>> If you are updating the firmware to the same version of the device, there will be an error message in red as shown below



- Automatic upgrades

The function “Automatic upgrades” is checked by default. When the device has network access, it will actively access the OTA server in the deep night to detect whether the current device is the latest version or not. If not, it will automatically update and upgrade.

Click the button "Checking for updates" to check and find that it is the latest firmware. There will be a red font prompt as shown below:

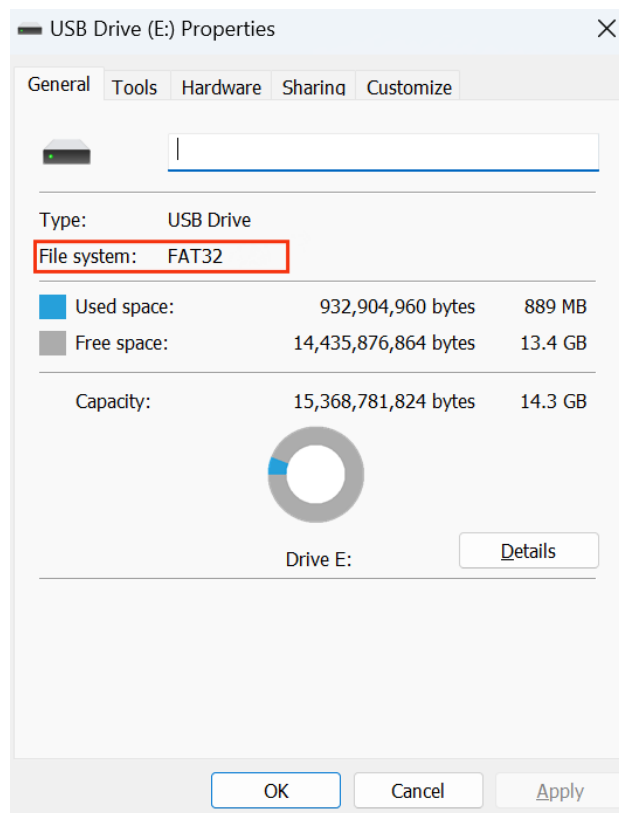


**Note:**

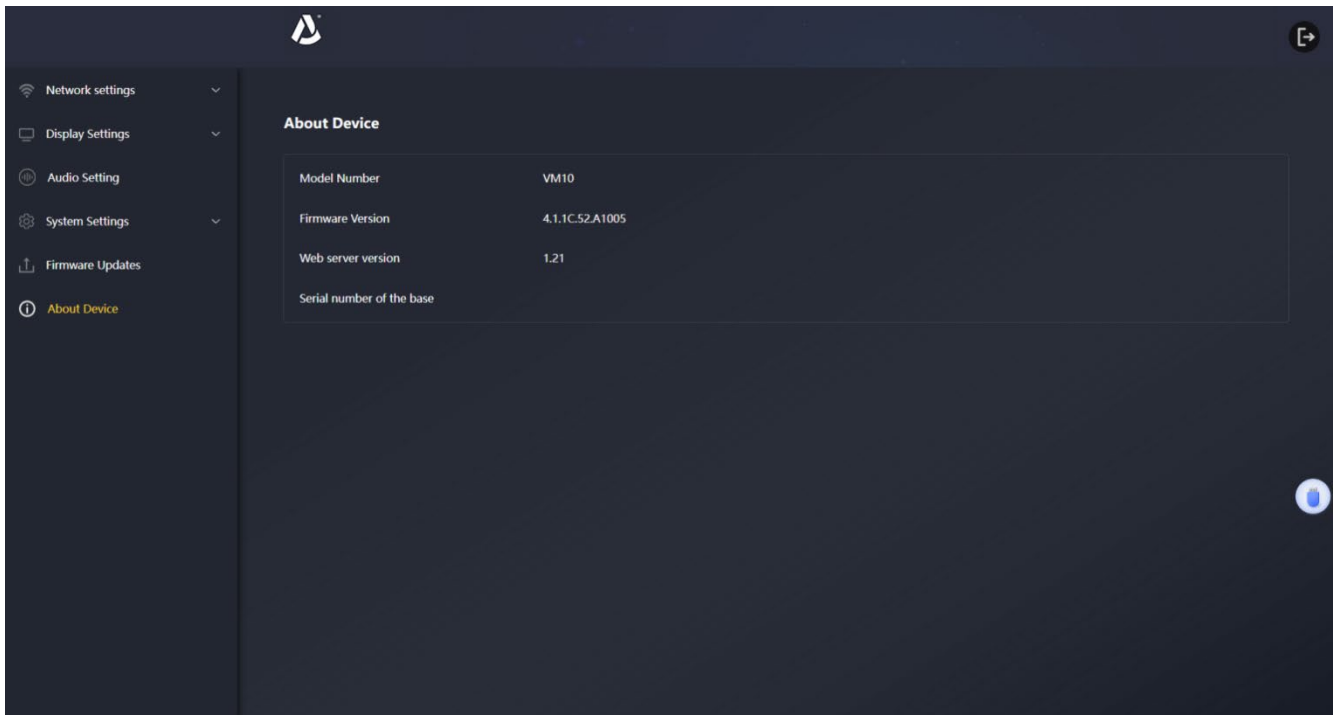
In addition to the above method of upgrading the device firmware through the web, you can also upgrade it through a USB flash drive. Copy the upgrade file "update.img" to the root directory of the USB flash drive. The USB flash drive needs to be in FAT 32 format.



update.img



## 8.6 About Device



Here you can see the relevant information of the device and the web version information, including below:

- Model Number
- Firmware Version
- Web server version
- Serial number of the base



# 9. Mechanical Diagram

