Prestel BYOM-2 & WB-2H / WB-2C

Dual-screen Video Collaboration System

USER MANUAL

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1. PRECAUTIONS

1.1 Important Remark

WARNING: SHOCK HAZARD - DO NOT OPEN

AVIS: RISQUE DE CHOC ÉLECTRIQUE - NE PAS OUVRIR

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING (If applicable): The terminals marked with symbol of “ ” may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the use of ready-made leads or cords.

WARNING: To prevent fire or shock hazard, do not expose this equipment to rain or moisture.

WARNING: A device with Class I construction shall be connected to a mains socket-outlet with a protective earthing connection.

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

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

1.2 Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this device near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Please kindly chack and install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other device (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Please protect the power cord from being walked on or pinched particularly at the convenience receptacles, plugs, and at the point where they exit from the device.
11. Please only use attachments / accessories specified by the manufacturer.
12. Unplug the device during lightening sorts or when unused for long periods of time.
13. Please refer all servicing to qualified personnel. Servicing is required when the device has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the device, the device has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. Disconnecting from the mains: When switching off the POWER switch, all the functions and light indicators of the base unit will be stopped, but fully disconnecting the device from mains is done by unplugging the power cable from the mains input socket. For this reason, it always shall remain easily accessible.
15. Equipment is connected to a socket-outlet with earthing connection by means of a power cord.
16. The marking information is located at the bottom of the unit.
17. The device shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on device.

1.3 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, benzine, solvents or abrasive substances to clean this unit.**

Grastron Technology Co.,Ltd. accepts no liability for any damage that may be caused to people, animal, or objects due to failure to comply with the warnings above.

Thank you for choosing our device BYOM-2 Wireless Conferencing and Presentation Switcher! We appreciate your trust.

It is **VERY IMPORTANT** to carefully read this manual and to fully understand its contents before any connection in order to maximize your use and get the best performance from this equipment.

To ensure optimal operation of this device, we strongly recommend that its maintenance be carried out by our authorised Technical Services.

All products are covered by warranty, please refer to the warranty card included with this product for the period of validity and conditions.

2. PACKAGE CONTENTS

- BYOM-2.
- Antenna (3 units). Not pre-mounted to avoid damages.
- Power adaptor with 3x plugs
- Phoenix connectors

3. DESCRIPTION and FEATURES

BYOM-2 is a 2nd generation wireless conference base with one HDMI input up to 4K30 and two HDMI outputs. Wireless input supports up to 4K30. It supports sharing PC content to the display via transmitters, Windows and macOS clients, and native protocols such as Airplay, Miracast, and Chromecast, while supporting wireless connection of compatible USB devices such as webcams and microphones via Windows and macOS clients to PC. Supports dual-screen display and can display 5 devices simultaneously in a multi-view layout. It also has a powerful WebGUI management background through which all these functions can be configured and managed.

3.1 Main Features

- 2x HDMI outputs enabling content sharing from same source or different sources.
- Support up to 4 sources shared in a single screen.
- Support 1080P wireless sharing from Airplay, Miracast, Chromecast, WirelessMedia App.
- Working with both 1080P and 4K wireless transmitter.
- Provide 1x 4K HDMI input.
- Provide 1x USB-B port for host PC.
- Support USB cam/mic/speaker transmission over wifi.

- Support 2x camera connection and switching.
- Support USB devices switching between local USB-B and wireless laptops.
- Support display content sharing to remote participant over video conference.
- Provide 2x LAN ports for network isolating between staff and guest.
- Support PoE with LAN port 1.
- Support reverse control of sources from touch screen.
- Provide native annotation and whiteboard tools with both outputs.
- Analogue audio extraction on stereo unbalanced 3,5mm jack connector.
- One channel RS232 can control 3rd party devices or be controlled.
- Provide API commands for RS232 and Telnet control.
- Provide powerful and intuitive web control interface.
- Provide GPI control interfaces with customizable function.
- All data transmitted are encrypted with RSA & AES.
- Support with LAN EAP certification.
- Support customization with home screen page.
- Provide OTA (on-the-air) firmware upgrade.

3.2 Optional Accessories

Wireless transmitters: WB-2H and WB-2C, used for plug & play wireless mirroring from personal PC or HDMI/USB-C sources to the main screen.

- **WB-2H** is a 4K HDMI wireless transmitter that allows participants to easily share content from a laptop or HDMI device to the BYOM-2 base unit. Power is supplied by an auxiliary USB Type A connector. It is designed as a cross platform and plug and play device with no additional driver installation needed. This technology allows to start a transmission and begin sharing content by just connecting the wireless transmitter into the source and clicking the center button. The LED indicator will help the user to know the status of the wireless transmitter at any time.

- **WB-2C** is an USB-C wireless transmitter that allows participants to easily share content from a laptop or USB-C video device to the BYOM-2 base unit. Power is supplied directly through the same connector. It is designed as a cross platform and plug and play device with no additional driver installation needed. This technology allows to start a transmission and begin sharing content by just connecting the wireless transmitter into the source and clicking the center button. The LED indicator will help the user to know the status of the wireless transmitter at any time.

4. INSTALL & CONNECT

4.1 Wall Mount Install

The BYOM-2 can be installed on the wall or flat surface. At the bottom of BYOM-2, there are two mounting holes that can be fixed to a surface using flat screws.

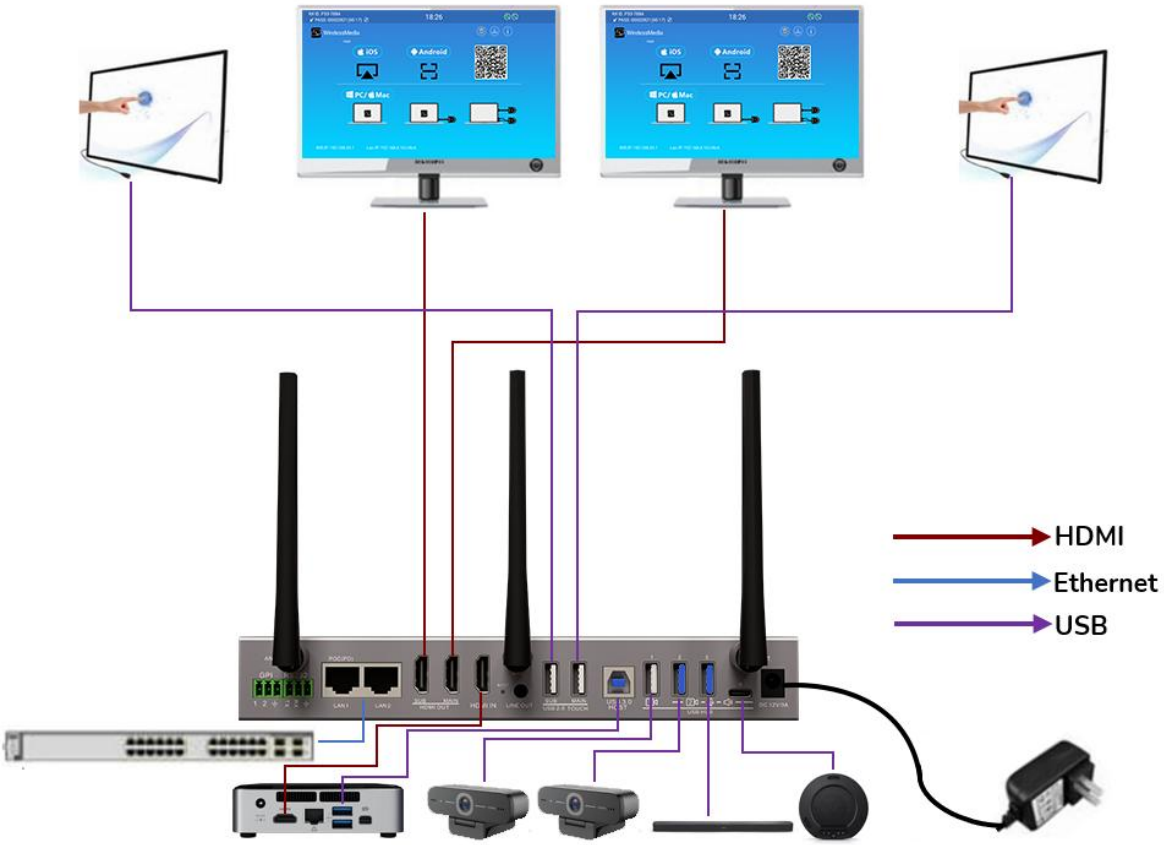
⚠ Mounting screws are not included in the BYOM-2 box. The type of screws depends on the type of wall (stone, wood, plasterboard, ...) you are mounting the Base Unit BYOM-2 to. Make sure the head of the screw is not larger than the hole in the bottom of base unit BYOM-2.

⚠ For optimal performance, install the BYOM-2 close to the display and avoid obstacles between the BYOM-2 and the Transmitters.

⚠ **Antenna Placement**

- The antennas should be oriented vertically, so perpendicular to the ceiling and parallel to the walls.
- The antennas should be installed far enough (at least 50cm/1.6ft) from metallic surfaces to avoid unwanted reflections and far enough (at least 1m/3.3ft) from other radio equipment that operates in the same frequency range, e.g. other WiFi access points, cordless telephone, microwave ovens, etc. It is also best to install antennas at least 15 cm (6 inches) from concrete walls.
- The most favourable situation is a direct line of sight between antennas and buttons. Any obstruction will cause the signal to follow a longer propagation path, which can result in performance degradation.
- Due to the particular radio pattern of the dipole antennas, the antennas should not be placed just above potential positions of BYOM-2 users. As a result, the advised position for the antennas is at the side of the meeting room.

4.2 Connection Diagram



4.3 Power Connection

- **Local Power Source**
  1. Plug the power connector to the power adapter to the power input connector of the Base Unit BYOM-2.
  2. Choose the appropriate power plug (US, UK, EU or AU) to be installed on the power adapter.

  3. Connect the power cable plug into the wall outlet.

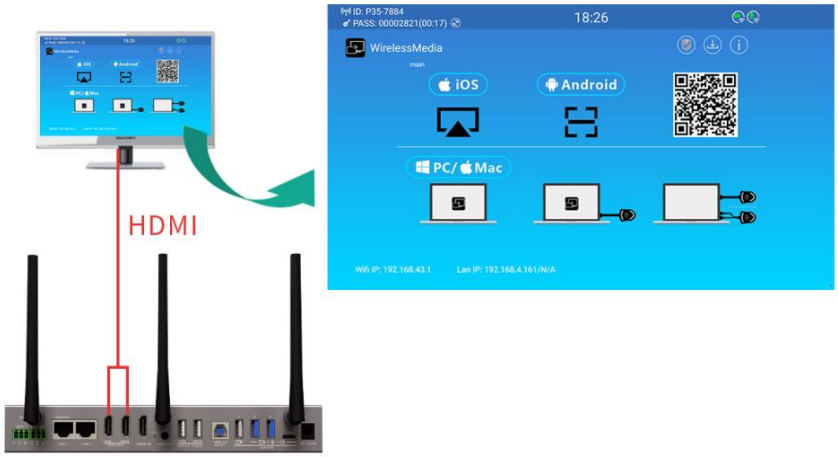
Once the BYOM-2 is powered it is recommended to use the POWER button on the front of the BYOM-2 to switch ON or OFF.

- **Power over Ethernet**

  If the LAN Ethernet switcher supports PoE (Power over Ethernet), LAN 1 port can be used to power up the Base-unit BYOM-2 instead of using the external power adapter. (LAN1 Port of the base unit supports PoE.).

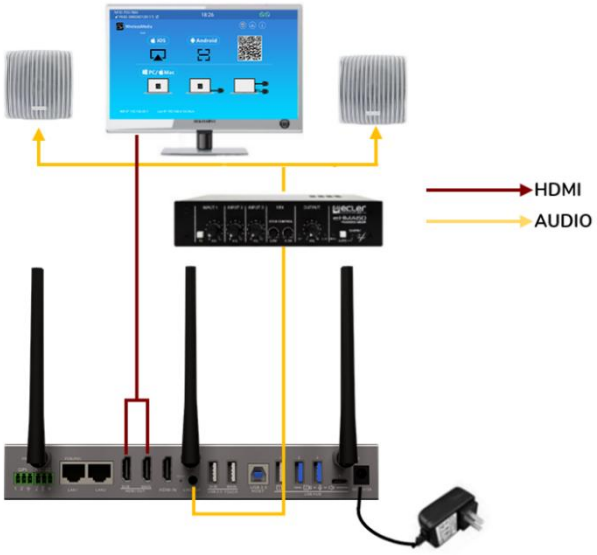
4.4 Video Connection

1. Connect the HDMI Output of BYOM-2 to a 4K or Full-HD display by a HDMI cable.
2. After starting up, the system displays the home page, as shown below.



4.5 Audio Connection

1. Connect an audio cable with mini jack socket 3.5mm connector into the audio of the BYOM-2.
2. Connect the other side to the meeting room's sound system.



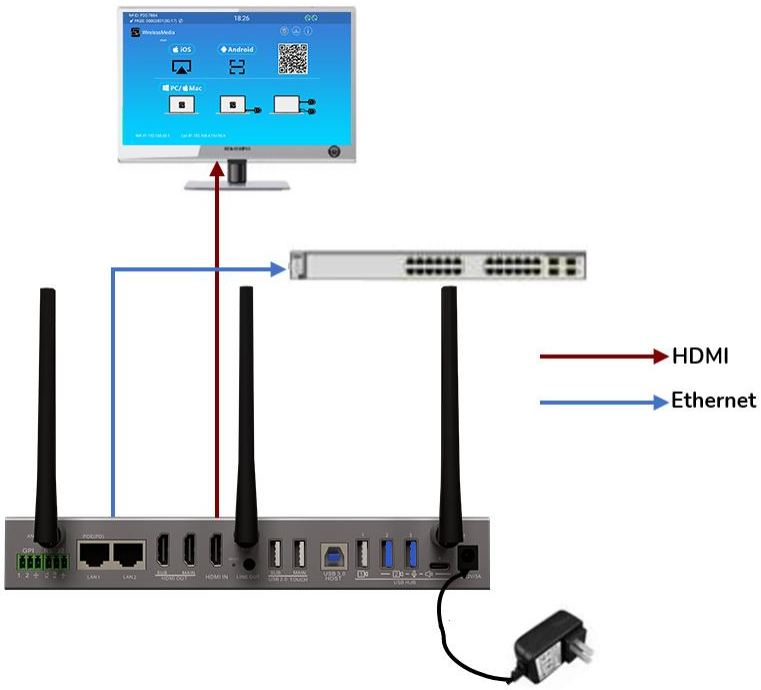
WB-2H and WB-2C can transmit audio to the BYOM-2 base unit when the audio output of the source device is selected.

4.6 LAN Connection

1. Connect a network cable with RJ-45 connector into the LAN 1 or LAN 2 port of BYOM-2.
2. Connect the other side to LAN. DHCP on the BYOM-2 switcher is enabled per default.
   a) If there's a DHCP server in the network, IP address will be assigned automatically.
   b) If there is no DHCP server in the network, BYOM-2 will require to manually configure a static IP address.

If the LAN Ethernet switcher supports PoE (Power over Ethernet), LAN 1 port of the BYOM-2 allows to power the switcher instead of using the external power adapter included.

Wireless Direct Mode is enabled by default. In this network mode, BYOM-2 generates its own wireless SSID with IP address 192.168.43.1.



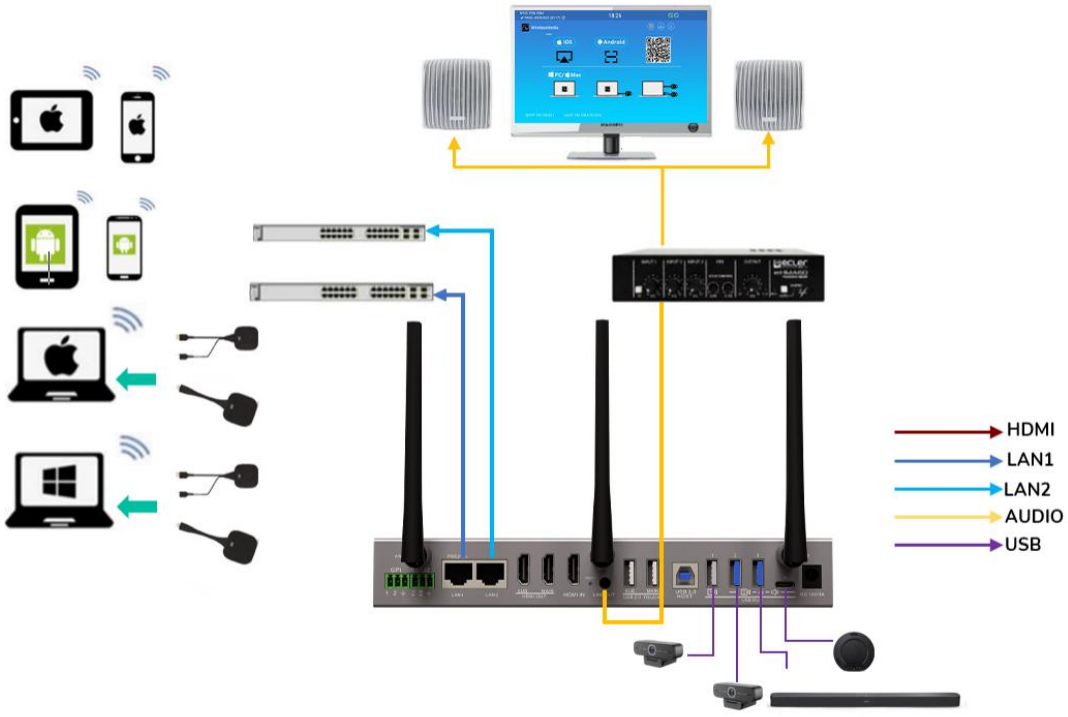
The LAN connection can be used for:

- Network integration of BYOM-2 in guest or company network.
- Telnet control the BYOM-2.
- Maintenance purpose.
- Over-The-Air -Update (OTA) of firmware of BYOM-2.

4.7 USB Control Devices Connection

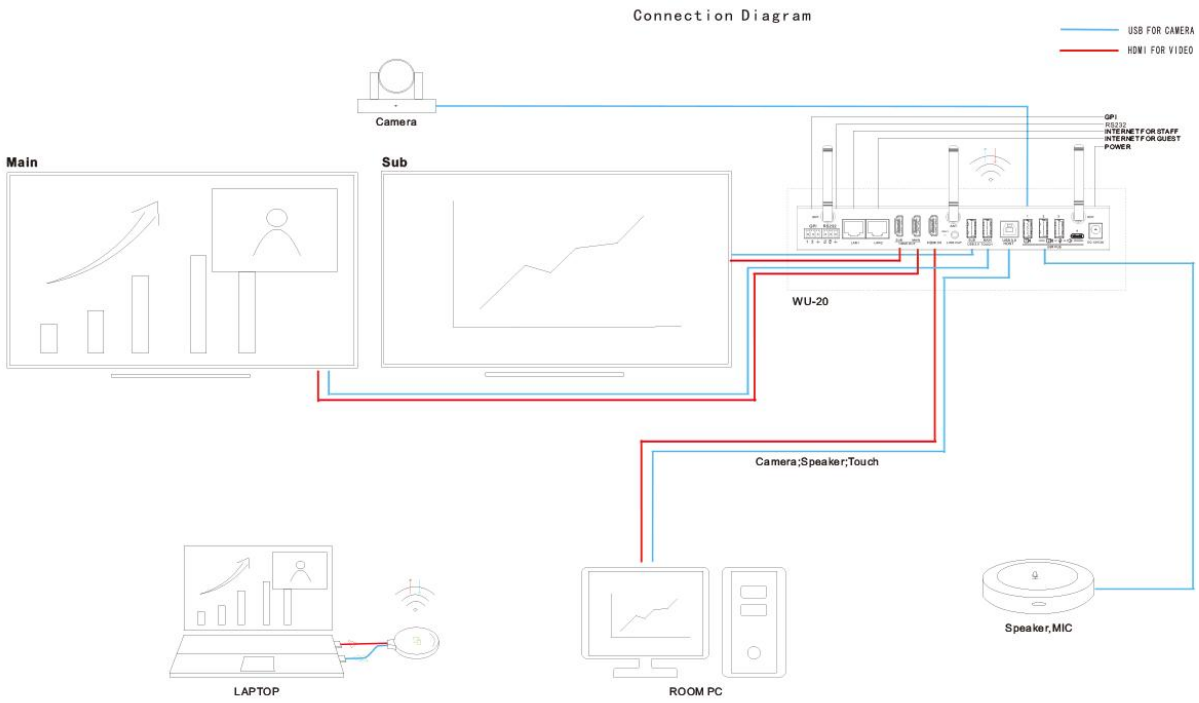
If the user connects an USB Mouse or Touchscreen, the following features will be available:

- Moderator tab to manage the active users sharing content with the BYOM-2.
- Whiteboard or annotation during a presentation.
- USB-HID function for laptop control and click function of a touchscreen:
  - **USB mouse:**
    - Single click to select.
    - Right-click to back to the Home Page.
  - **Touch screen:**
    - Click to select.
    - Long press to open the contextual menus.



4.8 USB Conferencing Devices Connection

BYOM-2 supports two sets USB Camera and USB Speaker & Microphone over WiFi sharing to start meetings with conferencing software's such as Skype, Zoom, Microsoft Teams, etc.



- It can choose and use USB-B or Wireless two mode to do the communication with USB camera and USB Speaker & Microphone that is connected to the BYOM-2 base unit.

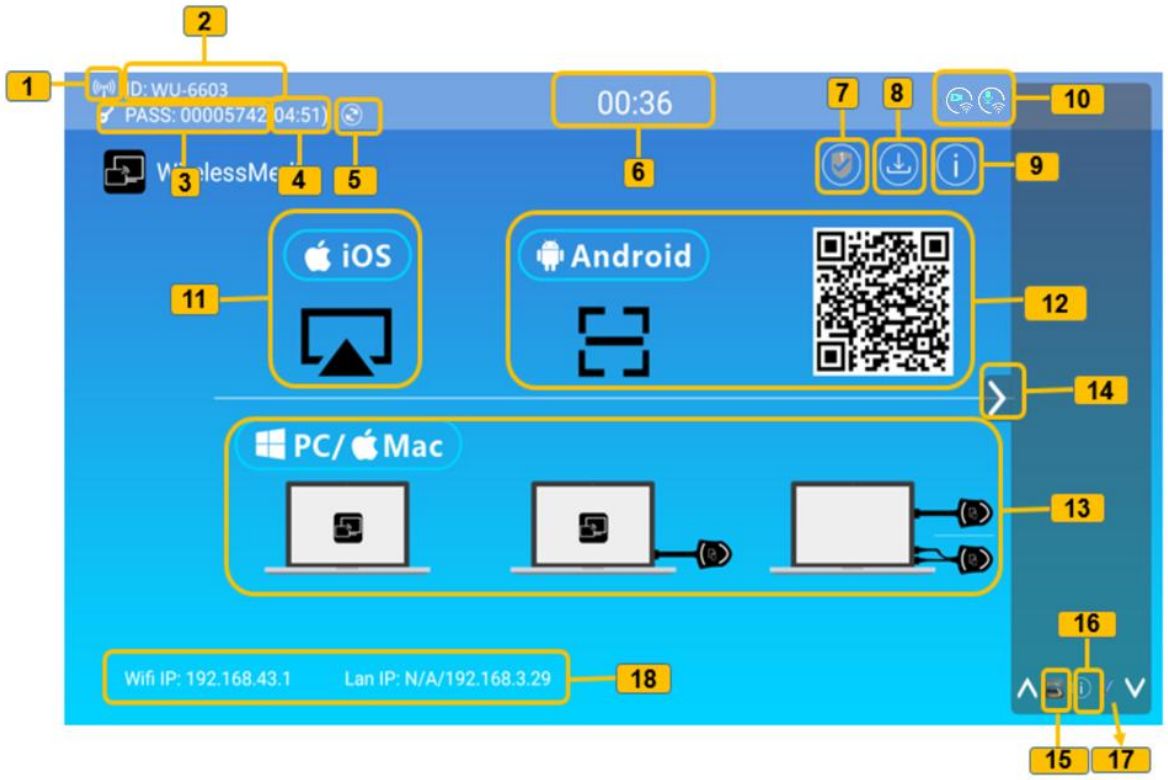
- When the base unit is on Wireles mode and there are two USB cameras connected, it can switch between different cameras to use by dongle button, WirelessMedia application, Web GUI.

- The WirelessMedia application must be open on the computer when it is going to do the video conference via Wireless mode even though it is using the transmitter.

5. START-UP and OPERATION

5.1 Home Screen

When a user connects the BYOM-2 base unit to the HDMI display, the following Home Screen is displayed:



ID	Item	Details
1	Wifi working mode	Wi-Fi Direct mode: Internal access point available. Networking mode: The router connected to Wi-Fi has been established, which is more secure. LAN networking mode: Access point is turned off.
2	ID	The name of the ID is the SSID.
3	PASS	Password of the base unit.
4	Password timer	For display only, when timer is enabled. Automatically counts down and the password will change.

5	Wifi password refresh	Manually generate new password.
6	Time	Displays current time. If base unit has access to a time server through wireless or LAN connection, time code will be set automatically.
7	Security level	Clicking on the icon a pop-up window will appear, displaying the security profile currently selected amongst the three levels available.
8	Download button	Clicking on this icon will create a USB launcher drive containing application and user manual.
9	Info	Clicking on this icon will show / hide Network information of the Home screen.
10	Camera&microphone icon indicator	It is only displayed accordingly a USB camera or microphone is connected to the BYOM-2 base unit, it will turn green when the USB devices are in use, it will also show different icons to indicate the USB host from wired USB-B or wireless laptop
11	IOS quick start	Steps to start sharing content wirelessly using Airplay on iOS and macOS.
12	Android quick start	Steps to start sharing content wirelessly using an Android device.
13	Windows/MAC quick start	Steps to start sharing content wirelessly using a laptop.
14	Sidebar	Preview screen for all connected devices, whiteboard, annotation.
15	Whiteboard	Click here to open the whiteboard function.
16	Info Indicator	When casting, click this button to view the ID and password to connect.
17	Annotation	Click here to open the annotation function.
18	Wifi IP Lan IP	WiFi IP: address of base unit in wireless. LAN IP: address of base unit in LAN. “N/A” means the base unit is not connected to any WiFi / LAN networks.

5.2 Pairing WB-2H and WB-2C with base unit

Connecting WB-2H (HDMI wireless transmitter) to USB Type A port or WB-2C to USB-Type C port will start pairing process automatically. They should be connected one at a time.

A transmitter can only be paired to one base unit and will always reconnect to the one that was last paired to.

Once a transmitter is plugged, a message indicating that wireless transmitter is booting will be displayed.

After completing the pairing, the message table displays "**Succeeded to pair!**" on the home page, as shown. Then, the transmitters can be unplugged and used for screen sharing content.

If error-message "**Configuration fail**" is displayed, check the connection of USB/type C to keep stable after plug-in and try again.

⚠ After changing the SSID / WiFi channel in Web GUI settings menu, all the transmitters must be paired again. Transmitters that need assigning to another BYOM-2 base unit must be paired again.

5.3 Wireless Presentation Mode

BYOM-2 can be used to wirelessly share the screen of AV sources. BYOM-2 can mirror 5 sources onto main display simultaneously, which supports PC/Laptop and mobile devices.

5.3.1 Screen Sharing using WB-2H and WB-2C

1. Pair WB-2H or WB-2C to BYOM-2 base unit, see chapter Pairing WB-2H and WB-2C with BYOM-2.
2. Plug WB-2H to the USB-A port and HDMI port or WB-2C to USB-C port of the device that is going to share its content.
3. LED indicator will show static green when ready. Click the center button will start wireless presentation and LED indicator will show static red.
4. Click the center button again will stop wireless presentation and LED indicator will go back to static green.

WB-2H

WB-2C

5. When LED is static red, the content is mirroring to the main screen connected to the BYOM-2 base unit.

WB-2H

WB-2C

See chapter LED Indicator for further information on LED status.

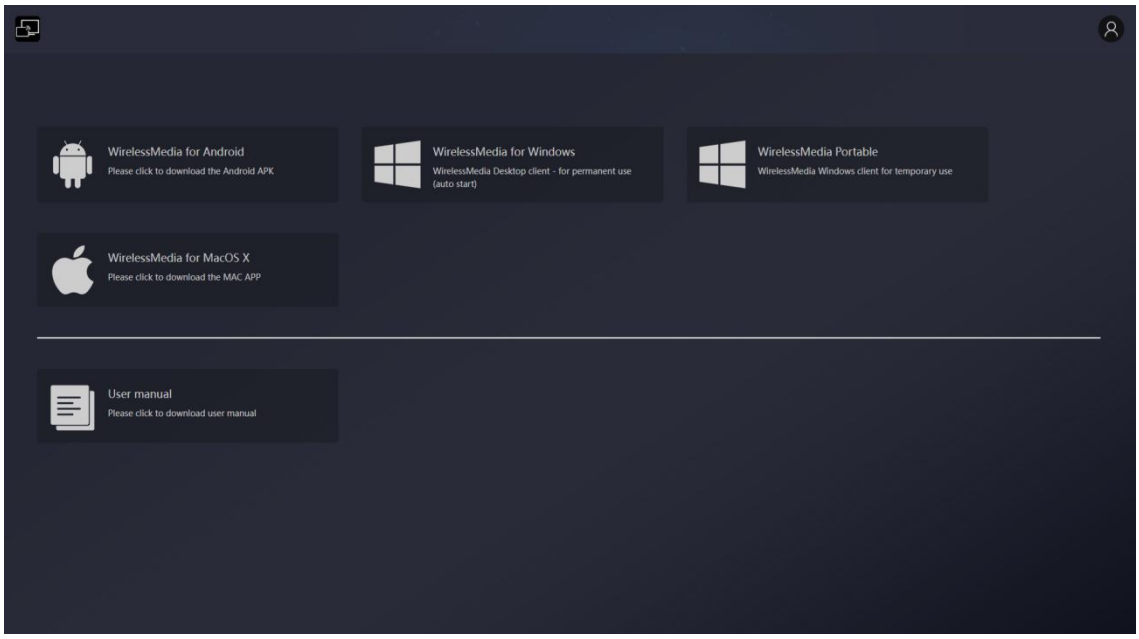
5.3.2 Screen Sharing using WirelessMedia Desktop Application

WirelessMedia application is the launcher that lets the user screen share content with BYOM-2 base unit wirelessly from any source device which hosts it (mac, PC…). Just copying the launcher to the internal storage will let the user run WirelessMedia application.

- **Setting up WirelessMedia**

There are two ways of getting WirelessMedia desktop app:

1. Downloading from WEB page
   Application can be downloaded from the website by connecting the device (laptop /Android) to the same network as the BYOM-2 controller.



2. Automatically create startup programs
   By connecting the USB flash drive and clicking the download icon on the home page, the application can be downloaded to the root directory of the USB flash drive and then copy to the computer.

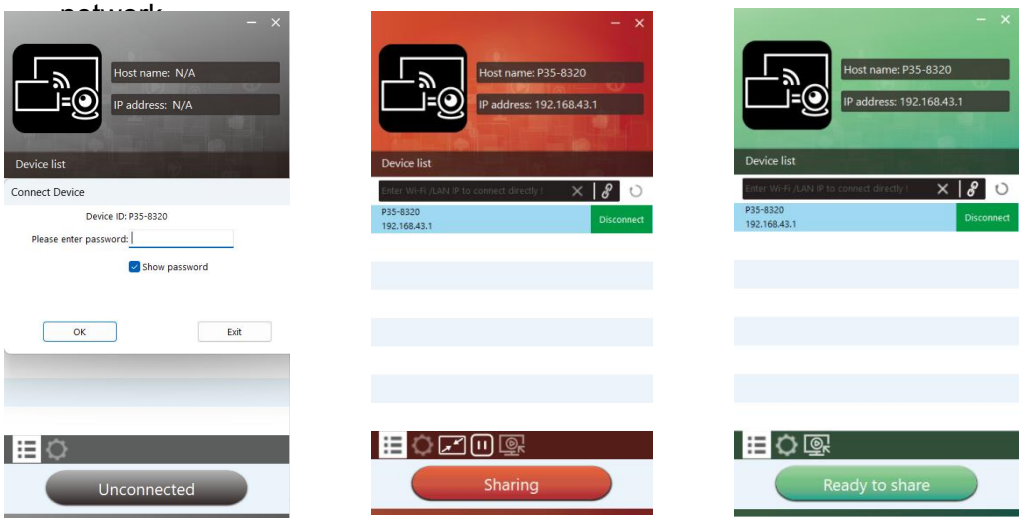
The first time that user connects laptop with BYOM-2 over WiFi, when the application detects that unit is connected to camera, mic&speaker, it will pop out the message bar indicating to install a virtual driver to activate USB over WiFi function.

The virtual driver is only for video conferencing, user can normally mirror desktop without it installed. If the BYOM-2 is not connected with camera, mic&speaker, it will not pop out message to install driver, user could mirror desktop as well.

- **Starting and Operating WirelessMedia application**

  Once WirelessMedia app is copied into the local storage of the Laptop, it is ready for use.

1. Open WirelessMedia application on the source device. The available BYOM-2 switcher will show if source device and the switcher are on the same network.



2. Connect the laptop to WiFi network displayed on the Home Screen (“Guest”, “Staff”), or connect to the LAN on the network using a network cable.

3. Double-click the WirelessMedia application. A list of all available BYOM-2 base units in the same network will be displayed. select the device to connect to. The connections are password protected (lock icon).

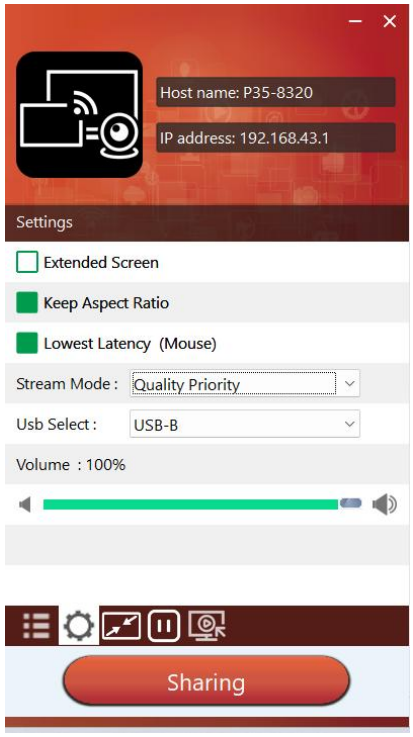
4. Enter BYOM-2 password and click “connect”, the system is ready to share.

> Manually connection by entering the name (SSID) or IP address is also possible if base unit is not appearing. (click icon).

5. WirelessMedia app layout will turn to green. Clicking “Ready to share” will start sharing content with the main display connected to the BYOM-2 HDMI output. When window colour is static red, the desktop is mirroring to the main screen.

6. Clicking “Sharing” will stop sharing content. Window colour is static green again.

- **WirelessMedia Settings**



1. **Device List**
2. **Settings**
   - **Extended Screen:**

     Transfers extended desktop of active source.

     The primary screen (1) is displayed on the laptop and the virtually extended screen (2) is displayed on the main screen. If the PC has already connected an extended screen (3), the extended screen (2) will always be displayed on the main screen.

     For the first time use of function “Extended Screen”, click the “Extended Screen”, will pop out a message to indicate the installation of the “ExtendedDisplay” driver. Click “yes” to continue, once installed, the Extended screen function is ready to use.

If Extended Screen feature is selected, Windows automatically switches to “Extended Mode”. If you stop the transfer with “WirelessMedia” (Pause), Windows remains in " Extended Mode" until pressing "Windows key + P" on the laptop to select the "PC screen only" mode.

In macOS, Extended desktop (“Use a Separate Display”) only via AirPlay, when activated for Display on WirelessMedia app.

- **Keep Aspect Ratio:**

  This parameter will apply the original aspect ratio of the main screen.

- **Lowest Latency (Mouse):**

  The setting is applied individually on every WirelessMedia host device only. The shape of mouse-pointer is equal to the shape in the application used. This parameter significantly improves the mouse response (approximate latency is under 20ms).

- **Stream Mode:**

  This parameter will adapt the performance to fit the desired application:

  - **Fluency Priority**: (Default) Image transmission delay is small, image resolution will be lower, suitable for PPT presentation mode.
  - **Quality Priority**: The image resolution is relatively high, but when the image content is complex, the transmission delay will be relatively larger, suitable for watching video.

- **Usb Select:**

  - **USB-B**: (Default) the USB camera/mic/speaker are switched to the USB-B host PC.
  - **WirelessMedia**: the USB camera/mic/speaker are switched to the wireless host PC.

- **Volume Slider:**

  This parameter will adjust the playback volume of the main screen when presentation mode is in use.

⚠ Not available in macOS

3. **Full Screen**

   By clicking full screen icon on PC UI interface, or long press the wireless transmitter, the content will be full displayed on screen. Click or short press again, will get the screen back to quad view mode.

4. **Screen Freeze**

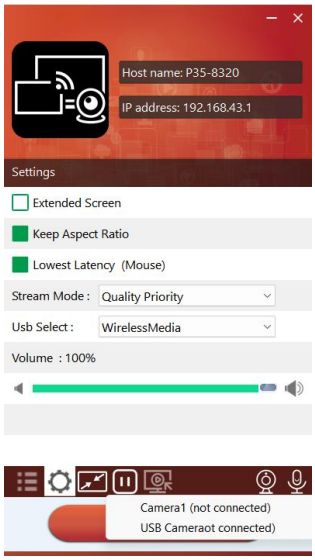
   By clicking the screen freeze icon on the interface or pressing the transmitter left button, the screencast content will be frozen. it will cancel the freeze by clicking again.

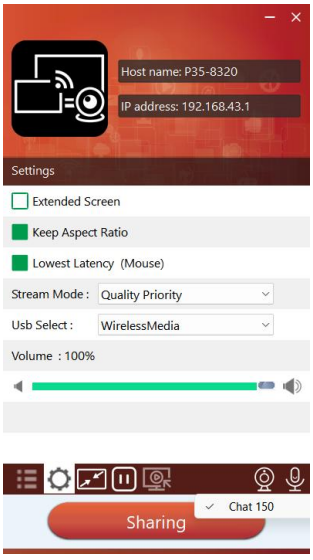
5. **Screen Capture**

   By clicking the screen capture icon on the interface, the screen capture window will open, and you can see the content of the main screen or sub screen.

6. **Camera & Mic (Option)**

When insert the camera & Mic device into the base unit, the corresponding icon will be shown on the software UI. If there are 2 sets camera & Mic devices connected with the base unit, it can use the mouse to click the icon to choose the camera & Mic that wants to use.



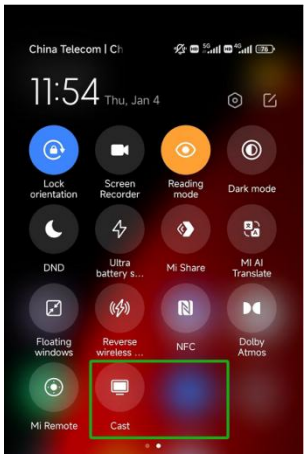


5.3.3 Screen Sharing using Airplay

On iOS and macOS devices a user can stream his screen or sound wirelessly to BYOM-2 base unit via Airplay protocol.

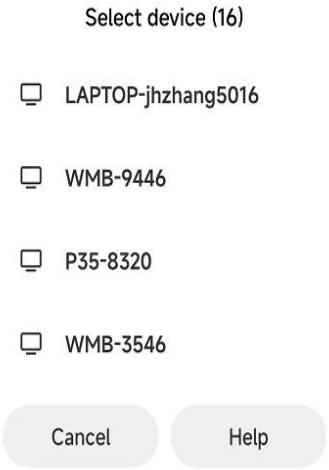
1. Connect the iOS or macOS device to the same WiFi network that BYOM-2 is connected too.
2. Show the control centre. Click the Airplay icon on your iOS and macOS device and select the target BYOM-2 to start sharing content with the BYOM-2.

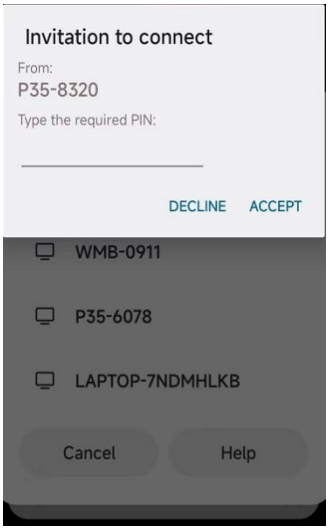
5.3.4 Screen Sharing using Miracast



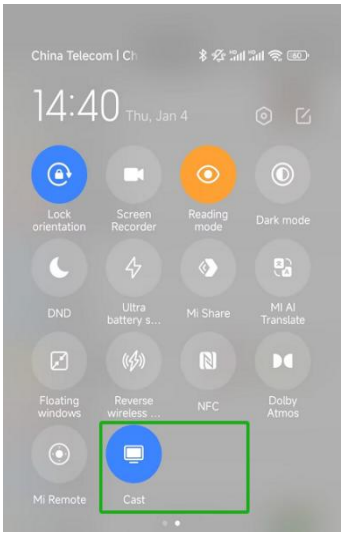
- **Android Devices**
  1. WiFi must be enabled.
  2. Click the Wireless projection icon on the control centre.
  3. Select BYOM-2 SSID and click to connect.

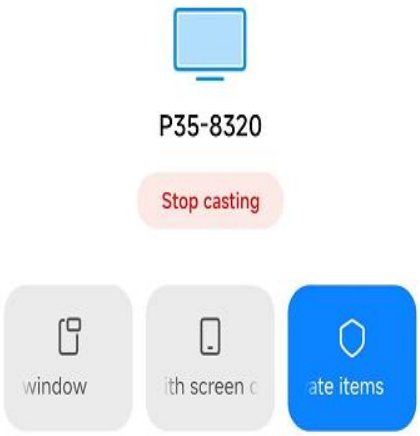
⚠ Under Security Level 1 mode, there is no need to enter password to connect. Under Security level 2 and Security level 3 mode, it will need to enter password on BYOM-2 Home Screen to connect and start casting.



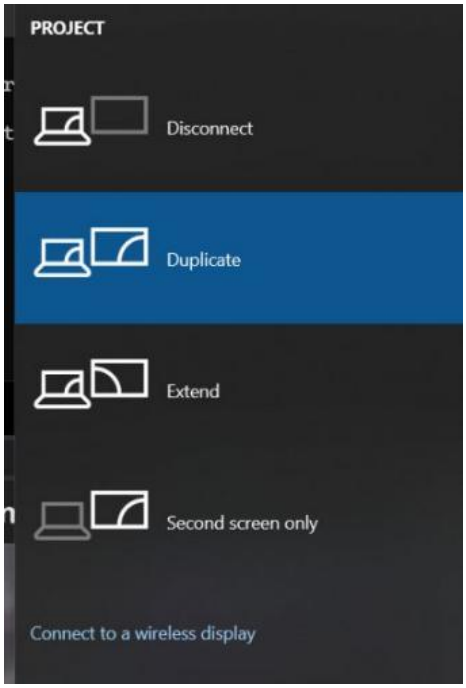


4. After entering password, your mobile content will be shown on the display.
5. Click the “Wireless projection” icon again to stop mirroring.





- **PC**
  1. WiFi must be enabled and connected to the same network as BYOM-2 base unit.
  2. Press + P and then click “Connect to a wireless display” in the pop-up window.



⚠ Under Security Level 1 mode, there is no need to enter password to connect. Under Security level 2 and Security level 3 mode, it will need to enter password on BYOM-2 Home Screen to connect and mirror. After entering password, your mobile content will be shown on display.

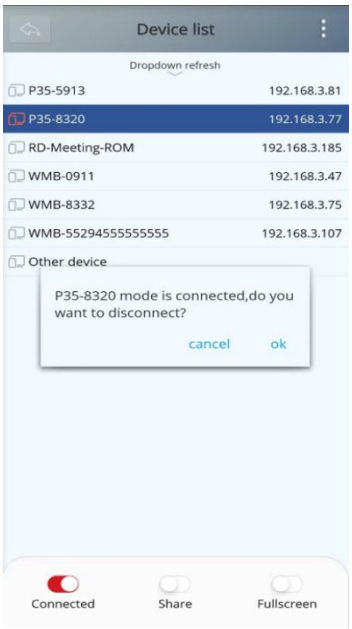
5.3.5 Screen Sharing using Android application

- **Android Devices**

  1. Download WirelessMedia application (see chapter WebGUI Setting Management & Configuration).
  2. Connect your Android device to one of the displayed WiFi networks.
  3. Open the WirelessMedia application in the Android device, and then click the device list refresh button.

4. Select the BYOM-2 to connect to and enter password to start screen sharing.

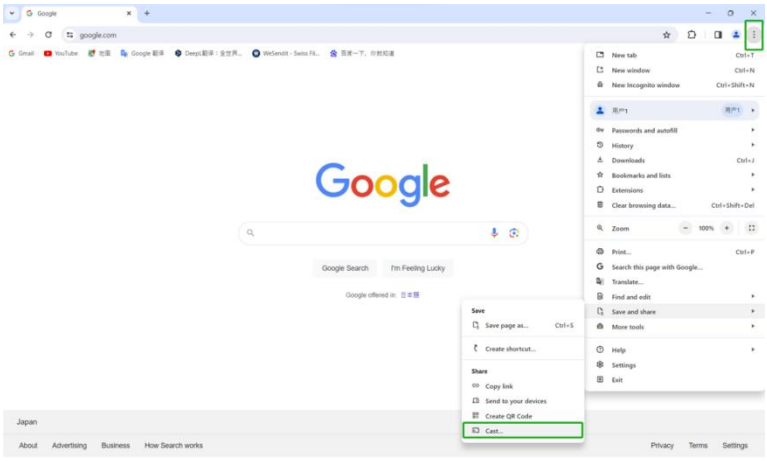
5. Click again the button “Share Screen” to stop mirroring.



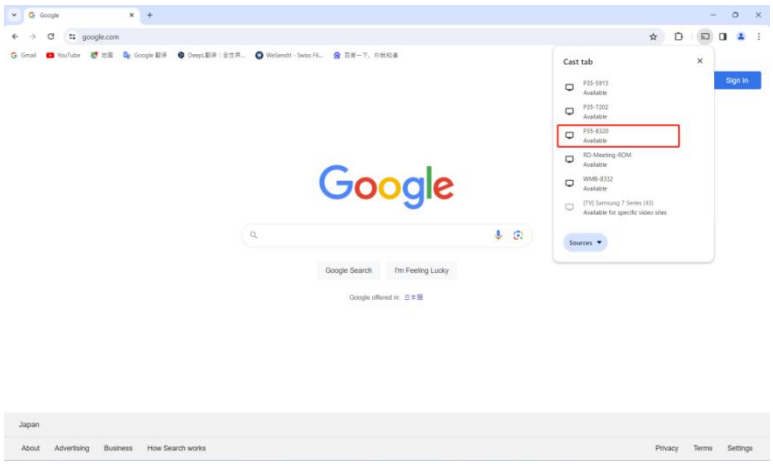
5.3.6 Screen Sharing using Chromecast

- **PC**

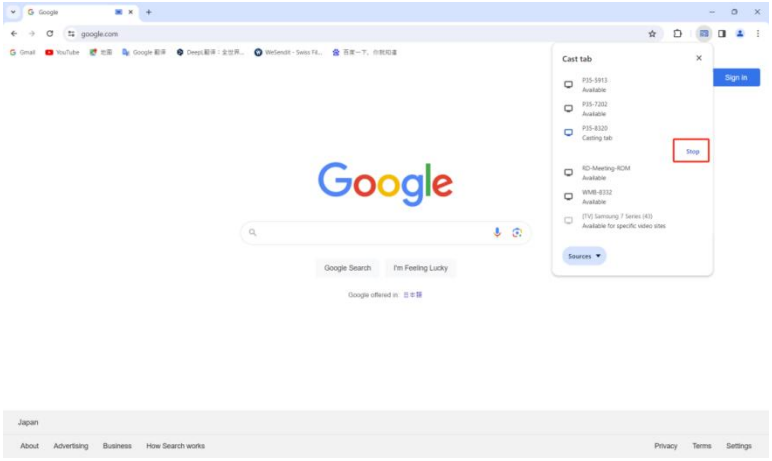
1. Connect the PC and BYOM-2 on the same network.
2. Open Chrome browser.
3. Click “cast” to connect Chromecast function.



4. Click BYOM-2 SSID to start sharing content.



5. Click BYOM-2 SSID again to stop sharing content.

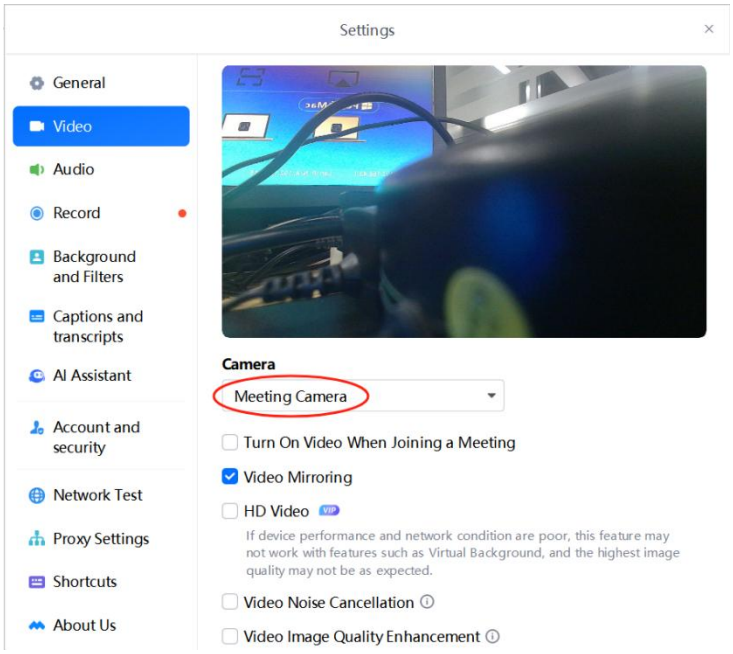


5.4 Wireless Conferencing Mode

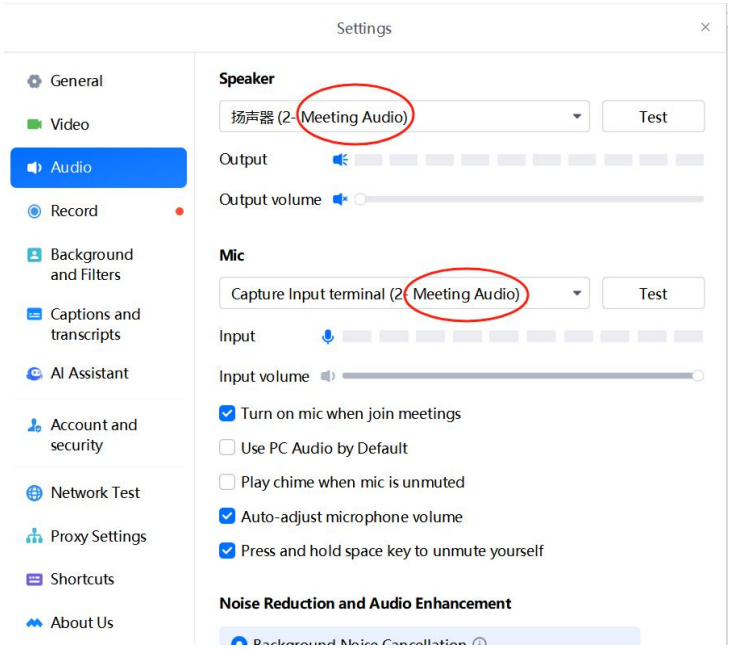
BYOM-2 allows to conduct a video conference using the room USB conferencing devices over WiFi.

5.4.1 Wireless Conference via transmitter

- Pair the transmitter with BYOM-2's USB port
- Connect the transmitter to the computer and then launch Video Conferencing application.
  - Select "Meeting Camera" as video device:

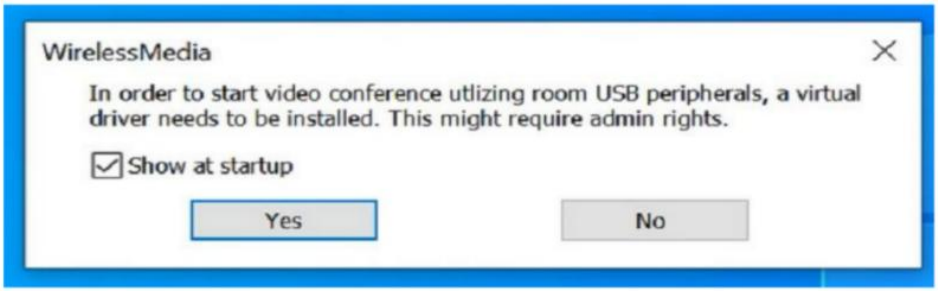


  - For Speaker & Microphone, select "Meeting Audio".

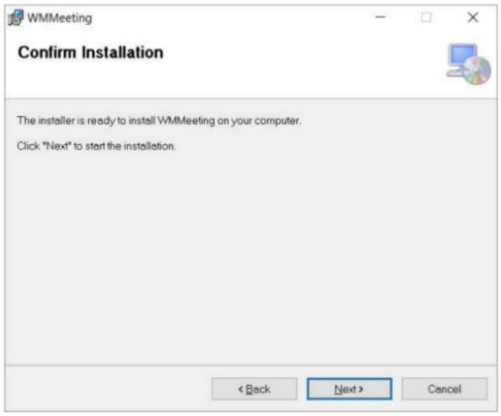


5.4.2 Conference via WirelessMedia application

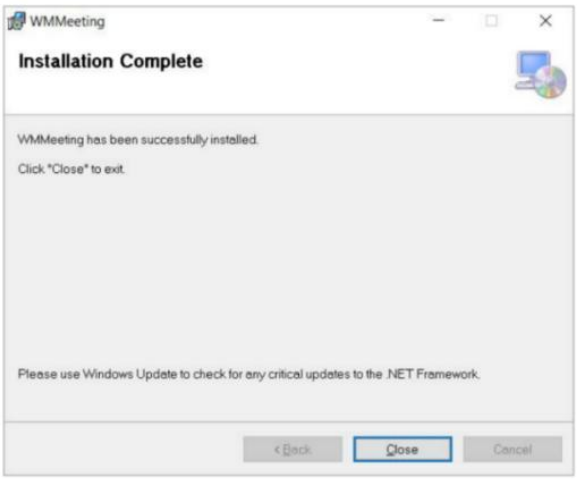
1. WMMeeting virtual driver needs to be installed in the PC to support USB over Wifi.
   - When runs the WirelessMedia application for the first time or connect to the transmitter for the first time, a prompt to install the driver will pop up.



   - Click “Next” button to continue installation.



   - Click “Done” button to finish the installation



Note:

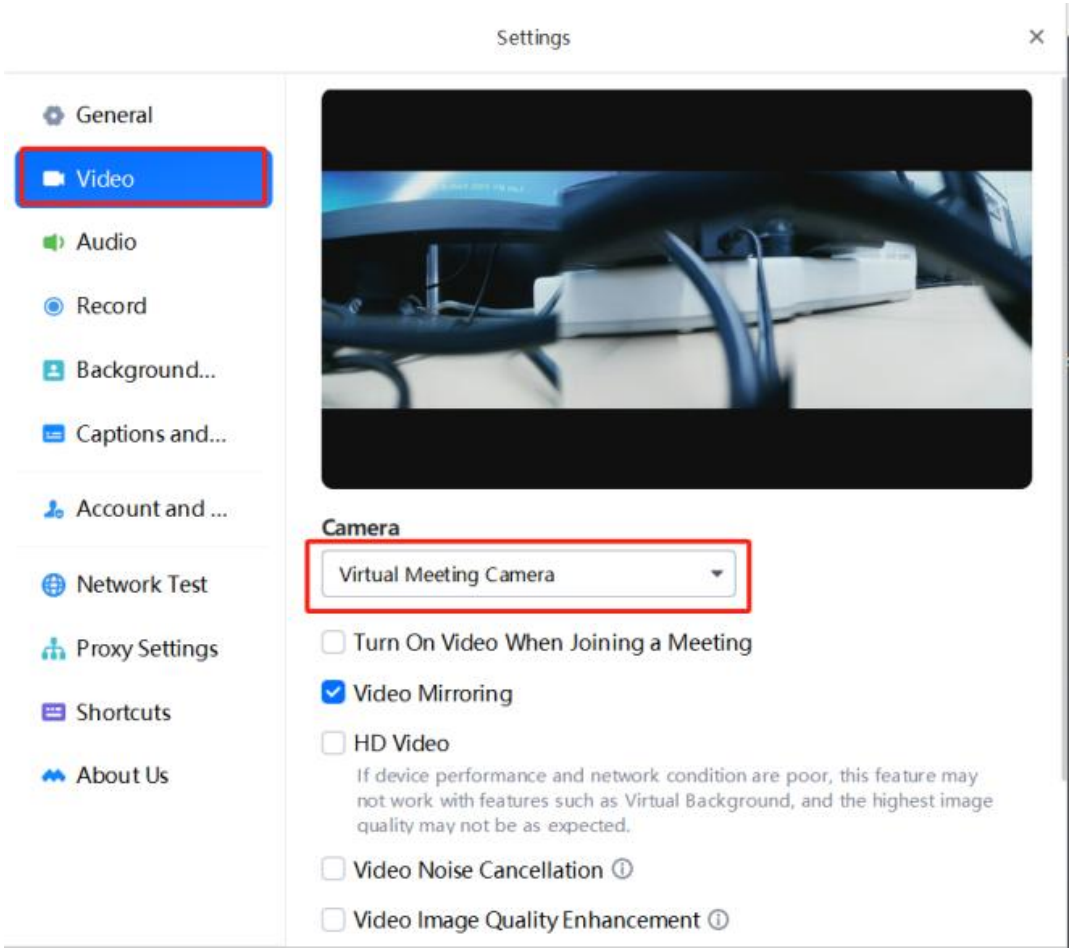
Users only need to install the driver for the first time.

2. Connect the USB conferencing devices to the BYOM-2 USB ports. Camera and microphone icons will appear on WirelessMedia control bar.

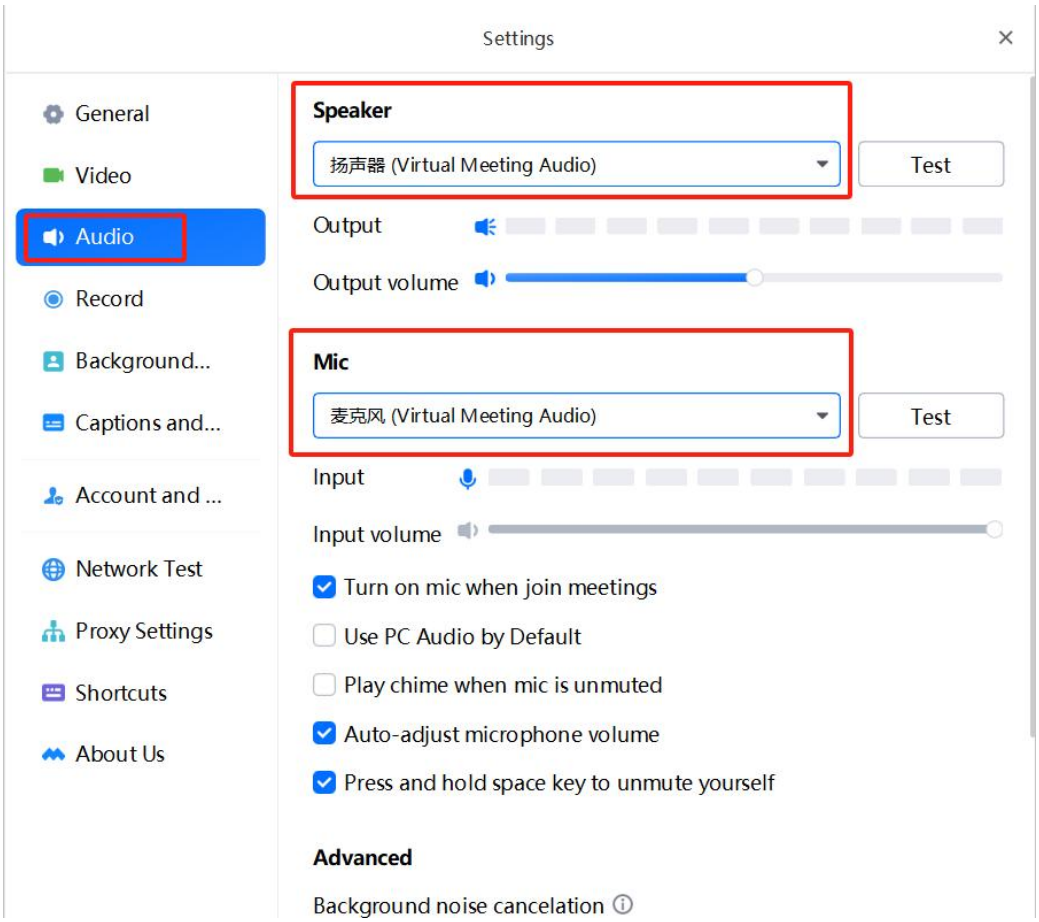
   - **White icons**: indicate the USB camera and speaker/mic are connected.
   - **Green icons**: indicate the USB camera and speaker/mic are connected and in use by any given application.

3. Launch Video conferencing application.

   - Select “Virtual Meeting Camera” as video device.



- For Speaker & Microphone, select “Virtual Meeting Audio”.



4. Clicking “Ready to share” button in WirelessMedia application will start wireless conferencing sharing.

5. Display content sharing to remote, local screen content including annotations and whiteboard can be shared to remote participants over video conference.

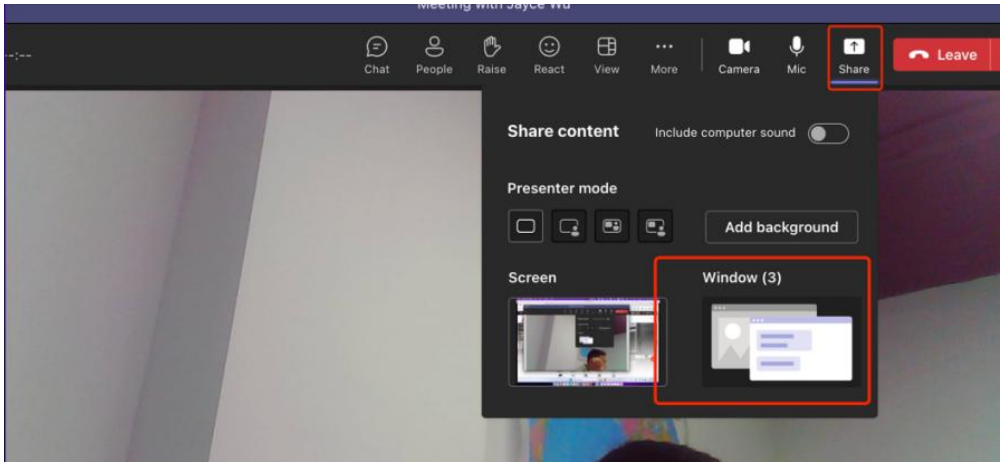
- Open WirelessMedia App in the background and click the screen capture button

Note:

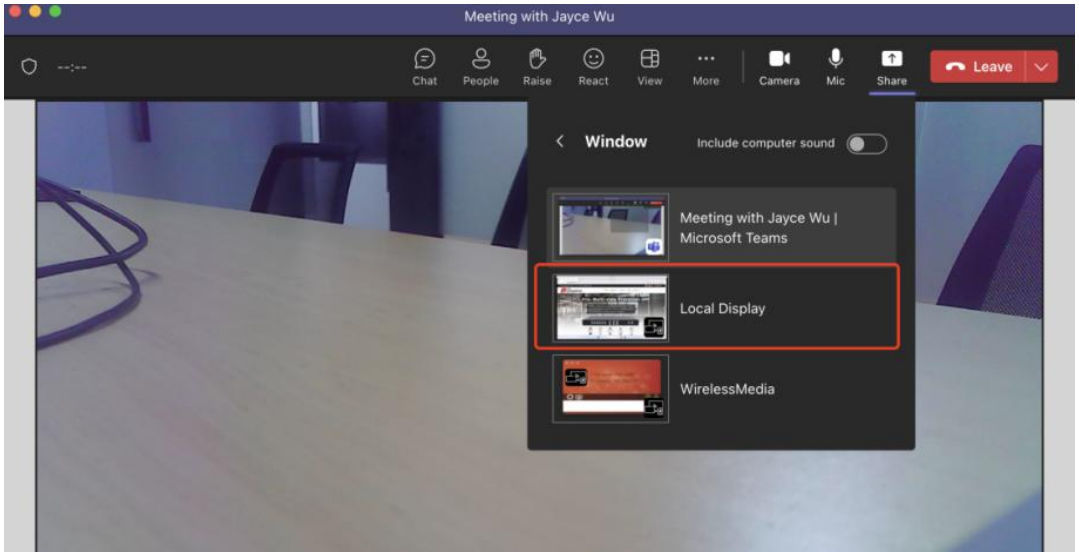
It will not work when the number of screen casts exceeds 2.

- A window appears that captures the content on the screen.

- Return to the VC app like Teams, click the "Share" button and then click "Window"



- Select "Local display" so remote participants can see the shared content on the local screen.

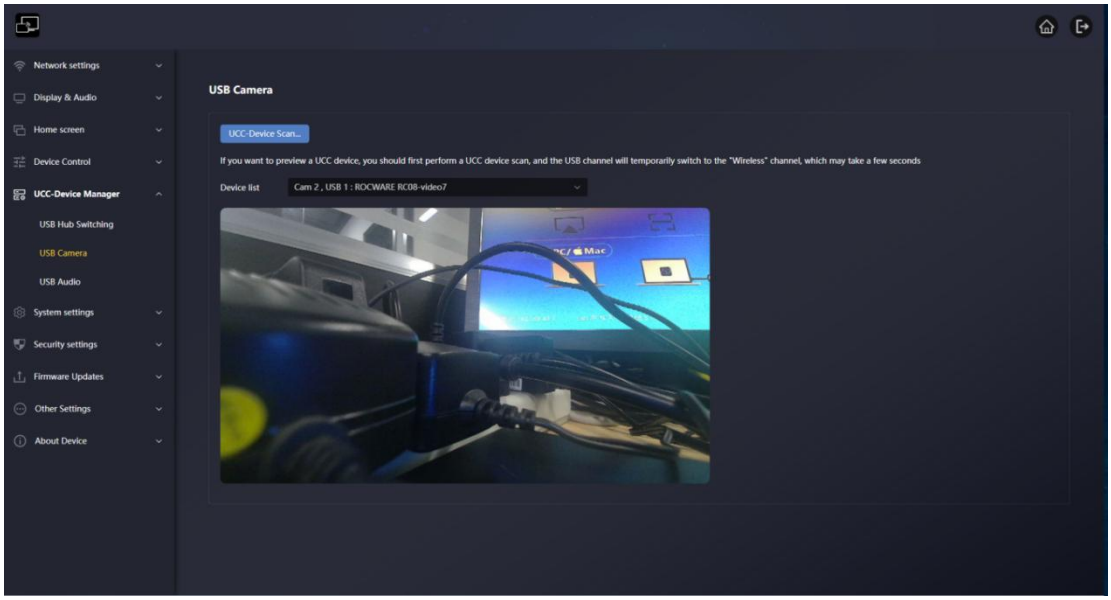


Note:

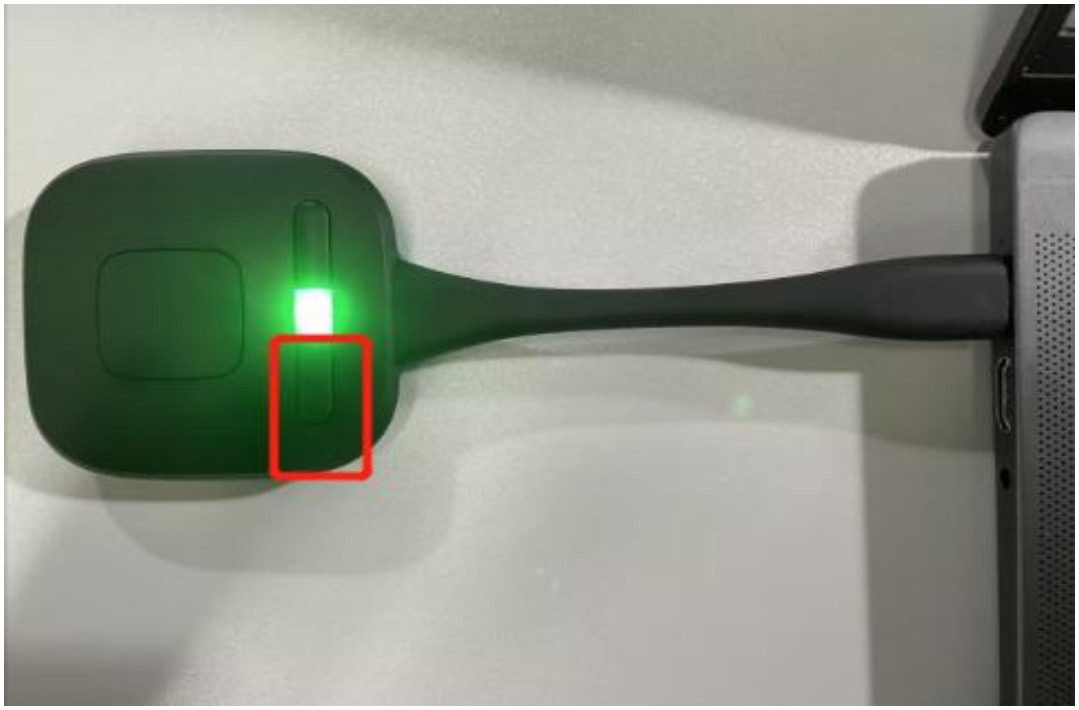
>> When use applicaiton WirelessMedia, you need make sure BYOM-2 and laptop are in the same network and the network can access internet.
>> You need make sure now the USB hub is switched to the wireless source.

5.4.3 Switch cameras during wireless meeting

- Switch via Web GUI. Click UCC-Device Manager > USB Camera, then it can select cameras from the device list and preview them.



- Switch by right-pressing button on the transmitter.



- Switch the camera through the WirelessMedia application, click the camera icon.

Note:

>> If you connect 2 cameras, at least 1 of them need be connected with USB port 1.

>> The camera switching feature is only for wireless conferencing, not working with wired USB-B room PC mode.

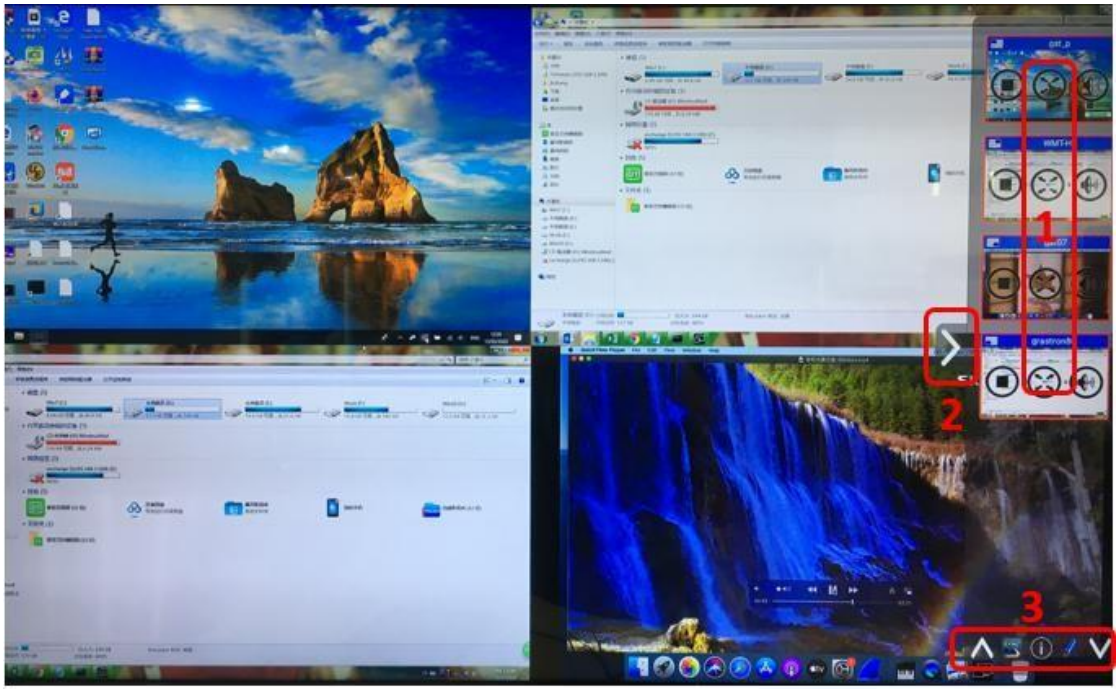
5.5 Moderator Preview Window

BYOM-2 includes a moderator preview window that will let the user choose which of the online devices is displayed on the main screen, turn on and off wireless casting on any device or control volume playback.

In order to show, hide or manage moderator tab, a USB HID compatible device connected to the BYOM-2 base unit is necessary (Touchscreen, mouse…).

Preview windows of all connected transmitters, WirelessMedia app users and Airplay / Miracast / Chromecast screen sharing devices will appear on the tab. Various window prefixed layouts can be selected on Moderator section of WEB settings.

Five users are allowed to present simultaneously and 14 more can be connected to BYOM-2 base unit in standby.



Moderator Preview Control Buttons:

1		Click to start transmission.
		Click to stop mirroring the current participant.
		Click to make this device full screen on main screen.

		Click to adjust the volume of connected participant.
2	Arrow to show moderator tab.	
3	Whiteboard and Annotation. For further details, see below.	

5.6 Whiteboard & Annotation

Whiteboard and Annotation requires an USB HID compatible device, such as interactive white board, touch screen or mouse. There are two different modes;

5.6.1 Whiteboard

A white board is brought up that will let the user to write notes, draw content. It allows different figures, colours and background. To start Whiteboard mode, click on the Home Screen.

Use the toolbar to select one of the following functions.

ID	Icons	Function
Tool bar 1		Add an empty page.
		Delete current page.
		Display previous or next page.

Tool bar 2		Undo: one step backward in changes.
		Redo: one step forward in changes.
		Erase part of drawings or annotation, change diameter by a longer tap.
		Clear the entire drawing/writing on the screen.
		Pen allows writing/drawing in different colours.
		Draw basic geometric shapes.
		Select colour of board, the drawing will be kept.
Tool bar 3		Will pop up, when “Pen” or Draw shape or Select colour of board is selected, for individual change of size of Pen, Shape or colour.
Tool bar 4		Save the current screenshot on local storage (PNG+WMN).
		Close Whiteboard to go back to Home Screen, actual project can be saved on local storage (WMN).
File options		• Open WMN-file from local storage and continue/edit an older project. • New project. • Save as WMN on local storage in unit, it will be erased after POWER-OFF. • Import from U disk stored project (WMN). • All pages are saved as PDF on local storage. • Clear history, delete all files on local storage.

5.6.2 Annotation

Allows the user to draw or write annotations in overlay within the presented content of the active sharing devices. It allows different figures, colours, and background.

To start Annotation mode, click it on the Home Screen.

Use the toolbar to select one of the following functions.

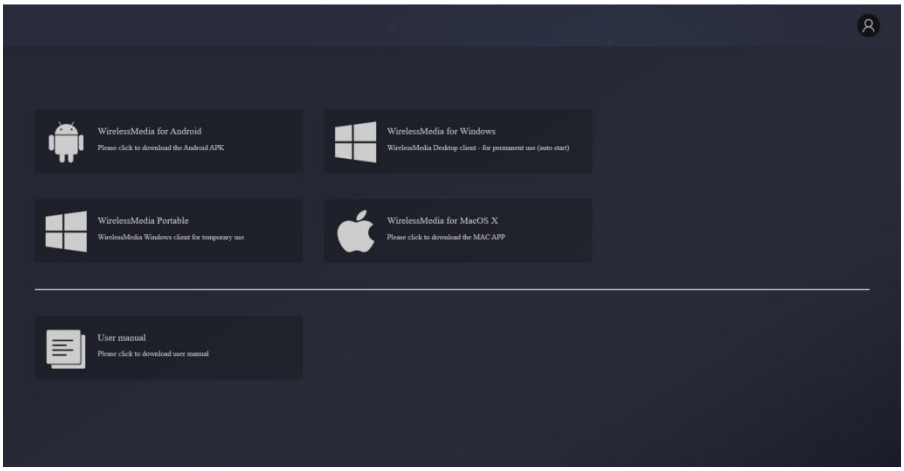
ID	Icons	Function
Tool bar 1		Undo: one step backward in changes
		Redo: one step forward in changes
		Erase part of drawings or annotation, change diameter by a longer tap
		Clear the entire drawing/writing on the screen
		Pen allows writing/drawing in different colours
		Draw basic geometric shapes
		Select colour of board, the drawing will be kept
		Close Whiteboard to go back to Home Screen, actual project can be saved on local storage (WMN).
		Save the current screenshot on local storage (PNG).

- **Download the Drawings to Connected Users**
  When saving a screen of Whiteboard or Annotation modes into internal storage of BYOM-2, scanning the QR code or entering the given IP address in a browser will allow the user to download the saved files.

Data can be copied to a USB disk and after connecting it to the BYOM-2, it can be imported into the Whiteboard section with "Import from U disk".

6. WebGUI SETTING MANAGEMENT & CONFIGURATION

To access BYOM-2 WEB settings it is necessary to enter the base unit IP address in an internet browser. The first page displayed will let the user download WirelessMedia app for all platforms.

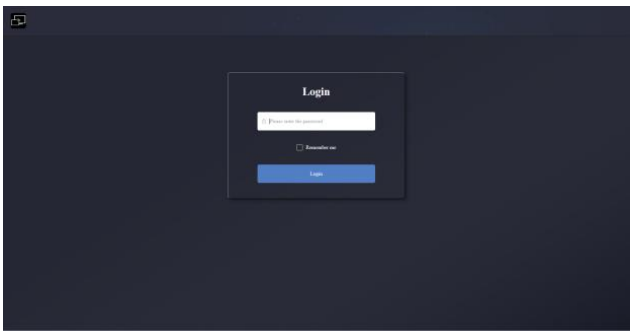


If BYOM-2 is on “Wireless direct Mode”, first access BYOM-2 SSID and enter current password on Home Screen page. IP address is 192.168.43.1. For further information on how to configure network, see chapter Network Settings.

1. Click on the top right corner to enter into WEB Settings menu.

2. Login page will appear.

   >> **Default password: admin.**



Entering Login credentials will give access to the main WEB settings page where it will be able to configure Network settings, Display & Audio, Home screen, Device Control, UCC-Device Manager, System settings, Security settings, Firmware upgrade, Other settings, About device.

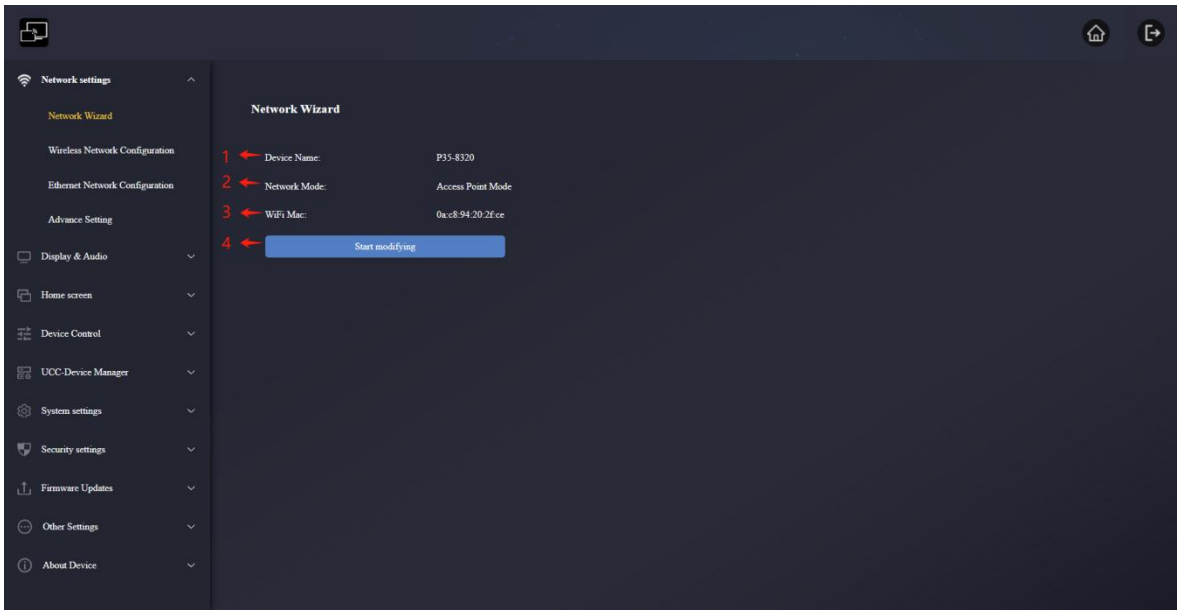
6.1 Network Settings

To take the full benefit of BYOM-2 features, it is important to configure and integrate the base unit network settings according to the needs of the application required. BYOM-2 includes two independent wired LAN and a WiFi network card.

>> The following sections can be accessed in Network Settings page:

6.1.1 Network Wizard

This section allows the user to set the network working mode of

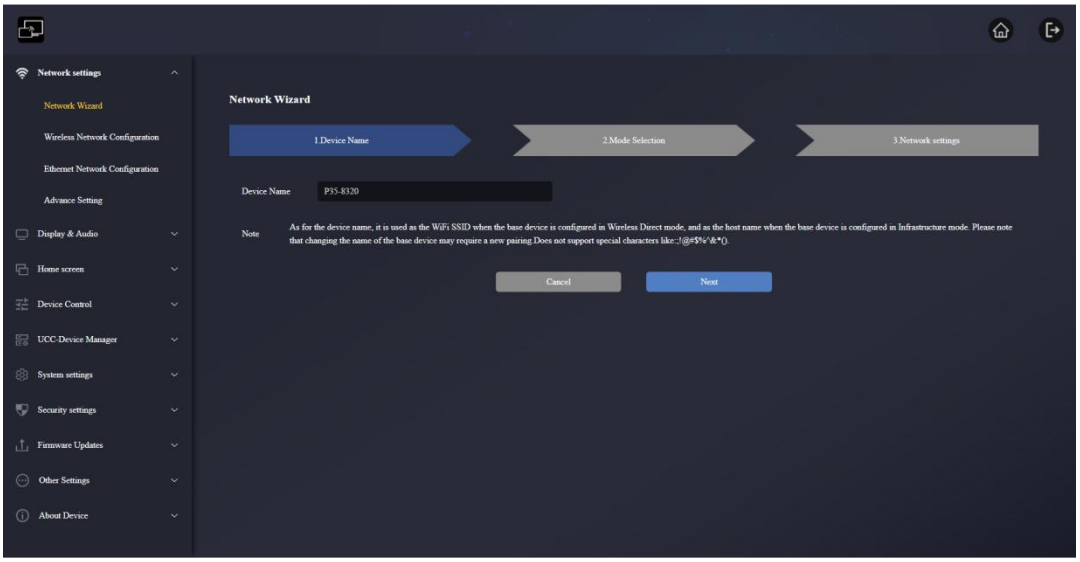


1. **Device Name**: this parameter indicates current name assigned to BYOM-2.
2. **Network Mode**: this parameter tells the user which network working mode is currently configured.
3. **WiFi Mac:** this parameter shows the MAC address assigned to the BYOM-2 network card.
4. **Start modifying**: Click to enter a network setup wizard is available to change network working mode to properly integrate BYOM-2 into an existing wireless infrastructure.

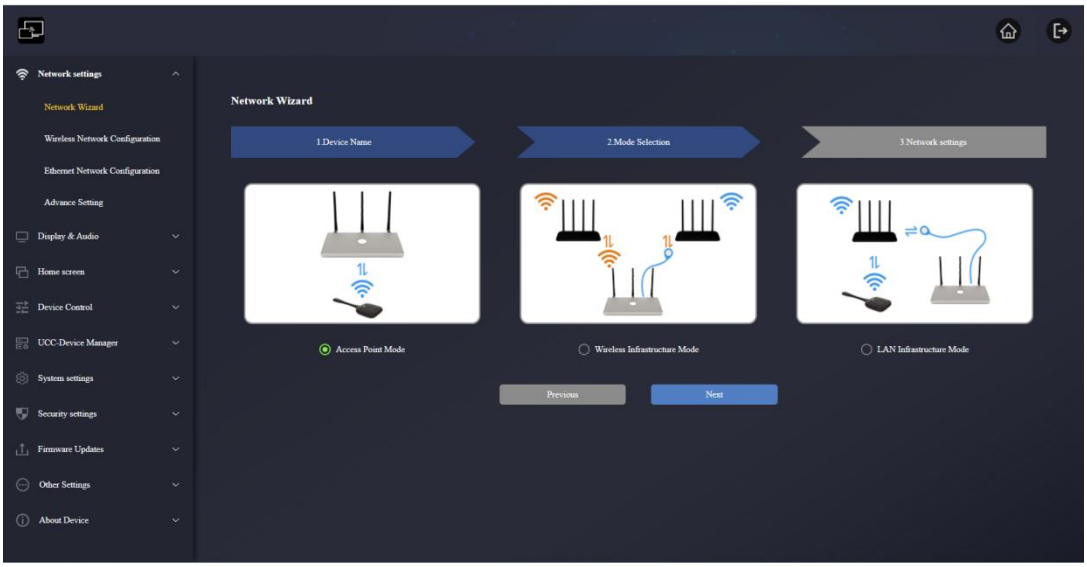
Any change to Network mode will need WB-2H and WB-2C to be paired again with BYOM-2 base unit.

6.1.1.1 Network Modes Configuration

1. **Device Name:** Enter a device name for the Base-unit BYOM-2. Allowed characters are: "a-z", "A-Z", "0-9", "-“, “_" and “space “, then Click “Next step”.



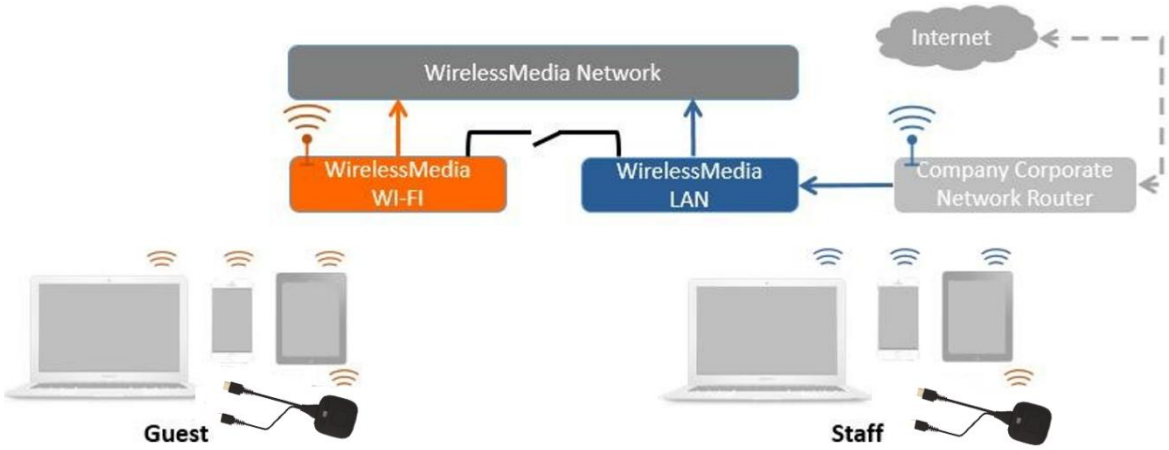
2. **Mode Selection**: Select the desired network mode and click “Next Step”.



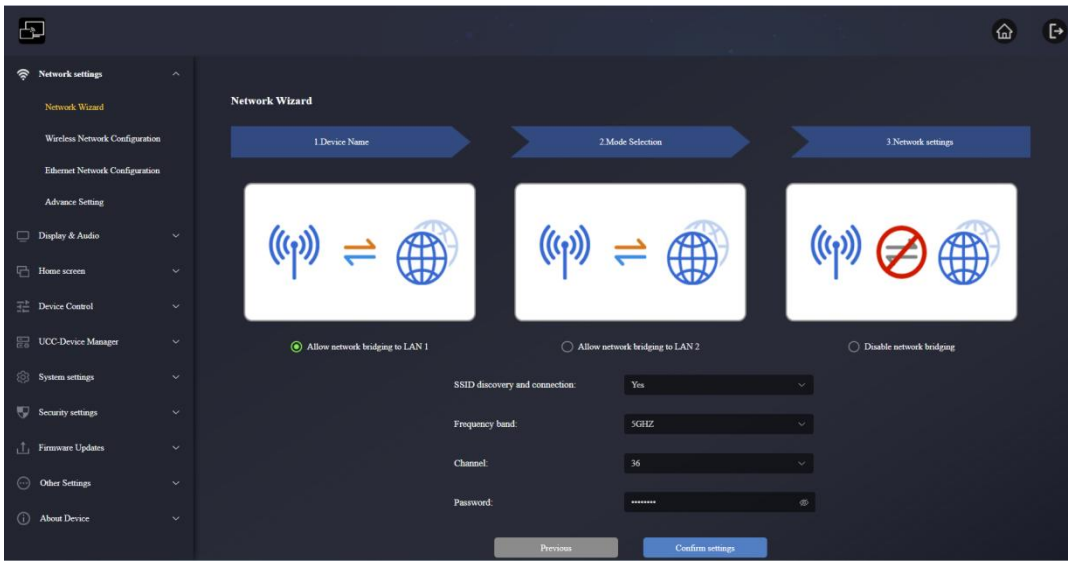
- **Wireless Direct Mode**

BYOM-2 unit starts up in the default standalone “Wireless direct mode” configuration after a factory reset or the first time it’s being used. The base unit creates its own wireless access point, which all devices need to connect in order to share content with base unit. This option is best for temporary operation, small installations, and rooms without network access or networks that do not allow network access for Guests, due to strict security concerns, and are completely separated from the corporate network.

Under this mode, BYOM-2 can work without any other wireless network configuration. Just pair WB-2H / WB-2C with BYOM-2 base unit, connect to BYOM-2 internal hotspot and open WirelessMedia app or use Airplay, Miracast or Chromecast wireless casting protocols.



1. **Click "Next step" to Set up WiFi access point**.



- There are **three ways of connecting to Internet** through BYOM-2 in "Wireless Direct Mode":
  - **a) Allow internet access (bridging) via LAN 1**: the source device is able to connect to Internet if LAN1 port is available.
  - **b) Allow internet access (bridging) via LAN 2**: the source device is able to connect to Internet if LAN2 port is available.

c) **Disable internet access**: the source device is not able to connect to Internet if this mode is activated. Sometimes it is for safety requirements.

- **SSID discovery and connection**: Select “Yes” to make BYOM-2 SSID visible and “No” to hide it.
- **Frequency:** Click to select 2.4 GHz or 5 GHz WiFi frequency. Default is 5 GHz.

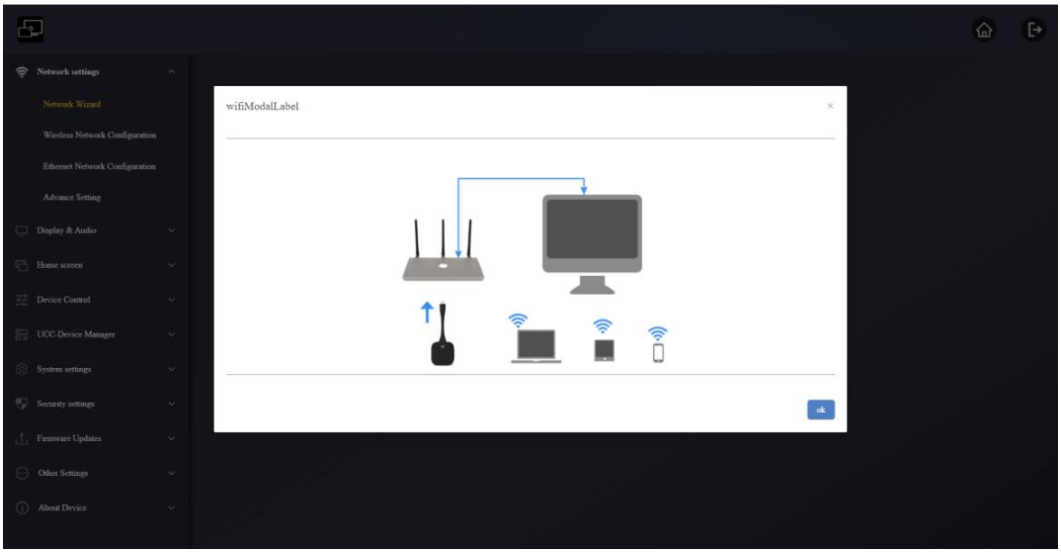
- **Channel**: Click to select the WiFi channel. Default is 5 GHz, Auto. If the WiFi channel is changed, no new pairing of the wireless transmitter is necessary.
  - **2.4 GHz frequency band**: channels 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.
  - **5 GHz frequency band**: no need to choose 5G channel, system will choose proper channel automatically. Default is 5 GHz, channel: 36.
  - **Default channel (USA&China area)**: 36, 40, 44, 48, 149, 153, 157, 161.
  - **Default channel (European area)**: 36, 40, 44, 48.

  Note:

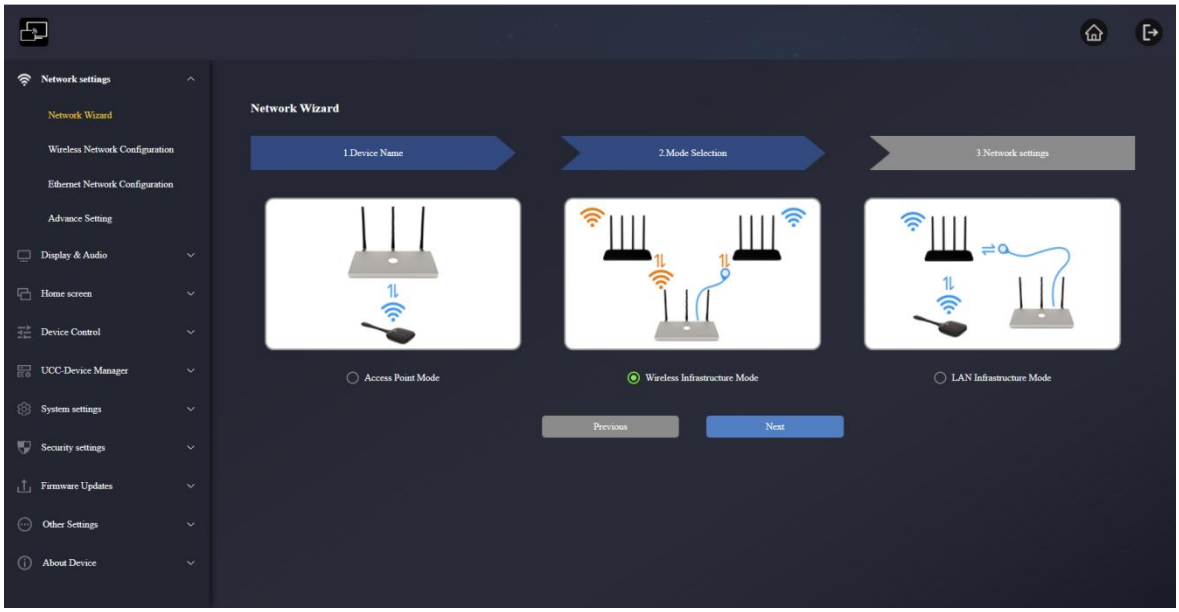
  Since channel 36 is supported all over the world, the default channel is 36.

- **Password**: Click in the input filed to fill out the appropriate password with length of 8 characters.

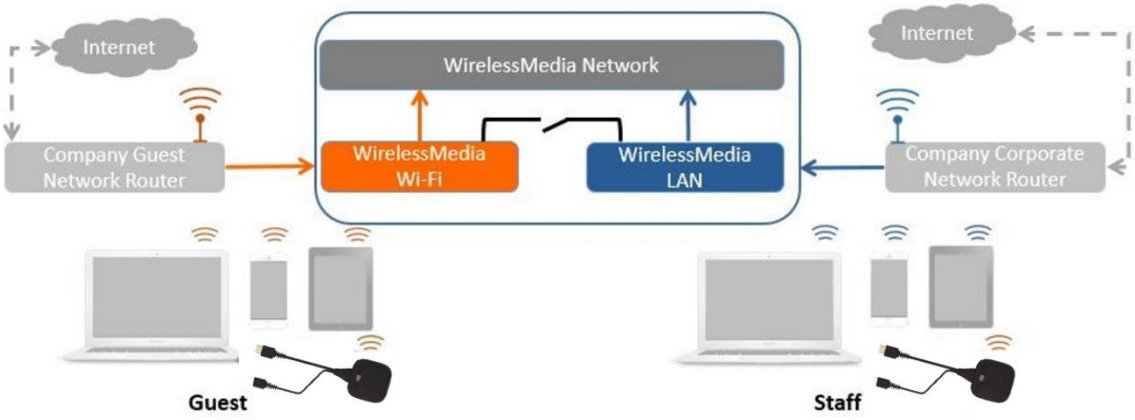
2. Click “Submit settings” to finish configuration. Then, pair wireless transmitters with the BYOM-2 again.



- **Wireless Infrastructure mode**



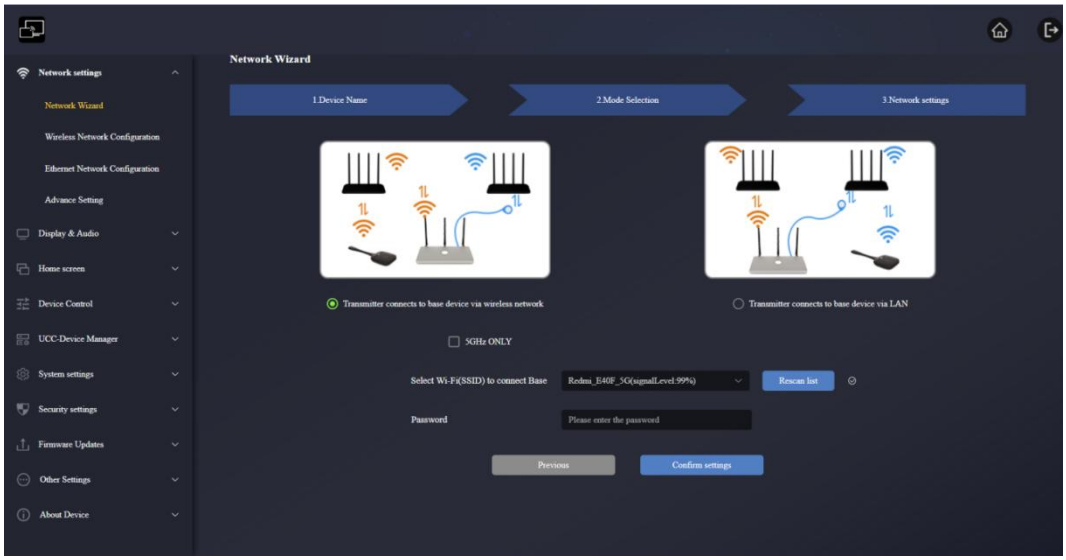
BYOM-2 can simultaneously connect to a wired and a wireless network. The segmented dual network of BYOM-2 provides two separated routing ways to connect to the base unit at the same time. This is very useful for organizations, which have a wireless “Guest” network for external visitors and a wired “Staff” network for their employees. Guest-users are not able to access any resource on the internal network of the company. Guest and Staff have internet access.



Under this mode, users will be able to present with WB-2H / WB-2C / Native Wireless protocols (Airplay, Miracast, Chromecast). WB-2H / WB-2C will be connected to the WiFi access point of “Guest” network, which in turn is connected to the internal WiFi access point of BYOM-2. (They can also be configured to connect to the enterprise’s access point.) Mobile devices users will stay connected to their current network thus have access to their normal corporate environment as well as Internet access.

>> Transmitter conncts to base device via wireless network

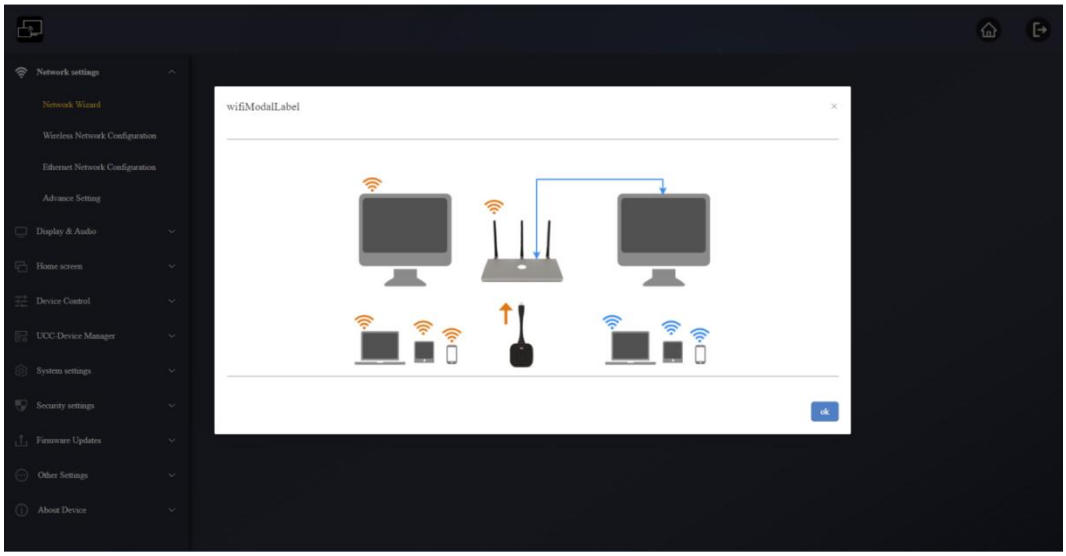
1. Click “Next” to enter the configuration of this the network mode.



2. Choose “Transmitter conncts to base device via wireless network”, a wireless network which is separate from the company LAN network for guest users.

   - **Select SSID**: Choose a wireless network to connect to BYOM-2 for guest.
   - **Password**: enter password to connect the BYOM-2 to the guest network.

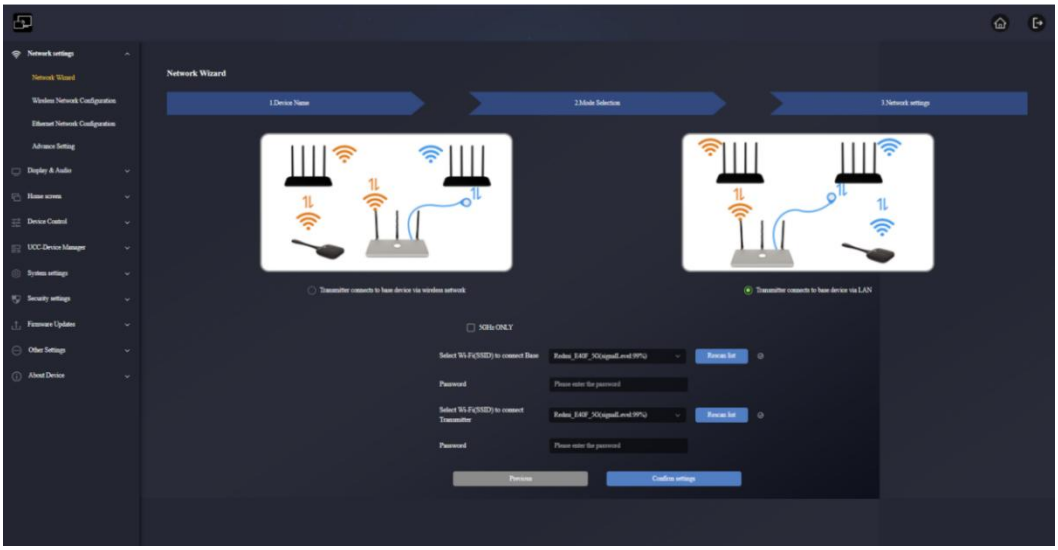
3. Click “Confirm settings” to finish configuration. Then pair wireless transmitters with the BYOM-2 again.



>> Transmitter connects to base device via LAN

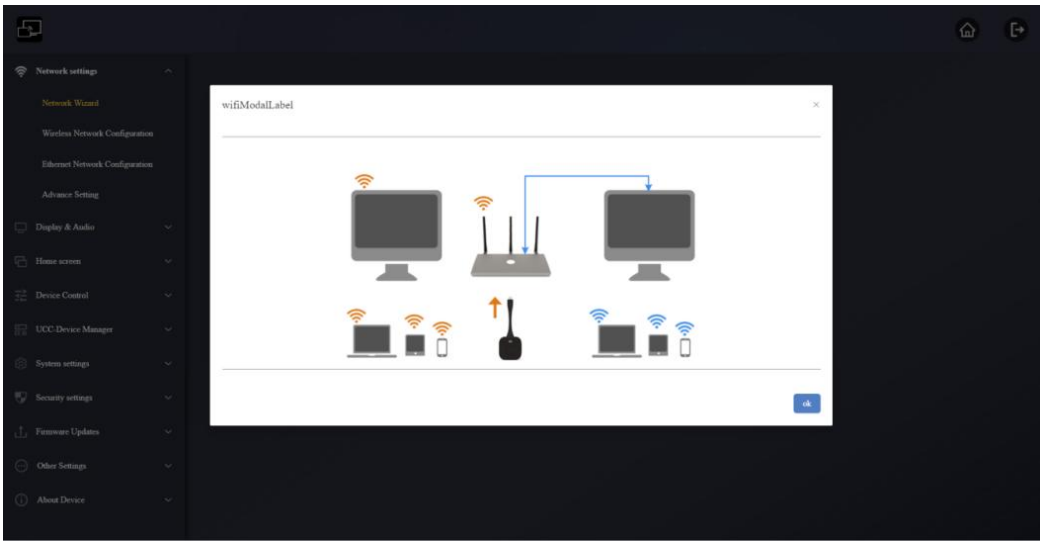
Choose a wireless network for guests and a LAN network for staff.

1. Click “Next” to enter the configuration of this the network mode.

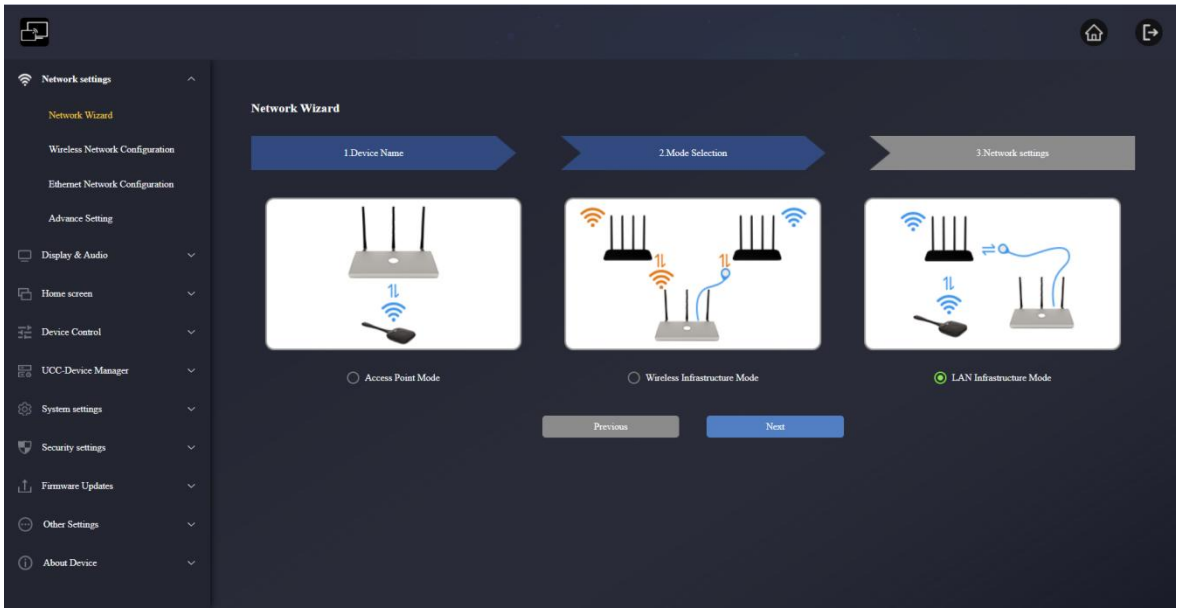


2. Choose “Transmitter connects to base device via LAN”, transmitter is for staff use.
   - **Select Wi-Fi(SSID) to connect Base:** Choose a wireless network to connect to BYOM-2 for guest.
   - **Password:** enter password to connect the BYOM-2 to the guest network.
   - **Select Wi-Fi(SSID) to connect transmitter**: choose the same LAN network which BYOM-2 connects, to pair the wireless transmitter.
   - **Password:** enter password of the LAN network.

3. Click “Confirm settings” to finish configuration. Then pair transmitters with the BYOM-2.



- **LAN Infrastructure Mode**

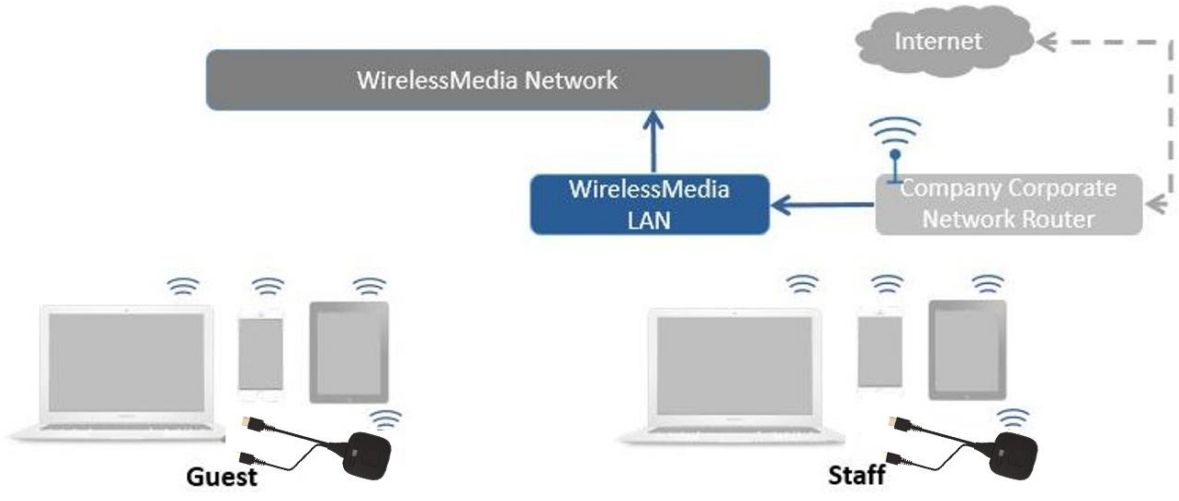


In this configuration the built-in WiFi access point of BYOM-2 is disabled.

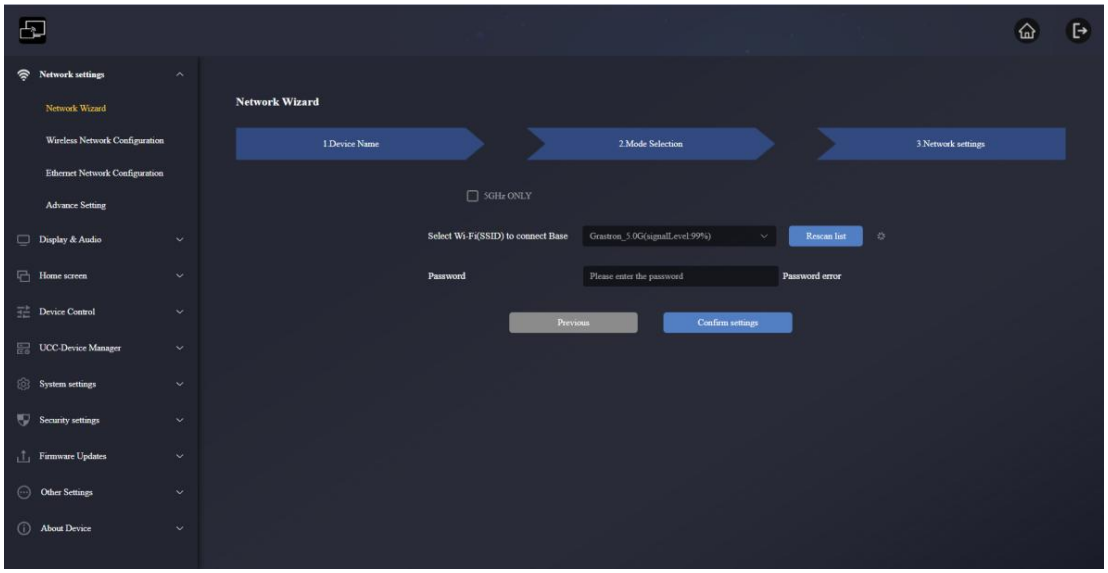
WB-2H / WB-2C and mobile devices can connect to the secured wireless access point of the company network. The BYOM-2 base unit will be connected via network cable to the wired of the company network.

The Staff users will be able to connect to their usual access point of Company network, without the need to change the WiFi as long as both networks are on the same range.

⚠ WB-2H / WB-2C will be automatically paired to the Staff access point, and not to BYOM-2 base unit.

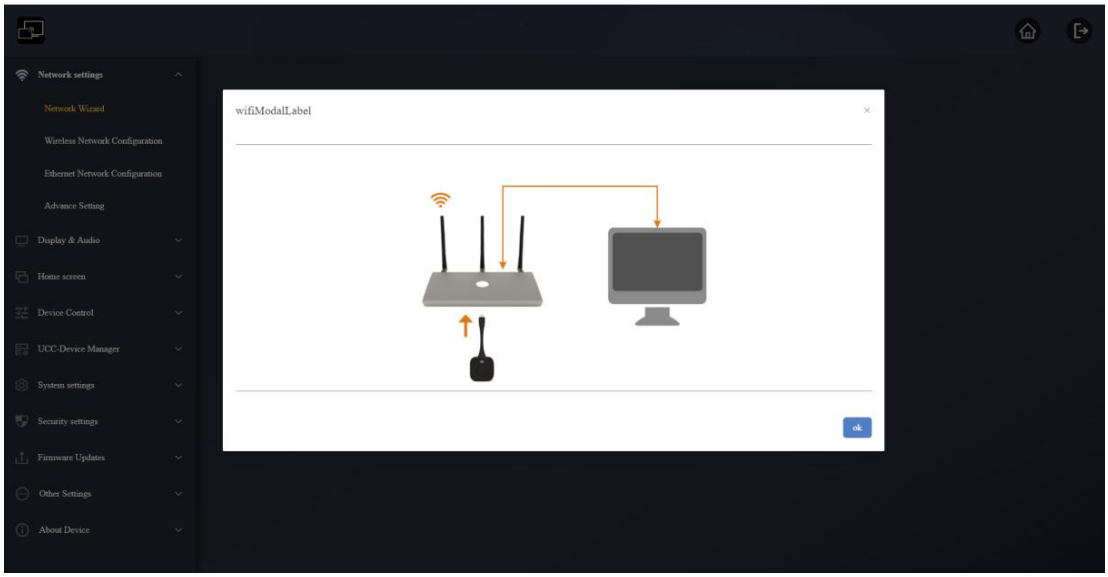


1. Click “Next” to enter the configuration of this the network mode.



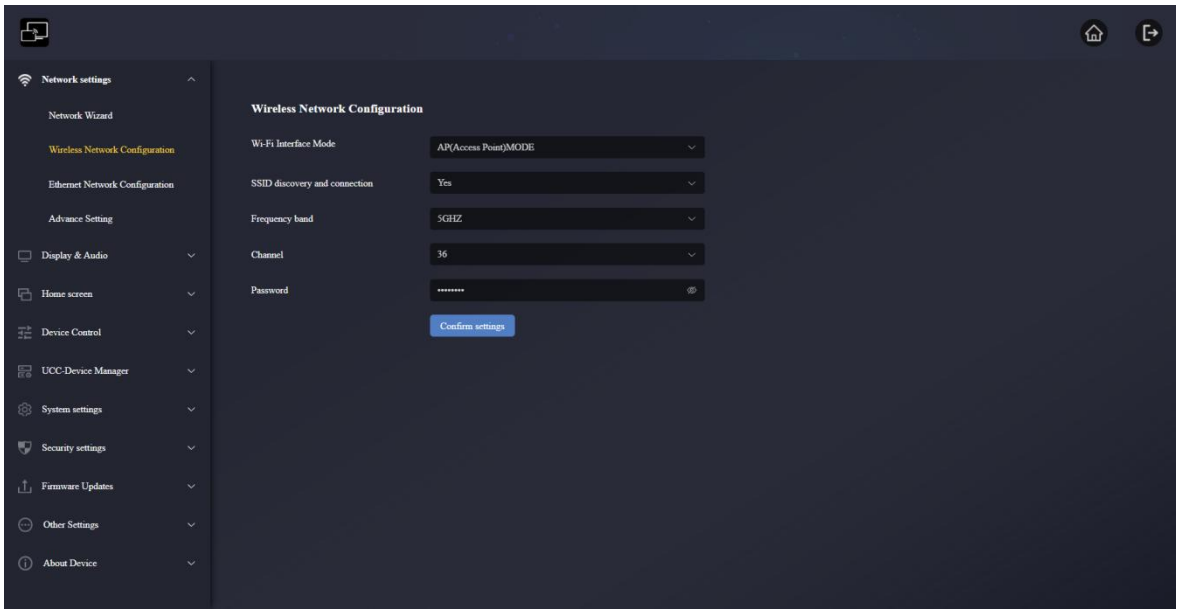
- **Select Wi-Fi(SSID) to connect Base:** Choose a network to connect to BYOM-2 for staff.
- **Password:** Enter password to connect the BYOM-2 to the staff network.

2. Click “Confirm settings” to finish configuration. Then pair transmitters with the BYOM-2.



6.1.2 Wireless Network Configuration

For specific configuration of the three modes on this page, please refer to the operation of setting the three network modes in the previous section "Network Wizard".



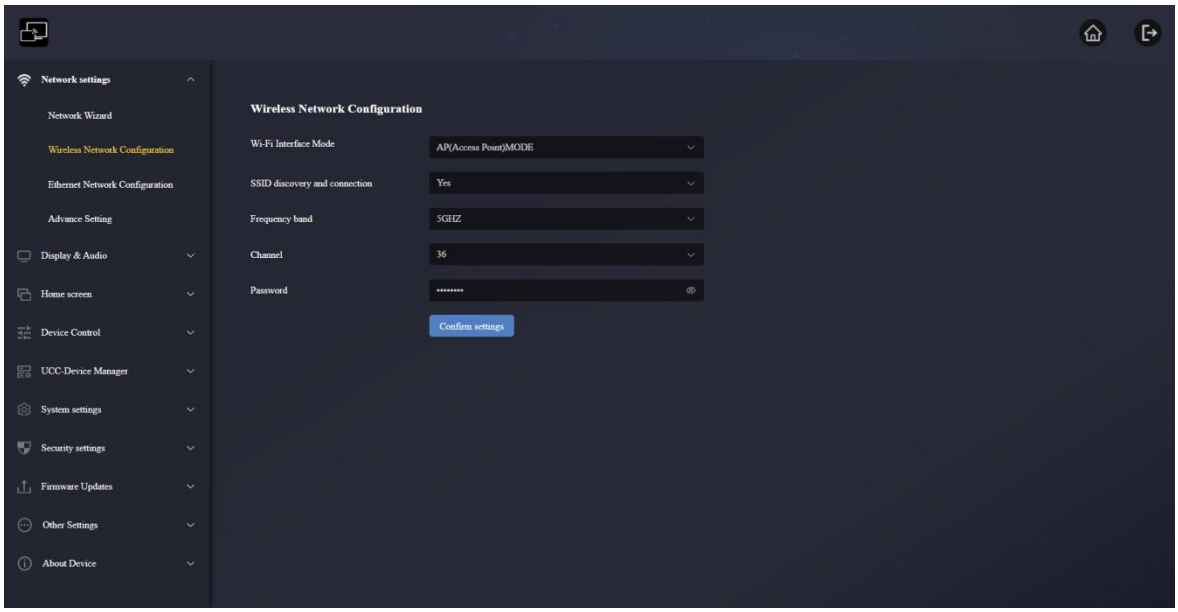
Wi-Fi Interface Mode: AP(Access Point)MODE, STA(Station) MODE, OFF;

It can set the network mode directly on this page: Access Point Mode, Wireless Infrastructure Mode or LAN Infrastructure Mode;

Which network mode is set on the network wizard page, this page will change accordingly; similarly, after the mode is set on this page, the network wizard page will also change the network mode accordingly.

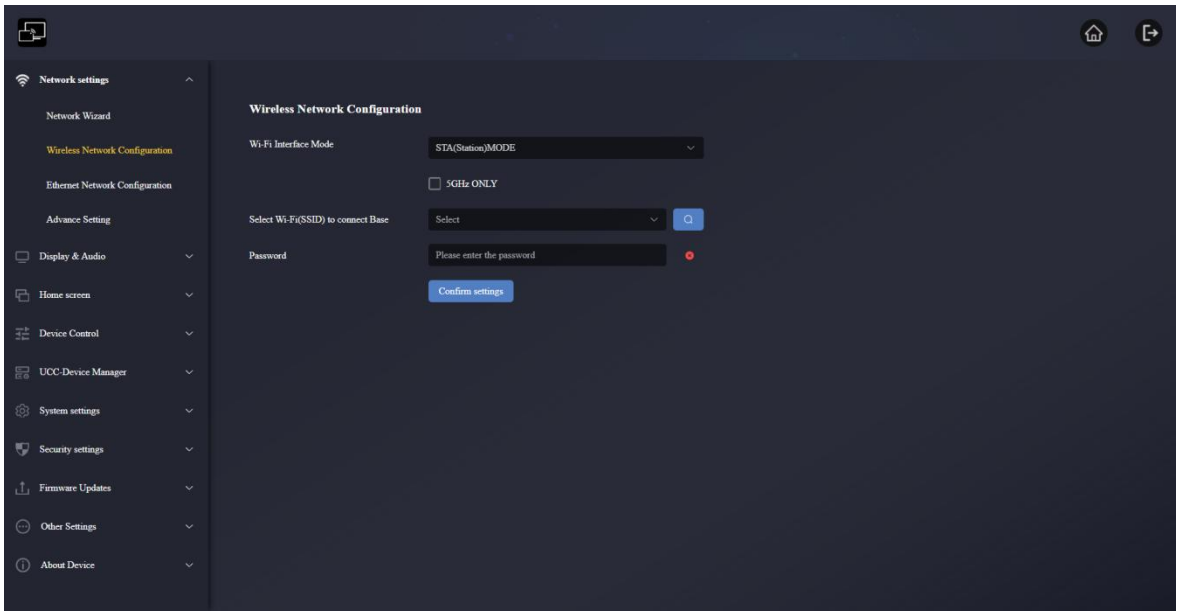
6.1.2.1 AP(Access Point)MODE

When the Network Wizard is set to Access Point MODE, this page will be displayed in AP(Access Point)MODE, you can directly set the options on this page.



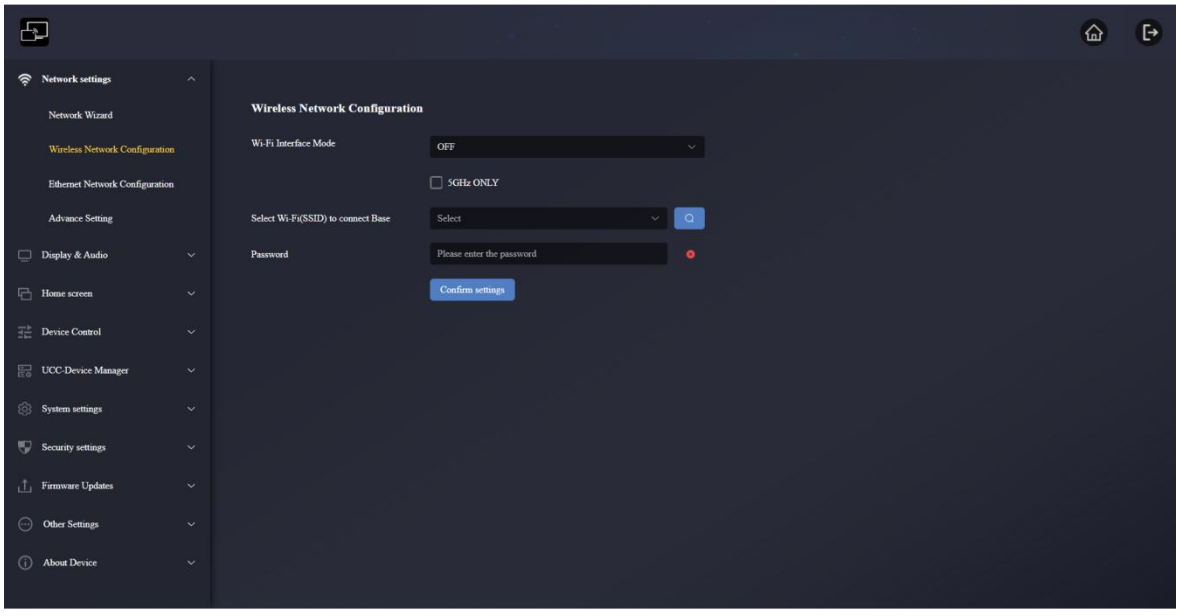
6.1.2.2 STA(Station)MODE

When the Network Wizard is set to Wireless Infrastructure Mode, this page will be displayed in STA(Station)MODE, you can directly set the options on this page.



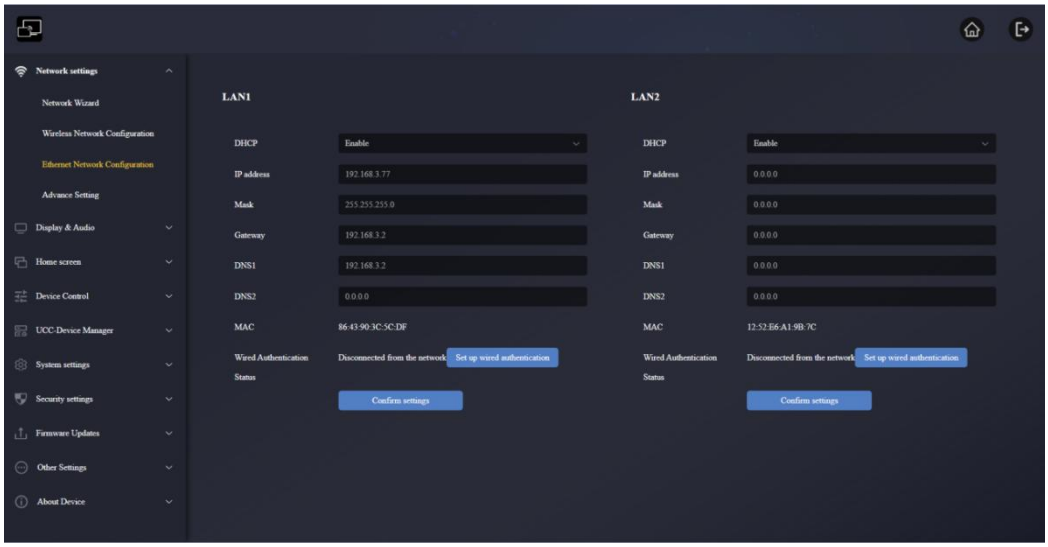
6.1.2.3 OFF

When the Network Wizard is set to LAN Infrastructure Mode, this page will be displayed in OFF, you can directly set the options on this page.



6.1.3 Ethernet Network Configuration

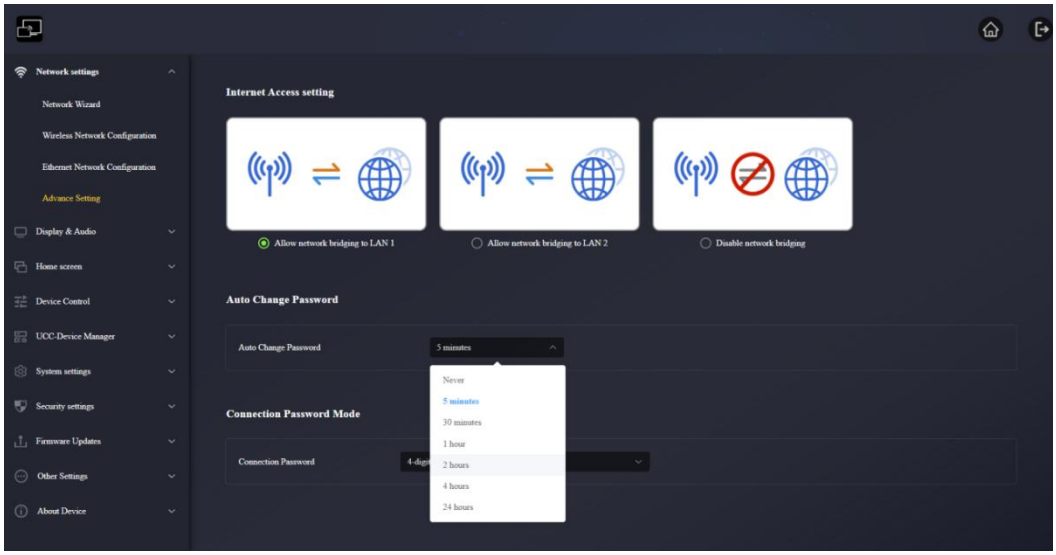
This section will let the user configure the wired LAN 1 and LAN2 settings.



- **DHCP**: this parameter lets the user to enable the automatic assignment of IP address if a DCHP server is present in the network. To configure a fixed IP address, first this parameter should be disabled.
- **Mask**: this parameter lets the user introduce the desired network mask.
- **Gateway**: this parameter lets the user introduce the desired IP gateway.
- **DNS1-2**: this parameter lets the user introduce the desired DNS servers.
- **Wired Authentication Status:** Establish wired authentication (no authentication, EAP-TLS, EAP-TTLS, PEAP).

6.1.4 Advance Setting

When the network mode is Access Point Mode, it can directly change the three ways the BYOM-2 connects to the Internet here.



- **Allow network bridging to LAN1**: Allow the BYOM-2 to access the Internet through LAN port 1.
- **Allow network bridging to LAN2**: Allow the BYOM-2 to access the Internet through LAN port 2.
- **Disable network bridging**: Not allow the BYOM-2 to access the Internet through LAN port.

1. **Auto Change Password**

- **Never**: never change WiFi password. (Even after POWER-OFF condition)
- **5 minutes**: change WiFi password every 5 minutes.
- **30 minutes**: change WiFi password every 30 minutes.
- **1 hour**: change WiFi password every 1 hour.
- **2 hours**: change WiFi password every 2 hours.
- **4 hours**: change WiFi password every 4 hours.
- **24 hours**: change WiFi password every 24 hours.

2. **Connection Password Mode**

- **4-digits password begining with 0000**: The first 4 digits are fixed to 0, and the last 4 digits are random numbers.
- **8-digits password**: 8 digits are all random numbers

6.2 Display & Audio

6.2.1 HDMI

6.2.1.1 HDMI Resolution

Select the resolution at HDMI output of base-unit.

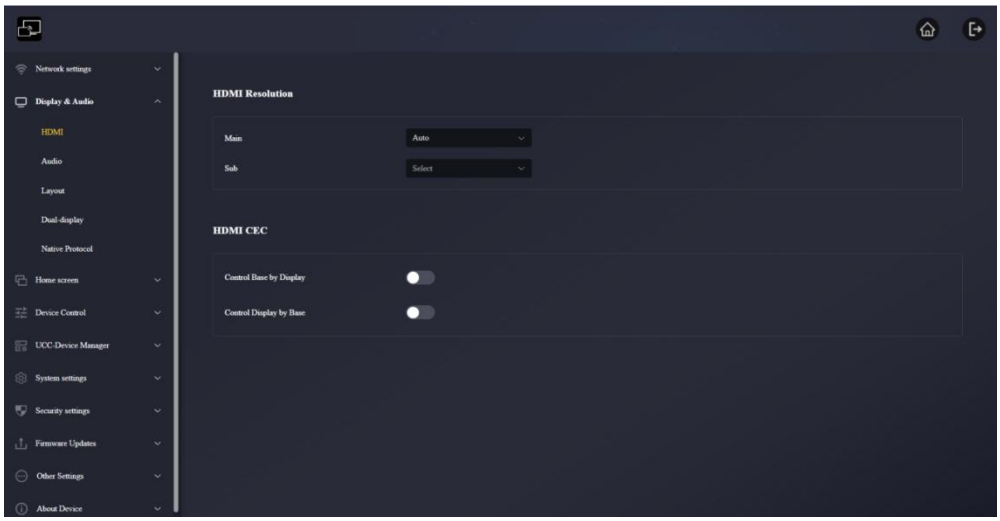
Existing HDMI output resolution as below:

Main

- Auto
- 3840x2160@60Hz
- 3840x2160@50Hz
- 3840x2160@30Hz
- 1920x1080@60Hz
- 1920x1080@50Hz
- 1920x1080@30Hz
- 1280x720@60Hz
- 1280x720@50Hz

Sub

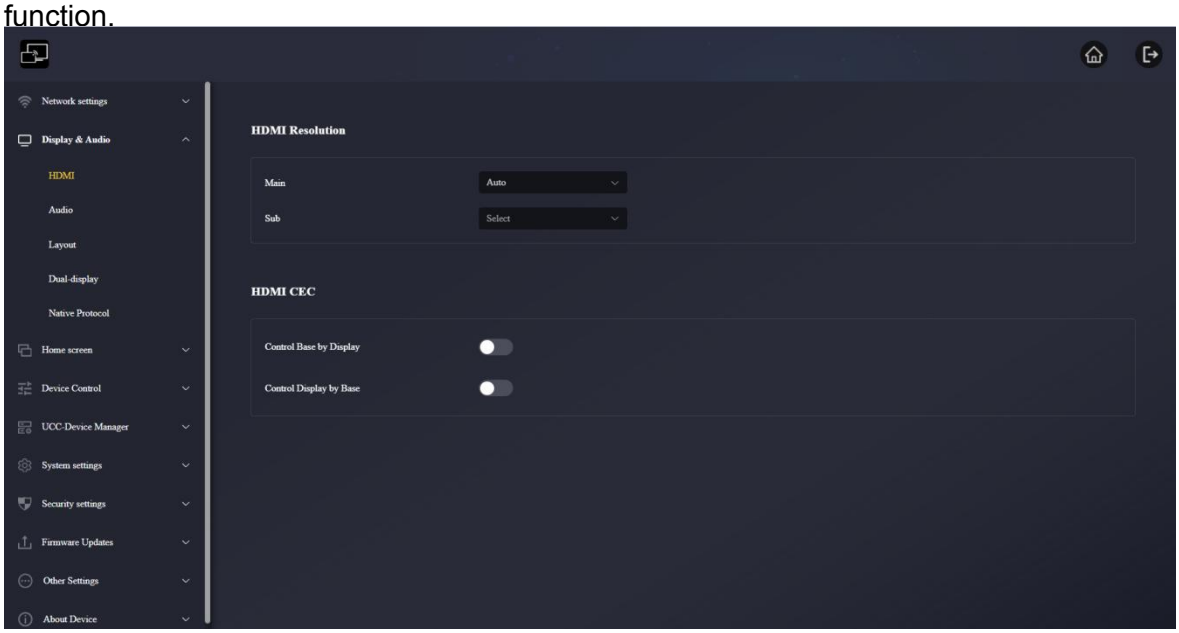
- Auto
  - 1920x1080@60Hz
  - 1280x720@60Hz
  - 1280x720@50Hz



If the display only supports FULL HD, the 4K resolution will not be displayed on the resolution list. The sub screen supports up to 1920*1080P.

6.2.1.2 HDMI CEC

BYOM-2 support CEC function if the connected display support CEC function.



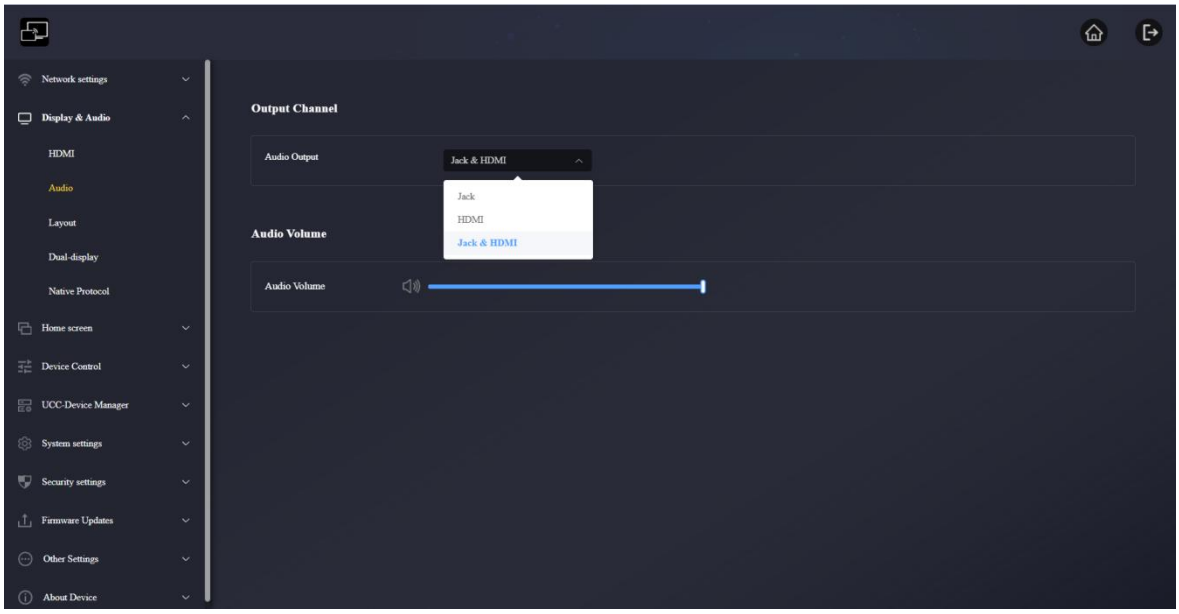
- **Control Base by the display**
  With this option, you can choose whether the connected BYOM-2 base unit automatically enters standby mode or not as soon as the display is turned off.

  - **On:** As soon as the display is turned off, the unit base BYOM-2 will also be auto turned off.
  - **Off (Default)**: The display is turned off but the BYOM-2 will not be auto turned off.

- **Control Display by Base**
  With this option, you can choose whether the display automatically enters standby mode or not as soon as the connected unit base BYOM-2 is turned off.
    - **ON:** As soon as the BYOM-2 is turned off, the connected display will also auto turn off.
    - **OFF (Default)**: Display will not automatically turn off when BYOM-2 is turned off.

6.2.2 Audio

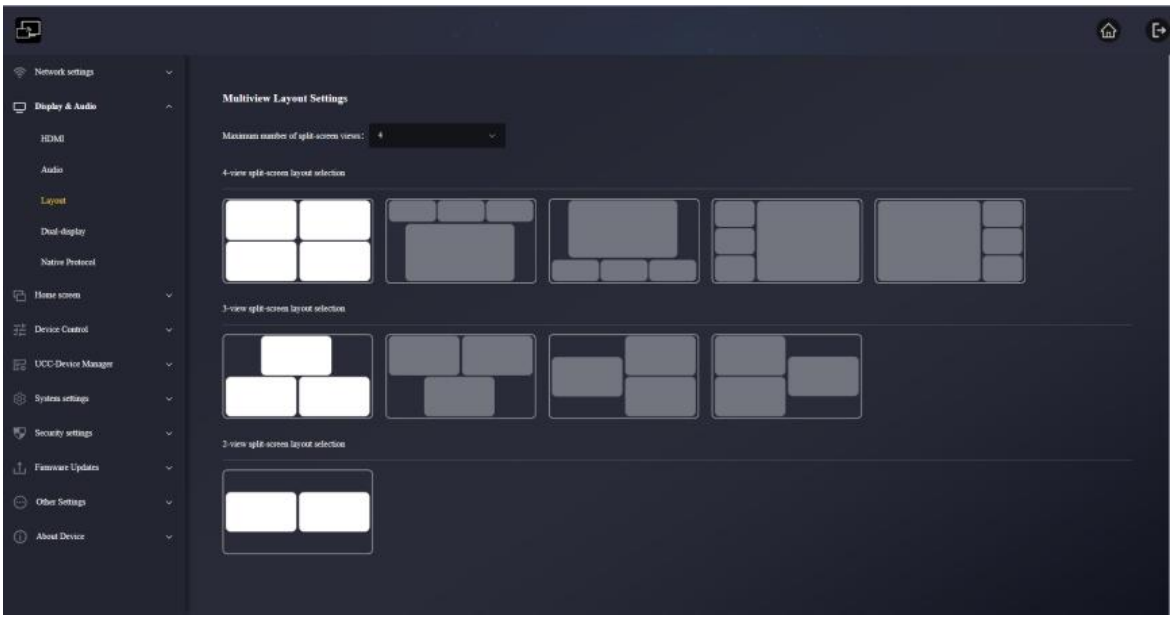
Allows the user to choose which sound source is routed to audio output.



1. **Audio output:**
    - **Jack:** output only 3.5mm mini-jack audio.
    - **HDMI:** output only HDMI audio.
    - **Jack&HDMI (Default):** output Jack & HDMI audio.
2. **Audio volume:** volume can be selected from 0 to 100.

6.2.3 Layout

Allows various fixed window layout presets to display participants in the main screen. Four the most can be performed simultaneously on one screen.



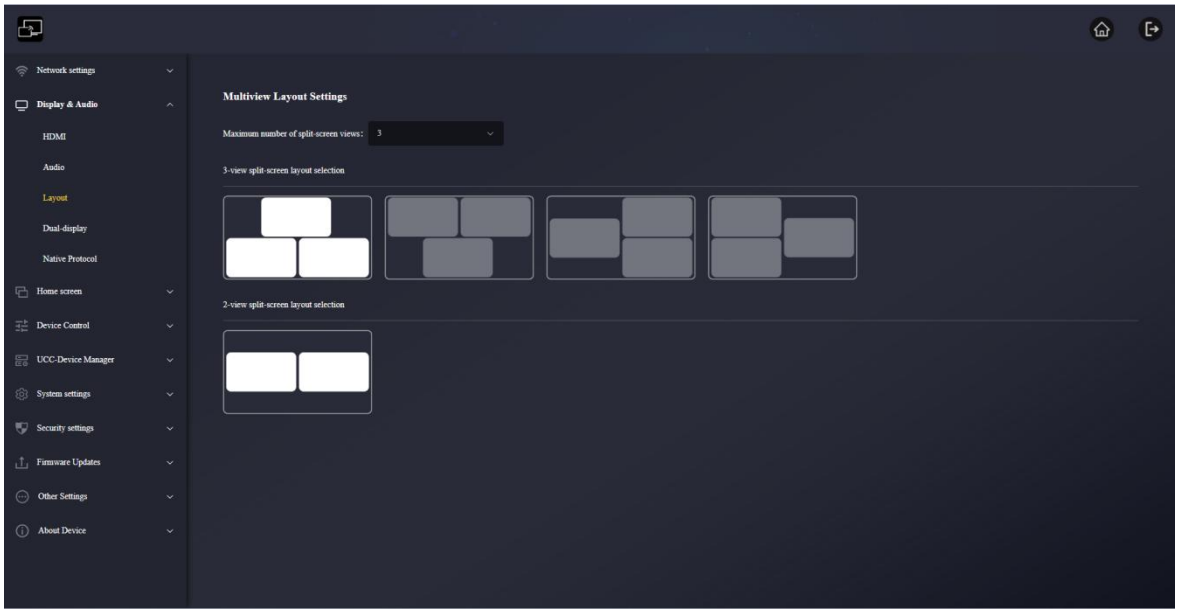
Maximum number of split-screen views: 1, 2, 3, 4

It can manually select the number of screens allowed to be presented as needed. If it selects 4, it can cast a maximum of 4 screens. It can select a 4-split screen layout in the layout selection; if it selects 3, it can only cast a maximum of 3 screens. It is the same meaning of selecting 1 and selecting 2.

Example:

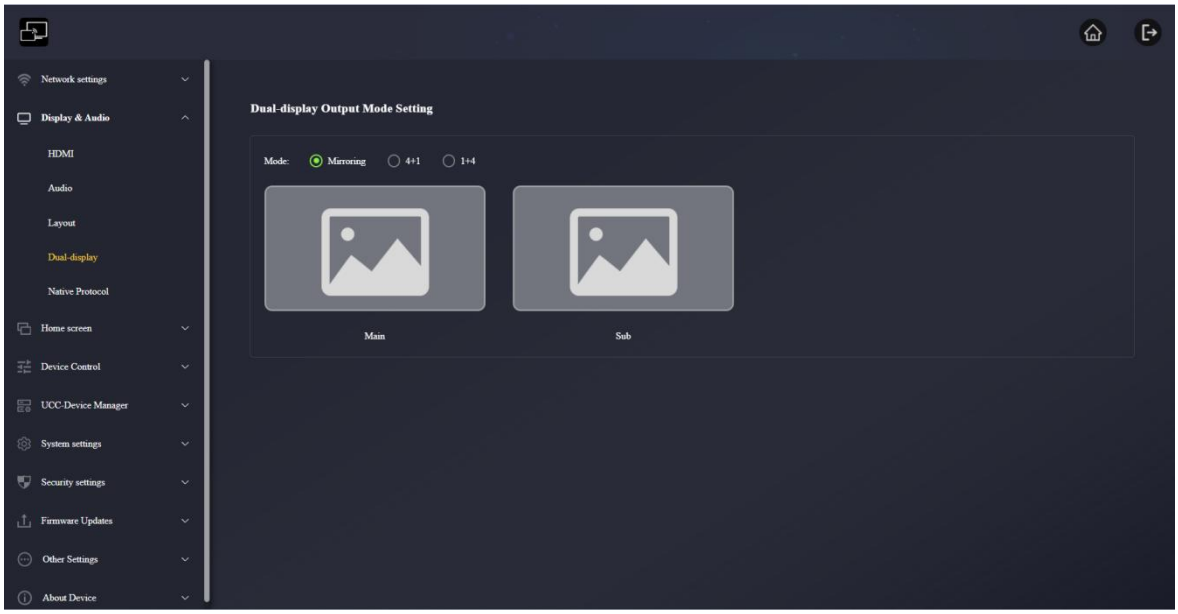
Select the maximum number of split-screen views is 3, the screen display is shown as below photo.

It can choose a 3-split screen layout in the layout selection.



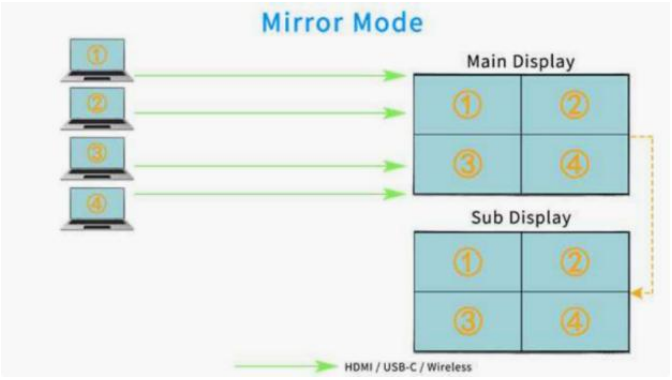
6.2.4 Dual-display

BYOM-2 can use two screen to display and can cast up to 5 images at the same

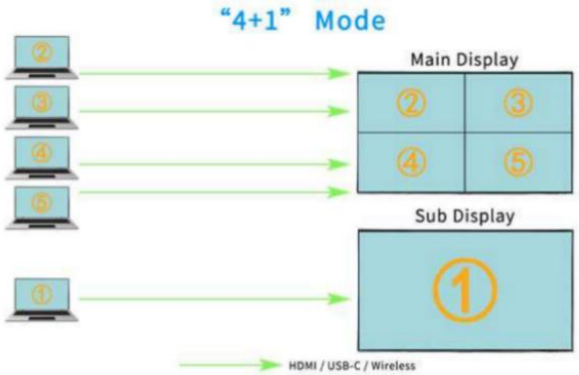


Mode:

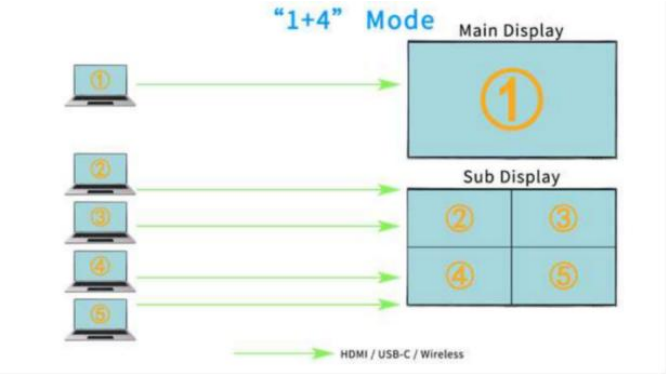
- **Mirroring**: Main screen and sub screen display the same cast image



- **4+1:** Main screen can cast 4 images, sub screen can cast 1 image



- **1+4:** Main screen can cast 1 image, sub screen can cast 4 images



Note:

In mode 4+1 or 1+4, the first cast screen is fixed even though the 6 cast source comes.

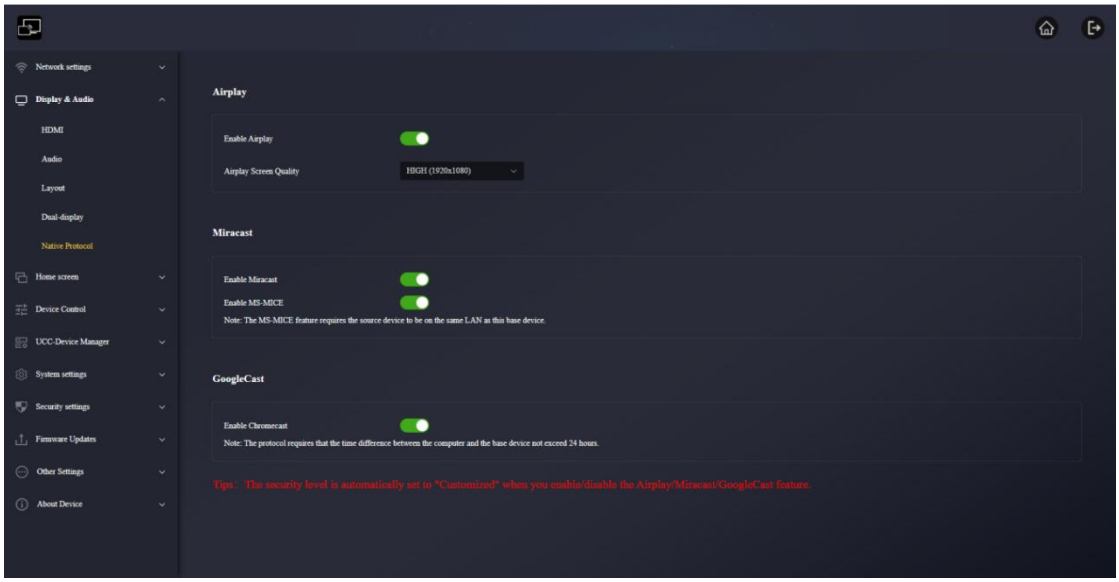
Example:

In 1+4 mode, there are several sources A/B/C/D/E/F for projection. The display logic is as follows

Main	Sub
A	home screen
A	B
A	B/C
A	B/C/D
A	B/C/D/E
A	C/D/E/F

6.2.5 Native Protocol

Enabling/disabling third-party protocol, it will adjust the security level to a customized level.



6.2.5.1 Airplay

Airplay switch: enabled by default

Turn on the Airplay switch, it can perform airplay screencasting through Mac, iPhone, and PAD. Turn off the Airplay switch, it can not perform Airplay screencasting.

Airplay screen projection resolution:

>> High (1920*1080)

>> Medium(1600*900)

>> Low (1280*720)

>> 4k (3840*2160)

Note:

The higher the resolution, the clearer it is, but it will also bring greater delay.

6.2.5.2 Miracast

Miracast switch: enabled by default

Miracast uses the P2P protocol by default, and the maximum supported resolution is 1080p. In this mode, the computer and the base unit do not need to be on the same network. It only needs to press the Windows+K keys to enable the Miracast function. In the searched miracast device Find the BYOM-2 device and click the link to start screencasting.

Miracast MICE protocol switch: off by default

The MS-MICE protocol is an extension of the P2P protocol. To start this protocol, the PC and BYOM-2 need to be in the same LAN. Searching device still uses the P2P protocol, but when transmitting video streams, it uses the LAN. There is no difference in usage from when the MS-MICE protocol is not turned on.

Note:

MS-MICE functionality requires the source device to be on the same LAN as this device.

6.2.5.3 GoogleCast

Google Cast switch: enabled by default

Note:

This protocol requires that the time difference between the computer and the base unit does not exceed 24 hours.

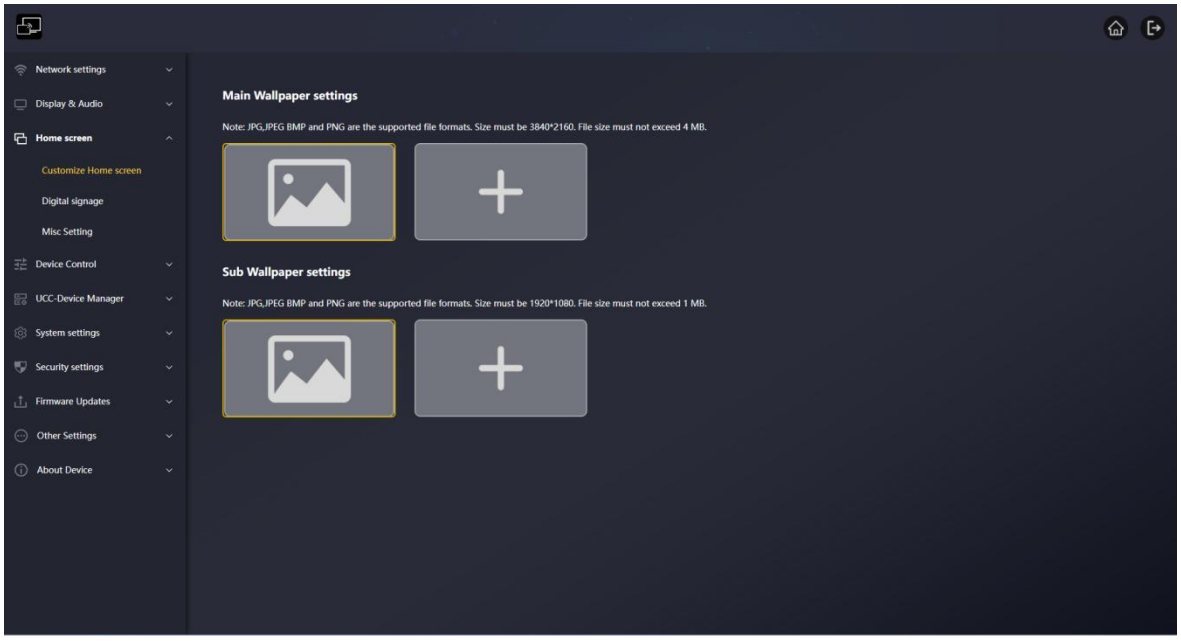
6.3 Home screen

6.3.1 Customize Home screen

The home screen background can be customized. Click + to add a local image as the home screen background image.

Note:

Currently supported image formats are: JPG/BMP/PNG, the maximum resolution is 3840*2160, and the file size is within 4MB.



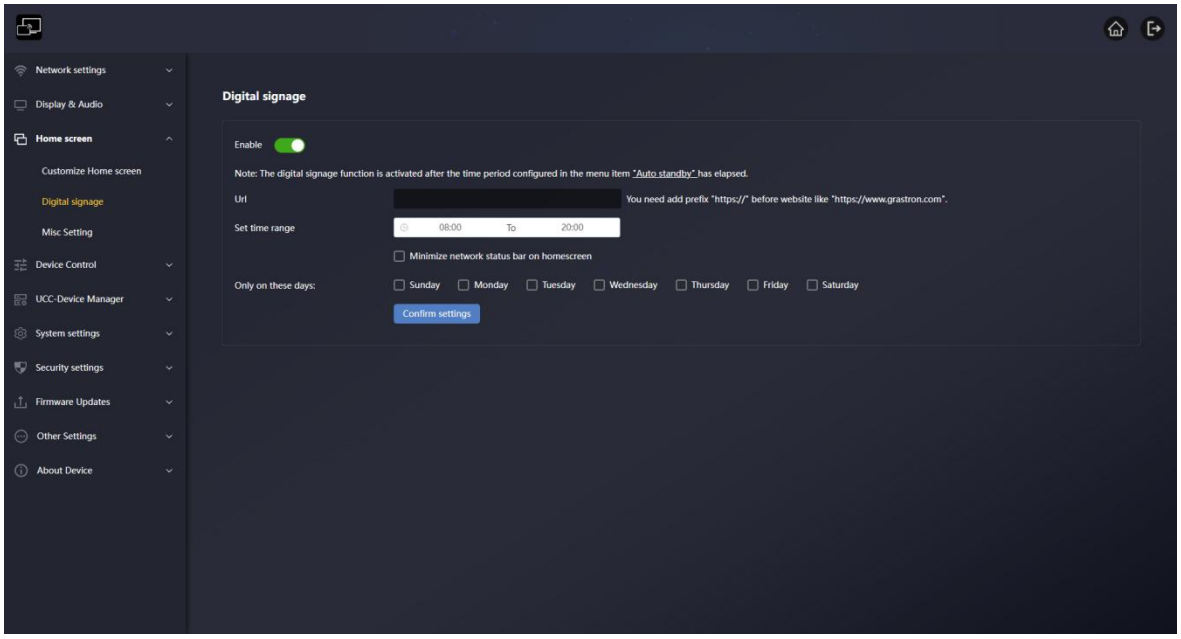
6.3.2 Digital signage

Switch is off by default

This function can display the web page information you want when the base unit is standby.

Note:

Digital signage functionality will activate when ready for "auto standby".



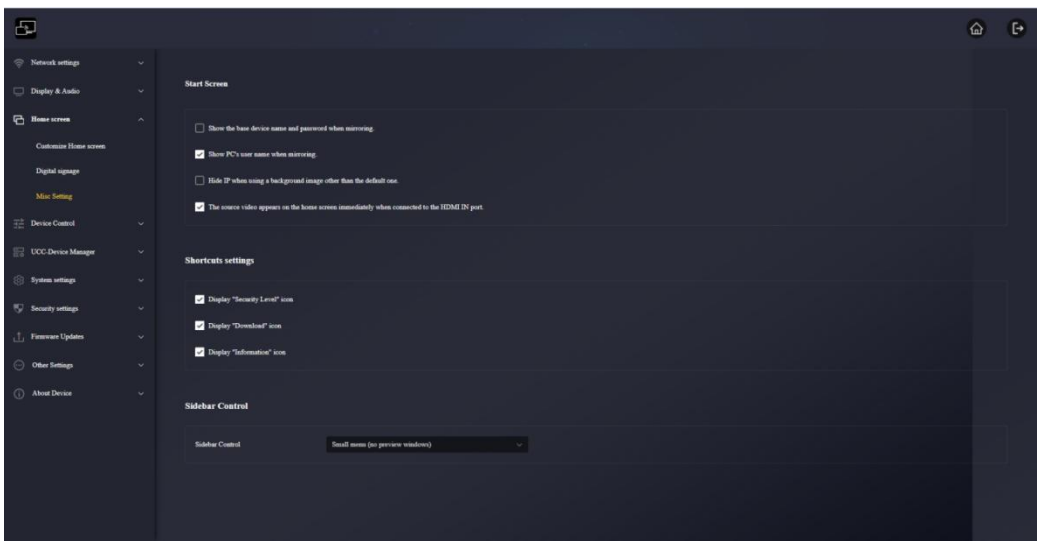
URL: Enter the required URL.

Set time range: Set a time period. During this time period, the monitor will be standby and display the web page information of the URL that set above.

Only on these days: it can set the date you want to display (Monday to Sunday).

It can directly click "Auto Standby" in the prompt on this page to jump to the auto standby page for settings.If the current time is within the set time period, press the power key on the BYOM-2 device to enter the digital signage page. Press the key again to exit and return to the main page.

6.3.3 Misc Setting



6.3.3.1 Start Screen

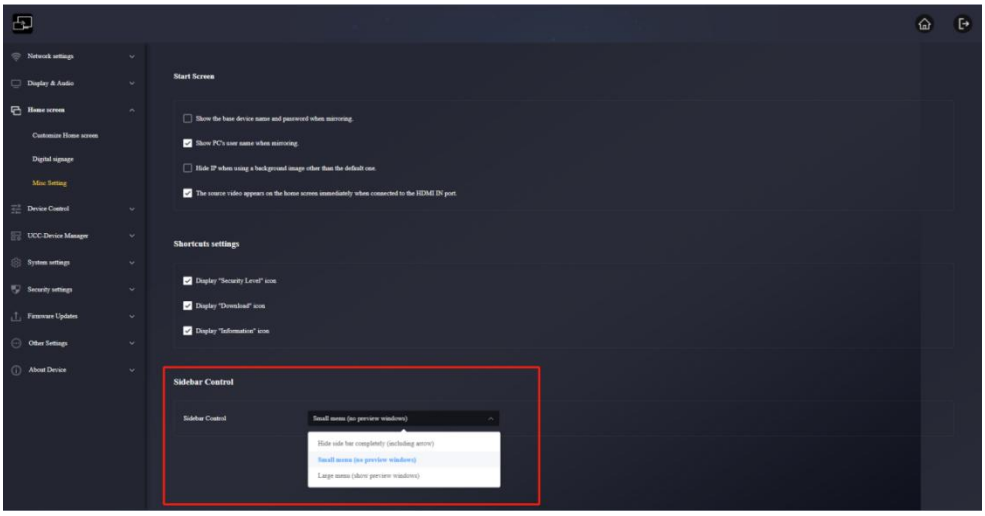
- **Show the base device name and password when mirroring**: When this option is ticked, the BYOM-2's device ID and password will not disappear when mirroring.
- **Show PC's user name when mirroring:** When this option is ticked, the PC username will be displayed when casting the screen.
- **Hide IP when using a background image other than the default one:** When this option is ticked, the base device wifi IP and LAN IP will not displayed if the background image is not the default one.
- **The source video appears on the home screen immediately when connected to the HDMI IN port:** When this option is ticked, it will cast the screen automatically if an HDMI source is plugged into the BYOM-2's HDMI IN port.

6.3.3.2 Shortcuts settings

- **Display "Security Level" icon**: The Security Level icon will be displayed on the home screen when ticked. If not, it won't be displayed.
- **Display "Download" icon:** The Download icon will be displayed on the home screen when ticked. If not, it won't be displayed.
- **Display "Information" icon:** The Information icon will be displayed on the home screen when ticked. If not, it won't be displayed.

6.3.3.3 Sidebar Control

- **Hide side bar completely(including arrow)**: When choose this item, the side bar won't be shown on the home screen.
- **Small menu(no preview windows):** When choose this item, the side bar will be shown as small menu(including whiteboard, annotation, information icon) on the home screen.
- **Large menu(show preview windows):** When choose this item, the side bar will be shown as large menu as well as the preview window will be displayed on the home screen.

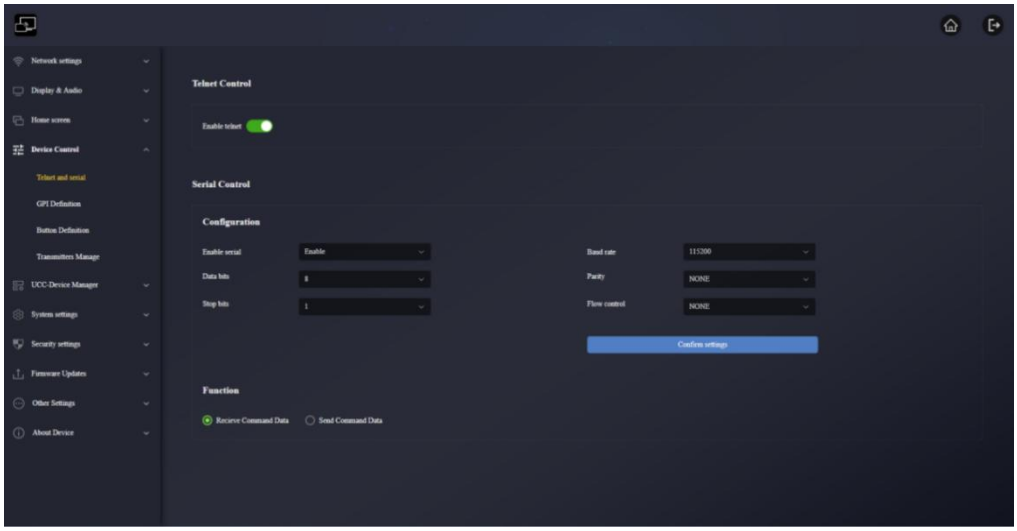


6.4 Device Control

6.4.1 Telnet and serial

It allows users to configure telnet commands and RS-232 commands to control the BYOM-2.

Please contact the supplier for the control command table. In addition, RS232 also supports sending simple commands, such as power on and off, controlling cascaded devices, and realizing simple central control functions.



6.4.1.1 Telnet Control

Enable telnet: enabled by default.

When it is enable,

The telnet command can control the device.

When it is not enable,

It won't be able to use the telnet command to control the

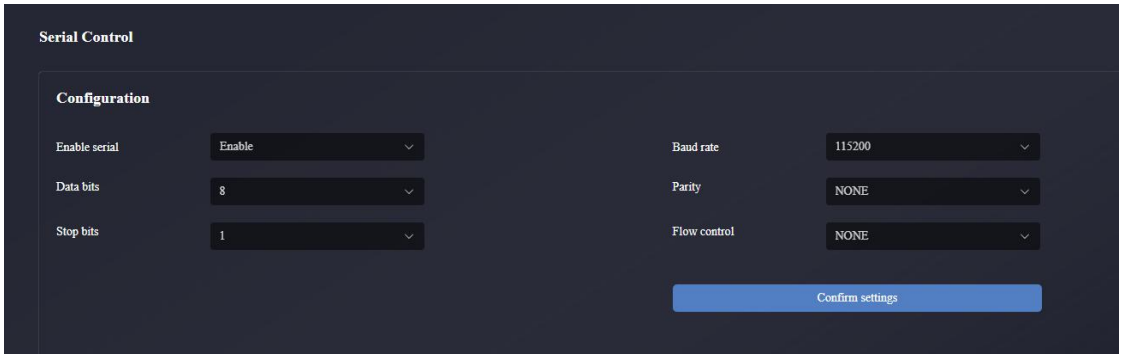
BYOM-2.

- Telnet communication via TCP commands, enter the current BYOM-2 IP address and port 23.
- For commands that contain multiple words, spaces are required between each word.
- Commands are not case sensitive.

6.4.1.2 Serial Control

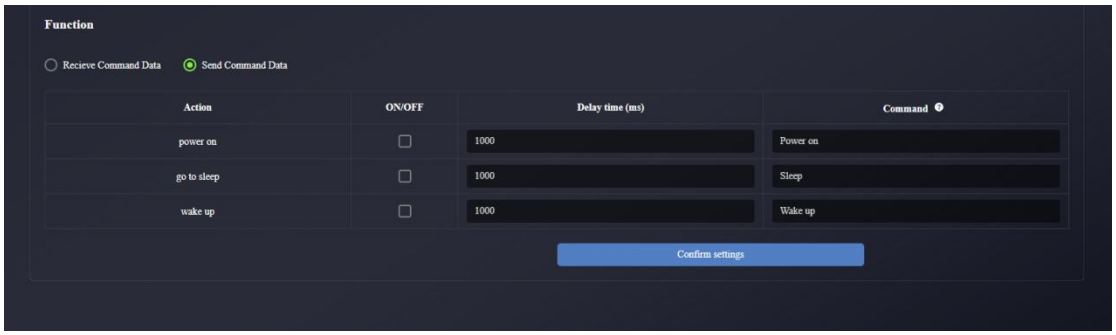
The serial port function is enabled by default. When it is disabled, RS-232 commands cannot be used to control the BYOM-2.

For the first use, Set the baud rate, data, parity bit, stop bit, and flow control as needed.



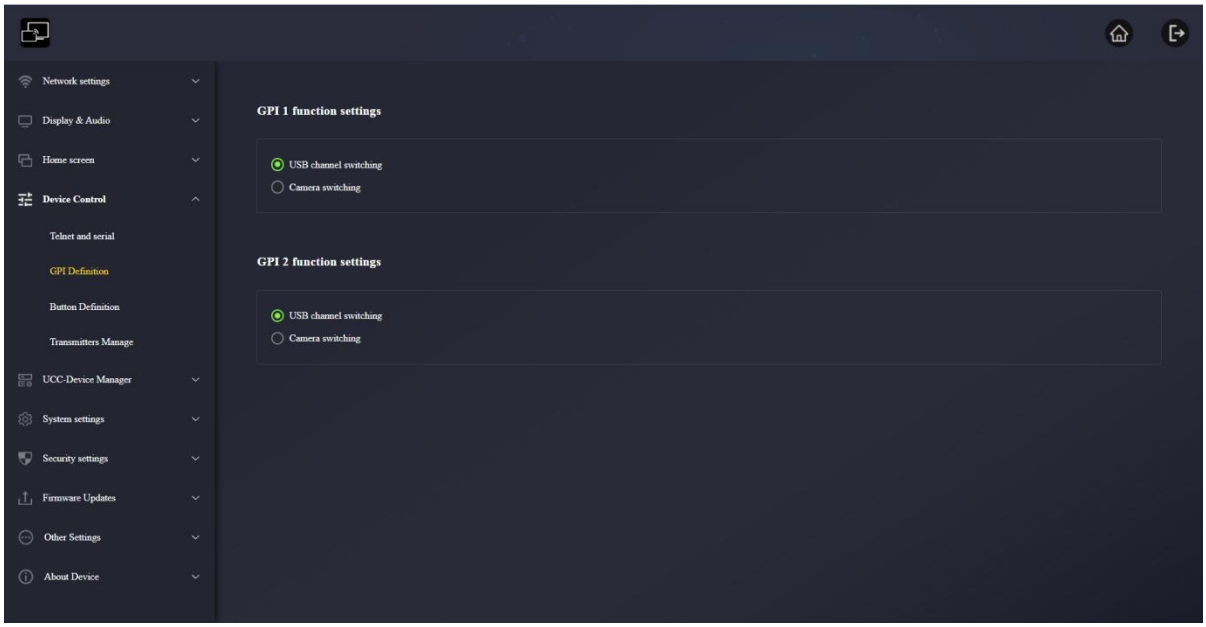
6.4.1.3 Function

- **Receive Command Data:** Base unit BYOM-2 can reveive the command and be controlled
- **Send Command Data:** Base unit BYOM-2 can send the command out to control other device proactively.

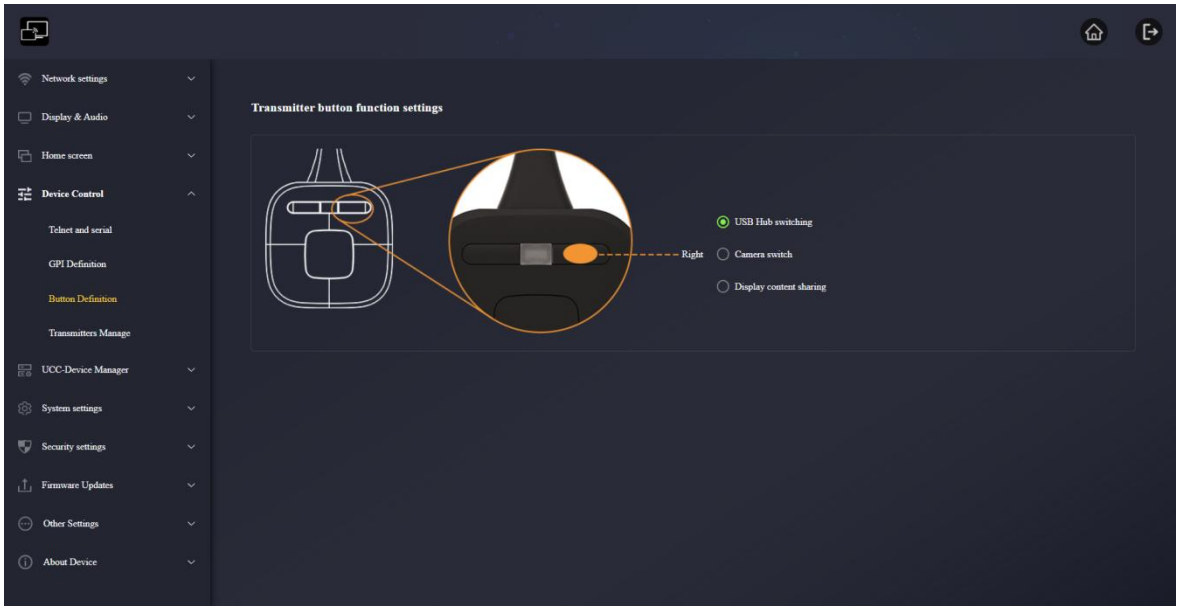


6.4.2 GPI Definition

Two GPI inputs, the maximum power frequency supports 5V input, the function of the input port can be customized.



6.4.3 Button Definition

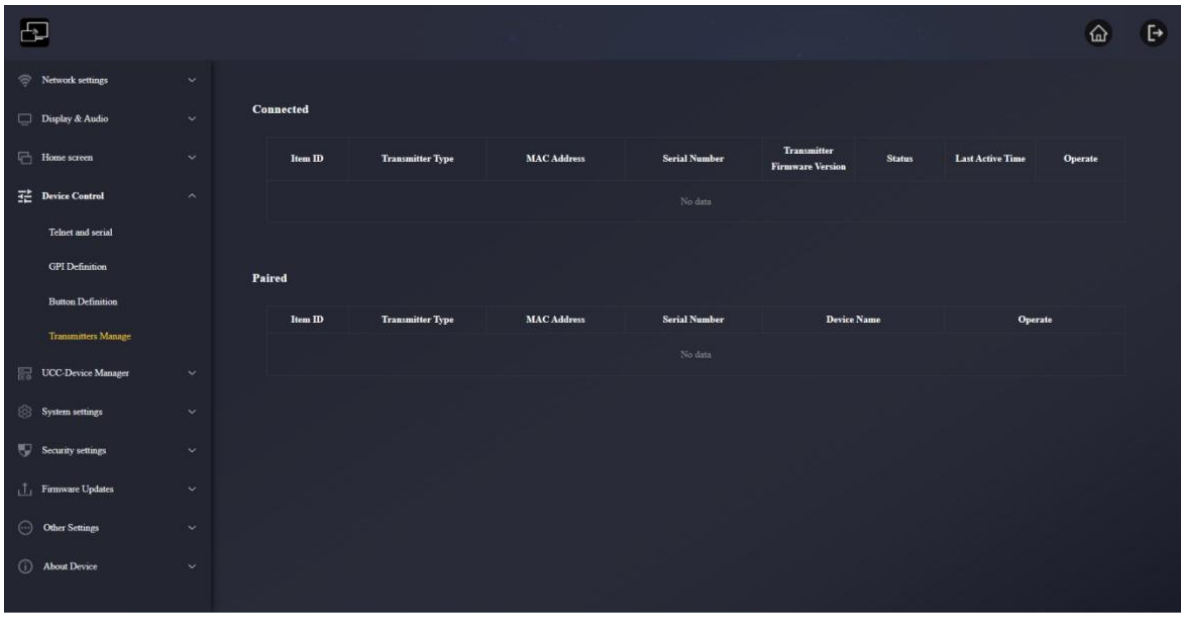


- **USB Hub switching:** When press the button, the USB devices will be switched between USB-B host PC and wireless PC.
- **Camera switch:** When press the button, it can switch between 2 cameras

Note:

When the mouse is placed on the function options, a prompt for the function will pop up.

6.4.4 Transmitters Manage

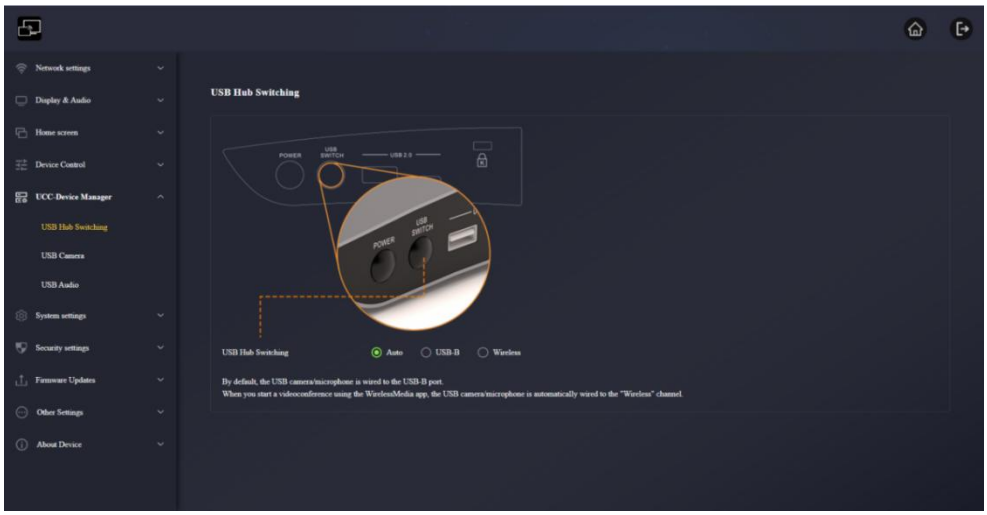


- **Connected:** Display the transmitters being connected to BYOM-2 and show the corresponding transmitters information.
- **Paired:** Display the transmitters successfully paired with BYOM-2 and show the corresponding transmitters information.

6.5 UCC-Device Manager

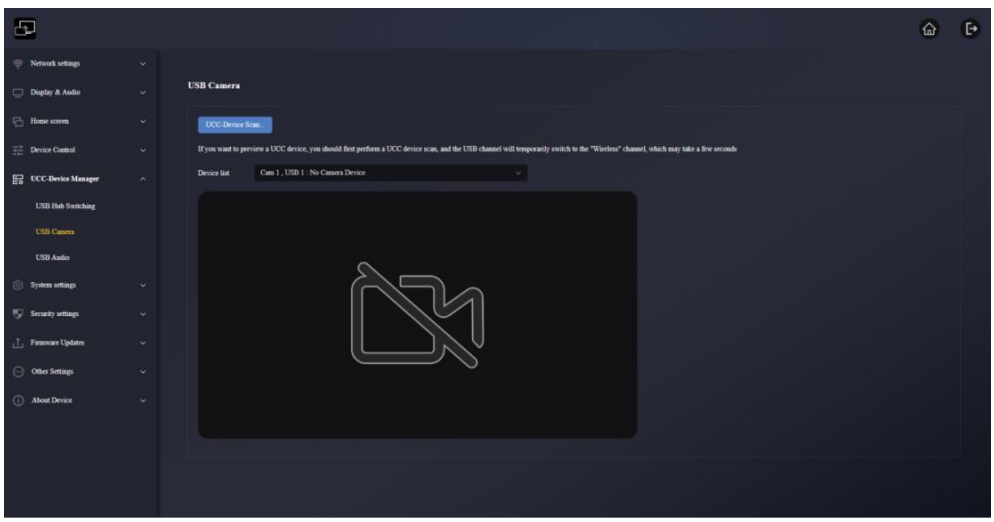
6.5.1 USB Hub switching

By default the USB devices switching is in auto mode, that means the USB devices are linked to USB-B port by default, when people start the wireless conference and require the USB devices data, the USB devices will be automatically switched to the wireless host PC, and the USB devices will be switched back to USB-B port when the wireless conference is ended; But people can still switch the USB devices manually here to “USB-B” or “Wireless” whenever they need.



6.5.2 USB Camera

It allows users to select and preview the image from the listed USB cameras.



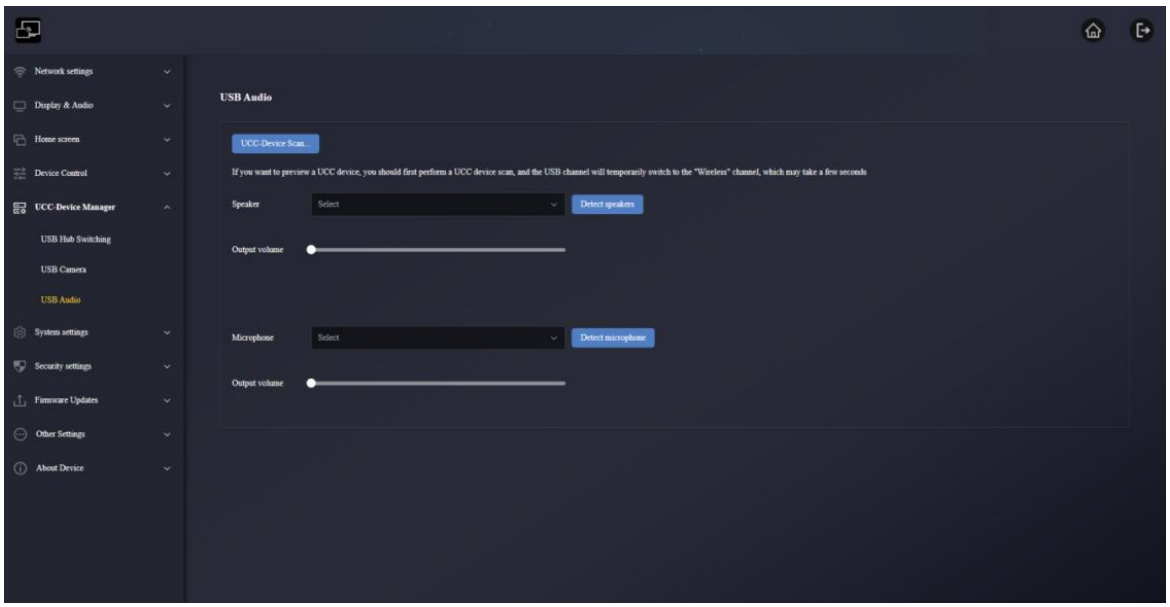
- **UCC-Device Scan:** After clicking, the connected camera devices will be scanned.
- **Device list:** the cameras connected with BYOM-2.

Note:

If wants to preview a UCC-device, it should first use UCC-device scan function, the USB channel will temporarily switch to the "Wireless" mode, this may take a few seconds.

6.5.3 USB Audio

It allows users to select and test the current USB audio device. When multiple microphones or speakers are connected, they can switch the microphone or speaker to be used here.



- **UCC-Device Scan:** After clicking, the connected audio device will be scanned.
- **Detect speakers:** Click this button to test whether the audio device outputs sound normally. Click button again it will cancel.
- **Detect microphone:** Click this button to test whether the audio device inputs sound normally. Click button again it will cancel.

Note:

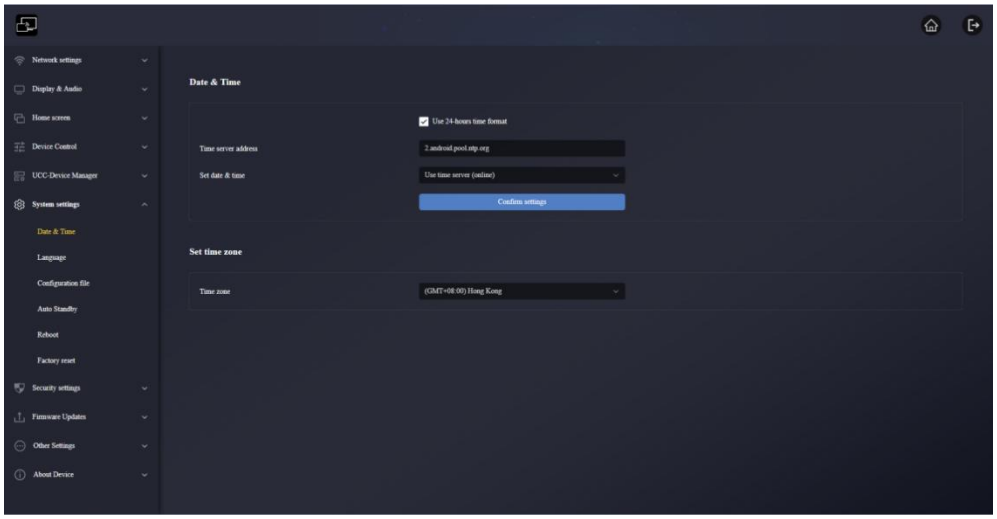
If wants to preview a UCC-device, it should first use UCC-device scan function, the USB channel will temporarily switch to the "Wireless" mode, this may take a few seconds.

6.6 System settings

6.6.1 Date & Time

Use 24-hours time format: If ticked, the time will be displayed in 24-hour time format. If not ticked, the time will be displayed in 12-hour format.

Time Server address: 2.android.pool.ntp.org



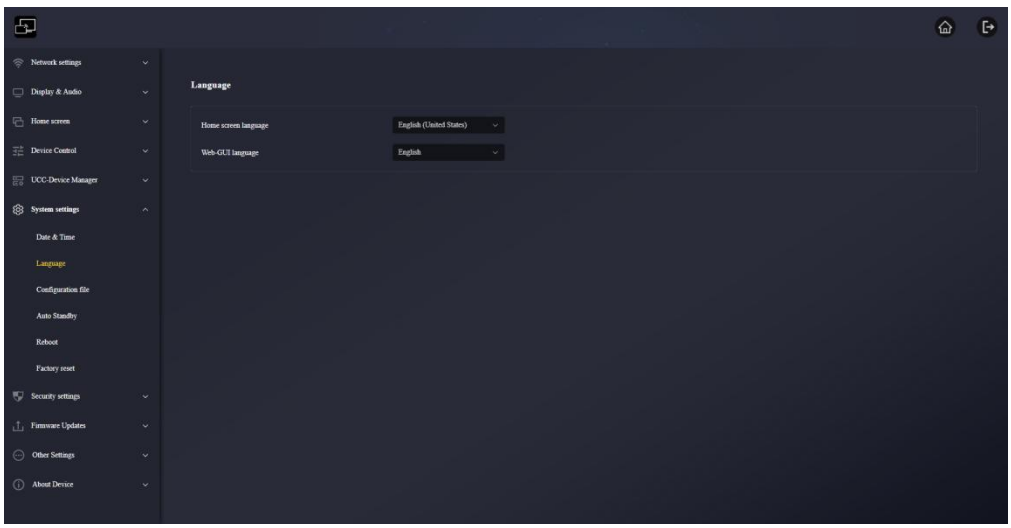
Set date & time:

- **Use time server(online):** Check and use an NTP time server to provide time as system time.
- **OFF:** It can set the date and time manually after turning off the network time.

Time zone: Click the "Time Zone" option to drop down and select the required time zone.

6.6.2 Language

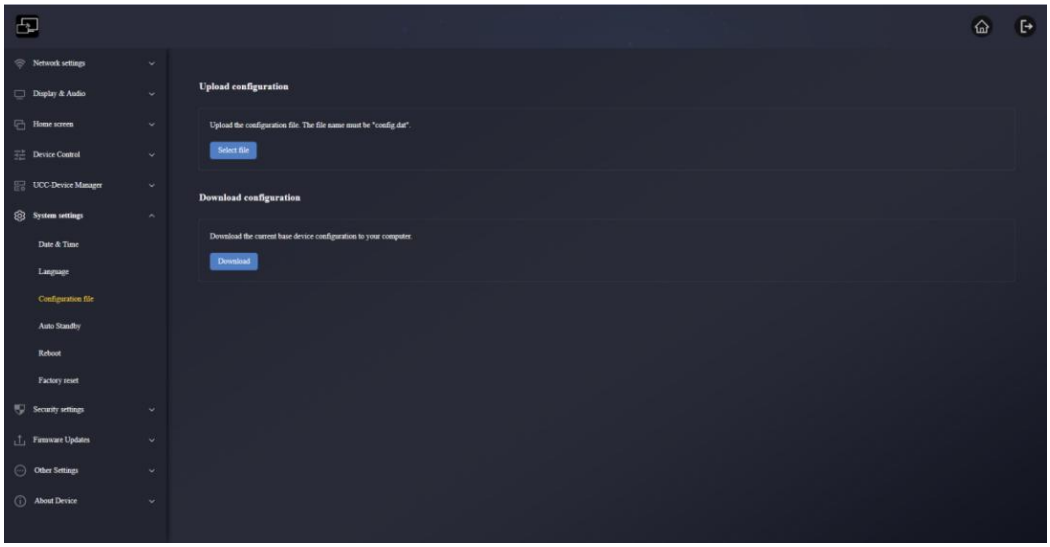
It allow users to select the home screen and web page display language



- **Home screen language:** It can select the language display on home screen here.
- **Web-GUI language:** It can select the language display on Web-GUI here.

6.6.3 Configuration file

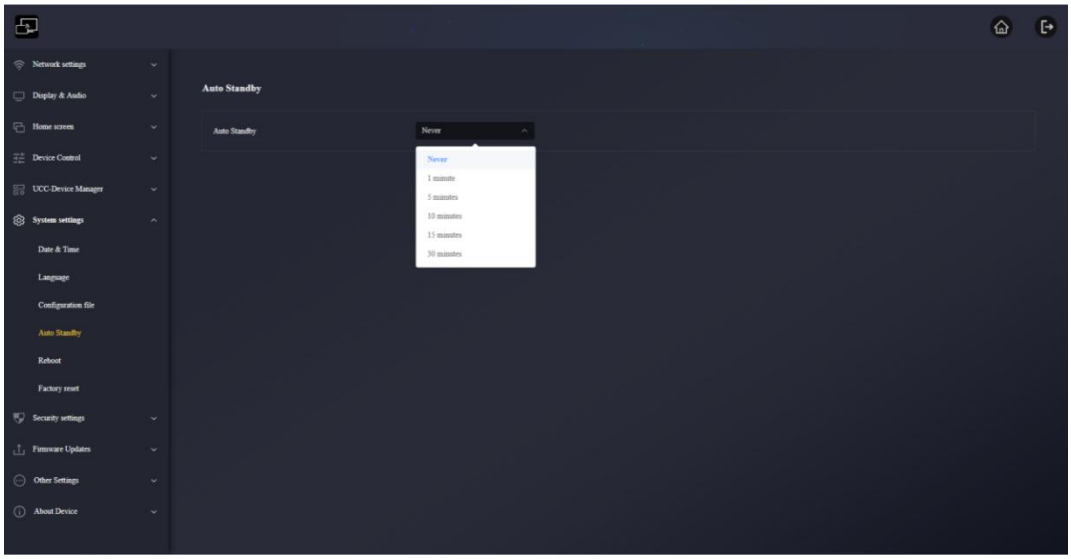
A profile is a downloadable preset that will save all set configuration parameters so that they can be loaded onto other devices.



- **Upload configuration:** The file name must be "config.dat" when upload the file.
- **Download configuration:** It can download the current BYOM-2 configuration to the computer.

6.6.4 Auto Standby

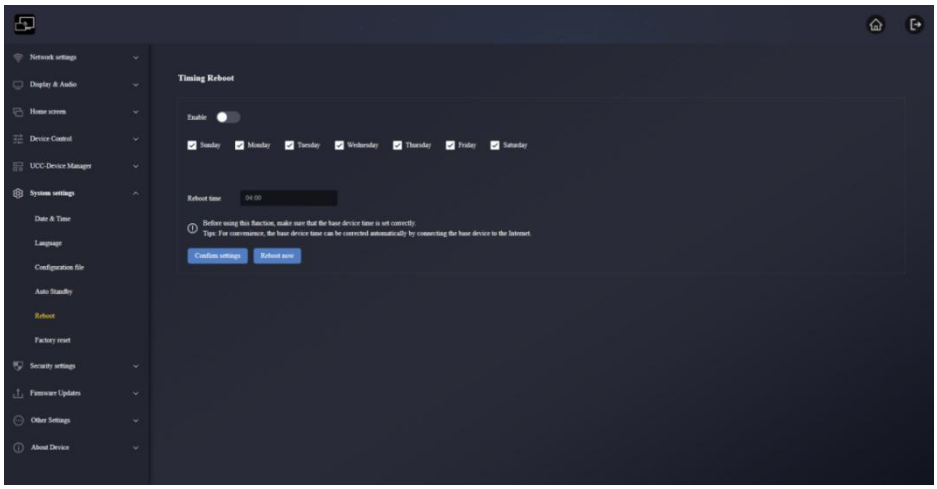
When Auto Standby mode is activated, the BYOM-2 base unit will automatically switch to power saving mode. In standby mode, the green LED on top of the BYOM-2 base unit flashes and the HDMI output is off.



When a WB-2H / WB-2C is plugged in and connected, or a mobile device is connected, Standby is deactivated.Movement of mouse at USB-input at BYOM-2 base unit deactivates standby mode as well.

6.6.5 Reboot

It allows users to perform scheduled restart and routines for a given week.



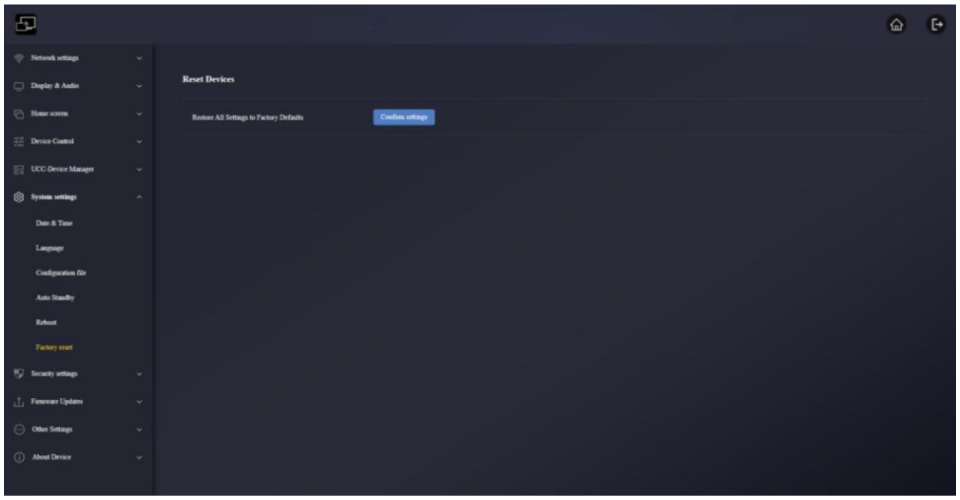
- **Timing Reboot:** The scheduled restart time of the BYOM-2 base unit can be set, and the days that need to be restarted can be selected from Monday to Sunday.
- **Reboot time:** It can set the time to restart manually here.

Note:

Whether scheduled restart is enabled or not, it can click Restart now icon and the BYOM-2 base unit will restart at once.

6.6.6 Factory reset

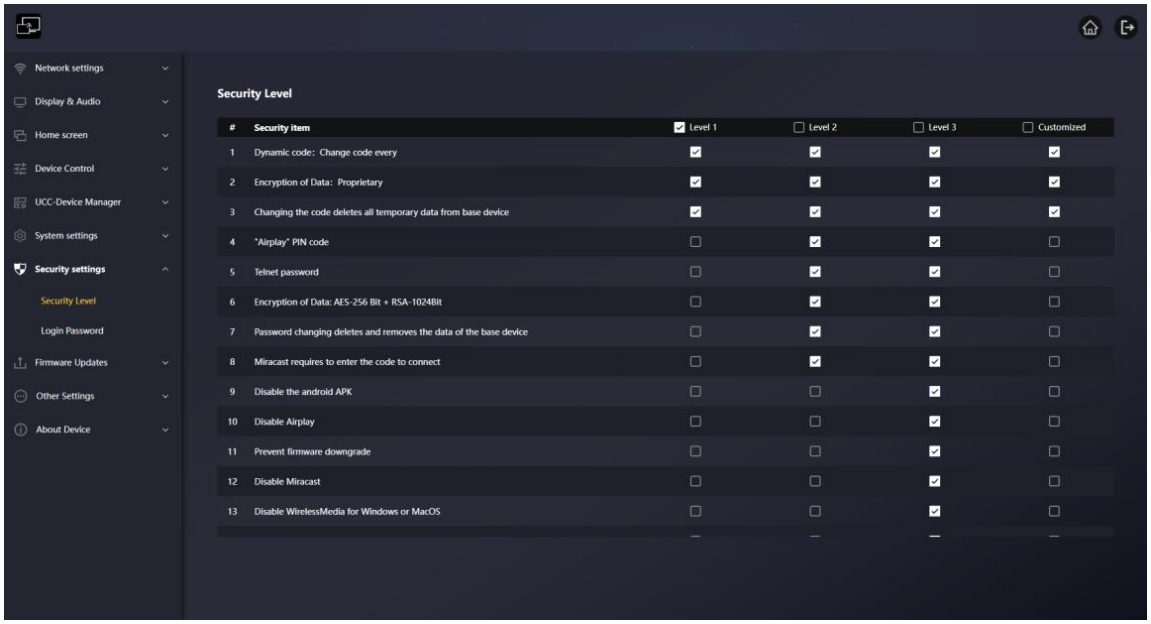
It allow users to perform a factory reset to restore device default settings.



6.7 Security settings

6.7.1 Security Level

Based on user requirements, three different security levels can be set to satisfy different security requirements.Click on the corresponding entry in the menu to adjust the respective security features. The **default setting is level 1.**



- **Level 1**: **normal safety**

Keeps the security in normal and daily usage for any organization, such like classroom, regular meeting room etc.

- **Level 2**: **higher security**

Provides increased security for companies, organizations, government agencies, etc., through powerful encryption of audio and video data; other security features include limiting the transmission of "AirPlay" by introducing a password.

- **Level 3: highest security**

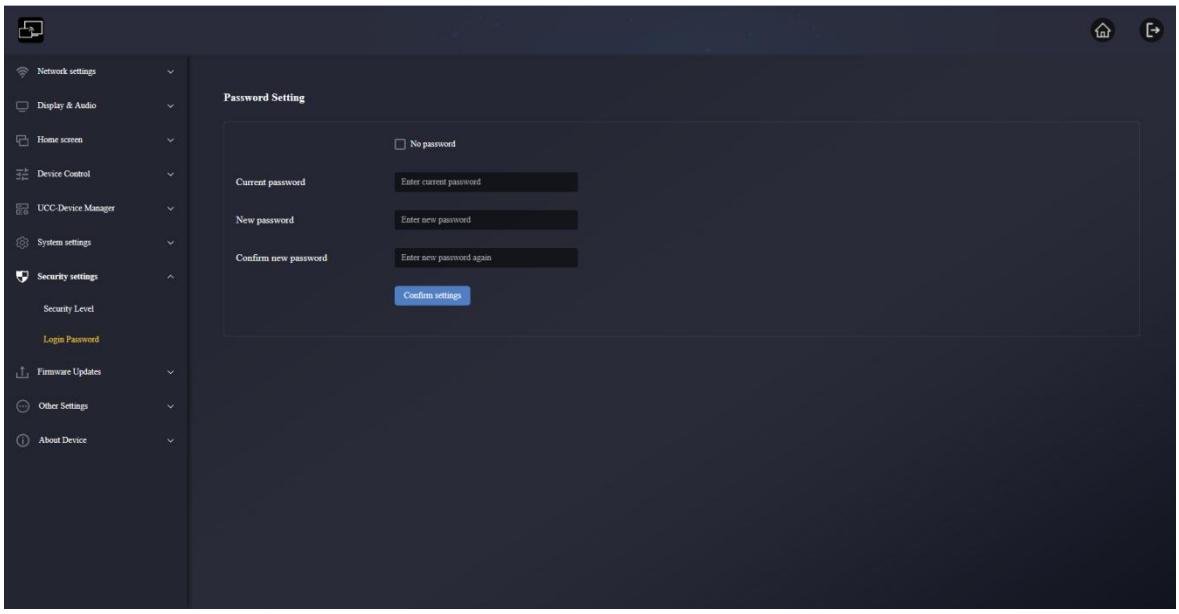
It is used for strict security requirements of companies, organizations, authorities, banks.This level contains all “Level 2” security measures and in addition, all mobile applications as well as the web settings GUI will be blocked. In addition, the downgrade of the firmware will not be possible.

The security level will be displayed in the Home Screen clicking on the icon.

6.7.2 Login Password

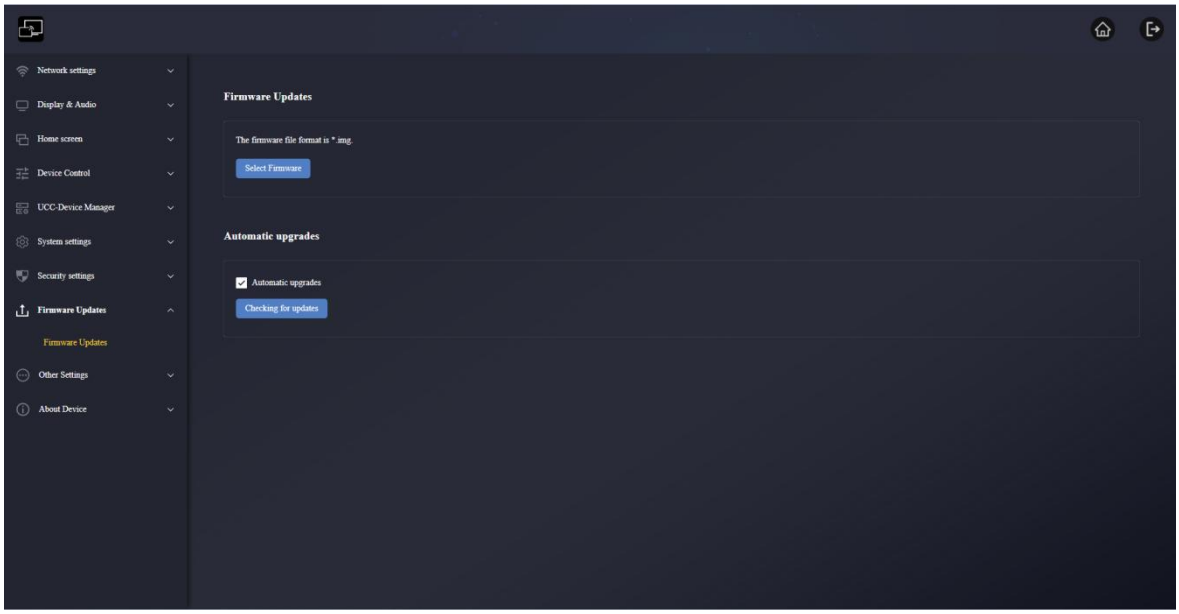
It allows the user to change their password to enter the web settings GUI.

The default password is "admin".



- **No password**: When ticked here, it can log in directly to the web and no need the password to enter.
- **Current password**: Enter the current login password of the base unit.
- **New password:** Enter the new password that wants to set.
- **Confirm new password:** Enter the new password again.

6.8 Firmware Updates

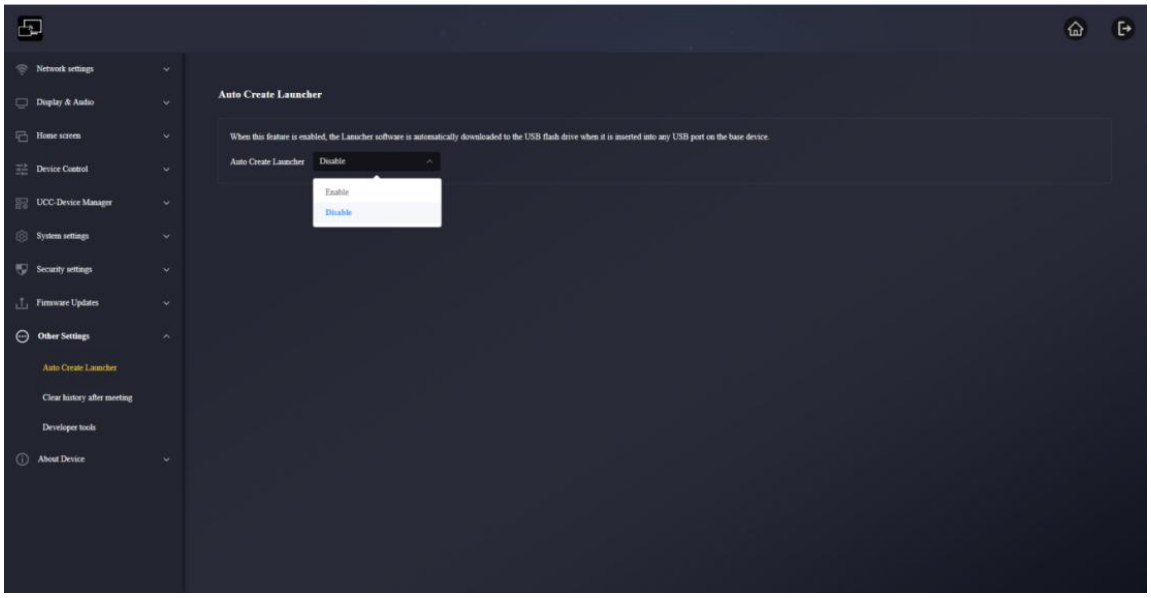


- **Firmware Updates:** Users can upload local update files to upgrade BYOM-2. The firmware file format is *.img.
- **Automatic upgrades**: When ticked, it will automatically detect the new system and update in the early morning. If not ticked, it can manually click the Check for Updates button to detect updates manually.

6.9 Other Settings

6.9.1 Auto Create Launcher

After enabling this function, when a USB flash drive is inserted into any USB port of the base unit, the Launcher software will be automatically downloaded to the USB flash drive.



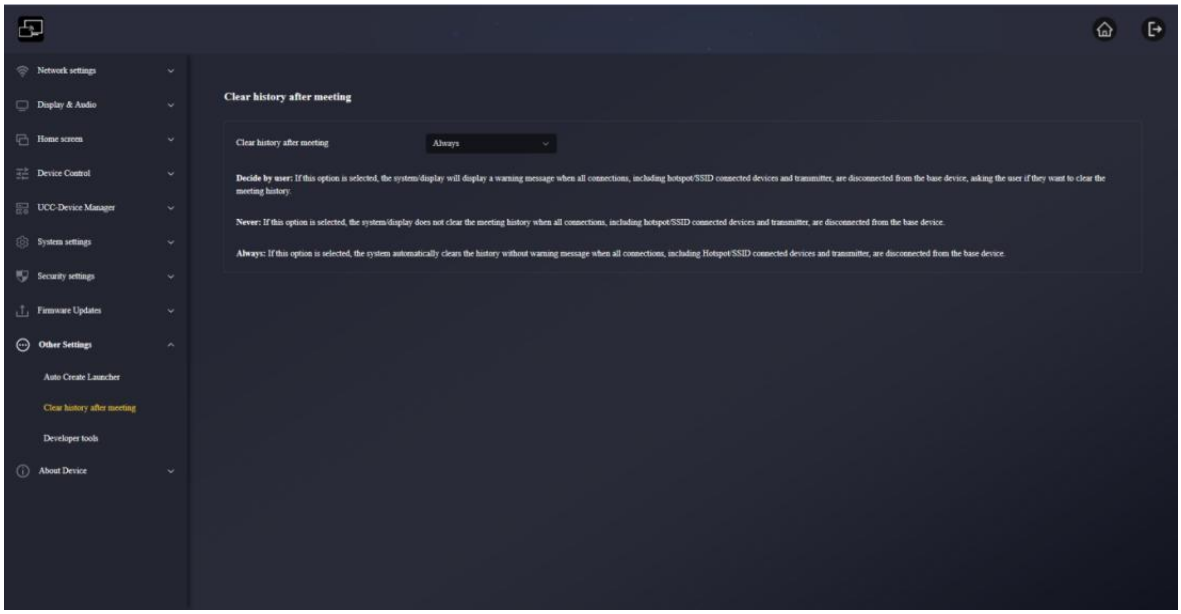
- **Enable:** When the USB flash drive is connected to the base unit, the Windows and mac applications WirelessMedia, user manual, and Android apk will be automatically copied to the USB storage.
- **Disable**: When the USB flash drive is connected to the base unit, the Windows and mac applications WirelessMedia, user manual, and Android apk won't be automatically copied to the USB storage.

Note:

If necessary, it also can click the download button manually on the home screen to download and save to the USB flash driver finally.

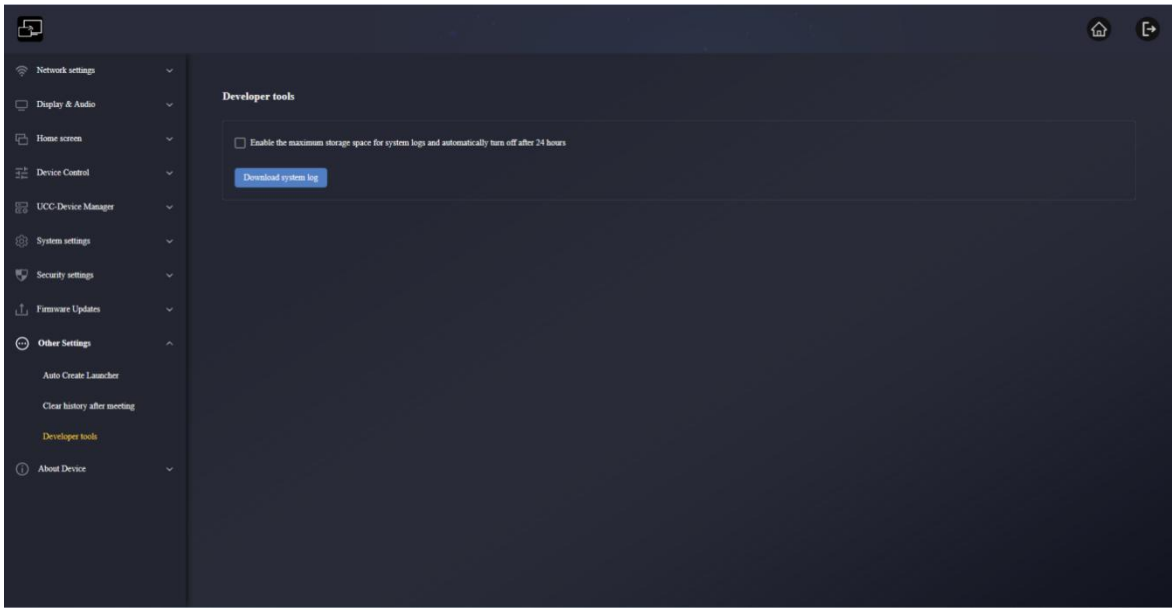
6.9.2 Clear history after meeting

The pictures, videos, and music from the screen mirroring device will be stored in the memory of the Base unit. At the end of the meeting, when removing the transmitter from the laptop/PC, here is an option to clear this memory.



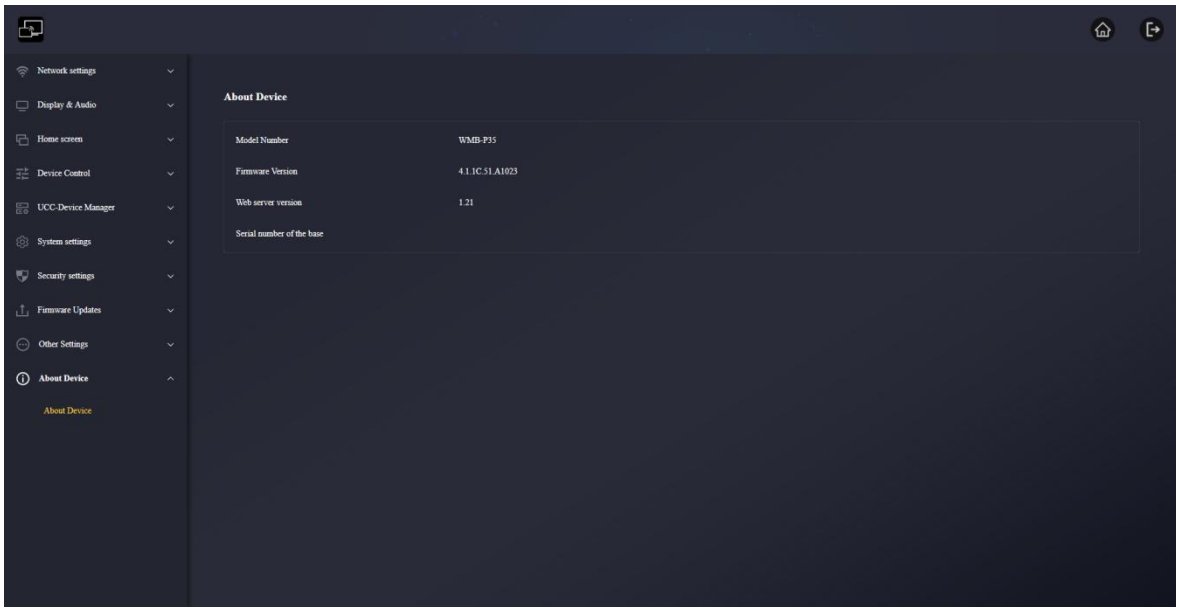
6.9.3 Developer tools

Used to capture the log when a problem occurs. Click Download System Log on icon, and the system will automatically start downloading the log file.



6.10 About Device

The information includes device Model Number, Firmware Version, Web server version, Serial number of the base.



7. FIRMWARE UPDATE

There are three different elements that can require firmware updating:

- Base unit:
  - **BYOM-2**
- Wireless transmitters:
  - **WB-2H**
  - **WB-2C**

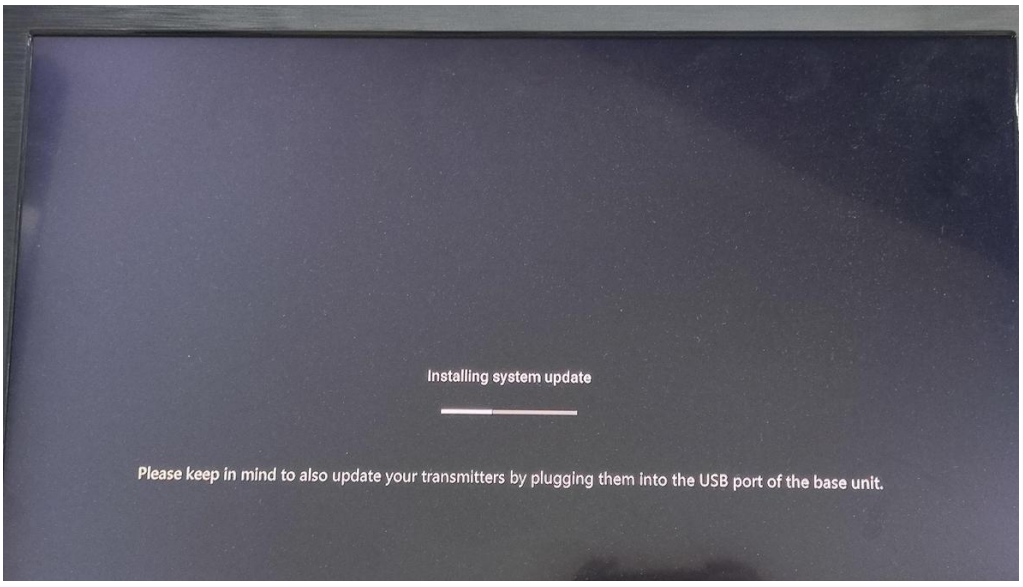
⚠ All software is stored in BYOM-2 base unit and later transferred to the rest of the elements. After updating the BYOM-2 base unit, it is necessary to check whether the other parts need to be updated as well.

7.1 Upgrading Firmware version of BYOM-2

- **External USB storage drive:**
  1. Copy the updating file “update.img” to the root directory of the USB drive.
  2. Connect the USB drive to either USB 2.0 front port of BYOM-2 base unit.
  3. BYOM-2 recognizes the “update.img”-file at the plugged-in USB stick automatically and starts the “Full Update” procedure. USB stick can be plugged out within 10 seconds to stop the update.

⚠ Do not disconnect power during upgrading progress. Otherwise, the unit firmware will be corrupted.

4. The upgrading progress displays as shown, and the BYOM-2 will reboot automatically after completing the updating.

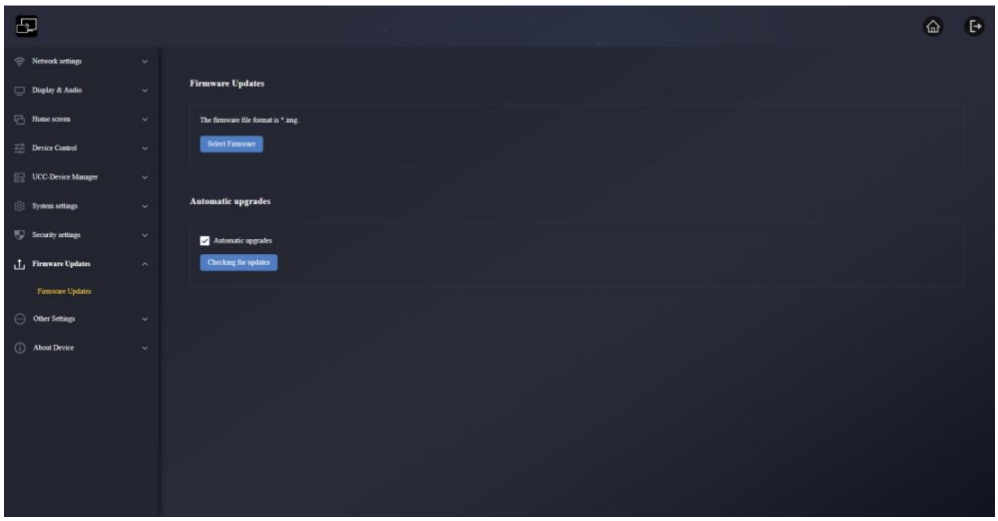


During the update, screen can be temporary dark.

If the progress bar stops at 1%, use another USB stick, since this one may be defective.

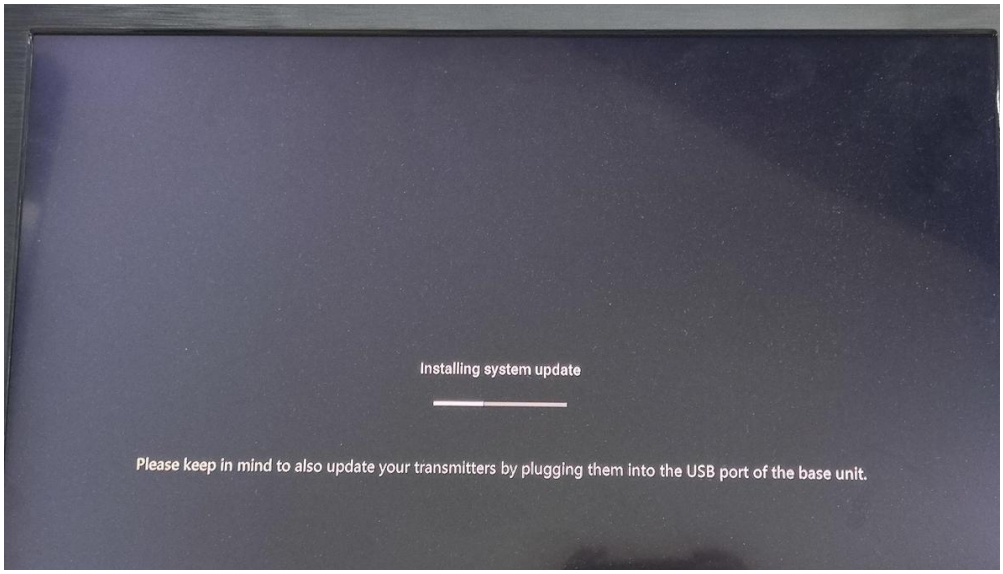
5. The display device shows the Home Screen after normal boot of the device, you can disconnect USB stick.
6. Perform “Factory Reset” when the firmware update is completed.

- **Web settings:**
  1. Browse to “**Firmware update**” section on Web Settings.



  2. Select a “update.img” file.

  3. The upgrading progress displays as shown below, and the BYOM-2 will reboot automatically after completing the updating.

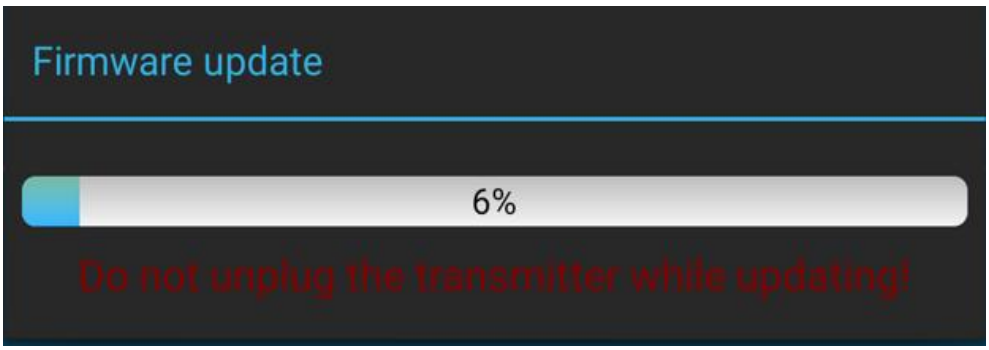


4. The display device shows the Home Screen after normal boot of the device,
5. Perform “Factory Reset” when the firmware update is completed.

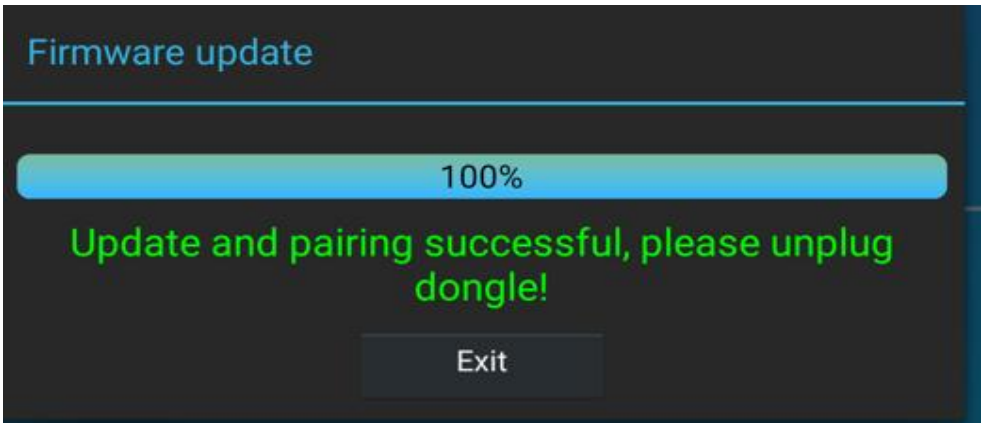
7.2 Upgrading Firmware version of WB-2H / WB-2C

1. Plug the WB-2H / WB-2C to the according USB front port of BYOM-2 to be updated. It will automatically display up a message to indicate if the installed firmware of wireless transmitter is older and needs to be upgraded.

2. The upgrading progress starts automatically with the progress bar.



3. “Pairing” to the BYOM-2 base unit is done automatically afterwards.



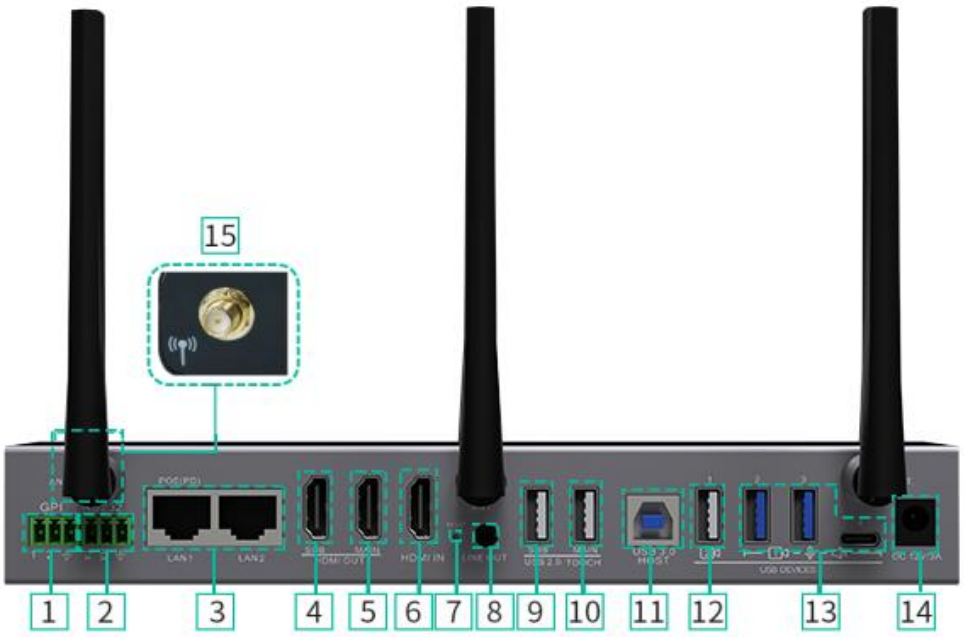
4. Upgrading progress is finished. Plug out the wireless transmitter (WB-2H / WB-2C) and it is now ready to use.

8. PANEL FUNCTIONS and WIRELESS TRANSMITTERS

8.1 Front Panel

1. **Power button:** Turns the device on or off.
2. **USB Switch button:** switch USB devices between “USB-B” and “wireless” host PC.
3. **USB 2.0 port:**
   - **USB:** Used to pair WB-2H with BYOM-2 and also can be connected to U disk and mouse.
   - **Type-C**: For pairing WB-2C with BYOM-2.
4. **Kingston lock:** used to prevent theft.

8.2 Rear Panel

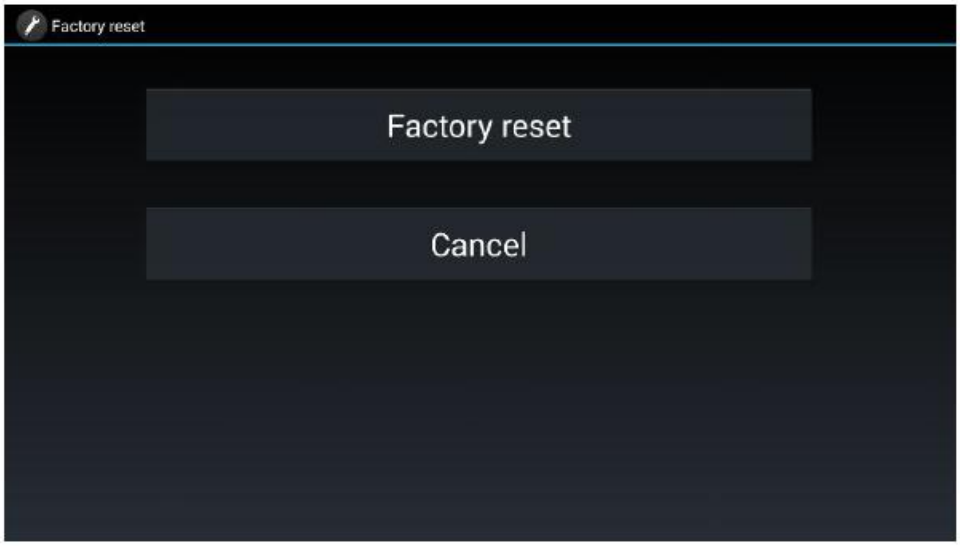


1. **GPI:** Two GPI inputs, the maximum level supports 5V input, and the function of this input port can be defined through the Web.
2. **RS-232:** Simple 232 interface, used to receive or send serial port commands to control the machine or other slave devices.
3. **LAN Ethernet port:**
   >> LAN1: 1000Mbps, supports POE;
   >> LAN2: 1000Mbps;
4. **HDMI sub screen output:**
   supports up to 1080P.
5. **HDMI main screen output:**
   supports up to 4K@60Hz.
6. **HDMI IN input:**
   supports up to 4K@30Hz.
7. **Reset:** press button to restore factory default settings.
8. **Line audio output:** 3.5mm headphone unbalanced stereo analog audio output.
9. **Sub screen USB 2.0 touch interface:** used to connect the touch screen from the sub screen.
10. **Main screen USB 2.0 touch interface:** used to connect the touch screen from the main screen.
11. **USB-B interface:** The camera that has been connected to the base unit can be switched through this port and used by other computers such as Room PC.
12. **USB 2.0 interface:** Connect compatible cameras & microphone devices for video conferencing. It should be noted that if two cameras are connected, one of them must be connected to this port.
13. **USB 3.0 interface:** Connect compatible camera and microphone devices for video conferencing.
14. **DC power socket:** local 12V DC power supply.
15. **Antennas:** Connect the three antennas provided to use Miracast and built-in WiFi functionality.

8.2.1 Factory Reset Using Rear Panel Button

By using this function, all previous settings will be lost, and you will need to do the set-up once more.

Start up the BYOM-2. When the Home Screen is displayed, press the reset button at the rear panel of BYOM-2. Press this button with a pointed object, e.g., an unbent paper clip for at least 2 seconds, until the “FactoryReset” page is displayed as below.



The BYOM-2 will reboot after 3 seconds to be default configuration.

If BYOM-2 HDMI output is not connected to a display and no picture is available, press and hold the reset button until the red LED indicator on the top surface of BYOM-2 lights up to execute the reset process.

Factory Default Configuration is as following

- **Wireless Network Configuration:**
  - Wi-Fi Interface Mode: AP(Access Point)MODE
  - SSID discovery and connection: Yes
  - Frequency: 5GHZ
  - Channel: 36

- **Ethernet Network Configuration:**
  - LAN1 DHCP: Enable
  - LAN2 DHCP: Enable

- **Advnace Setting:**
  - Internet Access setting: Allow network bridging to LAN 1
  - Auto Change Password: 5 minutes
  - Connection Password Mode: 4-digits password begining with 0000

- **Display & Audio**
  - HDMI Resolution:
    - Main: Auto
    - Sub: Auto
  - HDMI CEC:
    - Control Base by Display: OFF
    - Control Display by Base: OFF
  - Audio output: Jack&HDMI
  - Audio Volume: 100%
  - Maximum number of split-screen views: 4
  - Dual-display Output Mode: Mirroring
  - Airplay:
    - Enable Airplay: ON
    - Airplay Screen Quality: HIGH (1920x1080)
  - Miracast:
    - Enable Miracast: ON
    - Enable MS-MICE: OFF
  - GoogleCast:
    - Enable Chromecast: ON

- **Home screen**
  - Digital signage: OFF
  - Start Screen:
    - Show the base device name and password when mirroring: OFF
    - Show PCs user name when mirroring: ON
    - Hide IP when using a background image other than the default one: OFF
    - The source video appears on the home screen immediately when connected to the HDMI IN port: ON
  - Shortcuts settings:
    - Display “Security Level” icon: ON
    - Display “Downloadl” icon: ON
    - Display “Information” icon: ON
  - Sidebar Control: Large menu (show preview windows)

- **Device Control**
  - Telnet Control: ON
  - Serial Control: ON
  - Function: Receive Command Data
  - GPI Definition:

        - GPI 1 function settings: USB Channel switching
        - GPI 2 function settings: USB Channel switching
    - Transmitter button function settings: USB Hub switching

- **UCC-Device Manager:**
    - USB Hub switching: Auto

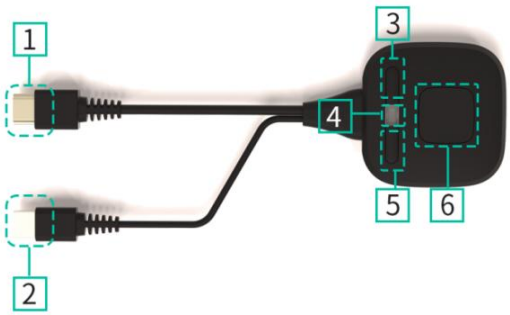
- **System settings**
    - Date & time: Use time server(online)
    - Language: English
    - Auto Standby: Never
    - Timing Reboot: OFF

- **Security Settings**
    - Security Level: Level 1

- **Other settings**
    - Auto create launcher: Disabled.
    - Clear history after meeting: Always.

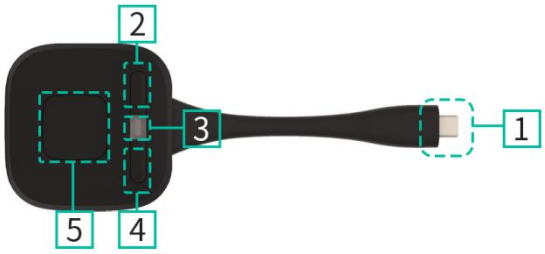
8.3 Wireless Transmitters

8.3.1 WB-2H



1. **HDMI connector**: Using HDMI connector of the button can be plugged into a PC/Laptop for sharing your screen.
2. **USB connector:** Supply power or plug into the BYOM-2 for pairing the Button to the BYOM-2 or upgrade the wireless transmitter.
3. **Auxiliary button 1**: Freeze the image shared on the screen, press again to release.
4. **LED ring indicator**: Indicates the status of the button. For further information, see Led Indicator chapter.
5. **Auxiliary button 2:** Customize the key function, for example different cameras switch.
6. **Main Button** : Click the button to start displaying the content of the PC/Laptop's screen on the screen. Click the button again to stop the sharing.

8.3.2 WB-2C



1. **Type C (DP)connector**: Using Type C (DP) connector of the button can be plugged into a PC/Laptop for sharing your screen.
2. **Auxiliary button 1:** Freeze the image shared on the screen, press again to release.
3. **LED ring indicator**: Indicates the status of the button. For further information, see Led Indicator chapter.
4. **Auxiliary button 2:** Customize the key function, for example different cameras switch.
5. **Main Button** : Click the button to start displaying the content of the PC/Laptop's screen on the screen. Click the button again to stop the sharing.

Note:

WB-2C is full function type-C interface with DP Alt mode compliance, which supports audio and video transmission.

8.3.3 LED Indicator

WB-2H		
WB-2C		

- WB-2H / WB-2C connected to BYOM-2:

  First of all, a WB-2H / WB-2C needs to be connected to the BYOM-2 base unit:
  - When LED indicator is blinking Green: the WB-2H / WB-2C is pairing with BYOM-2 base unit or firmware upgrading.
  - When LED indicator is static red: pairing is done. WB-2H / WB-2C can be unplugged and ready to use.

- WB-2H / WB-2C connected to a source device:

  First of all, a WB-2H / WB-2C needs to be connected to the source device. For example, to a PC:
  - When LED indicator is blinking Green: the WB-2H / WB-2C is plugged in the laptop and initializing.
  - When LED indicator is static green: it is ready to mirror the PC desktop on the main screen connected to BYOM-2 HDMI output.
  - When LED indicator is static red: it is mirroring the PC desktop on the screen.

9. TROUBLESHOOTING

Here you can find some fundamental problems and possible causes, which can be happen during the use of BYOM-2. Find out the problem in the table below and apply the indicated solution.

Problem	Cause	Solution
Using the BYOM-2 for Android APP in the Android device or Airplay on the iOS device, it can nott find the BYOM-2 device.	WiFi password of BYOM-2 changed when android or iOS device is connected to the WiFi of BYOM-2.	Reconnect the mobile by entering password displayed on Home Screen.
Image quality on the main display screen is not good.	The quality or length of the cable between the BYOM-2 and the display or the connection between these two.	• Replace the cable • Use another cable. • Check the cable to be fasten properly.
	Improper resolution for the main screen.	Change the resolution on the Setting configuration and match it to the native resolution of the main screen.
Bad wireless connection. The connection between the transmitter and the BYOM-2 is not stable.	WiFi problems. • Interference in the radio channel. • Overload in the radio channel. • BYOM-2 does not automatically jump to other channels when there are changes in the RF environment.	• Use a WiFi scanner to find a free wireless frequency and channel and select it via the setting configuration. • check the RF environment if there are frequently changes in WiFi networks in your environment.
	Low signal strength: • Cabinets, Metal, walls, construncion elements, which can cause reflections deteriorating the wireless signal. • Obstacles between BYOM-2 and transmitters cause lowering of the wireless strength and quality.	• Put the BYOM-2 closer to the main screen. • Change orientation of the antennas at the rear panel of BYOM-2 to the transmitter direction. • Remove or limit as much as possible obstructions between the transmitters and BYOM-2. • Avoid placing the BYOM-2 base unit in (metal) cabinets, suspended ceilings, under tables or in adjoining rooms.
Can not get the WirelessMedia application run when plug the transmitter to Laptop.	When you are using BYOM-2" for the first time on your laptop or for guests, you must copy the Launcher program WirelessMedia for first on your Laptop / PC. Run this Starter-program. You can run the Starter App without Admin-rights.	Download the App via LAN or WiFi of Base-unit. When the Launcher program is pre-installed one time, WirelessMedia is ready to use later immediately.

	Bad connection at USB port on the Laptop.	• Reconnect to the USB port. • Try another USB port. • Reboot the Laptop.
	Some types of USB devices might be blocked as the company policy. USB port setting on the Laptop might limit the usage of high power USB device when on battery power.	If possible, change the USB port policy on the Laptop.
Obvious that low video performance (sharpness, audio and video dropouts, video stream is jerking, …)	• The media-player is not ideal. • The video quality also depends on the computing power of the PC / laptop and the interaction and CPU load with other running software applications. • A laptop in battery mode can be switched to reduce the computer power to save energy. However, The transmission of HD video requires a certain amount of CPU power to guarantee the optimum quality of the transmission.	• Use another media-player (VLC player…), another browser. • Update the software of your Video-player to the latest version. • Reduce the CPU usage of other software applications. • Lower the screen resolution of the laptop. • Update driver of graphic card. • End low power mode at laptop.
Video is not shown on screen	The content use HDCP	BYOM-2 input cannot support showing HDCP source. If possible, connect the source device to local HDMI input at BYOM-2.
	The display cable (HDMI) is not correctly connected.	Insert the display cable to the display and the Base-unit.
	The displays are switched off.	Switch on the display.
	The BYOM-2 base unit is in standby mode, “Power-LED” is flashing at BYOM-2 Power-supply is missed.	Power off and on again or insert a wireless transmitter into laptop.
The message Window Aero colour scheme appears when using Windows 7 “Windows has detected your computer’s following performance is slow…”	BYOM-2 uses resource from the GPU. In combination with other programs which do so, Windows 7 sometimes displays this message suggesting disabling Aero to improve the performance of Laptop.	It is safe to ignore this message and choose “Keep the current colour scheme.”
When the content is removed from the screen, however, the	Connection to the BYOM-2 is lost.	BYOM-2 tries to restore the connection automatically. If it fails, the LEDs on the button start

LEDs on the button are blinking.		blinking red. Unplug the button from your Laptop and try a new button.
Nothing is shown on the displays at all	The displays are switched off.	Switch on the display
	The display cable is not correctly connected.	Insert the display cable to the display and the BYOM-2.
	The BYOM-2 is in standby mode.	Briefly push the standby button on the BYOM-2 or power off and on again.
There is no LAN connection with the BYOM-2.	Wrong IP address.	• IP address is not within LAN range. • DHCP is not enabled.
There is no WiFi connection between mobile device with BYOM-2.	Wrong WiFi frequency.	Check mobile device to select the correct 2.4GHz or 5GHz.
	Wrong SSID and password	Enter the correct SSID.
Obvious that No audio when transmit local file to BYOM-2.	Unsupportive audio format as below listed, including Dolby MS11, DDCO DTSLBR, DTSE, SRS-THEATERSOUND, DTS_HD, DTS_StudioSound3D.	If possible, reformat it to the other audio format, like DD, DD+, HE-AAC, DTS DMP, WMA, DRA, COOK
There is no sound at main display.	No connected audio device.	Make sure, the audio is turned on.
	Volume is set to OFF.	Adjust the volume level at Options in menu of BYOM-2.
	The volume level is set too low in the options of the WirelessMedia app program on PC.	Check and adjust the volume in the WirelessMedia app on PC.
	Audio signal may be muted.	Click with the right-mouse button at speaker icon in taskbar and switch on.
	The volume level is set too low.	Adjust the volume level at Options in menu of BYOM-2.
	Audio is muted in mixer of volume in taskbar.	Right-mouse click at speaker icon in taskbar, open mixer and unmute BYOM-2 or “Video Playback”.
	The software of used Video-player is not actual.	Check and update Video-player or try another player.

	An active virus scanner can block the Audio.	Please check the filter-settings in Virus scanner. De-activate the player for a check.
There is no sound with MacBook.	Maybe the problem of sound-flower App, which is integrated in driver WirelessMedia app.	• You need Admin-password. • Please check and go to the macOS System Preferences and select the “Security & Privacy” tab. Find the "allow to run/install the sound-flower" there click on “Allow” next to “Matt Ingalls”, to allow this sound-flower to install on the Mac Book. • Run the WirelessMedia app again, it’ll auto-install the sound-flower to the MacBook.
There is no sound via AirPlay.	The volume is set too low, on the mobile device.	Increase the volume on the mobile device.
No sound on the mainvscreen, when screen mirroring a video by WirelessMedia APP.	Due to the limit of the Android system, Android doesn’t provide an interface to capture the audio. In this case, there is no sound when mirroring the video.	Use transmitter or Apple Airplay to do mirroring when necessary.
Can not update the firmware of the BYOM-2.	Flash disk format is NTFS.	Please re-format the flash disk to be FAT format to update it.
Can not work airplay with MacBook / iPhone / iPad.	Operation System’s Requirement Mac OS 10.9, iOS 8.0 and later (WirelessMedia app).	• To use AirPlay, you must connect the iOS device to the WiFi of BYOM-2 and enable the AirPlay feature in the Control Center. • Update the iOS device to a newer operating system.
Poor video-quality with AirPlay.	There are 2 states for AirPlay: a.) Mirroring: 1: 1 copy of the screen b.) Streaming: Videos from (Internet or Youtube); the image will not be displayed on the iOS device. => picture is jerky.	Please check and reduce “Quality” in settings of Youtube, for example from “Automatic” to 720p.
Can not work with Android device.	Operation System Requirement is that Android 2.3 version and later (WirelessMedia app).	Update to the later OS.

10. TECHNICAL DATA

10.1 Technical Specifications

BYOM-2	
Video Output	2 × HDMI type A 19-pin female connector
Video Output Resolution	HDMI Main: 3840x2160@60Hz, 3840x2160@30Hz 1920x1080@60Hz, 1280x720@60Hz HDMI Sub: 1920x1080@60Hz, 1280x720@60Hz
Video Output Capabilities	HDMI Main: HDMI1.4/HDMI2.0 HDMI Sub: HDMI1.4
Video Output HDCP	HDMI Main: HDCP1.4/HDCP2.2 HDMI Sub: HDCP1.4
Video Input	1 × HDMI type A 19-pin female connector
Video Input Resolution	3840x2160@30Hz, 1920x1080@60Hz, 1280x720@60Hz
Video Input Capability	HDMI1.4
Video Input HDCP	HDCP1.4
Analog Audio Output	1 × 3.5mm computer audio interface
LAN Interface	RJ45 x2; 1000Mbps x2
USB Interface	USB3.0: typeA x2, typeC x1; USB2.0: typeA x4, typeC x1;
Audio Input	AirPlay, Miracast, Chromecast, Windows/MAC App, WMH, WMC
Control Interface	Phoenix terminal 3.5mm RS232 interface
GPI Interface	Phoenix terminal 3.5mm 2xGPI
Maximum Display Window	⩾4+14 (4 main screens + 14 preview control windows)
Maximum Connected Transmitter	⩾16
Wireless Data Rate	Up to 1200Mbps
Video Play Frame Rate	20-60 FPS
Transmission Delay	80ms/min
Wireless Transmission Protocol	WIFI IEEE 802.11 a/g/n/ac/ax
Frequency Band	2.4 GHz & 5 GHz
WIFI Antenna	MIMO 2x2, MIMO 1x1
Dimensions (W x D x H)	220mm x 130mm x 34mm 280mm x 130mm x 34mm (including antenna)

Weight	2.05lbs（930g）
Storage Temperature	-4° ~ +140° F (-20° ~ +60° C)
Humidity	20%-90% (non-condensing)
Power Supply	DC 12V or POE
POE Standard	IEEE802.3at
Power Consumption	30W(MAX)

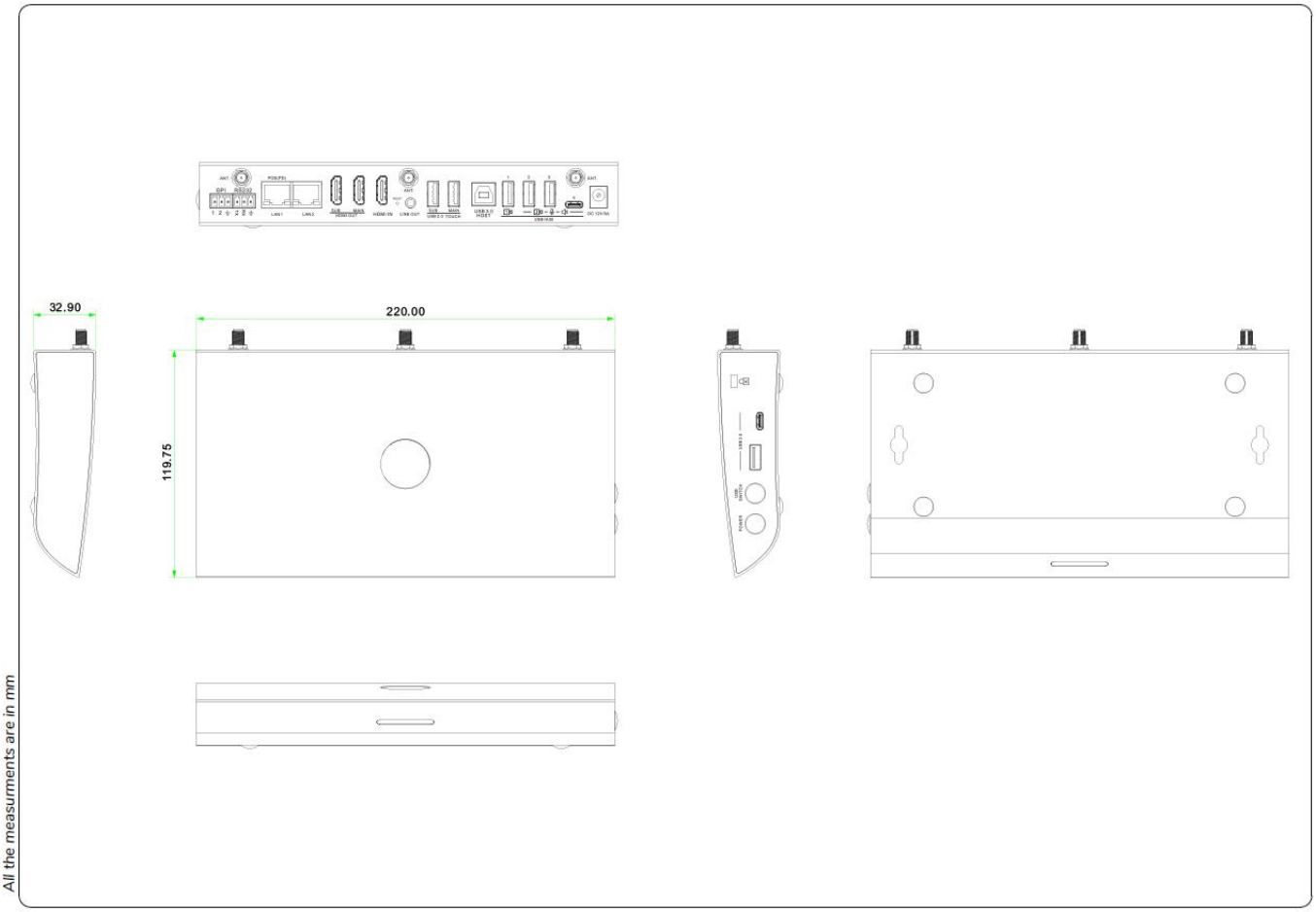
WB-2H (optional accessory)	
Video Input Connectors	1×HDMI type A 19P male interface
Video Input Resolution	3840x2160@30Hz, 2540x1440@60Hz 1920x1080@60Hz, 1280x720@60Hz
Video Capability	HDMI1.4
HDCP	HDCP1.4
USB Interface	USB 2.0 x1
Audio Input	HDMI PCM 2CH
Control Interface	USB HID touch passback
Video Play Frame Rate	20-60 FPS
Transmission Delay	<100ms
Wireless Transmission Protocol	WIFI IEEE 802.11 a/g/n/ac/ax
Frequency Band	2.4 GHz & 5 GHz
WIFI Antenna	MIMO 2x2
Wireless Data Rate	Up to 1200Mbps
Dimensions (W x D x H)	80cm x 65cm x 1.3cm HDMI cable length: 11cm USB cable length: 21cm
Weight	0.2lbs（100g）
Storage Temperature	-4° ~ +140° F (-20° ~ +60° C)
Humidity	20%-90% (non-condensing)
Power Supply	USB
Power Consumption	2.5W(MAX)

WB-2C (optional accessory)	
Video Input Connectors	1 × USB-C 24P male interface
Video Input Resolution	3840x2160@30Hz, 2540x1440@60Hz 1920x1080@60Hz, 1280x720@60Hz
Video Capability	DP1.2
USB Interface	USB 2.0 x1
Audio Input	HDMI PCM 2CH
Control Interface	USB HID touch passback
Video Play Frame Rate	20-60 FPS
Transmission Delay	<100ms
Wireless Transmission Protocol	WIFI IEEE 802.11 a/g/n/ac/ax
Frequency Band	2.4 GHz & 5 GHz
WIFI Antenna	MIMO 2x2
Wireless Data Rate	Up to 1200Mbps

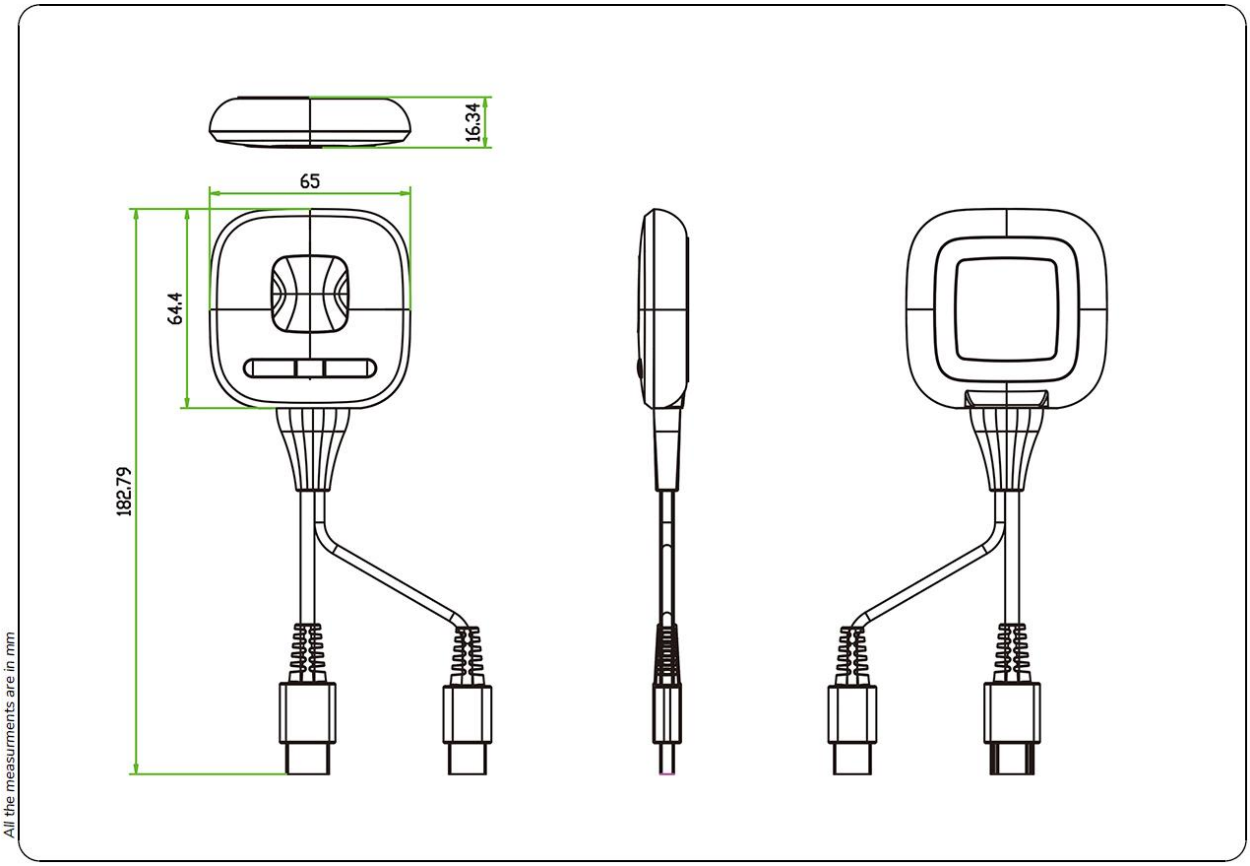
Dimensions (W x D x H)	80cm x 65cm x 1.3cm USB C cable length: 11cm
Weight	0.2lbs（100g）
Storage Temperature	-4° ~ +140° F (-20° ~ +60° C)
Humidity	20%-90% (non-condensing)
Power Supply	USB
Power Consumption	3.0W(MAX)

10.2 Mechanical Diagram

BYOM-2

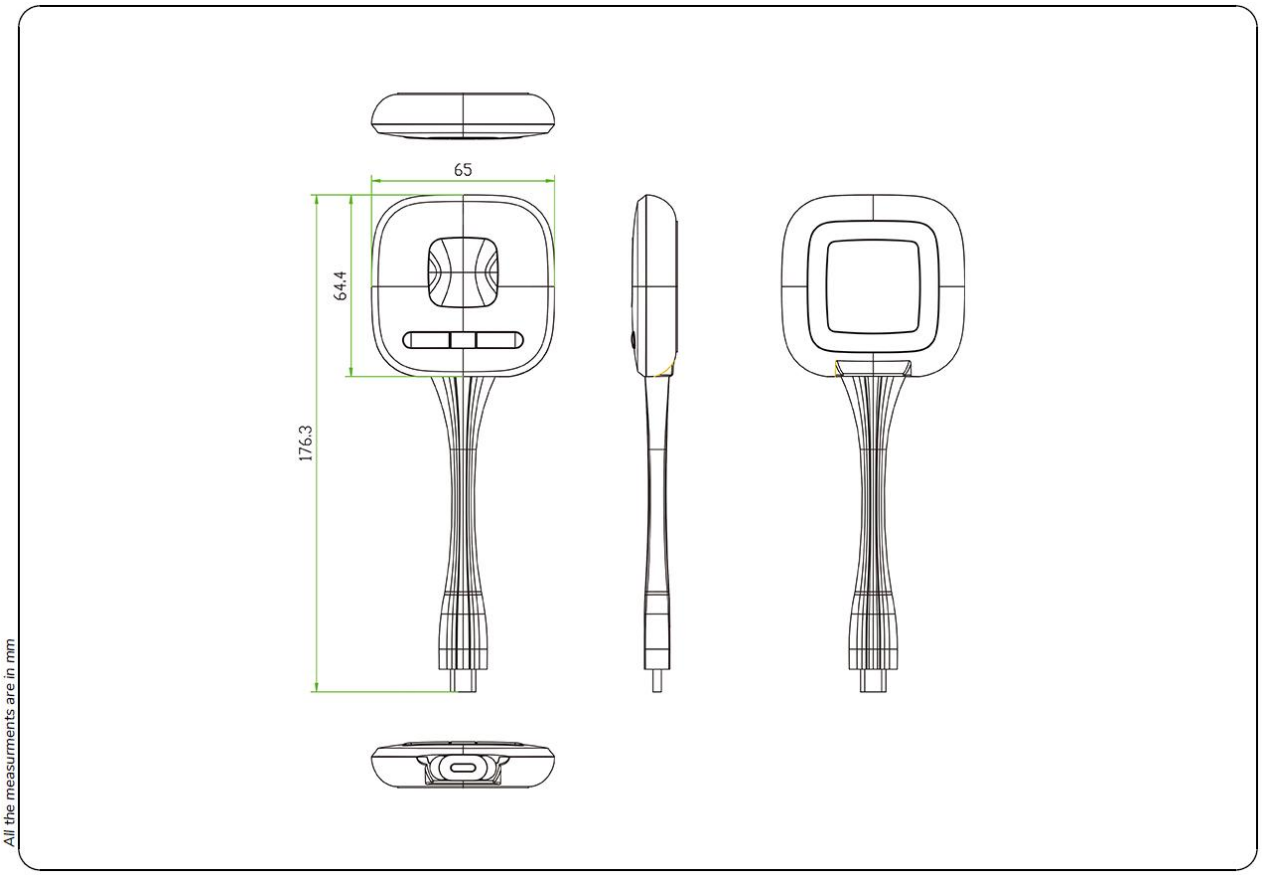


WB-2H



All the measurments are in mm

WB-2C



All the measurments are in mm