User Manual
Wireless and Wired Switcher
Model: WSP-511A0

Release V1.0

Feature List:

- Support VESA PC resolution input, auto-detecting
- Can transmit PC’s mirror/extended desktop or Macbook's mirror desktop
- Can transmit smart devices' mirror, photos, videos, music etc.
- Support remote viewing the active signal on displayer by installed app on smart devices
- Support remote control the active source devices from other smart devices. Support "Airplay" for apple device
- Multiple inputs: 3 x HDMI, 1 x VGA
- HDMI source input with 4Kx2K@60Hz support
- Supports multiple HDMI output resolutions, such as 4Kx2K@60Hz, 4Kx2K@30Hz and 1080P.
- HDCP compliant.
- Easy-to-use panel and Web GUI.
- Control methods – Front Panel, LAN (Web GUI and TCP) and RS232.
- On-site firmware upgrading through LAN or USB ports (reserved for some devices).

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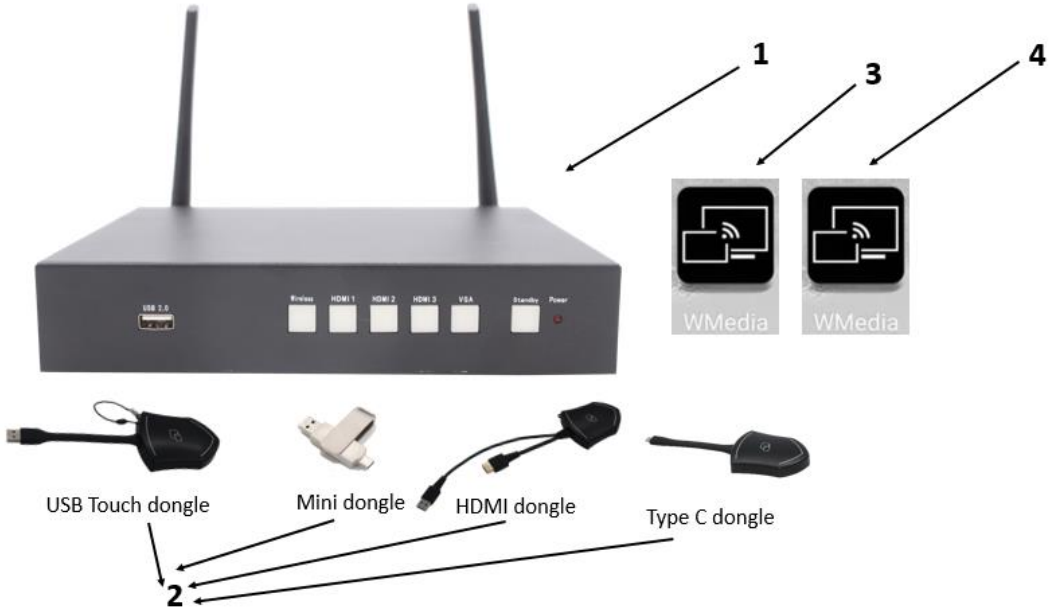
1.Introduction

WSP-511A0 is the 4K wireless and wired scaler collaboration system which not only support 4K wireless presenting the laptop, MacBook, Android and iOS device to the main screen to share the ideas, but also support scaler switch the HDMI and VGA sources.

Set Components

A typical Set includes one mini dongle WMT-mini, one Base Unit, “WMedia for Android” APK and “WMedia for IOS” APP. Depending on the application or size of meeting room, user could purchase more dongle transmitters if they need. Dongle transmitters is optional components.

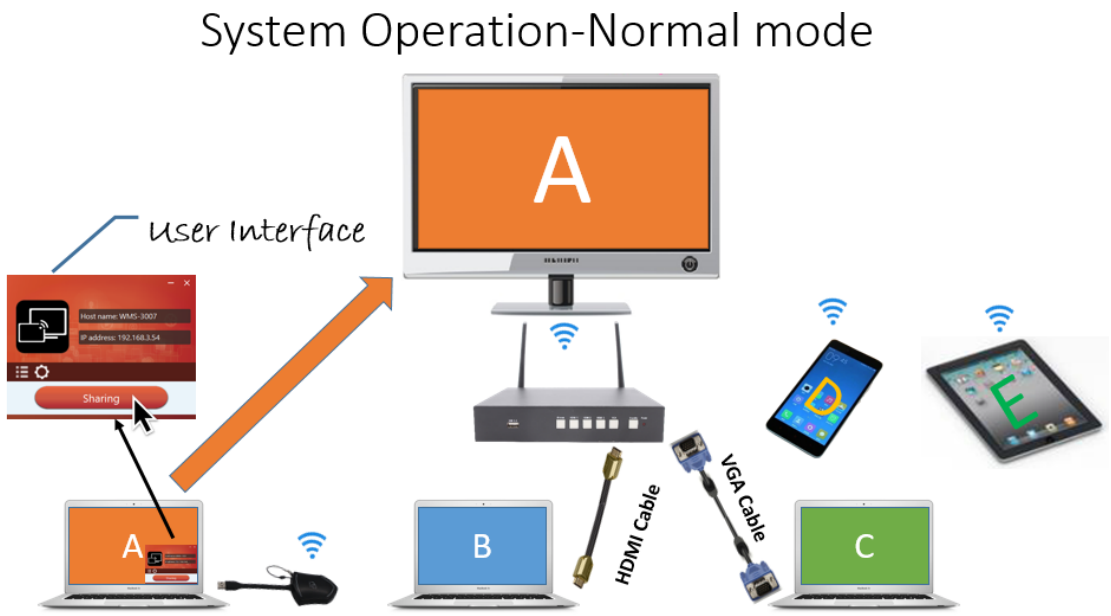


ID	Name	Description
1	Base Unit	Host unit WSP-511A0
2	Transmitter dongles	For PC/Lap-top to share the desktop/extended desktop.
3	WMedia for Android	For smart android devices to share the screen, transmit photos/music/video/files, exchange files, remote view and review mouse.
4	WMedia for IOS	For smart IOS devices to share the screen, transmit photos/music/video/files, exchange files, remote view and review mouse.

Accessories List

ID	Name	Description
1	Antenna	2 pcs of antenna are included in the box. To avoid damage, they are not pre-mounted. The antenna can rotate for a better wireless connection.
2	Power adapter	International plug inter-changeable power adapter, of which the plugs includes US, Europe, UK, Australia standard.

The diagram of WSP-511A0 system as below in Fig 1.2



2.Specification

Specifications of WSP-511A0 on Windows	
Features	
SW format	WirelessMedia.exe for Windows
Security	WPA/WPA2

Required Windows OS	Windows XP/Vista/7/8/8.1/10 and above, 32 & 64 bit
Video Capacity	Wireless Transmission 1080P@ < 30Hz
Distance	35m without obstacle between lap-top WIFI module and WSP-511A0
Control	
Transmitter	Visual button on Lap-top
Indicator	Green/Red visual indicator on visual button
Specifications of WSP-511A0 on macOS	
Features	
SW format	WirelessMedia.app for macOS
Security	WPA/WPA2
Required Windows OS	macOS 10.13
Video Capacity	Wireless Transmission 1080P@ < 30Hz
Distance	35m without obstacle between lap-top WIFI module and WSP-511A0
Control	
Transmitter	Visual button on Lap-top
Indicator	Green/Red visual indicator on visual button
Specifications of WSP-511A0	
Supported Formats	
Video Input Formats	1x Wireless, 3x HDMI, 1x VGA
Format Compliance	WIFI 11n/ac
Video Output Formats	1x HDMI with CEC
Video Output Resolution	1920x1080@60Hz, 3840x2160@30Hz/60Hz, 1920x1200@60Hz
Format Compliance	HDMI1.4/HDMI2.0
Audio Input Formats	1x analog audio in
Audio Output Formats	HDMI: embedded digital audio De-embedded analog stereo audio: 20 kΩ impedance
Inputs Connectors	
Wireless Input	WIFI 11n/ac
Outputs Connectors	
HDMI Output	1x HDMI 19-pin female connector
Analog Audio Output	1x 3.5mm PC audio female connectors
Features	
Number of window simultaneous on screen	1
Number of simultaneous connections	<14

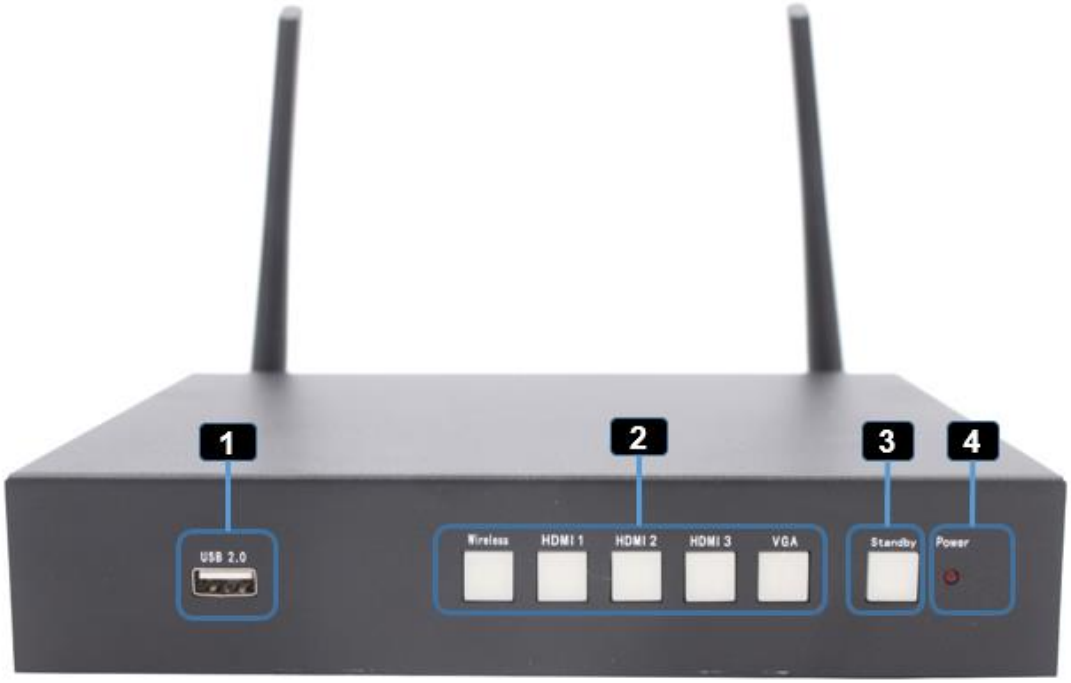
Data rate wireless	Up to 300Mbps, depending on the WIFI module of the lap-top
Video Playback Frame Rate	20-30 FPS
Latency of wireless	100-130ms (lowest latency mouse lower to 20ms)
Wireless transmission protocol	IEEE 802.11 a/g/n/ac
Frequency band	2.4 GHZ and 5 GHz
Video Capacity:	1080P @ <60Hz Airplay for IOS devices 1080P @ <60Hz WMedia.apk for Android 1080P @ <60Hz WMedia.APP for IOS devices 1080P @ <30Hz for WirelessMedia.EXE for Windows 4K @ <60Hz for wired HDMI
Remote Viewing	Mirroring remote view on mobile by app installed
Mobile Capability	Free IOS app, Free Android app
Encryption	AES WPA PSK, WPA2 PSK
Remote Mouse	Remote control presenter's PC
"WirelessMedia C"	Support 1080P maximum 30frm/s over wireless channel Adopt H.264 compression tech on the transmitter 35m distance between transmitter and base unit, "Auto-password" for each meeting or class for security, Real-time remote viewer of the main screen from mobile device app,
Firmware 2.2	Preview Windows, enable preview windows to monitor each lap-top Low-latency mouse, minimum 20ms latency for mouse HDMI AUTO-switch, auto-switch between HDMI input and wireless input Airplay 2.0, support Airplay 2.0 device
Firmware 3.0	Segmented Dual Network, staying both Guest network and Corp network Security Levels, enables three different security level Win10 Extended Desktop, enables presenter mode White Board & Annotation

Control	
On-Screen Setting	Configuration Visual button, by HID mouse, or remote control on APP
Ethernet	Telnet
RS-232	1x 3-pin terminal connector
Mechanical	
Dimensions (W x D x H)	215X159X43.5MM
Weight	1KG
Environmental	
Operating Temperature	+32° to +104° F (0° to +40° C)
Storage Temperature	-4° to +140° F (-20° to +60° C)
Humidity (Storage / Operating)	20% to 90% (non-condensing)
Power	
DC Power	12V
Power Consumption	10W (max.)
Accessories Included	
1x DC adapter with four plug-in, US, Europe, UK, Australia	

3.Panel layout

3.1 Hardware Interface

3.1.1 WSP-511A0 Front Panel



ID	Name	Description
1	USB 2.0	USB port is for updating via plugging USB disk with firmware.
2	Front Button	To switch the input signal.
3	Standby Button	Standby
4	Power LED	To indicate the signal available and power on/off.

USB port

- The USB port is used to update the software of the WSP-511A0.
- The USB port is used for pairing the transmitter and WSP-511A0, when the transmitter is plugged-in.

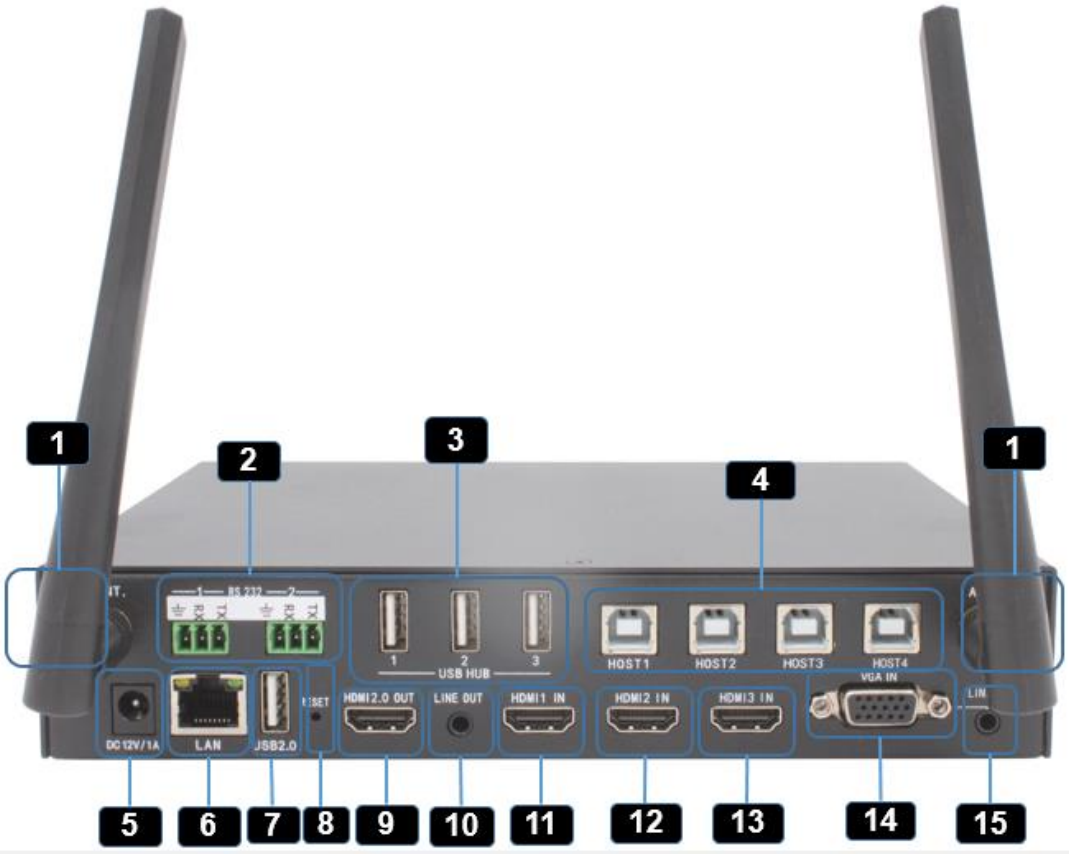
- The USB port is used for connecting a mouse to create/upgrade Launcher by clicking **Download** button, select local **HDMI Input**, control the **SETTING** configuration, open the **Help** Page and control PC source device, when a PC desktop is mirroring to the screen by plugging in the transmitter.
- The USB port is used for creating or upgrading Launcher by clicking **Download** button, when a USB stick is plugged in.

Standby Button

The button at the front of the base unit has a power on/off function once the Base unit is powered.

- Push the power button to enter into standby mode.
- Push the power button to wake up base unit.

3.1. 2 Rear Panel



ID	Name	Description
1	Antenna fixture points	Screw up the included two antennas to these two ports.
2	RS-232 Ports	Connect to the third-party control device. 2 ports are the

		same. User could connect to control respective third-party devices simultaneously.
3	USB Hub port	Port1, port2, port3 connect USB connector devices such as USB drive, USB mouse, Camera, keyboard… This function is to control 3 set of USB devices to mount to one input signal source and switch between each input source.
4	HOST 1-HOST 4	Connect a USB-B cable from a USB port of PC to HOST port. To control the 3 set of USB hub device to mount to one input signal source.
5	DC Power socket	Connect the included power adapter to this socket, and connect the plug to an available electrical outlet.
6	LAN Ethernet port	Connect an Ethernet cable between this jack and a LAN to connect WSP-511A0 to LAN, support POE.
7	Rear USB connector	USB port, for transmitter pairing, mouse control, USB touch screen etc.
8	Reset	Reset button to restore to the factory default setting.
9	HDMI output	Connect an HDMI cable from this port to an HD or 4K/HDMI2.0 display.
10	Line audio output	2 channel analog audio output, Connect a 3.5mm mini-jack PC connector from this jack to the Line In jack of an audio system.
11	HDMI input 1	Connect an local HDMI input, up to 4K_60Hz, HDCP2.2 source device
12	HDMI input 2	Connect an local HDMI input, up to 4K_60Hz, HDCP2.2 source device
13	HDMI input 3	Connect an local HDMI input, up to 4K_60Hz, HDCP2.2 source device
14	VGA input	Connect an local VGA input
15	Line audio input	2 channel analog audio input, Connect a 3.5mm mini-stereo cable from the Line Out jack on the audio source to this jack.

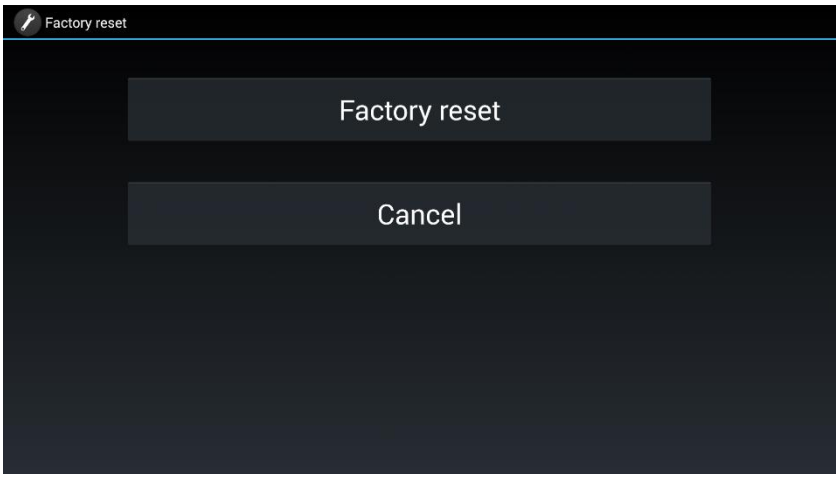
USB port

- The USB port is used to update the software of the WSP-511A0.
- The USB port is used for pairing the transmitter and WSP-511A0, when the transmitter is plugged-in.
- The USB port is used for connecting a mouse to create/upgrade Launcher by clicking **Download** button, select local **HDMI Input**, control the **SETTING** configuration, open the **Help** Page and control PC source device, when a PC desktop is mirroring to the screen by plugging in transmitters.

- The USB port is used for creating or upgrading Launcher by clicking **Download** button, when a USB stick is plugged in.

Restore default configuration via Reset button

- Start up the WSP-511A0.
- When the *Home Page* is shown up, press the reset button at the rear panel of WSP-511A0. Press this button until the *factory reset page* is shown up as below, for at least 2 seconds.
- Use a mouse to connect to WSP-511A0 and click *Factory Reset*. The Base unit will reboot after 3 seconds to be default configuration. Or click *Cancel* to return.



Default Configuration

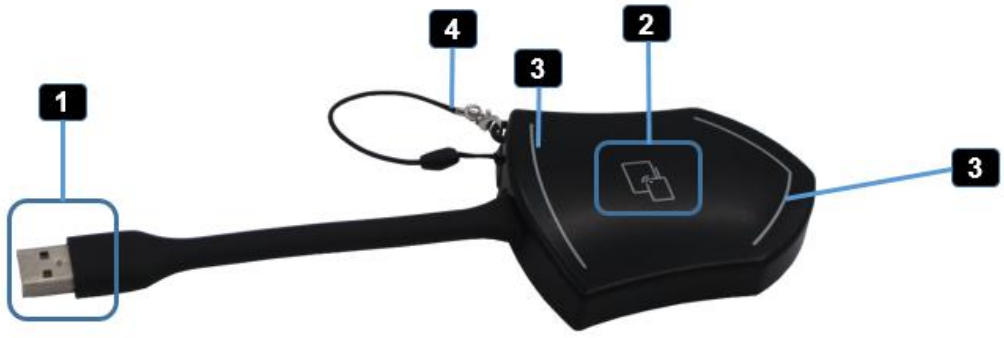
- Ethernet:
  - IP address
  - Ethernet MAC Address
  - Proxy: None
  - IP setting: DHCP
  - PPPOE setting: Disconnected
- Wireless network
  - Wireless network configuration wizard, Device name: WSP-XXXX; Network mode: Wireless direct mode
  - Show device name and password when mirroring: OFF
  - Auto change Wi-Fi hotspot password: 5minutes
  - Disable password change hint dialog: OFF
  - Hide SSID, Password& IP in Status Bar: OFF
  - Lock Homescreen Status Bar: OFF
- Moderator Control:
  - Preview Windows: OFF
- General setting:

- Auto Standby: Never
- Airplay screen quality: High
- HDMI output resolution: 1920x1080@60Hz
- Source switch when active source plugged out: switch to wireless
- HDMI input auto switch: Manual
- Home screen background image: Disable customized changeable background
- Volume: 100

- Security setting
  - Security level: Level 1
  - LAN discovery & connection: Devices can see and connect to the WSP-511A0 via LAN as well as WiFi: ON
  - Remote view lock: Disable viewing of the screen by mobile device: ON
  - Show PCs user status when mirroring: ON
  - Clear history after meeting: Always
  - Change admin password: admin(default)
- External Control Setup: Parameter , Control, HDMI CEC USB
- Language: English
- System update
- Date & time:
  - Automatic date & time: use network-provided time

3.1. 3 Dongle Front Panel

WMT2-C, WMT-Mini, WMT3-H, WMT-C1 are dongles, which is used for mirroring from personal PC or MAC desktop to the main screen.

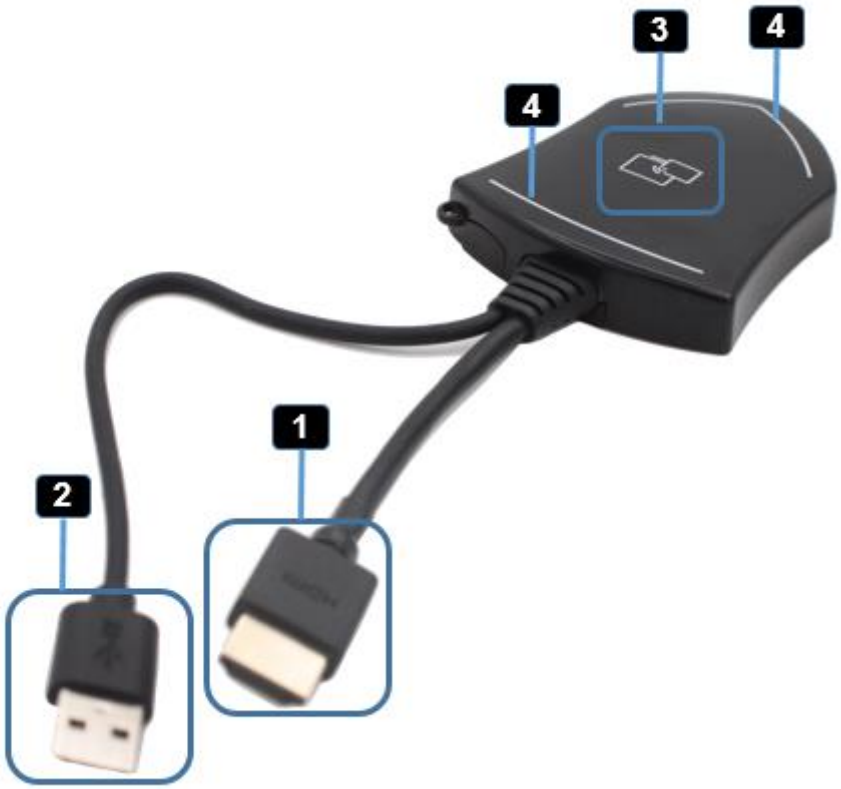


ID	Name	Description
1	USB connector	Using USB connect of the button can be plugged into a PC/Laptop (for sharing your screen) or the base unit (for pairing the Button to the Base Unit or Updating its software)

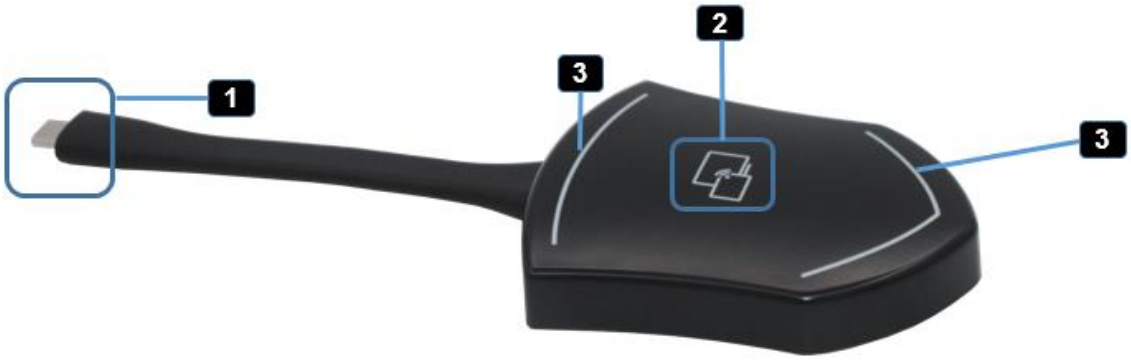
2	Touching Button	Press the button to start display the content of the PC/Lap-top's screen on the main screen. Touch the button during the meeting will toggle the sharing of the screen.
3	LED ring indicator	Indicates the status of the button
4	USB stick	Plugging USB stick into USB connector of WSP-511A0 to create or upgrade Launcher. Plugging USB stick into PC to run WirelessMedia exe/APP. Program to mirror.

LED ring indicator behavior

- When LED indicator is static green, it's ready to mirror your PC desktop on the main screen.
- When LED indicator is static red, 1) it's mirroring your PC desktop on the screen, 2) pairing is done. You can now unplug the Button from the base unit.
- When LED indicator is blinking Green, it indicates 1) the button is plugged in the laptop and initializing or waiting for user to start the WirelessMedia application, 2) pairing/software upgrading of the button in the Base Unit is in progress.
- When LED indicator is Off (no light), it indicates 1) the button is not plugged in the PC/Lap-top; 2) the button is defective; 3) the USB port or computer might be defective.

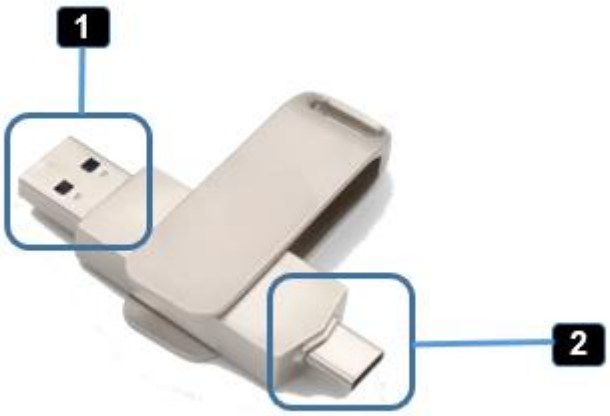


ID	Name	Description
1	HDMI connector	Using HDMI connector of the button can be plugged into a PC/Laptop for sharing your screen.
2	USB connector	Supply power, or plug into the base unit for pairing the Button to the Base Unit or upgrade the dongle.
3	Touching Button	Touch the sensor button to start displaying the content of the PC/Lap-top's screen on the main screen. Touch the button during the meeting will toggle the sharing of the screen.
4	LED ring indicator	Indicates the status of the button.



Note: WMT-C1 is full function type-C interface with DP Altmode inside, which supports Audio and video transmission. Thus PC's type C connector also requires full function type C connector for mirroring screen.

ID	Name	Description
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	Touching Button	Touch the sensor button to start displaying the content of the PC/Lap-top's screen on the main screen. Touch the button during the meeting will toggle the sharing of the screen.
3	LED ring indicator	Indicates the status of the button.

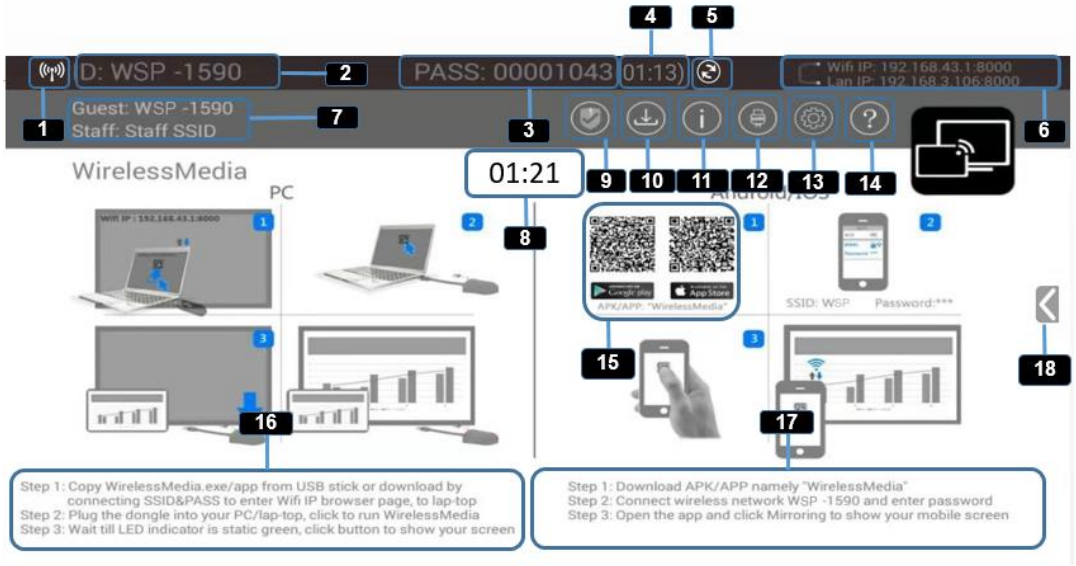


ID	Name	Description
1	USB connector	Using USB connector of the dongle can be plugged into a PC/Laptop for sharing your screen.

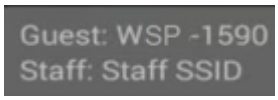
2	Type C connector	Using Type C connector of the dongle can be plugged into a PC/Laptop for sharing your screen.

3.2 Software Interface

3.2.1 Home Page



ID	Name	Description
1	**Wi-Fi Indicator**	Wi-Fi Direct mode: internal access point is enabled **Wi-Fi Infrastructure mode:** “Client-Mode“ , Wi-Fi connection to router is established, icon displays the current signal strength. A secure Wi-Fi connection is established, or connection to a router failed: Wi-Fi is not available:

		LAN Infrastructure mode: access point is disabled
2	**ID**	Wi-Fi name or device name of the Base-unit access point.
3	**PASS (Password)**	Enter the password when connect the WIFI SSID of WSP-511A0.
4	**Password-timer**	only displayed, when timer is active; time until the password is changed automatically.
5	**Refresh Wi-Fi-password**	Generate new password manually for securing your Wi-Fi network.
6	**Wi-Fi IP** **LAN IP**	● Wi-Fi IP: address of base unit in wireless LAN ● Assigned IP: address of base unit in LAN; "N/A" = no connection to network
7	**SSID: Guest** **SSID: Staff**	 Name of Wi-Fi network for **Guest** and **Staff**, which allows mobile devices to connect with the base unit.
8	**TIME**	Show time, if LAN has access to a time server; even after disconnecting the LAN connection, the time is displayed until the device has been disconnected from power.
9	**Security level**	Security level 1-3, display ONLY; the security features of the displayed level are displayed in detail by clicking on the icon; the settings can only be changed by administrator in the webserver console setting menu.
10	**Download Button**	Creating & upgrading Launcher "WirelessMedia.exe" for Windows, MAC to USB stick.
11	**Info**	Show status-bar (1) – (7) in Home screen showing/hiding
12	**Wired source input**	Click to selection switch the local wired source input including HDMI1, HDMI 2, HDMI 3 and VGA input
13	**Setting**	Connect a mouse to either USB port, click to open the "Setting" menu.
14	**Help**	Help documents to help quick installation, operation.
15	**Load "WirelessMedia" App from GooglePlay Store and Apple Store**	Scan QR-code for Android device and Apple device and download the App from GooglePlay Store and Apple store.
16	**Windows / MacOS Quick Start**	Steps to instruct how to transmit PC/Lap-top onto the main screen. First-time users must first install

		the starter program from the web page or from the USB stick one time.
17	**Android/IOS Quick Start**	Steps to instruct how to transmit smart mobile devices either powered by Android or IOS, onto the main screen.
18	**Preview function of the screen contents of the participants with transmitter and mobile devices; White Board& Annotation function icon**	Preview function of the screen contents of all connected transmitters and mobile devices; White Board and Annotation function.

SSID and PASS (password)

To connect the Hotspot of WSP-511A0 by this SSID and PASSWORD.

Changeable PASS (password)

- PWD (password) is changeable randomly every 5 minutes. PWD (password) is configurable is the **Setting** page, Never Change, 5m, 30m, 1h, 2h, 4h 24h. The changeable Password will be fixed by connecting a dongle transmitter to PC/Laptop, and continue to be changeable after 15s after disconnecting the last WirelessMedia WMT-mini.
- User don't need to re-pair the dongle transmitter again, if only the PWD (password) is changed. Smart mobile device has to enter the correct SSID and PWD (password) to connect the WSP-511A0 hotspot, in order to access all WSP-511A0 functionality.
- When WSP-511A0 is disconnected with the last dongle transmitter for 15s, it'll open up a dialog box for user to confirm whether to clear the meeting history, including all data/files to be temporarily memorized in the WSP-511A0.

Note: For any change of SSID (occurred when the full-upgrade), the dongle transmitter should pair with the WSP-511A0 again.

Refresh button:

Click the Refresh button on home page to change the password.

Wifi IP & Lan IP:

- Wifi IP: It shows Hotspot IP address of WSP-511A0.

- Lan IP: It shows the WSP-511A0's IP address in the corporate LAN (Local Area Network).

Note: When Lan IP shows "N/A", it means, the WSP-511A0 is not connected to the LAN (Local Area Network) by CAT cable or it failed to get an available IP address by the corporation router. When Wifi IP shows "N/A", it means, the WSP-511A0 doesn't click to open hotspot.

Security Level

It will show the security level when clicking the icon, thus let user know the permissions.

Download Button

Creating and upgrading launcher.

Wired source Input

Click this button to toggle the local wired input on the WSP-511A0 including HDMI1, HDMI2, HDMI3 and VGA.

Setting

It gives a way to control all the configuration of WSP-511A0 over a LAN (local Area Network). User shall use the USB connected mouse or the Remote Mouse function in the "WirelessMedia for Android" APK or "WirelessMedia for IOS" application".

It includes the sub-menu as below

- Ethernet
- Wireless network
- Moderator Control
- General setting
- Security setting
- External Control Setup
- Language
- System Update
- Date & Time
- About Device

Help

- User Manual WSP-511A0

4.Installation

About this chapter:

The installation chapter gives an overview of the different ways to install and connect WSP-511A0 Base Unit.

Overview:

- Installation methods for the Base unit
- Table mounting
- Wall mounting
- Recommendations about antenna placement and orientation
- WSP-511A0 Power Connection
- WSP-511A0 Video Connection
- WSP-511A0 Audio connection
- WSP-511A0 LAN connection
- About USB device connection
- Wiring Diagram

4.1 Installation methods for the Base unit

Introduction to the installation methods:

The Base unit can be installed in different ways in a meeting room.

- Table mount
- Wall mount

The articulated antennas are removable. They can rotate for better wireless connection.

Note: For optimal performance, install the Base unit close to the display and avoid obstacles between the Base unit and the Transmitters.

Necessary tools

• A drill (type of drill depends on the type of wall)
• Flat screwdriver
• Additional screwdriver that matches the mounting screws (mounting screws not included in the package)

Necessary parts

• 2 mounting screws
• 2 plugs
• Mounting bracket (included in the box)

How to install

1. Drill two holes in the wall as indicated on the drawing.
2. At the bottom of Base Unit, place the bracket on the 4 holes and turn in 4 delivered flat screws to be fasten enough.

3. Insert a plug in each hole (if needed, depends on the wall type), and drive in 2 screws. Please leave at least a dimension 0.15mm space to place the bracket between the screw header and wall. And please not the head of the screw is bigger than the whole of the bracket.
   Note: Mounting screws and plugs are not included in the WSP-511A0 box. The type of screws depends on the type of wall (stone, wood, plasterboard, ...) you are mounting the Base Unit to. Make sure the head of the screw is not larger than the hole in the bracket.

4. Place the WSP-511A0 on the wall, so that the holes on the bracket matches the 2 unfixed screws on the wall. And the bracket is touching the wall closely. Hoop the bracket on the screw and slide the Base Unit downwards until it's fixed in the 2 screw on the wall.

5. Fixate the bracket with the 2 unfixed screws.

Antenna placement rules

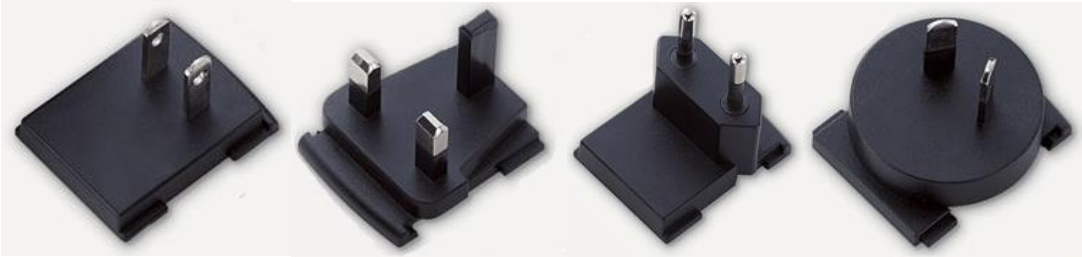
- The antennas should be oriented vertically, so perpendicular to the ceiling and parallel to the walls.
- The antennas should be installed far enough (at least 50cm/1.6ft) from metallic surfaces to avoid unwanted reflections and far enough (at least 1m/3.3ft) from other radio equipment that operates in the same frequency range, e.g. other Wi-Fi access points, cordless telephone, microwave ovens,…. It is also best to install antennas at least 15 cm (6 inches) from concrete walls.
- The most favorable situation is a direct line of sight between antennas and Transmitters. 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 WSP-511A0 users. As a result, the advised position for the antennas is at the side of the meeting room.

4.2 WSP-511A0 Power Connection

The Base unit can be powered by the external universal power adapter.

How to connect the external power adapter

1. Plug the power connector to the power adapter to the power input connector of the Base Unit
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.



Note: Once the base unit is powered, it starts up. From now on please use the POWER button with Status LED on front of Base-unit to switch ON or OFF.

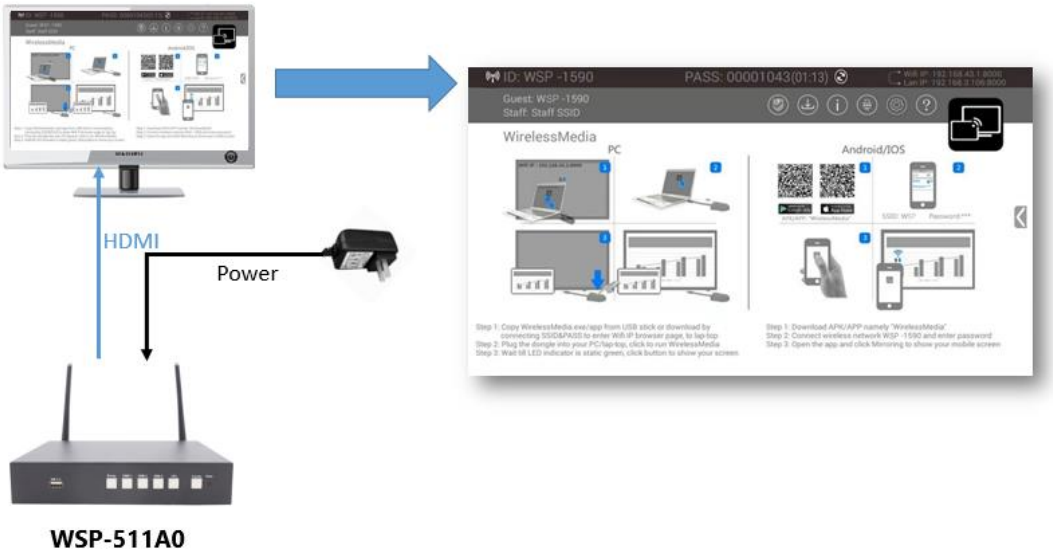
Power over Ethernet

WSP-511A0 supports POE (Power over Ethernet), it could power up the device instead of using the external power adapter.

4.3 WSP-511A0 Video Connection

1. Screw up the two **Antenna** to the WSP-511A0.
2. Connect the WSP-511A0 **HDMI Output** to a 4K or HD display by a HDMI cable.
3. Connect the power adapter to the WSP-511A0 **DC power socket** and connect the other side plug to an available electrical outlet.

After started, the system show the **home page**, as shown below

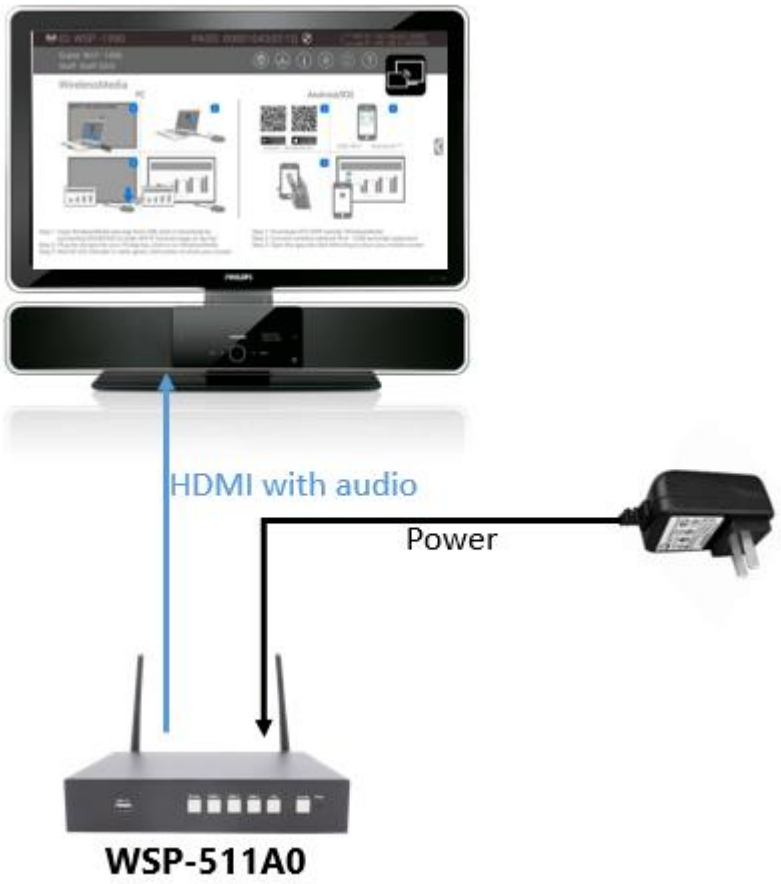


4.4 WSP-511A0 Audio Connection

WirelessMedia transmitter can capture the audio output of the PC/Lap-top, re-direct and send to the Base Unit together with the video signal. The audio will be output at line levels from mini jack socket 3.5mm connector and via the HDMI output connectors simultaneously.
It's up to the user to decide whether or not to send the audio signal together with the video signal.

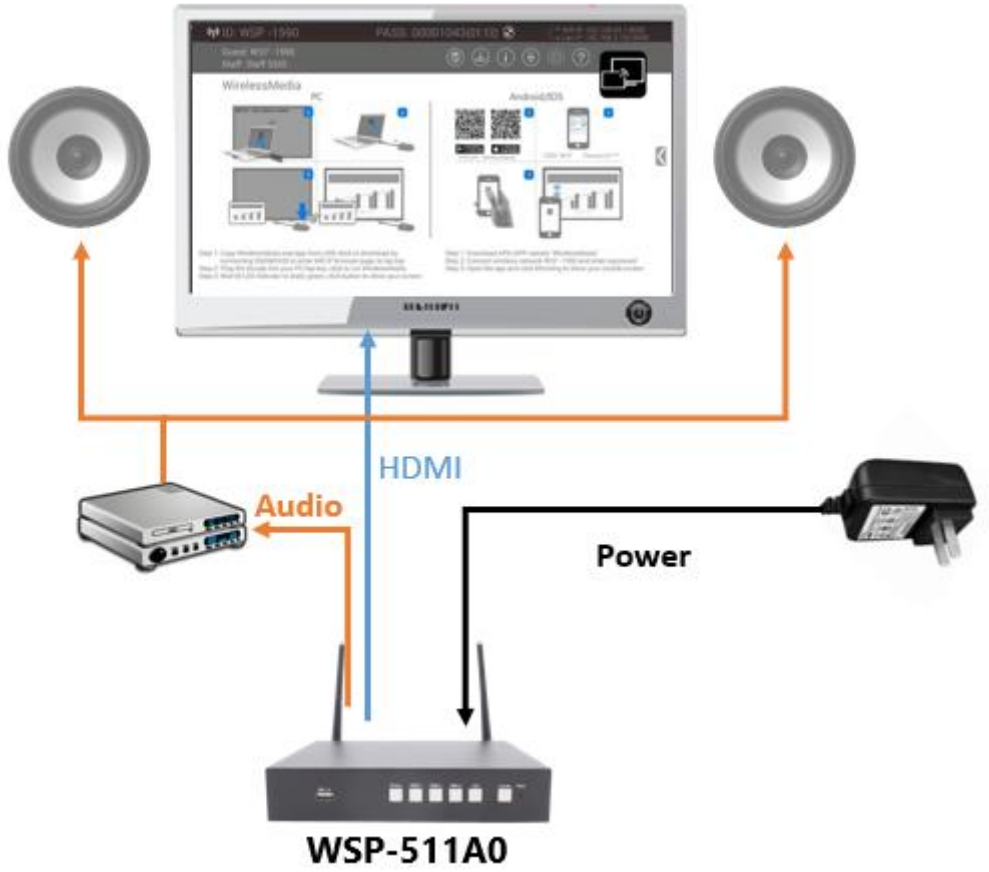
Audio via HDMI output

When your display is connected via HDMI and it support audio together with video, then a separate audio connection is not necessary. The audio signal is sent together with the video signal to the display. The system is shown as below.



How to connect separate audio

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



Sound is not sent out

WirelessMedia dongle will keep capturing and send the audio of PC/Lap-top, since PC/Lap is successfully mirroring desktop to the main screen.

1. Please be sure the button is static green and the PC/Lap-top is sharing on the screen.
2. Check *Setting* configuration, to adjust the *Volume* set in *WirelessMedia setting* tab.

PC/Lap Sound

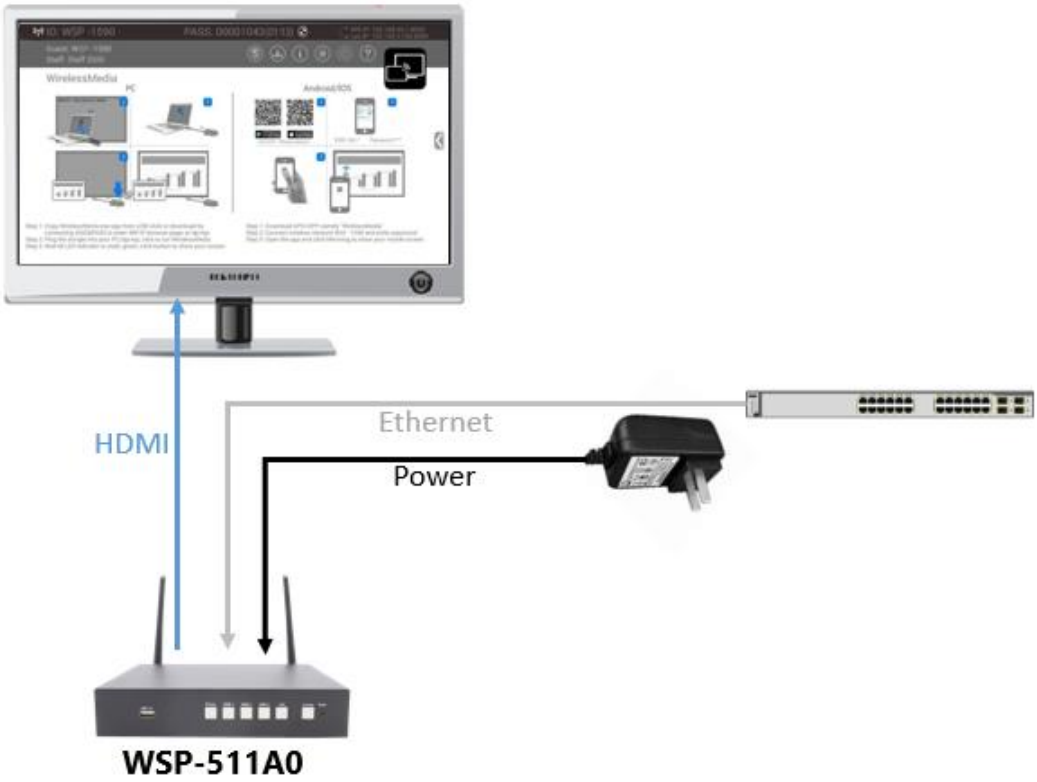
As default set, WirelessMedia will mute the internal speaker of PC/Lap and route the audio to the base unit, after PC/Lap is successfully mirroring desktop to the main screen, in order to avoid the repeated audio.
When click the icon of UI to stop sharing, it'll turn on the internal speaker of PC/Lap. You could adjust the volume on your PC/Lap.

Note: *If you want to keep the internal speaker of PC/Lap still while route the audio to the base unit, please click the audio mute icon in the status bar to turn on the internal speaker.*

4.5 WSP-511A0 LAN connection

The Base Unit can be connected to a local network or directly to a PC/lap-top. For normal operation, a LAN connection is not necessary. When needed, it's suggested to connect the WSP-511A0 to the Internet.

1. Connect a network cable with RJ-45 connector into the LAN port of Base Unit.
2. Connect the other side to LAN.
3. If the LAN Ethernet switcher support POE (Power over Ethernet), it could power up the WSP-511A0 than using the external power adapter.

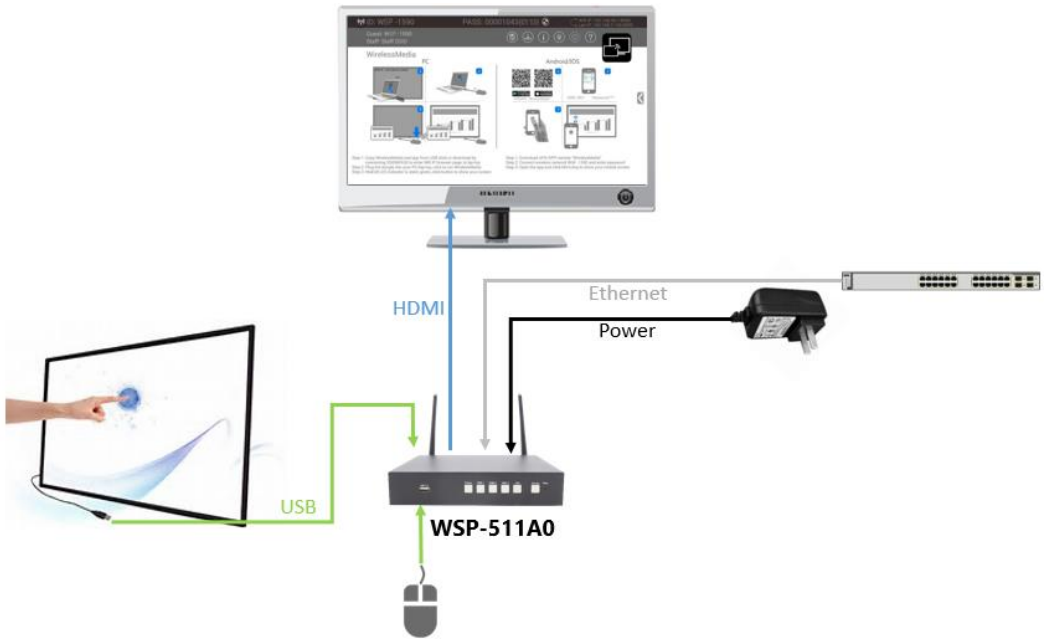


The LAN connection can be used

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

4.6 Usage of USB device

Please use a USB Mouse or Touchscreen



5. To configure the **Security level check button, DOWNLOAD BUTTON**, **Wired INPUT, SETTING, HELP**.
6. To control the sharing PC/Lap-top
7. To activate system upgrading
8. For white board or annotation during a presentation, WirelessMedia transmits Video, Audio and the USB-HID function for mouse-control and click-function of a touchscreen. Connect touch-interface of your screen to the USB-port on your laptop or PC.
9. To create and upgrade Launcher

USB control

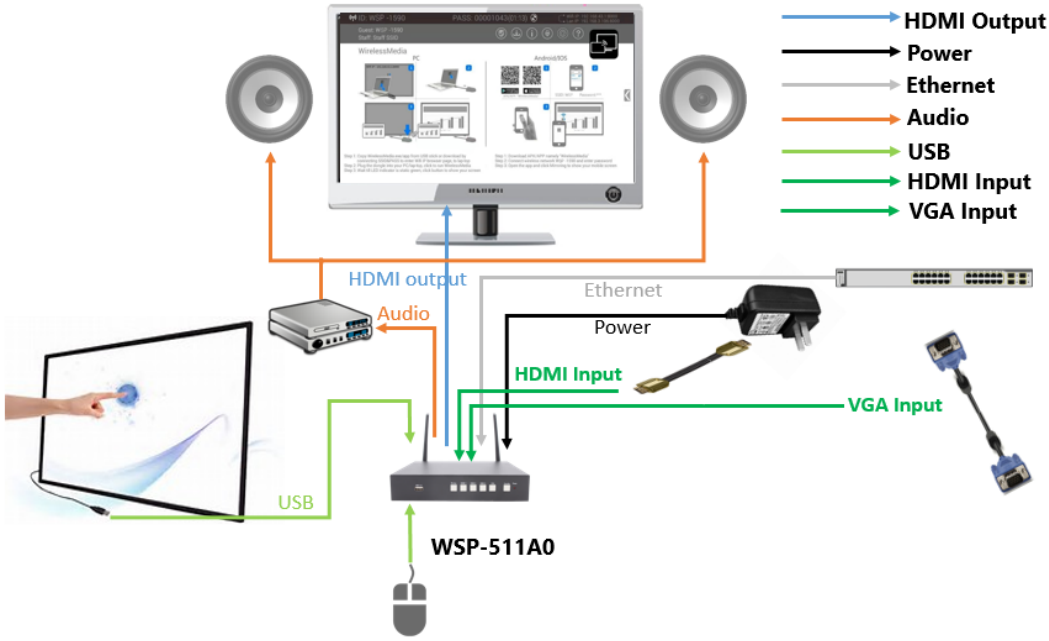
USB mouse for configuration menu

- Single click to select
- Right-click to back to the Home Page.

Touch screen

- Click to select.
- Long press to open the contextual menus, as double-click or click the right button of a USB mouse.

4.7 Wiring Diagram



5. Quick-to-Start

5.1 Mobile device: Wireless Connection

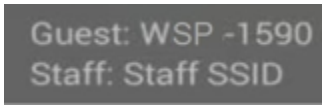
1. Download the application namely “WMedia”(WirelessMedia) in Android Google Play market or Apple App Store. (For example scan QR-Code in Home screen)

2. WSP-511A0 provides two way to discover the WSP-511A0.

a) Wireless network, to connect the hotspot to connect the WSP-511A0,
b) LAN connection, to connect the WSP-511A0 and mobile both in LAN network, to discover and connect to WSP-511A0.

After Factory reset, WirelessMedia starts in standard configuration "Wireless Direct Mode" ("Linked Single Network"), where the base unit creates its own wireless access point, to which all the transmitters connect. This is typical for quick setup, temporarily installations or for small business meetings with a small number of meeting rooms.

The Wi-Fi icon for "WiFi Direct Mode" appears in the top status bar of the Home screen. The SSIDs for these hotspots appear in the Start screen of WirelessMedia:

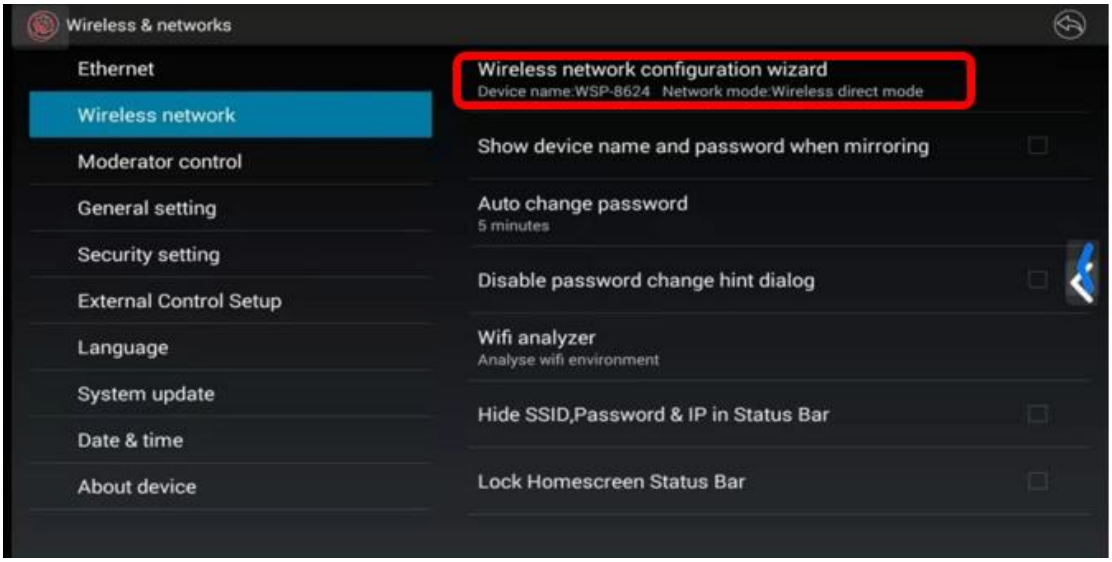


Guests and staff have access to the Internet when LAN is enabled.

5.1.1 Enable portable hotspot:

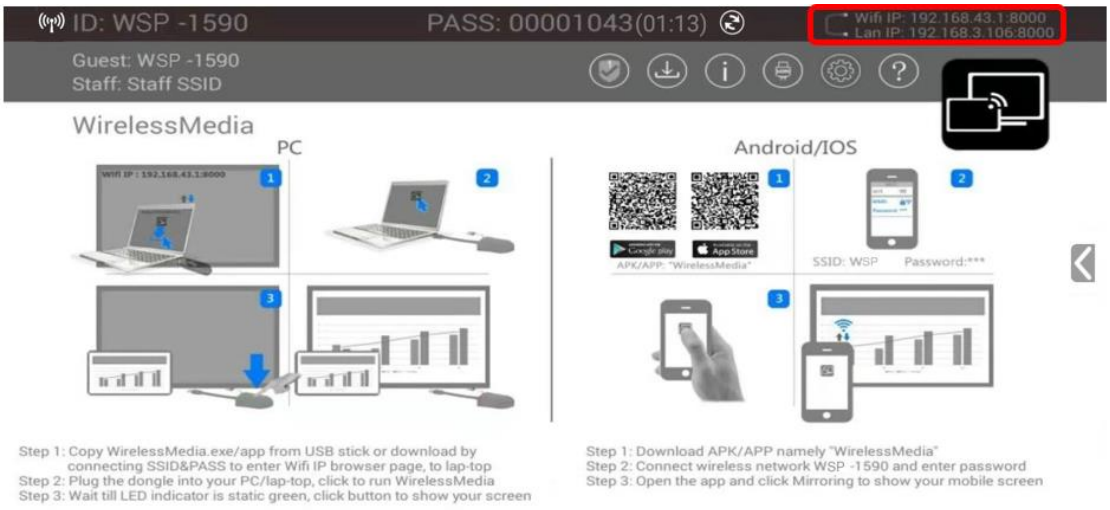
1. Check the SSID and PASS (Password) are shown on the Homepage, as shown below.

2. If it shows SSID: N/A and PASS: N/A, please refer to “Wireless & network” setting, to select the first mode ”Wireless direct mode” by clicking step by step.



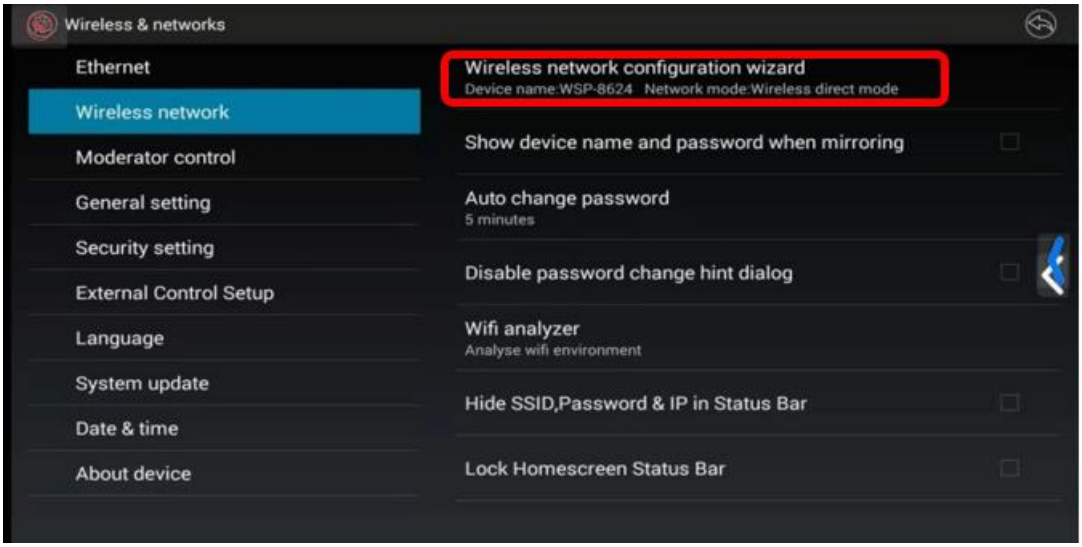
5.1.2 Enable LAN connection:

Be sure the WSP-511A0 is connected to the Network. When *Local IP* shows an active IP address, such like 192.168.3.106:8000, it indicates WSP-511A0 is successfully connected to the LAN and get an appointed IP address.



Note: When it shows “N/A”, it means, the WSP-511A0 is not connected to the LAN (Local Area Network) by CAT cable or it failed to get an available IP address by the corporation router.

Please refer to the LAN-settings in “Wireless network”, as below.



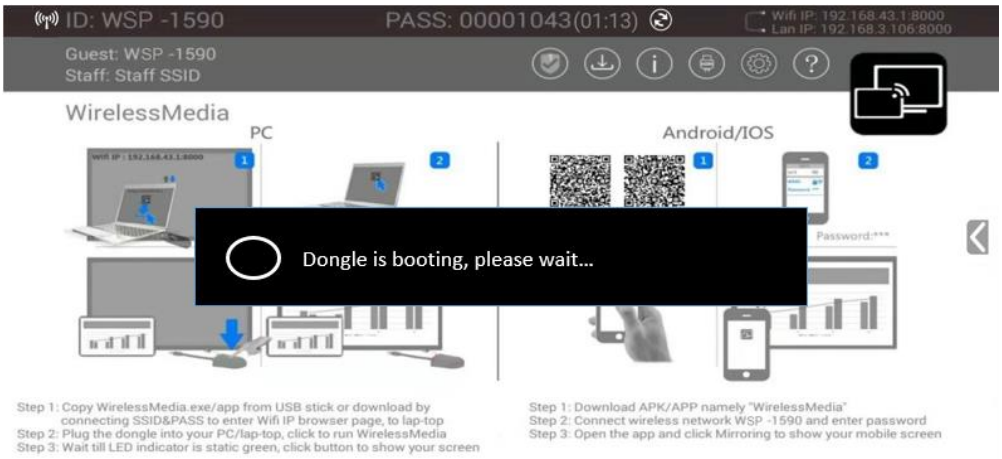
5.2 Pairing transmitter with base unit

1. Connect the USB port of transmitter dongle to either of the 2xUSB2.0 port of WSP-511A0, to pair the dongle and the WSP-511A0. The home page displays as shown below. Pair all dongle with base unit in the same way.

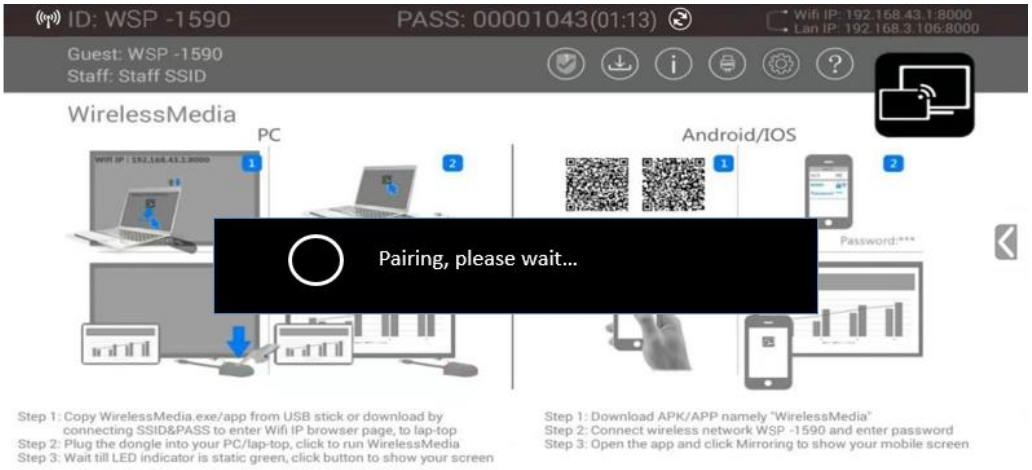
Note: *WMT-C1 type C dongle could use a type C to USB-A cap to pair with USB port of base unit.*

2. When plug in transmitters, the message table shows ““Dongle is booting, please

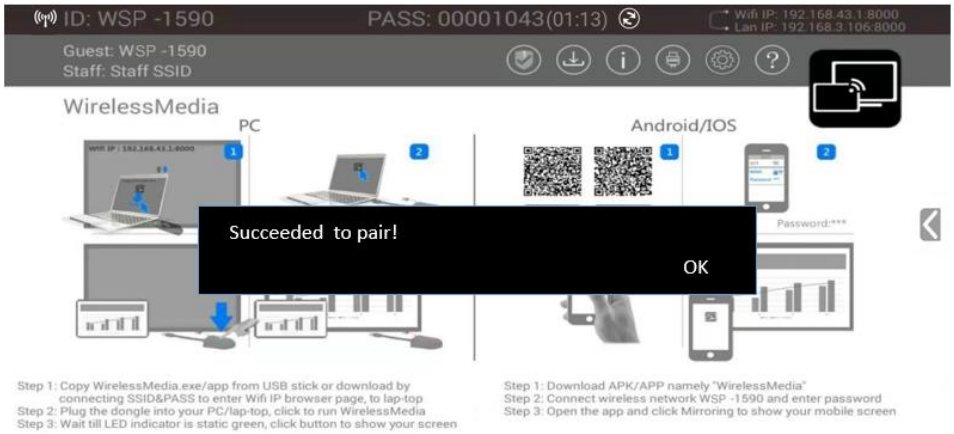
wait…” as shown below



3. Then, the message table shows “Pairing, please wait…” as shown below



4. After completing the pairing, the message table shows “Succeeded to pair!” on the home page, as shown below. Then, please un-plug the transmitters and use it for the mirroring on your laptop.



5. If error-message “Configuration fail” is shown, please check the connection of USB to keep stable after plug-in, and try again.

Note: After each changing the SSID in menu, all the transmitters must be paired again!
When you buy additional transmitters or when a transmitter should be assigned to another Base-unit, the transmitter must be paired again.
A transmitter can only be paired to one Base-unit at a time. The transmitter will always make connection to the Base-unit it was last paired to.

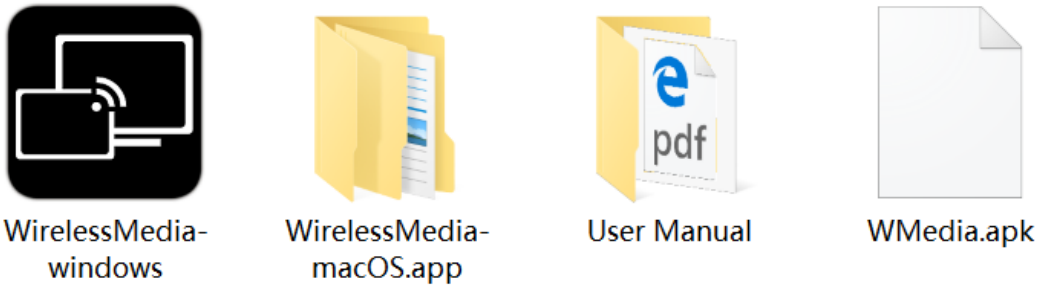
5.3 Wireless Mirroring

5.3.1 PC/Lap-top

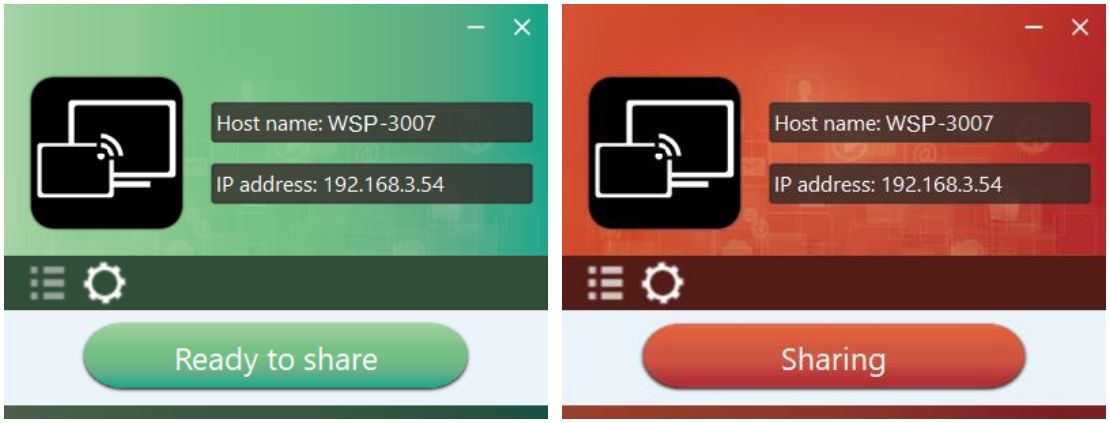
Driver-based Transmitter

WMT2-C:

1. Use a universal USB stick to create a “Launcher”, which is stored in the base unit.
2. Connecting the USB stick to base unit and click the DOWNLOAD icon on the homepage to download “WirelessMedia-windows.exe” for windows PC/Lap-top, “WirelessMedia-macOS.app” for Macbook, “user manual”, “WMedia.app” for IOS devices and “WMedia.apk” for Android devices. Plug the USB stick to the USB port of your PC or lap-top to copy the relative “Launcher” as above to PC or lap-top. Continue with step 4.



3. Or connect PC to SSID & PASS of base unit which are shown on Homepage and browse the Wifi IP or Lan IP from PC, which are also shown on Homepage. Select to download the “WirelessMedia-windows.exe” for Windows PC/Lap-top or “WirelessMedia-macOS.app” for MACbook. Continue with step 4.
4. Execute WirelessMedia.exe/app from pc or lap-top. Till the transmitter shows a static green LED indicator, or till you see a visual button of “Launcher”, showing “Ready to share”, you could click the transmission button WMT2-C or visual button to start “Sharing” the desktop on the main screen.

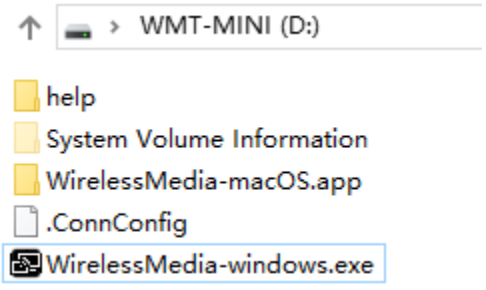


5. Click the transmitter again, to stop mirroring, LED shows green again.

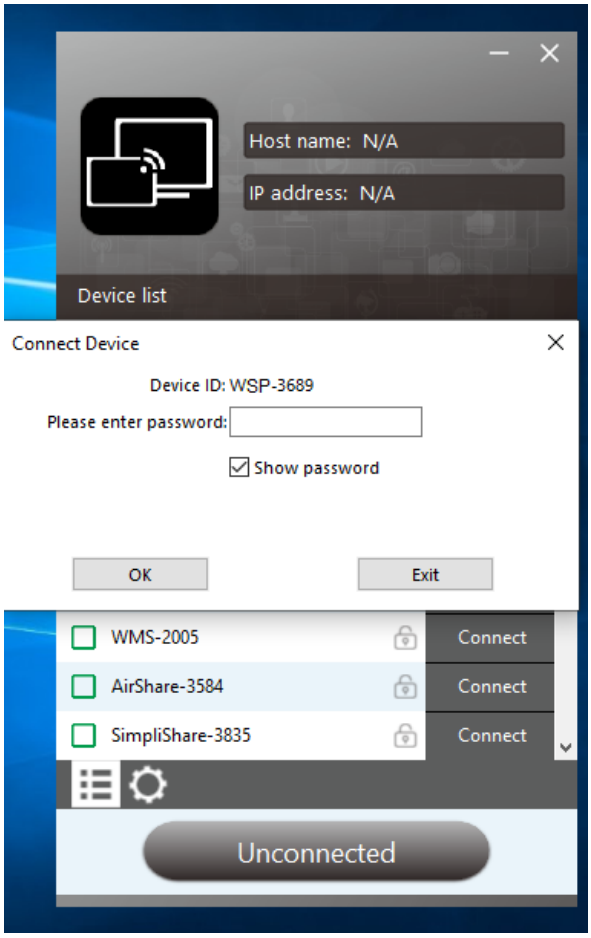
Note: *For second time user, once plug transmitter into PC, it will run automatically to be ready for share.*

WMT-mini:

1. Plug WMT-mini into USB/Type C port to pair with base unit. The “WirelessMedia-windows.exe” for windows PC/Lap-top, “WirelessMedia-macOS.app” for Macbook will be auto downloaded into WMT-mini.



2. Plug WMT-mini into PC/Laptop/MACbook and click the “Launcher” to run. WMT-mini will auto change PC’s wifi to the target base unit wifi. No need to manually change PC’s wifi. It will pop out the message bar to enter the password to connect.



3. It will show “Ready to share”, click to share the desktop to screen.

Note: *for second time user, WMT-mini will automatically run to share screen, no need to click "Launcher".*

Non-Driver based transmitter

WMT3-H (HDMI dongle)

1. Plug the USB port of WMT3-H to base unit to pair.

2. Plug the USB port and HDMI port of WMT3-H to PC/Laptop/MacBook. USB port for power and HDMI for AV.

3. Touch to mirror when the LED indicates is static green.

WMT-C1 (Type C dongle):

4. Plug the Type C port of WMT-C1 to base unit to pair.

5. Plug the Type C port of WMT-C1 to PC/Laptop/MacBook.

6. Touch to mirror when the LED indicates is static green.

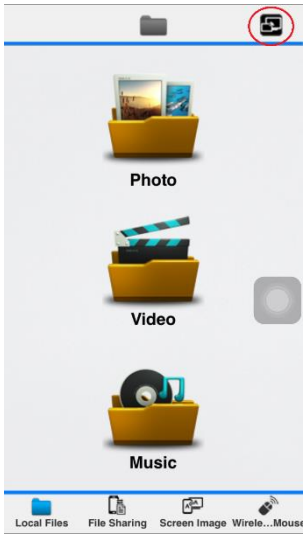
5.3.2 Mobiles Devices

Sharing on Android devices and IOS devices

1. Open the “WirelessMedia” application in your mobile device, and you will see the Home Page of “WirelessMedia” as shown below. and click the device list button“ ” for Android, or click the device list button “ ” for IOS devices, which is highlighted in red circles as shown below:

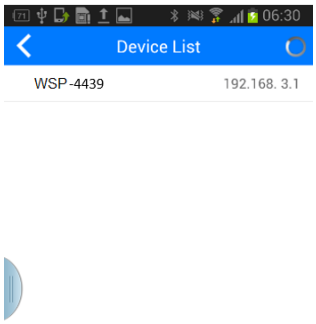
Android

IOS

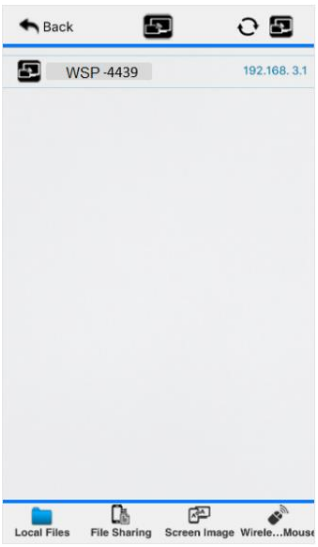


2. Click the found device to connect the WSP-511A0.

Android



IOS



3. After completing the connecting, it shows OSD “Successfully mirror to WSP-***” on the home page.

4. Till now, the pairing between “WirelessMedia” application built-in mobile device and WSP-511A0 is set up.
5. For IOS devices, please swipe from bottom on desktop, to activate the **control center**. Click the airplay icon on your Apple device and select the target WSP-511A0 to start mirroring through the WSP-511A0 to the main screen.
6. For above Android 5.0 devices, please click the devices list to select the target WSP-511A0, and click the **Mirror** icon on main interface of WSP-511A0 APK for Android. For lower than Android 5.0 devices, please click the **Local Files** icon to select the sharing picture, music and video.

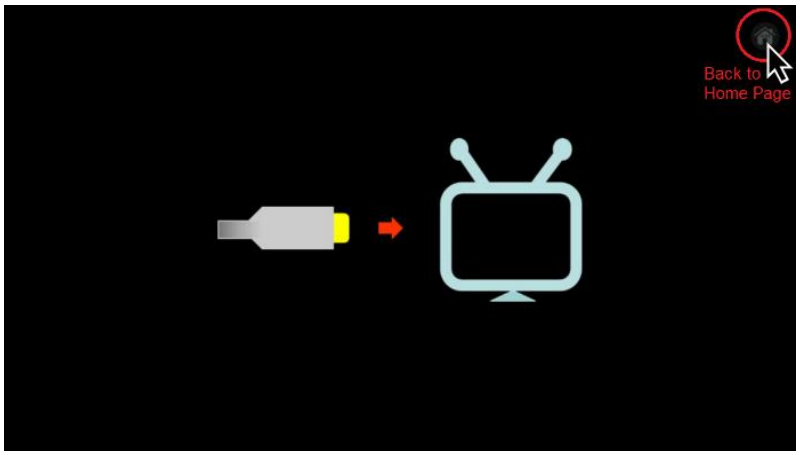
5.4 Wired input Select Switch

Use Input button on the front panel to switch to each input source devices. 4 wired input sources can be connected and switched. Including HDMI I~ HDMI 3, VGA input.

When on Home Page, it’s used as WirelessMedia receiver for receiving PC or Mobile devices. Please connect a mouse to either USB 2.0 of WSP-511A0 or use the WirelessMedia Wireless Mouse/Remote Mouse to click the local wired input icon, as shown below.

When local Wired input, it’s used as HDMI switcher with 3 x HDMI input and 1 x

VGA input. If you want to go back to wireless system, please connect a mouse to either USB 2.0 of WSP-511A0 or use the WirelessMedia Wireless Mouse/Remote Mouse to click the Back to Home Page icon, as shown below.



The WSP-511A0 shall transfer all the video and audio capabilities and standards from HDMI inputs to HDMI outputs, including conversion from input standard to output standard according to the Sink EDID.

Table 1 describes the capabilities of WSP-511A0 shall support HDMI Standards.

Table 1

Video	Video Input Formats: 3x HDMI Video Output Formats: 1x HDMI Format Compliance: HDMI 2.0 Video Output Resolution: 3840x2160@60Hz/30Hz, 1920x1200@60Hz, 1920x1080@60Hz
Video-Audio Synchronization	HDMI support Lip Sync
Audio	Audio Input Formats: HDMI embedded digital audio Audio Output Formats: HDMI embedded digital audio

Table 2 describes the capabilities of WSP-511A0 shall support VGA Standards.

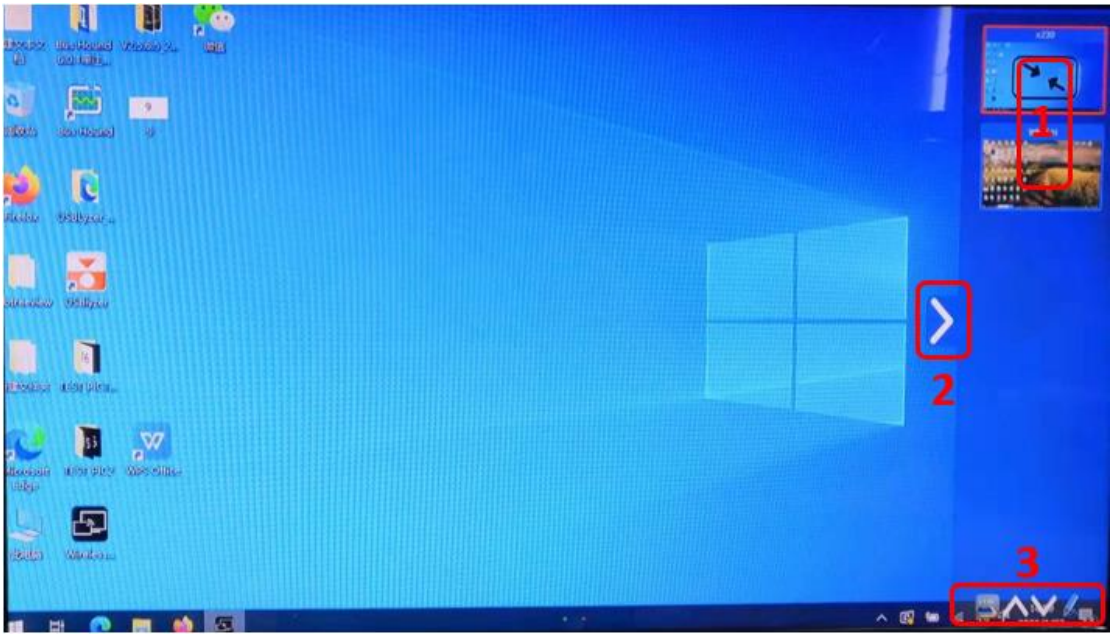
Table 2

Video	VGA/YPbPr
Audio	3.5mm mini jack supports 2-channel stereo analogy audio

5.5 Preview Window

At touch-screen or with mouse of Base-unit, you can click on LEFT or RIGHT-arrow (2),

to show the small preview-windows as a bar on the right edge of the screen, or to hide them, if they are disturbing. Once the preview windows are activated, you see live-pictures (1) of all connected transmitters at the right edge of the screen. Just scroll UP or DOWN (3) to see further preview pictures.



As soon as presenter is clicking with mouse of Base-unit, or clicking with finger at touch-screen, the appropriate participants of the meeting is activated, another click at the arrow shows his picture at the main screen in full format. A red frame is shown for the active picture. The button indicates play button, click to show screen. The button indicates to step out.

5.6 Whiteboard & Annotation

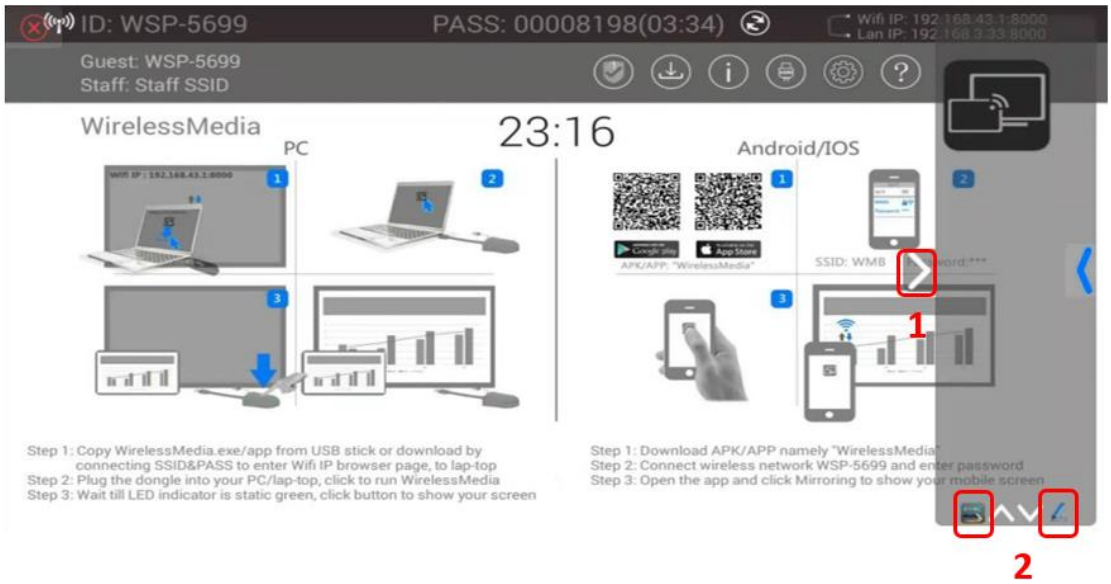
Whiteboard and **Annotation** requires an HID compatible device, such as interactive white board or interactive touch screen. It is easy to use, makes collaboration in your business more productive and effective: documents can be easily written, edited, captured and shared.

Whiteboard: write all your ideas and share the digital notes with anybody. Different colors of pen and background can be selected.

Annotation: draw or write annotations in overlay within your documents, presentations. Save and share everything that was discussed. Different colors of pen can be selected.

How to start Whiteboard or Annotation mode

The “Preview window” in Home Screen to start this mode.
Tap (click) the LEFT-arrow (1), located on the right side of the screen, and select **Whiteboard** or Annotation icon icon in (2).



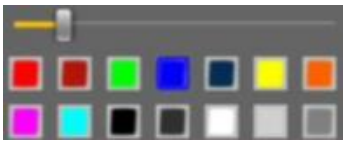
The toolbar for Whiteboard or Annotation appears in the bottom of your screen.
If another user is mirroring, the Whiteboard & Annotation function is closed.

5.6.1 Whiteboard

Click on the icon to enter the Whiteboard page. You can create free drawings with your finger at touch screen, mouse (multitouch capability).

Use the toolbar to select one of the following functions.

ID	Icons	Function
Tool bar 1		Add an empty page
		Delete the actual 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 colors
		Draw basic geometric shapes
		Select color of board, the drawing will be kept
Tool bar 3		will pop up, when “Pen” or “Draw shape” or “Select color of board” is selected, for individual change of size of Pen, Shape or color.
Tool bar 4 File options 	 	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 whiteboard & annotation files on local storage

5.6.2 Annotation

Click on icon to enter the Annotation function.

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 colors
		Draw basic geometric shapes

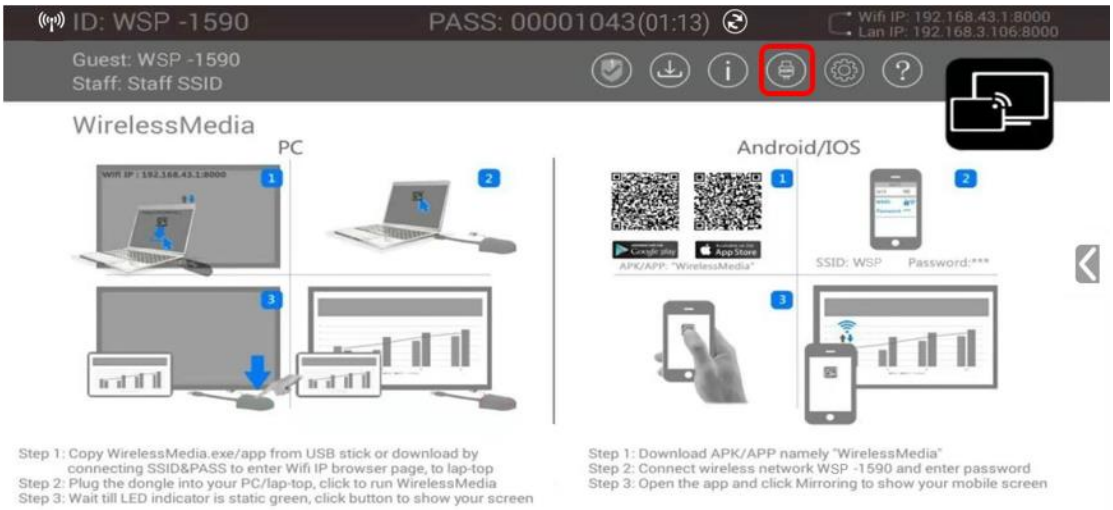
Tool bar 1		Close Whiteboard to go back to Home screen, actual project can be saved on local storage (WMN) Close Whiteboard to go back to Home screen,
		Save the current screenshot on local storage (PNG)

Download the drawings to connected users

Scan the QR-code with your mobile's camera or enter the given IP-address in a browser. If the network connection is set properly, you will get the saved files on Base unit, which you can download as PNG file. The possibility for download will be closed after you click OK. You can copy data to USB disk and put this USB disk into the Base-unit and import with "Import from U disk" to the Whiteboard-section.

6.“Setting” Configuration

Connect a mouse to either USB2.0 of the WSP-511A0, and click the setting button on the top right corner to open the setting menu of WSP-511A0, which is shown as below.



The main interface of Setting is shown as below, including **Ethernet**, **Wireless network**, **Moderator Control, General setting**, **Security Setting, External Control Setup, Language, System Update**, **Date & time**, **About Device**.

6.1 Ethernet:

Includes IP address, Ethernet MAC address, Proxy & IP settings, PPPoE Settings.

6.1.1 IP Address

The local IP address of WSP-511A0.

6.1.2 Ethernet MAC address

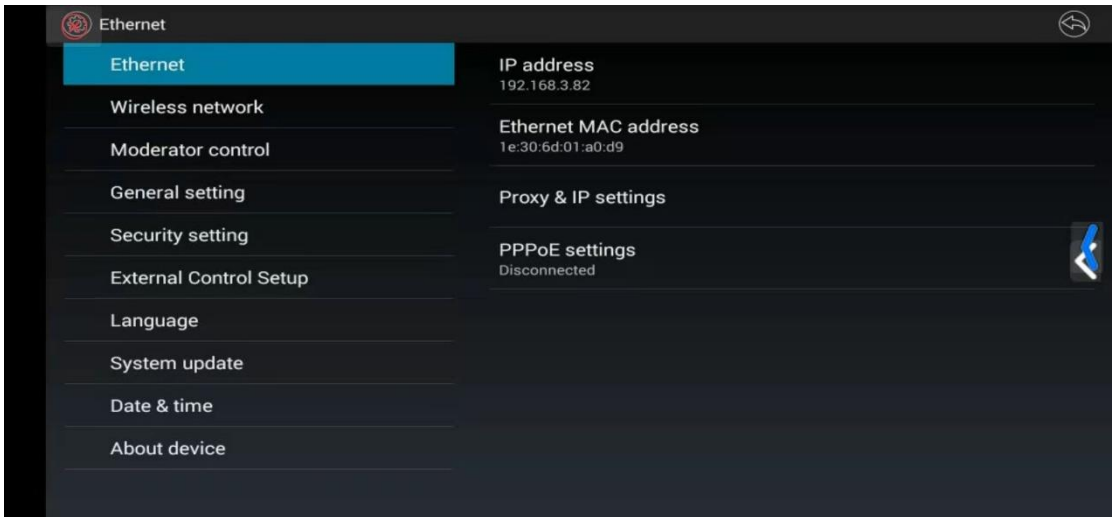
The unique MAC address of WSP-511A0.

6.1.3 Proxy & IP settings

Click to configure proxy.

6.1.4 PPPoE settings

Click to configure the PPPoE setting.



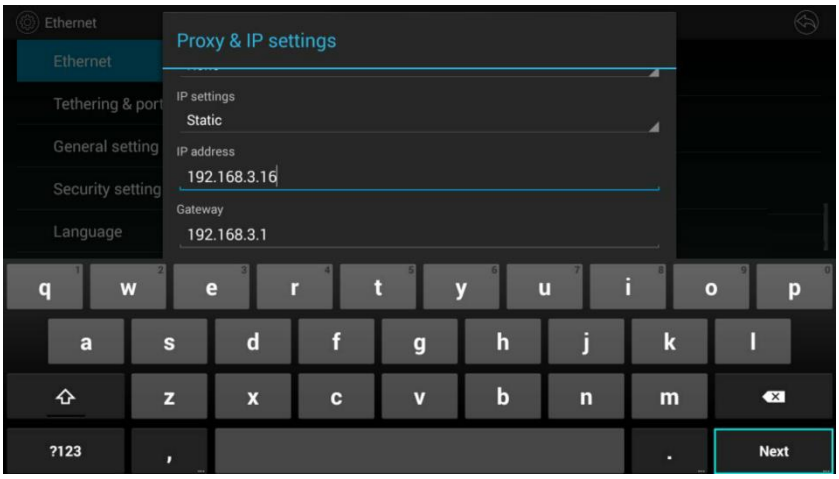
The interface of Proxy & IP settings can be configured, including Proxy on/off, and IP setting, as shown below

Proxy & IP settings:

- **Proxy**: Click in the check box, to select the check box of “None” or “Manual”
- **IP setting**: Click to select the check box, which includes “Static” or “DHCP”. When set to Static IP address, it will open-up an advance setting page, which including the set items bellow. Click in the input field to fill out the number.
  - **IP address**: Click in the input field to fill out the 4 fields.
  - **Gateway**: Click in the input filed to fill out the 4 fields. Set the default Getway to the IP-address of the router (Must be on the local subnet. it can’t be 0.0.0.0). If no router on the local subnet, then just set it to any IP address on the subnet.)
  - **Network prefix length**: Click in the input field to fill out the number. Default is 24.
  - **DNS1**, Click in the input field to fill out the appropriate for the local.
  - **DNS2**. Click in the input field to fill out the appropriate for the local.

After finish, please click the “Set” to save and return. Or, please click “Cancel”.

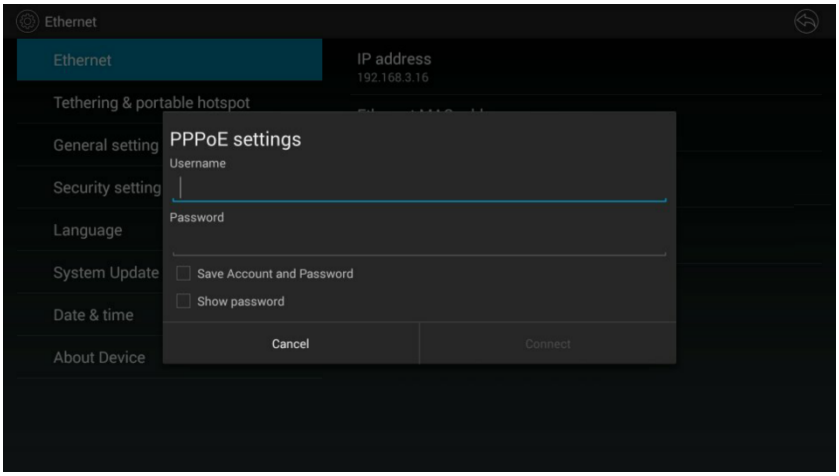
Change IP address: Click in the input field to fill out the 4 fields by a show-up keyboard. You could change other field by the same way.



PPPoE settings:

- **User name**: Click in the input filed to fill out the appropriate user name.
- **Password**: Click in the input filed to fill out the appropriate password.
- Check box to choose “Save Account and Password” and “Show Password”.

After finish, please click the “Connect” to connect and return. Or, please click “Cancel”.



6.2 Wireless network

Including Wireless network configuration wizard; Show device name and password when mirroring; Auto change password; Disable password change hint dialog; Wifi analyzer; Hide SSID, Password & IP in Status Bar; Lock homescreen Status Bar.

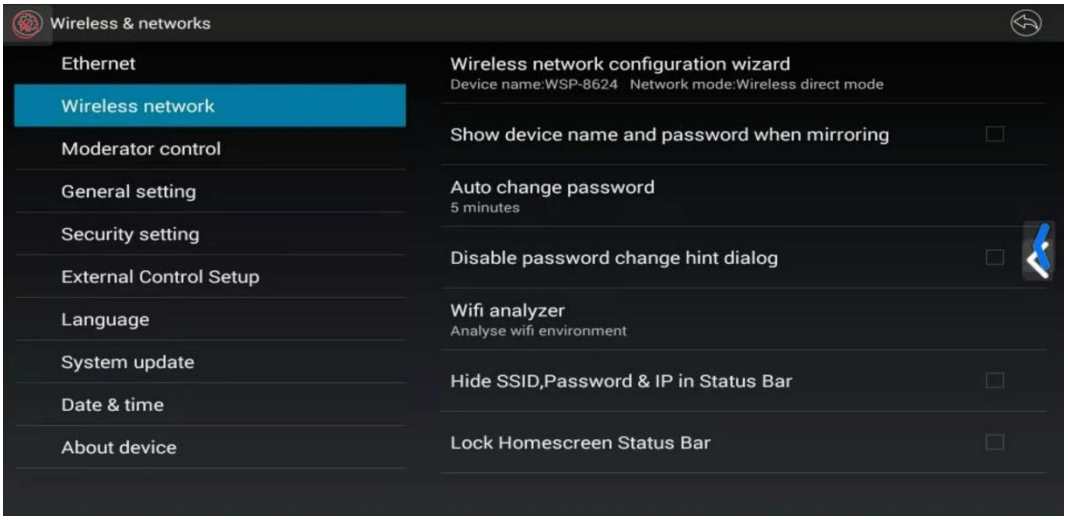
6.2.1 Wireless network configuration wizard

Attention:

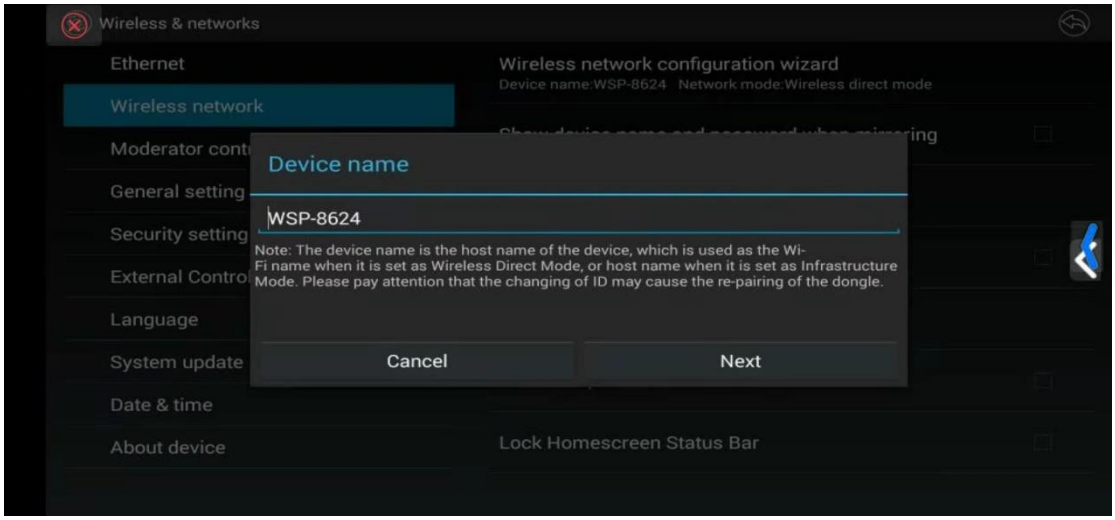
It’s highly recommended not to select the Wireless direct mode. Or you will lose the hotspot of the base unit WSP-511A0. Default setting is the Wireless direct mode.

To take the full benefits of the WirelessMedia possibilities, WSP-511A0 should be properly integrated in the organization's network (company/university/school). This wizard allows user to create a custom configuration for integration of WirelessMedia into the existing wireless infrastructure in larger organizations.

Segmented Dual Network, is to provide two segmented routing ways to connect to the base unit simultaneously and separately, including wireless WI-FI network (normally connected to Guest/untrusted network) and wired LAN network (normally connected to the corporate/trusted network).

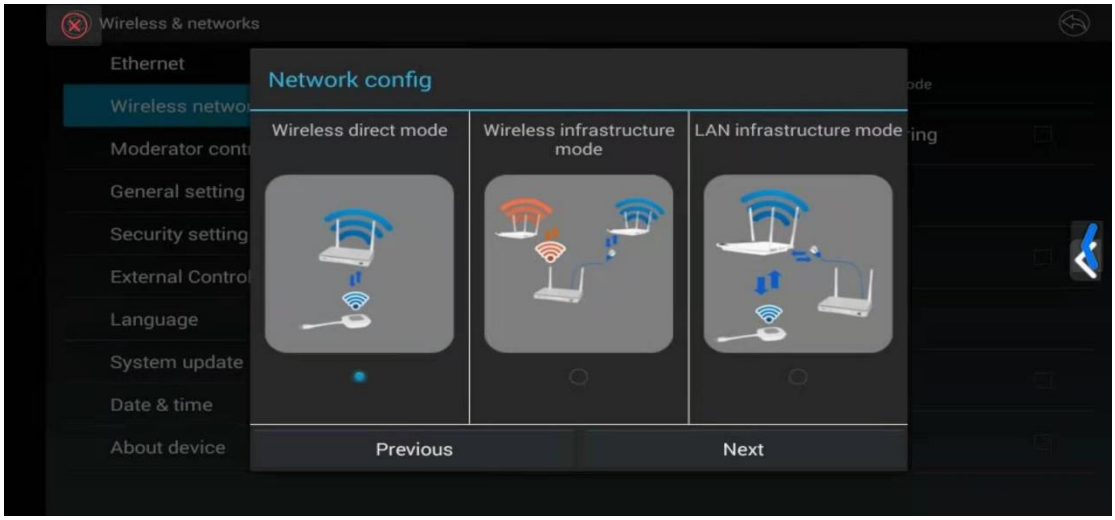


Enter a device name for the Base-unit. We recommend to take a descriptive name, if you have more than one WirelessMedia installed. The default name is "WSP-511A0-XXXX".



Only "a-z","A-Z","0-9","-_" and space are legal character.

Click "Next step". The following three connection methods are available:



6.2.1.1 Wireless direct mode

After Factory Reset, WSP-511A0 base unit starts up in the **default Stand-Alone "Wireless direct mode"** configuration, where the Base-unit creates its own wireless access point, which all transmitters use to connect. This is typical for a quick setup for small group meetings. The Wi-Fi icon for the "Wireless direct mode" is displayed in top status-bar of Home screen. **Guest** connect to the access-point of WirelessMedia, while **Staff** can also connect to Base-unit via Wi-Fi or via LAN connection to their corporate network.

Stand-Alone Connection

The internal Wi-Fi access Point of WSP-511A0 is active . The dongle is paired directly to it. Guest and Staff use the internal Wi-Fi access point of Base-unit to present with all their units. **No Internet access is required.**

The LAN-Port of Base-unit is not connected. The PC-users can present with or without transmitter dongle by WirelessMedia PC driver (Windows or MacOS). Android/iOS users (BYOD) can share their content by installing the free APP.

Recommended Environment
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 separate from the corporate network.

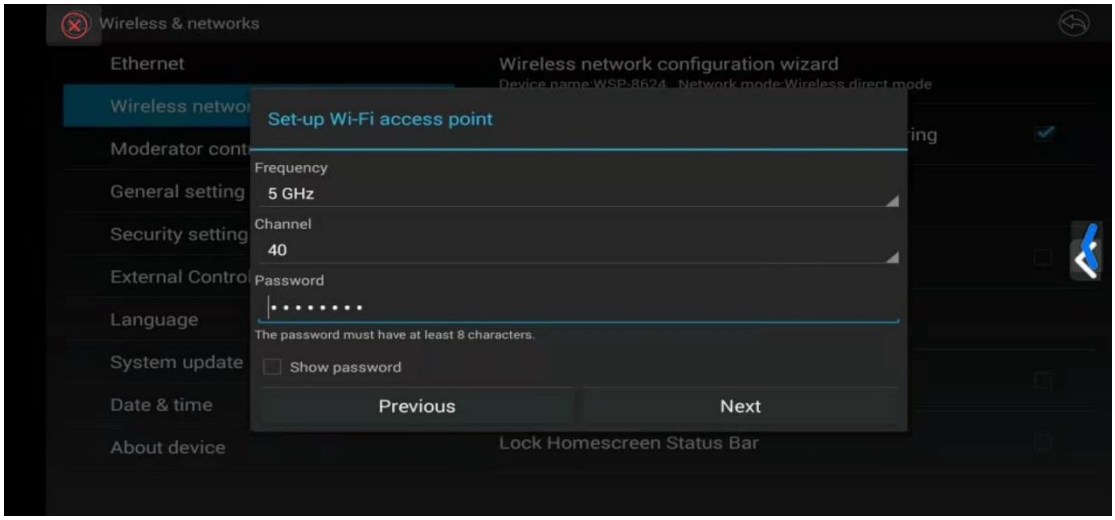
Under this mode, dongle will be automatically paired to the base unit Wi-Fi hotspot

when plugging dongle to the base unit USB port for pairing.

You can start using WSP-511A0 in this mode without any other wireless network configuration.

Set up Wi-Fi access point

Set-up Wi-Fi access point includes, Channel, Frequency, Password.



- **Frequency**: Click to select 2.4 GHz or 5 GHz Wi-Fi frequency. Default is 5 GHz.
- **Channel**: Click to select the Wi-Fi channel. Default is 5 GHz, Auto.

If the Wi-Fi channel is changed, no new pairing of the dongle 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: Auto.

Default channel (USA area): 36,40,44,48 or 149,153,157, 161. Four channels will be opened at the same time, system will automatically choose proper channel from them.

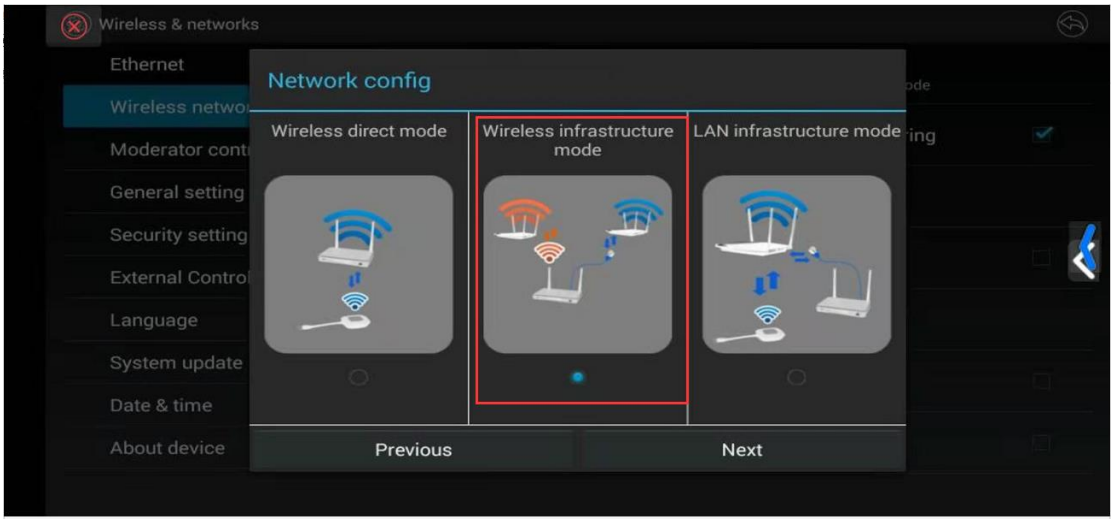
Default channel (European area): 36,40,44,48.

Default channel (China): 149,153,157,161.

- **Password**: Click in the input filed to fill out the appropriate password with length of **4 characters.**

Click “Next step” to edit or change Guest network SSID and STAFF network SSID. This information will be shown at Home Screen of WSP-511A0.

6.2.1.2 Wireless Infrastructure mode



WSP-511A0 can connect to a wired and a wireless network simultaneously. The basic unit is firmly "connected to the company network with LAN. Guest users connect to Wi-Fi "Guest" access. The employees (“Staff”) connect to their usual access point of the corporate network, without having to change the Wi-Fi. This is very useful for organizations, which have a wireless “Guest” network for external visitors and a wired “Staff” network for their employees. The segmented Dual Network of WSP-511A0 provides two separated routing ways to connect to the Base-unit at same time. Guest-users are not able to access any resource on the Ethernet of the company.
WSP-511A0 uses the existing wireless network infrastructure. Guest and Staff have internet access.

Dual Network Configuration

The internal the Wi-Fi network of WSP-511A0 is connected to Guest Wi-Fi network of the organization, (**Client Mode:** the indicator-icon shows the actual signal strength). The Base-unit is still wired with LAN-cable to the internal company network The PC-users can present, with or without dongle by WirelessMedia PC driver (Windows or MacOS).
Android/iOS users can share their content by installing the free APP.

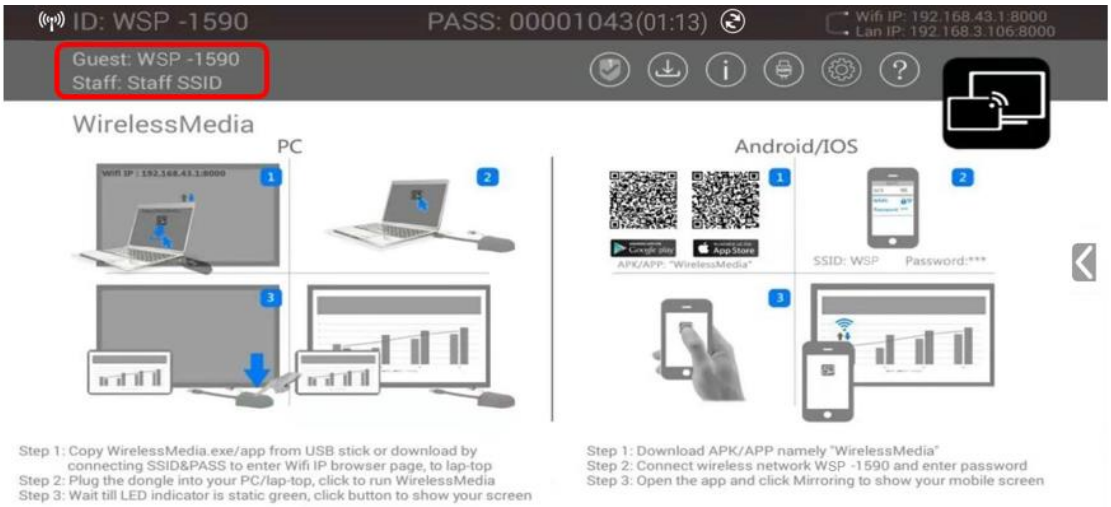
The dongle is connected to the Wi-Fi access Point of Guest network, which in turn is connected to the internal Wi-Fi access Point of WirelessMedia. (The dongle can also be configured to connect to the enterprise’s access point.) Mobile users stay connected to their current network, have access to their normal corporate environment, as well as Internet access.

The actual received signal strength from Guest network is shown in Home screen of WirelessMedia: .

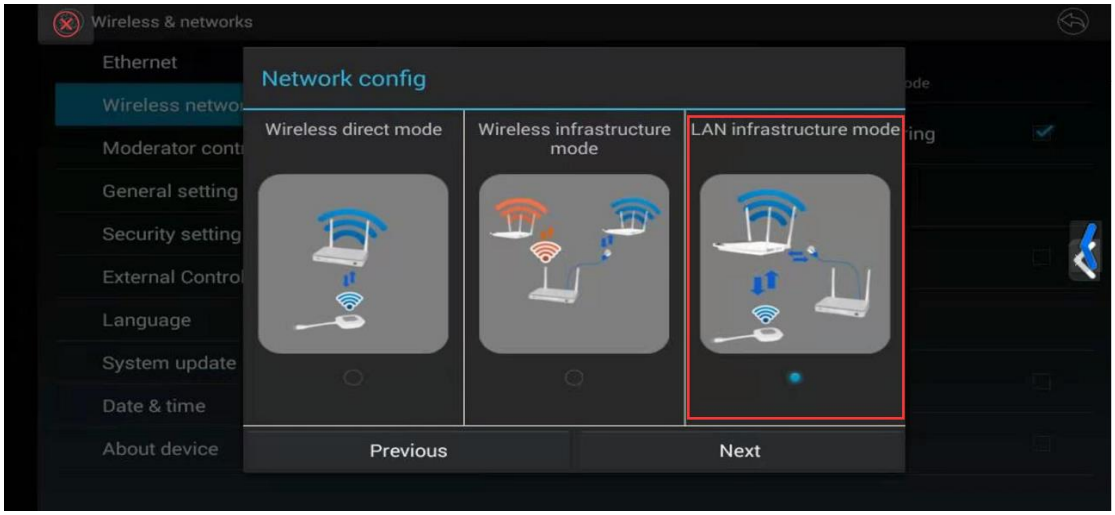
Follow the instructions of the configuration wizard for “Wireless infrastructure mode”. When pairing the dongle, by plugging the dongle in the USB port of the Base-unit, it will automatically pair to the associated access point of Guest or Staff Wi-Fi and NOT to WirelessMedia network.

Click “**Next step**” to configure the network which dongle needs to be re-paired to.

Wi-Fi name of guest and staff will be shown on home screen after “OK”.



6.2.1.3 LAN Infrastructure Mode

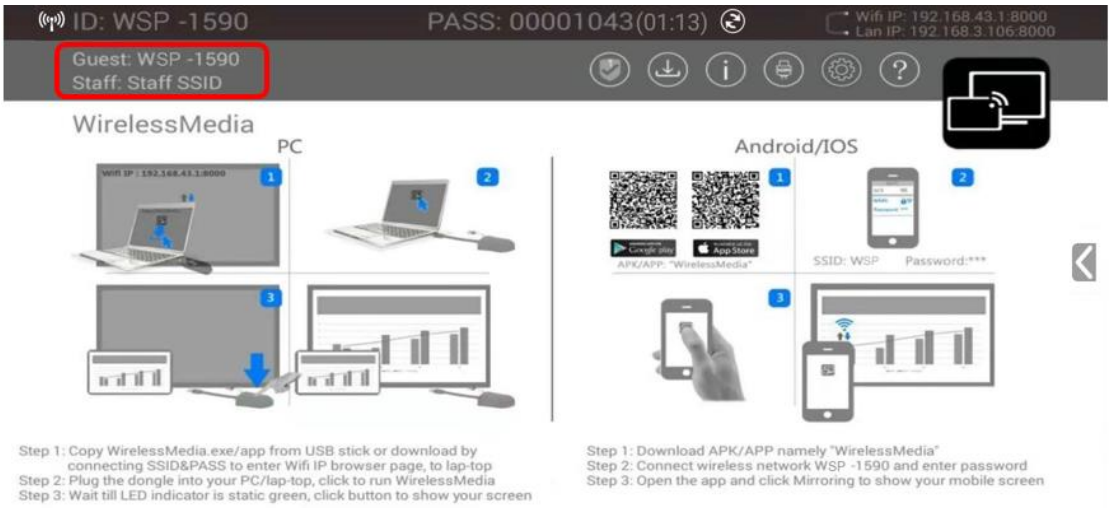


In this configuration the **built-in Wi-Fi** access point of WirelessMedia **is disabled:** .

The dongle and/or the mobile devices can connect to the secured wireless access point of the company network. The Base-unit of WirelessMedia is hard-wired connected via LAN to the Ethernet of the Company network.

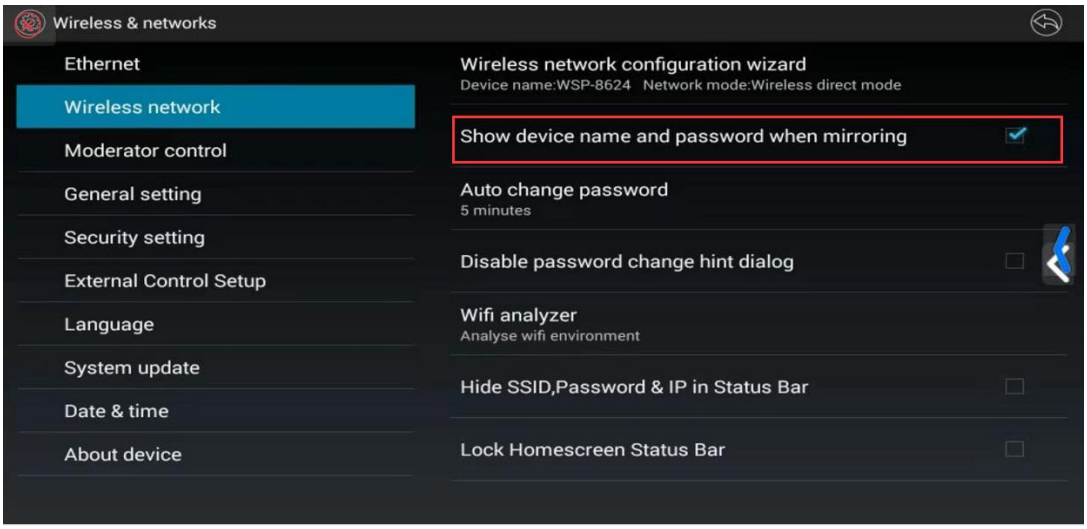
The Staff-users connect to their usual access point of Company network, without the need to change the Wi-Fi.
Follow the instructions of the configuration wizard for “LAN infrastructure mode”.
When pairing the dongles, by plugging the dongle in the USB /Type C port of the Base-unit, will be automatically paired to the Staff access point, and NOT to “WirelessMedia” Base-unit.

Wifi name of guest and staff will be shown on home screen after “OK”



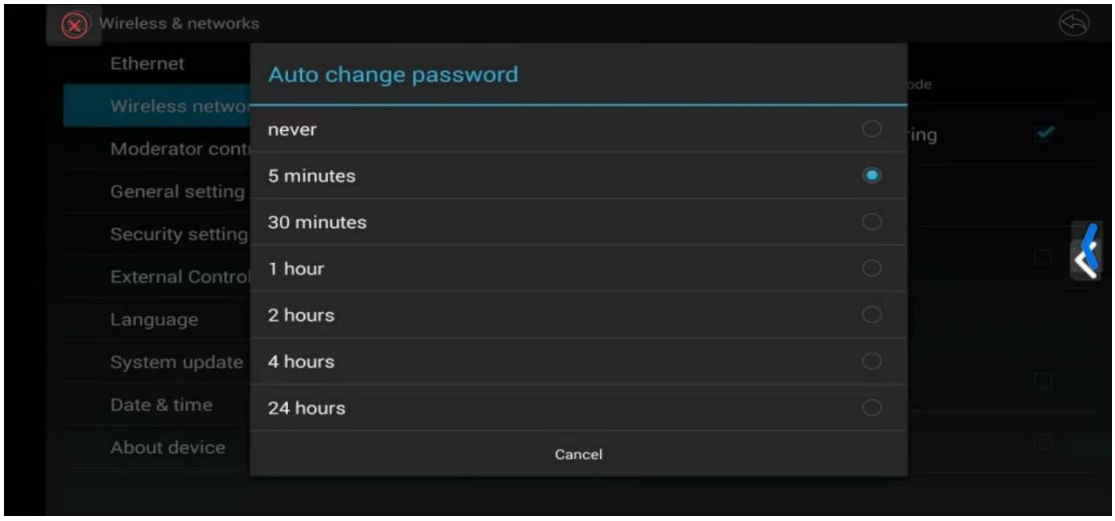
6.2.2 Show device name and password when mirroring

If “Show SSID and PASS when mirroring” is ticked, the information of SSID, PASS, and Wifi IP & Lan IP will be shown always when mirroring. Default setting is Off.



6.2.3 Auto change password

Configure to automatically change Wifi password to a random number every period of time.

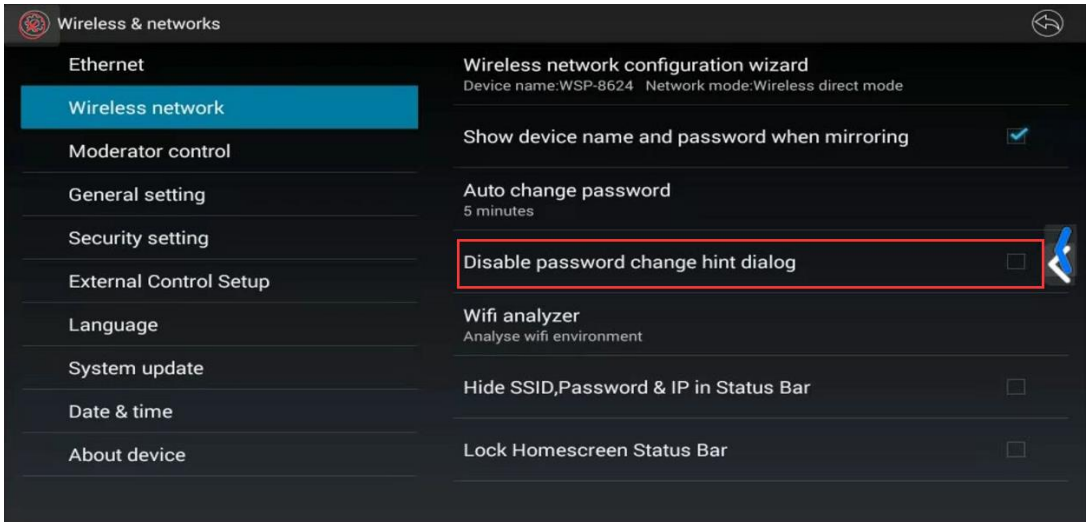


Click to set the configuration, including:

- **Never:** never change wifi password.
- **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.

6.2.4 Disable password change hint dialog

When tick it, there will be no hint dialog to remind attendee it is changing the password.



6.2.5 Wifi analyzer

Wifi analyzer is an embedded application tool, to provide an advice for the deployment and Wifi configuration.
The IEEE802.11 a/g/n/ac standard makes use of a part of the 2.4GHz ISM band of the 5GHz U-NII bands.

The 2.4GHz ISM band (industrial, scientific and medical) goes from 2.400 GHz to 2.500GHz and can be used freely by any radio device for industrial, scientific and medical application. This band is also used by several common telecommunications protocols or standards the likes of Wi-Fi, Bluetooth, ZigBee, RFID devices … A more comprehensive list of systems authorized on this band can be found at http://www.efis.dk/sitecontent.jsp?sitecontent=ecatable for the European Union and at http://transition.fcc.gov/oet/spectrum/table/fcctable.pdf for the United States.
The 802.11 standard divides the 2.4GHz ISM band into thirteen 22MHz wide channels, spaced 5MHz from each other (cf. as table 1 below). These channels thus strongly overlap with each other. The availability of these channels varies from country to country.

Table 1 below depicts the channels enabled for the different regional versions

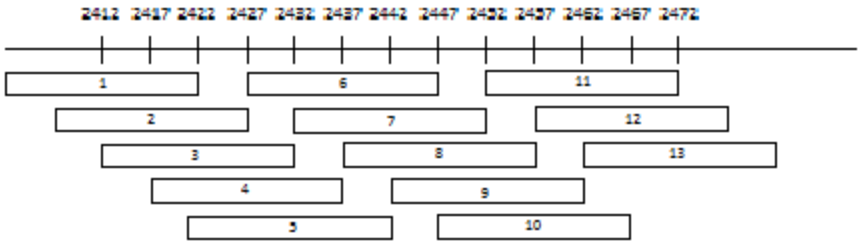


Table 1 Wi-Fi channels in the 2.4GHz band

Channel number	Frequency range (MHz)	regional version			
		NA	EU	JP	CN
1	2401 – 2423	X	X	X	X
2	2406 – 2428	X	X	X	X
3	2411 – 2433	X	X	X	X
4	2416 – 2438	X	X	X	X
5	2421 – 2443	X	X	X	X
6	2426 – 2448	X	X	X	X
7	2431 – 2453	X	X	X	X
8	2436 – 2458	X	X	X	X
9	2441 – 2463	X	X	X	X

10	2446 – 2468	X	X	X	X
11	2451 – 2473	X	X	X	X
12	2456 – 2478				
13	2461 – 2483				

Table 2: Wifi channels in the 2.4 GHz frequency band

The 5GHz U-NII band covers discontinued parts of the RF spectrum between 5.15GHz and 5.825GHz and allows the use of unlicensed wireless systems. The U-NII band is divided into 4 different sub-bands subjected to specific restriction (cf. Table 3).

Band	**Frequency range (MHz)**	**Number of Wi-Fi channels**	**Restriction**
U-NII 1	5150 - 5250	4	Until recently[1], limited to indoor use only
U-NII 2	5250 – 5350	4	Requires use of radar detection
U-NII 2 extended	5470 – 5725	11	Requires use of radar detection
U-NII 3	5725 - 5825	4	

Table 3 U-NII organization

Contrary to the channels defined on the 2.4 GHz band, the channels defined on the 5 GHz band do not overlap with each other.

As stated in Table 3, the U-NII 2 and U-NII2 extended sub-bands are also used by several radar systems and can only be used by Wi-Fi access points using the Dynamic Frequency Selection (DFS) and Transmit Power Control (TPC) algorithms. These 2 algorithms have been defined by the IEEE802.11h standard and specify a set of procedures to detect and avoid interference with radar systems operating in the U-NII 2 and U-NII 2 extended sub-bands.

Currently, the WSP-511A0 access points do not support DFS and TPC as specified in the IEEE 802.11h standard and the list of the 5 GHz channels enabled for the different regional variants is displayed at Table 4.
The 5 GHz band is much less used by non Wi-Fi devices than the 2.4 GHz band. Besides, many of the older Wi-Fi devices only support the 2.4 GHz channels, meaning that the 5 GHz band is less crowded. Moreover, 5 GHz channels do not overlap with each other. **As a result, the use of the 5 GHz channels is most often the preferred choice when installing.**

Channel number	**Frequency range (MHz)**	**regional variant**			
		NA	**JP**	**EU**	**CN**
36	5150 – 5170	X	X	x	

40	5170 – 5190	X	X	X	
44	5190 – 5210	X	X	X	
48	5210 – 5230	X	X	X	
149	5735 – 5755	X			X
153	5755 – 5775	X			X
157	5775 – 5795	X			X
161	5795 – 5815	X			X
165	5815 – 5835	X			X

Wi-Fi channel selection

Wireless communication signals travel over the air. Therefore, two devices transmitting at the same time, on the same frequency, and within range of one another, will disturb each other. When the interference caused by other devices is too strong, the packets transmitted by the Wi-Fi transmitter get so distorted that they are no longer correctly understood by the receiver, and as a result these packets must be retransmitted. This causes a decrease in the actual data rate achieved between the transmitting and the receiving Wi-Fi devices.

To limit the effect of interference between Wi-Fi devices, the 802.11 standard makes use of the CSMA/CA and Clear-Channel Assessment (CCA) algorithms. Before sending a packet, the device checks whether another transmission is currently going on. If this is not case, the device can use the channel and sends some packets. Otherwise, the device will do a random back-off and retry to access the channel after a short period of time.

Even with the use of the CSMA/CA and CCA algorithms, the presence of too many Wi-Fi devices on the same channel will have a negative impact on the maximum achievable data rate. Moreover, these algorithms are inefficient against interferences coming from non Wi-Fi devices or from Wi-Fi devices operating on overlapping channels. Therefore, it is strongly recommended to select a Wi-Fi channel with little to no congestion.

Site survey

Ideally, the selection of the Wifi channel should be made after conducting a wireless site survey. This site survey maps out the different sources of interference and the active RF systems.

Based on the results from the site survey, the least occupied channel can be found and selected for each meeting room.

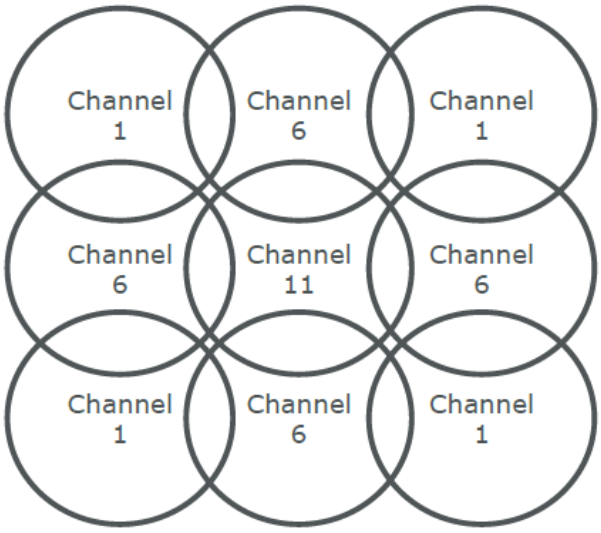
Wifi Analyzer includes two modes, Simple Mode to deeply check one Wifi hotspot and Expert Mode to check the Wifi spectrum signal strength. A screen capture of Simple Mode and Export Mode is shown as below

Generic configuration rules

In case no site survey can be made, the following rules of thumb should allow for a correct configuration:

- The WSP-511A0 access point in a particular meeting room should not re-use a Wi-Fi channel that overlaps with one of the channels used in the corporate WLAN infrastructure. Ideally, at least two channels in the corporate WLAN should be reserved exclusively for WSP-511A0. In case many WSP-511A0 systems are located closely to one another, more channels may be required. When installing WSP-511A0 base units, we recommend checking with the local IT department which channels are not used by the corporate WLAN infrastructure.

- In an ideal setup, overlapping channels should not be used for two WSP-511A0 base units within range of each other. As the channels in the 2.4 GHz band overlap with each other, best practise is to use channels 1, 6 and 11 on a single floor. On floors above and below, the channel pattern will be shifted to avoid overlap between floors (e.g. by placing channel 6 at the center of the illustrated pattern).



- In case there are not enough channels available, two or more WSP-511A0s can be placed on the same channel. This will of course have an impact on the quality of the link when several clients are sharing simultaneously. In a worst case scenario, with three base units place on top of one another, this can result in performance issues, as illustrated in Table 4 and Table 5. Table 4 shows a scenario in which all clients are streaming video content, and Table 5 shows a standard office situation where clients share typical office documents or presentations.

- As stated above, the 5 GHz channels do not overlap with each other and are less used by non Wi-Fi devices than the 2.4 GHz channels. Moreover, 5 GHz signals are more rapidly damped than 2.4 GHz signals. Therefore the use of a 5 GHz channel is recommended. This will limit the impact of a WSP-511A0 system on other installed WSP-511A0 and on other WLAN users.

clients sharing video	1	2	3
1	Ok	Ok	Ok
2	Ok	Ok	Moderate risk of reduced quality
3	Ok	Moderate risk of reduced quality	Strong risk of reduced quality
4	Ok	Strong risk of reduced quality	Strong risk of reduced quality

Table 4: Connection quality matrix when multiple co-located base units use the same channel at the same time for video streaming Number of co-located Base Units sharing the same channel

Number of clients sharing typical office documents	1	2	3
1	Ok	Ok	Ok
2	Ok	Ok	Ok
3	Ok	Ok	OK
4	Ok	Ok	Moderate risk of reduced quality

Table 5: Connection quality matrix when multiple co-located base units use the same channel at the same time for daily office work (Power point presentation, Excel sheets …)

Important remarks about the WSP-511A0 system installation

A correct installation of the WSP-511A0 base unit is of critical importance to ensure good performance and a robust communication between the WSP-511A0 transmitters and the base unit. When installing the WSP-511A0, please follow the rules below:

- The most favorable setup is a direct line of sight between base unit and transmitters. Any obstruction will cause the signal to follow a longer propagation path, which can degrade performance.

- Due to the particular radio pattern of the dipole antennas used with the WSP-511A0 Base Unit, the antennas should not be placed above WSP-511A0 users. In case of ceiling-mounted setup, the advised position for the WSP-511A0 base unit antennas is at the side of the meeting room.

- Do not use the WSP-511A0 base unit without the shipped antennas. Removing the antenna will cause severe degradation of the signal quality and may result in connection issues between the WSP-511A0 base unit and clients.

- Place the base unit in an open emplacement and avoid installing in a metallic shell. A metallic shell (or even shelf) could act as a Faraday cage and block the RF signal. In case this is unavoidable, please use a WSP-511A0 rack-mounting kit or external antennas.

Once the WSP-511A0 base unit is installed, it is best to control the signal strength at the potential WSP-511A0 Transmitter location. For correct performance, signal strength of -70dBm is needed.

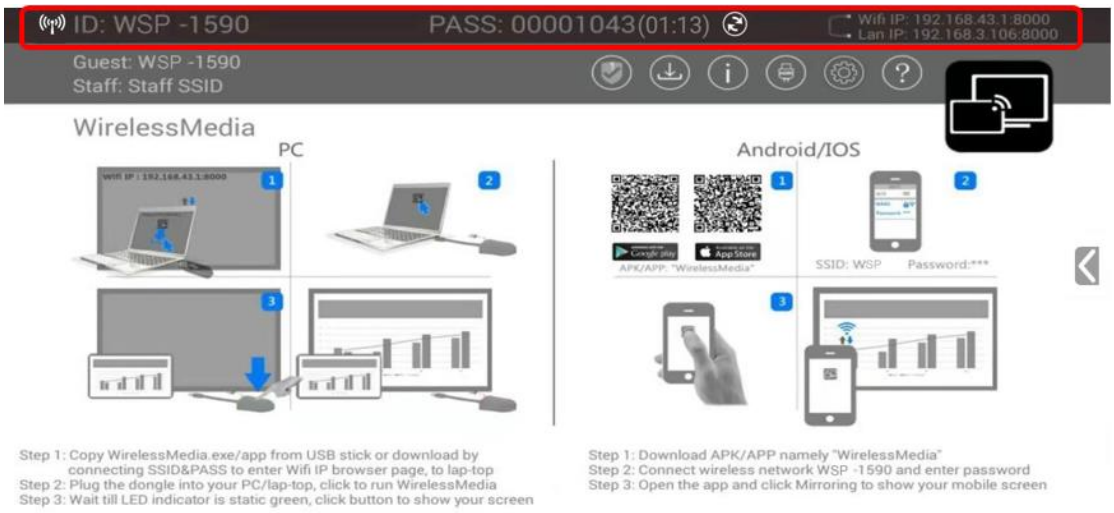
Wi-Fi Troubleshooting
Check the RSSi from the connected transmitters
Even if the selected channel is free of any interference, a too weak signal coming from the WSP-511A0 client (transmitters or mobile device) can result in an unstable link. In such cases, we recommend:

- Measuring the RSSi from the WSP-511A0 base unit at different Transmitter locations. This can be done by means of a free Wi-Fi survey tool like the Android Application “Wifi analyzer” or another base unit’s embedded Wifi analyzer. As explained above, the RSSi should be at least -70dBm.

If the measured RSSi is too low, check above paragraph “Important remarks about the WSP-511A0 system installation”.

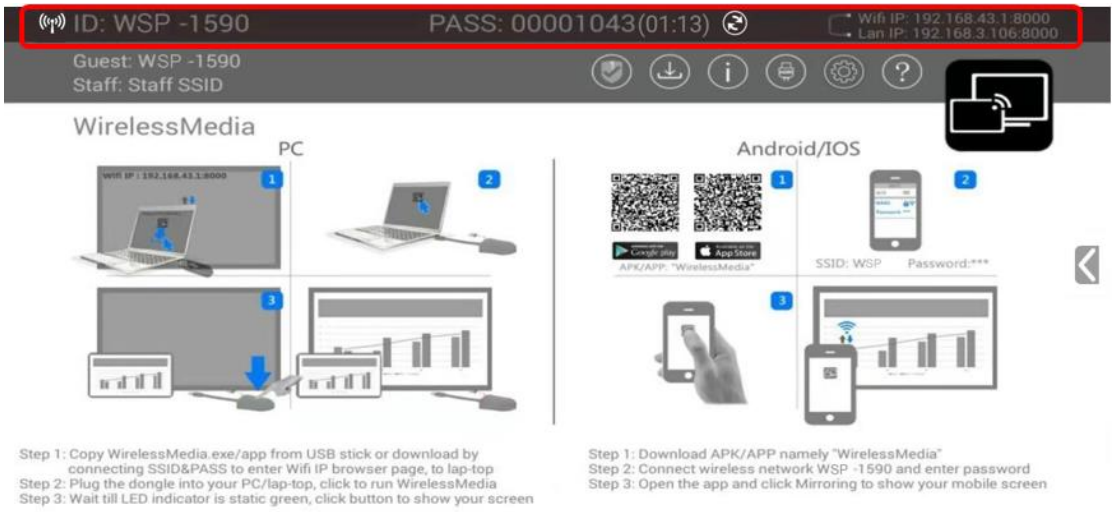
6.2.6 Hide SSID, Password & IP in Status Bar

When tick it, the status Bar will be hidden so that the attendees cannot connect the base unit via hotspot.



6.2.7 Lock Homescreen Status Bar

When tick it, the status bar will keep to show whether in mirroring or not. So that the attendee can connect the base unit in mirroring of the meeting.

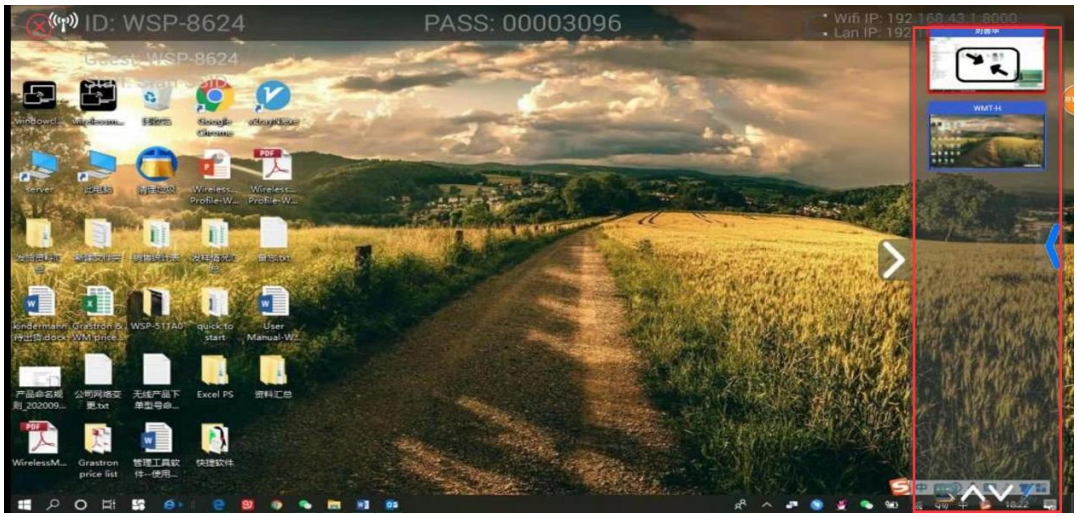


6.3 Moderator Control

6.3.1 Preview Windows

If turn on “Preview Windows”, the connecting dongle will be showed on the right

column of display as small windows.



6.4 General setting

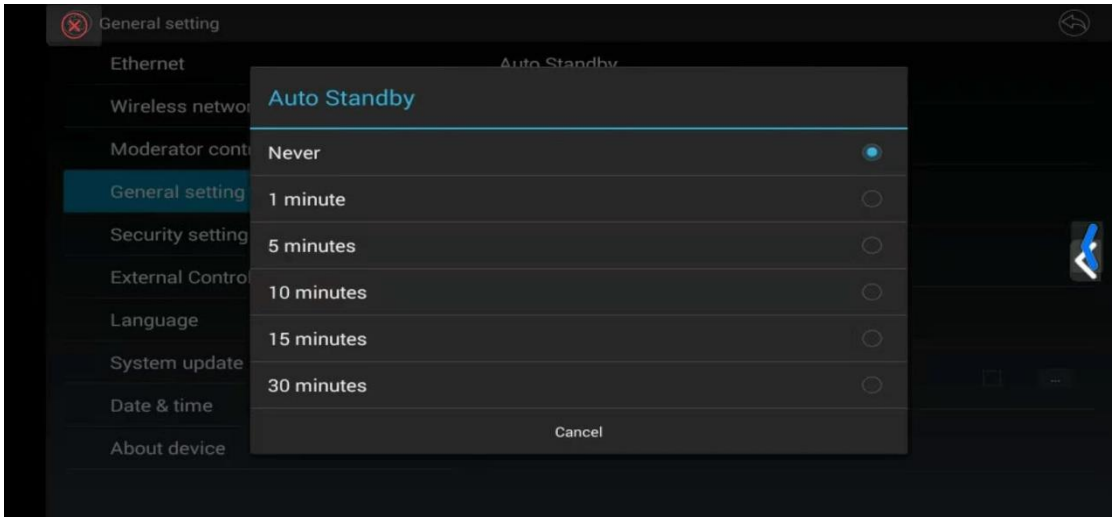
Includes Auto Standby, Airplay screen quality, HDMI output resolution, Source switch when active source plugged out, HDMI input auto switch, Home screen background image and Volumes.

6.4.1 Auto Standby

WSP-511A0 will automatically enter standby mode, using limited power for maintain functionality. The time is configurable.
Standby time could be configured to:

- Never: the WSP-511A0 will not go into standby mode.
- 1 minute: WSP-511A0 will go into standby mode after 1 minute.

- 5 minutes: WSP-511A0 will go into standby mode after 5 minute.
- 10 minutes: WSP-511A0 will go into standby mode after 10 minute.
- 15 minutes: WSP-511A0 will go into standby mode after 15 minute.
- 30 minutes: WSP-511A0 will go into standby mode after 30 minute.



There are 3 methods to wake up WSP-511A0:

1) Connect the dongle transmitter to PC and it successfully connect to WSP-511A0
2) Plug an USB mouse to USB port of WSP-511A0 and move the USB mouse to wake up WSP-511A0.
3) Push the power button of WSP-511A0 to wake up.

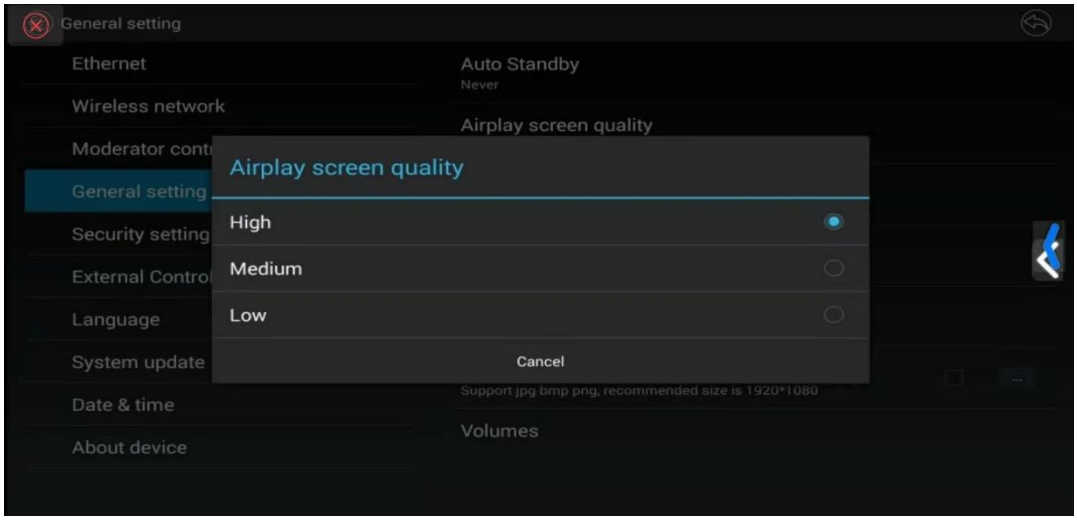
Attention: There are 3 situations which will make WSP-511A0 unsuccessfully go into standby mode:

1) In “Auto Standby” setting, the standby mode is configured to “Never”.
2) Dongle is still connected to PC and successfully connected to WSP-511A0.
3) If USB mouse is connected to USB port of WSP-511A0 and move the USB mouse, standby time will be re-calculated.

6.4.2 Airplay screen quality

Click to select the image quality when transmit apple device by “Airplay” mode, including

- High: 1920x1080
- Medium: 1280x720
- Low: 1136x640



Note:

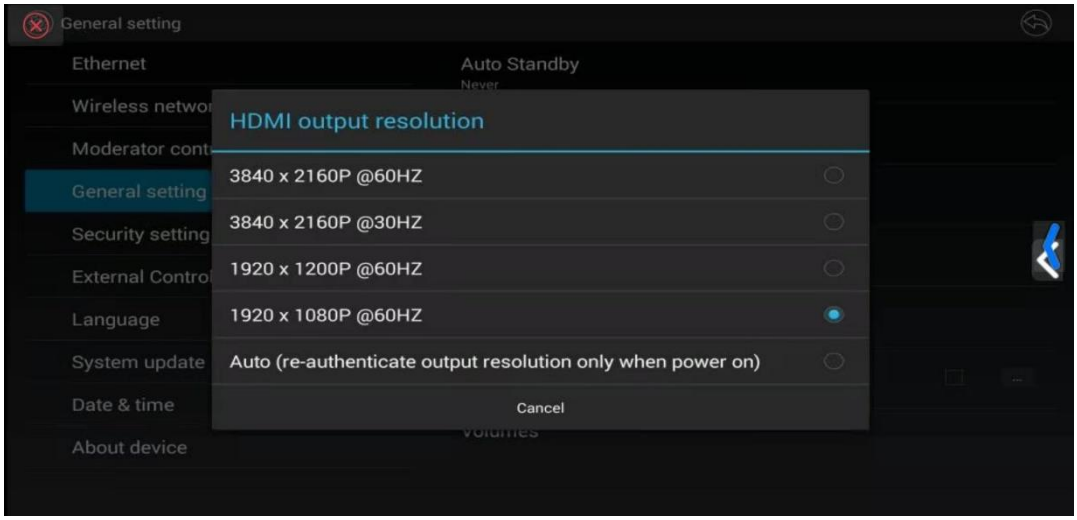
- Different airplay quality will occupy different data rate.
- Under a certain data rage, lower resolution will get better fluency.

6.4.3 HDMI output resolution

Click to select the output resolution for WSP-511A0 HDMI output port.

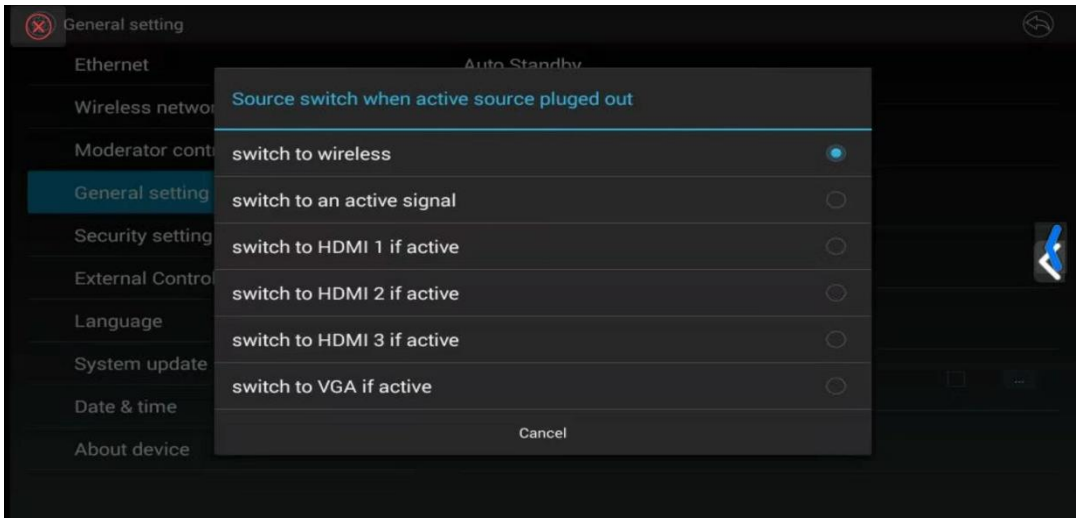
HDMI output resolution:

- **3840x2160 @60Hz**: Set the HDMI output resolution of WSP-511A0 at 3840x2160 60Hz.
- **3840x2160 @30Hz**: Set the HDMI output resolution of WSP-511A0 at 3840x2160 30Hz.
- **1920x1200 @60Hz:** Set the HDMI output resolution of WSP-511A0 at 1920x1080 60Hz.
- **1920x1080 @60Hz**: Set the HDMI output resolution of WSP-511A0 at 1920x1080 60Hz.
- **Auto：** Re-authenticate output resolution only when power on.



6.4.4 Source switch when active source plugged out

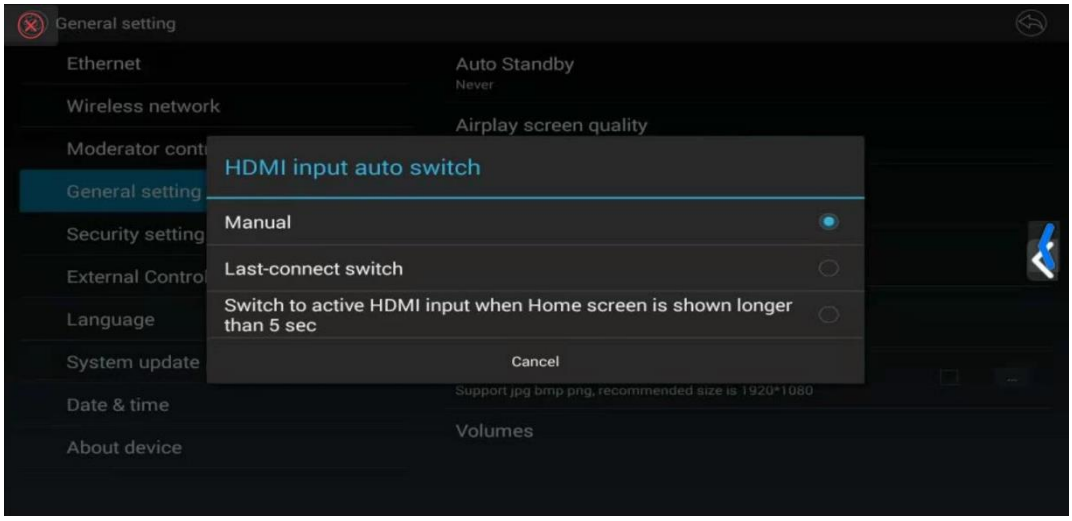
Click to switch active connecting sources.



6.4.5 HDMI input auto switch

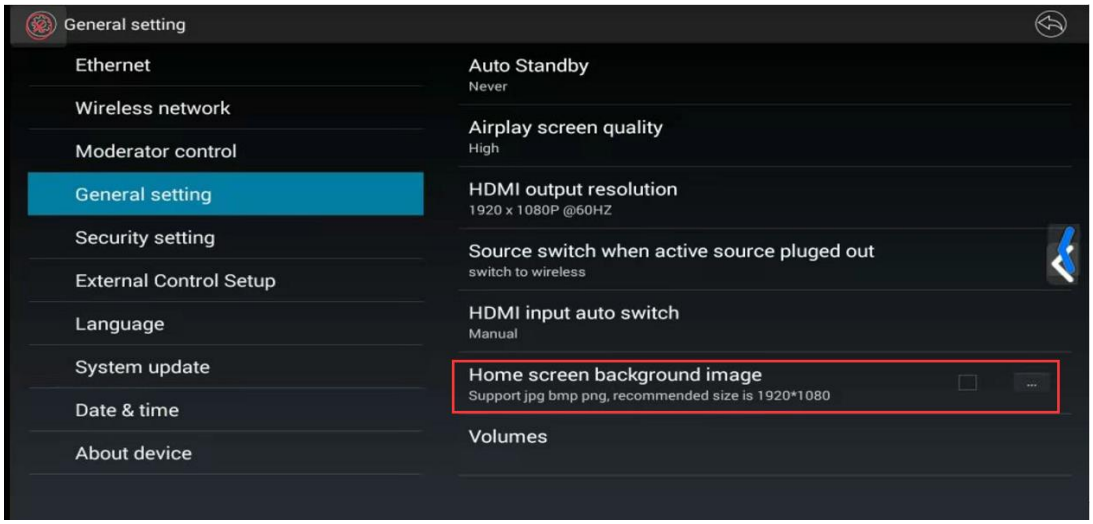
There are three mode for wired auto switch.

- Manual: manually switch to wired input signal source by clicking wired icon on home page.
- Last-connect switch: Switch to the last-connected wired input source.
- Switch to active wired input when Home screen is shown longer than 5 sec. In this mode, if click the “setting” menu during 5 seconds, then it will stop switching to wired input source. After back to home page and stay on home page for 5 seconds, it will auto switch to wired input source again.



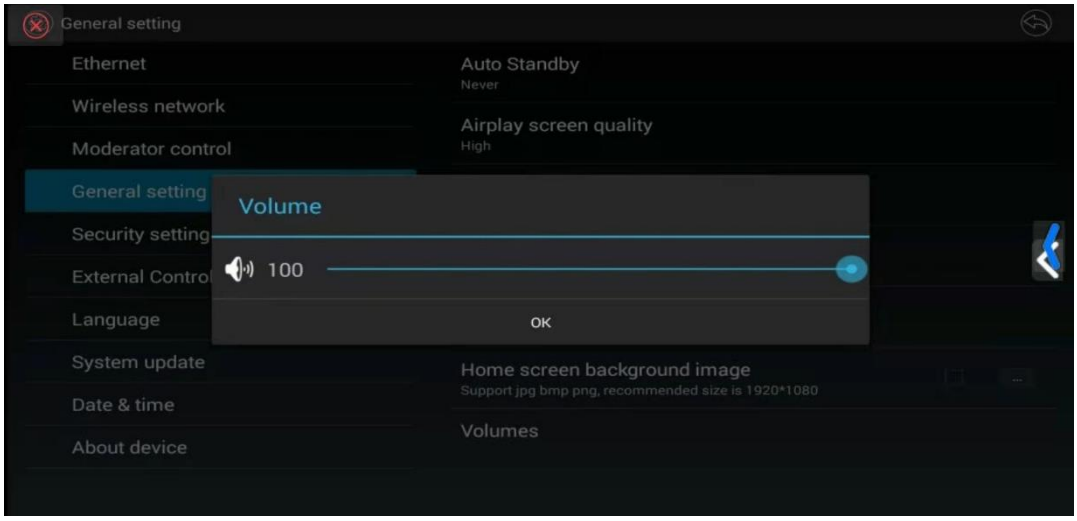
6.4.6 Home screen background image

To set user-defined background, use a USB stick (with image inside) to connect to base unit, click and choose an image to apply to homepage. Support jpg, bmp, png, recommended image size is 1920*1080.



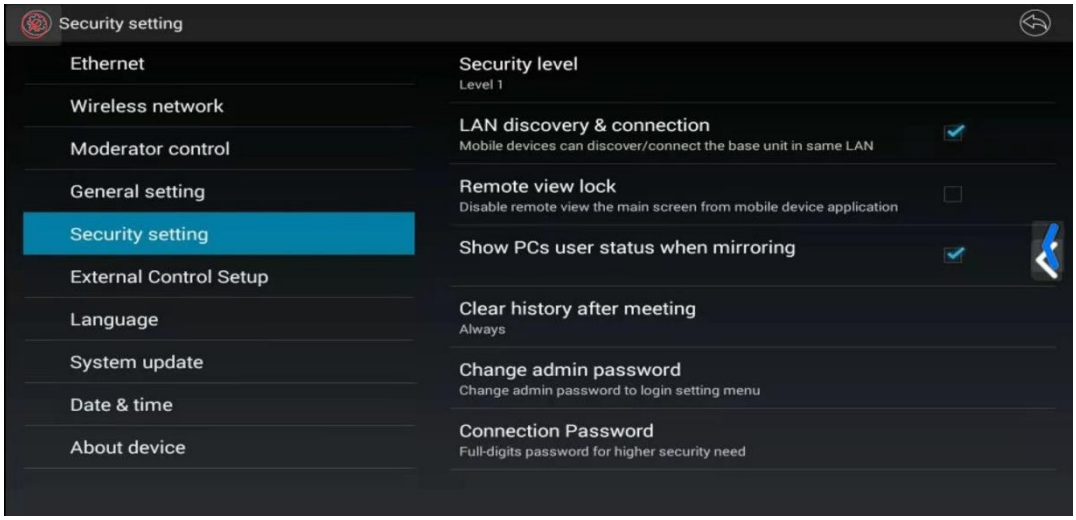
6.4.7 Volumes

Volume output of WSP-511A0 could be adjusted.



6.5 Security setting

Includes Security level, LAN discovery & connection, Remote view lock, Show PC's user status when mirroring, Clear history after meeting, Change admin password and Connection Password.



6.5.1 Security Level

Based on user requirements, **three different security levels** can be set in the menu of WirelessMedia, to satisfy different security requirements, according to different security sensitive environments or security policies. A security level is a predefined set of settings. Click on the corresponding entry in the menu if you want 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.

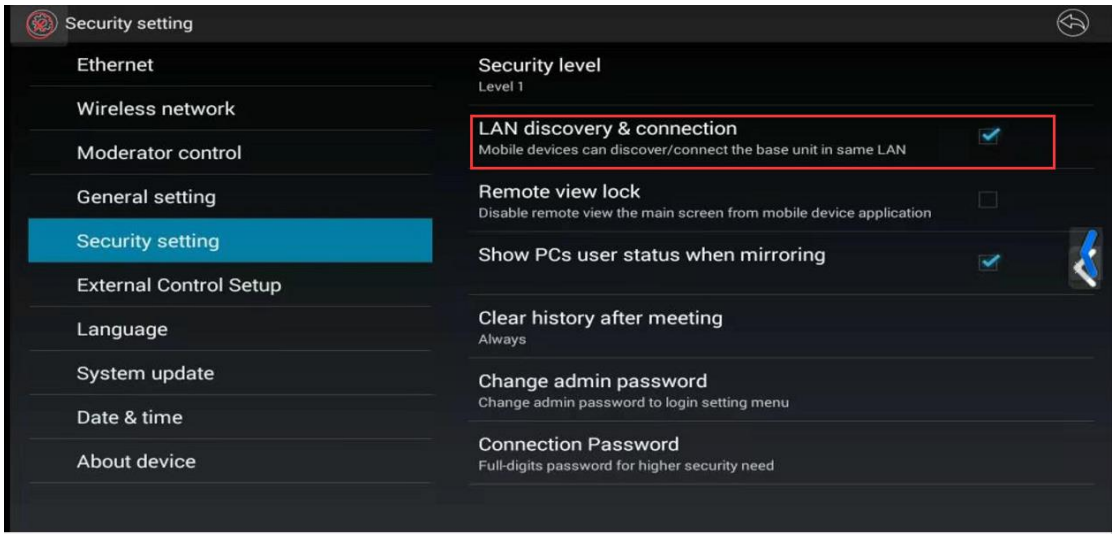
Level 2: higher security; provides increased security for companies, organizations, government agencies, etc., through powerful encryption of audio and video data; other security features include limiting the transmission of "AirPlay" by introducing a password.

Level 3: is used for strict security requirements of companies, organizations, authorities, banks.
This level contains all “Level 2” security measures; in addition, all mobile applications, such as the Android APP as well as AirPlay are blocked, the web browser (WebUI) of the Base-unit is blocked. In addition, the downgrade of the firmware is not possible.

The setting of the security level is displayed in the Home screen, click the icon for more information.

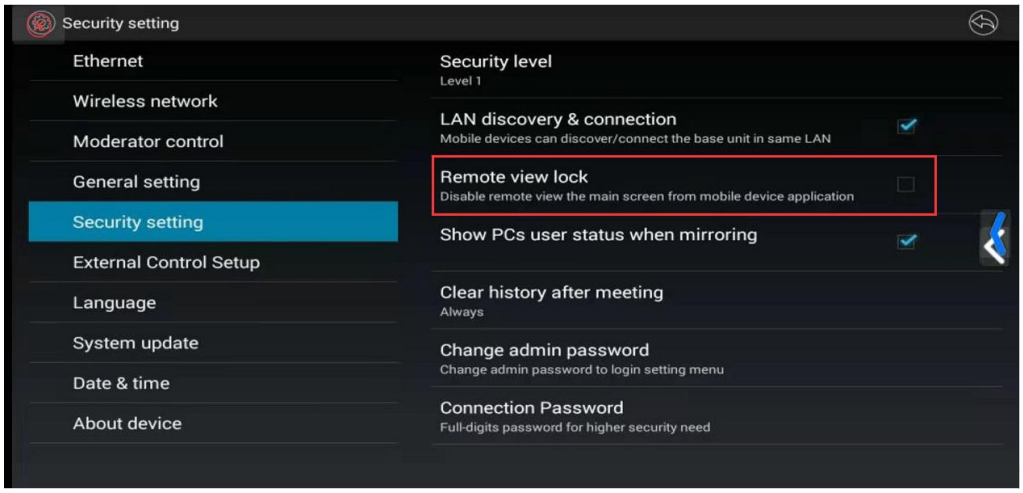
6.5.2 LAN discovery & Connection

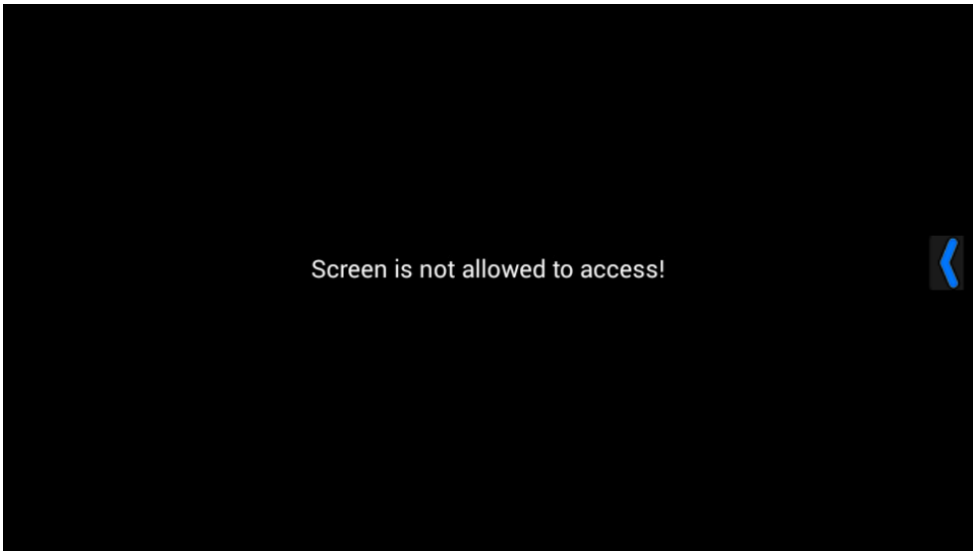
Allow the PC/Mobile/tablet to discovery the WSP-511A0 in LAN and connect it.



6.5.3 Remote view lock

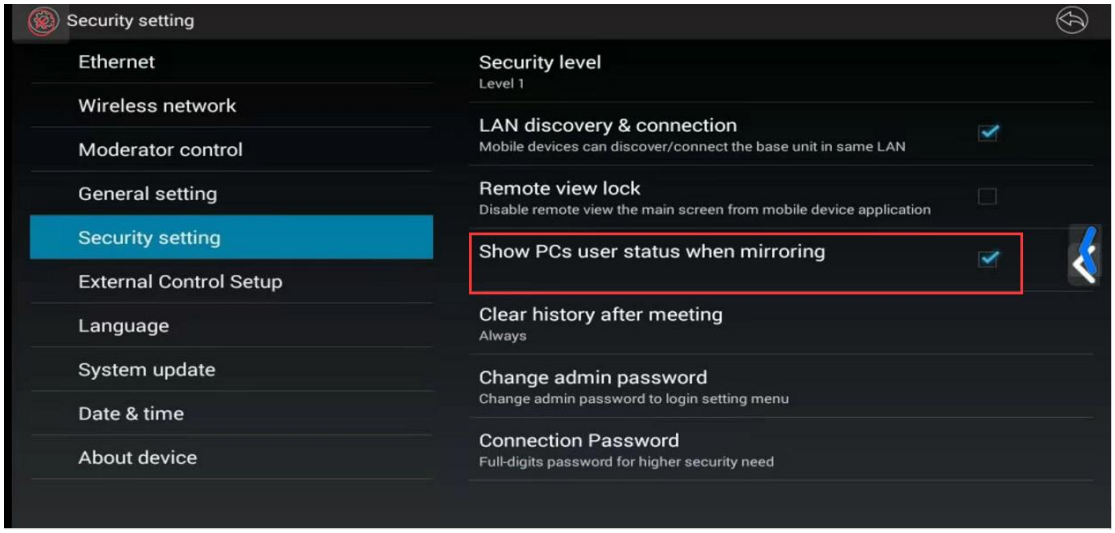
Presenter is able to turn on/off the “Remote View”, to enable/disable the “WirelessMedia” APK/APP to remotely watch the main screen. When “Remote view lock” is ticked, mobile device will show message “Screen is not allowed to access” as below:

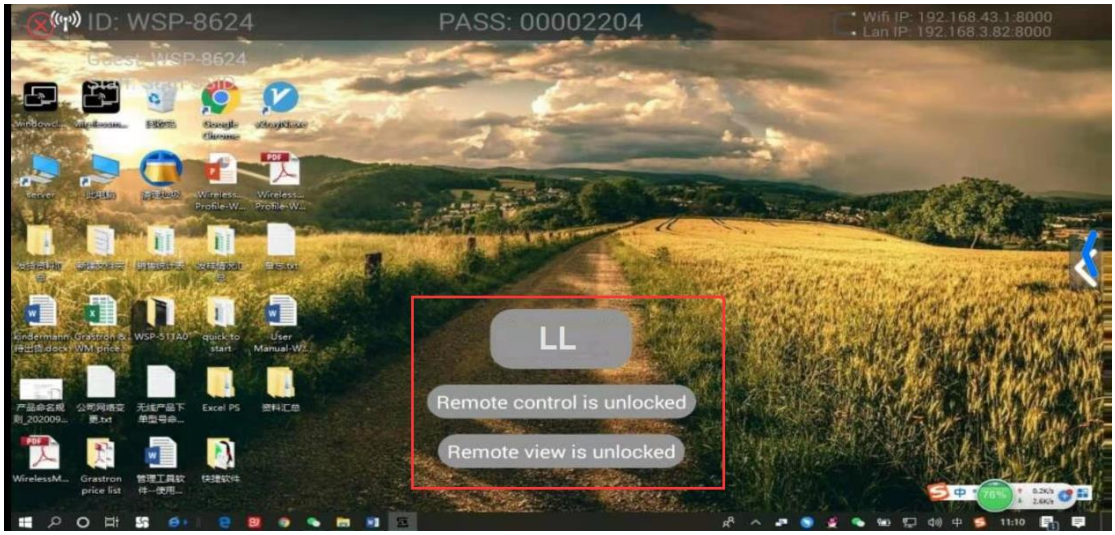




6.5.4 Show PCs users status when mirroring

When touch to share screen, there will be OSD showed in screen as below.



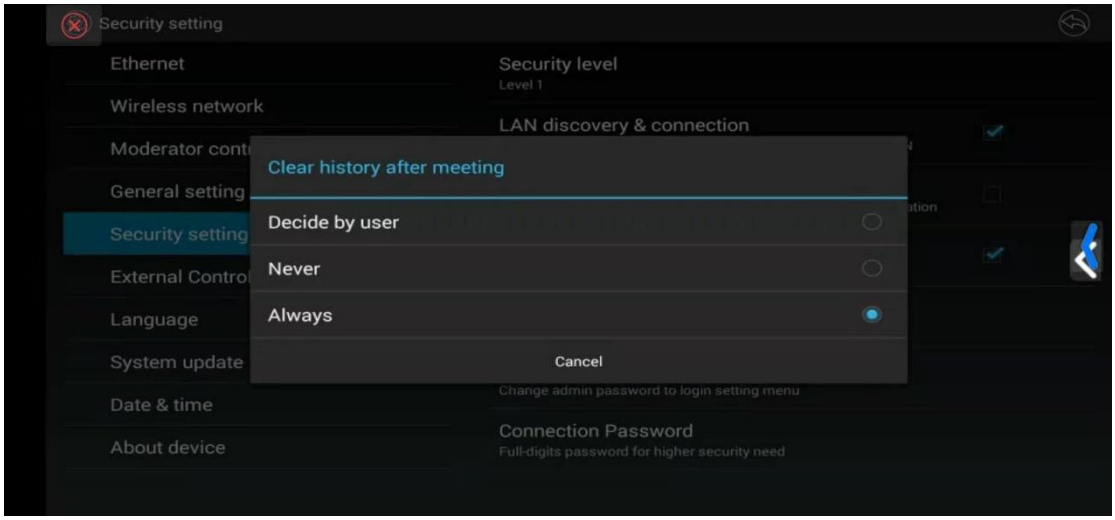


6.5.5 Clear history after meeting

It is configurable:

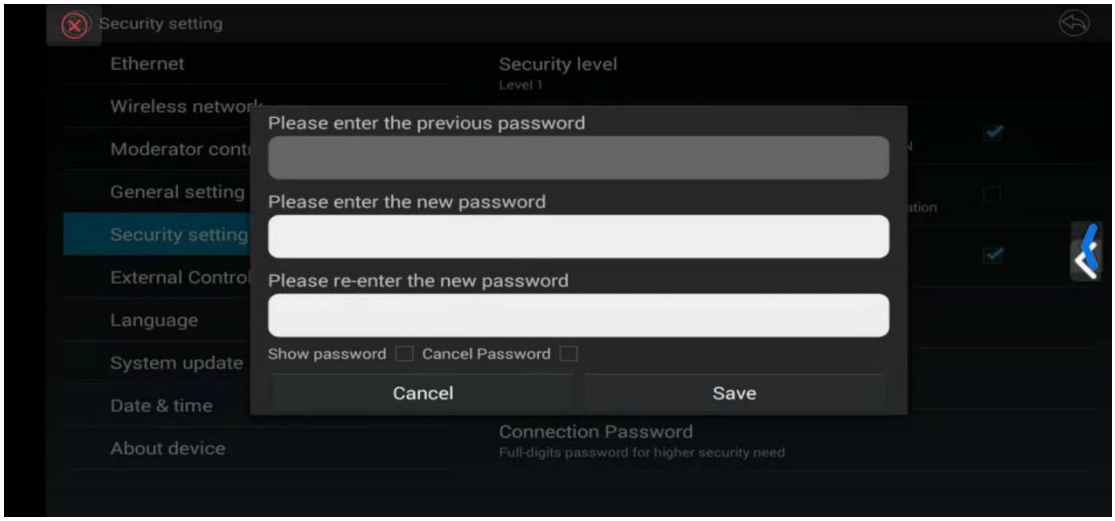
- Decide by user
- Never
- Always

Default setting is Always.



6.5.6 Change admin password

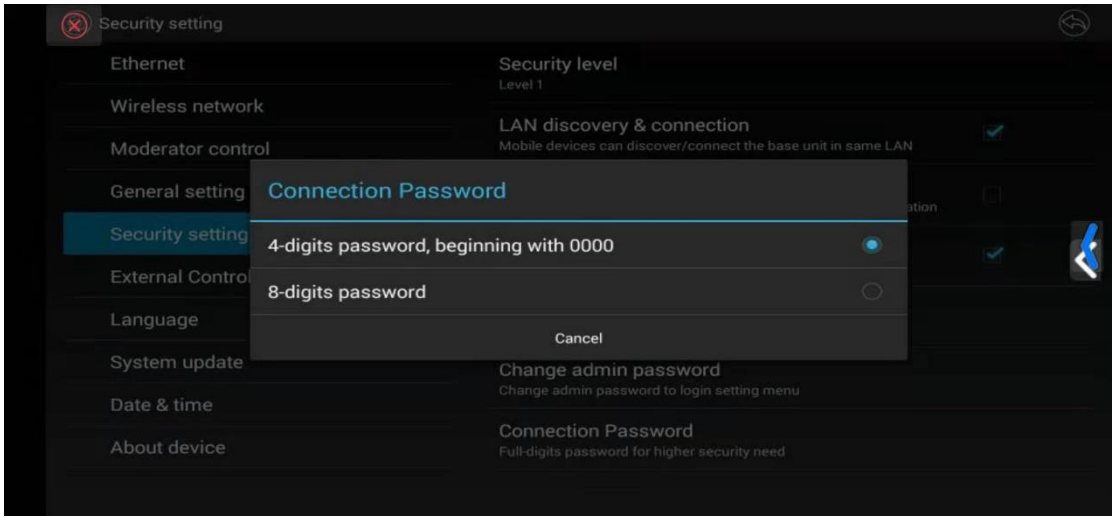
When enter **Setting** menu, it needs you to input admin password. The default password is: admin, which could be changed. The password could be canceled if don't need it, just tick the option as below.



6.5.7 Connection Password

Two type of password format can be chosen to show on home screen.

- 4-digits password, beginning with 0000
- 8-digits password



6.6 External Control Setup

6.6.1 Parameter

This is to set Uart setting, including Baud rate, Data bits, Stop bits, Parity check. All of them are configurable. User could select the needed data from the drop-down list. after selecting related parameter, and click the **Save** transmitter to make the changes take effect. There are 2 RS-232 ports in rear panel of WSP-511A0, user could configure both as blow Uart 1 and Uart 2 accordingly. The default setting is as below.
Baud rate: 115200
Data bits: 8
Stop bits: 1
Parity check: NONE

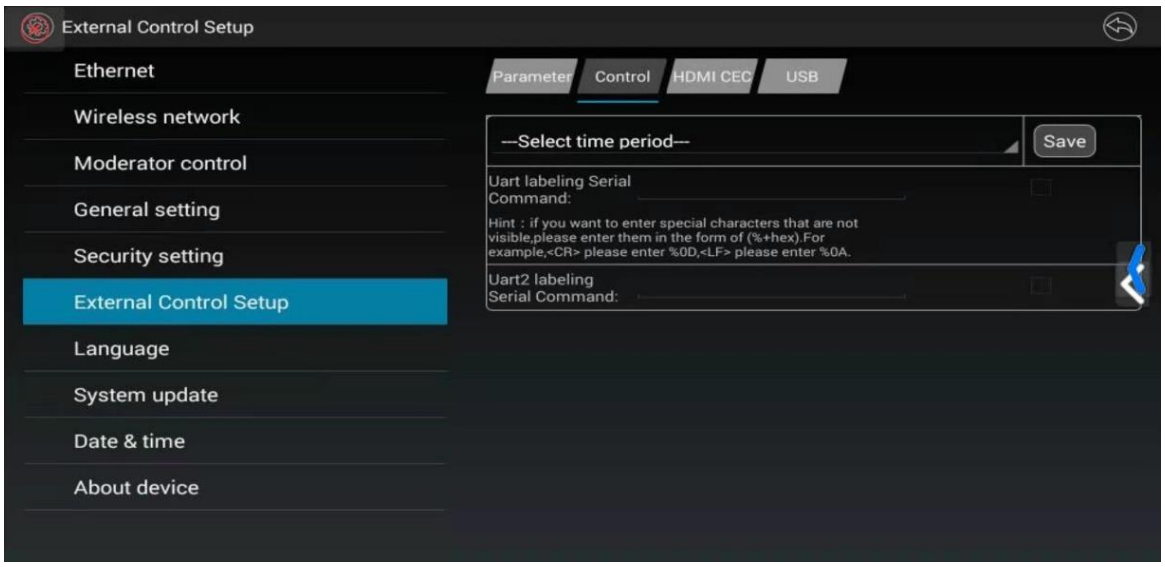
6.6.2 Control

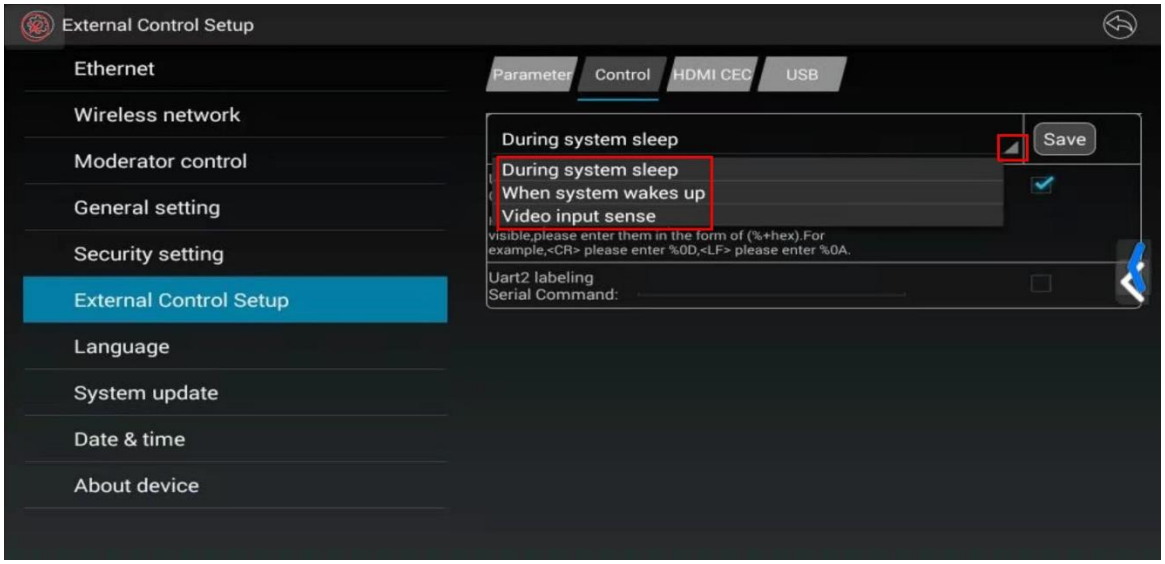
Controlling the WSP-511A0 via LAN.

The WSP-511A0 supports control via Telnet at port 5656.

Using the WSP-511A0 To Control External Devices

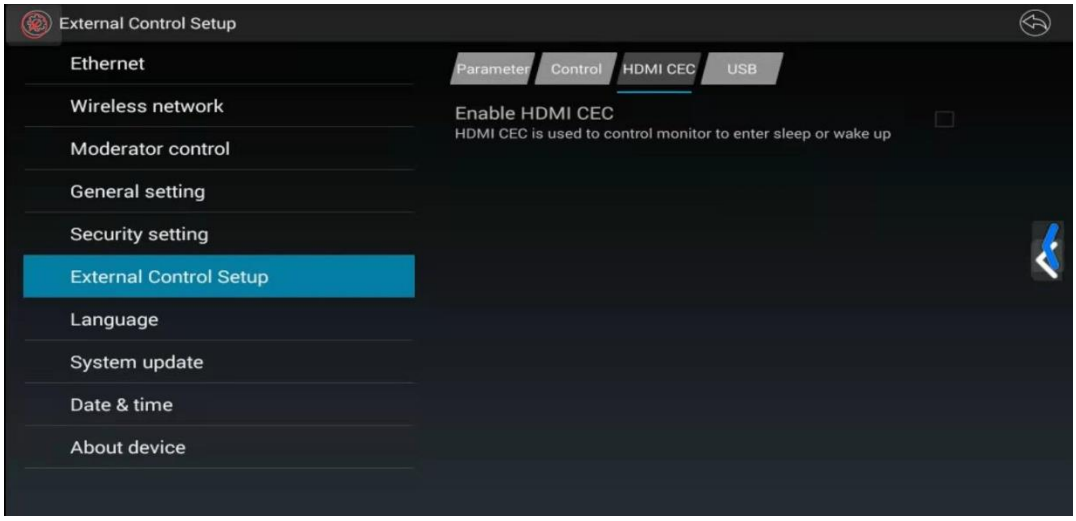
User could configure the RS232 to be sent by WSP-511A0, to control other third-party device upon the receipt of trigger command. To send an RS-232 command, enter it into the “Serial Command” field and check the checkbox next to it to
enable sending the command. To enter any non-printable hex characters, preface the hex byte with “%”. For example, to send Carriage Return, <cr> or 0x0D, enter %0D.
There are 3 kinds of modes of status of WSP-511A0 as below red circled, when user control the other device.





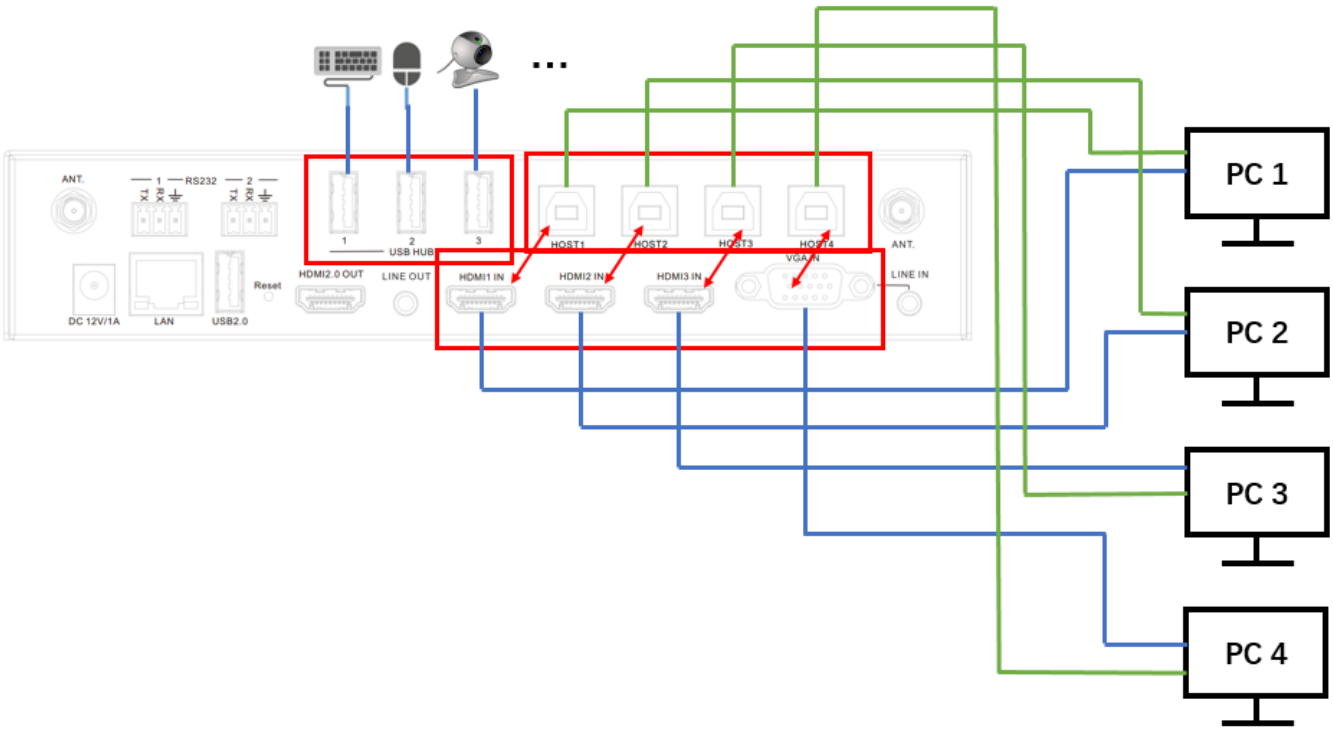
6.6.3 HDMI CEC

This pane allows you to enable HDMI CEC to automatically sleep or wakeup the connected display when the WSP-511A0 sleeps or wakes up.



6.6.4 USB Hub function

USB Hub function is a function that provides users with a set of USB devices (3 USB ports) that can be mounted on the corresponding input signal source when in following input signal source switching mode or HOST last-connect mode.
USB hub connector supports any USB port devices including USB drive, camera, keyboard, microphone and ect.



Follow Input mode: switch to the same port as input signal.

The USB HUB switches to the input source which the front panel signal source light switches.

- Default mode is in wireless input, USB HUB function is not available in this mode. And the output displays the home page of wireless mode.
- **HOST1** bind to **HDMI1 IN** connecting to Input Source 1.
- **HOST2** bind to **HDMI2 IN** connecting to Input Source 2.
- **HOST3** bind to **HDMI3 IN** connecting to Input Source 3.
- **HOST4** bind to **VGA IN** connecting to Input Source 4.

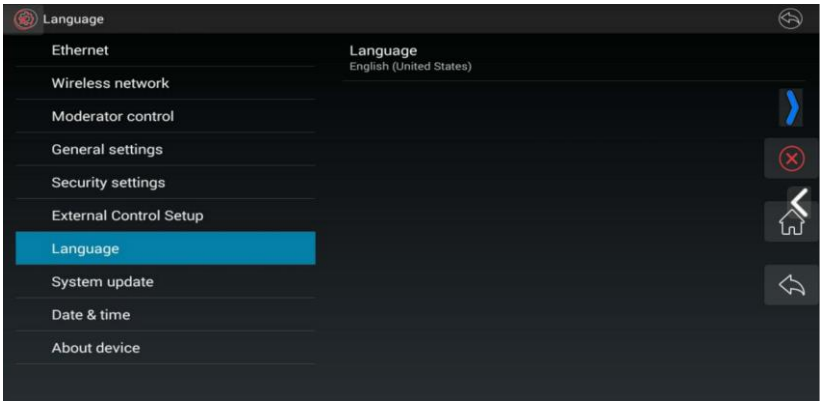
Last-connect switch

The USB HUB switches to the last connected HOST with responding input signal in this mode.

- Default mode is in wireless input, USB HUB function is not available in this mode. And the output displays the home page of wireless mode.
- When last connected to **HOST 1**, USB devices switches to **HDMI1**.
- When last connected to **HOST 2**, USB devices switches to **HDMI2**.
- When last connected to **HOST 3**, USB devices switches to **HDMI3**.
- When last connected to **HOST 4**, USB devices switches to **VGA IN**.

6.7 Language

Includes Language setting. Click to choose required languages.

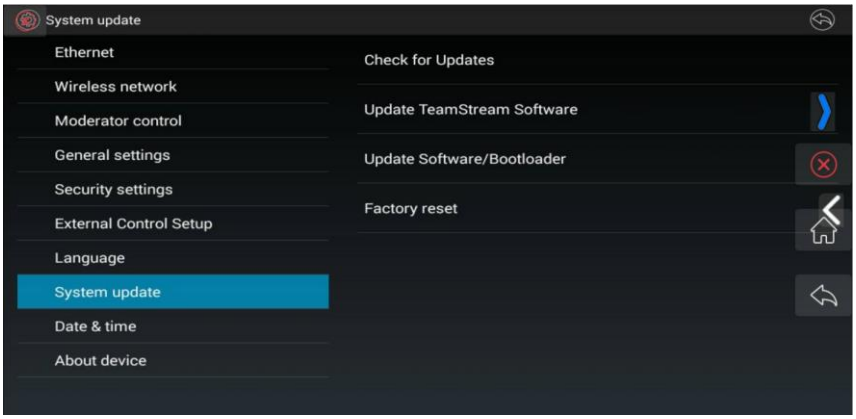


- **Language**: Click to select the appropriate language.

6.8 System Update

Includes Local update and Full update.

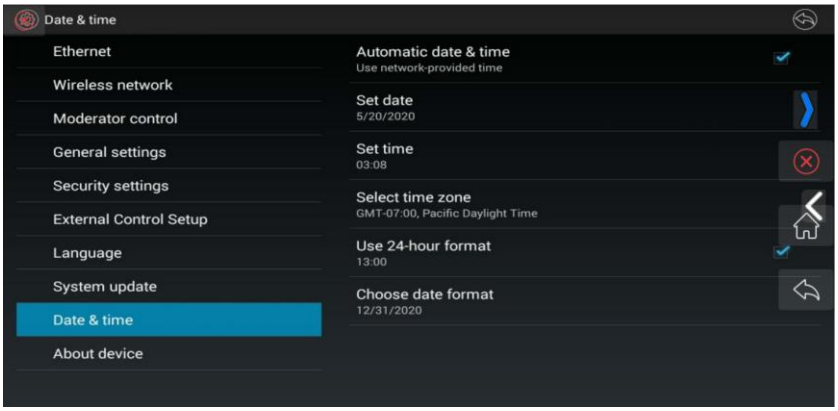
- **Local update**: Includes application software.
- **Full update**: Includes application software and firmware.
- **Factory reset**: Click to do factory reset.



6.9 Date & Time

Includes Automatic date & time, Set date, Set time, Select time zone, Use 24-hour format and Choose date format.

- **Automatic date & time**: Check to use the network provided time as system time of WSP-511A0.
- **Set date**: Click in the input filed to fill out the appropriate date.
- **Set time**: Click in the input filed to fill out the appropriate time.
- **Select time zone**: Click in the input filed to fill out the appropriate time zone.
- **Use 24-hour format**: Click to select use 24-hour format or not.
- **Choose date format**: Click to select the data format.



6.10 About Device

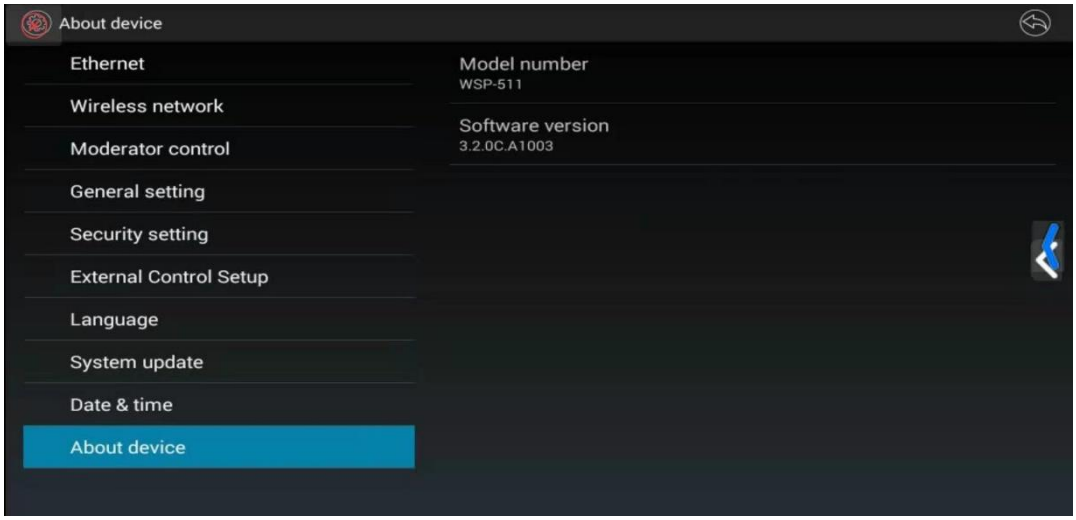
Includes Model number and Software Version

6.10.1 Model number:

WSP-511A0

6.10.2 Software version:

Includes version number# 3.2.0C.A1003.



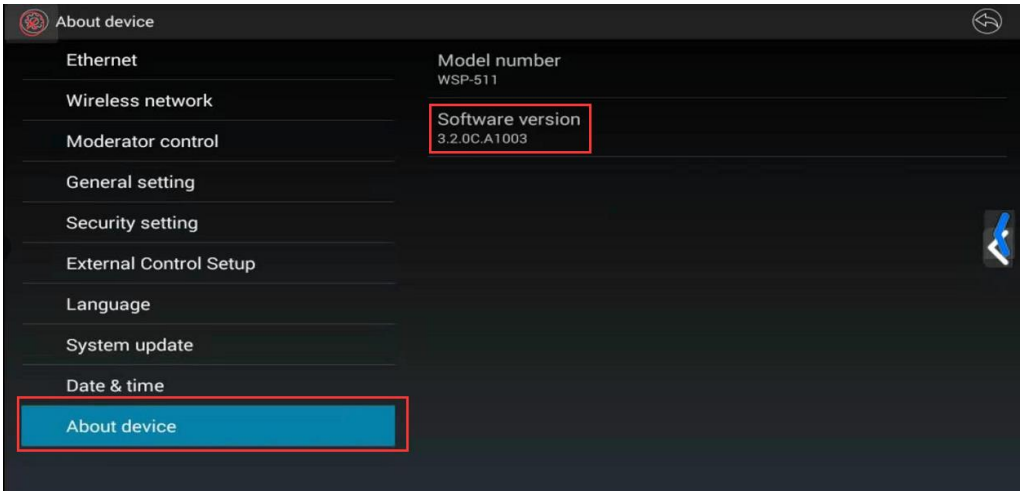
7. Updating WirelessMedia

An update of the firmware can be useful to take the advantage of new features of WirelessMedia or to fix known issues and bugs. WirelessMedia includes two methods of updating. Updating by USB stick and webserver.
After updating the Base-unit, always check, whether the other parts still fit together or should be updated also.

There are **up to three different areas** for updating: Firmware **Base-unit**, Firmware **dongle** and **Launcher** for PC/Laptop or MAC “WirelessMedia.exe“. All software is stored in Base-unit, to be transferred manually to different devices.

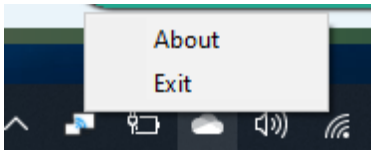
7.1 Check current firmware information

Base unit: base unit “Setting” menu/About device

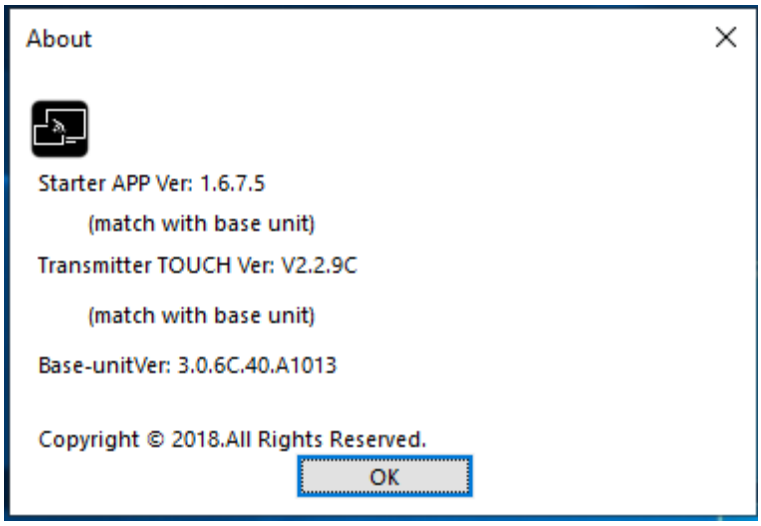


Windows OS:

Dongle/Launcher: firmware version can be visual in the ““WirelessMedia”.exe” program icon in windows status bar by right-clicking the ““WirelessMedia”” icon and select “About”, as shown below.

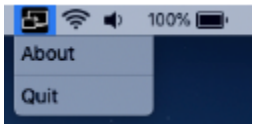


Click “About” to check dongle and launcher program version.



MAC OSX:

Dongle/Launcher: firmware version can be visual in the ““WirelessMedia”.app” program icon in MAC OSX status bar, by clicking the ““WirelessMedia”” icon and select “About”, as shown below.



Click “About” to check dongle and launcher program.

7.2 Upgrading WSP-511A0:

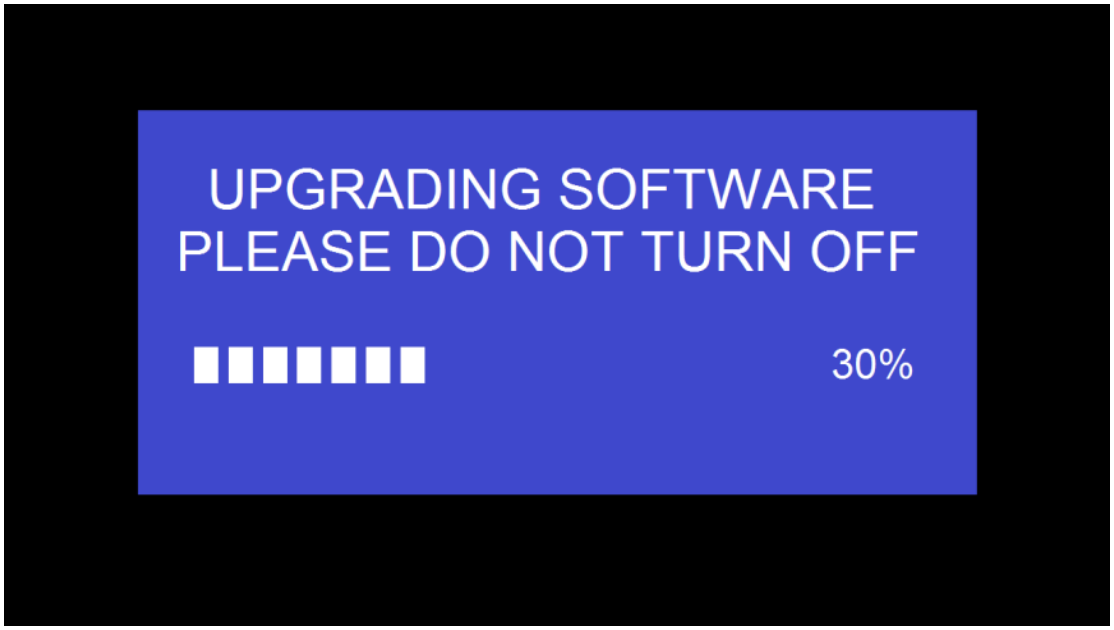
There are two ways to upgrade base unit as below.
First method to upgrade base unit WSP-511A0 as below:
The WSP-511A0 device can be “Full-Updated” through a USB drive as follows.

1. Copy the updating file “update.bin” to the root directory of the USB drive.

2. Connect the USB drive to either USB port of WSP-511A0.
   Note: The USB port can only support maximum 500ma. Please use a small power U-disk as upgrading USB drive.

WirelessMedia recognizes the “**update.bin**” file at a plugged-in USB stick automatically and starts the “Full Update” procedure.
You can plug out the USB stick within 10 seconds to stop the update.
Attention !
Do not disconnect power during upgrading progress. Or, the unit firmware will be corrupted.

3. The upgrading progress displays as shown below, and the unit will reboot automatically after complete the updating 100%, as shown below.



Note: *During the update, screen can be temporary dark.*
If the progress bar stops at 1%, use another USB stick, it may be defective.
The display device shows the Home Screen after normal boot of the device, you can disconnect USB-drive.

4. Perform “Factory Reset” when the firmware update is complete.

Only when the associated “Release notes” are requiring an additional „**Factory Reset**“, perform it via the menu “**System settings”** / “**Reset”**.

All data of configuration will be lost. So that you do not have to re-configure all data in an elaborate process, therefore note all settings within the Sub-menus before doing Factory Reset.

5. The update of Base-unit is finished.

Second method to upgrade base unit as below:

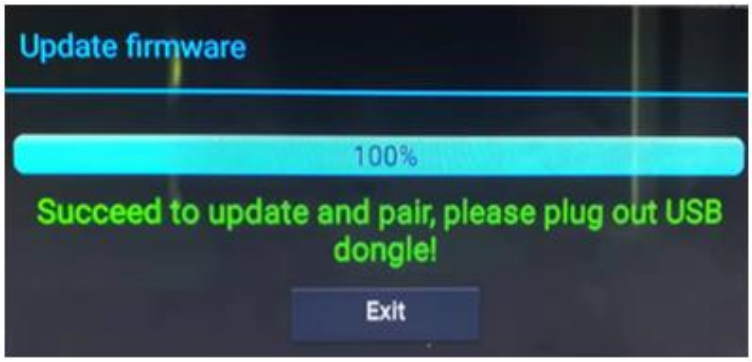
Base unit can be upgrade via base unit menu as below:
Via OTA upgrading method. Check menu on “**System update**”-“**Upgrading mode setting**”.

7.3 Upgrading and Pairing of Dongle:

1. Plug the dongle to either of the two USB port of WSP-511A0 to be updated. It will automatically show up a message to indicate if the installed firmware of dongle is older, and needs to be upgraded.

The upgrading progress starts automatically with the progress bar, as shown below.

2. “**Pairing”** to the Base-unit is done automatically afterwards, it shows as below



3. Plug out the dongle. Now, the upgrading progress is finished. Update all other dongles accordingly.

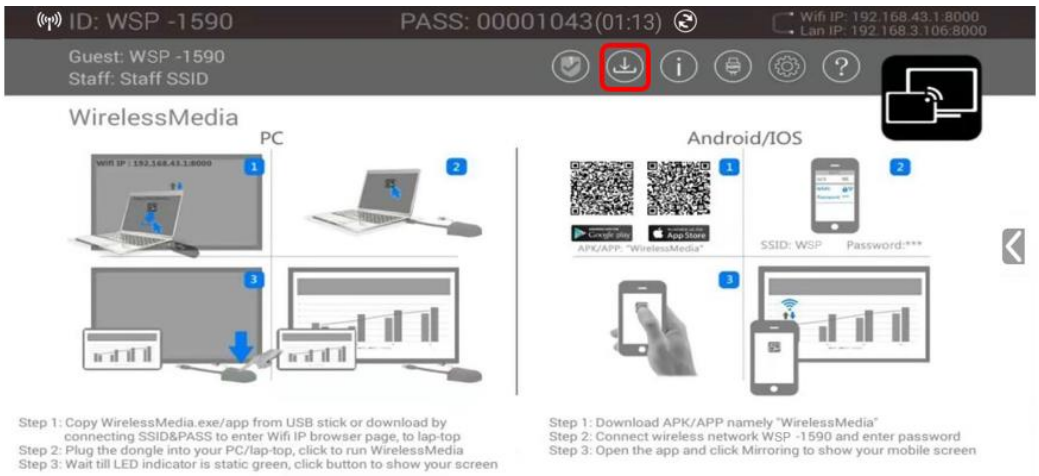
7.4 Upgrading launcher:

Attention: The USB driver should be FAT 32 format not NTSC format.

After upgrading WSP-511A0 and dongle, we need to update the launcher.
There are 2 methods to update the USB stick/launcher, including:

Method 1: Via USB stick

1. Connect the USB drive to either USB port of WSP-511A0.
2. Click the “Download” icon in “Home Page”, pls see as below:

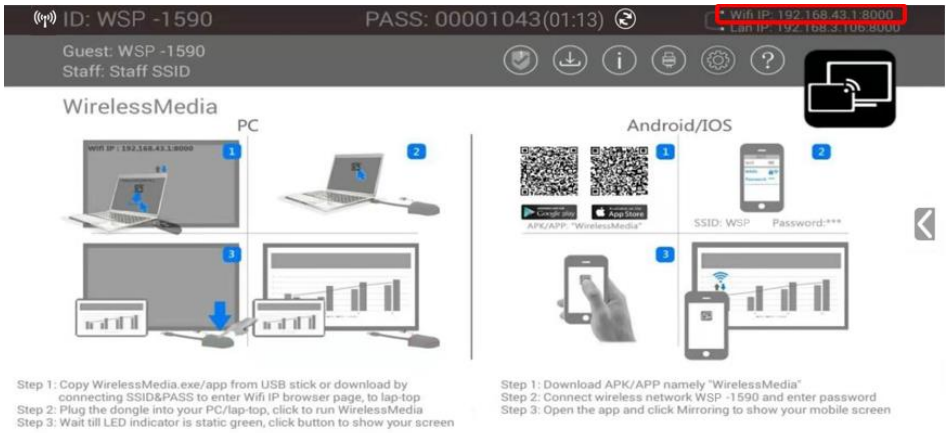


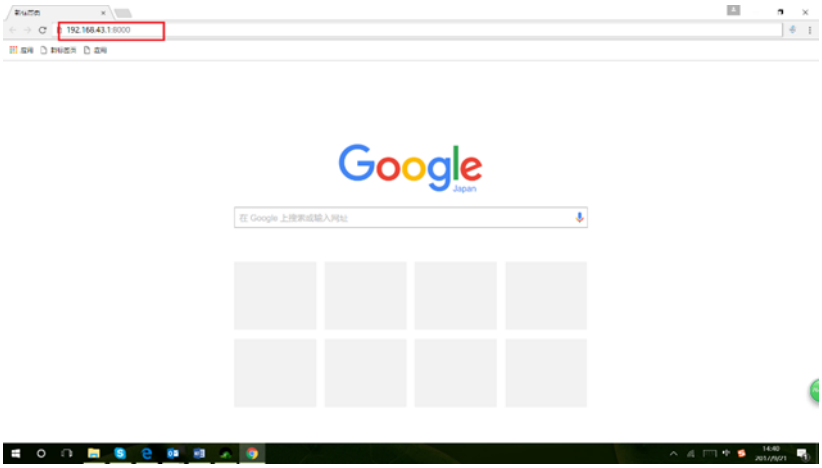
3. When creating progress is completed, it will show the message “Succeed to create launcher, they are in directory / UDISK / Launcher”.

Method 2: Via WIFI

1. Connect PC’ wifi to WSP-511A0’s SSID and enter password in homepage, see pictures as below:

2. Open Explorer and enter WiFi IP: 192.168.43.1:8000.





3. Click to enter “Launcher” download webpage.
4. Choose and click Windows or MAC launcher to download.
5. Find the “Launcher” program in PC and copy to PC desktop. (Recommend to copy to desktop for quick run.)
6. Run the program to start sharing.

Two methods to execute the launcher for first time user

- Copy the program to PC, and click to execute it to share PC screen.
- Connect dongle to PC; click to run program from the USB drive and share PC screen.

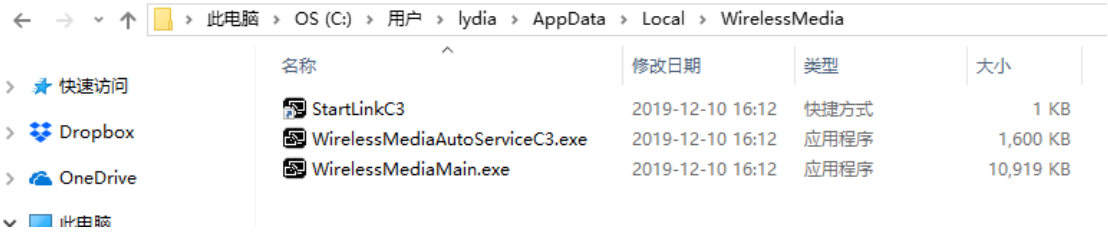
For both two methods, user don’t need repeat the above steps since the second time plug-in.

7.5 Clean left files of older versions of Launcher program in Lap-top

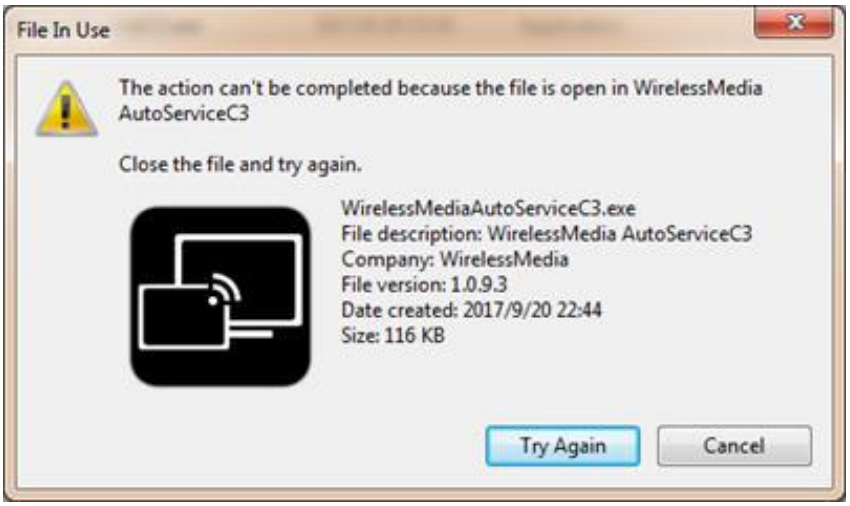
There are some old version “WirelessMedia” files left in the lap-top, which may influence the performance of the newer “WirelessMedia” program. Currently, it needs to manually clear them, before start to use the newly updated “WirelessMedia” firmwares.

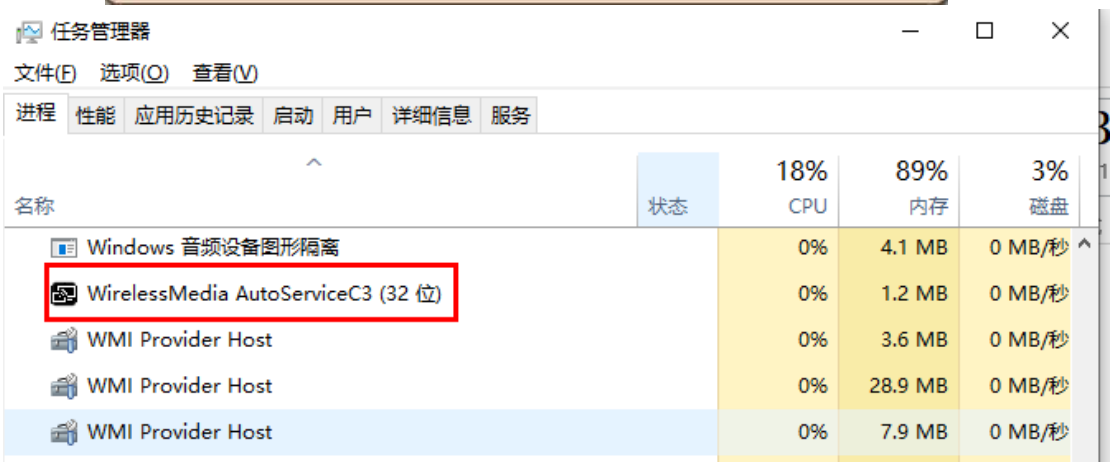
Steps:

1. Find the place where the left “WirelessMedia” programs are stored. Normally, these files are stored in the C:\Users***(user name)\AppData\Local\” WirelessMedia”.



2. If the “*.service” or “*.serviceC3” can’t be removed and shows up an alert message as below, please use combined hot key to open the task manager by pressing “Ctrl+Alt+Delete”, as shown below.





3. Right-Click on the “*.service” or “*.serviceC3”, for example right-click on “WirelessMediaAutoServiceC3.exe”as shown below, and click to End Process Tree.
4. Check again the task manager, to be sure there is no more any “WirelessMedia” programs still running in the task manager. And check again to be sure there is no more any “WirelessMedia” in the C:\Users***(userame)\AppData\Local\”WirelessMedia”.
5. Execute the actual version of Launcher program.

Upgrading progress is completed.

Till now, the upgrading progress is completed. Please feel free to enjoy the newer firmware version with the new features!

8. Operation Guide (Wireless)

8.1 Mirroring PC desktop

You can operate WirelessMedia for Windows optionally **with** or **without Dongle.** If there are several participants in a meeting, mixed operation is also possible.

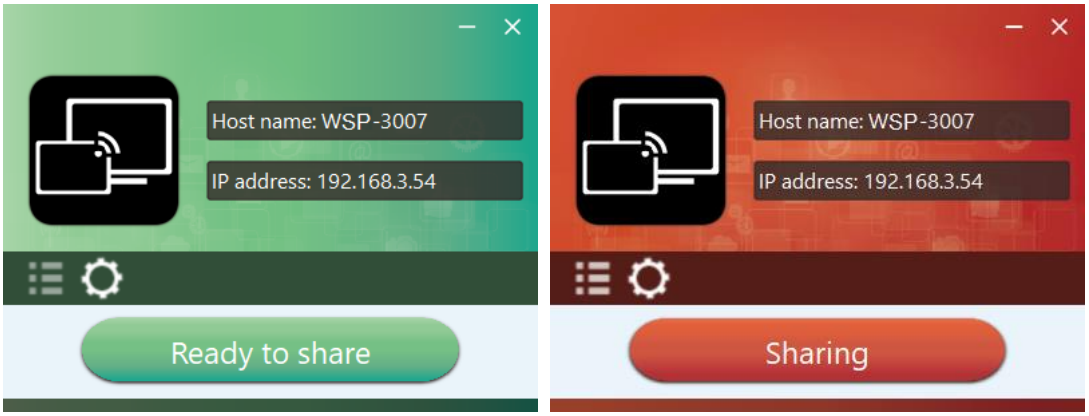
8.1.1 Extended Desktop for Windows 10

The Launcher program "**WirelessMedia for Windows**" and "**WirelessMedia Pro for Windows**" includes by default an additional virtual driver "**ExtendedDesktop**" to optionally install the Windows 10 Extended Desktop functionality, if it is needed.

8.1.2 Microsoft Windows PC/Laptop with Dongle

Operating system requirement: Windows XP/Vista/7/8/8.1/10 32 & 64 bit.
For first time user, you have to **copy the Launcher program "WirelessMedia" first on your Laptop. Run this Launcher program.**
When the Launcher program is pre-installed one time and already run in the first time, with plug in dongle, continue with step 2.
When Launcher program is not yet installed on PC, refer to chapter 7.4.

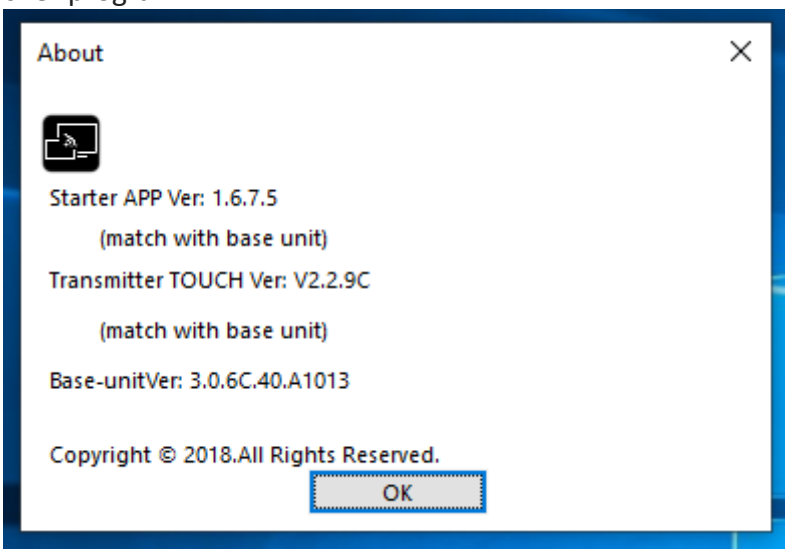
1. Plug a dongle **to the USB port of your PC or Laptop.** The WirelessMedia application is starting automatically and a symbol is displayed in the task bar of the PC/laptop .
2. Until the transmitter button shows a static **green** LED indicator, or till you see a message table showing up "**Ready to share"**, you could click the transmission button to start mirroring.



3. Click dongle or the visual button again to stop mirroring, LED or window color shows green again.

Right click the WirelessMedia status icon in Windows taskbar to open up the **context- menu**.

- "**About**": You can check the software versions of the Base-unit, the dongle and the launcher program.



- "**Exit"**: End APP. Exiting the App completely.

If you click the cross "**X**" in the upper right corner of the app, the app in the task bar is only minimized and can be recalled again from the taskbar at any time.

8.1.3 Microsoft Windows PC/Laptop without Dongle

For first time user, you have to **copy the Launcher program "WirelessMedia for Windows" first on your Laptop.**
When the Launcher program is already loaded, continue with Step 2.

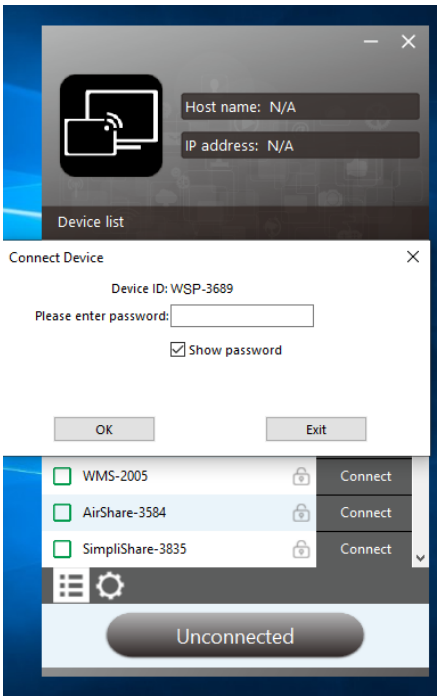
1. When Launcher program is not yet installed on PC, refer to chapter 7.4.
2. Connect your laptop to **Wi-Fi network displayed on the Home screen** ("Guest', "Staff"), or connect to the **LAN** on the network using a network cable.
3. Double-click the "**WirelessMedia-windows.exe**" Launcher program , a list of all available "WirelessMedia" in the **same network** will be displayed, select which device you want to connect to. The connections are password protected (lock icon).

(**LAN** connection: several receivers possible) (**Wi-Fi**: only 1 receiver)

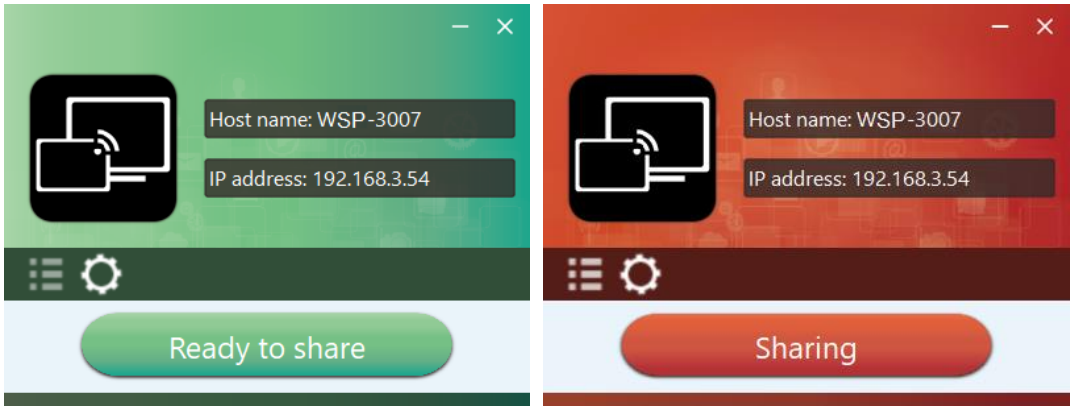
4. Enter base unit password and click “connect”, the system is ready to share.

You can also manually connect by entering the name (SSID) or IP address. (click icon).

Enter the corresponding base unit password, press **'OK'**, the system is “**Ready to share”**.



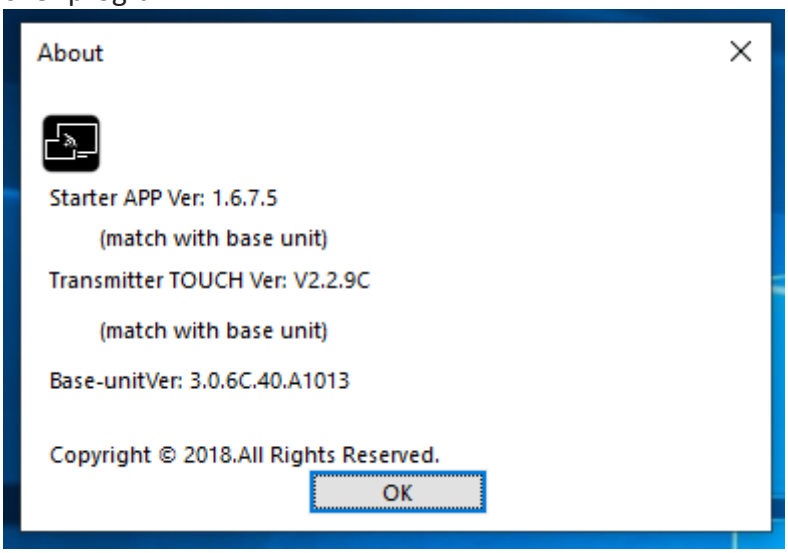
5. Click “Ready to share” in PC, when window color is static red, the screen is mirroring to the main screen.



6. Click the **visual button again**, to stop mirroring, window color shows green again. You can minimize the APP-window, in Windows taskbar you can see if screen is mirroring or not .

Right click the WirelessMedia status icon in Windows taskbar to open up the **context- menu**.

- "**About**": You can check the software versions of the Base-unit, the dongle and the launcher program.

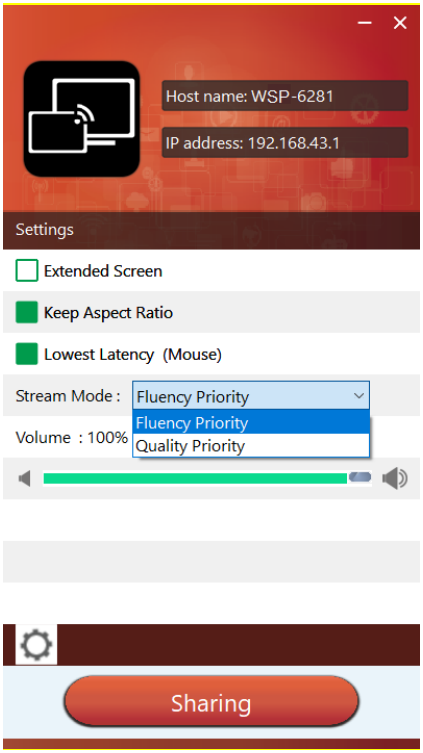


- "**Exit"**: End APP. Exiting the App completely.

If you click the "**close**" in the upper right corner of the app, the app in the task bar is only minimized and can be recalled again from the taskbar at any time.

8.1.4 Options for Microsoft Windows PC / Laptop – Extended Screen

Click the icon in App to open/close “options”.

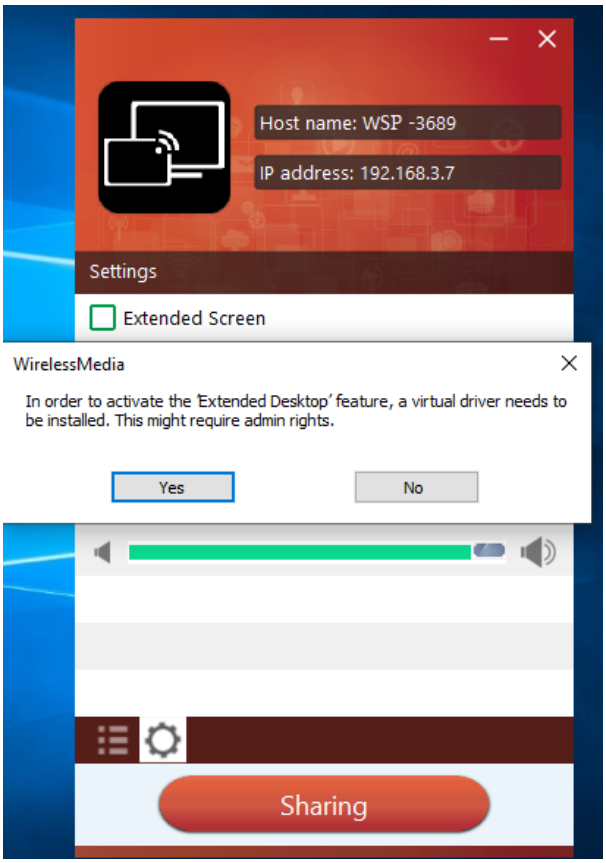


“Options”:

- **Extended Screen:**
  Transfers extended desktop of active source. (depending on your operating system, may require the installation of the virtual driver “**ExtendedDisplay**“ for function with Windows 10).

  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.

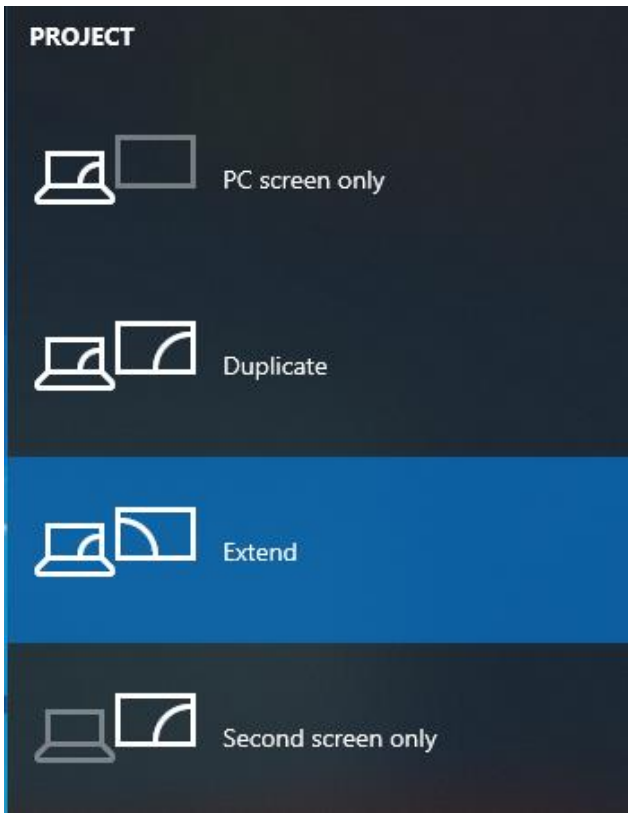
  For the first time use of function “Extended Screen”, click the “Extended Screen”, will pop out a message to indicate the installation of the “ExtendedDisplay” driver. Click “yes” to continue, once installed, the “Extended screen” function is ready to use.



Note:

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

“Remote control” is available for “Extended screen” since Firmware version V3.0.7C.40A1020.



- **Keep Aspect Ratio:**
  Keep the original aspect ratio to display on the main screen.

- **Stream Mode:**
  - 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.

- **Low Latency Mouse:**
  The setting is applied individually for this laptop only. The shape of mouse-pointer is equal the shape in application. There may be a small delay in movement of the cursor (approx. 150 ms). The movement of mouse-pointer is displayed very smooth with **hardly noticeable delay** (about 20 ms) on the main screen, which significantly improves the operation of the application from the main screen. The look of the mouse pointer is every time, in all applications, like a typical cursor arrow.

- **Volume Slider:**

Adjust the playback volume of the main screen when presentation laptops is active.

8.1.5 MAC OS PC/Laptop with Dongle

At least **operation system macOS 10.9** is required.

For first time user, you have to **copy the Launcher program "WirelessMedia for MAC" first on your Laptop. Run this Launcher program.**
When the Launcher program "**WirelessMedia for MAC**" is already loaded, continue with Step2.

1. When Launcher program is not yet installed on PC, refer to chapter 7.4.
2. Plug a dongle **to the USB port of your Macbook.** The WirelessMedia application is starting automatically and a symbol is displayed in the dock and in top menu-bar.
3. Until the transmitter button shows a static **green** LED indicator, or till you see a message table showing up "**Ready to share"**, you could click to start mirroring.

4. Click dongle or visual button again to stop mirroring, LED or window color shows green again.

Right click the WirelessMedia status icon in Windows taskbar to open up the **context- menu**.

- "**About**": You can check the software versions of the Base-unit, the dongle and the launcher program.

- “**Exit”**: End APP. Exiting the App completely.

If you click the "**close**" in the top menu bar of the app, the app is only minimized and can be recalled again in the dock at any time.

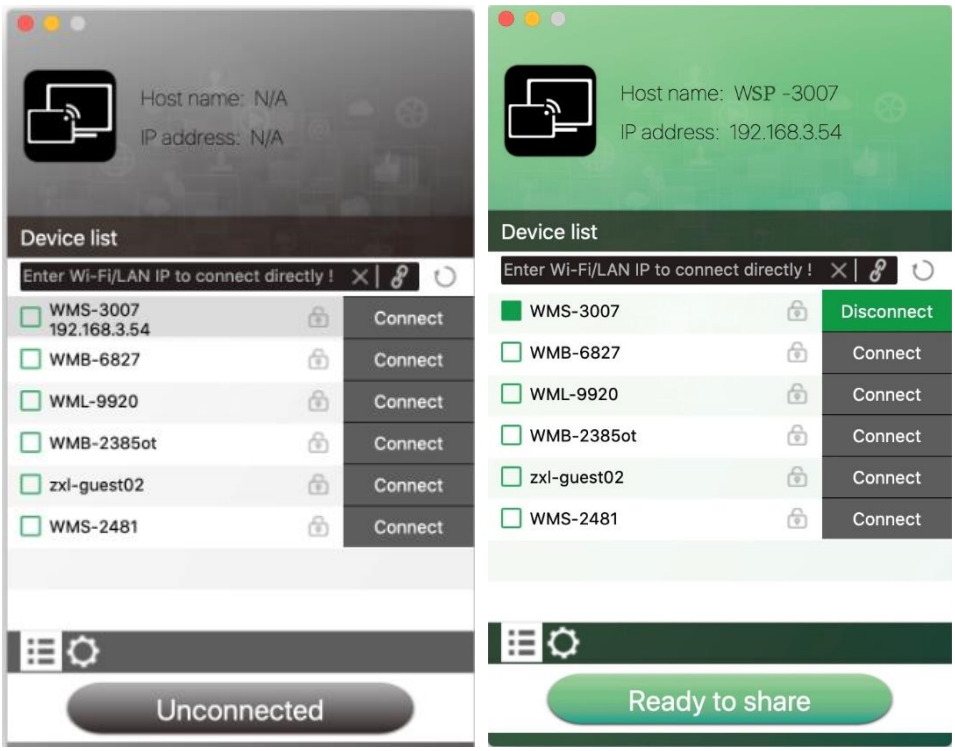
5. **Disconnect at end of meeting.**

8.1.6 MAC OS PC/Laptop without Dongle

For first time user, you have to **copy the Launcher program ”WirelessMedia for Mac” first on your Mac.**

When the Launcher program is already loaded, continue with Step 2.

1. When Launcher program “**WirelessMedia-macOS.app”** is not yet installed on PC, refer to chapter 7.4.
2. Connect your Mac to **Wi-Fi 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 for Mac**" Launcher program , a list of all available “WirelessMedia” in the **same network** will be displayed, select which device you want to connect to. The connections are password protected (lock icon).



(**LAN** connection: several receivers possible) (**Wi-Fi**: only 1 receiver)

4. Enter base unit password and click “connect”, the system is “Ready to share”.

You can also manually connect by entering the name (SSID) or IP address. (click icon).

Enter the corresponding base unit password, press **'OK'**, the system is “**Ready to share”**.

5. Click the visual button “Ready to share” in Mac, when window color is static red, the screen is mirroring to the main screen.

6. Click the **visual button again**, to stop mirroring, window color shows green again. You can minimize the APP-window, in top menu-bar you can see if screen is mirroring or not .

Right click the WirelessMedia status icon in top menu-bar to open up the **context- menu**.

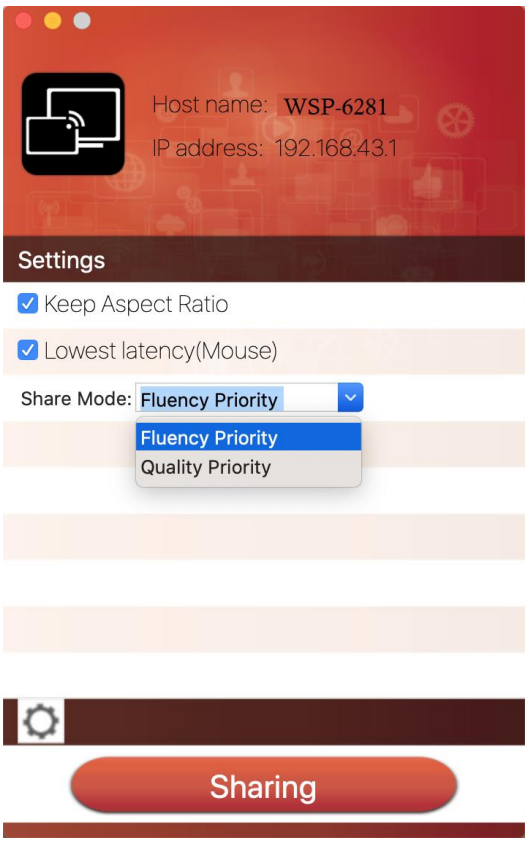
- “**About**”: You can check the software versions of the Base-unit, the dongle and the launcher program.

- “**Exit”**: End APP. Exiting the App completely.

If you click the “**close**” in the menu bar of the app, the app in the top menu-bar is only minimized and can be recalled again from the top menu-bar at any time.

8.1.7 Options for Apple MacOS, MacBook – Extended Screen

Click the icon in App to open/close “options”.



“Options”:

- **Extended Screen:**
  Transmits the Extended desktop (“Use a Separate Display”) **only via AirPlay**, when activated for Display on WirelessMedia.

- **Keep Aspect Ratio:**
  Keep the original aspect ratio to display on the main screen.

- **Lowest Latency (Mouse):**
  The setting is applied individually for this laptop only. The shape of mouse-pointer is equal the shape in application. There may be a small delay in movement of the cursor (approx. 150 ms). The movement of mouse-pointer is displayed very smooth with **hardly noticeable delay** (about 20 ms) on the main screen, which significantly improves the operation of the application from the main screen. The look of the mouse pointer is every time, in all applications, like a typical cursor

arrow.

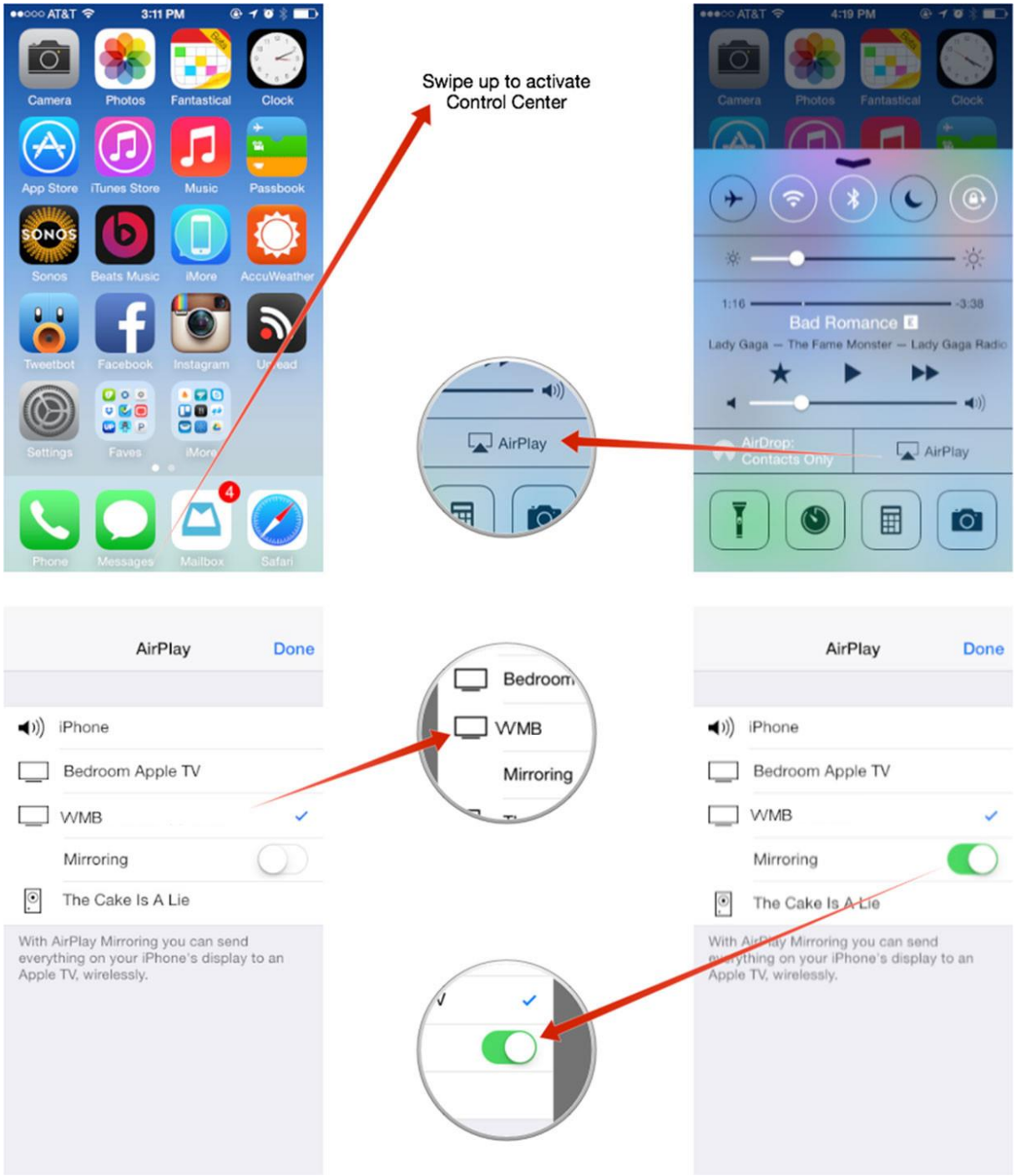
- **Stream Mode:**
  - Fluency Priority: (Default) Image transmission delay is small, image resolution will be lower, suitable for PPT presentation mode.
  - Quality Priority: The image resolution is relatively high, but when the image content is complex, the transmission delay will be relatively larger,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

8.2 Transmitting IOS mobile device

Airplay: WirelessMedia Base Unit supports “Airplay” receiver, which enable mirroring the desktop of your Apple device to the airplay receiver, like Iphone, Ipad etc.

Please swipe from bottom on desktop, to activate the control center. Click the airplay icon on your Apply device and select the receiver device WSP-511A0 to connect the WSP-511A0. Then you could mirror your screen content wireless through the WSP-511A0 to the main screen.

8.2.1 How to use airplay

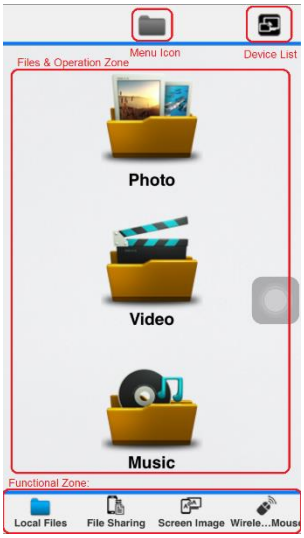


8.2.2 “WirelessMedia” App for IOS

Operating system requirement: iOS 7.0 and later

1) Open the “WirelessMedia” application.

2) The main interface of WirelessMedia is shown as below. It includes the features including

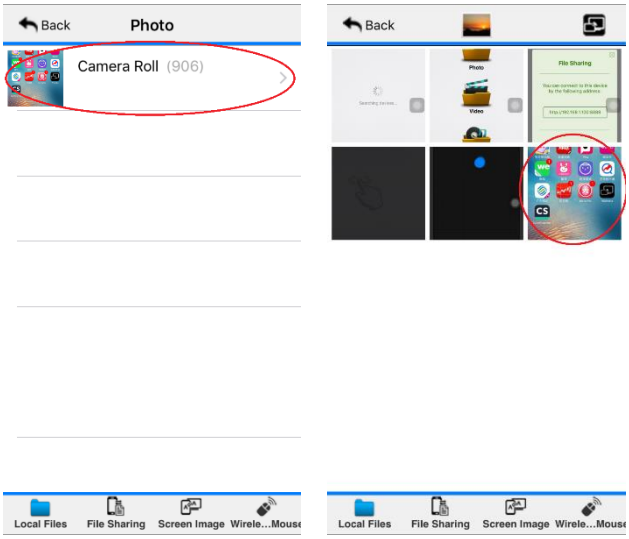


Functional Zone:

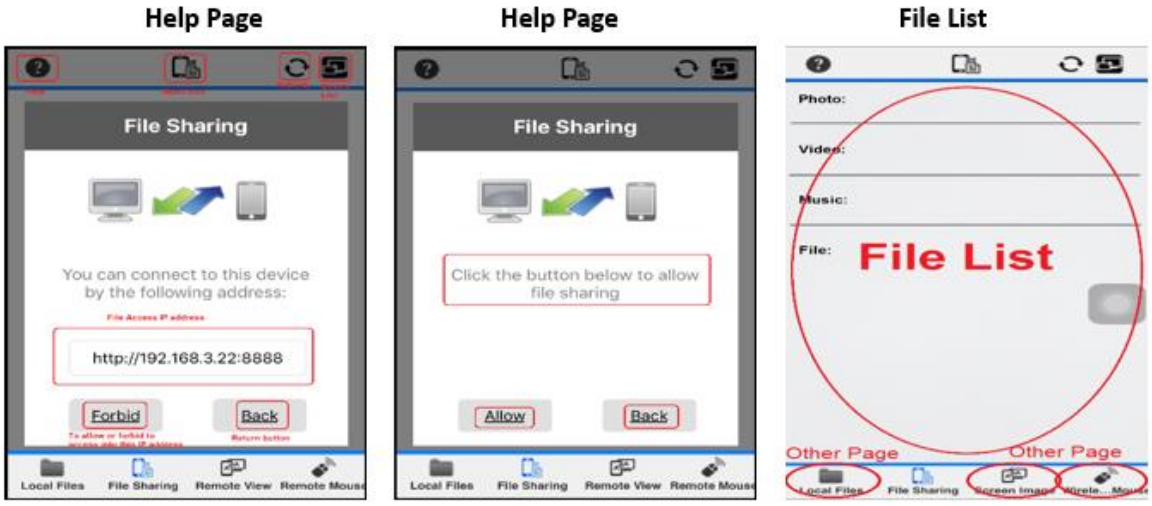
- **Local Files**: Can transmit the local file, including Photos, Video, Music to the receiver to playback.
- **File Sharing/File Exchange**: Can setup a storage for the PC/Lap-top to access/transmit files to the mobile device.
- **Screen Image/Remote View**: Can remote video the active signal on main screen, and control the PC/Lap-top device like a mouse.
- **Wirelessless Mouse/Remote Mouse**: Can control the WSP-511A0 or the sharing device, like an air-mouse.

Menu Icon: show the directory menu icon, like photo, video, music, file sharing
Device list: Click to discovery the available WSP-511A0 to connect them.
File & Operation Zone: Select the file to transmit and do the control operation when available.

3) Local Files: select the file stored in local Iphone / Ipad, as shown below

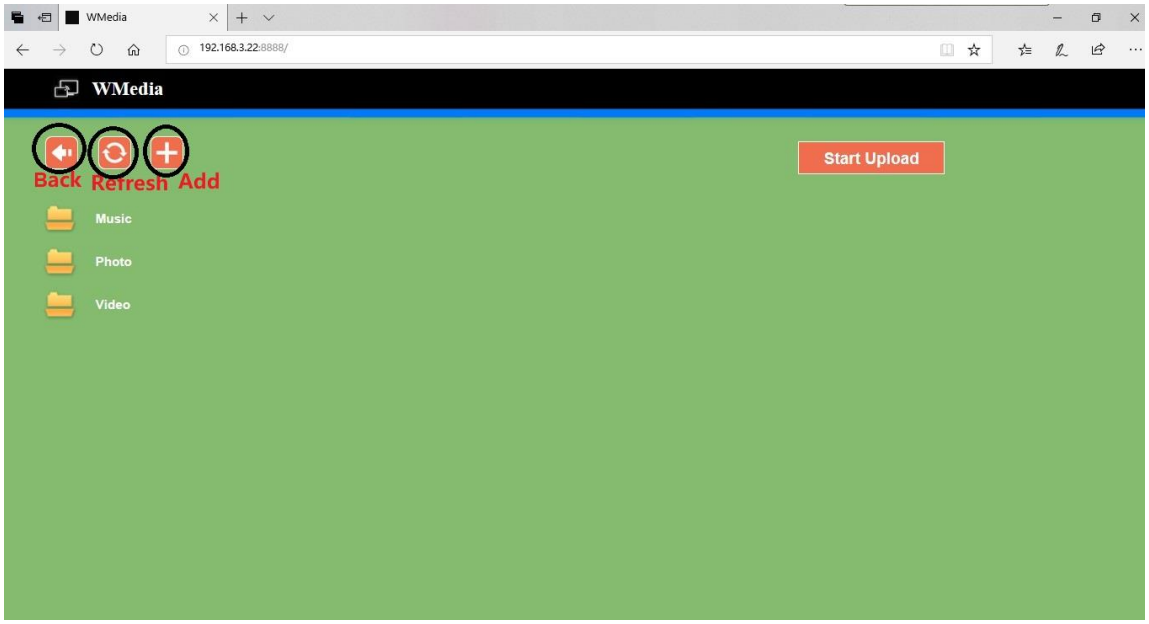


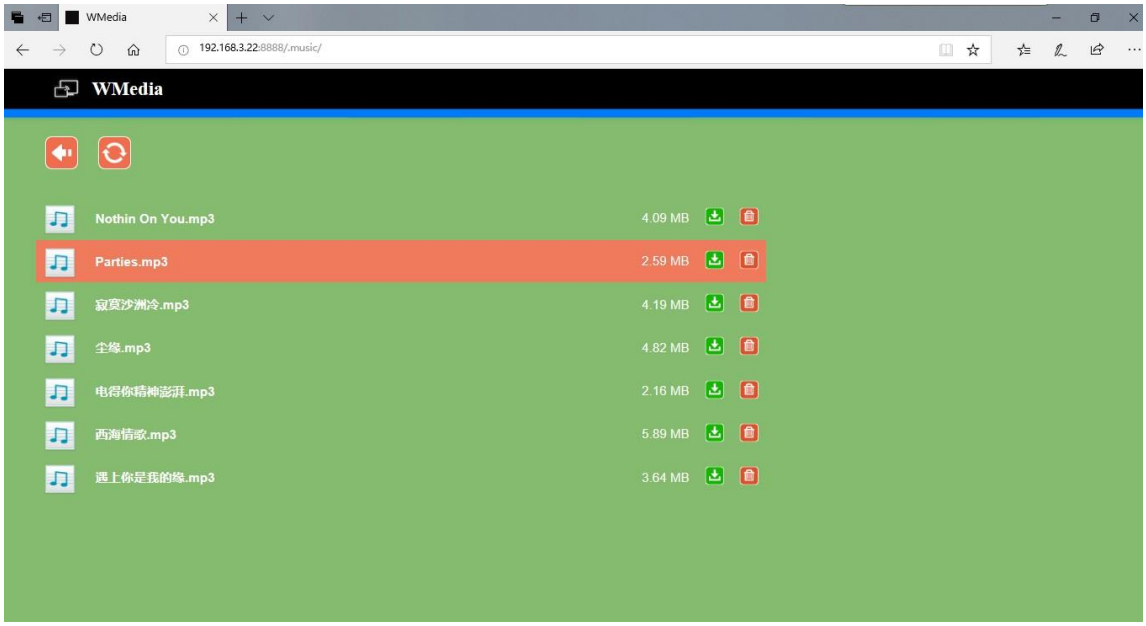
4) File Sharing/File Exchange: Click the File sharing/File exchange to check the IP address.
Close the File Sharing dialog box as shown below, to enter into the File List, which is a new generated File List stored under WirelessMedia APP in IOS mobile.
To access the files, you can enter the IP address by our PC/lap-top's web browser while your PC/Lap-top has connected to the WSP-511A0 by hotspot connection or LAN connection.



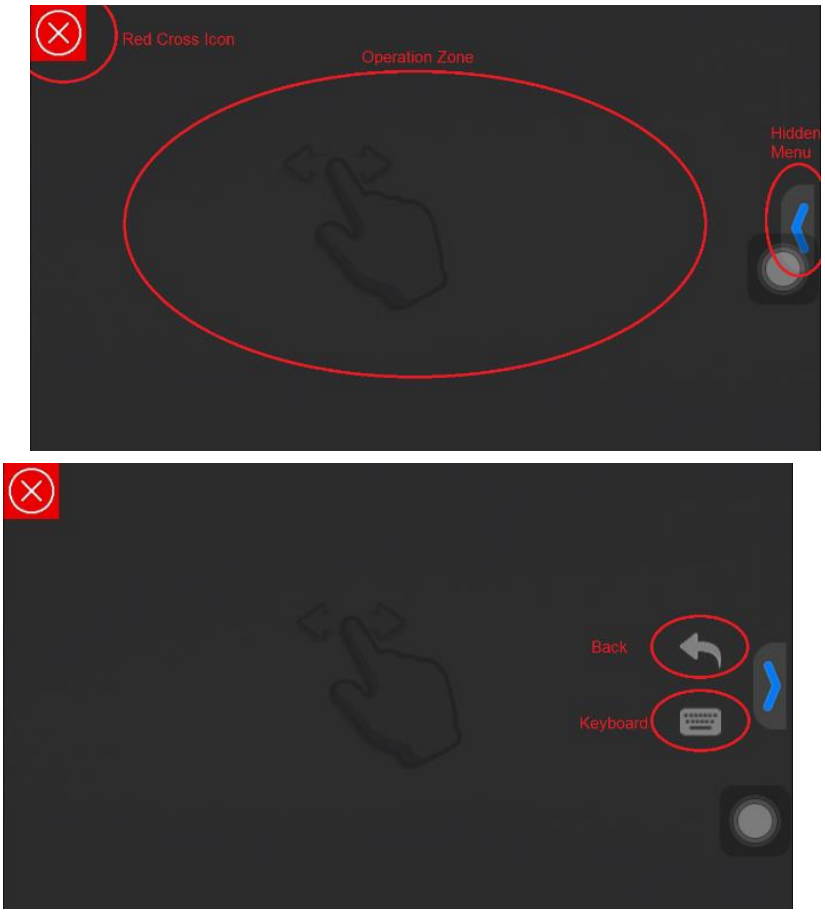
Help: to open up the IP address page.
Access menu: to allow or forbid to enter into the IP address page.
File List: to select the photo, video, music, file to transmit to the main screen.
Other page: Click the other functional icon to return File Sharing/File Exchange.

PC/Lap-top page





5) Screen Image/Remote View: Click the Screen Image/Remote View to remotely view/watch what's showing on the main screen.
When there is no connected WSP-511A0, it shows

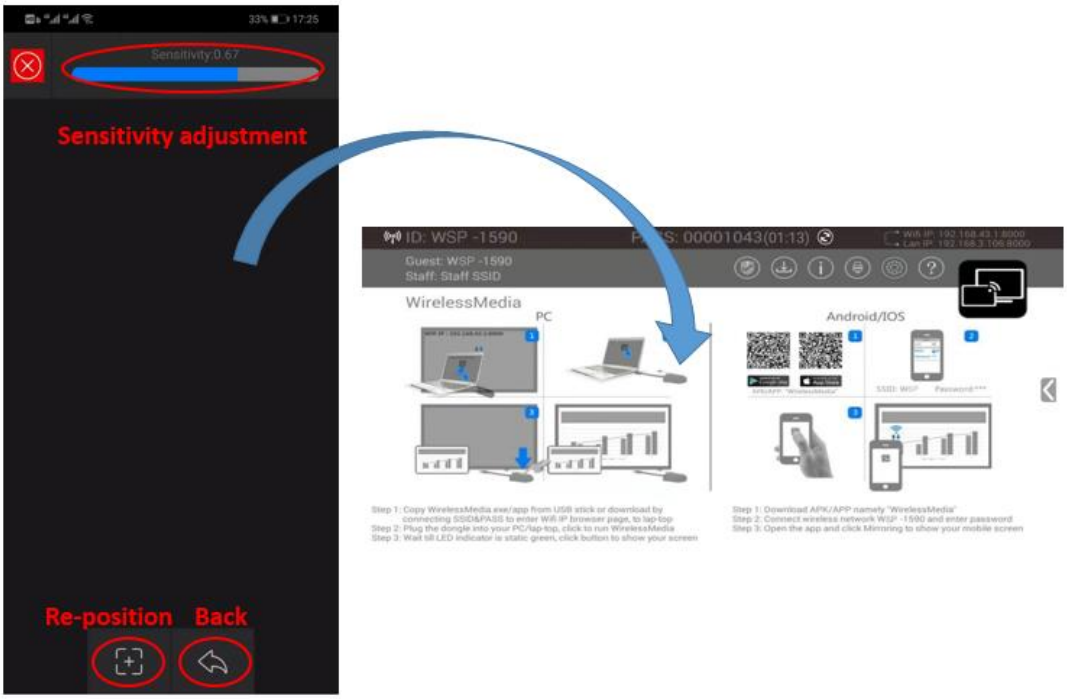


Red Cross Icon: return to the main interface of WirelessMedia.
Operation Zone: Zone to remote view the active signal and control it as a mouse.
Hidden Menu: Click to open the hidden function features, including Back and Keyboard when available.
Back: It sends a “Return” command to the WSP-511A0 to go back to the previous directory menu.
Keyboard: Open the keyboard to enter character/number.

When there is an active signal showing on the main screen, you’ll see it, and click the screen to control it as a mouse, as shown below.

Click the Red Cross icon to return.

6) Wireless Mouse: Click the Wireless Mouse to generate a mouse pointer to control the WSP-511A0.



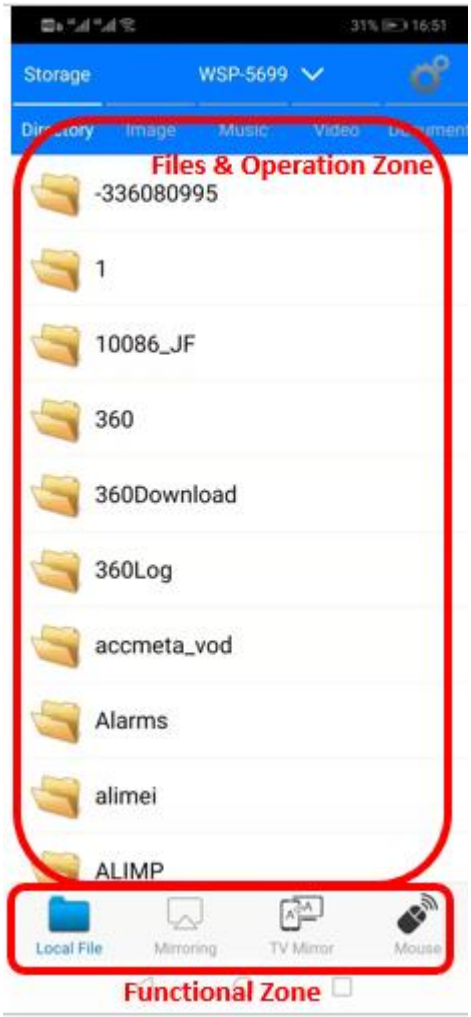
Mouse Pointer: represent the relative position of the mouse on the main screen.
Re-position: reset the position to be the center of the screen.
Back: It sends a “Return” command to the WSP-511A0 to go back to the previous directory menu.
Red Cross Icon: return to the main interface of “WirelessMedia”.

8.3 Transmit Android device wireless

8.3.1 “WirelessMedia” Apk for Android

1) Open the “WirelessMedia” application.

2) The main interface of WirelessMedia is shown as below. It includes the features including



Functional Zone:

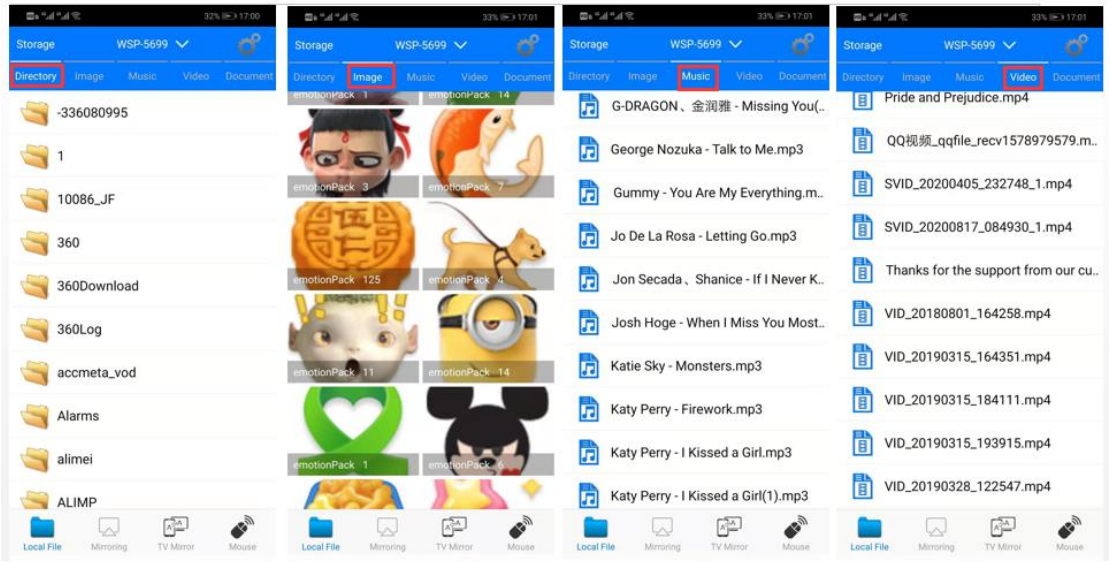
- **Local Files**: Can transmit the local file, including Photos, Video, Music to the receiver to playback.
- **File upload/File Exchange/Storage (for Android 5.x)**: Can setup a storage for the PC/Lap-top to access/transmit files to the mobile device.

- **TV Mirror /Remote View**: Can remote video the active signal on main screen, and control the PC/Lap-top device like a mouse.
- **Mouse/Remote Mouse**: Can control the WSP-511A0 or the sharing device, like an air-mouse.

Menu Icon: show the directory menu icon, like photo, video, music, file sharing
Device list: Click to discover the available WSP-511A0 to connect them.
File & Operation Zone: Select the file to transmit and do the control operation when available.

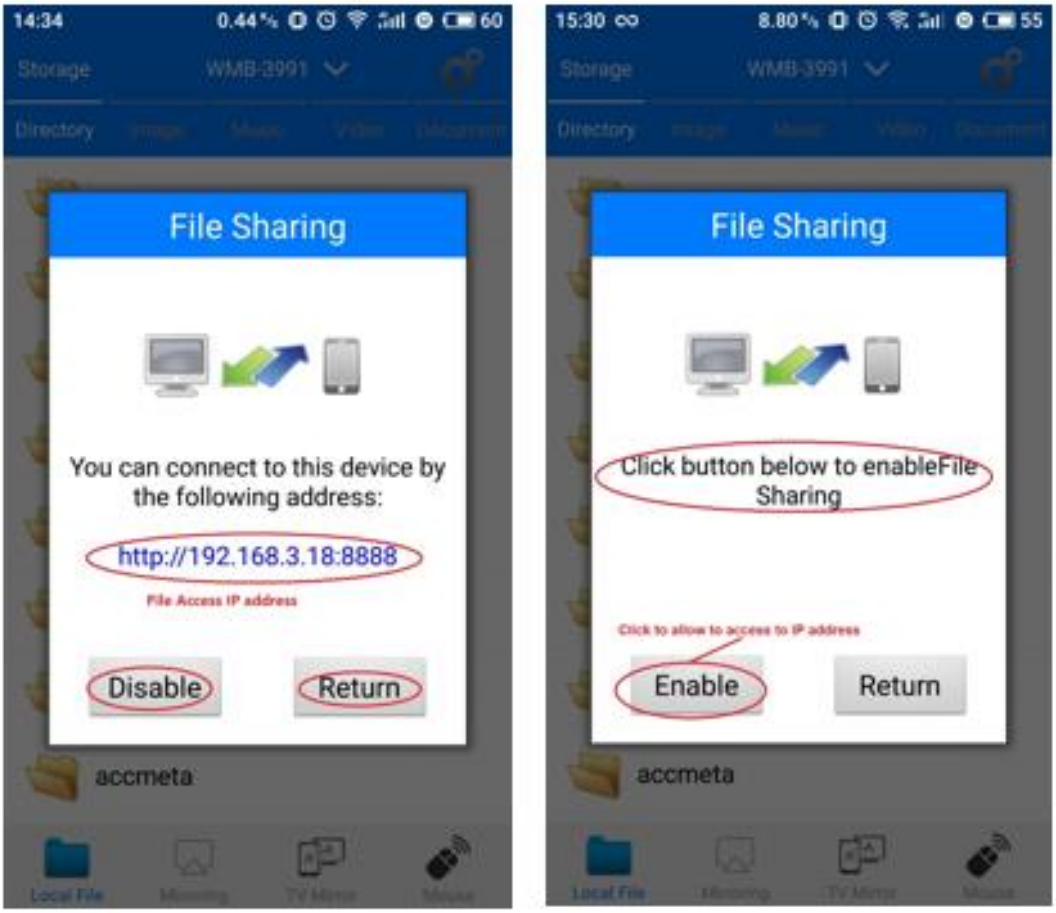
Attention:
As Android OS performance, Android Mirroring feature could only be achieved on the Android 5.0 and above OS device.

3) Local Files: select the file stored in local Iphone / Ipad, as shown below

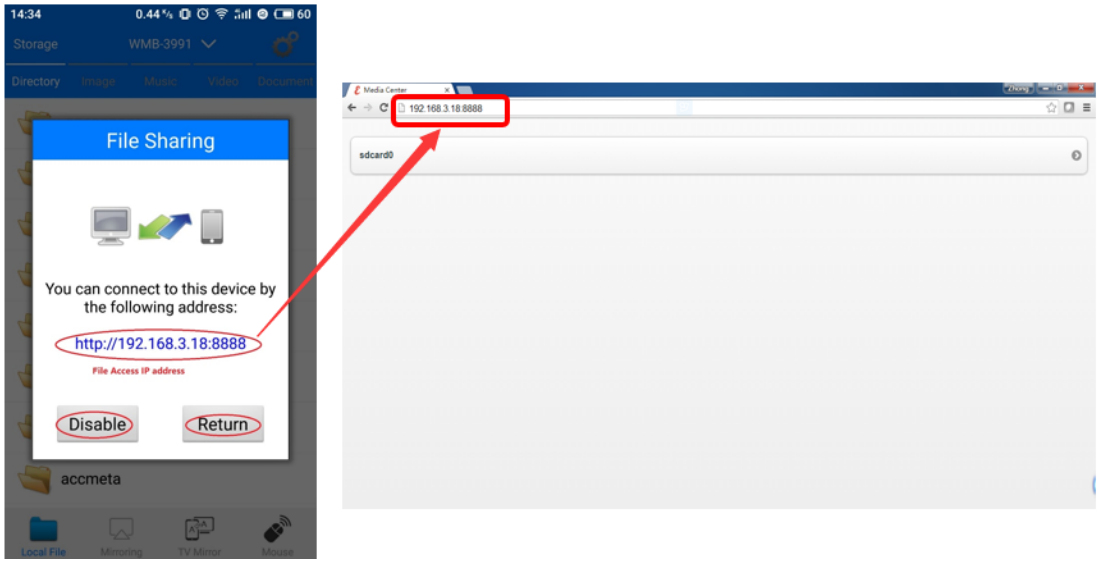


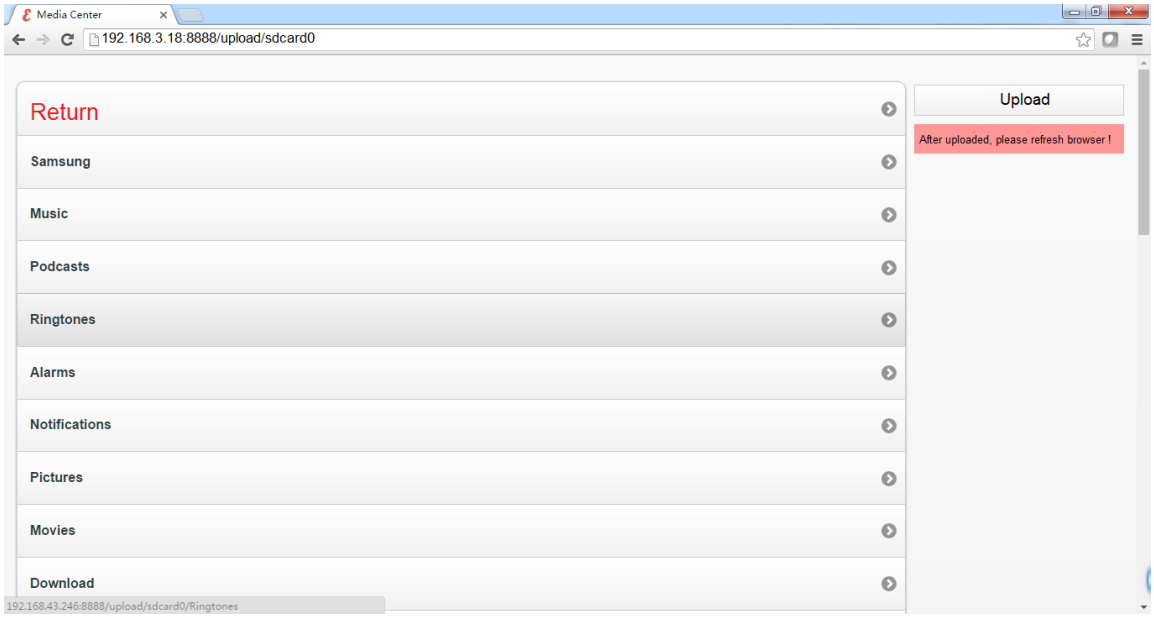
4) File Sharing/File Exchange: Click the File sharing/File exchange to check the IP address. Then enter the IP address by our PC/lap-top's web browser.
   1） Enter the IP address on the web browser
   2） Click the root directory "sdcard0"
   3） On the open-up directory, click the "upload" to select the file from local PC/Lap-top to be uploaded.

Android file sharing



PC/Laptop access page





Help: to open up the IP address page.
Access menu: to allow or forbid to enter into the IP address page.
File List: to select the photo, video, music, file to transmit to the main screen.
Other page: Click the other functional icon to return File Sharing/File Exchange.

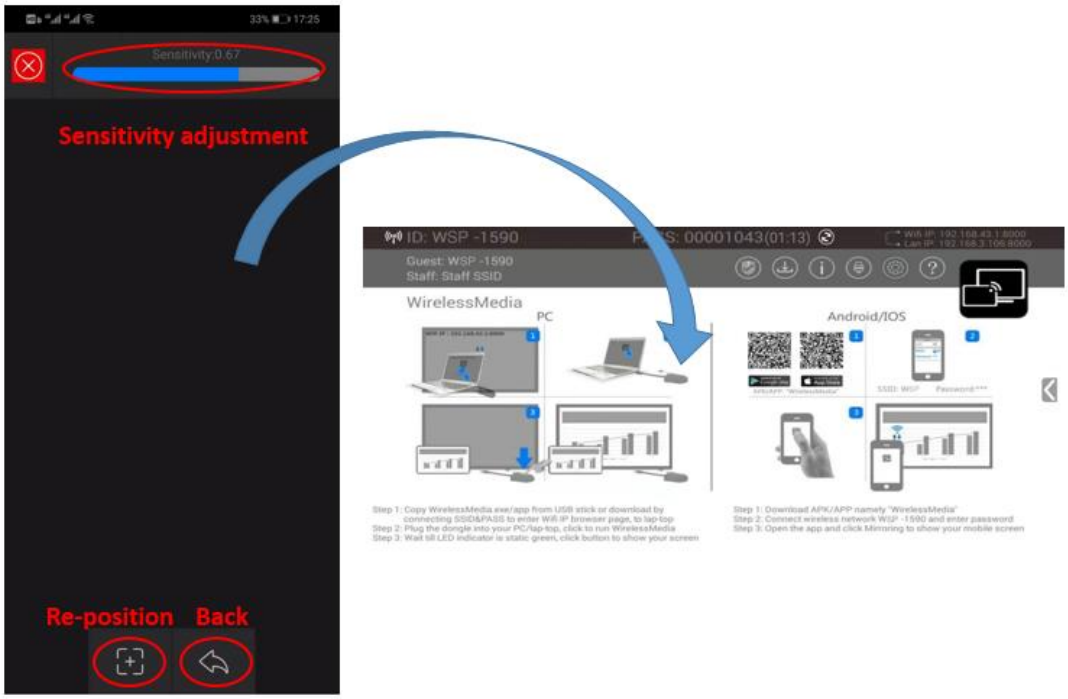
5) Screen Image/Remote View: Click the Screen Image/Remote View to remotely view/watch what's showing on the main screen.
When there is no connected WSP-511A0, it shows

Red Cross Icon: return to the main interface of WirelessMedia.
Operation Zone: Zone to remote view the active signal and control it as a mouse.
Hidden Menu: Click to open the hidden function features, including Back and Keyboard when available.
Back: It sends a “Return” command to the WSP-511A0 to go back to the previous directory menu.
Keyboard: Open the keyboard to enter character/number.

When there is an active signal showing on the main screen, you’ll see it, and click the screen to control it as a mouse, as shown below.

Click the Red Cross icon to return.

6) Wireless Mouse: Click the Wireless Mouse to generate a mouse pointer to control the WSP-511A0.



Mouse Pointer: represent the relative position of the mouse on the main screen.

Re-position: reset the positon to be the center of the screen.

Back: It sends a "Return" command to the WSP-511A0 to go back to the previous directory menu.

Red Cross Icon: return to the main interface of "WirelessMedia".

9. Problem Shooting

Here you can find some fundamental problems and possible causes, which can be happen during the use of "WirelessMedia". Find out the problem you've encountered in the table below and apply the solution.

Problem	Cause	Solution
Use "WirelessMedia for Android" application in Android device or Airplay on IOS device, and it can't find base unit device.	WIFI password of base unit changed when android or IOS device is connected to the WIFI of base unit.	Reconnect the mobile by entering password showed on home screen.
The image quality on the main display screen is not good.	The quality or length of the cable between the Base Unit 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. WSP-511A0 could output 3840x2160_60Hz, 3840x2160_30Hz, 1920x1200_60Hz, 1920x1080_60Hz,	● Change the resolution on the Setting configuration. And match it to the native resolution of the main screen. See chapter 7.
Bad wireless connection. The connection between the transmitter and the base unit is not stable.	Wi-Fi problems. ● Interference in the radio channel. ● Overload in the radio channel. "WirelessMedia" does not automatically jump to other channels when there are changes in the RF environment.	● Use a Wi-FI scanner to find a free wireless frequency and channel and select it via the setting configuration. ● Regularly check the RF environment if there are frequently changes in Wi-Fi networks in your environment.
	Low signal strength: ● Metal cabinets, walls, construction elements, …can cause reflections deteriorating the wireless signal. ● Obstacles between dongles and Base unit cause lowering of the wireless strength and quality.	● Put the base unit closer to the main screen. ● Change the orientation of the antennas at the rear panel of base unit to the transmitter direction. ● Remove or limit as much as possible all obstructions between the transmitters and base unit. ● Avoid to place the Base-unit in (metal) cabinets, suspended ceilings, under tables or in adjoining rooms.
Can't get the "WirelessMedia" run when plug the transmitter to lap-top	● When you are using "WirelessMedia" for the first time on your laptop or for guests, you have to copy the Launcher	There are 2 possibilities to load the Launcher program, see chapter **7.4.** Best is: download the App **via LAN or Wi-Fi of Base-**

	program "**WirelessMedia windows. Exe"** or "**WirelessMedia macOS. app"** for first on your Laptop /PC. Run this Starter-program. You can run the Starter App without Admin-rights.	**unit.** When the Launcher program is preinstalled one time, "WirelessMedia" is ready to use later immediately.
	● Bad connection at USB port on the lap-top	● Reconnect to the USB port ● Try another USB port ● Reboot the lap-top
	● Some types of USB devices might be blocked as the company policy. ● USB port setting on the lap-top might limit the usage of high power USB device when on battery power.	If possible, change the USB port policy on the lap-top
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 reduced computer power, to save energy. The transmission of HD video requires a certain amount of CPU power to	● 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.

	guarantee the optimum quality of the transmission.	
Video is not shown on screen	The content use HDCP	● WirelessMedia input can't support showing HDCP source. If possible, connect the source device to local HDMI input at base unit.
	The display cable (HDMI) is not correctly connected.	● Insert the display cable to the display and the Base-unit.
	The displays is switched off.	● Switch on the display.
	The Base-unit is in **standby** mode, "Power-LED" is flashing at Base unit. Power-supply is missed.	● Power off and on again or insert a dongle into laptop.
When using window 7 the following message about the Window Aero color scheme apprears "Windows has detected your computer's performance is slow. This could because these are not enough resources to run the windows Aero color scheme. To improve… "	WirelessMedia uses resource from the GPU. In combination with other programs which do so, Window 7 sometimes shows this message suggesting to disable Aero to improve the performance of lap-top.	● It's safe to ignore this message and choose "Keep the current color scheme."
Your content is removed from the display and the LEDs on the transmitter are blinking	Connection to the Base Unit is lost.	WirelessMedia tries to restore the connection automatically. If it fails, the LEDs on the transmitter start blinking red. Unplug the transmitter from your lap-top and try a new transmitter.
Nothing is shown on the displays at all	The displays are switched off.	Switch on the display
	The display cable is not	Insect the display cable to

	correctly connected	the display and the Base Unit
	The Base Unit is in standby mode	Briefly push the standby transmitter on the Base Unit or power off and on again the Base Unit.
No LAN connection with the Base Unit	Wrong IP address	IP address is not within LAN range
		DHCP is not enabled.
No Wi-Fi connection between mobile device with Base Unit	Wrong Wi-Fi frequency	Check mobile device to select the correct 2.4GHz or 5GHz
	Wrong SSID and password	Enter the correct SSID
No audio when transmit local file to Base Unit	Unsupportive audio format, including Dolby MS11, DDCO DTSLBR, DTSE, DTSNeoUltra, SRS-THEATERSOUND, DTS_StudioSound3D, DTS_HD,	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 level in menu configuration WirelessMedia console in on webserver settings.
	The volume level is set too low in the options of the "WirelessMedia" Launcher program on PC.	Adjust the volume in the "WirelessMedia" Launcehr program on PC.
	Audio signal may be muted.	Click with right-mouse transmitter at speaker icon In task-bar and switch on.
	The volume level is set too low.	Adjust the volume level at Options in menu of WirelessMedia.
	Audio is muted in mixer of volume in taskbar.	Right-mouse click at speaker icon in taskbar, open mixer and unmute “WirelessMedia” or “Video Playback”.

	The software of used Video-player is not actual	Update Video-player. Try another player.
	An active virus scanner can block the Audio.	Check the filter-settings in Virusscanner. De-activate the player for a check.
There is no sound with MacBook.	Problem of sound-flower App, which is integrated in driver WirelessMedia.app.	● You need Admin-password ● 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 Ingels”, in order 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.
There is no sound at main-screen, when mirroring a video by the **App “WirelessMedia for Android“.**	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 dongle or Apple Airplay to do mirroring when necessary.
Can’t update firmware of the base unit.	Flash disk format is NTFS	Please re-format the flash disk to be FAT format to update it.
Can’t work airplay with Macbook/Iphone/iPad.	Operation System Requirement Mac OS 10.9 IOS 8.0 and later	● To use AirPlay, you must connect the iOS device to the Wi-Fi of WireleeMedia and

	(WirelessMedia app)	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 (Internet, Youtube); the image will not be displayed on the iOS device. => picture is jerky	Reduce “Quality! In settings of Youtube, for example from “Automatic” to 720p.
Can’t work with Android device?	Operation System Requirement Android 2.3 and later (WirelessMedia app)	Update to the later OS