



CDPS-CS7

IP Master Controller
(Phase 2)



Operation Manual

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SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply. Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.
- Please completely disconnect the power when the unit is not in use to avoid wasting electricity.

VERSION HISTORY

REV.	DATE	SUMMARY OF CHANGE
RDV1	2017/11/27	Preliminary release
VS0	2018/03/13	Initial technical review
VS0	2018/03/21	Phase 1 technical review
VS0	2018/07/20	Updated Sections 6.5.1, 6.5.3, 6.5.5
VS0	2018/10/05	Updated Sections 6.5.1, 6.5.3, 6.5.6, 6.5.7, 6.6
VS1	2019/12/03	Phase 2 technical review

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1. INTRODUCTION

This controller is a powerful and flexible solution for controlling multiple AVoIP (Audio/Video over IP) extenders within same network. The user only needs to install this unit into the same local network as the extenders (transmitters and receivers) to easily define and configure channel routing selections, for both unicast and multicast scenarios, using the WebGUI. It is also possible to define and switch routes using customized groups or presets allowing for easy control over multiple video zones. Without the use of this centralized unit, each transmitter and receiver in the system would need to be controlled and configured directly through their own individual WebGUIs.

Additionally, this unit supports controlling the matrix and video wall modes of connected AVoIP units. The settings of all connected transmitter/receiver units, including IP address, netmask and extender status are clearly displayed within the WebGUI. The WebGUI is easily accessed via a web browser over a normal network connection or by directly connecting an HDMI display and USB keyboard & mouse to the unit. A standard HDMI plus USB touch screen display can also be used to interact with the local WebGUI and control the unit. A trigger input interface is also provided to allow the easy addition of a remote control keypad, or other trigger-supporting products, which can be installed within a podium or within a table in a conference room or classroom. This interface can allow the user to activate stored presets with the simple press of a button. Standard control is available via WebGUI (remote or local), RS-232, Telnet and IR remote.

2. APPLICATIONS

- Video/TV wall display and control
- Security surveillance and control
- Commercial advertising, display and control
- Home Theaters with Smart Home Controls
- Retail sales and demonstration

3. PACKAGE CONTENTS

- 1× IP Master Controller
- 1× 5V/2.6A DC Power Adapter
- 1× Terminal Block (3-pin)
- 3× Terminal Block (5-pin)
- 1× 3.5mm to IR Extender Cable
- 1× Remote Control (CR-183)
- 1× Shockproof Feet (Set of 4)
- 1× Operation Manual

4. SYSTEM REQUIREMENTS

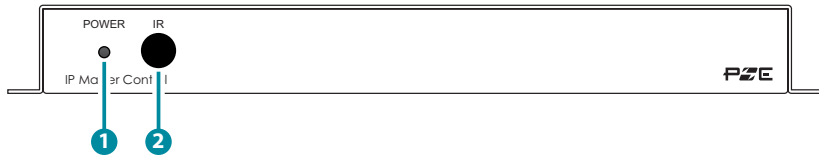
- An active network connection from a switch or router for control of compatible AVoIP devices.

5. FEATURES

- Enables the management and full configuration of multiple compatible AVoIP extenders through a single WebGUI
- Supports point-to-point (unicast) and multi-to-multi (multicast) routing selections
- Control over standard matrix, free routing, and TV wall modes using presets or direct configuration
- Definable display groups
- WebGUI clearly displays the status of all connected Transmitters and Receivers, including IP address, channel selection, etc.
- HDMI output displays the WebGUI and system status
- Supports the use of a USB mouse and keyboard, with separate HDMI display, or an HDMI + USB touch screen display to locally control the WebGUI (Optional)
- Can be powered by an Ethernet switch that supports the IEEE 802.3af-2003 PoE standard (Optional)
- Trigger Control Keypad support for easy, single-button, preset activation (Optional)
- Standard control is available via WebGUI (remote or local), RS-232, Telnet, and IR remote

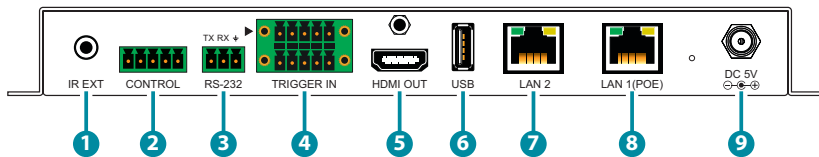
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



- 1 POWER LED:** This LED will illuminate to indicate the unit is on and receiving power.
- 2 IR Window:** Accepts IR signals from the included IR remote for control of this unit only.

6.2 Rear Panel



- 1 IR EXT Port:** Connect to the provided IR Extender to extend the IR control range of the unit. Ensure that the remote being used is within direct line-of-sight of the IR Extender.
- 2 CONTROL 5-pin Terminal Block:** This port's functionality is reserved for use in a future update.
- 3 RS-232 3-pin Terminal Block:** Connect to a PC, laptop or other serial control device with a 3-pin adapter cable to control the unit via RS-232.
- 4 TRIGGER IN 10-pin Terminal Block:** Connect to the Trigger Control Keypad (OPTIONAL) or any device with trigger switch functionality such as window security alarms, motion detectors, door switches, etc. Each of the 8 trigger inputs will activate the associated preset (1~8) when triggered.

Note: A minimum of 5V DC is required to activate each trigger.

- 5 HDMI OUT Port:** Connect to a standard HDMI display to view the unit's current status information and access the WebGUI directly without a PC.

Note: HDMI output is locked to a resolution of 1080p@60Hz.

- 6 **USB Port:** Connect a USB mouse and keyboard to control the unit's WebGUI displayed on the HDMI output port. Firmware update via USB is also supported.

Note: Specialized USB control devices, such as a touch panel, should be connected before the unit is powered on.

- 7 **LAN 2 Port:** Connect directly, or through a network switch, to your PC/laptop to control the unit via WebGUI/Telnet.

- 8 **LAN 1(PoE) Port:** This port is used to connect to the AVoIP devices to be controlled. Connect to the AVoIP units' private network, either directly or through their dedicated network switch, to enable detection and control over those units.

Note 1: Typically the AVoIP device network is contained within a separate subnet or, more frequently, in a physically separate network.

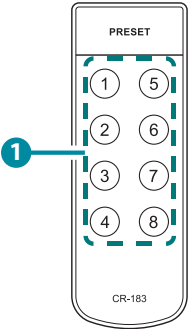
Note 2: If the connected network switch supports the IEEE 802.3af-2003 PoE (Power over Ethernet) standard, this unit can optionally be powered directly via this Ethernet port.

- 9 **DC 5V Port:** Plug the 5V DC power adapter into the unit and connect it to an AC wall outlet for power.

Note: Optional, not required if the unit is powered via PoE.

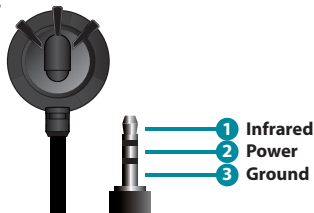
6.3 Remote Control

- 1 PRESET 1~8:** Press any of the 8 buttons to activate the saved preset associated with that number.



6.4 IR Cable Pinouts

IR Extender Cable

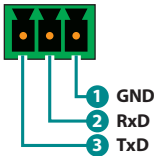


6.5 RS-232 Pinout and Defaults

Serial Port Default Settings (RS-232 Port Only)	
Baud Rate	19200
Data Bits	8
Parity Bits	None
Stop Bits	1
Flow Control	None

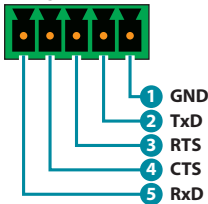
RS-232 Port

3-pin Terminal Block



Control port (Currently disabled)

5-pin Terminal Block



6.6 WebGUI Control

• Device Discovery

Please obtain the “Device Discovery” software from your authorized dealer and save it in a directory where you can easily find it.

Connect the unit and your PC/Laptop to the same active network and execute the “Device Discovery” software. Click on “Find Devices on Network” and a list of devices connected to the local network will show up indicating their current IP address.

Find Devices on Network				
Product Name	Description	IP Address	MAC Address	

By clicking on one of the listed devices you will be presented with the network details of that particular device.

Product ID	
Product Name	
MAC Address	00:00:00:00:00:00
IP Address	<input type="text"/>
Subnet Mask	<input type="text"/>
Gateway IP	<input type="text"/>
DNS	<input type="text"/>
IP Mode	Static
Web GUI Port	Static
Telnet Port	DHCP
S / N	0
Firmware Version	
Hardware Version	
Description	
Web GUI	Web GUI
Save	Reboot

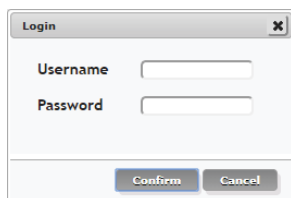
- 1) IP Mode:** If you choose, you can alter the static IP network settings for the device, or switch the unit into DHCP mode to automatically obtain proper network settings from a local DHCP server. To switch to DHCP mode, please select DHCP from the IP mode drop-down, then click “Save” followed by “Reboot”.
- 2) WebGUI Hotkey:** Once you are satisfied with the network settings, you may use them to connect via Telnet or WebGUI. The network information window provides a convenient link to launch the WebGUI directly.

• WebGUI Control Page

All functions of this unit are controllable via the built in WebGUI which is accessed by connecting your web browser to LAN 2's IP address or by connecting an HDMI display to the unit's HDMI output and attaching a USB mouse and keyboard to the unit's USB port. Control via standard HDMI plus USB style touch screens is also supported. This control is presented across a number of separate tabs, including Monitor & Control, Preset Recall, System, Setting, and Devices. A setup wizard is also provided to help simplify first-time setup. The individual functions will be introduced in the following sections.



When no user is logged in, a limited selection of tabs are available (Monitor & Control, Preset Recall, and System). This allows for easy user access to routing selection and presets while still protecting the more sensitive and critical setup and configuration controls. To log in to the WebGUI, switch to the System tab and click on the "Login" button. By default, both the Username and Password are set to "admin" for the WebGUI. The administrator password can be changed within the System tab of the WebGUI if desired.

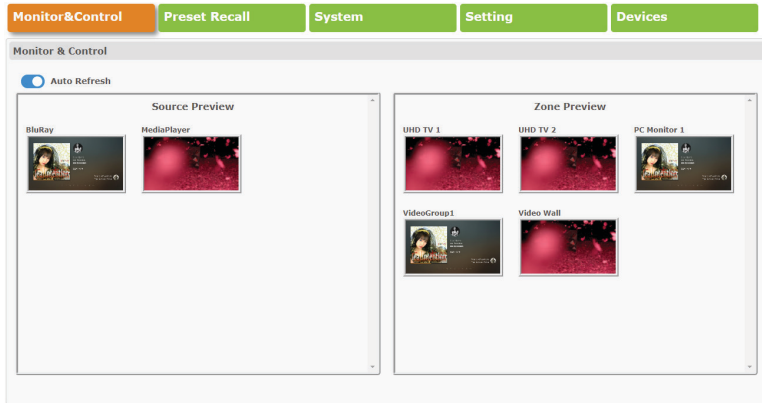
A 'Login' dialog box with a title bar containing the word 'Login' and a close button (X). The dialog contains two input fields: 'Username' and 'Password'. Below the input fields are two buttons: 'Confirm' and 'Cancel'.

Note 1: If you are unsure of the unit's current LAN 2 IP address, please check the unit's HDMI status display.

Note 2: If the unit is in Multiple User mode, logging in as an authorized user is required before access to any of the unit's controls is provided. In this case, only the login prompt will be displayed upon initial connection.

6.6.1 Monitor & Control Tab

This tab provides a graphical representation of all current transmitters, receivers, video walls, and video groups. It also provides a simple way to change video routing by using drag and drop. The video thumbnails may be set to automatically update every few seconds by clicking the “Auto Refresh” switch to the right.



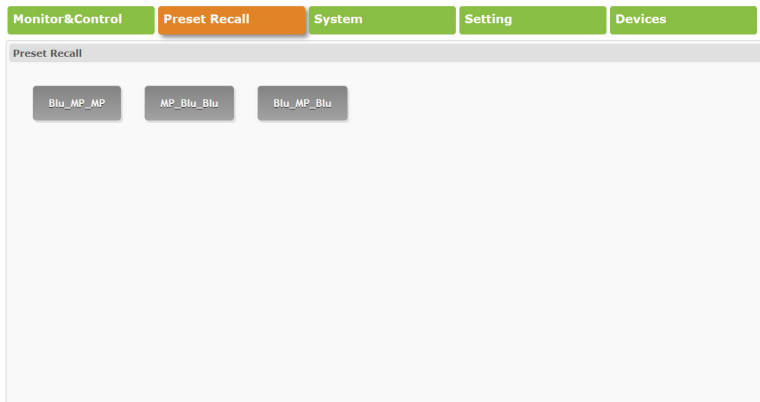
Note: This tab is fully functional even when the user is logged out in Single User mode.

- 1) **Source Preview:** This section displays preview thumbnails from all detected transmitters along with their assigned names. To route a transmitter's source to a receiver, video wall, or video group, drag-and-drop can be used. Click and drag the thumbnail from the Source side to drop it onto the preferred receiver or group on the Zone side. The routing change process will begin immediately.
- 2) **Zone Preview:** This section displays preview thumbnails from all detected receivers along with their assigned names. All available Display Groups and Video Wall Groups are also displayed here and a preview thumbnail of the most recently routed source for each group will be displayed for them. Display Groups and Video Wall Groups are defined within the Setting tab.

Note: Due to the potential for the displays within a video group to be showing different sources due to independent routing choices, video groups will show a thumbnail preview from the source that was most recently routed to it.

6.6.2 Preset Recall Tab

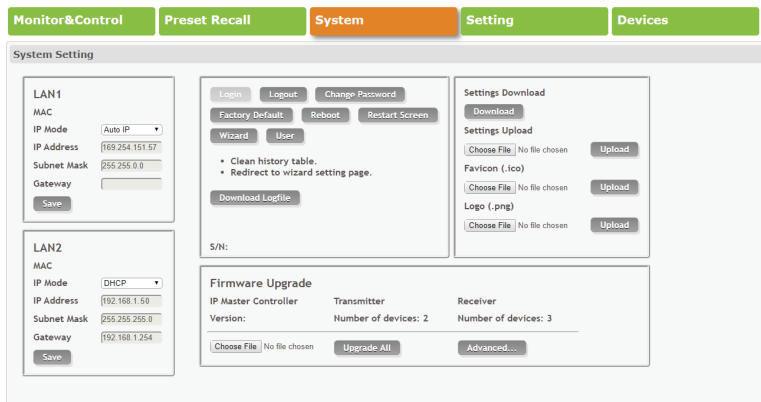
This tab lists all currently defined Presets and provides a simple way to activate them. To activate a saved Preset, simply click on the appropriately named button. Presets are defined within the Setting tab. When the unit is in “Multiple User” mode, only the Presets that have been defined by the currently logged in user will be visible.



Note: This tab is fully functional even when the user is logged out in Single User mode.

6.6.3 System Tab

This tab provides access to system configuration options including IP configuration for both LAN ports, login and user management, access to the setup wizard, and firmware update functionality.



Note: This tab will only display system information and provide a Login button if the user is logged out. All other functions will be greyed out.

- 1) **LAN1 & LAN2:** The IP mode for each LAN port (DHCP, Static IP, or Auto IP), IP address, netmask, and gateway can be set here. When a LAN port is set to Auto IP mode it will automatically assign itself an APIPA address from the 169.254.XXX.XXX range. When a LAN port is set to “DHCP” mode, it will automatically attempt to obtain proper configuration information from the local DHCP server. If no DHCP server is available, or the user wishes to configure the network settings manually, please set the LAN port to “Static IP” mode and enter the information as appropriate for the connected network. Press “Save” to activate the changes.

Note: LAN1 defaults to “Auto IP” mode and should be connected to the AVoIP device network. LAN2 defaults to “DHCP” mode and should be connected to the normal local network for access to the WebGUI.

2) **System and Setup Functions:**

- **Login & Logout:** Click these buttons to log in or log out of the WebGUI interface.

Note: When logged out, available WebGUI functionality is limited.

- **Change Password:** Click this button to change the current user’s login password.

- **Factory Default:** Click this button to clear all detected transmitter/receiver information, all groups and all presets.

Note: LAN settings will not be reset.

- **Reboot:** Click this button to reboot the unit.

- **Restart Screen:** Click this button to force the unit’s web browser to refresh and restart completely.

Note: This option can only control the unit’s built in web browser. To force a web page refresh when connected remotely use your browser’s built in functionality.

- **Wizard:** Click this button to clear all settings and launch the setup wizard. See section 6.6.4 for additional details.

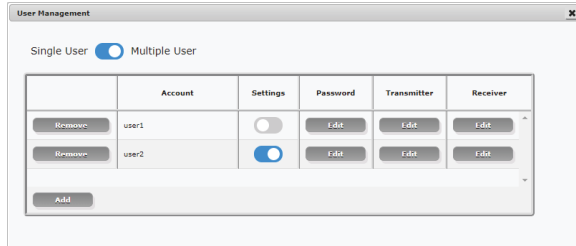
Note: Activating the wizard will clear all detected transmitter/receiver information, all groups and all presets.

- **User:** Click this button to open the User Management window which allows switching the unit between the “Single User” and “Multiple User” modes and configuring any additional users.

- **Download Logfile:** Click this button to download a copy of the system's log file to the local PC. The file will be saved in the *.zip format. It can be provided to technical support, upon request, to help troubleshoot the system.

Note: The log file is not user-readable.

- 3) **User Management:** Allows switching the unit between the "Single User" and "Multiple User" modes and configuring any additional users.



Note: By default, the unit is set to Single User mode.

- **Single User Mode:** Allows only a single, full access, user to log into the system. When not logged in, in Single User mode, access is restricted to the Monitor & Control and Preset Recall tabs.
- **Multiple User Mode:** Allows the addition and configuration of standard users. The amount of access each user has to the system, and which sources and displays they can control, is independently configured.
- **Add/Remove:** Click the "Add" button to add a new user to the user list. Click the associated "Remove" button to delete an existing user.
- **Account:** Displays the user name for each configured user.
- **Settings:** Clicking on the slider enables or disables each user's access to the "Settings" and "Devices" tabs.
- **Password:** Click to change the associated user's login password.
- **Transmitter:** Click to select which transmitters will be available to the associated user.
- **Receiver:** Click to select which receivers will be available to the associated user.

4) Settings Storage & Logos:

- **Settings Download:** The current system configuration, including routing and presets, may be saved as a *.json file to the local PC. Click the “Download” button to save the current system configuration to your local PC.
- **Settings Upload:** The system configuration may be restored from a previously saved *.json file. Click the “Choose File” button to locate the saved *.json file, then click the “Upload” button.

- **Favicon:** This allows for the upload of an icon image to use as the WebGUI’s page/tab icon which is also commonly used by browsers when a web page has been bookmarked or added to favorites. The image file must be 16×16 pixels and saved in the *.ico format. The file must be named “favicon.ico”.

Click the “Choose File” button, select the file from your PC’s file browser, then click the “Upload” button. Once the upload is complete, refresh the WebGUI to view the new icon.

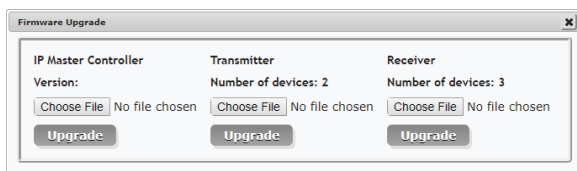
- **Logo:** This allows for the upload of a small logo image that will be displayed in the upper left corner of the WebGUI. The image is recommended to be no taller than 90 pixels and must be saved in the *.png format. The file must be named “logo.png”.

Click the “Choose File” button, select the file from your PC’s file browser, then click the “Upload” button. Once the upload is complete, refresh the WebGUI to view the corner logo.

- 5) **Firmware Upgrade:** This section provides a way to update the firmware of this unit as well as the firmware of all detected transmitters and receivers. The firmware of all devices can be updated simultaneously by use of a universal firmware package, or the firmware of the Master Controller, transmitter group, and receiver group can be updated independently, if necessary.

Note: The firmware update process can take several minutes, especially if there is a large number of detected transmitters and receivers. Please ensure that the units do not lose power while the updates are in process.

- **Upgrade All:** To update all detected units (Master Controller, transmitters, and receivers) simultaneously, click the “Choose File” button to open the file selection window and then select an appropriate global firmware update file (*.bin format) located on your local PC. After selecting the file, click the “Upgrade All” button to begin the firmware update process. Once the firmware has been uploaded to each unit, the units will reboot and the update process will begin.
- **Advanced:** Clicking the “Advanced” button opens up a window that allows for the firmware of the Master Controller, transmitter group, and receiver group to be updated independently of each other.



To update a unit/group (Master Controller, transmitters, and receivers), click the appropriate “Choose File” button to open the file selection window and then select an appropriate firmware update file (*.bin format) located on your local PC. After selecting the file, click the associated “Upgrade” button to begin the firmware update process. Once the firmware has been uploaded to each unit, the units will reboot and the update process will begin.

6.6.4 Setup Wizard

Pressing the “Wizard” button on the System tab will start the step by step Setup Wizard. **It will also clear the unit’s stored transmitter & receiver history, Video/TV Wall Groups, and Presets.** However, settings that are unique to each transmitter or receiver (Device tab Detail Settings) will not be reset. The following 4 wizard windows will then be presented, in order, to simplify the initial setup of a new AVoIP routing installation. Prior to pressing the “Finish” button on the final page of the wizard, it is possible to move freely between all 4 steps of the Setup Wizard to make additional changes to the configuration. Once “Finish” has been pressed, the changes will be committed to all involved units and they will automatically reboot.

- 1) **Transmitter Setup:** This wizard step provides a way to control the basic settings of each detected transmitter. First, click on the “Scan” button to check the LAN 1 network for all available transmitters. Once the list is populated with transmitters, the settings for each can be modified (See section 6.6.6 for configuration details and definitions).

1 Transmitter Setting
Scan Transmitters and then Set them.

2 Receiver Setting
Scan Receivers and then Set them.

3 Group/TV Wall Setting
Add Group/TV Wall for routing control.

4 Preset Setting
Add Preset for Preset Recall.

Currently discovered 2 Transmitters, if the number is lower than expected, check the devices not found and press Scan button again.

Scan

Hello	MAC Address	Name	Channel	Casting Mode	Switch Mode	IP Mode	IP Address	Subnet Mask	Gateway
<input type="checkbox"/>		MediaPlayer	0	Multicast	HDMI	Auto IP	169.254.1.161	255.255.0.0	169.254.0.254
<input type="checkbox"/>		BluRay	1	Multicast	HDMI	Auto IP	169.254.4.99	255.255.0.0	169.254.0.254

Previous

Next

Finish

After all desired changes have been completed, press the “Next” button to move to the next wizard step.

- 2) **Receiver Setting:** This wizard step provides a way to control the basic settings of each detected receiver. First, click on the “Scan” button to check the LAN 1 network for all available receivers. Once the list is populated with receivers, the settings for each can be modified (See section 6.6.6 for configuration details and definitions).

1 Transmitter Setting
Scan Transmitters and then Set them.

2 Receiver Setting
Scan Receivers and then Set them.

3 Group/TV Wall Setting
Add Group/TV Wall for routing control.

4 Preset Setting
Add Preset for Preset Recall.

Currently discovered 3 Receivers, if the number is lower-than-expected, check the devices not found and press Scan button again.

Scan

Hello	MAC Address	Name	Channel	Casting Mode	Scaler Output Mode	IP Mode	IP Address	Subnet Mask	Gateway
<input type="checkbox"/>		PC Monitor 1	BluRay	Multicast	Pass-Through	Auto IP	169.254.5.25	255.255.0.0	169.254.0.254
<input type="checkbox"/>		JHD TV 2	MediaP	Multicast	Pass-Through	Auto IP	169.254.3.220	255.255.0.0	169.254.0.254
<input type="checkbox"/>		JHD TV 1	BluRay	Multicast	Pass-Through	Auto IP	169.254.4.114	255.255.0.0	169.254.0.254

Previous
Next
Finish

After all desired changes have been completed, press the “Next” button to move to the next wizard step or press “Previous” to return to the prior step.

- 3) **Group/TV Wall Setting:** This wizard step provides a way to define groups of displays (Video Groups or TV Wall Groups) that will all receive the same routed source when used in Presets or as a routing target within the Monitor & Control tab (See section 6.6.5 for configuration details and definitions).

1 Transmitter Setting
Scan Transmitters and then Set them.

2 Receiver Setting
Scan Receivers and then Set them.

3 Group/TV Wall Setting
Add Group/TV Wall for routing control.

4 Preset Setting
Add Preset for Preset Recall.

Press Add button to add Group, then fill in the Group Name and select Receivers which you want to add to this Group.

Group Name

Remove
Edit
VideoGroup1

Add

TV Wall Name

Remove
Edit
Video Wall

Add

Previous
Next
Finish

After all desired changes have been completed, press the “Next” button to move to the next wizard step or press “Previous” to return to the prior step.

- 4) **Preset Setting:** This wizard step provides a way to add, edit or remove routing Presets (See section 6.6.5 for configuration details and definitions).

1 Transmitter Setting
Scan Transmitters and then Set them.

2 Receiver Setting
Scan Receivers and then Set them.

3 Group/TV Wall Setting
Add Group/TV Wall for routing control.

4 Preset Setting
Add Preset for Preset Recall.

Press Add button to add Preset, then fill in the Preset Name and routing actions which you want to add to this Preset.

		Preset Name	
Remove	Edit	Blu_MP_MP	<div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="border: 1px solid #ccc; padding: 5px; background-color: #f0f0f0;">Blu_MP_MP</div> <div style="border: 1px solid #ccc; padding: 5px; background-color: #f0f0f0;">MP_Blu_Blu</div> <div style="border: 1px solid #ccc; padding: 5px; background-color: #f0f0f0;">Blu_MP_Blu</div> </div>
Remove	Edit	MP_Blu_Blu	
Remove	Edit	Blu_MP_Blu	
Add			

Previous

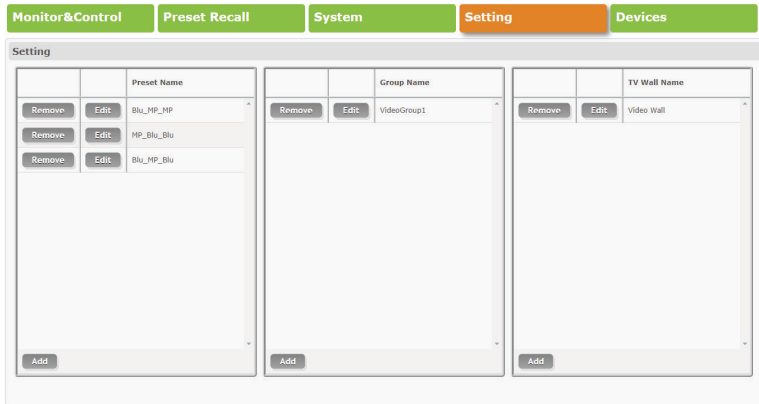
Next

Finish

After all desired Presets have been defined, press the “Finish” button to complete the Setup Wizard and commit all setup changes. All involved units will automatically reboot.

6.6.5 Setting Tab

This tab allows for the assignment and configuration of routing Presets, Display Groups, and Video Walls. Pressing the “Add” button in any of the three sections will open a new blank settings window for that section. Pressing the “Edit” button next to an existing item will open that settings window. Pressing the “Remove” button next to an existing item will delete it. Up to 250 presets/groups/video walls can be easily defined and managed. In Multiple User mode, these settings only apply to the currently logged in user and must be configured separately for each user.



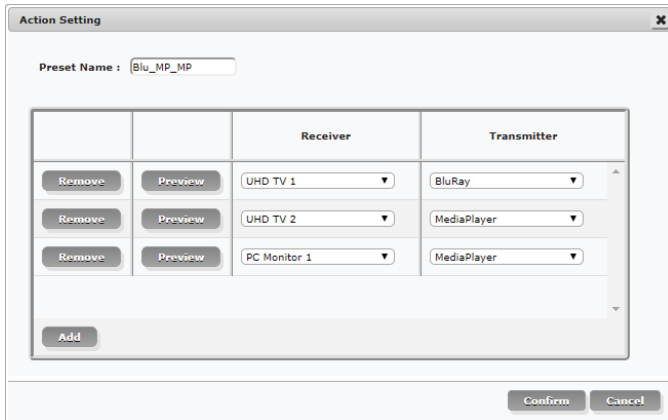
The screenshot shows the 'Setting' tab interface with three main panels:

- Preset Name:** Contains a list of presets: 'Blu_MP_MP', 'MP_Blu_Blu', and 'Blu_MP_Blu'. Each item has a 'Remove' button to its left and an 'Edit' button to its right. An 'Add' button is at the bottom.
- Group Name:** Contains a list with 'VideoGroup1'. It has 'Remove' and 'Edit' buttons for each item and an 'Add' button at the bottom.
- TV Wall Name:** Contains a list with 'Video Wall'. It has 'Remove' and 'Edit' buttons for each item and an 'Add' button at the bottom.

Note: This tab is not available when the user is logged out in Single User mode.

- 1) Routing Preset Configuration:** The Action Settings window provides a way to add, preview or remove routing assignments that will be recalled when the preset is activated.

Once the Action Setting window is open, the name of the preset can be set at the top of the window. Pressing the “Add” button will add an additional receiver/transmitter route. To delete an existing route, click on the “Remove” button next to the route to remove. Click on the “Preview” button to activate the associated route immediately. Once all routes for the preset have been defined, press the “Confirm” button to save the changes.




The **Action Setting** window features a **Preset Name** field with the value "Blu_MP_MP". Below this is a table with two columns: **Receiver** and **Transmitter**. Each row in the table contains a **Remove** button, a **Preview** button, and a dropdown menu for each column. The current selections are: UHD TV 1, BluRay, UHD TV 2, MediaPlayer, and PC Monitor 1, MediaPlayer. An **Add** button is located at the bottom left of the table. **Confirm** and **Cancel** buttons are at the bottom right.

		Receiver	Transmitter
Remove	Preview	UHD TV 1	BluRay
Remove	Preview	UHD TV 2	MediaPlayer
Remove	Preview	PC Monitor 1	MediaPlayer

■ **Receiver:** Use the dropdown to select a receiver, video group, or video wall to route the selected transmitter to.

■ **Transmitter:** Use the dropdown to select the transmitter to route to the selected receiver/group/video wall.

- 2) **Display Group Configuration:** The Device Selection window provides a way to define a group of displays that will all receive the same routed source when used in Presets or from the Monitor & Control tab.



The **Device Selection** window has a **Group Name** field set to "VideoGroup1". Above the device list are three buttons: **Select All**, **Deselect All**, and **Reset**. Below, there are three device buttons: **UHD TV 1**, **UHD TV 2**, and **PC Monitor 1**. The **UHD TV 1** and **UHD TV 2** buttons are darkened, indicating they are selected. **PC Monitor 1** is light gray, indicating it is not selected. **Confirm** and **Cancel** buttons are at the bottom right.

The name of the Display Group is set at the top of the window. All currently available receivers will be listed. To add receivers to the Video Group, click on the name of each one to include and the associated button will darken to indicate selection. To remove a receiver from the group, click on the receiver's name a second time. After all selections have been made, click on the "Confirm" button to save the changes.

- 3) **TV Wall Configuration:** The TV Wall Setting window allows the user to design, edit and manipulate a video wall system created using multiple receiver units connected to identical displays. The bezel and video size of the displays being used, as well as the horizontal and vertical monitor count, is defined here. Video stretch and rotation can also be controlled here.



Note: While it is possible to create small video walls using unicast mode, in order to more efficiently use the available network bandwidth, it is strongly recommended to only use multicast mode when creating video walls.

■ **TV Wall Setting:** This section is used to define the number of displays used in the video wall. A typical video wall consists of an equal number of horizontal and vertical monitors (for example: 2×2 or 3×3), however it is possible to create video walls using this system with a wider variety of dimensions as long as the end result is still a rectangle (for example: 5×1 or 2×3). Both horizontal and vertical dimensions are limited to a maximum of 16 displays.

- **TV Wall Name:** Set the name for the current video wall group.
- **Source:** Use the dropdown to select the transmitter to use as the source video for the video wall.
- **Vertical Monitor Count:** Use the dropdown to define the number of displays in the video wall, measured vertically. (Maximum is 16 displays.)
- **Horizontal Monitor Count:** Use the dropdown to define the number of displays in the video wall, measured horizontally. (Maximum is 16 displays.)

■ **TV Wall Bezel:** This section is used to define the physical dimensions of each display being used in the video wall. Accurate measurements are needed of the monitor's outer frame (OW, OH) and the video screen (VW, VH). The measurements may be made using any unit of measurement (inches, mm, cm, etc.) as long as ALL measurements in the same wall are made using the exact same units and the numbers are integers.

- **OW (Outer Width):** This is the horizontal measurement of the display's outer case.
- **OH (Outer Height):** This is the vertical measurement of the display's outer case.
- **VW (Video Width):** This is the horizontal measurement of the display's video screen.
- **VH (Video Height):** This is the vertical measurement of the display's video screen.
- **Stretch Type:** Set the video stretch method. Selecting "Fit In" will expand the video to exactly fit the dimensions of the video wall regardless of the source's original aspect ratio. Selecting "Stretch Out" will zoom the video until the video wall is filled in all 4 dimensions while maintaining the aspect ratio of the original source.
- **Clockwise Rotate:** Set the rotation of the video output to 0, 180, or 270 degrees.

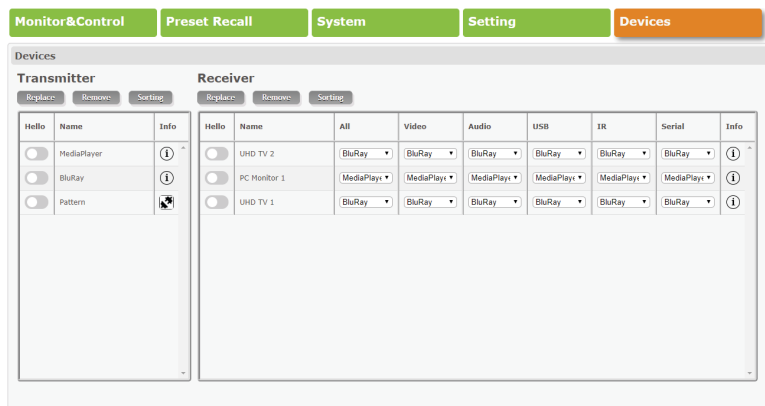
Note: All monitors in a video wall should be identical and have the same dimensions.

- **TV Wall Assignments:** Each rectangle in this section represents a single display within the defined video wall. Use the dropdown in each display to define the receiver that is attached to it. If no receiver is attached to a specific display, set it to "None".

Note: A receiver should not be assigned to more than one display.

6.6.6 Devices Tab

The Devices tab provides a way to control the detailed settings of each detected transmitter and receiver. Detected units may be replaced or removed from the list and the list order can be changed. Independent routing for each receiver can be configured via this tab, and the currently selected routing sources for each receiver is displayed with periodic automatic status updates. Transmitters and receivers that were previously detected by this unit, but are not currently detected will still be listed, however their settings cannot be changed and they will be marked as unavailable by changing the Info icon (i) to the disconnected icon (🔌).



Note: This tab is not available when the user is logged out in Single User mode.

1) Basic Transmitter Configuration:

- **Replace:** Click on this button to replace any currently listed transmitter (typically a unit that is no longer detected/active) with a new unit. The pop-up window provides dropdowns to select the original unit, and the unit to replace it with. Once the selection has been made, click on “Confirm” to apply the change. Once the replace process has completed, the replaced unit will be removed from the list, and the new unit will have settings copied from the replaced unit.
- **Remove:** Click on this button to remove any transmitter from the list of detected devices. The pop-up window provides a dropdown to select the unit to be removed. Once the selection has been made, click on “Confirm” to apply the change.

- **Sorting:** Click on this button to open the Sorting window for transmitters. Use the dropdowns to assigned the preferred order numbers for each transmitter. This sorting order will also be reflected on the Monitor & Control tab. Click on “Confirm” to apply the changes.

Note: Each transmitter must be assigned a different number with no gaps in the sequence.

- **Hello:** Clicking on this switch will cause the selected unit to immediately begin flashing the LEDs on the front of the unit to make it easy to find. Clicking it a second time returns the LEDs to their normal behavior.
- **Name:** Displays the unit’s currently assigned name. If no name has been assigned, its MAC address will be displayed.
- **Info:** Clicking on this button (i) will open the Detail Settings window for the associated transmitter.

Note: If a unit is not currently detected on the network, this icon will change to the disconnected icon (X).

2) Basic Receiver Configuration:

- **Replace:** Click on this button to replace any currently listed receiver (typically a unit that is no longer detected/active) with a new unit. The pop-up window provides dropdowns to select the original unit, and the unit to replace it with. Once the selection has been made, click on “Confirm” to apply the change. Once the replace process has completed, the replaced unit will be removed from the list, and the new unit will have settings copied from the replaced unit.
- **Remove:** Click on this button to remove any receiver from the list of detected devices. The pop-up window provides a dropdown to select the unit to be removed. Once the selection has been made, click on “Confirm” to apply the change.
- **Sorting:** Click on this button to open the Sorting window for receivers. Use the dropdowns to assigned the preferred order numbers for each receiver. This sorting order will also be reflected on the Monitor & Control tab. Click on “Confirm” to apply the changes.

Note: Each receiver must be assigned a different number with no gaps in the sequence.

- **Hello:** Clicking on this switch will cause the selected unit to immediately begin flashing the LEDs on the front of the unit to make it easy to find. Clicking it a second time returns the LEDs to their normal behavior.
- **Name:** Displays the unit's currently assigned name. If no name has been assigned, its MAC address will be displayed.
- **All:** Use the dropdown to select a transmitter to route all content types to this receiver.

Note 1: If the currently selected routing for the receiver involves more than one source this will display "Mixed".

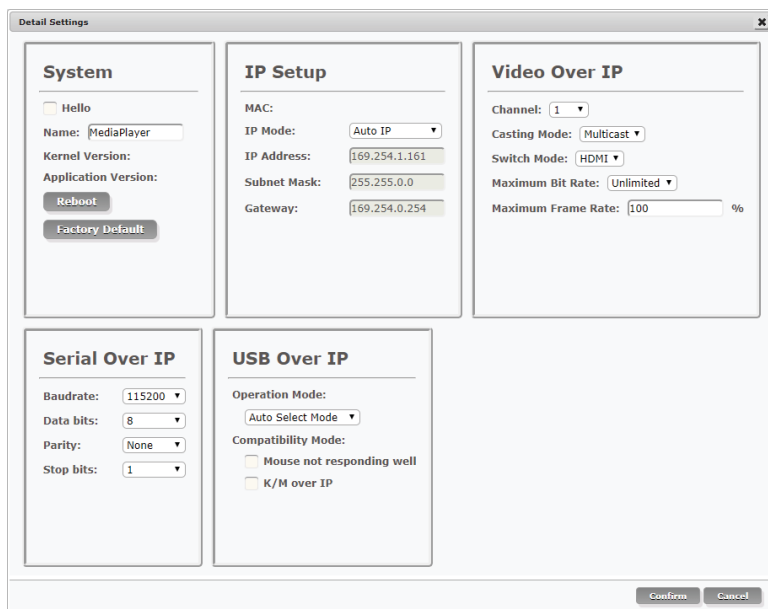
Note 2: Some content stream types will take longer to switch than others and the full results may not be properly represented in the WebGUI for a few seconds.

- **Video:** Use the dropdown to select a transmitter to route only its video stream to this receiver.
- **Audio:** Use the dropdown to select a transmitter to route only its audio stream to this receiver.
- **USB:** Use the dropdown to select a transmitter to route only its USB stream to this receiver.
- **IR:** Use the dropdown to select a transmitter to route only its IR stream to this receiver.
- **Serial:** Use the dropdown to select a transmitter to route only its serial stream to this receiver.
- **Info:** Clicking on this button (i) will open the Detail Settings window for the associated receiver.

Note: If a unit is not currently detected on the network, this icon will change to the disconnected icon (X).

- 3) **Transmitter Detail Settings:** This window provides control over all available settings for the associated transmitter. Once all desired changes to the transmitter have been selected, press the "Confirm" button to save and activate the changes.

Note: Changes made to the Detailed Settings of a unit might require the affected unit(s) to reboot. In that case, a notification will appear on screen to inform you that the unit(s) are automatically rebooting.



The screenshot shows a 'Detail Settings' window with five configuration panels:

- System:** Includes a 'Hello' checkbox, a 'Name' field (MediaPlayer), 'Kernel Version' and 'Application Version' labels, and 'Reboot' and 'Factory Default' buttons.
- IP Setup:** Includes 'MAC' label, 'IP Mode' dropdown (Auto IP), 'IP Address' field (169.254.1.161), 'Subnet Mask' field (255.255.0.0), and 'Gateway' field (169.254.0.254).
- Video Over IP:** Includes 'Channel' dropdown (1), 'Casting Mode' dropdown (Multicast), 'Switch Mode' dropdown (HDMI), 'Maximum Bit Rate' dropdown (Unlimited), and 'Maximum Frame Rate' field (100 %).
- Serial Over IP:** Includes 'Baudrate' dropdown (115200), 'Data bits' dropdown (8), 'Parity' dropdown (None), and 'Stop bits' dropdown (1).
- USB Over IP:** Includes 'Operation Mode' dropdown (Auto Select Mode) and 'Compatibility Mode' section with checkboxes for 'Mouse not responding well' and 'K/M over IP'.

At the bottom right are 'Confirm' and 'Cancel' buttons.

■ System:

- **Hello:** Checking this will cause the selected unit to immediately begin flashing the LEDs on the front of the unit to make it easy to find. Unchecking it returns the LEDs to their normal behavior.
- **Name:** The unit's assigned name can be changed here. Up to 12 alpha-numeric characters are allowed. By default, new units will use their MAC address as their name.
- **Kernel & Application Versions:** Displays the unit's current firmware versions.
- **Reboot:** Click this button to reboot the unit.
- **Factory Default:** Click this button to return the unit to its factory defaults.

■ IP Setup:

- **MAC:** Displays the unit's detected MAC address.
- **IP Mode:** Use the dropdown to select the IP mode for the unit. It may be switched between "Auto IP", "DHCP" or "Static IP". When the unit is set to Auto IP mode it will automatically assign itself an APIPA address from the 169.254.XXX.XXX range. When the unit is set to DHCP mode it will attempt to automatically obtain an IP address

from a DHCP server. When the IP mode is set to static IP, you can manually set the IP address, netmask and gateway address.

Note: The default IP Mode setting is “Auto IP”.

- **IP Address:** Displays the unit's current IP address. When in Static IP mode, the unit's IP address can be manually entered here.
- **Subnet Mask:** Displays the unit's current subnet mask. When in Static IP mode, the unit's subnet mask can be manually entered here.
- **Gateway:** Displays the unit's current gateway address. When in Static IP mode, the unit's gateway address can be manually entered here.

■ Video over IP:

- **Channel:** Use the dropdown to select the broadcast channel for the transmitter. All receivers on the local network that are set to the same channel will receive video from this transmitter. The available channel range is from 0 to 255.

Note: Every transmitter within the same local network must be assigned a different broadcast channel in order to avoid network conflicts.

- **Casting Mode:** Use the dropdown to switch the broadcast mode used by the unit between Multicast and Unicast.

Note: Receivers must be set to the same casting mode as the transmitter in order to receive video.

- **Switch Mode:** Use the dropdown to select the video input on the unit to broadcast.
- **Maximum Bit Rate:** Set the maximum bit rate that can be used by the video stream. Available options are: Unlimited, 400 Mbps, 200 Mbps, 100 Mbps, 50 Mbps. Selecting “Unlimited” will use up to the maximum available bandwidth in order to maintain a full framerate video stream.

Note: While it is generally suggested to select “Unlimited” when streaming 4K video sources, the amount of bandwidth required can be very large and will limit the number of concurrent video streams.

- **Maximum Frame Rate:** Set the percentage of frames from the source video to encode (2~100%). This is ideal for reducing the bandwidth requirements of high-resolution sources with limited motion elements such as power point presentations or information screens.

Note: If the framerate is lowered too far with motion video sources, the video will become noticeably choppy.

- **Serial over IP:** Set the desired baud rate, data bits, parity, and stop bits for the unit's RS-232 extension function.

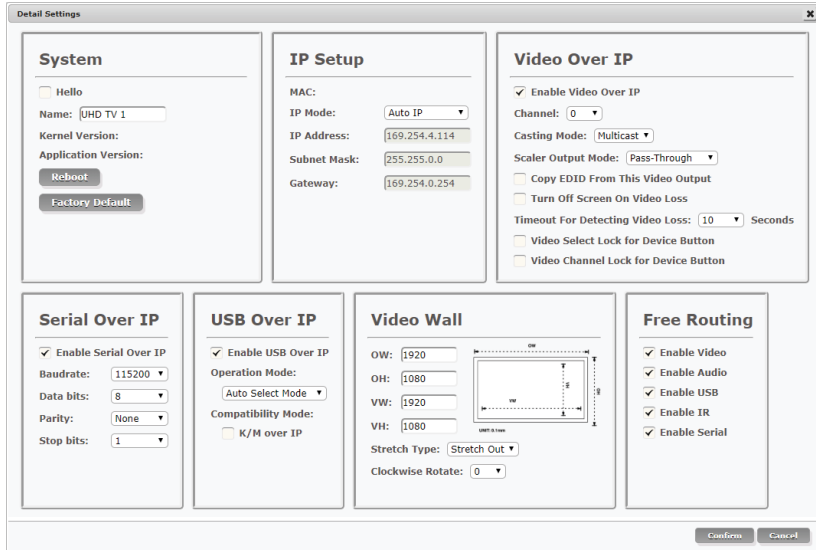
Note: Linked transmitters and receivers must have the same serial settings.

- **USB over IP:**

- **Operation Mode:** Sets the USB extension mode. Available options are Auto Select Mode, Active On Link (Unicast optimized), and Active Per Request (Multicast optimized). Auto Select Mode is set by default and will automatically select the optimal mode depending on the casting mode of the unit.
- **Compatibility Mode:** These troubleshooting options enable specialized optimizations to solve issues when a mouse or touch panel is not responding properly. They should normally be left unchecked.

- 4) **Receiver Detail Settings:** This window provides control over all available settings for the associated receiver. Once all desired changes to the receiver have been selected, press the "Confirm" button to save and activate the changes.

Note: Changes made to the Detailed Settings of a unit might require the affected unit(s) to reboot. In that case, a notification will appear on screen to inform you that the unit(s) are automatically rebooting.



The screenshot shows the 'Detail Settings' window with the following sections:

- System:** Includes a 'Hello' checkbox, a 'Name' field (UHD TV 1), 'Kernel Version', 'Application Version', and 'Reboot'/'Factory Default' buttons.
- IP Setup:** Includes 'MAC' address, 'IP Mode' (Auto IP), 'IP Address' (169.254.4.114), 'Subnet Mask' (255.255.0.0), and 'Gateway' (169.254.0.254).
- Video Over IP:** Includes 'Enable Video Over IP' checkbox, 'Channel' (0), 'Casting Mode' (Multicast), 'Scaler Output Mode' (Pass-Through), and checkboxes for 'Copy EDID From This Video Output', 'Turn Off Screen On Video Loss', 'Video Select Lock for Device Button', and 'Video Channel Lock for Device Button'.
- Serial Over IP:** Includes 'Enable Serial Over IP' checkbox, 'Baudrate' (115200), 'Data bits' (8), 'Parity' (None), and 'Stop bits' (1).
- USB Over IP:** Includes 'Enable USB Over IP' checkbox, 'Operation Mode' (Auto Select Mode), 'Compatibility Mode' (K/M over IP), and a 'K/M over IP' checkbox.
- Video Wall:** Includes 'OW' (1920), 'OH' (1080), 'VW' (1920), 'VH' (1080), 'Stretch Type' (Stretch Out), and 'Clockwise Rotate' (0).
- Free Routing:** Includes checkboxes for 'Enable Video', 'Enable Audio', 'Enable USB', 'Enable IR', and 'Enable Serial'.

■ System:

- **Hello:** Checking this will cause the selected unit to immediately begin flashing the LEDs on the front of the unit to make it easy to find. Unchecking it returns the LEDs to their normal behavior.
- **Name:** The unit's assigned name can be changed here. Up to 12 alpha-numeric characters are allowed. By default, new units will use their MAC address as their name.
- **Kernel & Application Versions:** Displays the unit's current firmware versions.
- **Reboot:** Click this button to reboot the unit.
- **Factory Default:** Click this button to return the unit to its factory defaults.

■ IP Setup:

- **MAC:** Displays the unit's detected MAC address.
- **IP Mode:** Use the dropdown to select the IP mode for the unit. It may be switched between "Auto IP", "DHCP" or "Static IP". When the unit is set to Auto IP mode it will automatically assign itself an APIPA address from the 169.254.XXX.XXX range. When the unit is set to DHCP mode it will attempt to automatically obtain an IP address from a DHCP server. When the IP mode is set to static IP, you can manually set the IP address, netmask and gateway address.

Note: The default IP Mode setting is "Auto IP".

- **IP Address:** Displays the unit's current IP address. When in Static IP mode, the unit's IP address can be manually entered here.
- **Subnet Mask:** Displays the unit's current subnet mask. When in Static IP mode, the unit's subnet mask can be manually entered here.
- **Gateway:** Displays the unit's current gateway address. When in Static IP mode, the unit's gateway address can be manually entered here.

■ Video over IP:

- **Enable Video Over IP:** Unchecking this checkbox will disable the AVoIP stream completely.

Note: This option should always remain checked unless troubleshooting is being performed.

- **Channel:** Use the dropdown to select the broadcast reception channel for the receiver. The receiver will display the video stream from the transmitter using the selected broadcast channel. The available channel range is from 0 to 255.

- **Casting Mode:** Use the dropdown to switch the broadcast mode supported by the unit between Multicast and Unicast.

Note: Receivers must be set to the same casting mode as the transmitter in order to receive video.

- **Scaler Output Mode:** Use the drop down list to select the preferred output resolution for this receiver. Selecting one of the specific resolutions will output all video sources at that resolution. Selecting "Pass-Through" will output the source video at its original resolution. Selecting "Native" will attempt to scale to the detected native resolution of the display connected to the HDMI output.

- **Copy EDID From This Video Output:** When multiple receivers are connected to a single transmitter in multicast mode, this checkbox selects which of the receivers should send its EDID to the transmitter for use with the source.

Note: This option is only valid in multicast mode. Only one receiver, per transmitter, should have this checked at any one time to avoid potential conflicts.

- **Turn Off Screen On Video Loss:** When this checkbox is checked, the HDMI output will be completely disabled, including sync, after the video loss timeout time has expired.
 - **Timeout For Detecting Video Loss:** Use the drop down to set the length of time to wait for a lost source to return before showing the “Link Lost” screen. Available options are: 3, 5, 10, 20, 30, 60 seconds, or Never.
 - **Video Select Lock for Device Button:** When this checkbox is checked, the unit’s physical “Source Select” button will be disabled.
 - **Video Channel Lock for Device Button:** When this checkbox is checked, the unit’s physical “Channel Select” buttons will be disabled.
- **Serial over IP:** Set the desired baud rate, data bits, parity, and stop bits for the unit’s RS-232 extension function. Serial support may also be completely disabled.
- Note: Linked transmitters and receivers must have the same serial settings.*
- **USB over IP:**
- **Operation Mode:** Sets the USB extension mode. Available options are Auto Select Mode, Active On Link (Unicast optimized), and Active Per Request (Multicast optimized). Auto Select Mode is set by default and will automatically select the optimal mode depending on the casting mode of the unit.
 - **Compatibility Mode:** This troubleshooting option enables specialized optimizations to solve issues when a mouse or touch panel is not responding properly. It should normally be left unchecked.
- **Video Wall:**
- **OW (Outer Width):** This is the horizontal measurement of the display’s outer case.
 - **OH (Outer Height):** This is the vertical measurement of the display’s outer case.
 - **VW (Video Width):** This is the horizontal measurement of the display’s video screen.
 - **VH (Video Height):** This is the vertical measurement of the display’s video screen.
 - **Stretch Type:** Set the video stretch method. Selecting “Fit In”

will expand the video to exactly fit the dimensions of the video wall regardless of the source's original aspect ratio. Selecting "Stretch Out" will zoom the video until the video wall is filled in all 4 dimensions while maintaining the aspect ratio of the original source.

- **Clockwise Rotate:** Set the rotation of the video output to 0, 180, or 270 degrees.

- **Free Routing:** This section controls the which stream source types (video, audio, USB, IR, serial) will be changed when a new routing source is selected for this receiver via the Monitor & Control tab or Presets. If a stream type is unchecked, then it will not change when the routing source is changed via those methods. This is useful, for example, when you wish to continue hearing the same audio source while switching between multiple video sources during a presentation (uncheck "Enable Audio"), or if you wish to maintain a constant USB connection between a specific transmitter and receiver (uncheck "Enable USB").

Note: The Free Routing settings do not affect the ability to manually change individual routing selections via the Devices tab.

6.7 Telnet Control

Before attempting to use Telnet control, please ensure that both the unit and the PC are connected to the same active networks.

To Access the Command Line Interface (CLI)	
Windows 7	Click Start , type “cmd” in the search field, and press Enter .
Windows XP	Click Start > Run , type “cmd”, and press Enter .
Mac OS X	Click Go > Applications > Utilities > Terminal .

Once in the Command Line Interface (CLI) type “**telnet**” followed by the IP address of the unit (and the port number if it is non-standard) and then hit “**Enter**”. This will connect us to the unit we wish to control.

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>telnet 192.168.1.50 23
```

Note 1: By default the unit will obtain the LAN 2 IP address via DHCP. If you are unsure of the unit's current LAN 2 IP address, please check the unit's HDMI status display.

Note 2: If the unit's IP address is changed then the IP address required for Telnet access will also change accordingly.

6.8 Serial and Telnet Commands

COMMAND
Description and Parameters
System Commands
help ↵ Show the full command list.
get_hardware_version ↵ Show the unit's hardware version.
get_firmware_version ↵ Show the unit's current firmware version.
set_factory_reset ↵ Reset the unit to the factory defaults.
set_history_reset ↵ Clear the unit's stored transmitter and receiver history list.
reboot ↵ Reboot the unit.
Network Commands
get_ipconfig N1 ↵ Show the current Ethernet configuration of the selected port. Available values for N1 : 1 [LAN port 1] 2 [LAN port 2]
set_ip_mode N1 N2 ↵ Set the IP assignment mode for the selected LAN port. Available values for N1 : 1 [LAN port 1] 2 [LAN port 2] Available values for N2 : 0 [Static IP] 1 [DHCP] 2 [Auto IP]

COMMAND					
Description and Parameters					
get_ip_mode N1↵ <p>Show the IP assignment mode for the selected LAN port.</p> <p>Available values for N1:</p> <table> <tr> <td>1</td><td>[LAN port 1]</td></tr> <tr> <td>2</td><td>[LAN port 2]</td></tr> </table>		1	[LAN port 1]	2	[LAN port 2]
1	[LAN port 1]				
2	[LAN port 2]				
set_ip_address N1 N2↵ <p>Set the IP address for the selected LAN port.</p> <p>Available values for N1:</p> <table> <tr> <td>1</td><td>[LAN port 1]</td></tr> <tr> <td>2</td><td>[LAN port 2]</td></tr> </table> <p>N2 = X.X.X.X [X = 0~255, IP address]</p>		1	[LAN port 1]	2	[LAN port 2]
1	[LAN port 1]				
2	[LAN port 2]				
get_ip_address N1↵ <p>Show the current IP address of the selected LAN port.</p> <p>Available values for N1:</p> <table> <tr> <td>1</td><td>[LAN port 1]</td></tr> <tr> <td>2</td><td>[LAN port 2]</td></tr> </table>		1	[LAN port 1]	2	[LAN port 2]
1	[LAN port 1]				
2	[LAN port 2]				
set_netmask N1 N2↵ <p>Set the netmask for the selected LAN port.</p> <p>Available values for N1:</p> <table> <tr> <td>1</td><td>[LAN port 1]</td></tr> <tr> <td>2</td><td>[LAN port 2]</td></tr> </table> <p>N2 = X.X.X.X [X = 0~255, Netmask]</p>		1	[LAN port 1]	2	[LAN port 2]
1	[LAN port 1]				
2	[LAN port 2]				
get_netmask N1↵ <p>Show the current netmask of the selected LAN port.</p> <p>Available values for N1:</p> <table> <tr> <td>1</td><td>[LAN port 1]</td></tr> <tr> <td>2</td><td>[LAN port 2]</td></tr> </table>		1	[LAN port 1]	2	[LAN port 2]
1	[LAN port 1]				
2	[LAN port 2]				

COMMAND

Description and Parameters

set_gateway N1 N2↵

Set the gateway address for the selected LAN port.

Available values for **N1**:

- 1 [LAN port 1]
- 2 [LAN port 2]

N2 = X.X.X.X [X = 0~255, Gateway address]

get_gateway N1↵

Show the current gateway address of the selected LAN port.

Available values for **N1**:

- 1 [LAN port 1]
- 2 [LAN port 2]

Discovery Service Commands

get_tx_device↵

List all supported AVoIP transmitter devices detected on LAN port 1's local network.

get_rx_device↵

List all supported AVoIP receiver devices detected on LAN port 1's local network.

Preset/Group Commands

set_preset_run N1↵

Activate the specified preset.

N1 = 1~250 [Preset number]

get_preset_run N1↵

List the contents of the specified preset.

N1 = 1~250 [Preset number]

set_group_route N1 N2↵

Set all members of the specified group to display the specified channel.

N1 = 1~255 [Group number]

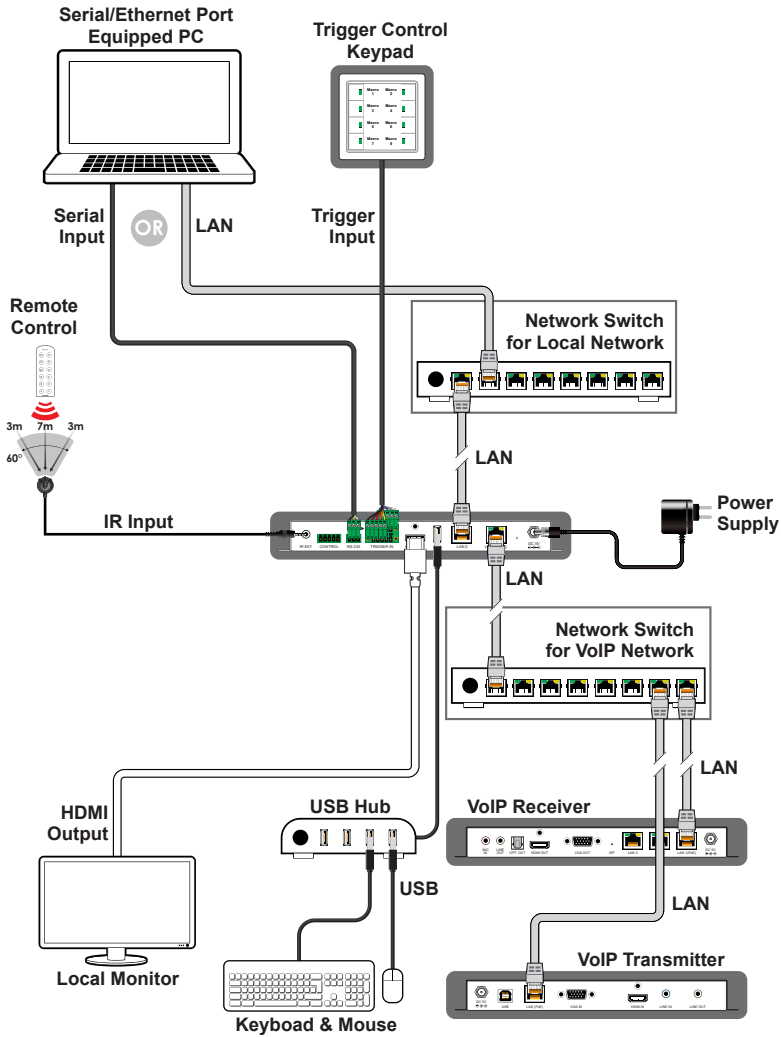
N2 = 0~255 [Channel number]

COMMAND	
Description and Parameters	
get_group_member N1↵	
List all receivers in the specified group.	
N1 = 1~255	[Group number]
Individual VoIP Unit Commands	
set_channel N1 N2↵	
Set the channel for the Tx or Rx at the specified IP address.	
N1 = X.X.X.X	[X = 0~255, IP address of the target unit]
N2 = 0~255	[Channel number]
get_channel N1↵	
Show the current channel used by the Tx or Rx at the specified IP address.	
N1 = X.X.X.X	[X = 0~255, IP address of the target unit]
set_device_name N1 N2↵	
Set the name of the Tx or Rx at the specified IP address.	
N1 = X.X.X.X	[X = 0~255, IP address of the target unit]
N2 = {Name}	[Alpha-numeric, 12 Characters max]
get_device_name N1↵	
Show the current name of the Tx or Rx at the specified IP address.	
N1 = X.X.X.X	[X = 0~255, IP address of the target unit]
set_net_mode N1 N2↵	
Set the network broadcast mode of the Tx or Rx at the specified IP address.	
N1 = X.X.X.X	[X = 0~255, IP address of the target unit]
Available values for N2 :	
0	[Unicast Mode]
1	[Multicast Mode]

COMMAND	
Description and Parameters	
get_net_mode N1↵	
Show the current network broadcast mode of the Tx or Rx at the specified IP address.	
N1 = X.X.X.X	[X = 0~255, IP address of the target unit]
set_vw_layout N1 N2 N3↵	
Set the horizontal and vertical display count of the video wall that the Rx at the specified IP address is a part of.	
N1 = X.X.X.X	[X = 0~255, IP address of the target unit]
N2 = 1~16	[Horizontal display count]
N3 = 1~16	[Vertical display count]
get_vw_layout N1↵	
Show the horizontal and vertical display count of the video wall that the Rx at the specified IP address is a part of.	
N1 = X.X.X.X	[X = 0~255, IP address of the target unit]
set_vw_pos N1 N2 N3↵	
Set the horizontal and vertical position of the Rx at the specified IP address within the defined video wall.	
N1 = X.X.X.X	[X = 0~255, IP address of the target unit]
N2 = 0~15	[Horizontal position]
N3 = 0~15	[Vertical position]
<i>Note: Cannot exceed the dimensions defined by VW_LAYOUT.</i>	
get_vw_pos N1↵	
Show the horizontal and vertical position of the Rx at the specified IP address within the defined video wall.	
N1 = X.X.X.X	[X = 0~255, IP address of the target unit]

Note: Commands will not be executed unless followed by a carriage return. Commands are not case-sensitive.

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

8.1 Technical Specifications

HDMI Output Resolution	1920×1080@60Hz
Output Port	1×HDMI (Type-A)
Control Ports	1×IR Extender (3.5mm) 1×RS-232 (3-pin Terminal Block) 8×Trigger (10-pin Terminal Block) 2×LAN (RJ-45) 1×USB 2.0 (Type A)
Reserved Port	1×Control (5-pin Terminal Block)
IR Frequency	38kHz
Baud Rate	19200
Power Supply	5V/2.6A DC (US/EU standards, CE/FCC/UL certified)
ESD Protection (HBM)	±8kV (Air Discharge) ±4kV (Contact Discharge)
Dimensions (W×H×D)	231.5mm×25mm×108mm [Case Only] 231.5mm×25mm×117mm [All Inclusive]
Weight	250g
Chassis Material	Metal (Steel)
Chassis Color	Black
Operating Temperature	0°C – 40°C/32°F – 104°F
Storage Temperature	-20°C – 60°C/-4°F – 140°F
Relative Humidity	20 – 90% RH (Non-condensing)
Power Consumption	2.99W

8.2 Video Specifications

Supported Resolutions (Hz)	Output
	HDMI
720×400p@70/85	×
640×480p@60/72/75/85	×
720×480i@60	×
720×480p@60	×
720×576i@50	×
720×576p@50	×
800×600p@56/60/72/75/85	×
848×480p@60	×
1024×768p@60/70/75/85	×
1152×864p@75	×
1280×720p@50/60	×
1280×768p@60/75/85	×
1280×800p@60/75/85	×
1280×960p@60/85	×
1280×1024p@60/75/85	×
1360×768p@60	×
1366×768p@60	×
1400×1050p@60	×
1440×900p@60/75	×
1600×900p@60RB	×
1600×1200p@60	×
1680×1050p@60	×
1920×1080i@50/60	×
1920×1080p@24/25/30	×
1920×1080p@50/60	60
1920×1200p@60RB	×

Supported Resolutions (Hz)	Output
	HDMI
2560×1440p@60RB	×
2560×1600p@60RB	×
2048×1080p@24/25/30	×
2048×1080p@50/60	×
3840×2160p@24/25/30	×
3840×2160p@50/60 (4:2:0)	×
3840×2160p@24, HDR10	×
3840×2160p@50/60 (4:2:0), HDR10	×
3840×2160p@50/60	×
4096×2160p@24/25/30	×
4096×2160p@50/60 (4:2:0)	×
4096×2160p@24, HDR10	×
4096×2160p@50/60 (4:2:0), HDR10	×
4096×2160p@50/60	×

8.3 Cable Specifications

Cable Length	1080p		4K30	4K60
	8-bit	12-bit	(4:4:4) 8-bit	(4:4:4) 8-bit
High Speed HDMI Cable				
HDMI Output	15m	x	x	x

Bandwidth Category Examples:

- **1080p (FHD Video)**
 - Up to 1080p@60Hz, 12-bit color
 - Data rates lower than 5.3Gbps or below 225MHz TMDS clock
- **4K30 (4K UHD Video)**
 - 4K@24/25/30Hz & 4K@50/60Hz (4:2:0), 8-bit color
 - Data rates higher than 5.3Gbps or above 225MHz TMDS clock but below 10.2Gbps
- **4K60 (4K UHD⁺ Video)**
 - 4K@50/60Hz (4:4:4, 8-bit)
 - 4K@50/60Hz (4:2:0, 10-bit HDR)
 - Data rates higher than 10.2Gbps

9. ACRONYMS

ACRONYM	COMPLETE TERM
10GbE	10 Gigabit Ethernet
ADC	Analog-to-Digital Converter
ARC	Audio Return Channel
ASCII	American Standard Code for Information Interchange
AV	Audio/Video
AVLC	Adaptive Visually Lossless Compression
AVoIP	Audio/Video over IP
AVR	Audio/Video Receiver or Recorder
Cat.5e	Enhanced Category 5 cable
Cat.6	Category 6 cable
Cat.6A	Augmented Category 6 cable
Cat.7	Category 7 cable
CEC	Consumer Electronics Control
CLI	Command-Line Interface
COAX	Coaxial
COM	Communication
DAC	Digital-to-Analog Converter
dB	Decibel
DHCP	Dynamic Host Configuration Protocol
DP	DisplayPort
DSC	Display Stream Compression
DSD	Direct Stream Digital
DVI	Digital Visual Interface
EDID	Extended Display Identification Data
Gbps	Gigabits per second
GUI	Graphical User Interface
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface

ACRONYM	COMPLETE TERM
HDR	High Dynamic Range
IP	Internet Protocol
IR	Infrared
kHz	Kilohertz
KVM	Keyboard/Video/Mouse
LAN	Local Area Network
LED	Light-Emitting Diode
MAC	Media Access Control
MHz	Megahertz
PD	Powered Device
TCP	Transmission Control Protocol
4K UHD	4K Ultra-High-Definition (10.2Gbps max)
4K UHD ⁺	4K Ultra-High-Definition (18Gbps max)
USB	Universal Serial Bus
VLAN	Virtual LAN
VoIP	Video over IP





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