

HDMI over IP PoE Seamless Tranceiver, 4K60

User Manual

500861



Control and Management via
the intuitive **MuxLab AV**
Management Tool & OSD
Menu.

Table of Contents

1. Safety Precautions.....	3
2. Introduction.....	4
3. Features.....	4
4. Package Contents.....	4
5. Specifications.....	5
6. Panels.....	6
6.1 Front Panel.....	6
6.2 Rear Panel.....	6
7. Installation.....	7
8. Using MuxLab KVM & AV Management Tool Software.....	8
8.1 Download MuxLab KVM & Management Tool Software.....	8
8.2 Login to MuxLab KVM & AV Management Tool Software.....	8
8.3 Configuring the Transceivers.....	9
8.3.1 Device tab.....	10
8.3.2 Input tab.....	18
8.3.3 Output tab.....	22
8.3.4 Site tab.....	24
8.3.5 IPC tab.....	28
8.3.6 User tab.....	30
8.3.7 Data tab.....	32
8.3.8 Status tab.....	33
8.3.9 System tab.....	34
8.3.10 Logs tab.....	34
8.4 Control the Transceivers.....	35

1. Safety Precautions

To ensure the best performance from the product, please read all instructions carefully before using the device. Save this manual for future reference.

- Follow basic safety precautions to reduce the risk of fire, electrical shock, and injury.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burns.
- Do not open or remove the housing of the device as you may be exposed to dangerous voltage or other hazards.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture and do not install this product near water. Keep the product away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on the housing, unplug the module immediately.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Using supplies or parts not meeting the product specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- Install the device in a place with adequate ventilation to avoid damage caused by overheating.
- Unplug the power when left unused for a long period of time.
- Information on disposal of devices: do not burn or mix with general household waste, please treat them as normal electrical waste.

Copyright Notice

All contents in this manual are copyrighted, and cannot be cloned, copied, or translated without the express permission of MuxLab Inc. Product specifications and information in this document are for reference only, and the content may be updated from time to time without prior notice.

2. Introduction

The HDMI over IPPoE Seamless Transceiver, 4K/60 (model: 500861) allows HDMI source equipment to be extended locally up to 330ft (100m) at up to 4K @ 60Hz resolution via Cat5e/6 cable and is compatible with the MuxLab 500861 Transceivers to support point-to-point, point- to-multipoint and multipoint-to-multipoint configurations, Video Wall and Multiview capabilities in a low bandwidth expandable and cost effective manner, without the need to install dedicated cabling systems. The exceptionally low bandwidth requirements of this device combination allows for streaming audio/video content over a local network, over WiFi, and over the Internet for distributed installations spread throughout the globe. The Transceiver accepts a 4K video @ 60Hz and streams the content to an H.264/H.265 Receiver to be displayed on a 4K monitor. The device supports PoE (PD) and may be powered by a PoE (PSE) Ethernet Switch.

3. Features

- Supports up to 4K @ 60Hz video streams
- H.264/265 video codec, excellent for LAN and Internet transmission
- High image quality and ~80ms latency
- Supports seamless switching
- This unit is a Transceiver and can be used as a Transmitter, as a Receiver, or as both simultaneously
- Supports Video Wall
- Supports Multiview with up to 16-windows per screen
- Supports image rotation, scrolling text, banner, etc.
- RS232, RS485, USB, Relay, IR and I/O for remote control of end devices
- PoE powered, via PoE (PSE) Ethernet Switch
- Managed via MuxLab AV Management Tool software.

4. Package Contents

- One (1) HDMI over IP PoE Seamless Transceiver, 4K30
- One (1) Infrared Emitter with terminal block 6POS
- One (1) Infrared Sensor with terminal block 6POS
- Two (2) Wall Mount Brackets with four (4) Screws

Notes: Confirm that the product and accessories are all included. If not, please contact the supplier from which you purchased the unit.

5. Specifications

Technical	
Environment	HDMI 2.0
Devices	Blu-Ray, Set Top Boxes, projectors, monitors, TVs, PCs, supporting HDMI.
Signal Protocol/Standard	HDMI 2.0 and HDCP 2.2
Video Resolution	Up to 4K/60 in and out
Audio	3.5mm Line in/out, or HDMI audio
Latency	80 ~ 120ms
Network Bandwidth	Up to 12Mbps
Protocols	Supports Multicast, RTSP, RTMP
Compression	Supports H.264/265
Front Panel	
Indicators	Power: Power indicator Sys: System indicator Link: LAN cable connection indicator HD: HDMI signal status
OLED Screen	Showing the Model, ID, IP, status
Rear Panel	
Video	2 x HDMI Type-A
Control Ports	1 x RS232 phoenix connector 1 x RS485 phoenix connector 1 x Relay phoenix connector 1 x I/O phoenix connector (Programmable as IR input/output or voltage sensor)
Audio	1 x 3.5mm IN 1 x 3.5mm OUT
LAN	1 x RJ45 (PoE) 1 x SFP Cage
USB	5 x USB-B ports for Keyboard & Mouse or PC host
Power	12VDC 1A
General	
Control	Windows PC software (MuxLab AV Management Tool), Android/iOS APP
Power Source	This device supports PoE (PD), an external power supply is not included. It is intended to be powered via a PoE (PSE) Ethernet Switch. If required, an optional power supply (500988) may be purchased separately.
Power Consumption	<10W
Temperature	Operating: 0° to 40°C Storage: -20° to 85°C Humidity: Up to 90% non-condensing
Dimensions	LxWxH (191mm x 100mm x 25mm)
Weight	1.27lbs (0.54kg)
Compliance	Regulatory: FCC, CE, RoHS Flammability: 94V0
Warranty	2 years
Order Information	500861 HDMI over IP PoE Workstation Transceiver, 4K60 (UPC: 627699008621)
Accessories (These items are sold separately)	500988 Univ. PSU 12VDC/2.0A Lock US/UK/EU 500925 14 Port Rackmount Transceiver Chassis 5.5U

6. Panels

6.1 Front Panel



1/2/3/4 (Indicators)	PWR: power indicator SYS: System indicator LINK: LAN cable connection indicator HDMI: HDMI signal status
5 (OLED Screen)	OLED Screen Showing the Model, ID, IP, Status{
6 (USB 3.0 Port)	Port to connect USB memory{
7 (USB 2.0 Port)	Port to connect the keyboard.
8 (USB 2.0 Port)	Port to connect the mouse.

6.2 Rear Panel



1 (Power)	12VDC 1.5A Power Supply
2 (RESET)	Press and hold for 5 seconds to factory reset
3 (USB 2.0 Port)	Port to connect Touchscreen
4 (USB 3.0 Port)	Port to connect to the host
5 (FIBER)	Fiber port
6 (LAN PoE)	RJ45 LAN port with standard PoE
7 (AUDIO IN)	3.5mm port for audio embedded in
8 (AUDIO OUT)	3.5mm port for audio embedded out
9 (HD OUT)	HDMI output port
10 (HD IN)	HDMI input port
11 (Control Ports)	1 x RS485(BGA) phoenix connector 1 x RS232(RGT) phoenix connector 1 x Relay(+ -) phoenix connector 1 x Infrared (IR1, IR0) phoenix connector

7. Installation

1. Identify the connectors on the Transceiver as indicated by the product silkscreen, see the above front and rear product views for further details.
2. To install the Transceiver:
 - 2a. Connect the 500861 Transceiver to the HDMI video source with an HDMI compliant cable.
3. If the configuration is a point-to-multipoint or multipoint-to-multipoint:
 - 3a. You will need to use an Ethernet Switch with Gigabit ports. In addition IGMP Protocol support is required for the multipoint-to-multipoint case.
Verify that the Ethernet Switch is configured correctly, that the IGMP Protocol is enabled for multipoint-to-multipoint applications.
 See the operating manual for more information about configuring the Ethernet Switch.
 - 3b. Connect all 500861 Transceivers to the Ethernet Switch.
 - 3c. Use the MuxLab KVM & AV Management Tool software to configure each transceiver
4. Powering the Transceivers via an external power supply is only necessary where PoE (PSE) is unavailable. If PoE is unavailable, connect a 12VDC power supply to each Transceiver and to an AC power outlet. If power is present, the blue power LED on each Transceiver will illuminate.
Note: Power 'ON' the Transceivers only after all connections have been made.
5. Power 'ON' the equipment (servers/computers) and verify the image quality.
6. This unit supports a Factory Reset function, if ever required. Note however that saved unit configuration data will be lost. To perform a Factory Reset, press and hold the reset button located on the back between 6 to 10 seconds.

The maximum number of devices is determined by your network's bandwidth.

- **Transmitters (Input):** Each consumes up to 12 Mbps. On a standard 1 Gbps network, the theoretical maximum is approximately 83 transmitters.
- **Receivers (Output):** These do not consume significant bandwidth. The system supports up to 5,000 receivers, limited primarily by the network's address capacity.

8. Using MuxLab KVM & AV Management Tool Software

This section describes the basic workflow for configuring, managing and controlling the 500861 Transceiver.

The typical workflow consists of the following steps:

1. Download MuxLab KVM & AV Management Tool software from MuxLab website.
2. Login to MuxLab KVM & AV Management Tool software
3. Make all necessary settings on the Transceivers as required by your setup, including configuring device IP addresses, setting streaming and output resolutions, naming devices, defining which devices will function as Inputs and Outputs, creating video walls, creating users with their respective permissions, among many others.
4. Control the system from the User Control Interface.

8.1 Download MuxLab KVM & AV Management Tool Software

The User can download the KVM & AV Management software free of charge directly from the MuxLab website from the following link: <https://muxlab.com>

8.2 Login to MuxLab KVM & AV Management Tool software

After downloading the MuxLab KVM & AV Management Tool software, double-click the Muxlab.exe file to run the software. On the home page we need to log in, to do this we must enter the username, password and IP address of the computer where we are running the software. Please note that by default the username is **admin** and the password is **123456**. (Figure 1)

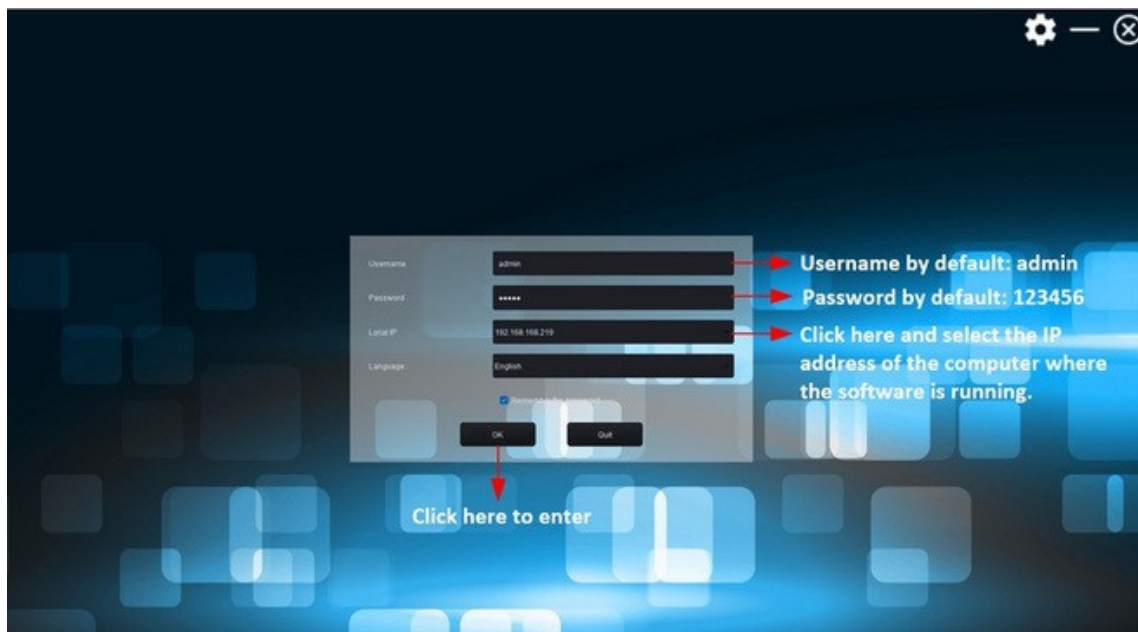


Figure 1

Once log in, the software gives us the option to configure or control the Transceivers. (Figure 2)



Figure 2

8.3 Configuring the Transceivers

By clicking on the gear icon that appears in the upper right corner, the program will open a new page where we can make all the necessary settings to the Transceivers. On this new page we can see 10 main tabs (Device, Input, Output, Site, IPC, User, Data, Status, System and Logs). (Figure 3)

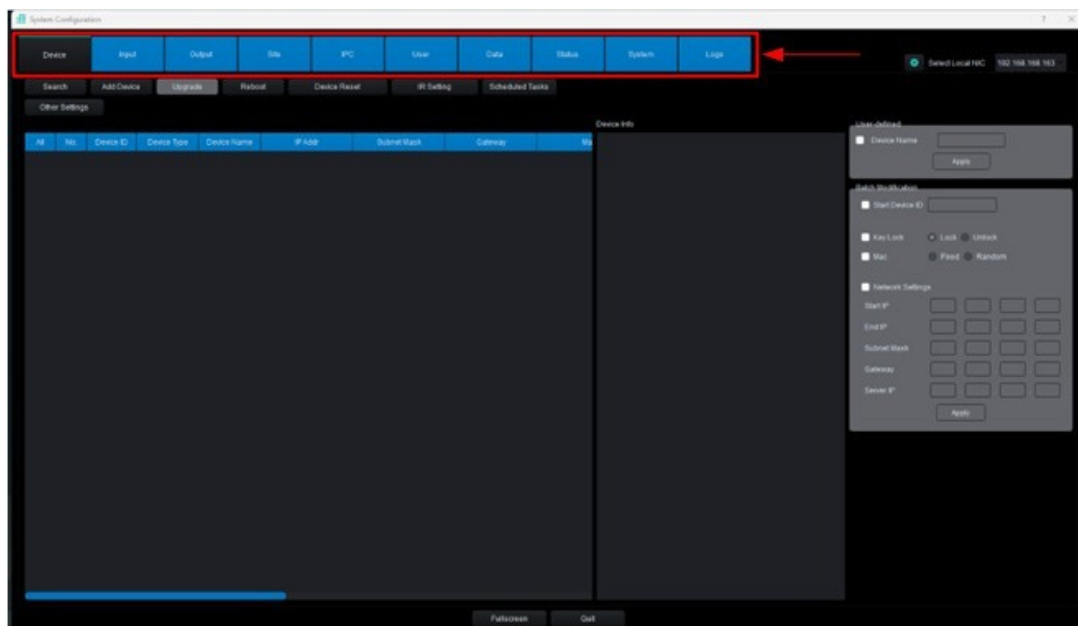


Figure 3

8.3.1 Device tab

After clicking on the Device tab we can see four main sections. Figure 4

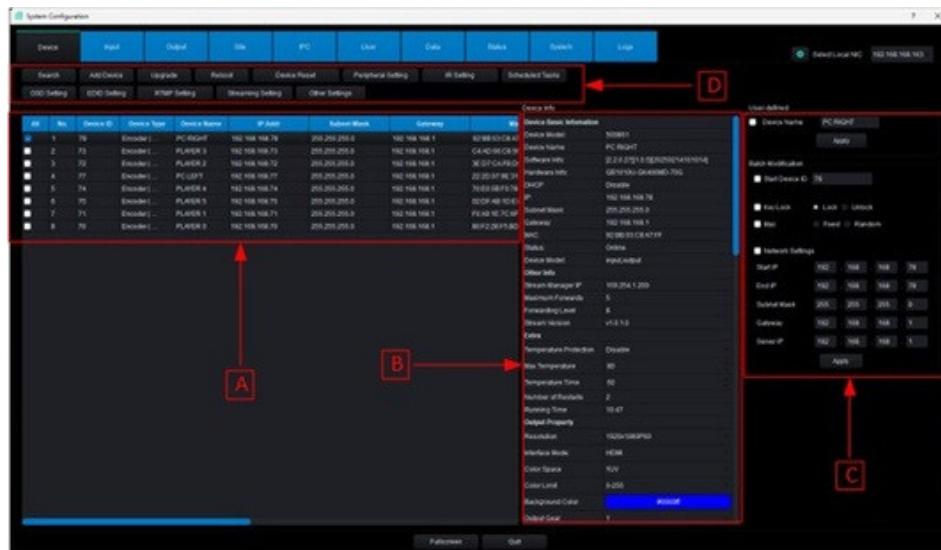


Figure 4

- A** In this section, the User will find all the information about each transceiver. Here you can see the device name, IP address, MAC address, device model, and hardware and firmware versions. Please note that it's not possible to edit the information in this section.
- B** In this section, the User can adjust the settings of each transceiver such as output resolution, encoding resolution, encoding type, output resolution, streaming type, image rotation, among others. After selecting a device, the User can configure the corresponding settings for the device. Figure 5

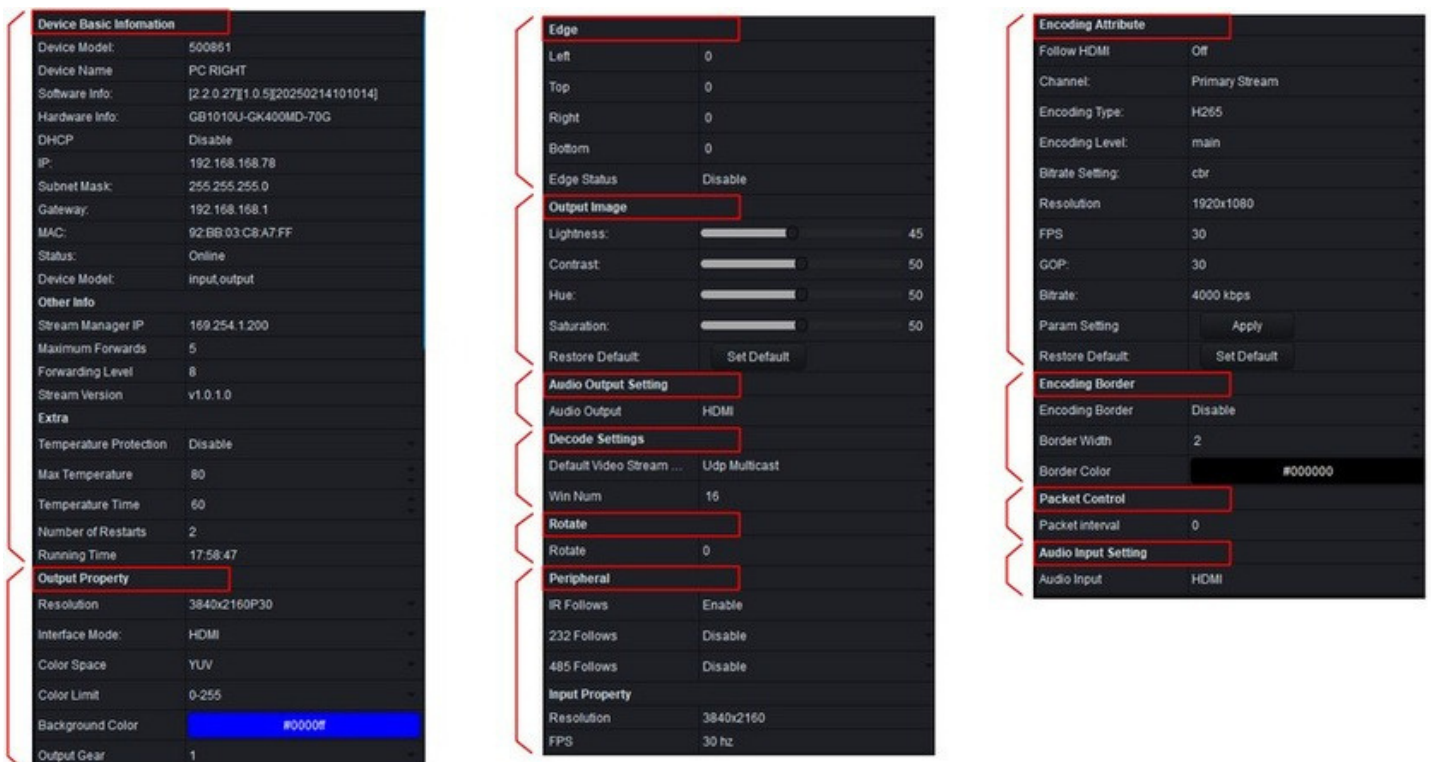


Figure 5

C In this section, the user can assign a name to the device, an ID that must be unique for each device, and assign an IP address. Figure 6

User-defined

☐ Device Name

Batch Modification

☐ Start Device ID

☐ Key Lock ☒ Lock ☐ Unlock

☐ Mac ☒ Fixed ☐ Random

☐ Network Settings

Start IP

End IP

Subnet Mask

Gateway

Server IP

Figure 6

D In this section there are 13 more options that the user can use to configure the transceivers, these options are: Search, Add Device, Reboot, Device Reset, Peripheral Setting, IR Setting, Scheduled Tasks, OSD Setting, EDID Setting, RTMP Setting, Streaming Setting and Other Settings.

Search: Clicking this option will cause the software to search for all transceivers connected to the network and display a list of the devices found. During the search, a rotating icon will appear; once complete, it will disappear. Figure 7

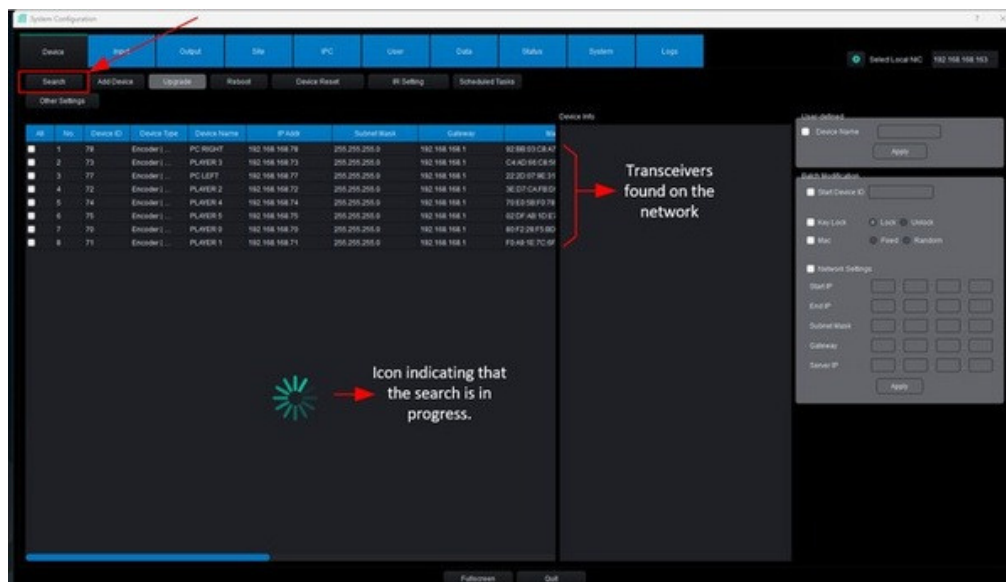


Figure 7

Add Device: By clicking this option, the User will be able to add a Transceiver manually by entering the IP address of the device. Figure 8

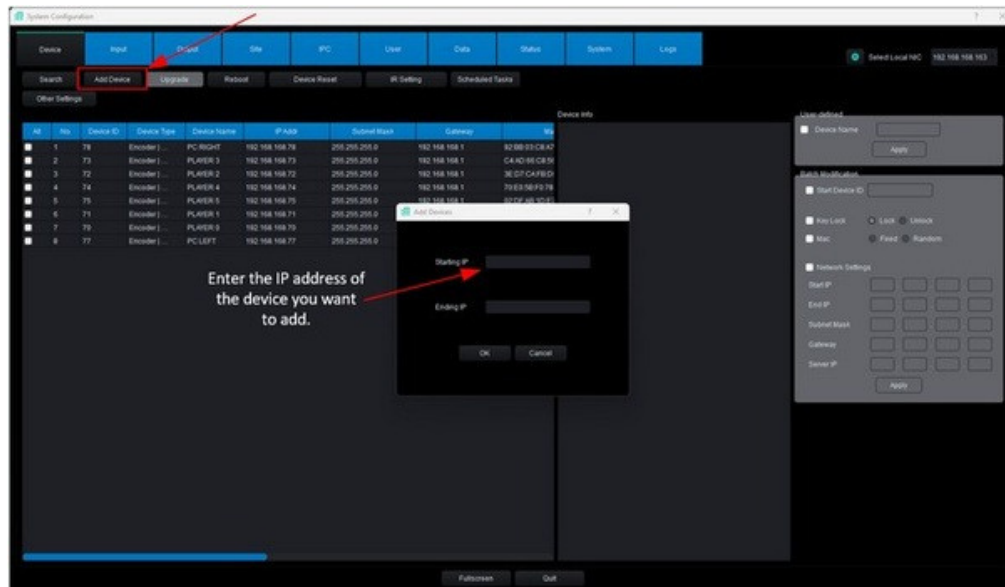


Figure 8

Upgrade: Clicking the "Update" option will allow the User to update the Transceiver's firmware version. Check the MuxLab website to see if an updated firmware version is available for the Transceiver model you are using. To update the firmware on the previously selected Transceivers, a) select the .bin file you downloaded from the MuxLab website and b) click the button to start the process. Figure 9

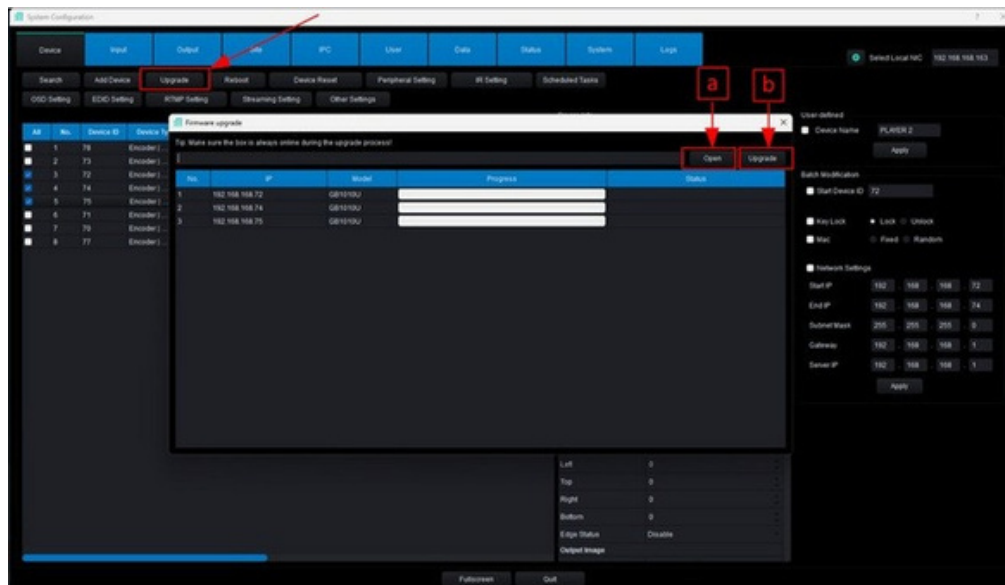


Figure 9

Reboot: Clicking this option will allow the User to reboot the Transceivers. After selecting the Transceivers and clicking the "Reboot" option, a pop-up window will appear asking the User to confirm whether they wish to continue with the reboot process. Please note that the reboot process will take approximately 4 minutes. Figure 10

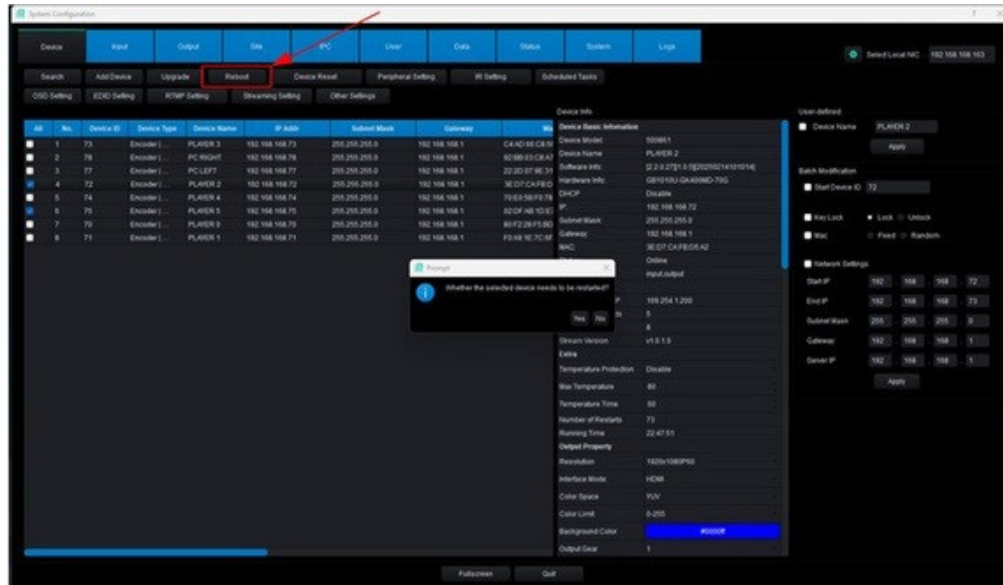


Figure 10

Device Reset: Clicking this option will allow the User to reset the device. After selecting the Transceivers and clicking the "Device Reset" option, a pop-up window will appear asking the user to confirm whether they wish to continue with the process. Please note that resetting the device will erase all user settings except for the IP address. The reset process will take approximately 4 minutes. Figure 11

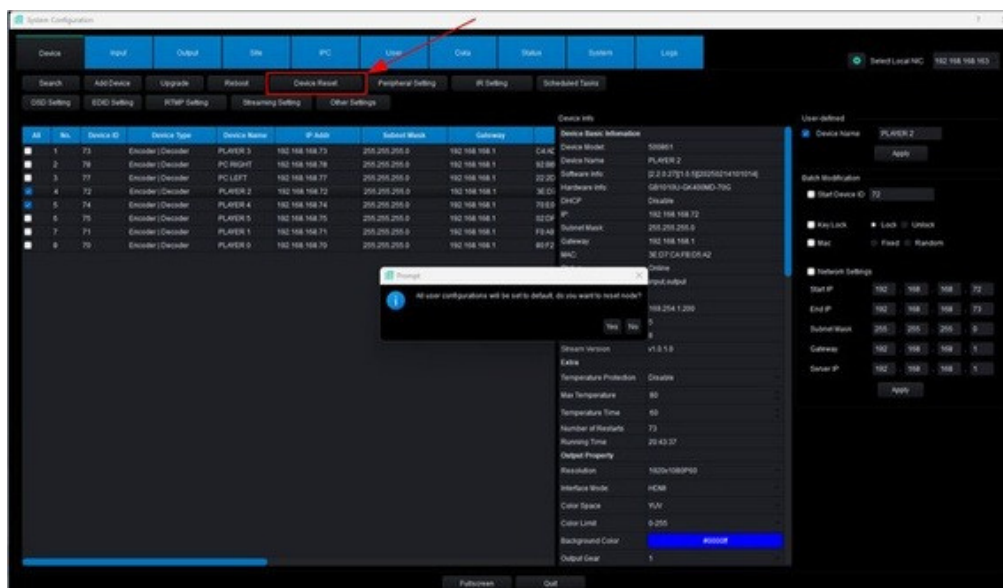


Figure 11

Peripheral Setting: Clicking this option will open a new window where the User can learn and test IR codes. To learn or test an IR command, a) click Add; b) enter a name for the IR command; c) if the user already has the command in hexadecimal format, they can copy it to the designated space; otherwise, d) click Save. Figure 12

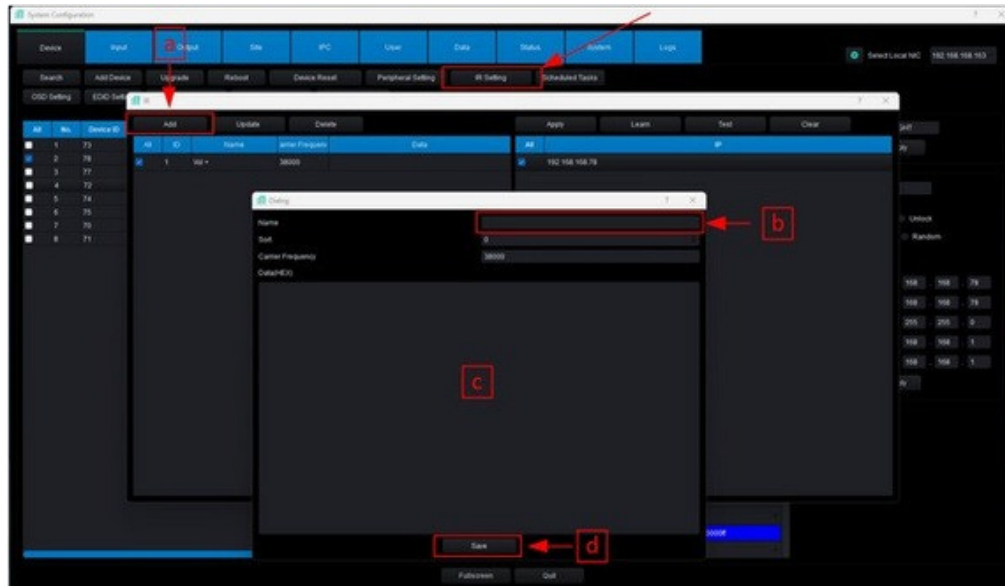


Figure 12

To learn or test IR commands, a) select a command name; b) select the IP address of the Transceiver you will use to learn or send the IR command; c) click **Learn** to learn an IR command, or click **Test** to send the command.

Figure 13

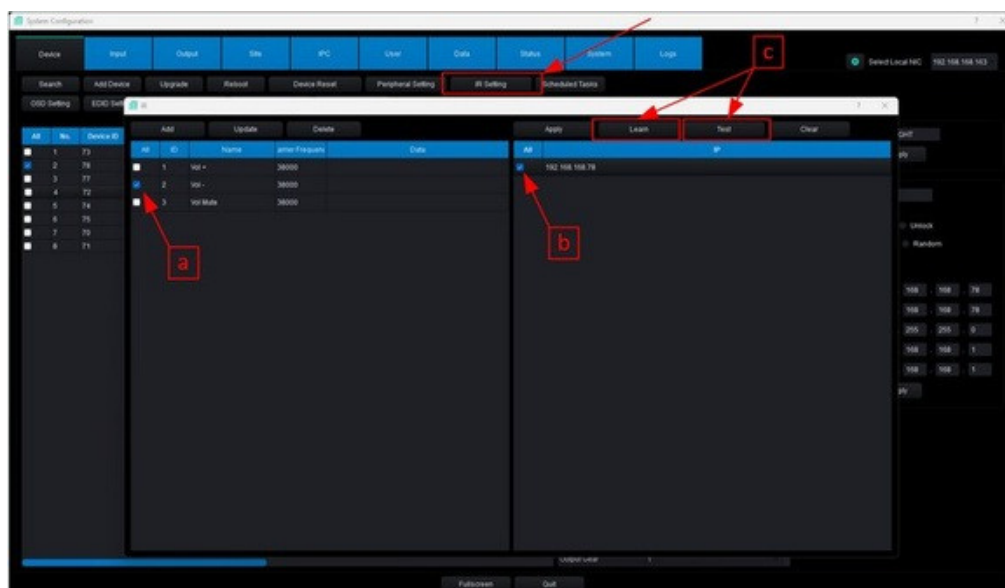


Figure 13

Scheduled Tasks: Clicking this option allows the User to schedule the reboot of one or more Transceivers on a specific day and time. After selecting the desired Transceivers and clicking the "Scheduled Tasks" option, a pop-up window will appear with a list of the IP addresses of the selected Transceivers. Since it is possible to schedule the Transceivers to reboot at different times or schedule all Transceivers to reboot at once, a) select the transceivers you want to reboot simultaneously and b) click "Add". Figure 14

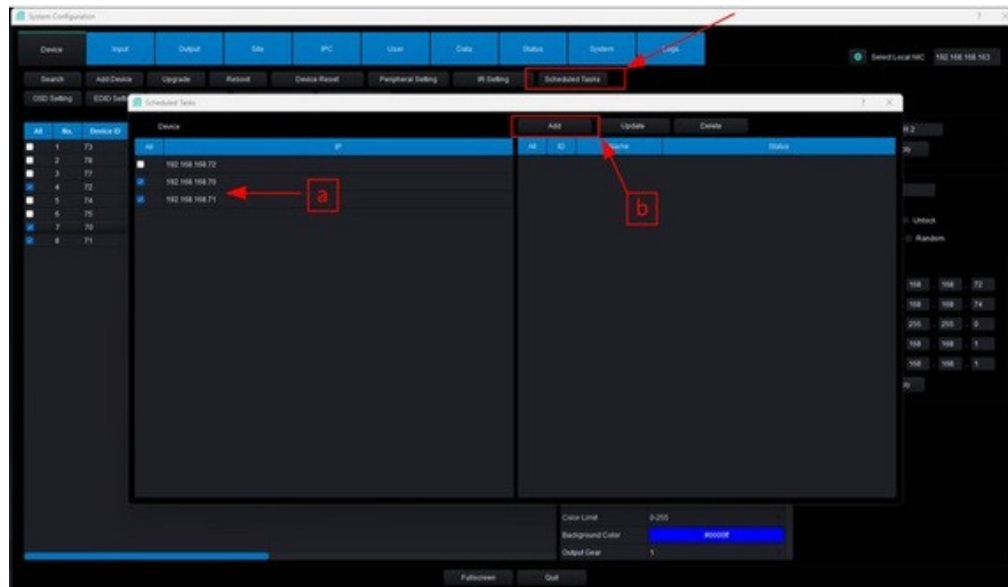


Figure 14

After clicking Add, a new pop-up window will appear in which the User must, a) enter a name for the schedule, b) select the day or days on which the schedule will run, c) enter the time at which the schedule will run, d) enable the schedule and e) click Save. Figure 15

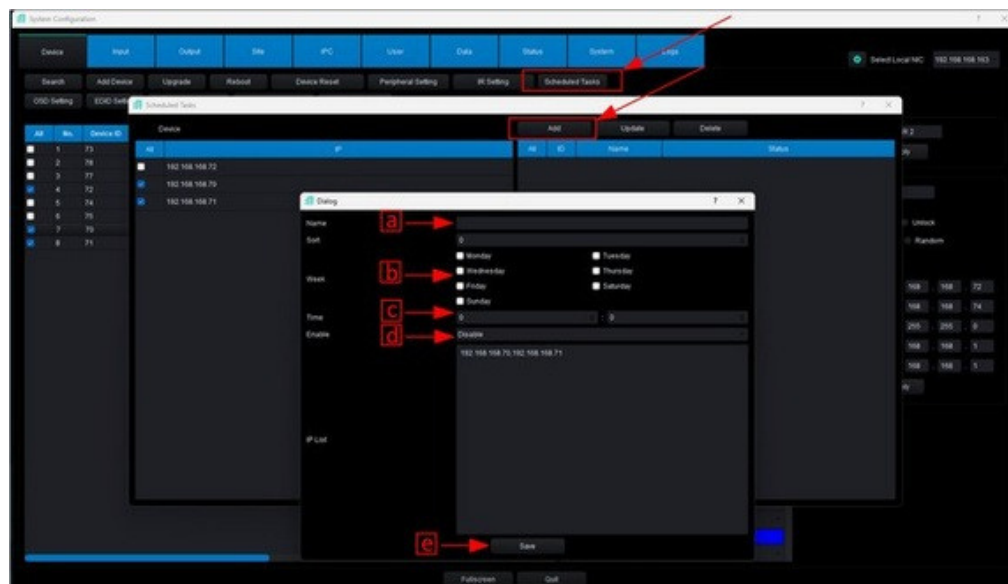


Figure 15

OSD Setting: Clicking this option will allow the User to add OSD text to each video source. After selecting the Transceiver to which they wish to add OSD text and clicking the "OSD Setting" option, a pop-up window will appear where the user must a) enter the OSD text, b) indicate the position where you want it to be displayed, c) select the font, d) select the font size, e) select the font color, f) select the background color, and g) click On to display the OSD text. Figure 16

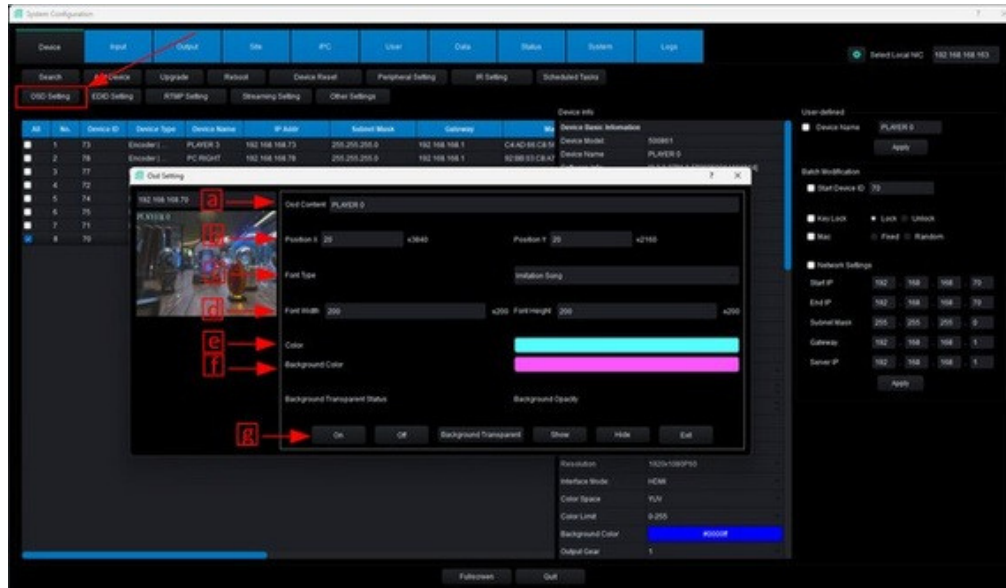


Figure 16

EDID Setting: Clicking this option will allow the user to load a custom EDID. After selecting the transceiver to which they wish to load the EDID and clicking the "EDID Configuration" option, a pop-up window will appear where the user must a) click Open File to select the corresponding EDID file and b) click Apply to load the EDID. Figure 17

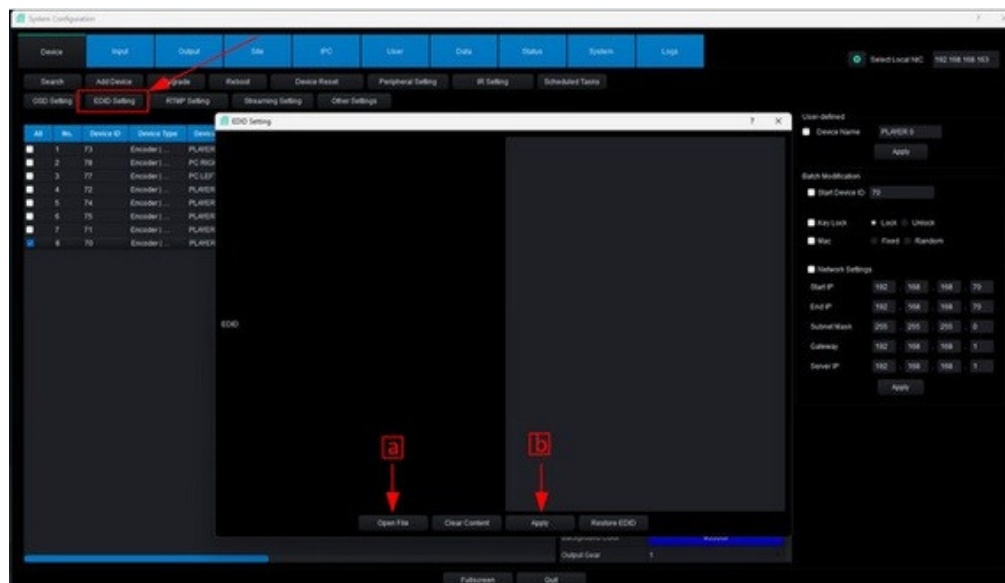


Figure 17

RTMP Setting: Clicking this option will allow the User to add an RTMP stream and select whether to enable or disable it. After selecting the Transceiver to which they wish to add an RTMP stream and clicking the "RTMP Settings" option, a pop-up window will appear where the User must a) assign a number to the stream, b) enable or disable the stream, c) enter the video source address, d) enter the RTMP address, e) click "Apply" to apply the changes, and f) click "Exit" if they wish to delete the stream. Figure 18

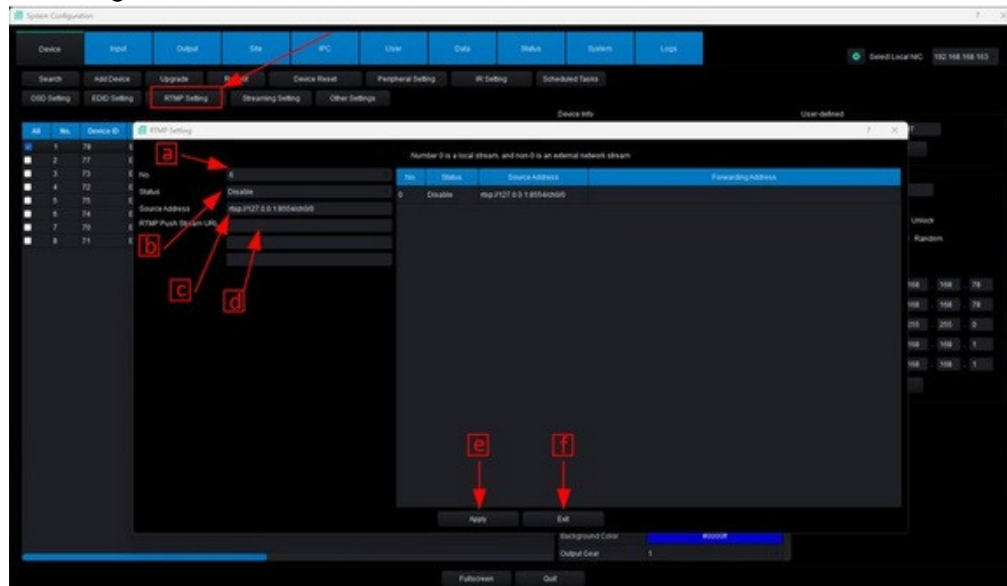


Figure 18

Streaming Setting: Clicking this option will allow the User to configure a streaming server. After selecting the Transceiver for which they wish to configure a streaming server and clicking the "Streaming Setting" option, a pop-up window will appear where the User must a) enter the server's IP address, b) select the level, c) enter the forwarding number, d) select the internal packet, and e) click "Apply" to apply the changes. Figure 19

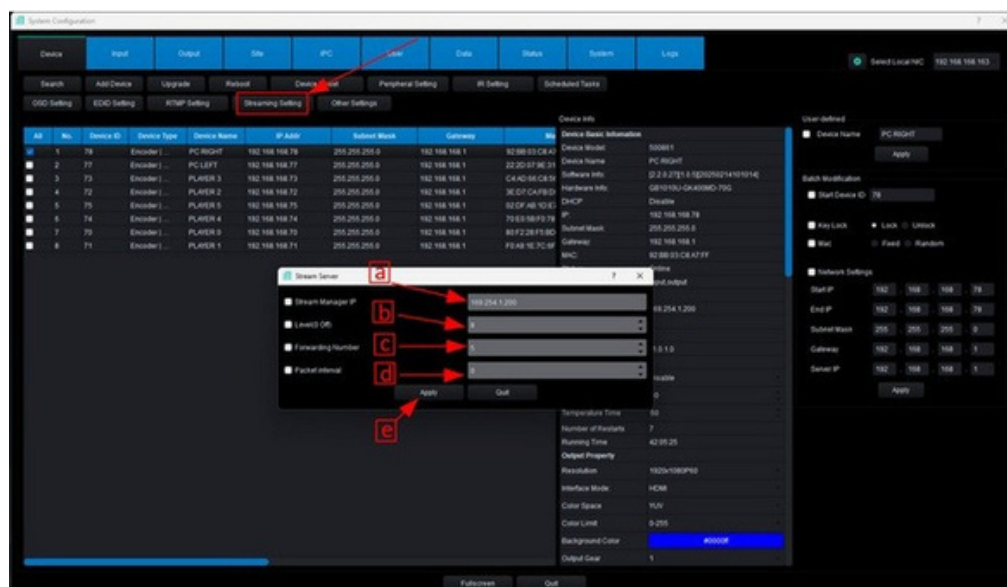


Figure 19

8.3.2 Input tab

After clicking on the Input tab we can see two main sections. Figure 20

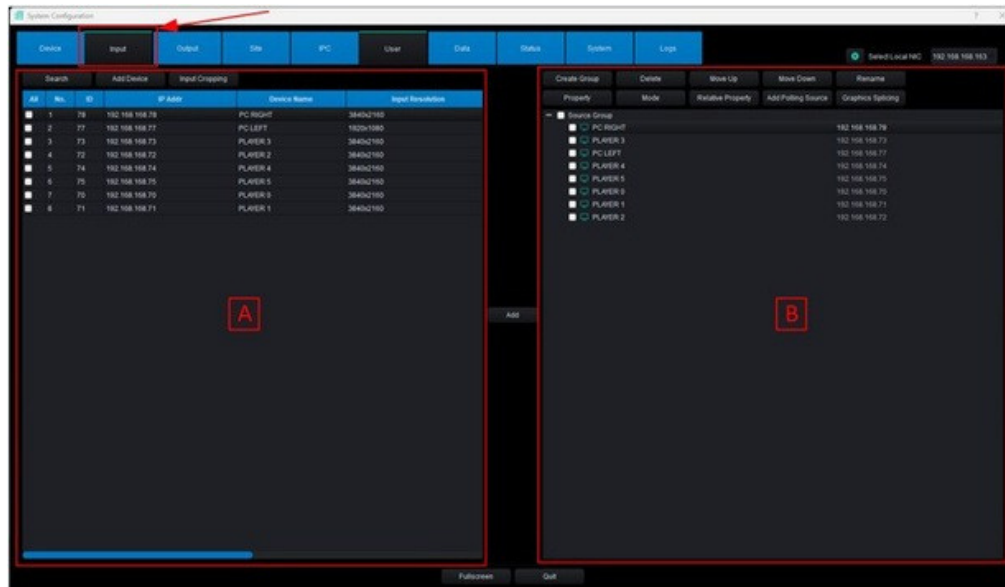


Figure 20

A In this section there are 3 options that the user can use to define which Transceivers will be used as signal inputs, these options are: Search, Add device and Input Cropping.

Search: Clicking this option will allow the User to scan the network to see a list of all connected Transceivers. To select the Transceivers to be used as signal inputs, the user must a) select the desired Transceivers from the list and, b) click "Add". After clicking "Add", the selected Transceivers will appear on the right. Figure 21

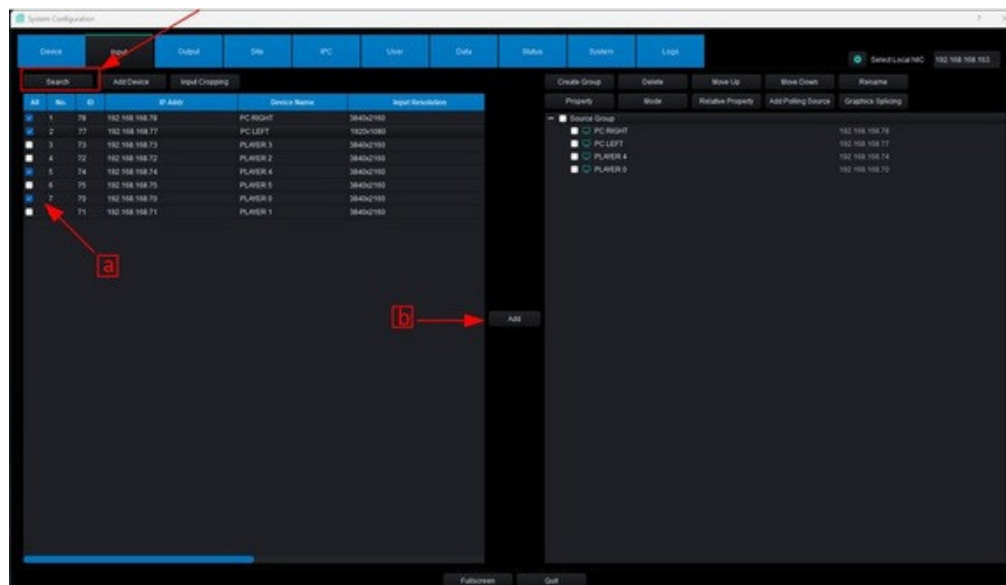


Figure 21

Add Device: By clicking this option, the User will be able to add a Transceiver manually.

To add a transceiver manually, click on Add Device. After clicking, a pop-up window will appear where the user must a) enter the IP address of the Transceiver they wish to add b) click "OK". Figure 22

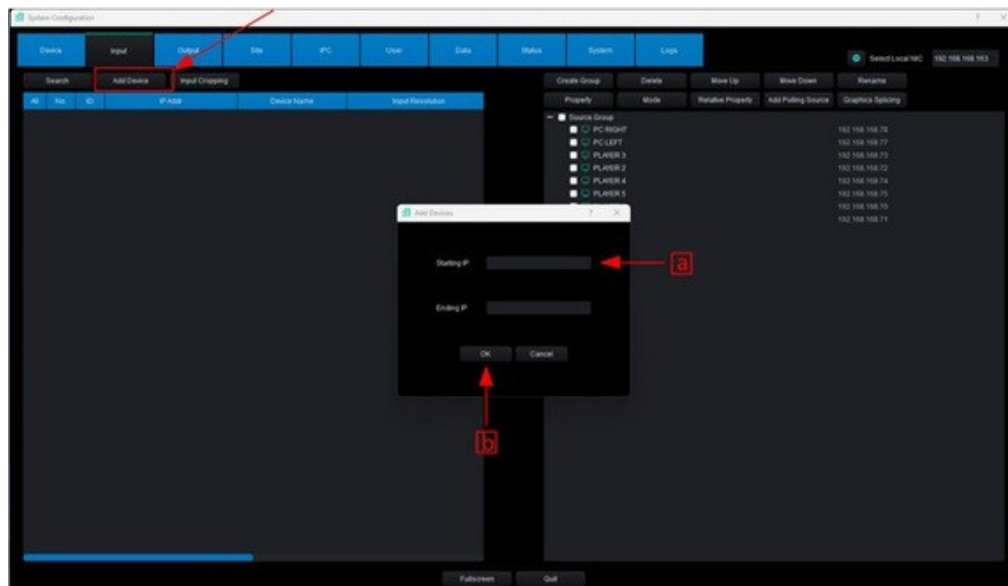


Figure 22

Input Cropping: Clicking this option will allow the User to crop a video source. After selecting the Transceiver they wish to crop and clicking the "Input Cropping" option, a pop-up window will appear where the user must a) Enter the number of pixels you want to crop at the top, bottom, left, and right, b) click "Apply". Figure 23

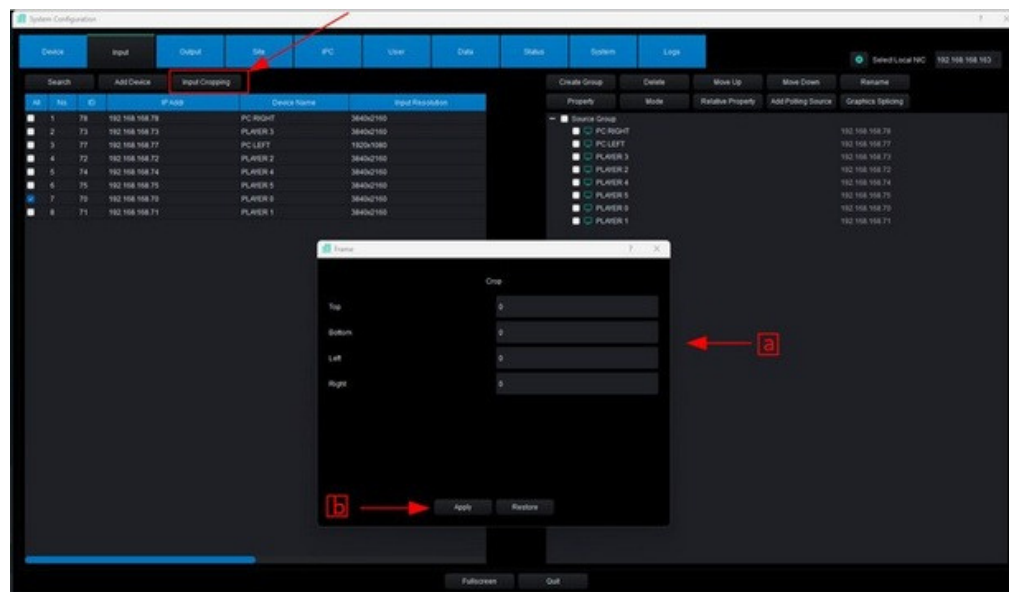


Figure 23

B In this section there are 10 options that the User can use to manage the Transceivers selected as inputs, these options are: Create Group, Delete, Move Up, Move Down, Rename, Property, and Mode.

Create Group: By clicking this option will allow the User to create Transceiver groups. To do so, a) click "Create Group," b) select the Transceivers you want to add to the group from the list on the left, and c) click "Add". Figure 24

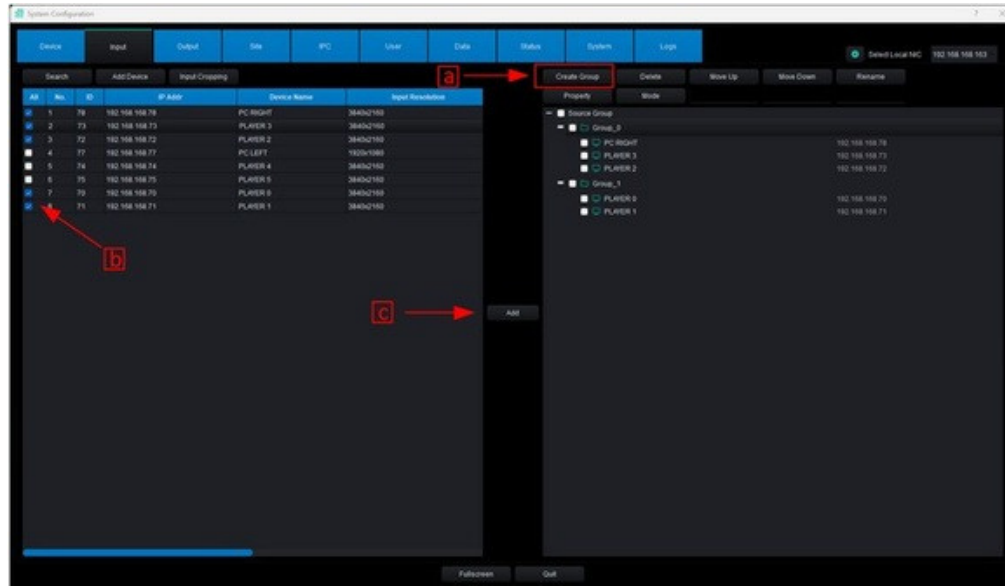


Figure 24

Delete: Clicking this option allows the User to delete one or more Transceivers selected as input. To do this, a) select the Transceiver(s) you wish to delete, b) click "Delete," and c) confirm the deletion. Figure 25

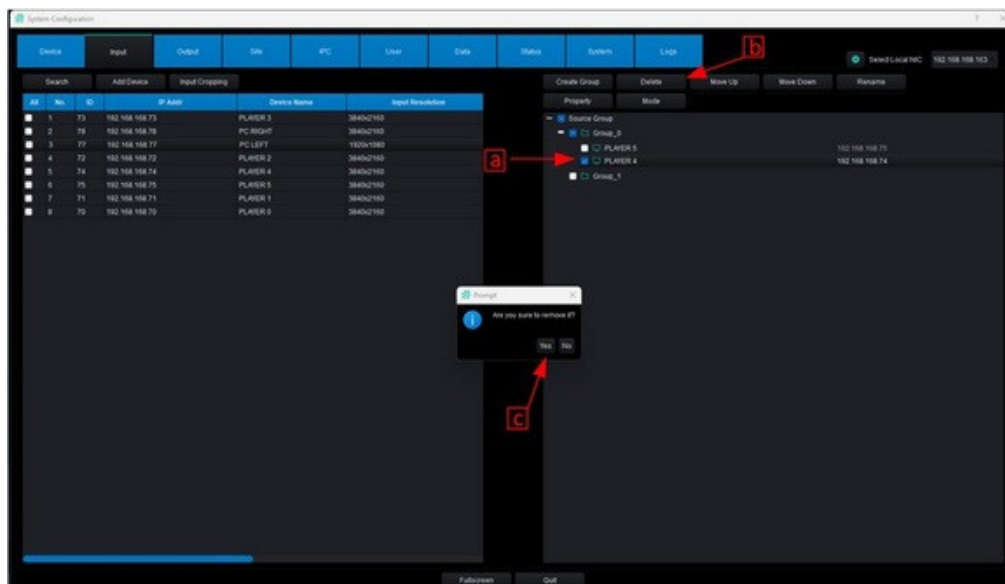


Figure 25

Move Up: Clicking this option will allow the User to move a selected Transceiver one place up in the Input Transceivers list.

Move Down: Clicking this option will allow the User to move a selected Transceiver one place down in the Input Transceivers list.

Rename: Clicking this option will allow the User to rename a selected Transceiver in the Input Transceivers list.

Property: Clicking this option will open a pop-up window where the User can view all the information for the selected Transceiver. This includes the name, IP address, primary and secondary stream resolution, RSTP address, Multicast address, and more. Figure 26

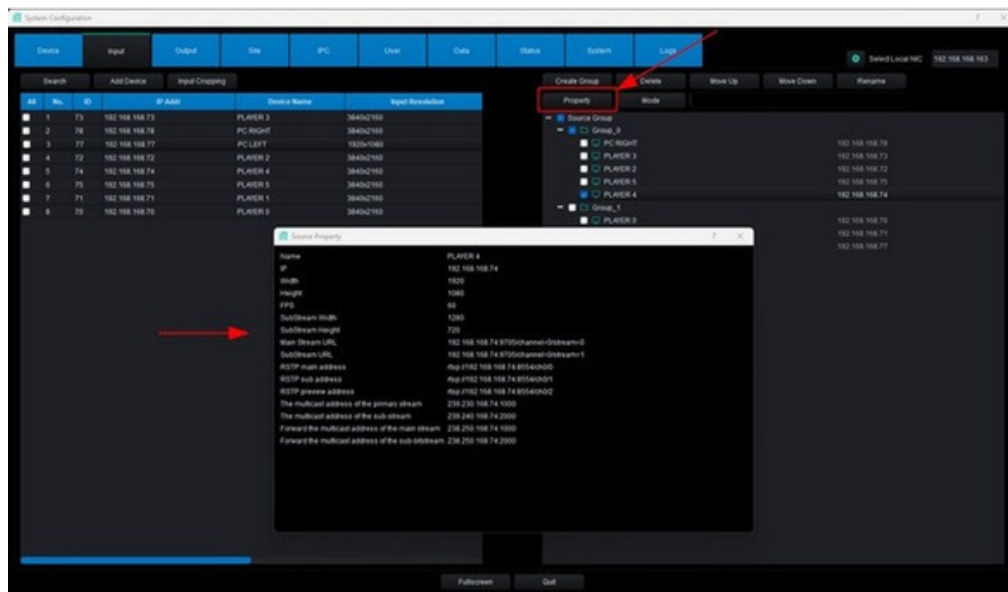


Figure 26

Mode: Clicking this option will allow the User to change the Transceiver signal mode to Direct Connection or Forwarding mode.

8.3.3 Output tab

After clicking on the Output tab we can see two main sections. Figure 27

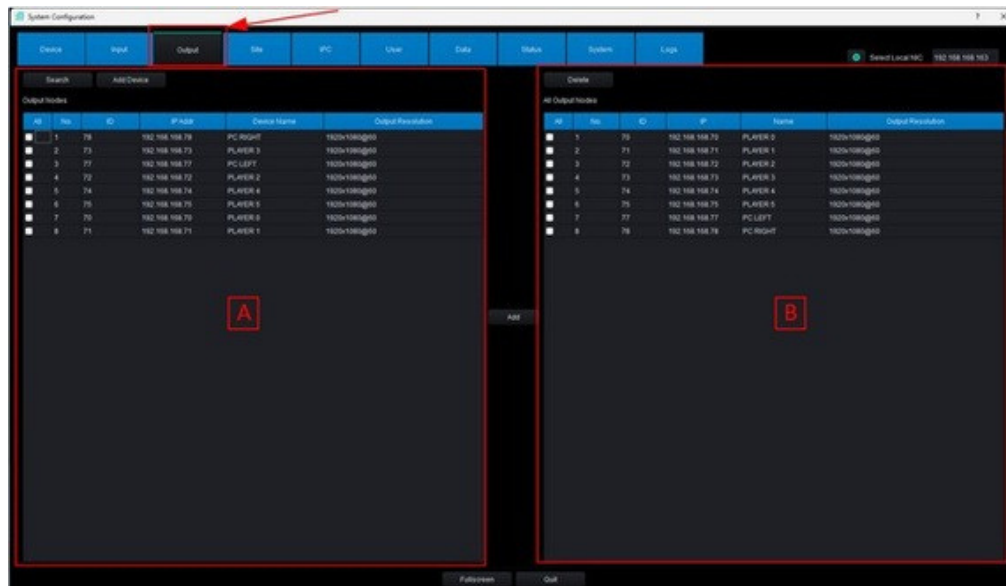


Figure 27

A In this section there are 2 options that the user can use to define which Transceivers will be used as signal outputs, these options are: Search and Add device.

Search: Clicking this option will allow the User to scan the network to see a list of all connected Transceivers. To select the Transceivers to be used as signal outputs, the user must a) select the desired Transceivers from the list and, b) click "Add". After clicking "Add", the selected Transceivers will appear on the right. Figure 28

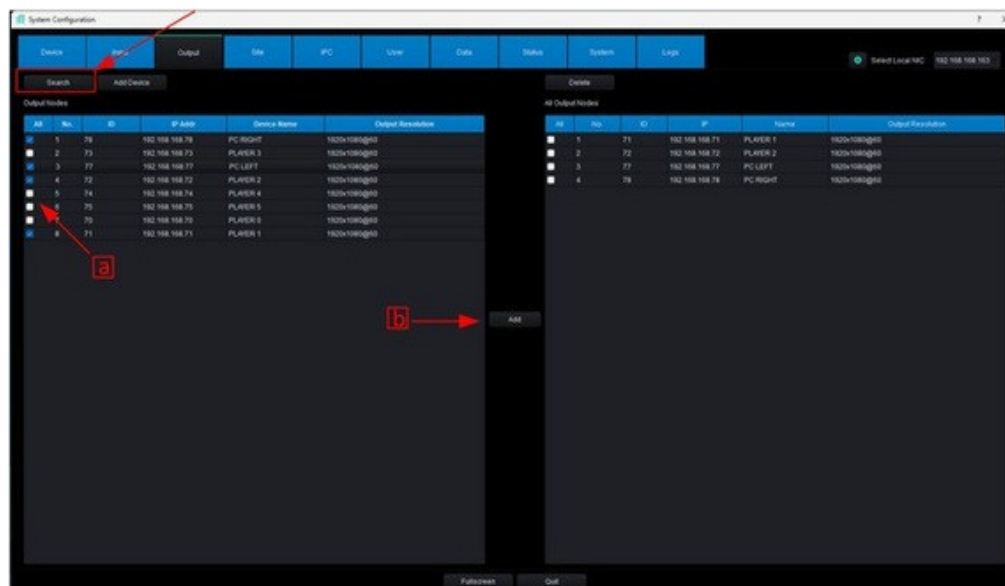


Figure 28

Add Device: By clicking this option, the User will be able to add a Transceiver manually.

To add a transceiver manually, click on Add Device. After clicking, a pop-up window will appear where the user must a) enter the IP address of the Transceiver they wish to add b) click "OK". Figure 29

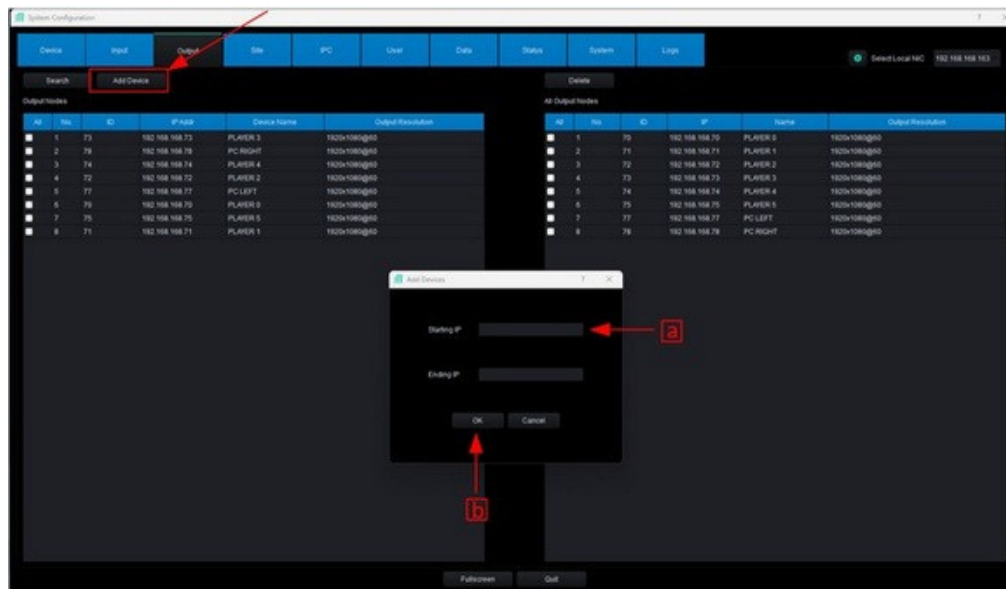


Figure 29

B In this section there is one option that the User can use to manage the Transceivers selected as outputs, this option is: Delete.

Delete: Clicking this option allows the User to delete one or more Transceivers selected as output. To do this, a) select the Transceiver(s) you wish to delete, b) click "Delete," and c) confirm the deletion. Figure 30

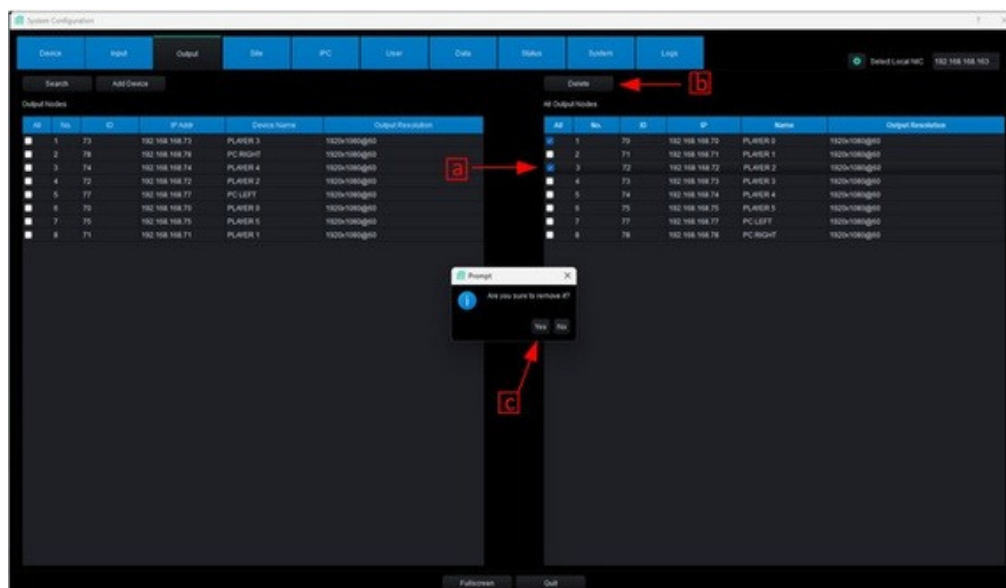


Figure 30

8.3.4 Site tab

After clicking on the Side tab we can see two main sections. Figure 31

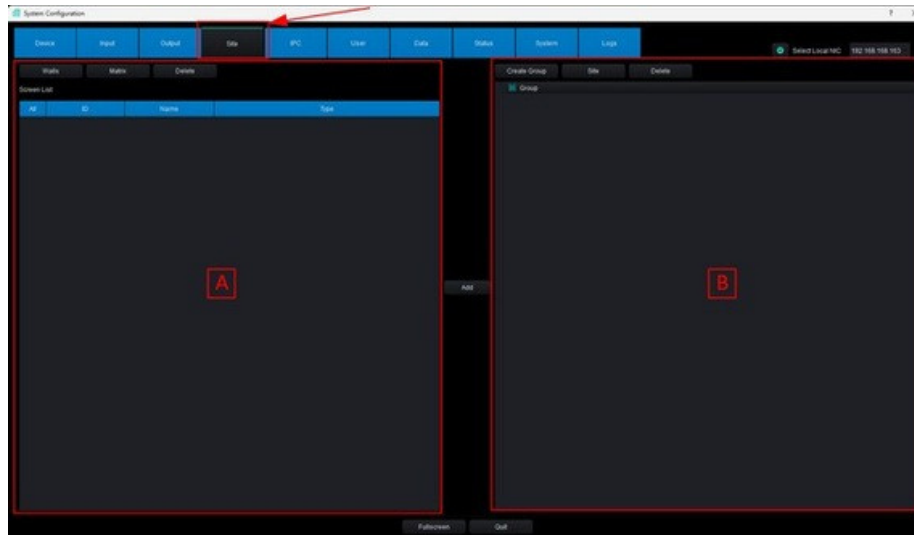


Figure 31

A In this section there are three options that the user can use to create and configure video walls and matrix, these options are: Walls, Matrix and Delete.

Walls: Clicking this option will allow the User to create and configure video walls. After clicking **Walls** a pop-up window will appear where the user must a) enter a name for the video wall, b) enter an ID, remember that this number must be unique for each video wall, c) select the Transceiver type; the Transceiver type for the 500860 is G1001U and for the 500861 is GB1010U, d) enter the number of rows the video wall will have, e) enter the number of columns the video wall will have, f) select the screen resolution, g) enable **Free Mode** option if they want to customize multiple views, h) enable **Overlay Mode** option if they want to use PIP and POP, and i) click **Create**. Figure 32

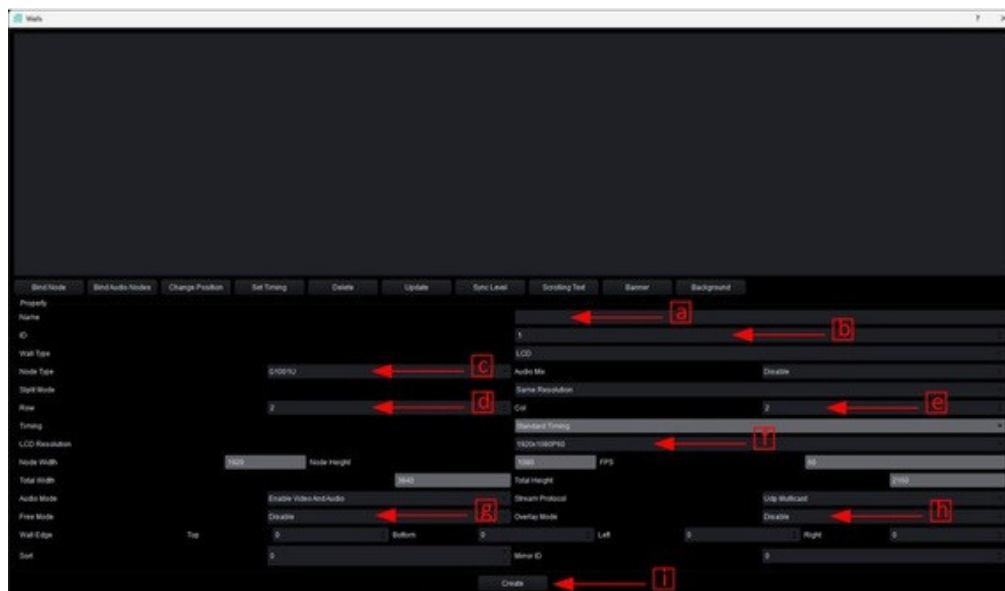


Figure 32

After clicking **Create** a new pop-up window will appear where the user must, by drag and drop, assign the Transceivers to their corresponding screens. Figure 33

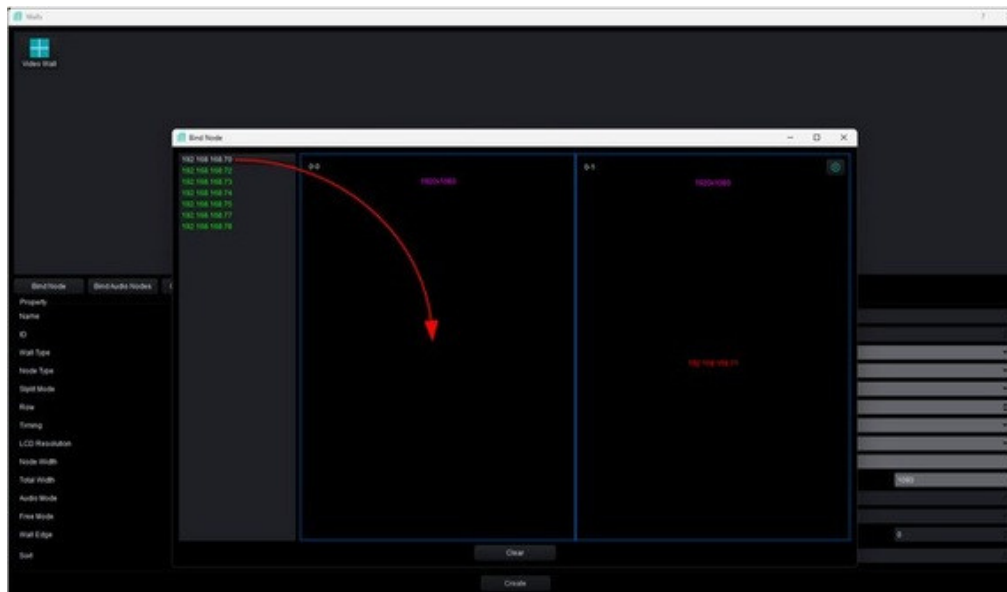


Figure 33

After assigning the transceivers to the displays, close the windows to save the changes.

Note: If you want to have the multi-view option on a single display, you must create a one-row by one-column video wall.

Matrix: Clicking on this option will allow the User to create and configure the matrix. After clicking on **Matrix**, a pop-up window will appear where the user must a) enter an ID, remember that this number must be unique for each matrix, b) enter a name for the matrix, c) enter the number of rows the matrix will have, d) enter the number of columns the matrix will have, e) select whether to send audio and video or just video, f) select the video transmission mode, g) activate or deactivate audio mixing and h) click on **Create**. Figure 34

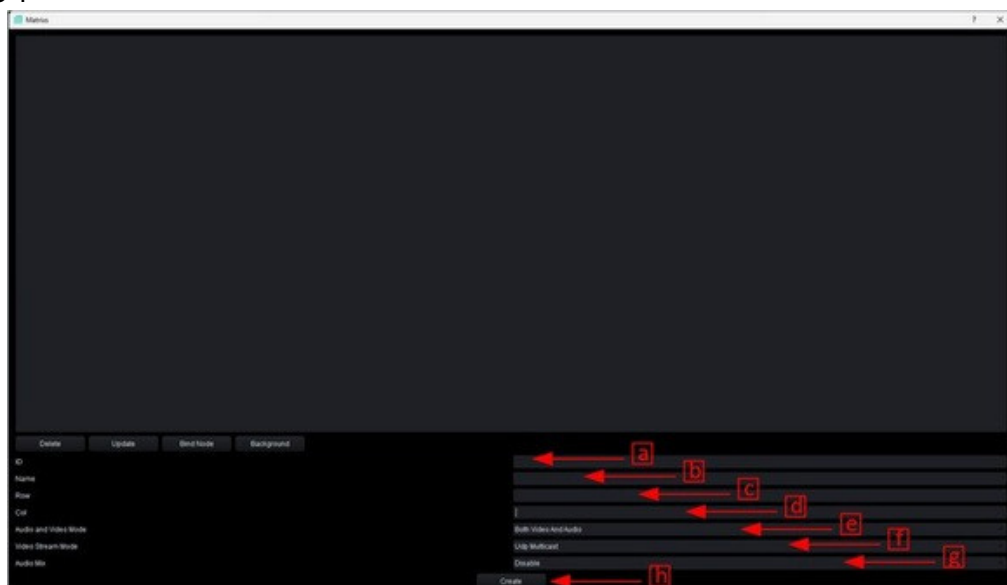


Figure 34

After clicking "Create," the user must select the Transceivers that will be part of the new matrix. To do so, click "Bind Node." After clicking, a pop-up window will appear where the user must: a) select the Transceivers and b) click "Add". Close the windows to save the changes. Figure 35

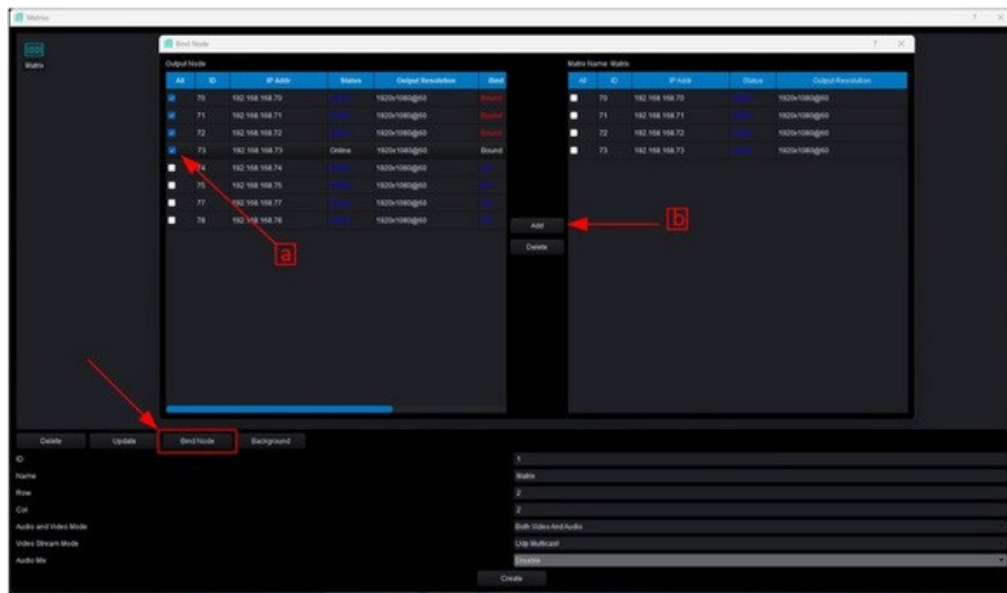


Figure 35

Delete: Clicking this option allows the User to delete one or more Walls or Matrix. To do this, a) select the Walls or Matrix you wish to delete, b) click "Delete," and c) confirm the deletion. Figure 36

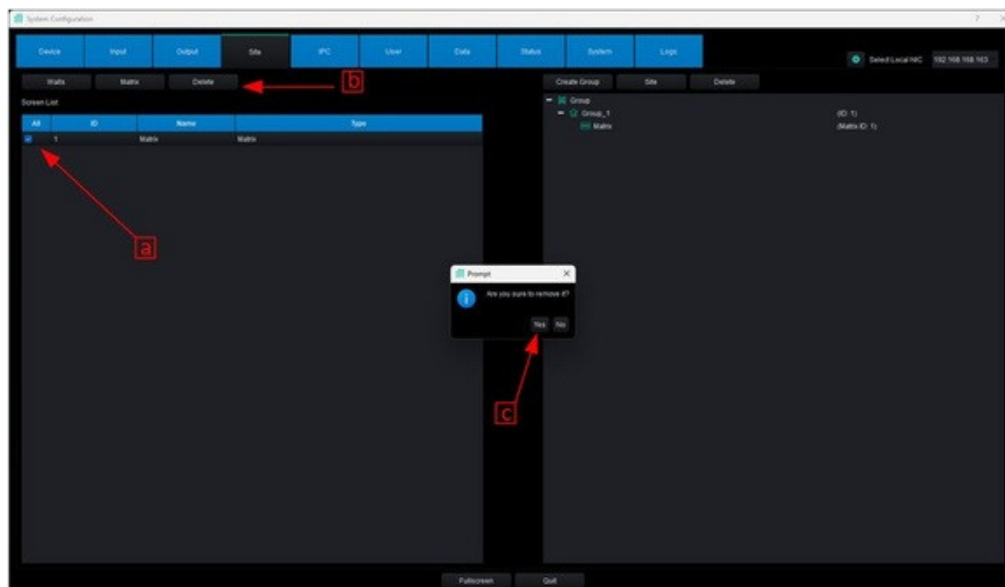


Figure 36

B In this section there are 3 option that the User can use to mange the Walls and Matrix, these option are: Create Group, Site and Delete.

Create Group: By clicking this option will allow the User to create Walls or Matrix groups. To do so, a) click "Create Group," b) select the Walls or Matrix you want to add to the group from the list on the left, and c) click "Add". Figure 37

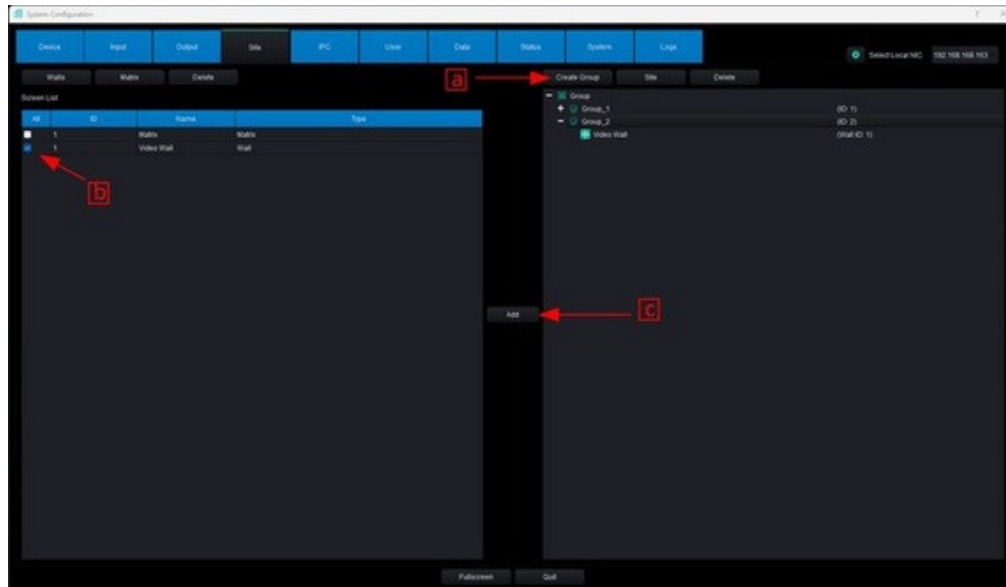


Figure 37

Site: Clicking on this option will bring up a pop-up window where the User can see the created groups and the Transceivers belonging to each group. Figure 38

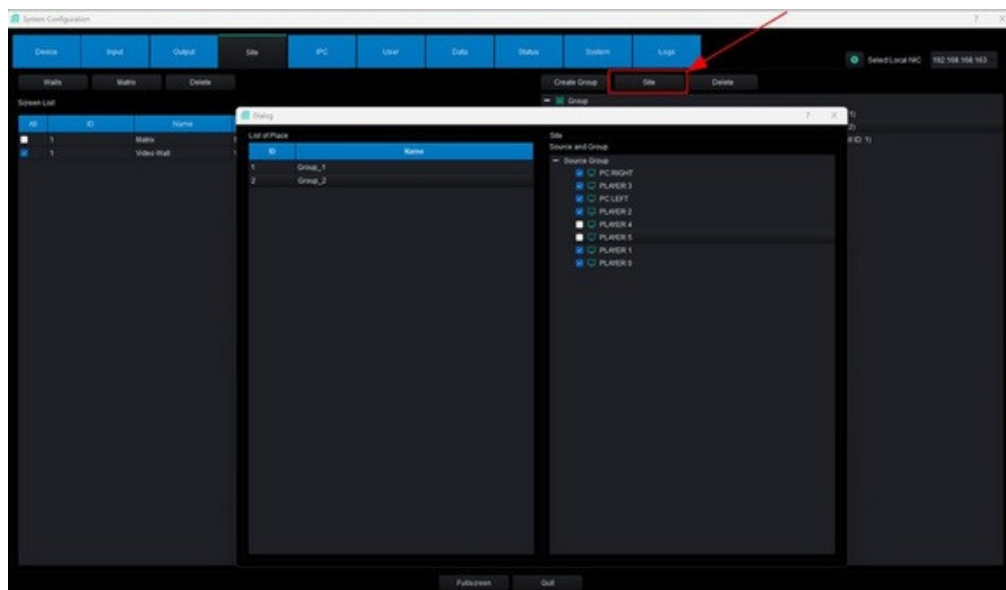


Figure 38

Delete: Clicking this option allows the User to delete one or more groups. To do this, a) select the group(s) you wish to delete, b) click "Delete," and c) confirm the deletion. Figure 39

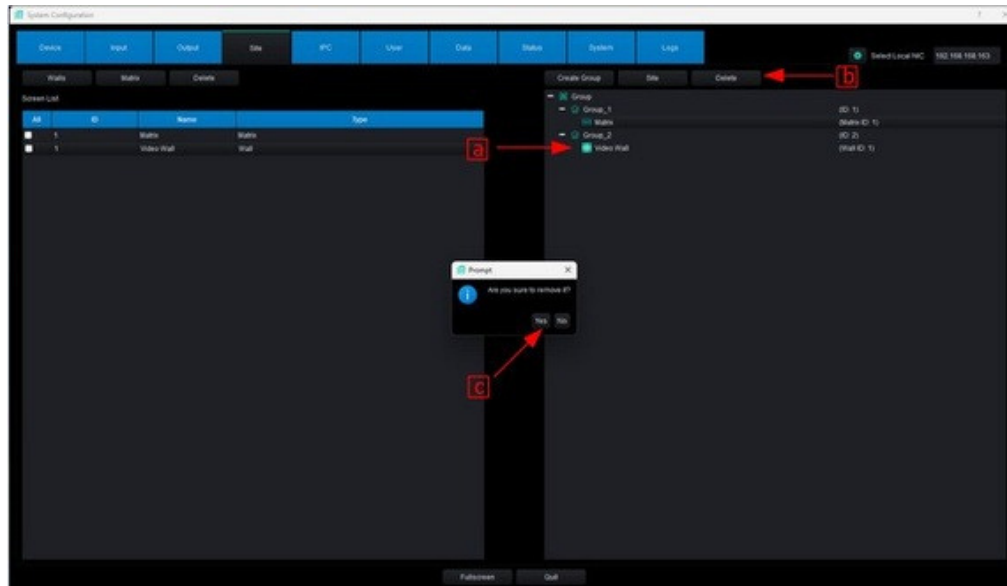


Figure 39

8.3.5 IPC tab

In this section the User can add video sources compatible with H.264/H.265 that are connected to the network such as IP cameras or any device that uses the RTSP protocol. After clicking on the IPC tab we can see two main sections. Figure 40

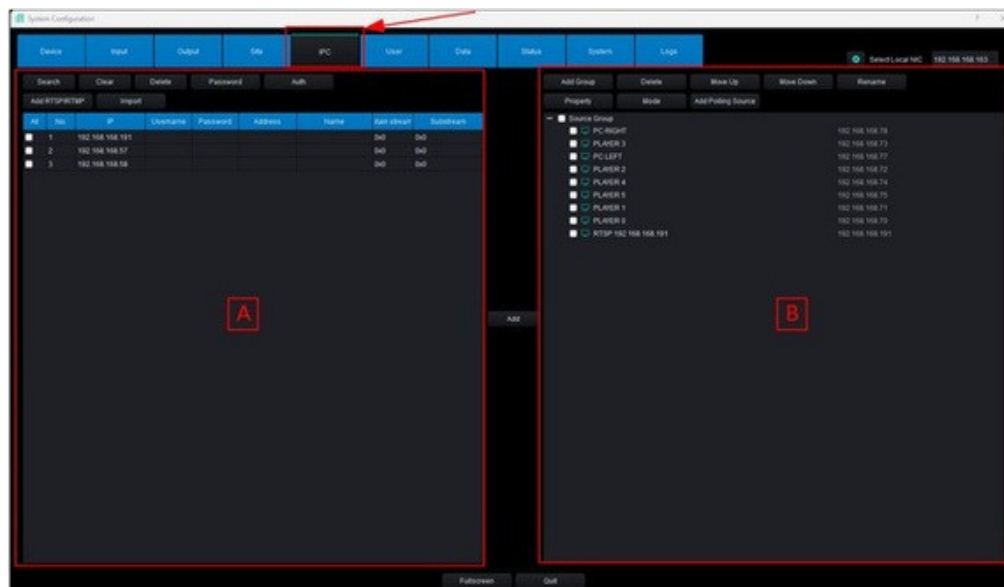


Figure 40

A In this section there are seven options that the User can use to add RTSP video sources, these options are: Search, Clear, Delete, Password, Auth, RTSP/RTMP and Import.

Search: Clicking this option will allow the User to scan the network to see a list of all connected RTSP video sources. To select the RTSP video sources to be used as signal inputs, the user must a) select the desired RTSP video source from the list and, b) click "Add". After clicking "Add", the selected RTSP video source will appear on the right. Figure 41

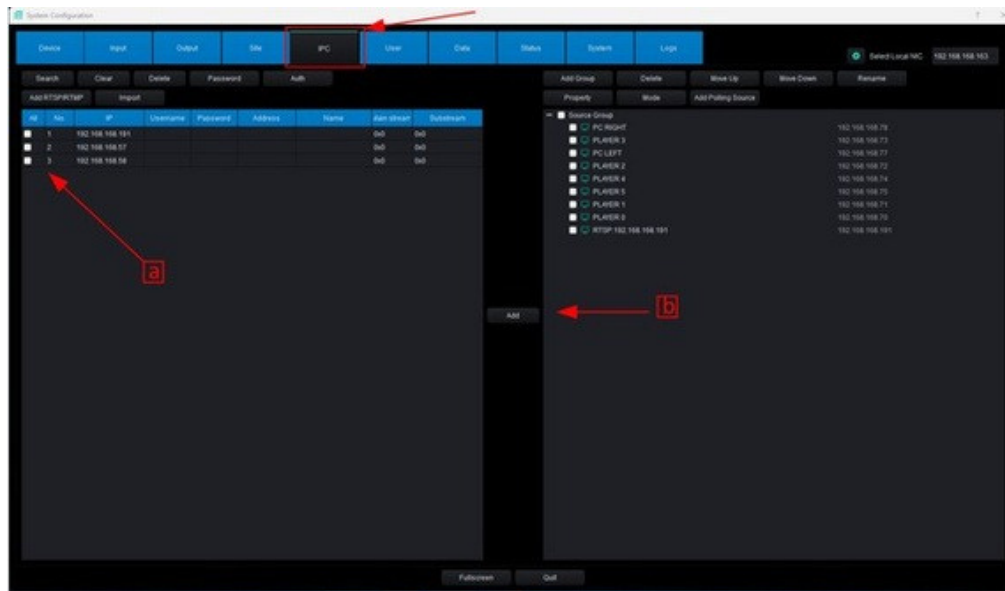


Figure 41

Clear: Clicking this option will allow the User to clear the RTSP video sources list.

Delete: Clicking this option allows the User to delete one or more RTSP video sources To do this, a) select the group(s) you wish to delete, b) click "Delete," and c) confirm the deletion. Figure 41

Password: Clicking this option will allow the user to enter the username and password for any RTSP video source if required.

Auth: Clicking this option will allow the user to authenticate the device's RTSP address. This is recommended every time IP cameras are added. If authentication is unsuccessful, you will need to enter the RTSP streaming address manually.

Add RTSP/RTMP: Clicking this option will allow the User to manually add an RTSP video source. To add a video source manually, click "Add RTSP/RTMP." After clicking, a pop-up window will appear where the user must a) enter the RTSP address of the primary stream, b) enter the RTSP address of the secondary stream, c) click **Fetch** to authenticate the connection, and d) click **Save**. Figure 42

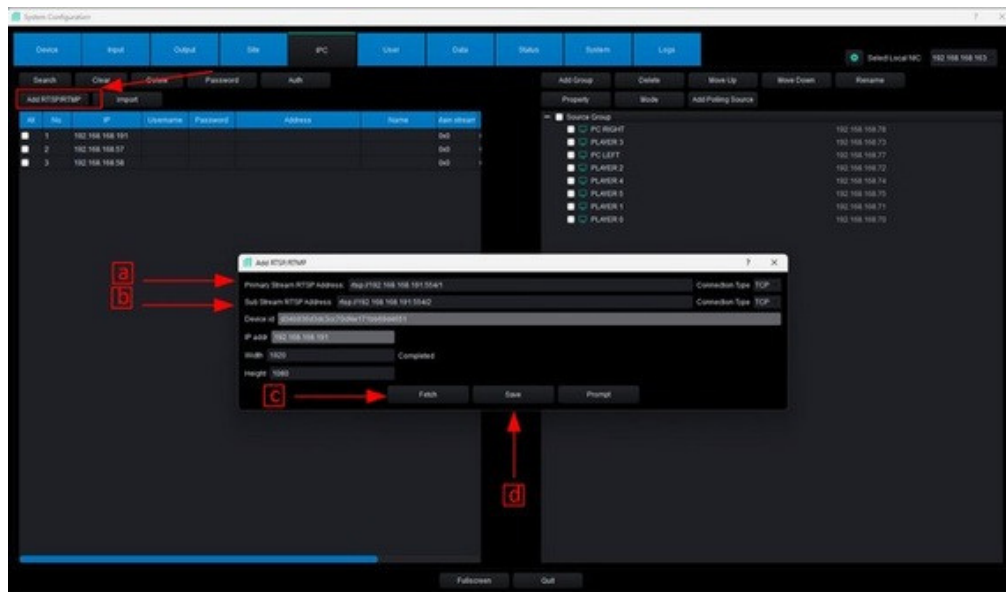


Figure 42

After you have added the RTSP video source, you can add it to the video source list.

- B** In this section there are 8 options that the User can use to manage the inputs video sources, these options are: Add Group, Delete, Move Up, Move Down, Rename, Property, Mode, and Add Polling. These options are the same as those in Section 7.3.2 **B**; see that section for details on how each option works.

8.3.6 User tab

In this section, the user can create, edit, and delete user accounts. There are two types of user accounts: the administrator account, which has access to the system configuration and control interface, and regular user accounts, which only have access to the control interface. After clicking on the User tab we can see two main sections. Figure 43

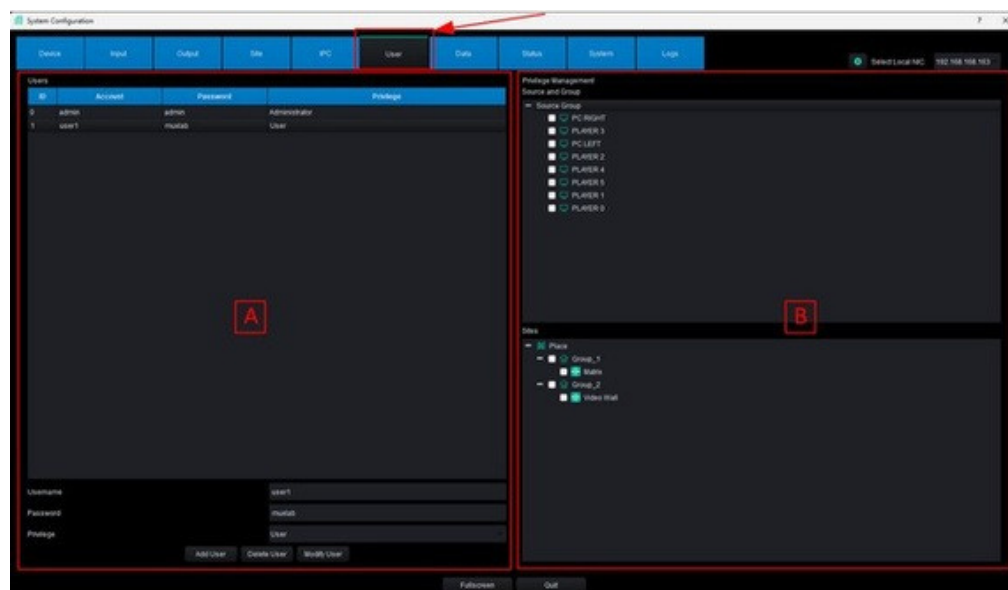


Figure 43

A In this section there are three options that the User can use to manage user accounts, these options are: Add User, Delete User and Modify User.

Add User: Clicking this option will allow the user to add a user account. After clicking **Add User**, a pop-up window will appear where they must a) enter a username, b) enter a password for this account, and c) click **OK**. Figure 44

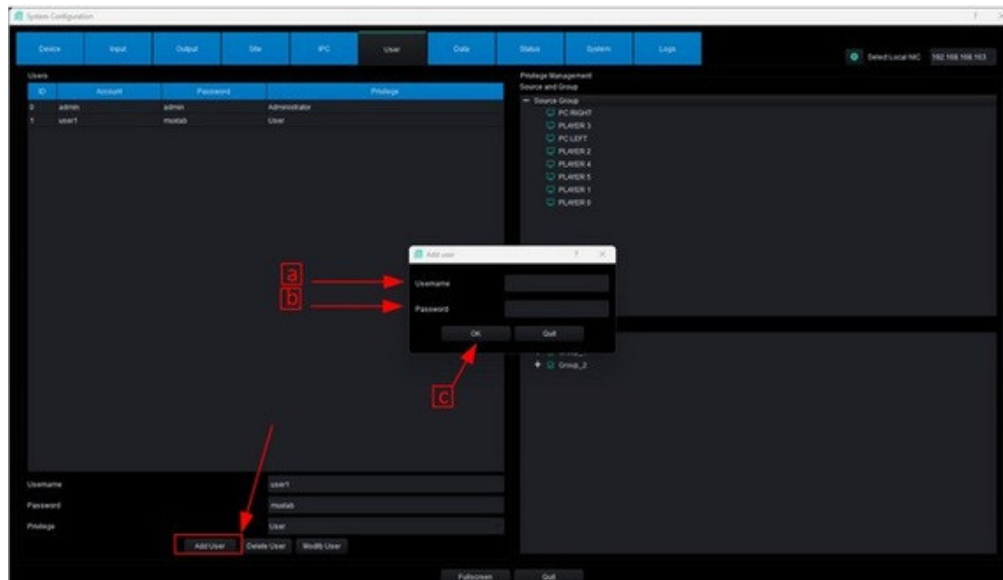


Figure 44

Delete User: Clicking this option will allow the User to delete a user account. After selecting the account and clicking **Delete User**, a pop-up window will appear where the user must confirm that they want to delete the account by clicking **Yes**.

Modify User: Clicking this option will allow the User to edit an account. After selecting the account and making changes, click **Modify User** to save the changes.

B In this section, there are two options that the User can use to allow user accounts to access video sources, video walls, and televisions, these options are: Source and Group and Sites.

Source and Group: Here the User, after selecting a user account, can select from the list which video sources that user account will have access to.

Sites: Here the User, after selecting a user account, can select from the list which TV's, matrix and video walls that user account will have access to.

8.3.7 Data tab

In this section, the User can upload the data/configuration made from the Windows version of MuxLab KVM & AV Management Tool to different Android or iOS control devices. After clicking on the Data tab we can see two main sections. Figure 45

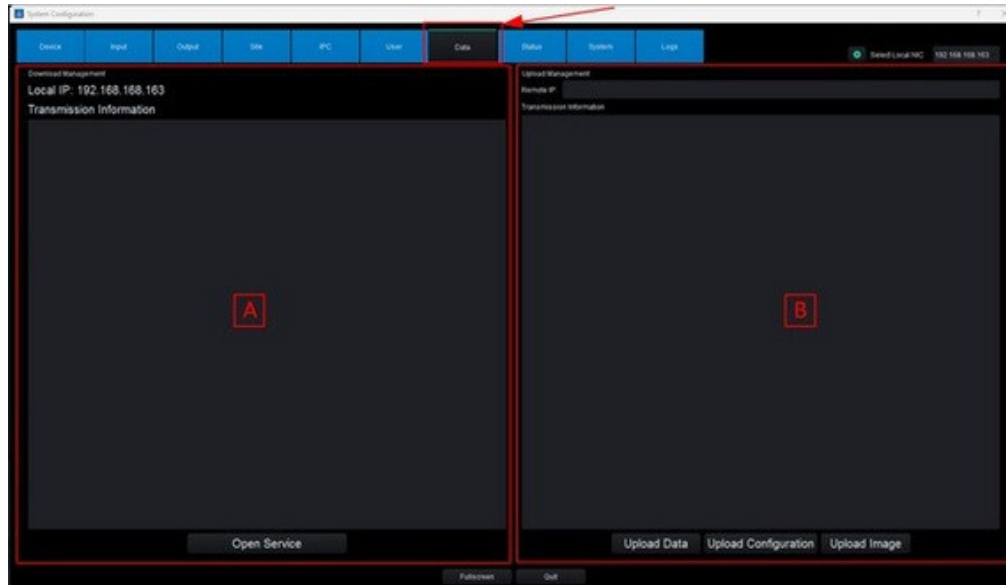


Figure 45

In this section, the User can open or close the server so that other control devices can send data to it; it must remain open for data downloads. To open or close the server, the User must a) verify that the Local IP address matches the IP address of the computer running MuxLab KVM & AV Management Tool and b) click "Open/Close Service". Figure 46

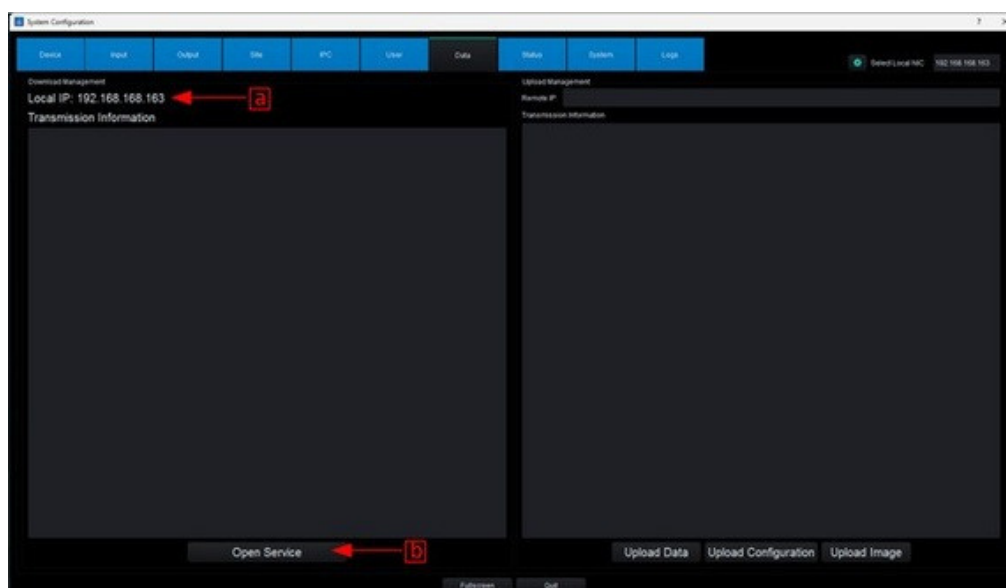


Figure 46

B In this section, the User can upload data or configurations created from the current control device to other control devices. The other device must also be in the open server state. To upload data or configurations to another device, the User must: a) Enter the IP address of the device to which you want to upload data/configuration, b) click **Upload Data** to load the data, c) click **Upload Configuration** to load configuration, and d) click **Upload Image** to load images. Figure 47

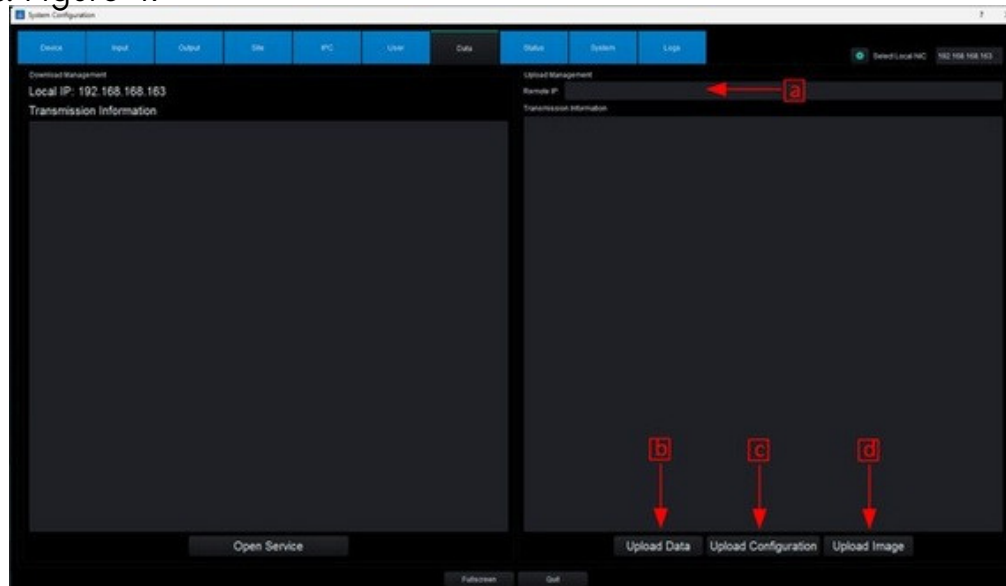


Figure 47

8.3.8 Status tab

This is a display section where the User can check/view the operating status of the transceivers. Clicking on the Status tab displays eleven important pieces of information about the Transceivers: ID, IP Address, Name, Type, Status, Stream Protocol, Number of Restarts, Amount of Data Transmitted, Amount of Data Received, Percentage of CPU Used, and Amount of Memory Used. Figure 48

ID	IP	Name	Type	Status	Stream Protocol	Number of Restarts	Transmitted	Received	CPU	Memory
70	192.168.168.70	PLAYER 0	Output	Online	N/A	N/A	36.00 Kbps	4.22 Mbps	33.91%	total:458.40 Kbps, used:99.27 Kbps
71	192.168.168.71	PLAYER 1	Output	Online	N/A	N/A	2.00 Kbps	33.00 Kbps	27.56%	total:458.40 Kbps, used:84.57 Kbps
72	192.168.168.72	PLAYER 2	Output	Online	N/A	N/A	2.00 Kbps	424.00 Kbps	28.53%	total:458.40 Kbps, used:88.75 Kbps
73	192.168.168.73	PLAYER 3	Output	Online	N/A	N/A	2.00 Kbps	30.00 Kbps	31.77%	total:458.40 Kbps, used:83.94 Kbps
74	192.168.168.74	PLAYER 4	Output	Online	N/A	N/A	48.00 Kbps	32.00 Kbps	34.96%	total:458.40 Kbps, used:81.83 Kbps
75	192.168.168.75	PLAYER 5	Output	Online	N/A	N/A	2.00 Kbps	78.00 Kbps	37.96%	total:458.40 Kbps, used:82.44 Kbps
77	192.168.168.77	PC LEFT	Output	Online	N/A	N/A	3.00 Kbps	21.00 Kbps	20.31%	total:458.40 Kbps, used:81.36 Kbps
78	192.168.168.78	PC RIGHT	Output	Online	N/A	N/A	310.00 Kbps	33.00 Kbps	31.11%	total:458.40 Kbps, used:82.15 Kbps
78	192.168.168.78	PC RIGHT	Input	Online	Unip Multicast	8	310.00 Kbps	36.00 Kbps	25.89%	total:458.40 Kbps, used:82.11 Kbps
73	192.168.168.73	PLAYER 3	Input	Online	Unip Multicast	73	2.00 Kbps	31.00 Kbps	32.72%	total:458.40 Kbps, used:83.13 Kbps
77	192.168.168.77	PC LEFT	Input	Online	Unip Multicast	8	3.00 Kbps	38.00 Kbps	23.72%	total:458.40 Kbps, used:82.13 Kbps
72	192.168.168.72	PLAYER 2	Input	Online	Unip Multicast	74	4.00 Kbps	372.00 Kbps	29.03%	total:458.40 Kbps, used:89.03 Kbps
74	192.168.168.74	PLAYER 4	Input	Online	Unip Multicast	102	48.00 Kbps	32.00 Kbps	43.02%	total:458.40 Kbps, used:82.35 Kbps
75	192.168.168.75	PLAYER 5	Input	Online	Unip Multicast	257	2.00 Kbps	77.00 Kbps	42.48%	total:458.40 Kbps, used:82.62 Kbps
71	192.168.168.71	PLAYER 1	Input	Online	Unip Multicast	67	2.00 Kbps	34.00 Kbps	38.41%	total:458.40 Kbps, used:85.20 Kbps
79	192.168.168.79	PLAYER 9	Input	Online	Unip Multicast	94	37.00 Kbps	4.36 Mbps	37.83%	total:458.40 Kbps, used:89.80 Kbps

Figure 48

8.3.9 System tab

This section allows the user to save data and configurations made on the transceivers to the transceiver of their choice. This operation is required every time a configuration is modified in the system. It is also possible to restore saved data and configurations from the transceiver on which they were saved. To save or recover data and settings, the User must a) enter the IP address of the Transceiver in which we are going to save or recover the data and settings, b) enable the **Force Sync Data** option, c) click on **Deliver Data** or **Get the Data** as the case may be, d) click on **Yes** to confirm the operation, and e) click on **Save**. Figure 49

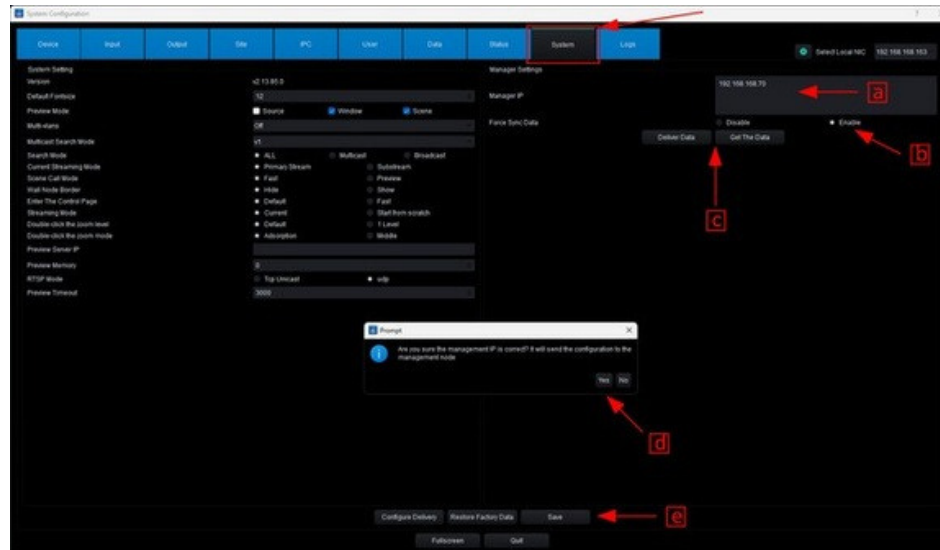


Figure 49

8.3.10 Logs tap

This is a section where the user can view the operation logs sent by the system. Figure 50

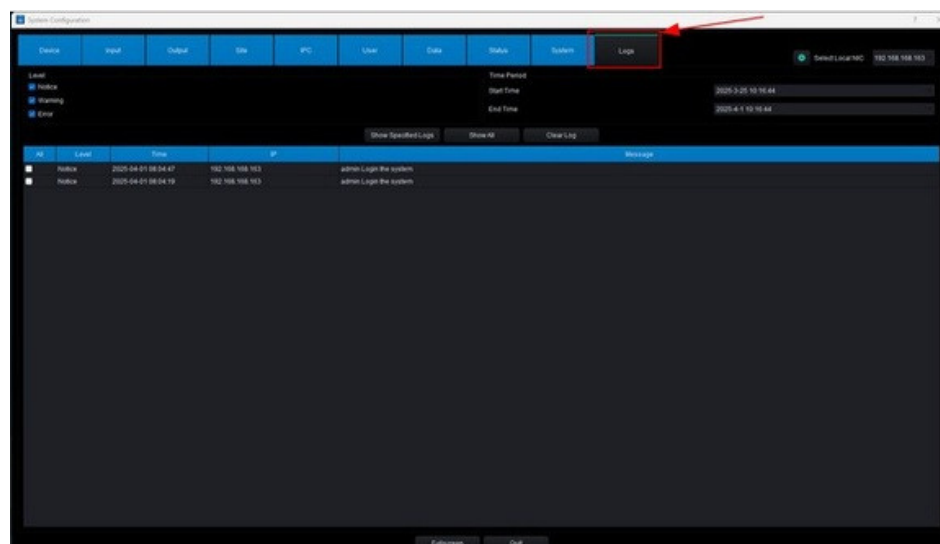


Figure 50

8.4 Control the Transceivers

By clicking the Enter icon that appears in the center of the screen, the program will open a control user interface where we can control the Transceivers. Figure 51



Figure 51

After clicking the Enter button, you'll access the user control interface, which consists of seven main sections. These sections are: TV's/Video Walls, Video Sources, Scenes, Source Options, Control Video Source Display, Audio, and Camera Control. Figure 52

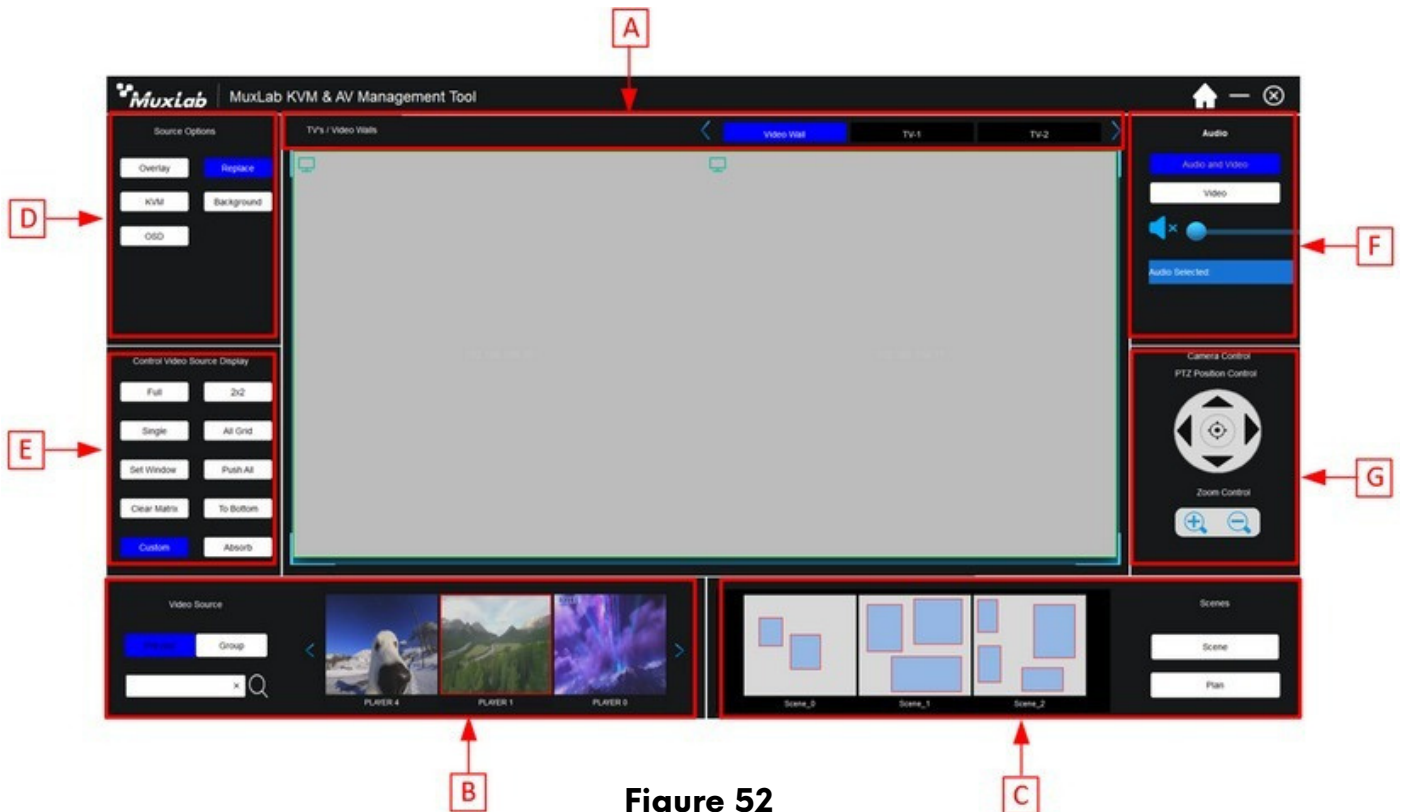


Figure 52

- A** In this section the User will be able to select a TV, Matrix or video wall, previously created in the Site tab of the configuration interface, to send it any content available in the video sources. Figure 53

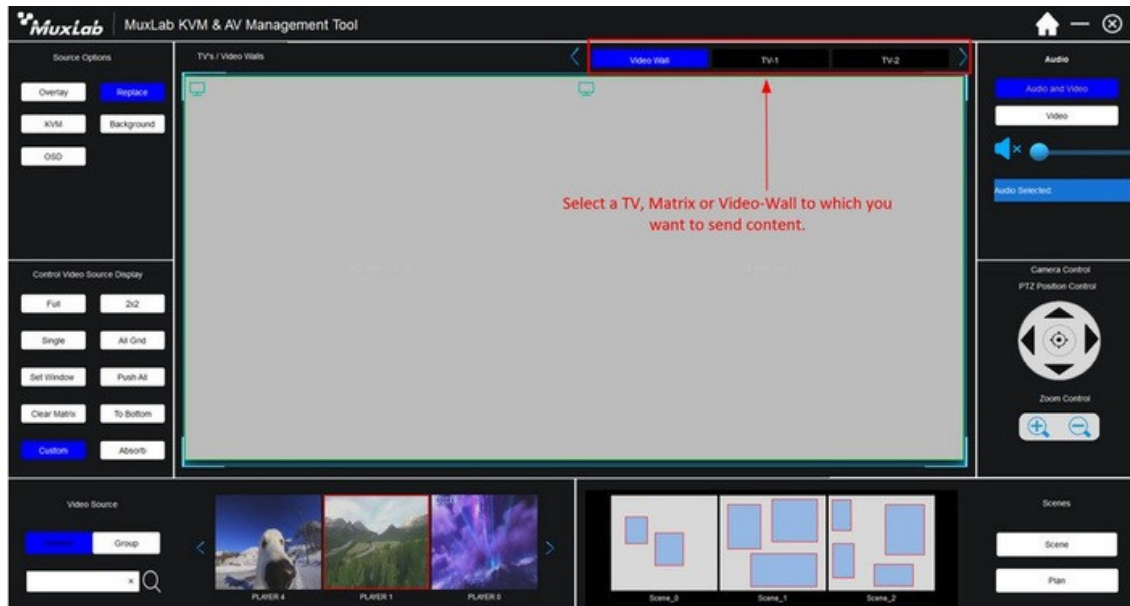


Figure 53

- B** In this section, previews of the available video sources will be displayed. The User can select the desired video source preview and drag and drop it onto the desired TV, matrix, or video wall. Figure 54

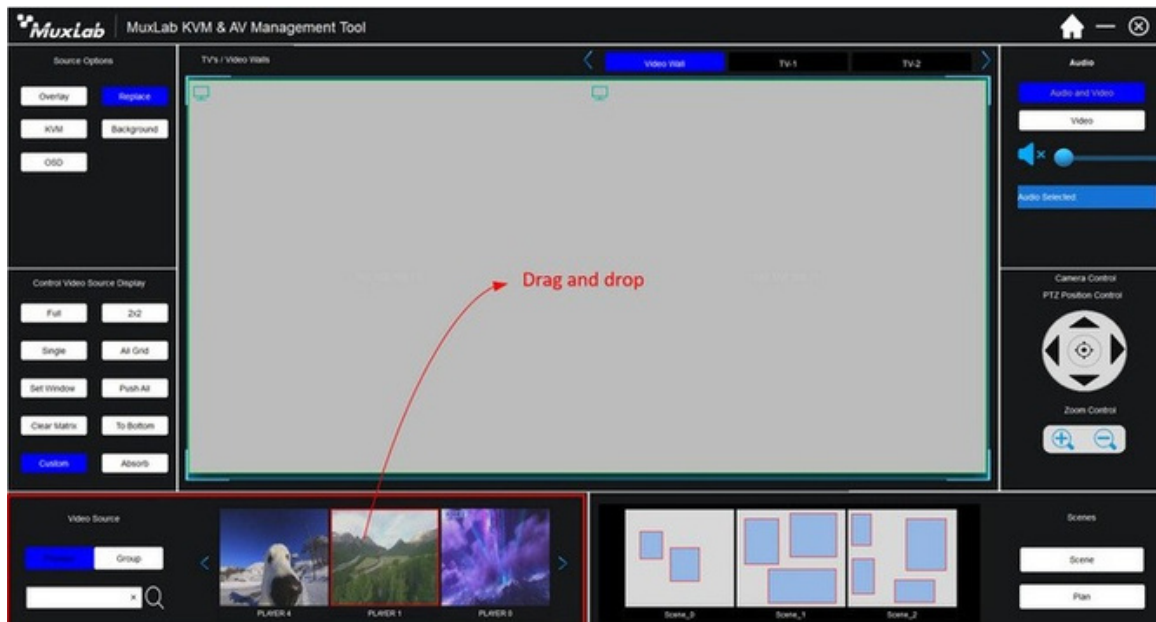


Figure 54

- C** This section displays the layouts for each preset. To access a preset, the User simply clicks on the corresponding layout. Figure 55

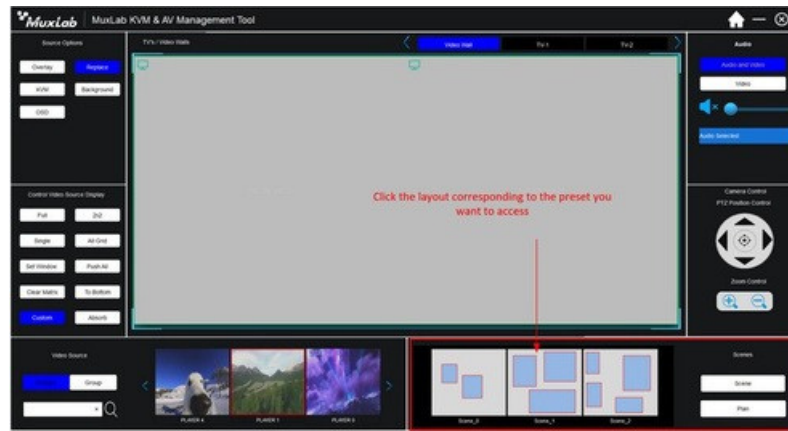


Figure 55

D In this section there are five different options that the user can use to manage video sources.

- a) **Overlay**: This option allows you to create multiple views with PIP and POP.
- b) **Replace**: This option allows you to replace video sources in full screen.
- c) **KVM**: This option allows you to control the source using KVM.
- d) **Background**: This option allows you to change the background.
- e) **OSD**: This option allows you to change the OSD scrolling text.

E In this section there are five different options that the user can use to manage video sources.

- a) **Full**: This option will display the canvas as a single screen even if it is a video wall.
- b) **2x2**: This option will divide the canvas into a 2x2 matrix.
- c) **Single**: This option will divide the canvas according to the number of screens on the video wall.
- d) **All Grid**: This option allows the User to divide the canvas with a custom grid.
- e) **Set Window**: This option allows the user to resize a window to a custom size and place it in a specific location on the screen.
- f) **Push All**: This option allows the User to send the same content to all displays and video walls in the system.
- g) **Clear Matrix**: This option allows the User to clean the canvas.
- h) **To Bottom**: This option allows the User to place a window at the bottom of a layout that contains POP.
- i) **Custom**: This option allows the User to create custom layouts
- j) **Absorb**: This option allows the User to send content in full screen.

F This option allows the user to control the volume of the video sources

G This option allows the user to control the PTZ cameras in the system.