

HDMI over IP PoE Workstation Transceiver, 4K60

User Manual

500863



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

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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.

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2. Introduction

The HDMI over IP PoE Workstation Transceiver, 4K60 (model 500863) allows HDMI & USB equipment to be connected up to 330ft (100m) over an Ethernet LAN, supports HDMI up to 4K @ 60Hz via Cat5e/6 cable in multiple point-to-point and point-to-multipoint configurations, it also allows offers enhanced features such as username/password authentication, share content between workstations, creation of video walls in workstations, mouse-roaming between monitors on workstation video wall, displays previews in the OSD menu, creation computers/servers groups, amount others. The HDMI over IP PoE Workstation Transceiver, 4K60 allows users to access, share, and switch full control of connected computers/servers from any workstation over the network. A single Transceiver allows one operator to manage numerous computers/servers, in a distributed KVM application.

3. Features

- Extends local audio/video transmission up to 330ft (100m) over Cat5e/6 or 2Km over Fiber
- H.264/265 video codec
- High image quality and ~80ms latency
- Supports KVM workstation with mouse & keyboard control
- Supports seamless switching
- Supports access to up to 9 computers/servers simultaneously on each workstation screen
- Supports real-time preview of all sources in OSD
- Supports push content from any workstation to any workstation or video wall
- Supports Workstation Video Wall
- Supports the creation of groups of computers or servers

4. Package Contents

- One (1) HDMI over IP PoE Workstation Transceiver, 4K60
- One (1) Infrared Emitter with terminal block 6POS One (1)
- Infrared Sensor with terminal block 6POS Two (2) Wall
- Mount Brackets with four (4) Screw One (1) User manual
- (available via download)

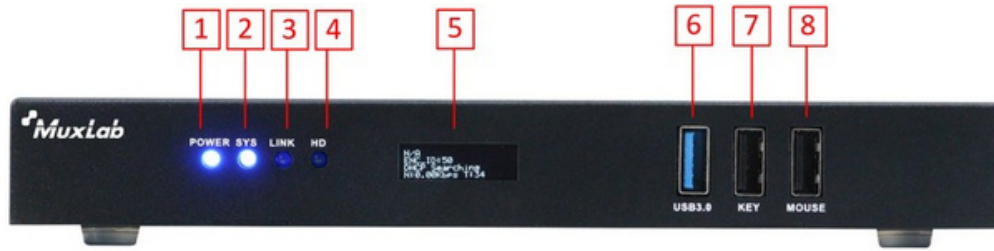
Notes: Confirm that the product and accessories are all included. If not, please contact the supplier from which you purchased the unit.

5. Specifications

Technical	
Environment	HDMI 2.0
Devices	Blu-Ray, Set Top Boxes, projectors, monitors, TVs, PCs, supporting HDMI.
Signal Protocol/Standard	HDMI 1.4 and HDCP 1.4
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 KVM & 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	500863 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 de-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, IRO) 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 500863 Transceiver to the computer using an HDMI cable between the HD IN port of the Transceiver and the HDMI port of the computer, only if you need to connect a local computer.
 - 2b. Connect the 500863 Transceiver to the computer using a USB cable between the PC port of the Transceiver and the USB port of the computer, only if you need to connect a local computer.
Connect the 500863 Transceiver to the monitor using an HDMI cable between the HD OUT port of the Transceiver and the HDMI port of the monitor, only if the Transceiver is part of a workstation.
 - 2c. OUT port of the Transceiver and the HDMI port of the monitor, only if the Transceiver is part of a workstation.
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 500863 Transceivers to the Ethernet Switch.
 - 3c. Use the MuxLab KVM & AV Management Tool software to configure each transceiver and log in as an administrator in a Transceiver to create workstations, create users, and assign access permissions to users.
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.

8. Using MuxLab KVM & AV Management Tool Software

This section describes the basic workflow for configuring, managing and controlling the 500863 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, among many others.
4. Log in as an administrator to a unit to create workstations, define which Transceivers will be part of the system, create users, assign users permissions to access servers, assign users permissions to access video walls, and more.
5. Control the system from the User Control Interface if necessary.

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)

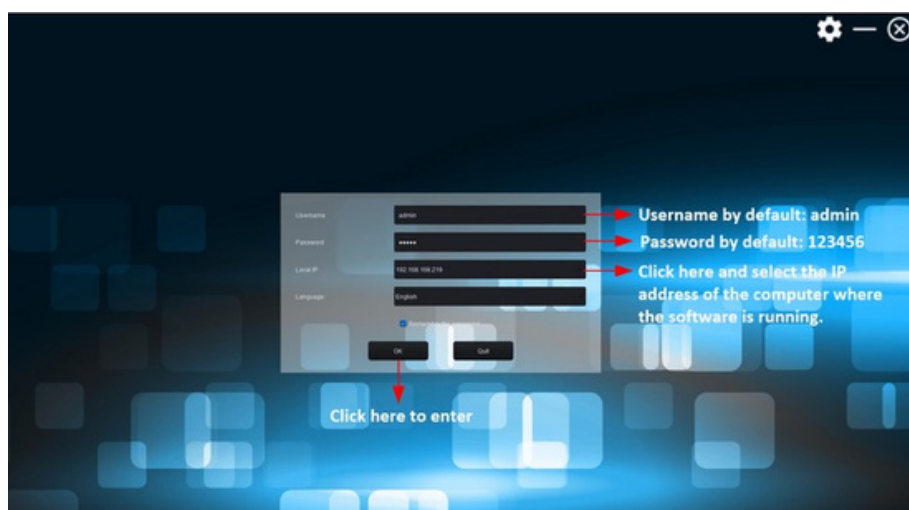


Figure 1

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

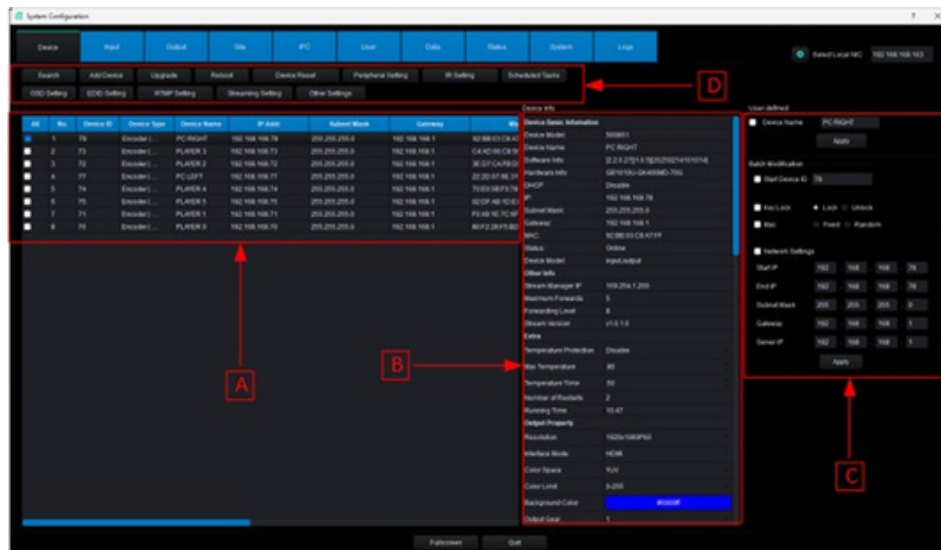


Figure 4

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.

Note: Workstation Transceivers are identified with "KVM" in the Device Type column. Figure 5

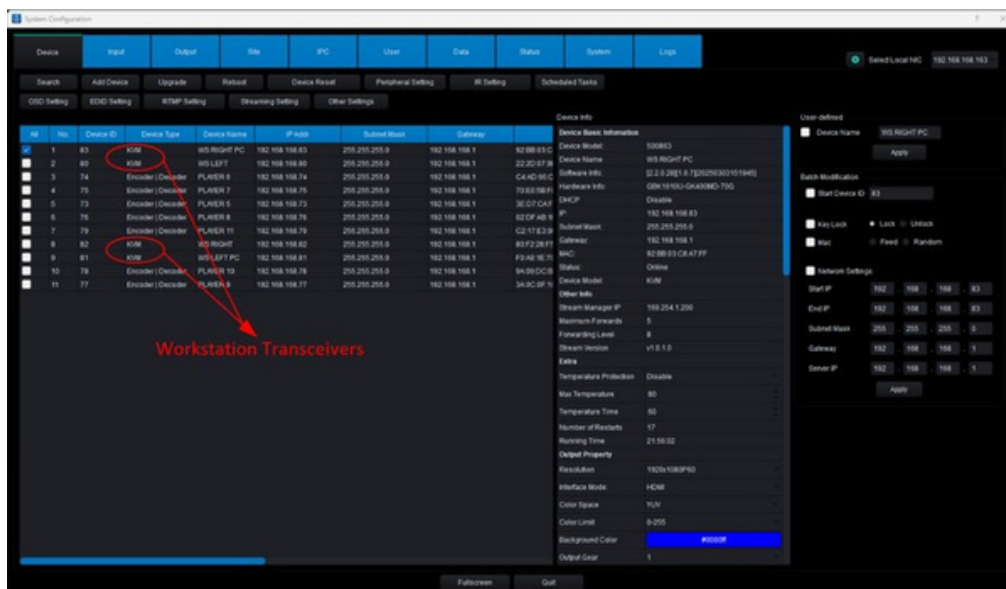


Figure 5

- 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 6

Device Basic Information

Device Model:	500861
Device Name:	PC RIGHT
Software Info:	[2.2.0.27][1.0.5][20250214101014]
Hardware Info:	GB1010U-GK400MD-79G
DHCP:	Disable
IP:	192.168.168.78
Subnet Mask:	255.255.255.0
Gateway:	192.168.168.1
MAC:	92 BB 03 C8 A7 FF
Status:	Online
Device Model:	input,output

Other Info

Stream Manager IP:	169.254.1.200
Maximum Forwards:	5
Forwarding Level:	8
Stream Version:	v1.0.1.0

Extra

Temperature Protection:	Disable
Max Temperature:	80
Temperature Time:	60
Number of Restarts:	2
Running Time:	17:58:47

Output Property

Resolution:	3840x2160P30
Interface Mode:	HDMI
Color Space:	YUV
Color Limit:	0-255
Background Color:	#0000ff
Output Gear:	1

Edge

Left:	0
Top:	0
Right:	0
Bottom:	0
Edge Status:	Disable

Output Image

Lighness:	45
Contrast:	50
Hue:	50
Saturation:	50

Restore Default: Set Default

Audio Output Setting

Audio Output:	HDMI
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Decode Settings

Default Video Stream ...:	Udp Multicast
Win Num:	16

Rotate

Rotate:	0
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Peripheral

IR Follows:	Enable
232 Follows:	Disable
485 Follows:	Disable

Input Property

Resolution:	3840x2160
FPS:	30 hz

Encoding Attribute

Follow HDMI:	Off
Channel:	Primary Stream
Encoding Type:	H265
Encoding Level:	main
Bitrate Setting:	cbr
Resolution:	1920x1080
FPS:	30
GOP:	30
Bitrate:	4000 kbps

Param Setting: Apply

Restore Default: Set Default

Encoding Border

Encoding Border:	Disable
Border Width:	2
Border Color:	#000000

Packet Control

Packet interval:	0
------------------	---

Audio Input Setting

Audio Input:	HDMI
--------------	------

Figure 6

- 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 7

User-defined

☒ Device Name: PLAYER 1

Apply

Batch Modification

☒ Start Device ID: 71

☒ Key Lock: Lock

☒ Mac: Fixed

☒ Network Settings

Start IP:	192	168	168	71
End IP:	192	168	168	71
Subnet Mask:	255	255	255	0
Gateway:	192	168	168	1
Server IP:	192	168	168	1

Apply

Figure 7

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 8

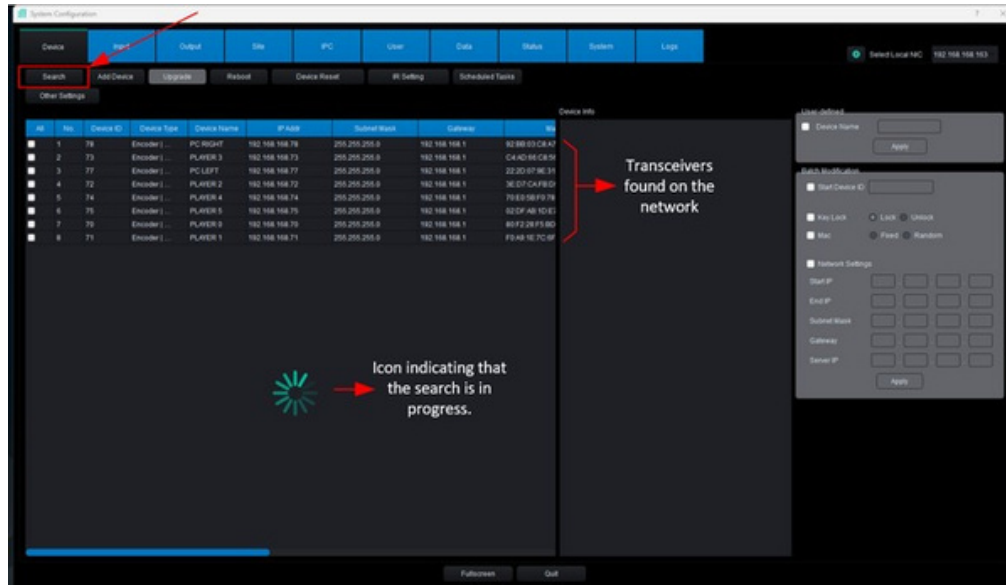


Figure 8

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 9

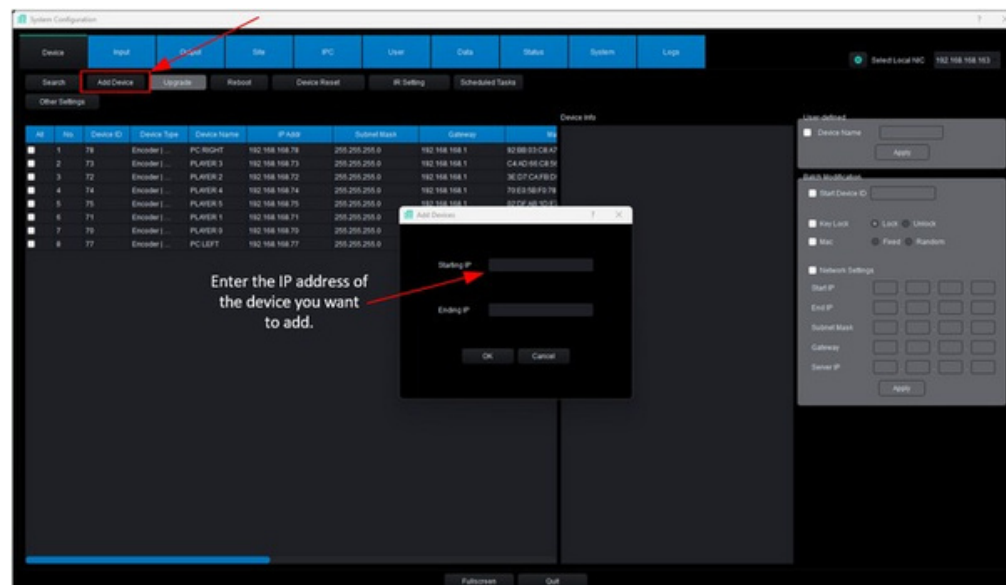


Figure 9

Upgrade: Clicking the "Upgrade" 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 10

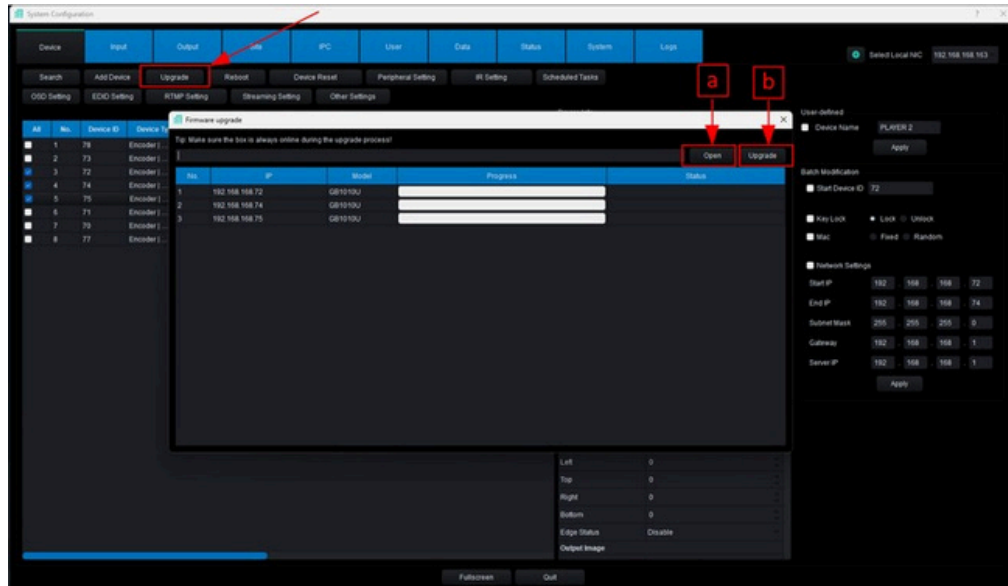


Figure 10

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 11

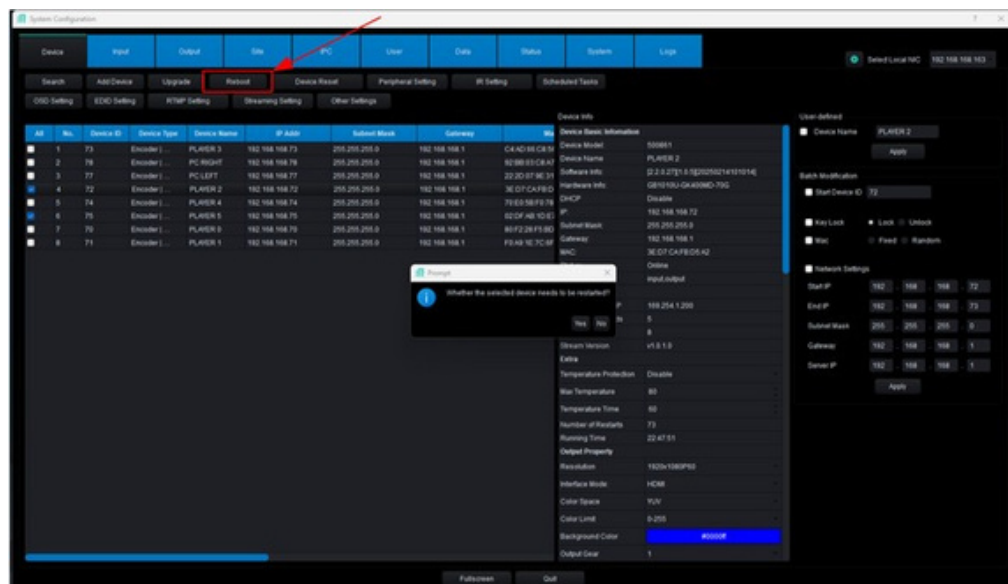


Figure 11

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 12

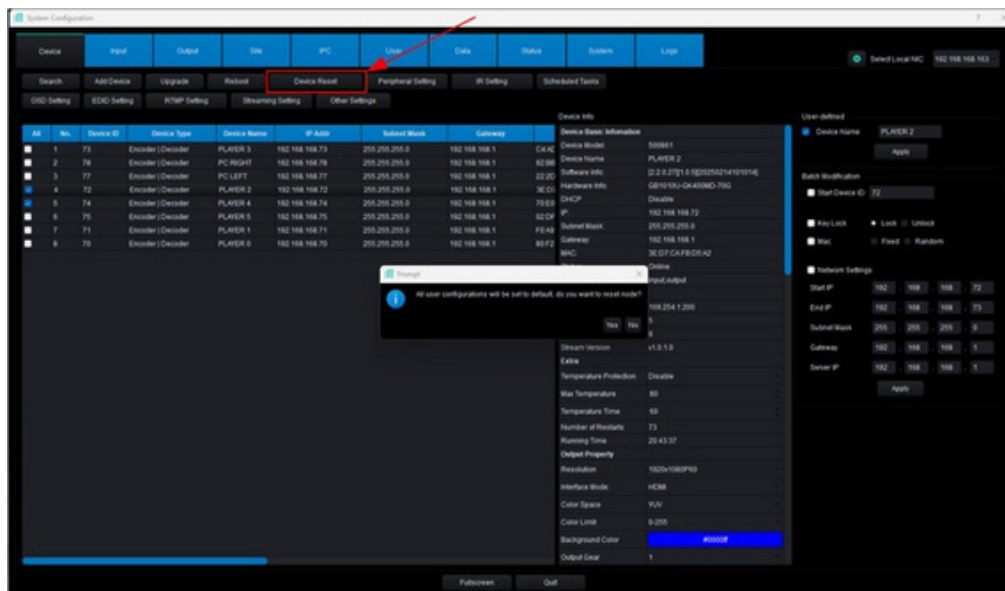


Figure 12

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 13

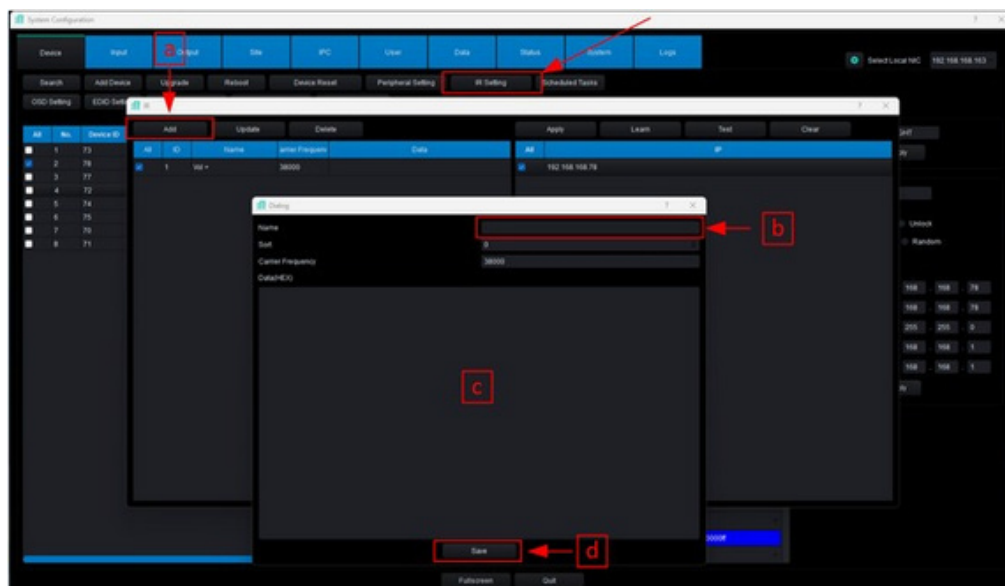


Figure 13

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 14

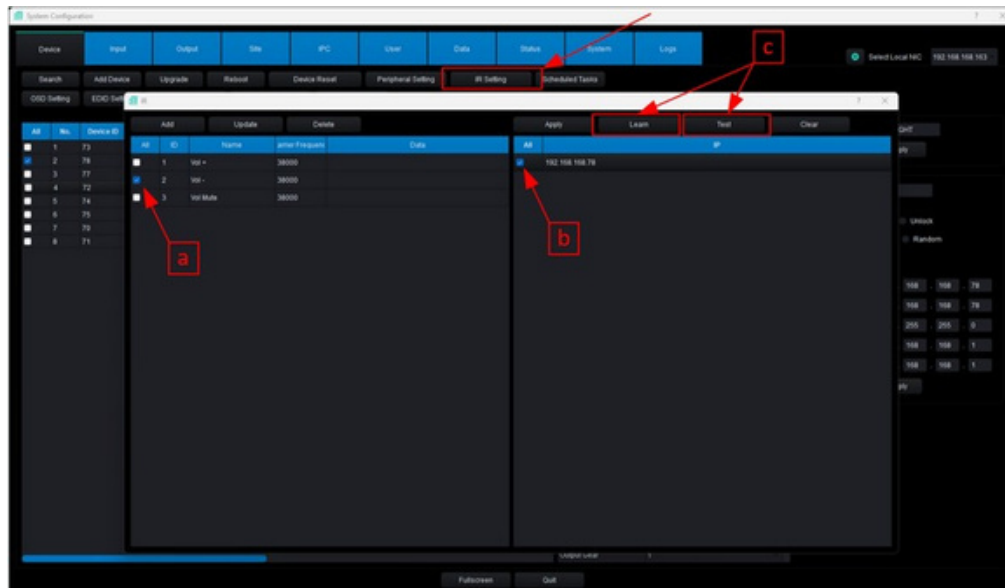


Figure 14

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 15

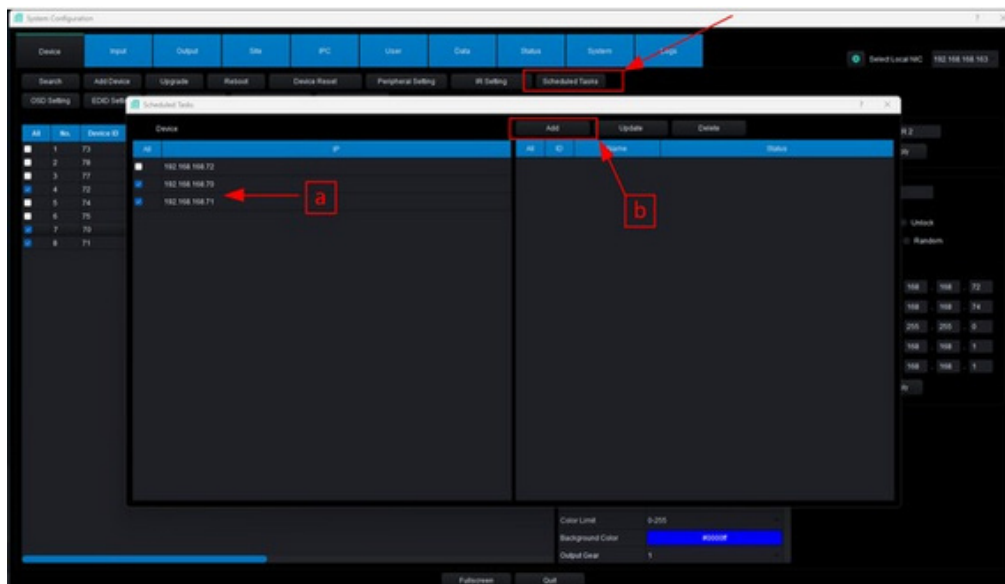


Figure 15

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 16

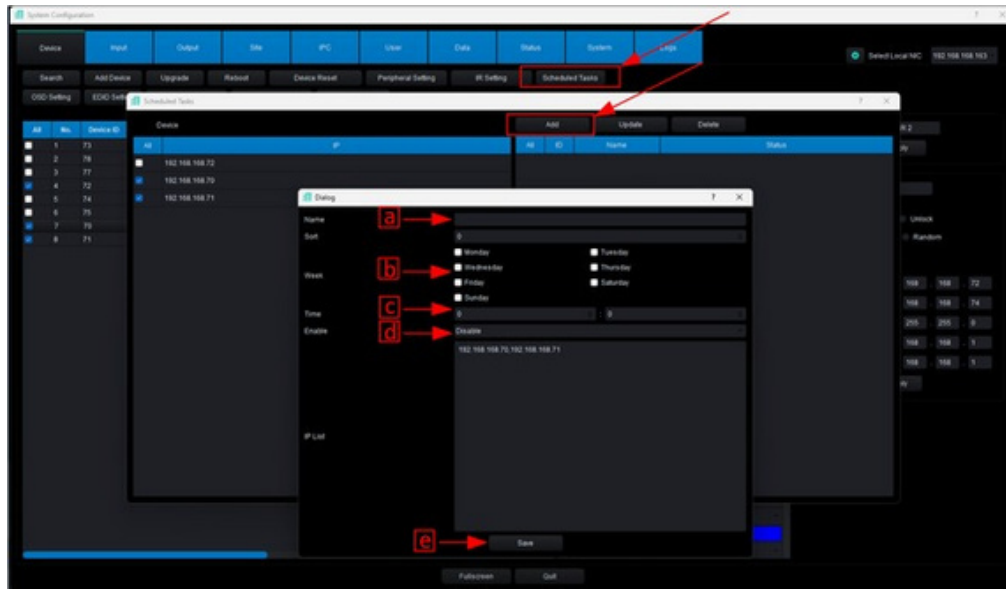


Figure 16

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 17

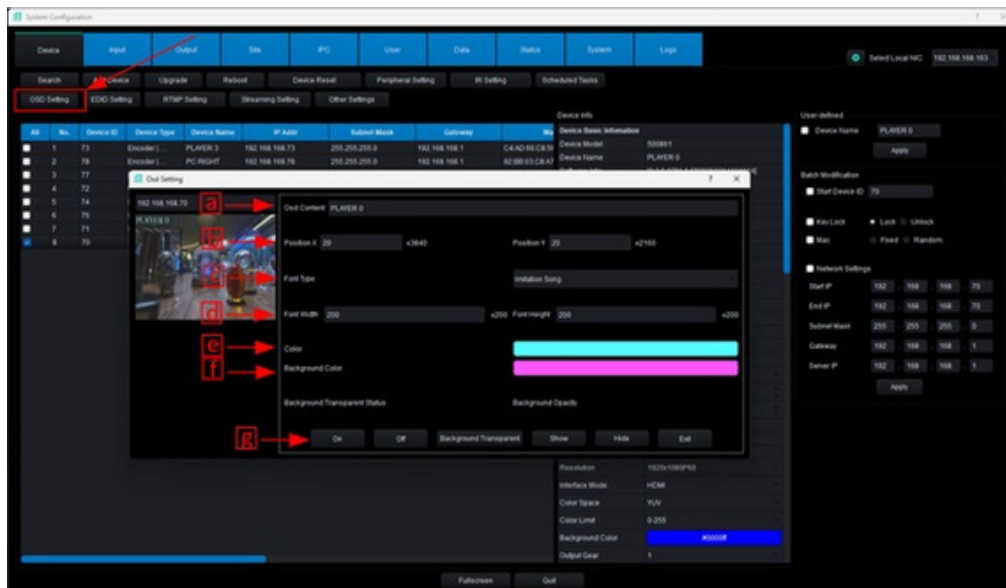


Figure 17

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 18

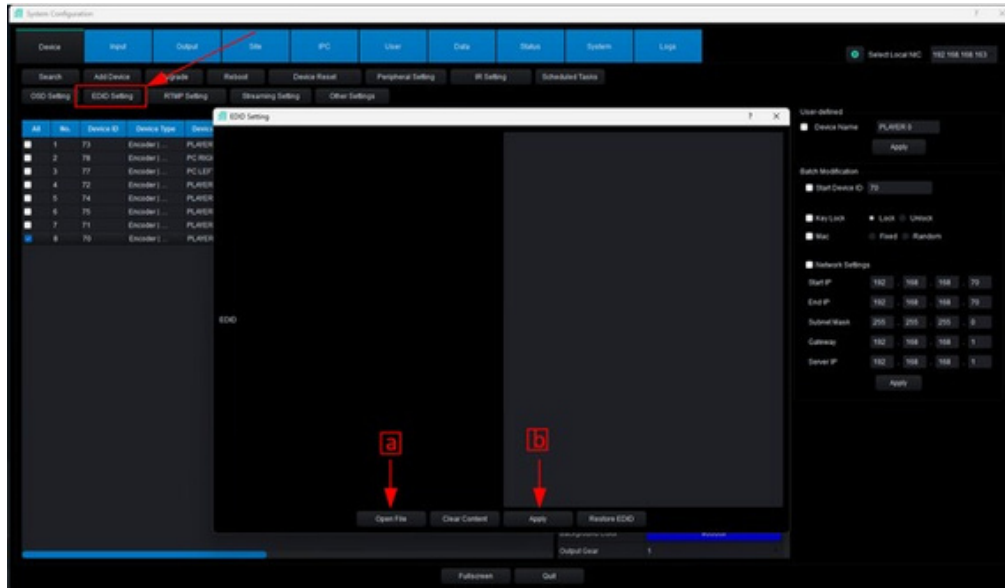


Figure 18

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 19

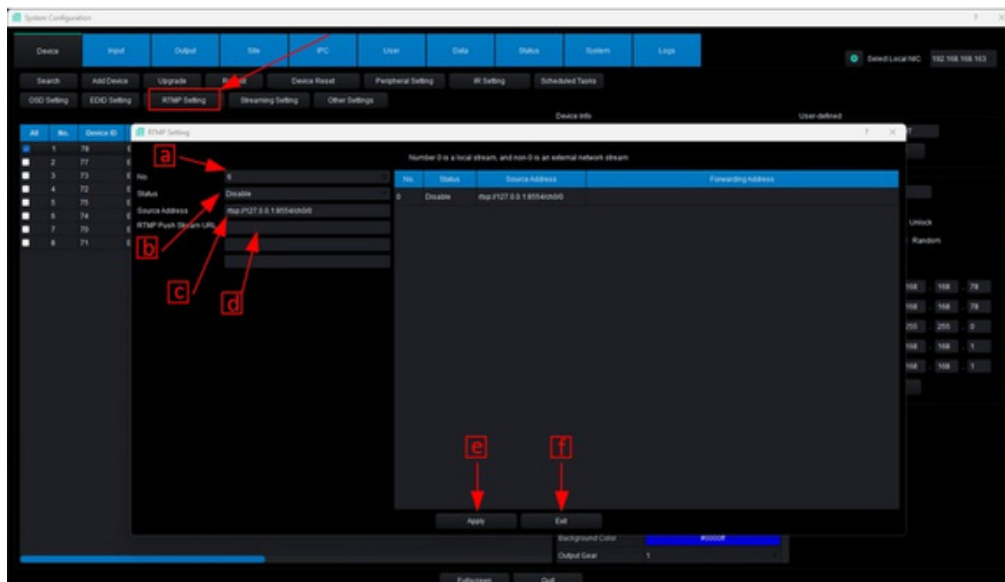


Figure 19

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 20

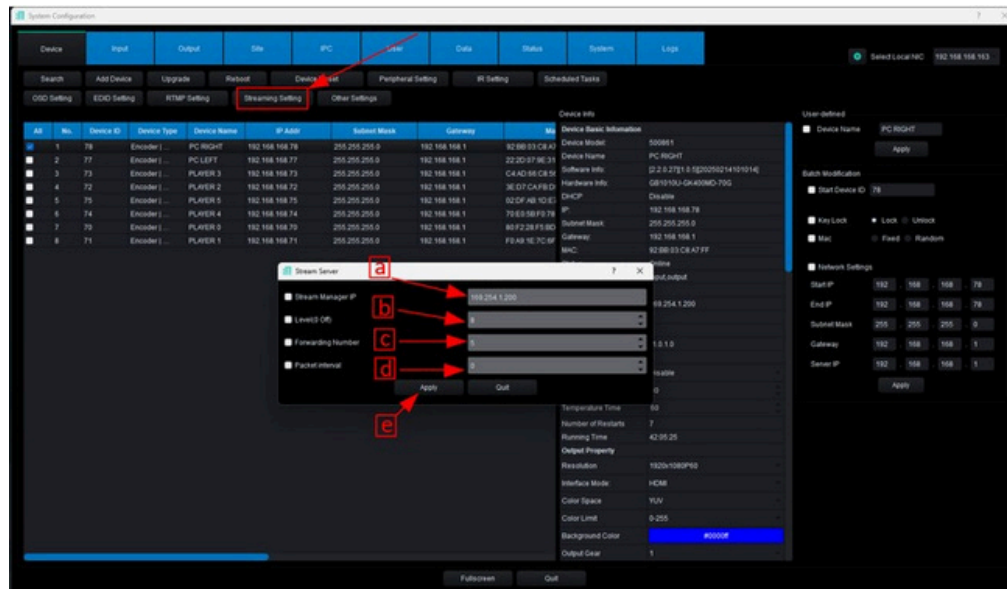


Figure 20

8.3.2 Input tab

After clicking on the Input tab we can see two main sections. Figure 21

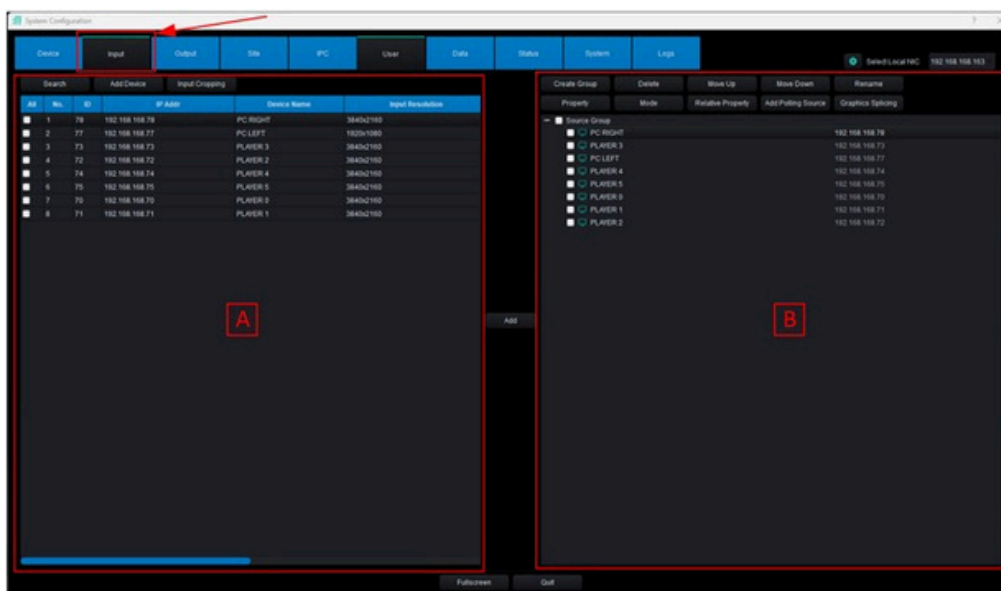


Figure 21

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 22

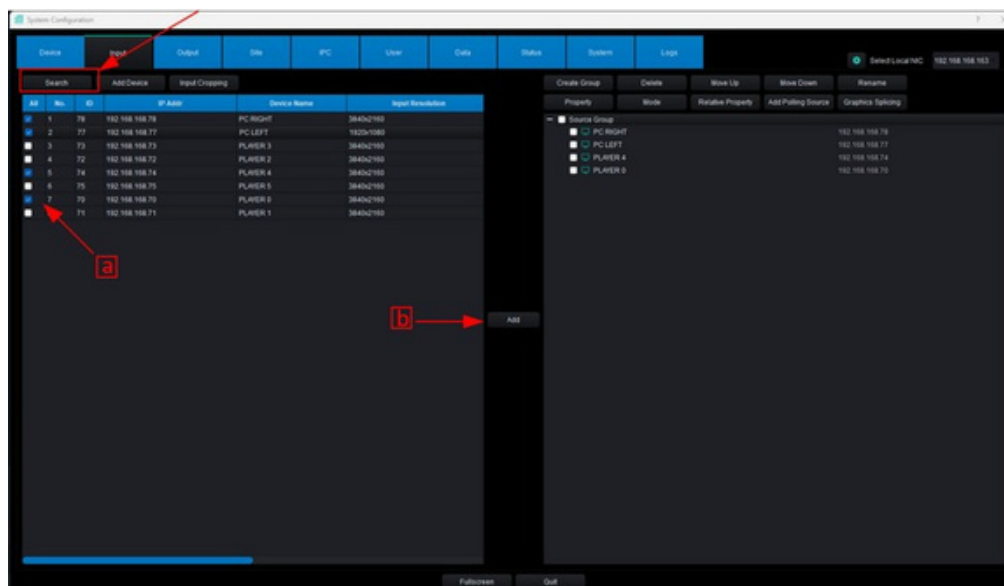


Figure 22

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 23

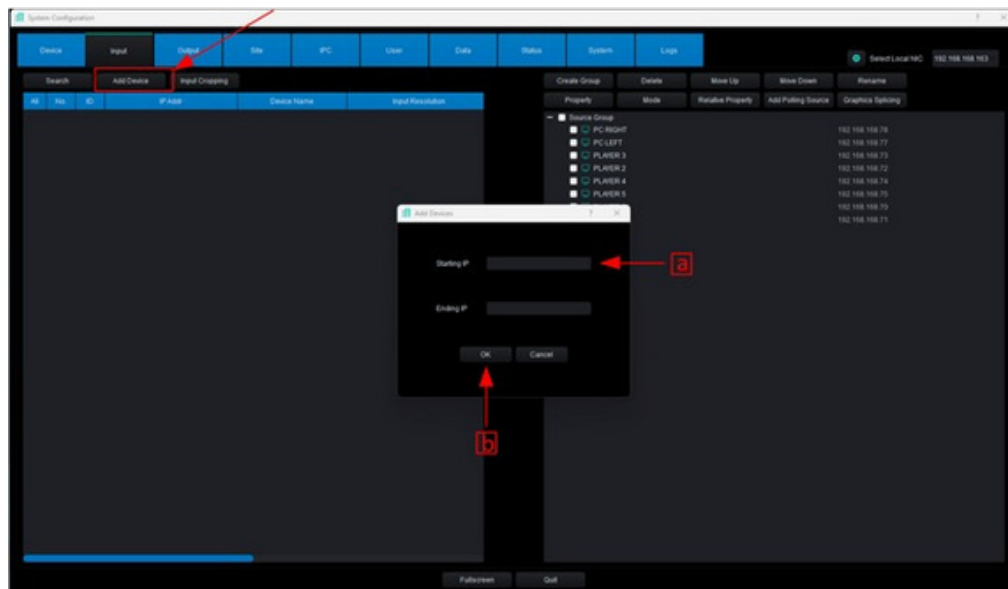


Figure 23

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 24

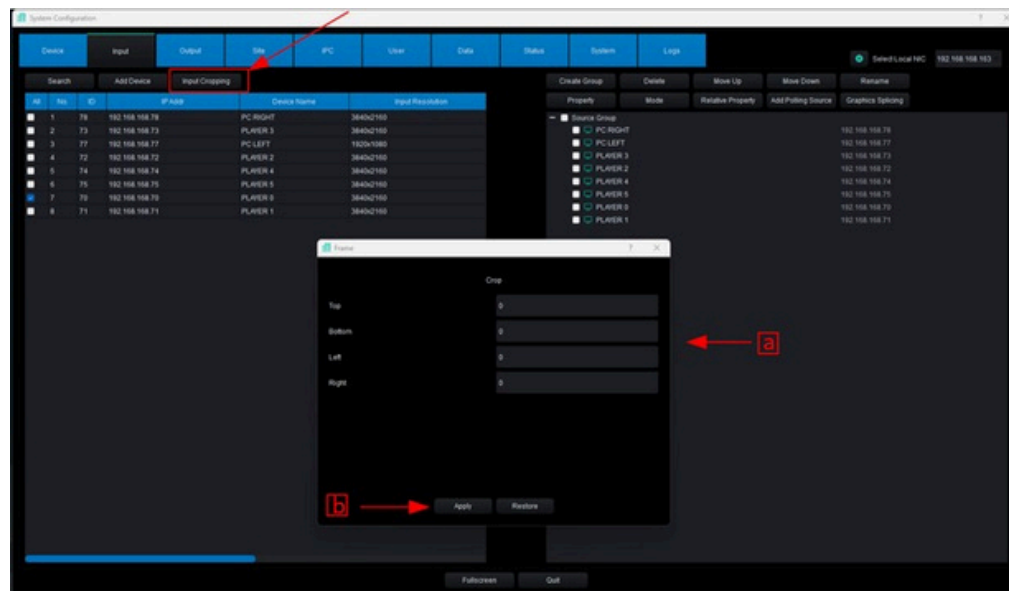


Figure 24

B In this section there are 7 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 25

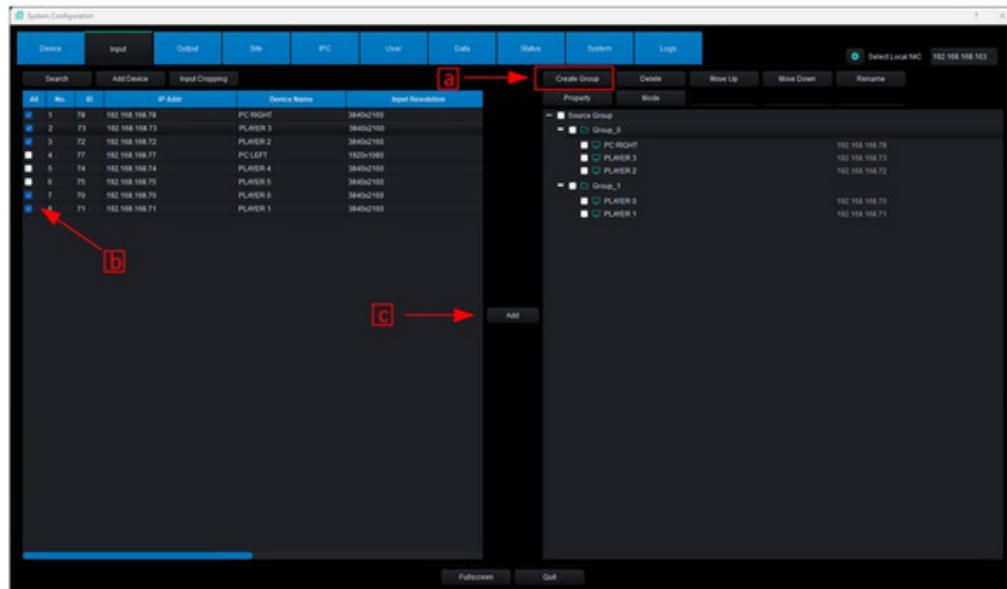


Figure 25

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 26

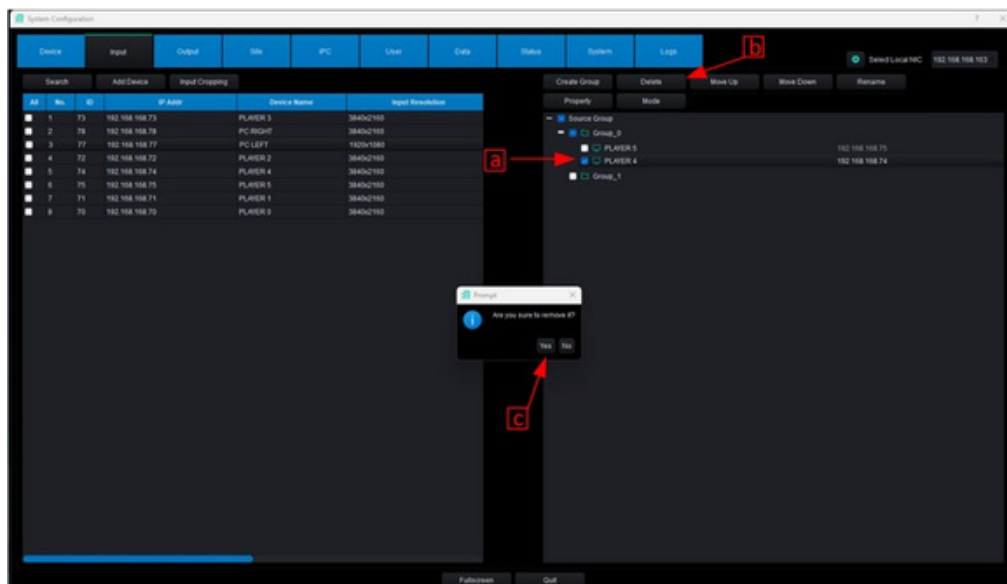


Figure 26

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 27

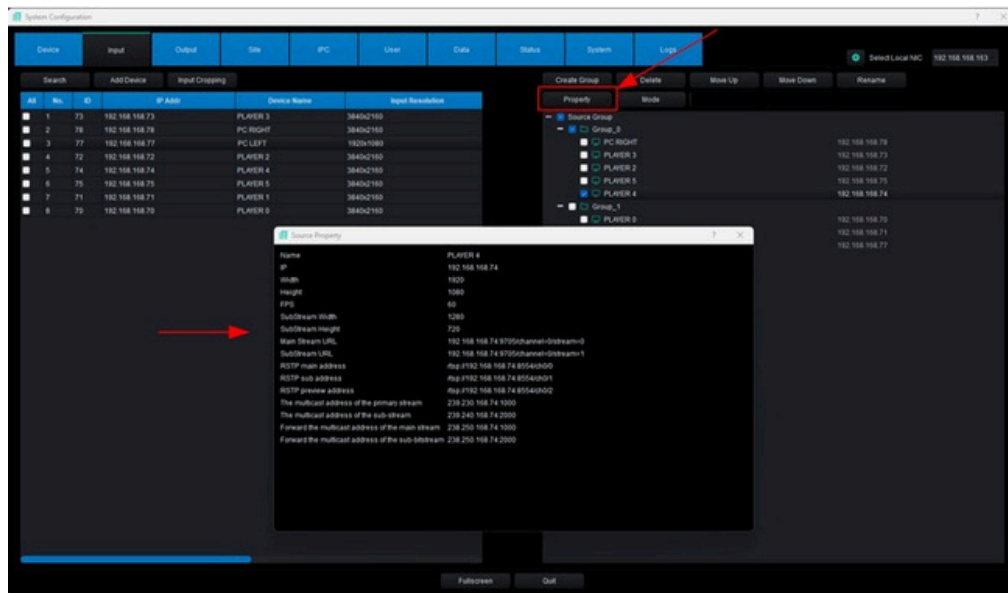


Figure 27

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 28

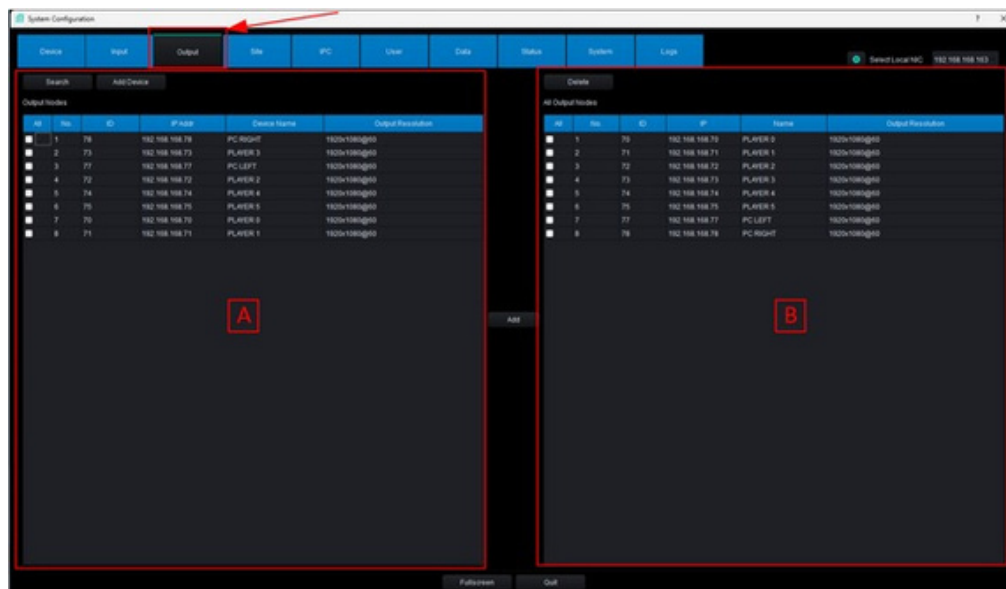


Figure 28

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 29

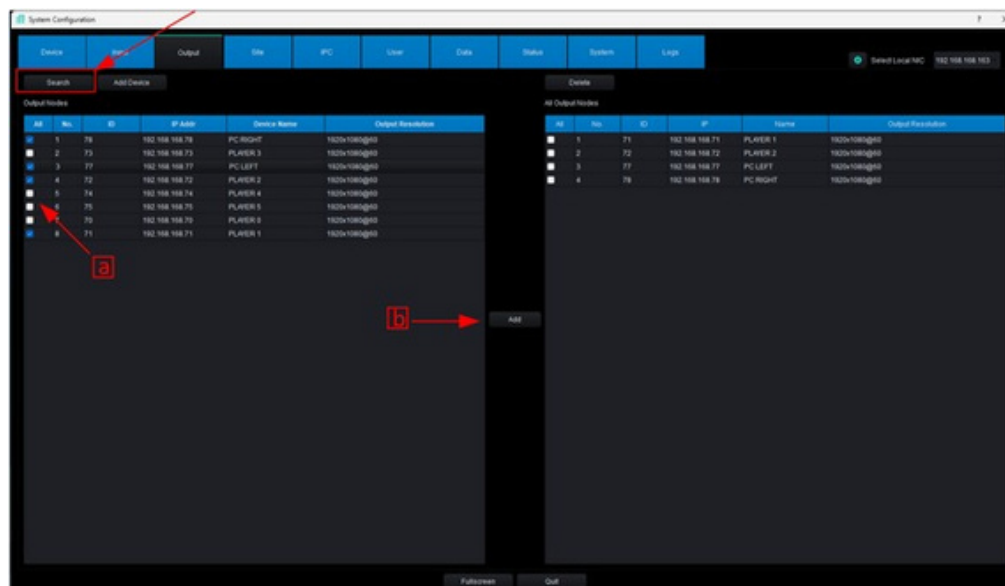


Figure 29

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 30

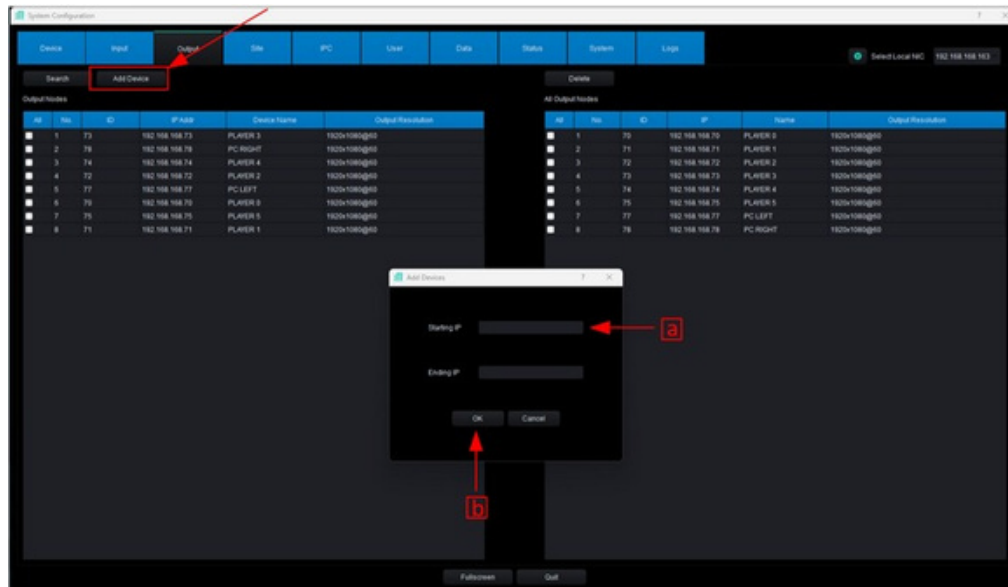


Figure 30

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 31

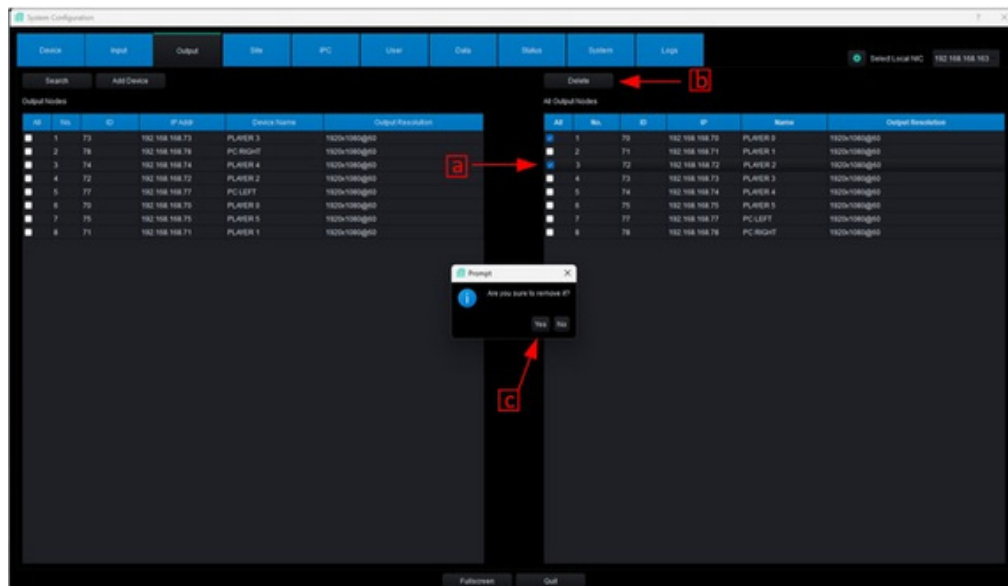


Figure 31

8.3.4 Site tab

This tab is not useful for the 500862 and 500863 Transceivers since to create workstations containing more than two monitors they must be created from the transceiver's OSD menu, this process will be explained in a later section. This section is only useful for the 500860 and 500861 Transceivers.

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 32

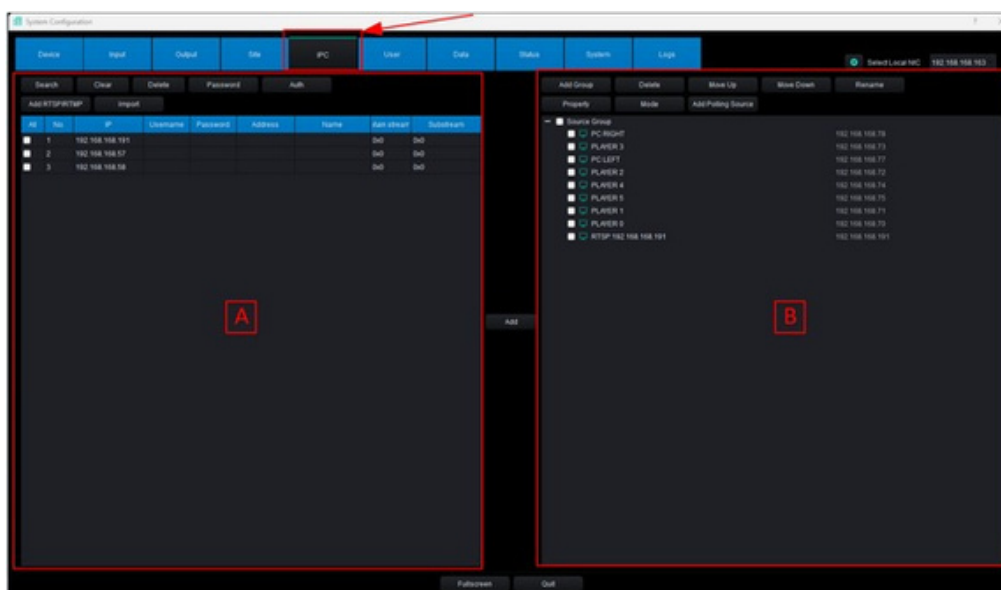


Figure 32

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 33

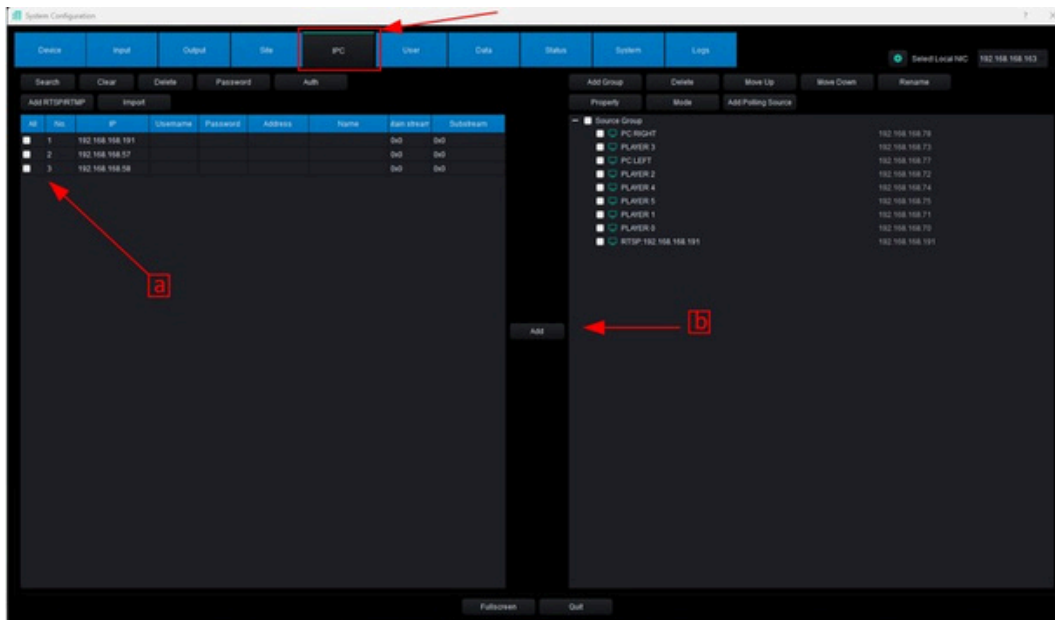


Figure 33

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 34

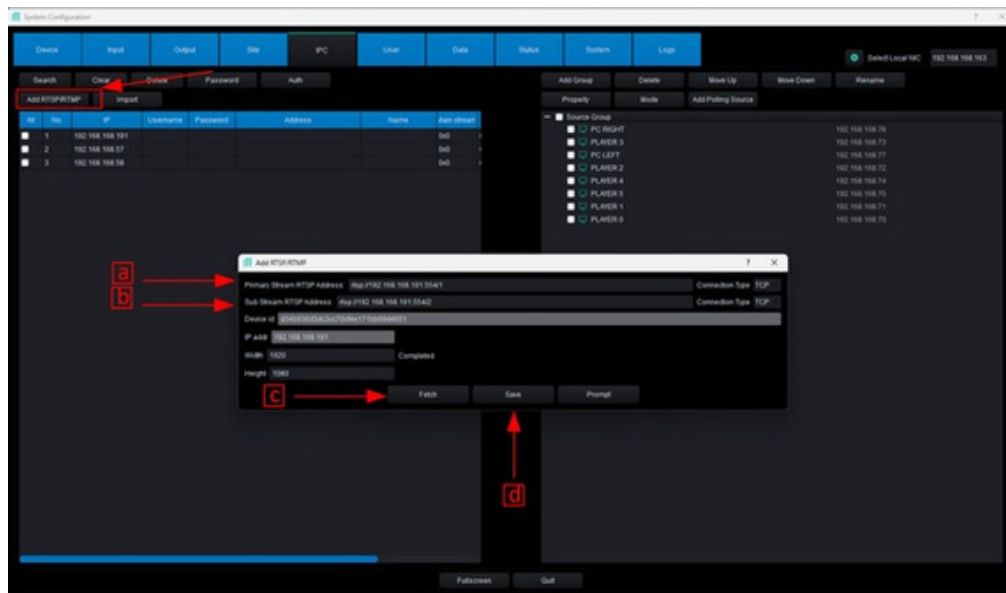


Figure 34

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 35

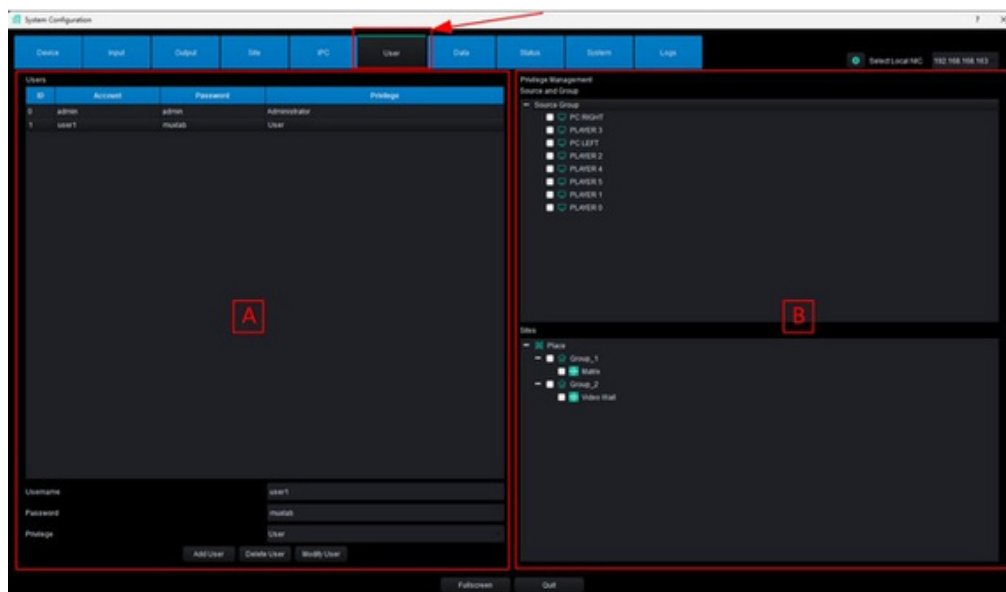


Figure 35

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 36

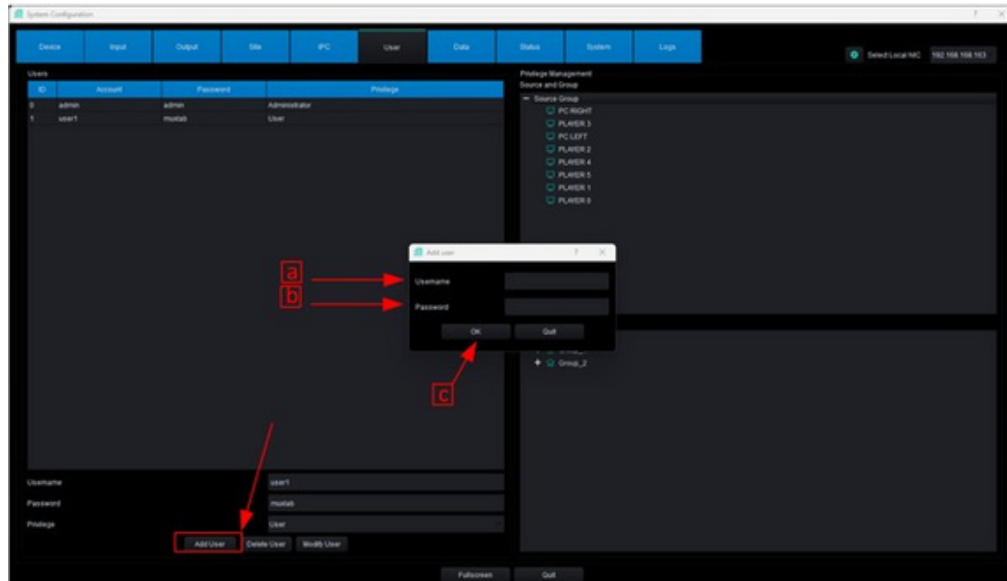


Figure 36

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 37

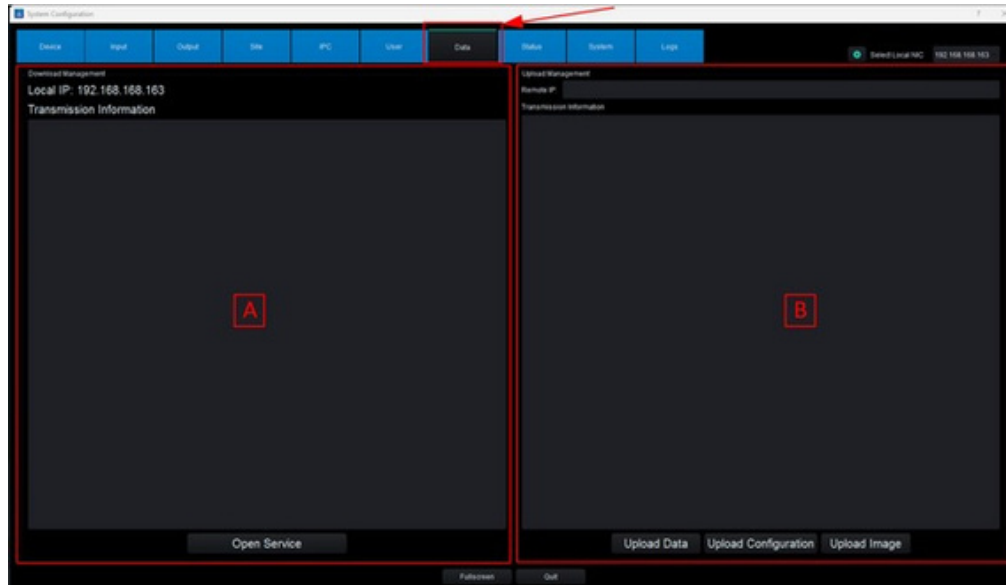


Figure 37

- A** 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 38

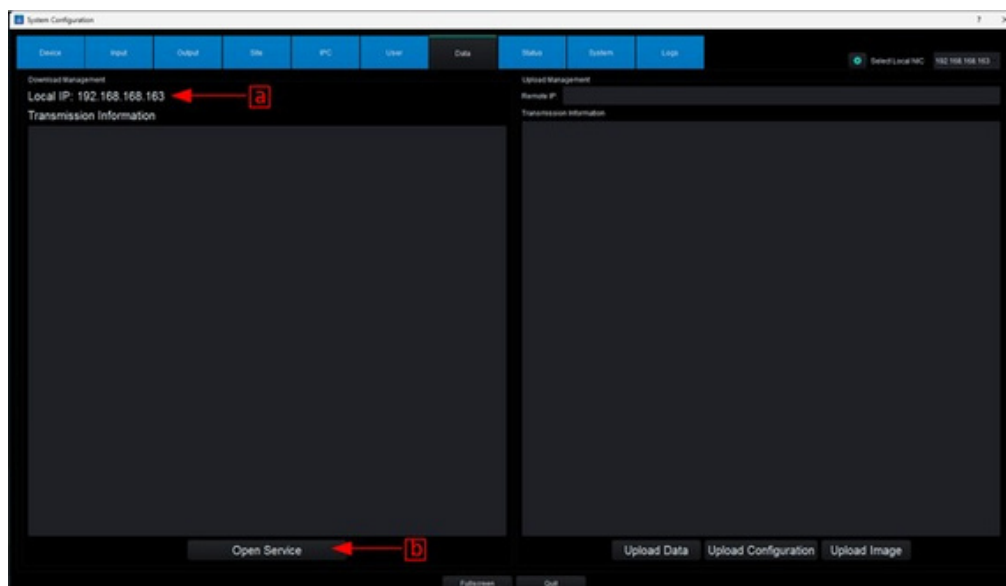


Figure 38

- 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 39

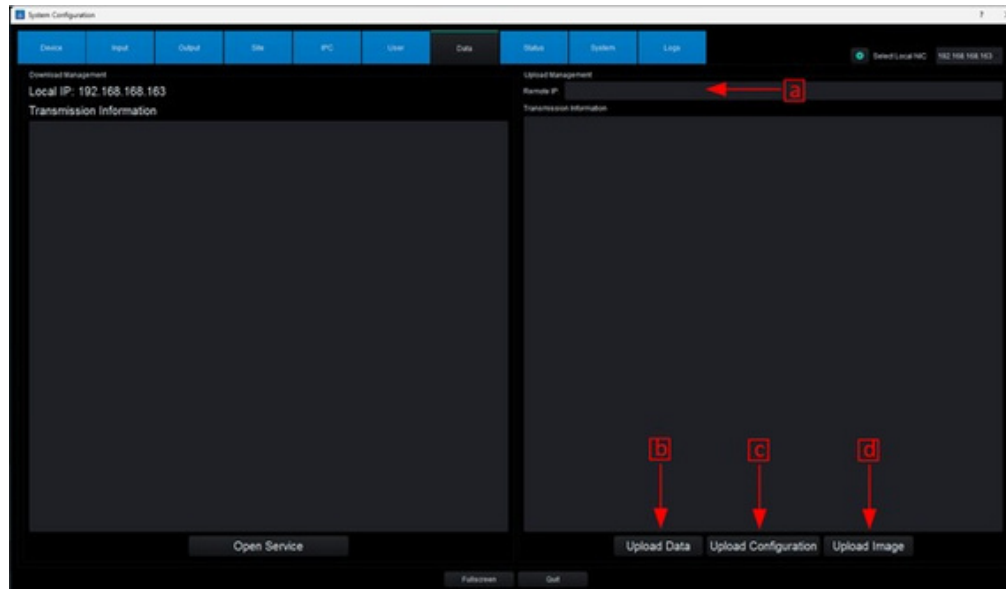


Figure 39

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 40

ID	IP	Name	Type	Status	Stream Protocol	Number of Restarts	Transmitted	Received	CPU	Memory
70	192.168.168.70	PLAYER 0	Output	Online	h264	h264	36.00 Kbps	4.20 Mbps	33.91%	total:458.40 Kbps, used:99.27 Kbps
71	192.168.168.71	PLAYER 1	Output	Online	h264	h264	2.00 Kbps	33.00 Kbps	27.56%	total:458.40 Kbps, used:94.67 Kbps
72	192.168.168.72	PLAYER 2	Output	Online	h264	h264	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	h264	h264	2.00 Kbps	30.00 Kbps	31.77%	total:458.40 Kbps, used:81.94 Kbps
74	192.168.168.74	PLAYER 4	Output	Online	h264	h264	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	h264	h264	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	h264	h264	3.00 Kbps	31.00 Kbps	25.31%	total:458.40 Kbps, used:81.36 Kbps
78	192.168.168.78	PC RIGHT	Output	Online	h264	h264	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	Udp 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	Udp 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	Udp Multicast	8	3.00 Kbps	36.00 Kbps	23.72%	total:458.40 Kbps, used:82.13 Kbps
72	192.168.168.72	PLAYER 2	Input	Online	Udp 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	Udp 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	Udp 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	Udp Multicast	67	2.00 Kbps	34.00 Kbps	36.41%	total:458.40 Kbps, used:85.20 Kbps
70	192.168.168.70	PLAYER 0	Input	Online	Udp Multicast	94	37.00 Kbps	4.36 Mbps	37.83%	total:458.40 Kbps, used:99.80 Kbps

Figure 40

8.3.9 System tab

This section allows the user to save data and configurations 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 41

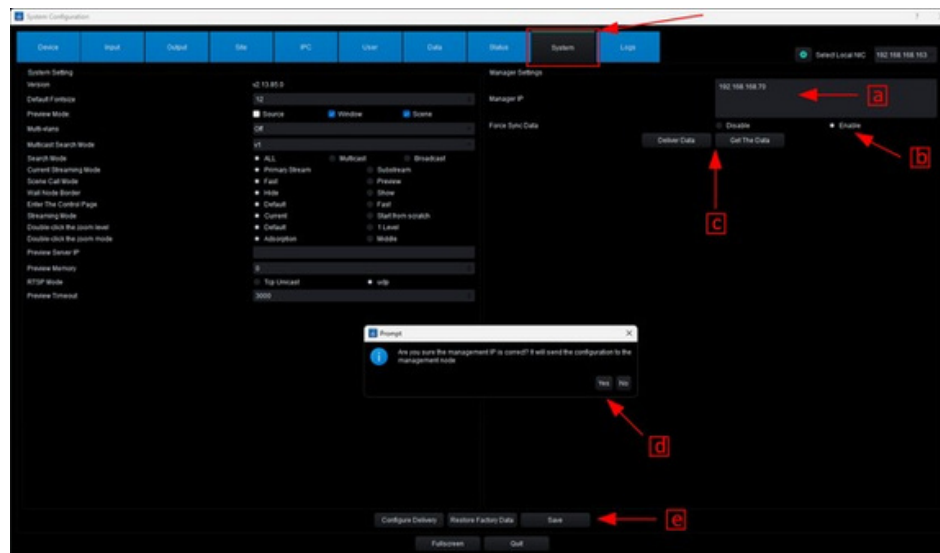


Figure 41

8.3.10 Logs tap

This is a section where the user can view the operation logs sent by the system. Figure 42

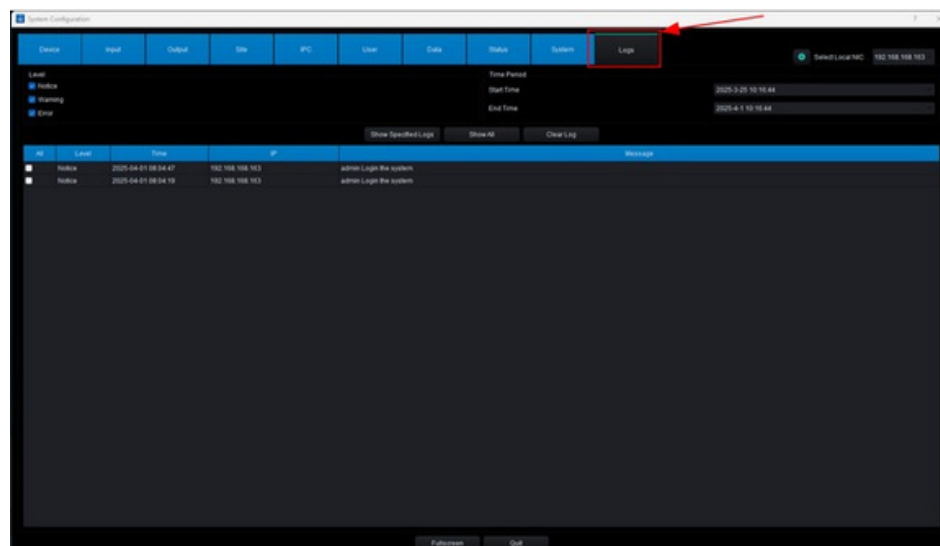


Figure 42

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 43



Figure 43

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 44

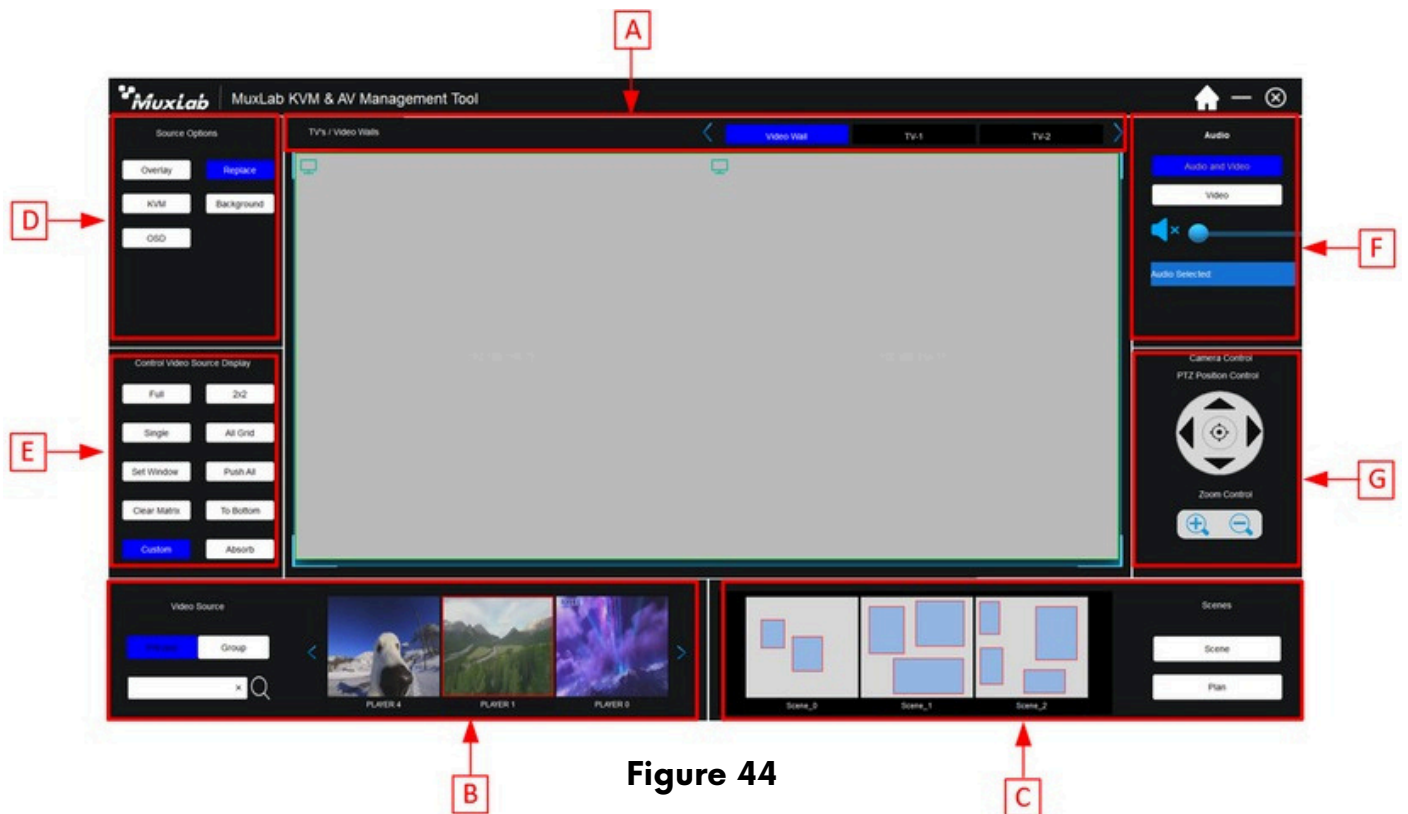


Figure 44

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 45

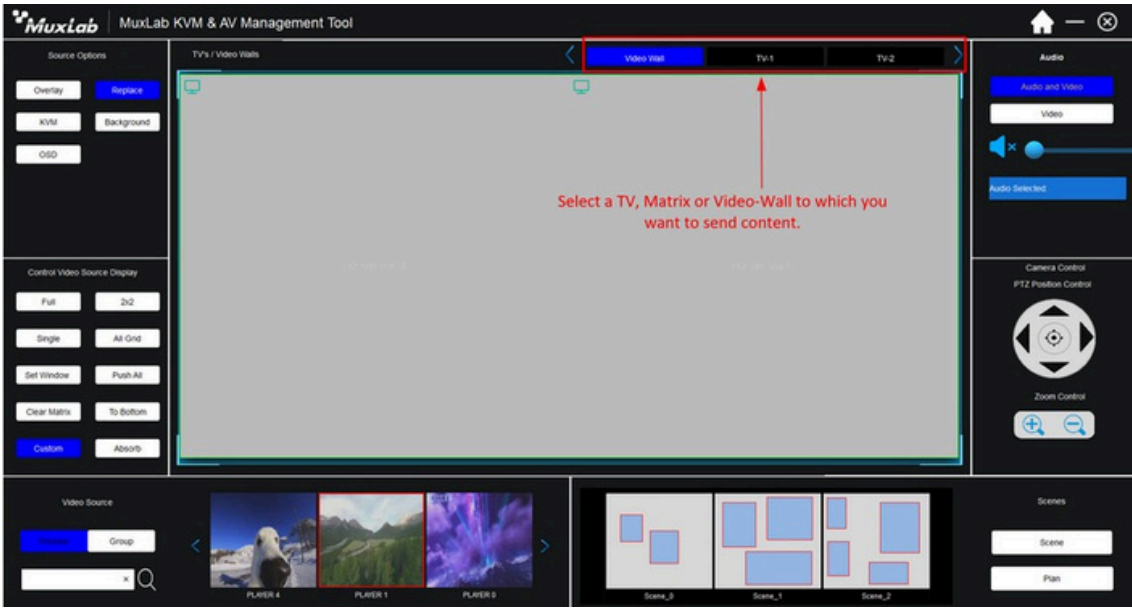


Figure 45

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 46

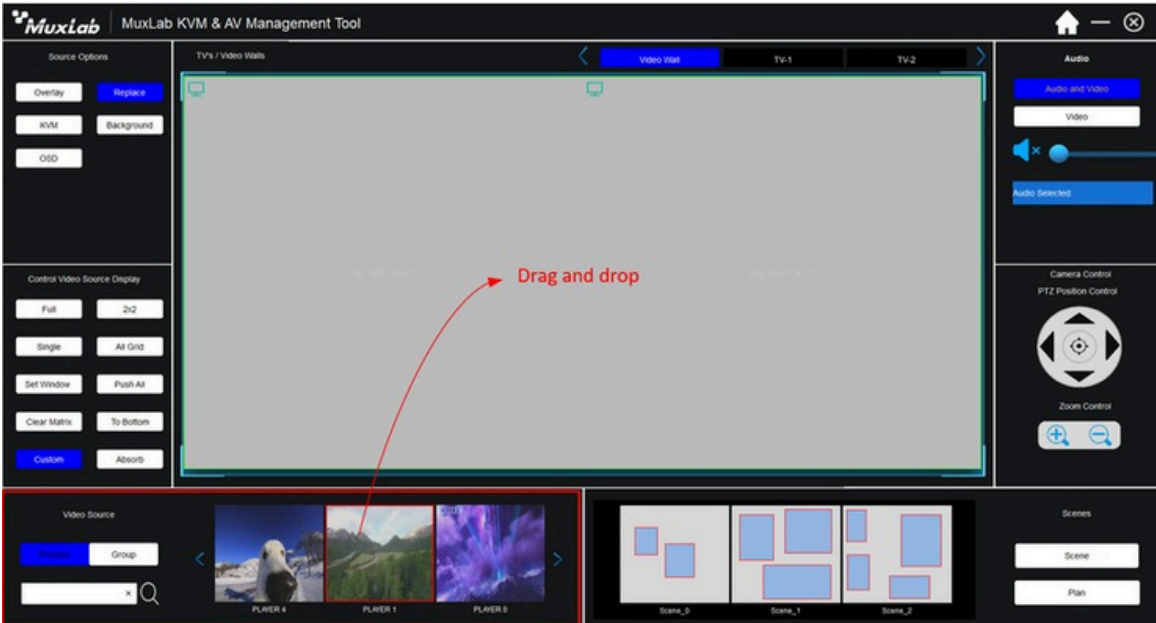


Figure 46

C This section displays the layouts for each preset. To access a preset, the User simply clicks on the corresponding layout. Figure 47

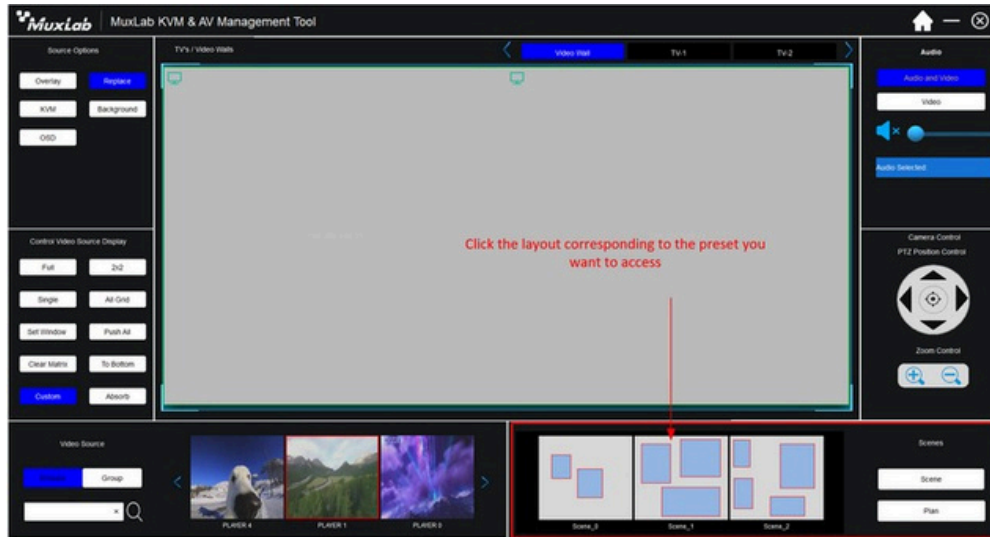


Figure 47

- D** In this section there are five different options that the user can use to manage video sources.
- Overlay:** This option allows you to create multiple views with PIP and POP.
 - Replace:** This option allows you to replace video sources in full screen.
 - KVM:** This option allows you to control the source using KVM.
 - Background:** This option allows you to change the background.
 - OSD:** This option allows you to change the OSD scrolling text.
- E** In this section there are 10 different options that the user can use to control the display of the video source.
- Full:** This option will display the canvas as a single screen even if it is a video wall.
 - 2x2:** This option will divide the canvas into a 2x2 matrix
 - Single:** This option will divide the canvas according to the number of screens on video wall.
 - All Grid:** This option allows the User to divide the canvas with a custom grid.
 - 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.
 - Push All:** This option allows the User to send the same content to all displays and video walls in the system.
 - Clear Matrix:** This option allows the User to clean the canvas.
 - To Bottom:** This option allows the User to place a window at the bottom of a layout that contains POP.
 - Custom:** This option allows the User to create custom layouts
 - 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.

9. Workstation Control

This section describes the basic for configuring, managing and controlling the KVM workstation of the 500863 Transceiver. After connecting the Workstation Transceiver to the display, an interface will appear where the User must log in. To do so, the User must enter his username and password. Please note that by default the Username is **admin** and the Password is **admin**. The first time you log in, you will also need to enter the IP address of the Transceiver on which the system configuration was saved in the IP box (see section 8.3.9). Figure 48

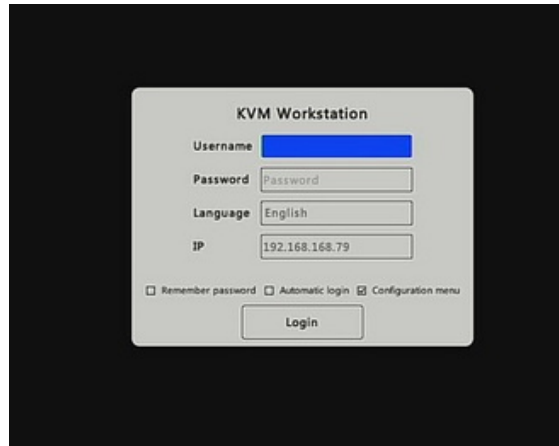


Figure 48

Once logged in, a new interface will appear where the User can configure all the necessary settings for the Workstations.

On this new interface we can see 5 main tabs (Source Management, Wall Management, User Management, Enter System, and Exit System). Figure 49

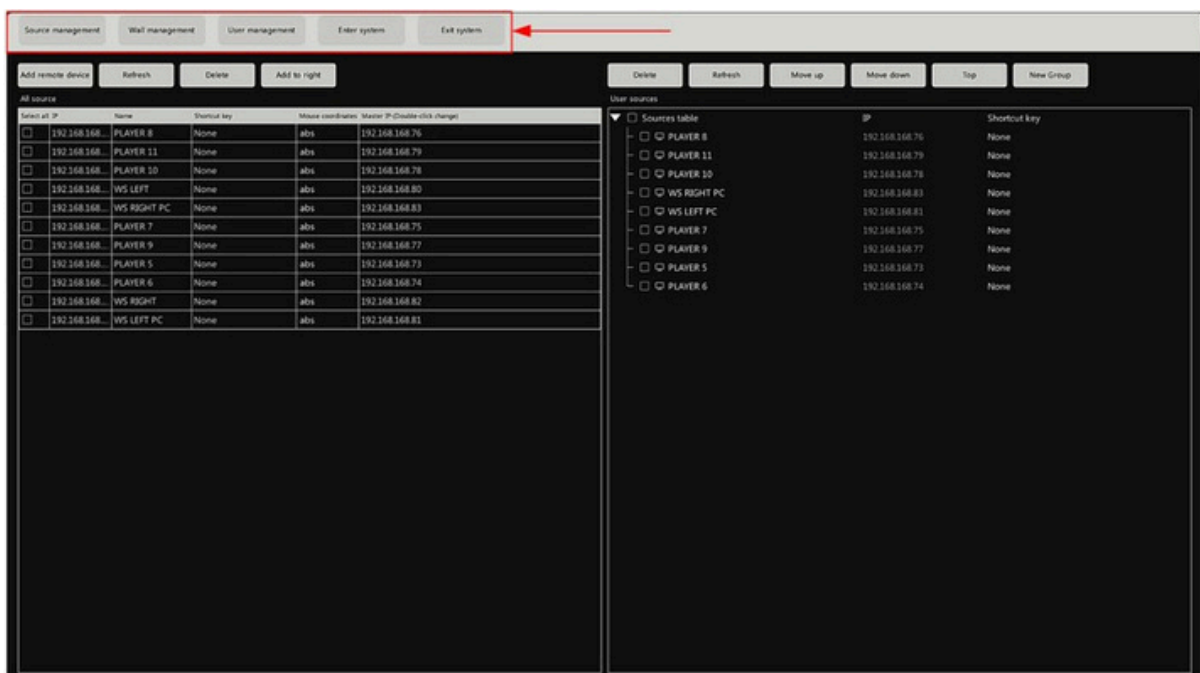


Figure 49

9.1 Source Management tab

After clicking on the Source Management tab we can see two main sections. Figure 50

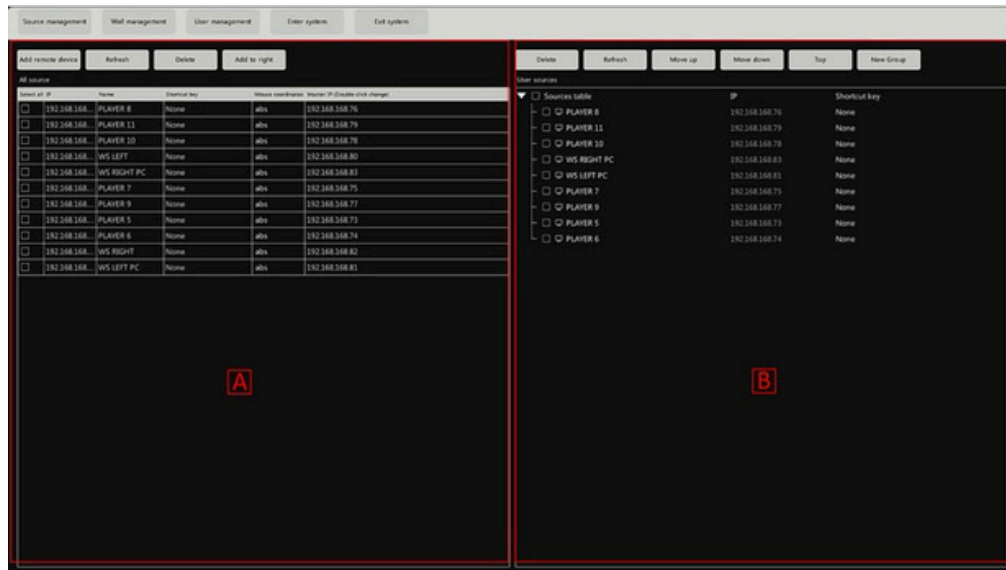


Figure 50

A In this section there are 4 options that the User can use to manage the Transceivers available on the network that can be used as sources, these options are: Add Remote Device, Refresh, Delete, and Add to Right.

Add Remote Device: By clicking this option, the User will be able to add a Transceiver manually. To add a transceiver manually, click on Add Remote 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 and b) click "Add". Figure 51

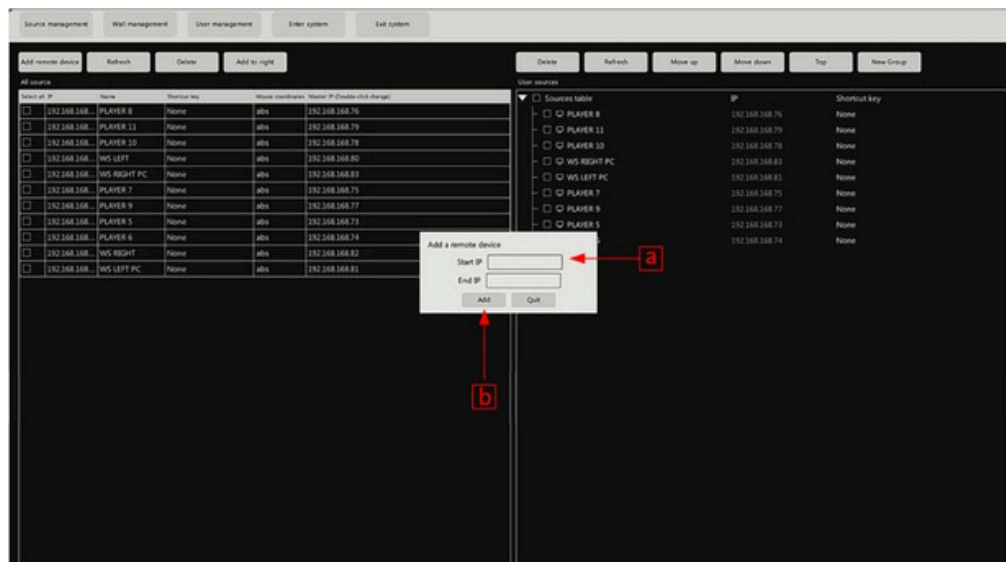


Figure 51

Refresh: Clicking this option will allow the User to scan the network to see a list of all connected Transceivers.

Delete: Clicking this option allows the User to delete one or more Transceivers from the list. To do this, a) select the Transceiver(s) you wish to delete, and b) click "Delete". Figure 52

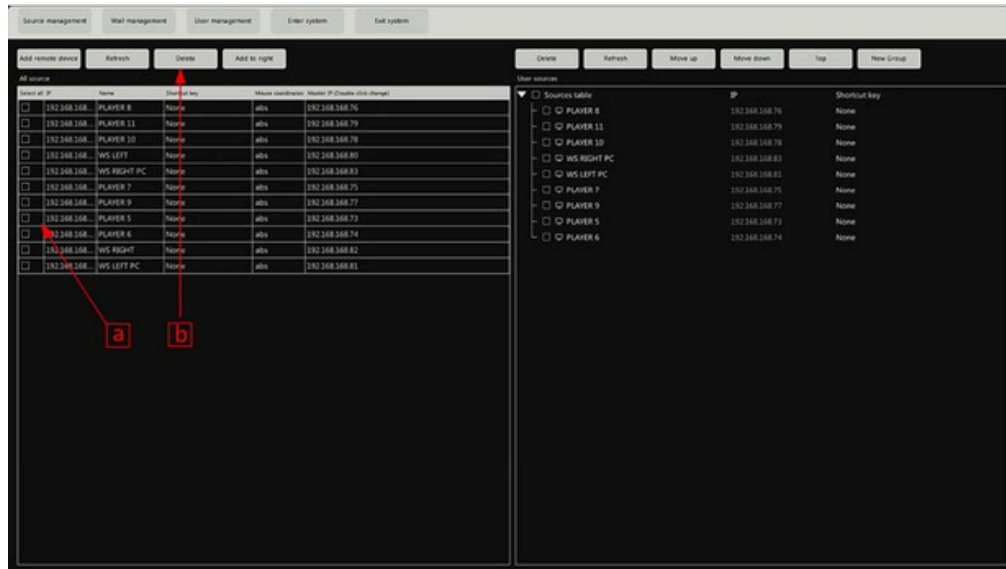


Figure 52

Add to Right: Clicking this option will allow the User to add one or more transceivers listed on the left side to the list on the right side where the selected transceivers are located as sources. To do this, a) select the Transceiver(s) you wish to add, and b) click "Add to Right" Figure 53

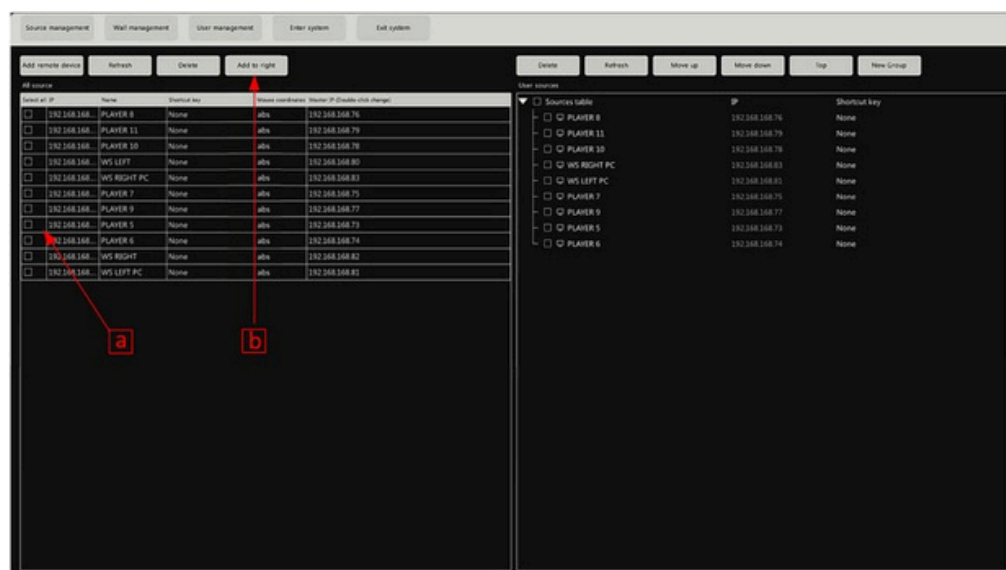


Figure 53

B In this section there are 6 options that the User can use to manage the Transceivers selected as sources, these options are: Delete, Refresh, Move Up, Move Down, Top, and New Group.

Delete: Clicking this option allows the User to delete one or more Transceivers from the list. To do this, a) select the Transceiver(s) you wish to delete, and b) click "Delete". Figure 54

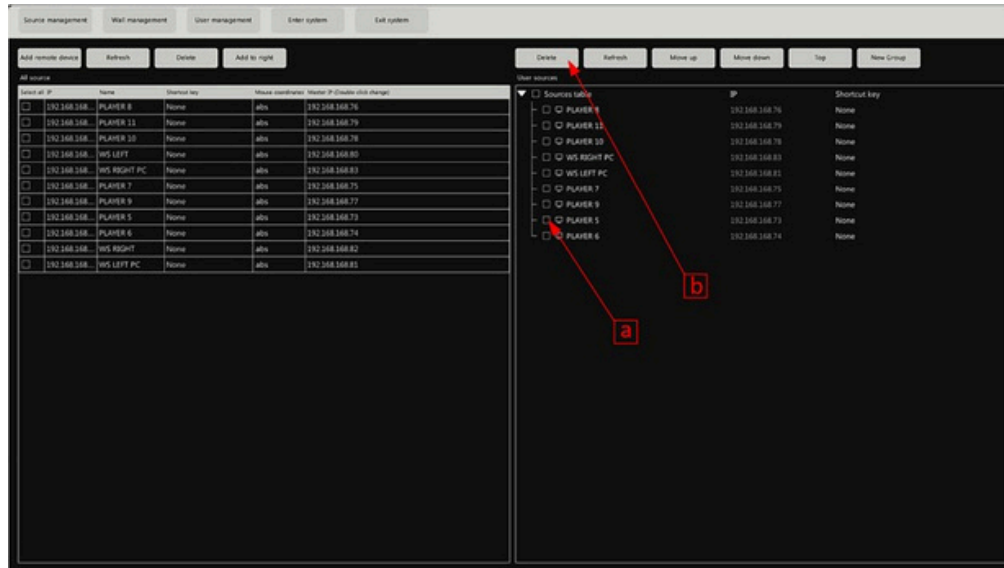


Figure 54

Refresh: Clicking this option will allow the User to update the list of transceivers selected as sources.

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

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

Top: Clicking this option will allow the user to move a selected transceiver to the top of the Transceiver list.

New Group: By clicking this option will allow the User to create Transceiver groups.

9.2 Wall Management tab

After clicking on the Wall Management tab, we can see two main options that the User can use to manage the KVM seat walls, these options are: All Seat Wall and New Seat Wall. Figure 55

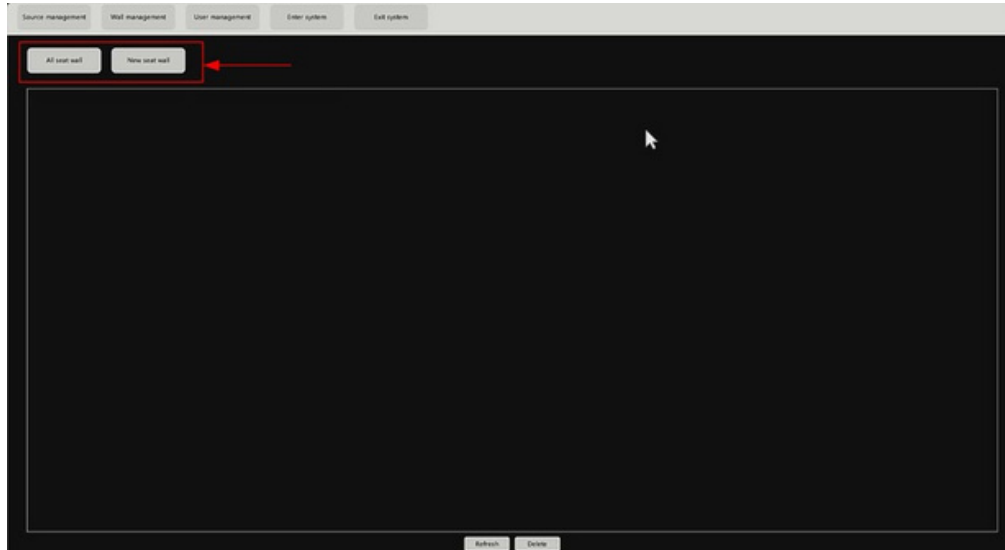


Figure 55

All Seat Wall: Clicking this option will allow the user to view all the Seat Walls already created and can also delete them by selecting the Seat Wall they wish to delete and then clicking Delete. Figure 56

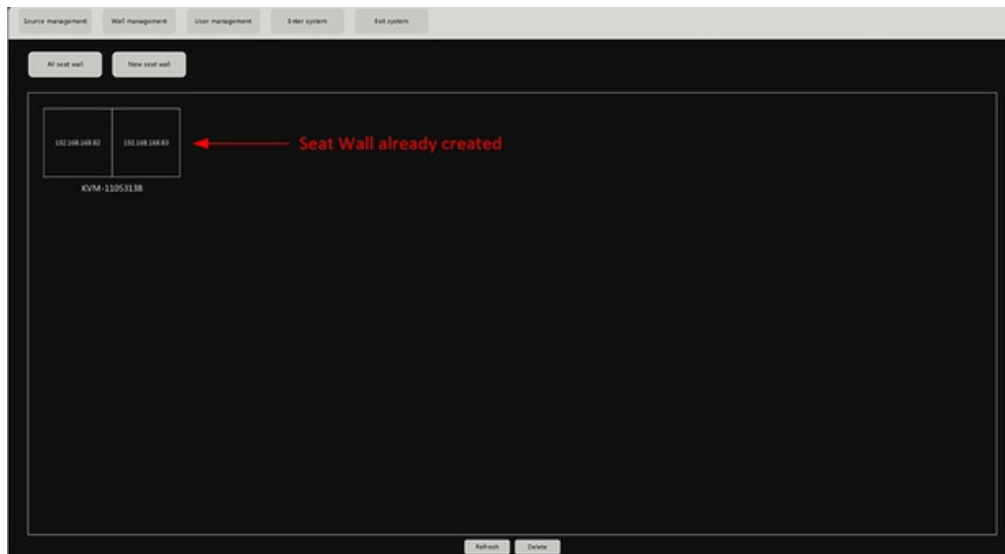


Figure 56

New Seat Wall: Clicking this option will allow the User to create a new Seat Wall. To do so, a) click "Refresh" to see the list of Transceivers that are available to make the Seat Wall, b) enter the number of rows and columns the Seat Wall will have, c) click "New". Figure 57

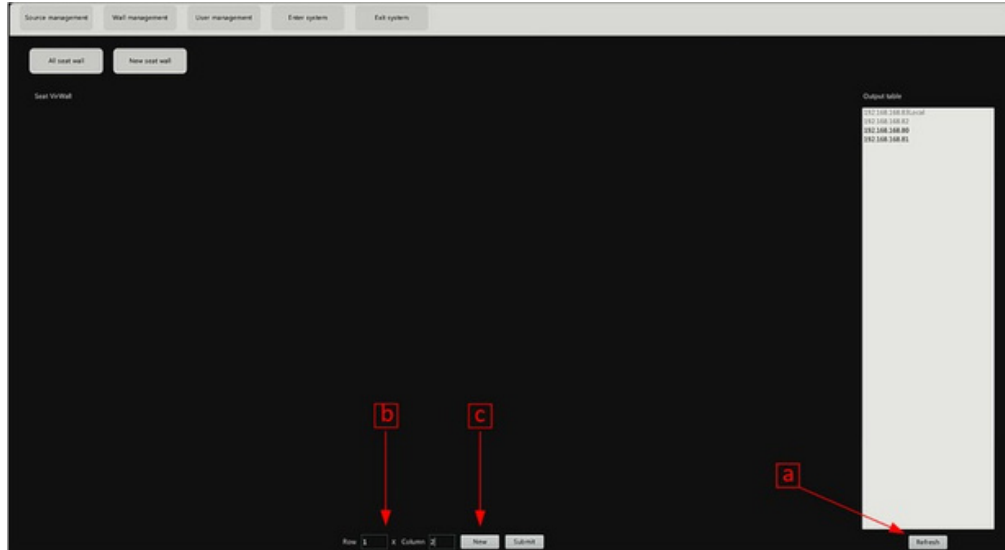


Figure 57

After clicking on "New" a template will appear representing the monitors that the Seat Wall will have, now the User must c) drag and drop onto each monitor the IP address corresponding to the Transceiver that will be connected to said monitor and d) click on "Submit". Figure 58

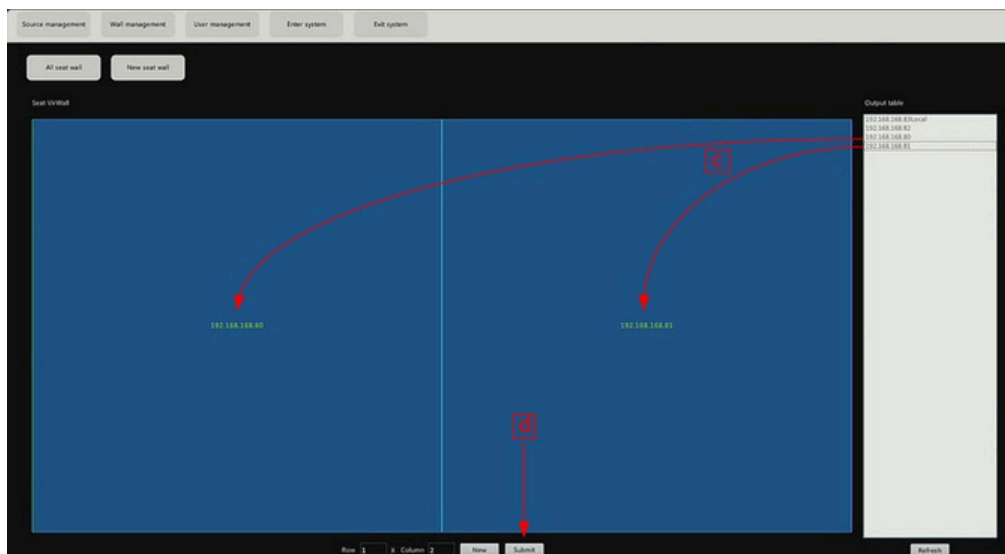


Figure 58

9.3 User Management tab

After clicking on the User Management tab, we can see three main sections that the User can use to manage the workstation users. Figure 59

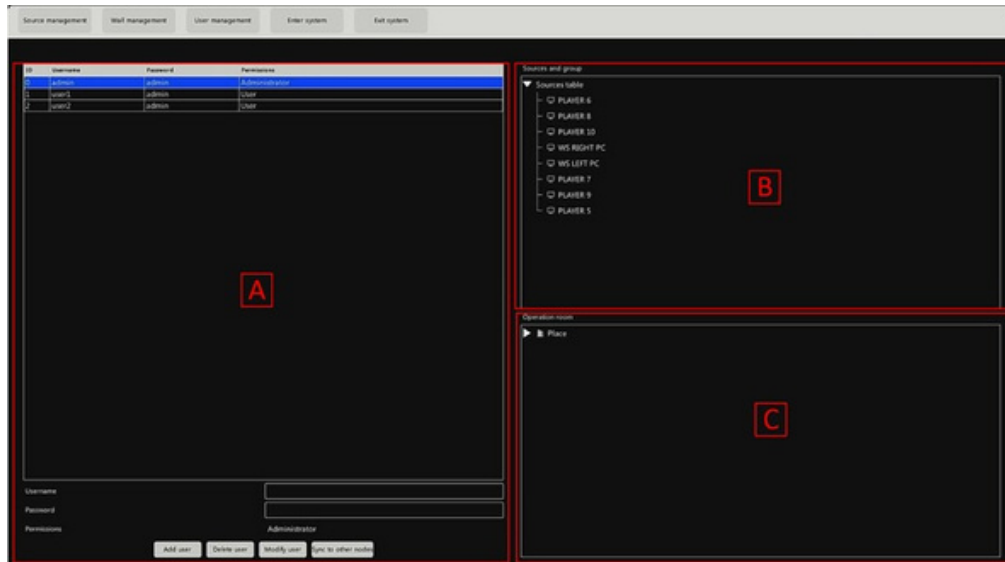


Figure 59

A In this section there are 4 options, these options are: Add User, Delete User, Modify User, and Sync to the other nodes.

Add User: Clicking this option will allow the user to add a workstation user. After clicking **Add User**, a pop-up window will appear where they must a) enter a username, b) enter a password for this user, and c) click **Submit**. Figure 60

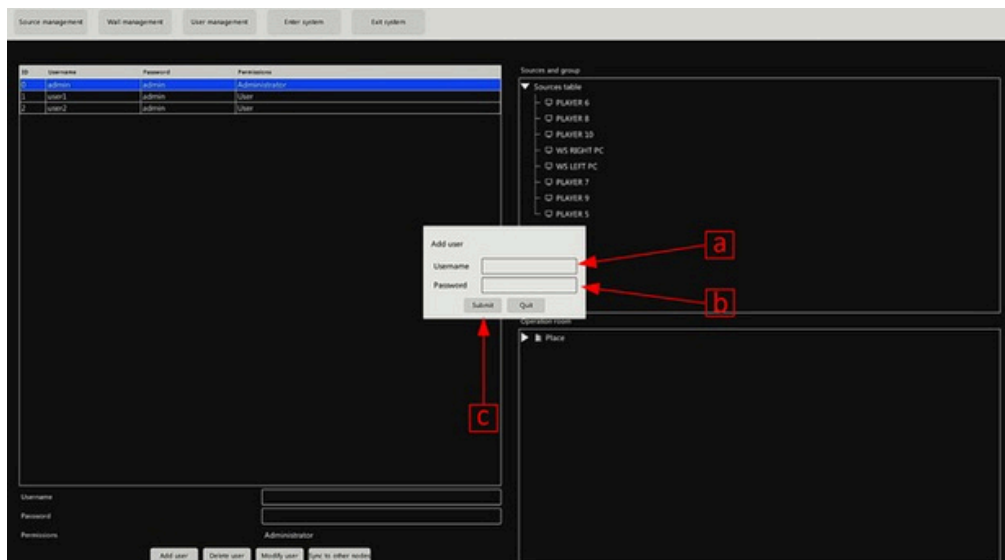


Figure 60

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

Modify User: Clicking this option will allow the user to change a workstation user's password. After selecting the workstation user and changing the password, click **Modify User** to save the changes.

Sync to Other Nodes: Every time a workstation user is created, deleted, or modified, the user must click Sync to Other Nodes to synchronize the information with all Transceivers.

- B** In this section, the User can assign access permissions to workstation users to the different computers/servers or video sources available in the system. To do this, a) select the workstation user, b) click each check box corresponding to the computer/server or video source you want the workstation user to have access to, and c) click **Sync to Other Nodes**. Figure 61

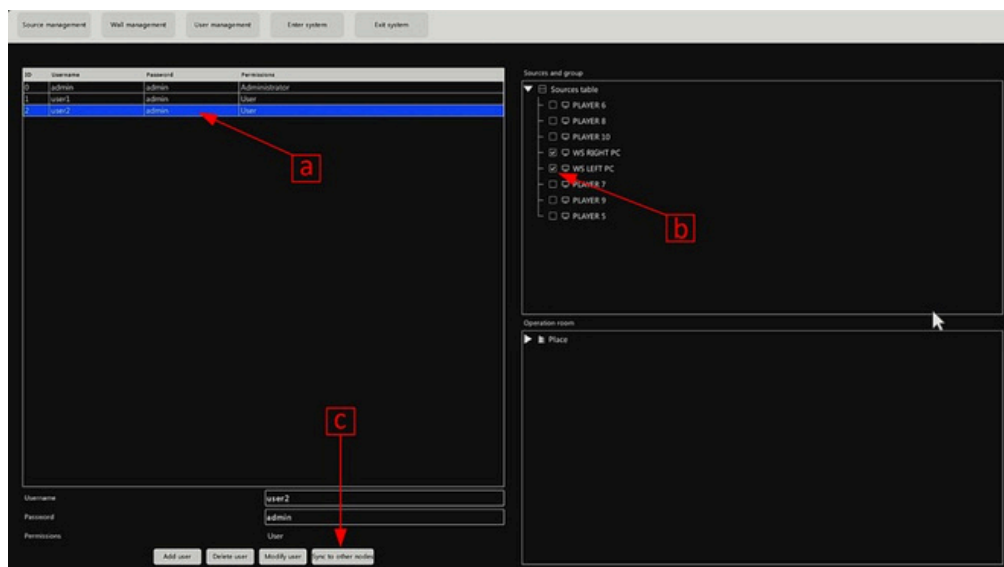


Figure 61

- C** In this section, the User can assign access permissions to workstation users to the different video walls or TV's available in the room. To do so, a) select the workstation user, b) click each check box corresponding to the video wall or TV you want the workstation user to have access to, and c) click **Sync to Other Nodes**. Figure 62

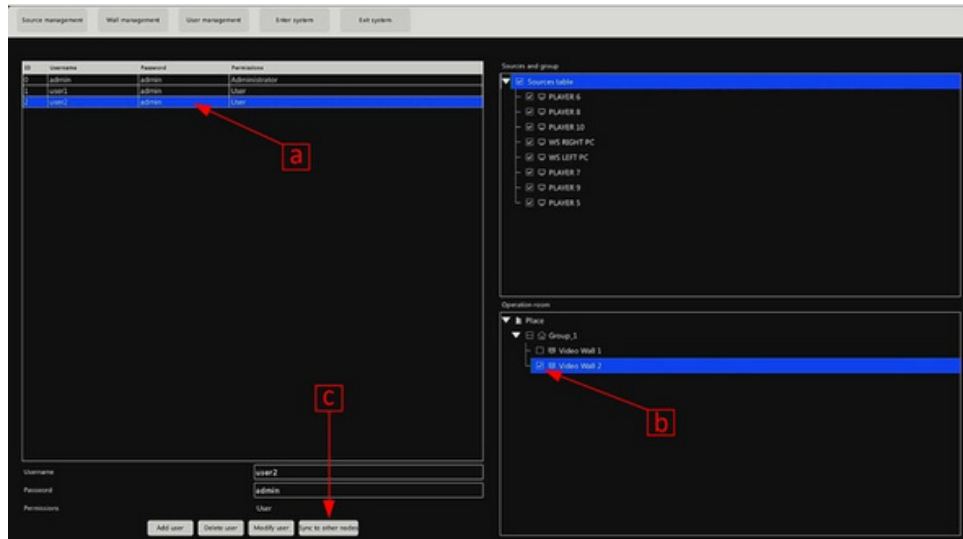


Figure 62

9.4 Enter System tab

After clicking the "Enter System" tab, the system will display a new screen where the User can begin working and access the computers/servers, or video sources to which they have permissions. On this new screen, you will find a triangular icon in the top center that you must click to view the OSD menu. Figure 63



Figure 63

The OSD menu has 7 options, these options are: Source, Layout, Restore, Cooperation, Intercom, System, and Quit. Figure 64



Figure 64

Source: By clicking on this option, the user will be able to see a preview of all the computers/servers or video sources they have access to and will be able to select one of them, to do so a) click the Source icon, b) click on the preview of the computer/server you want to select and c) click on the screen. Figure 65

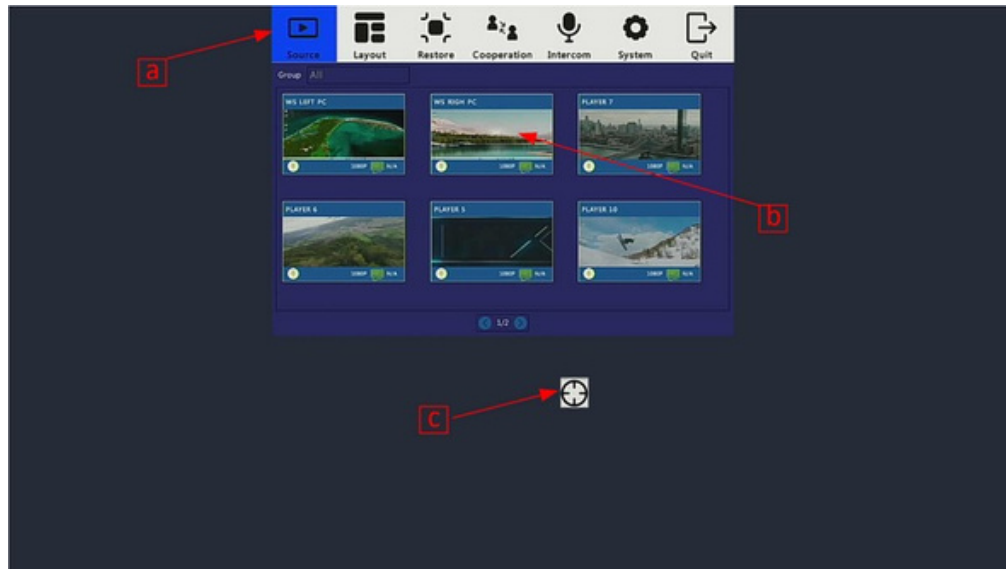


Figure 65

Layout: Clicking this option will display 4 different templates that the User can use to split the screen and view multiple computers/servers on a single screen. to do so a) click the Layout icon, and b) click on the layout you want to select. Figure 66

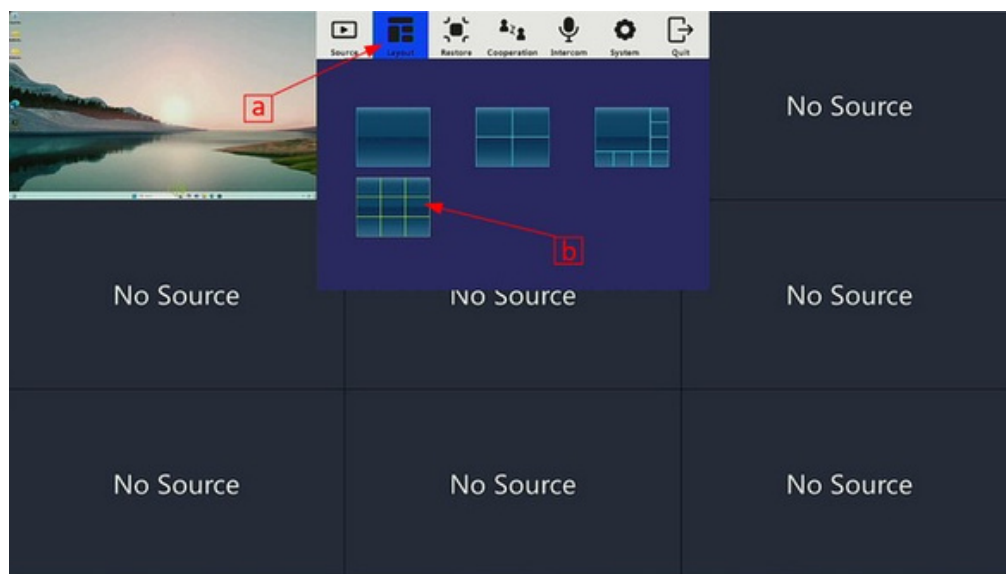


Figure 66

Restore: By clicking on this option will allow the user to recover the last layout used.

Cooperation: Clicking this option will allow the User to send or retrieve content to and from video walls, and will also be able to send content to other workstations. Two main options are displayed here: VirWall-Co and Agent-Co. Figure 67

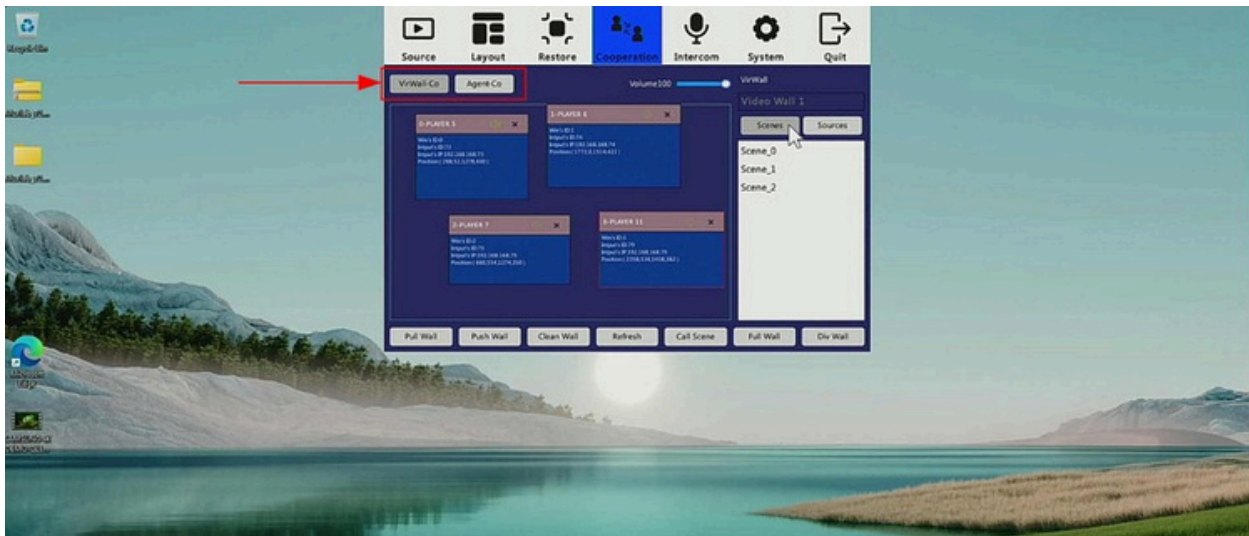


Figure 67

- **VirWall-Co:** Clicking on this option will display the different options the User has to manage the video walls, whether it be sending content to the video wall, taking content from the video wall, calling an already created scene, or sending a video source to the video wall from the sources available in the system. Figure 68 and 69

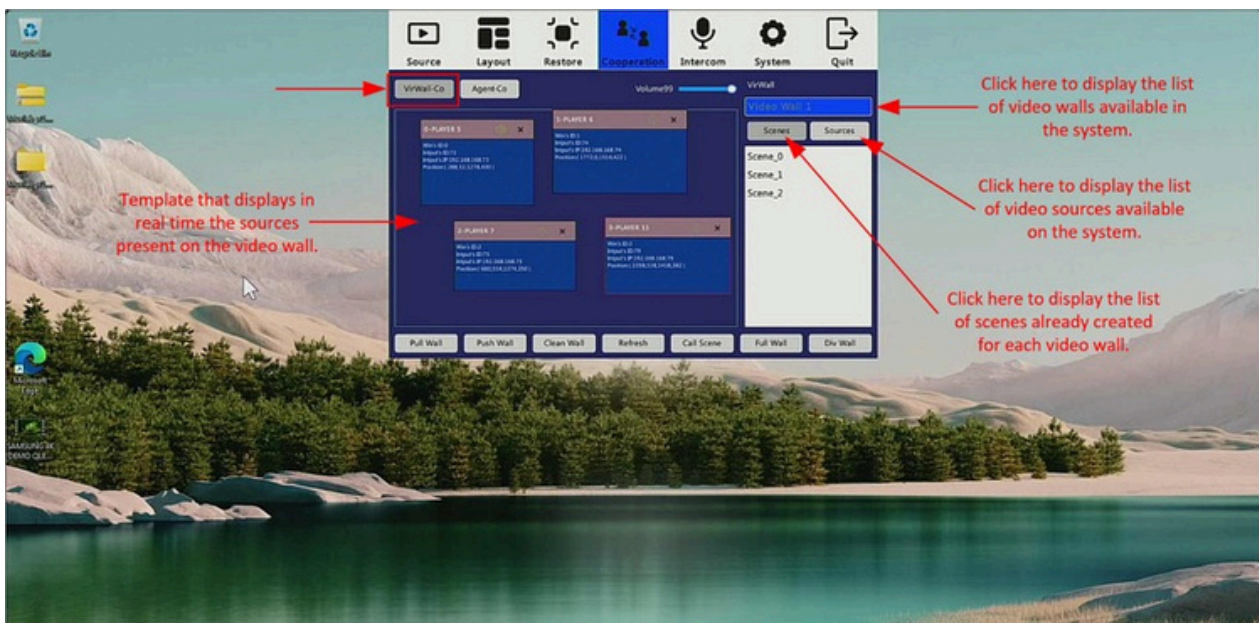


Figure 68

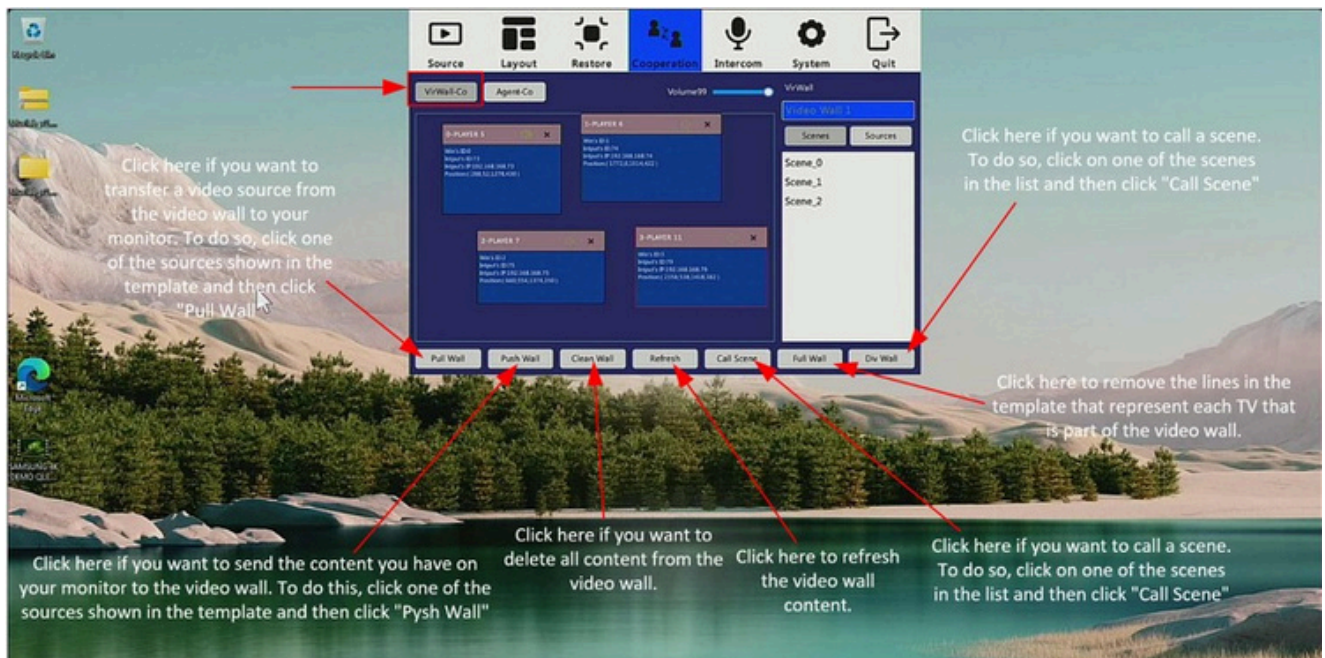


Figure 69

- **Agent-Co:** Clicking this option will allow the User to send the content on their monitor to another user. To do so, a) check the box for the user you want to send the content to and, b) click "Push" Figure 70

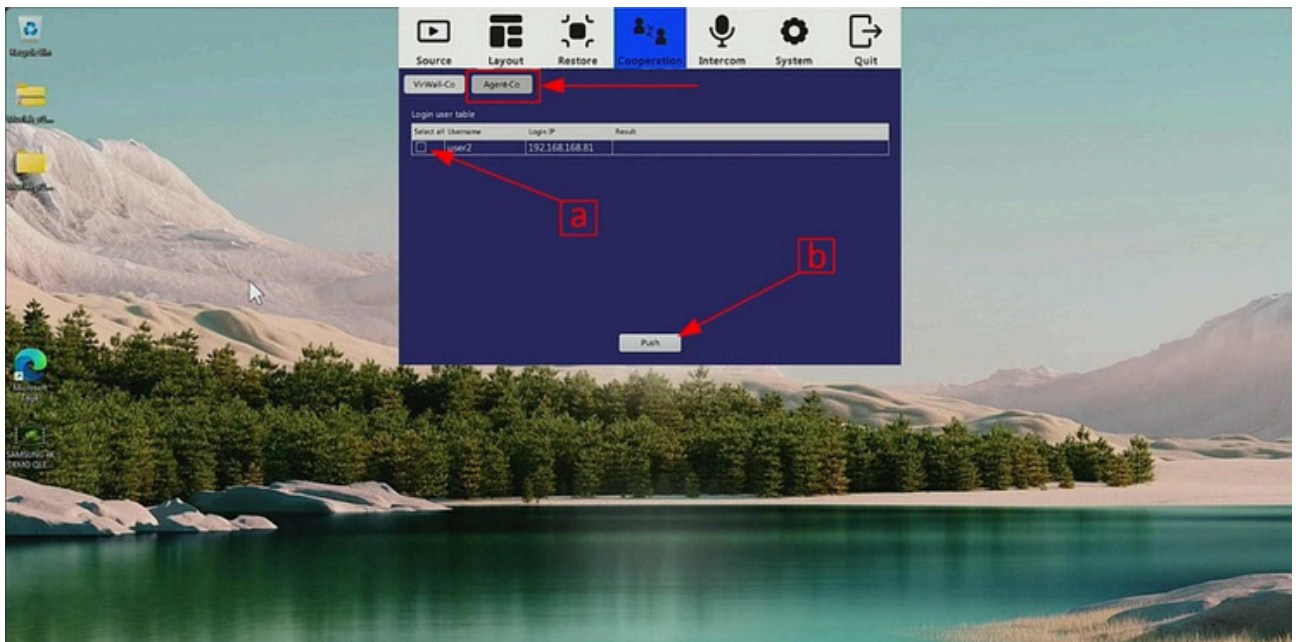


Figure 70

Intercom: Clicking this option will allow the User to make an audio call to another user. To do so, a) check the box for the user you wish to call and b) click "Dial." Figure 71

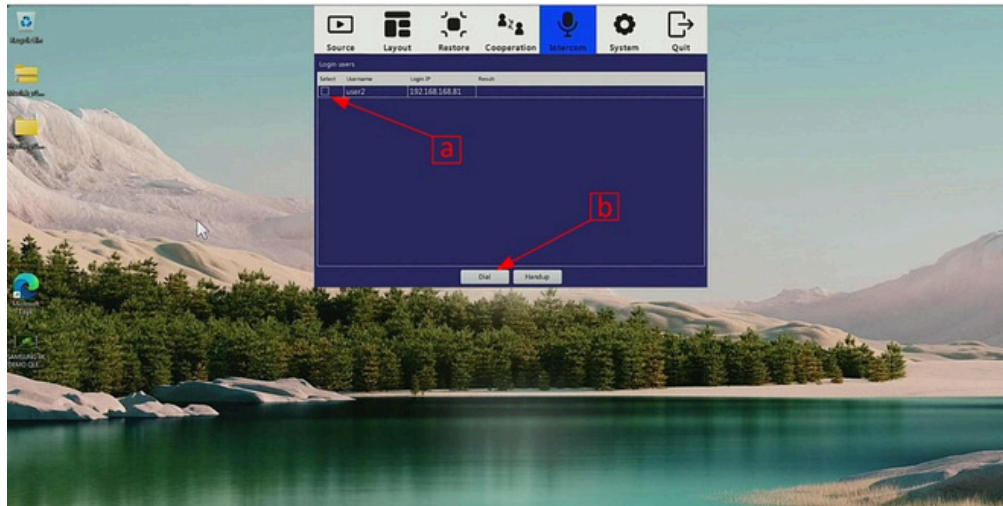


Figure 71

System: Clicking on this option will give the User some basic options to configure the system. Figure 72

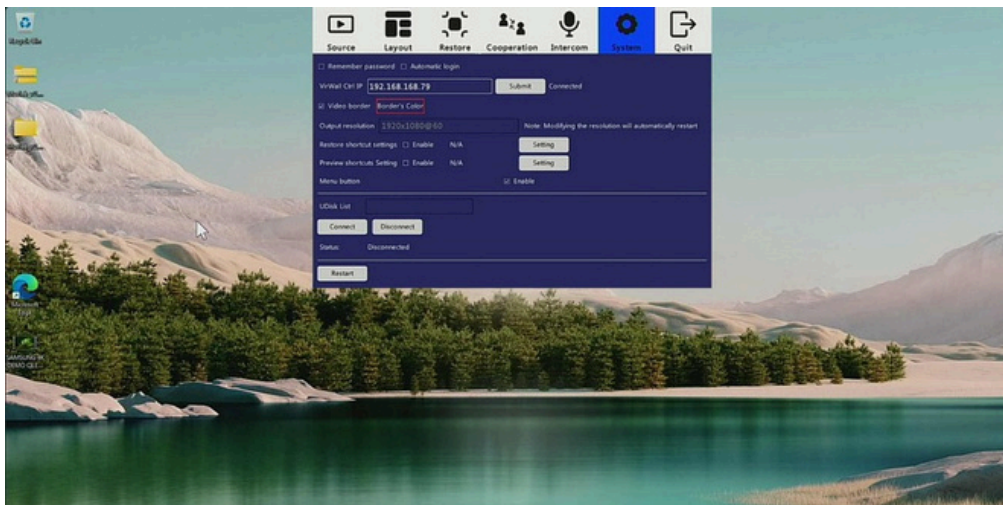


Figure 72

Quit: Clicking this option logs the user out.

9.5 Exit System tab

Clicking this option logs the user out.