

DIRECTOR

USER MANUAL

LIGHTNING



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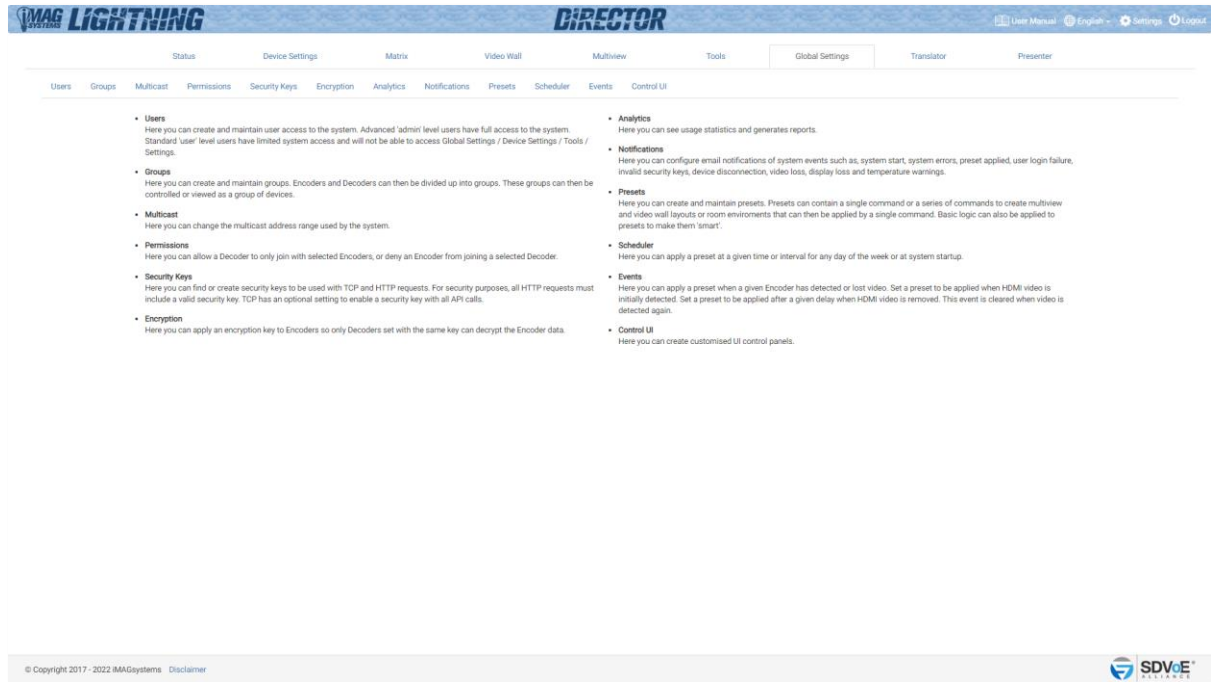
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1 Global Settings

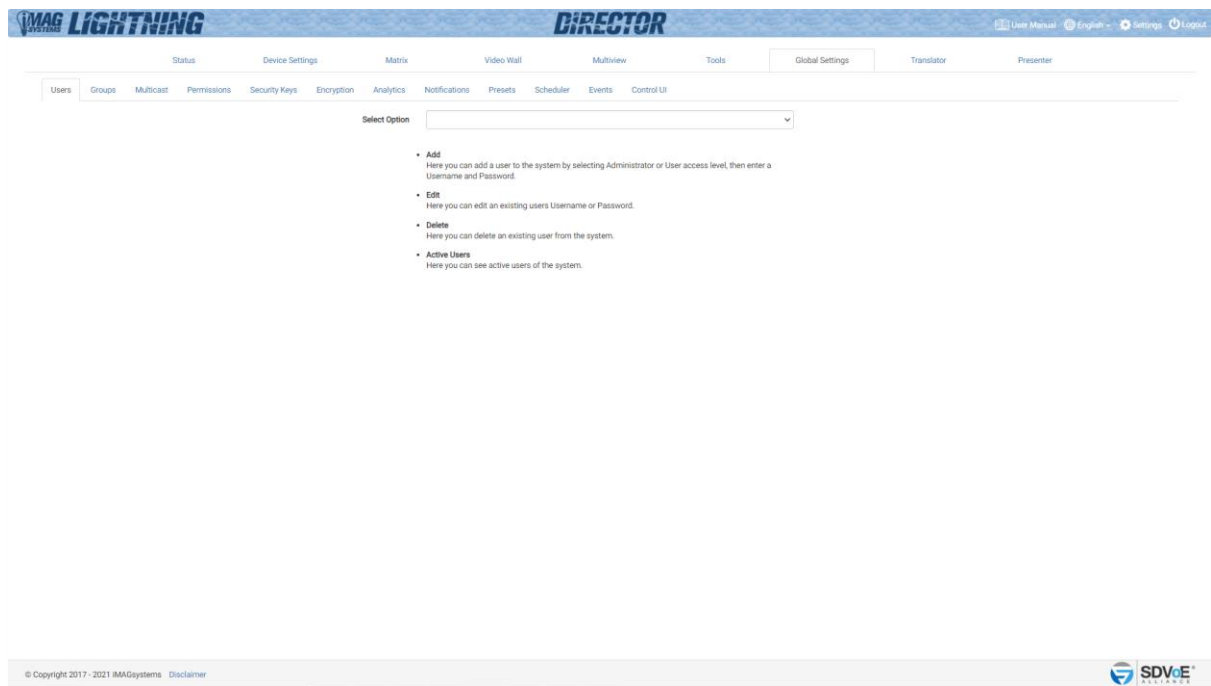
Here you will find all the global settings of the software.



1.1 Users

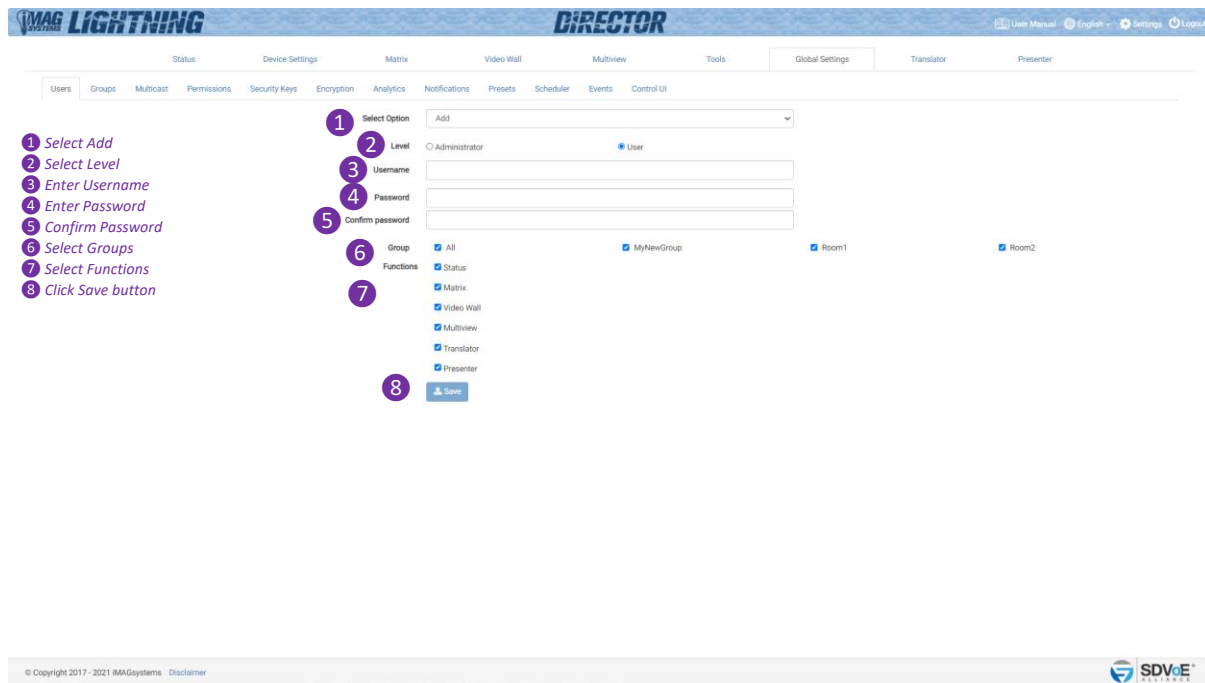
The system can be configured for user access control. Two levels of access are available, **administrator** and **user**. An **administrator** will have complete access, while a **user** is limited to the following areas:

- Status
 - Matrix
 - Video Wall
 - Multiview
 - Translator
 - Presenter
-
- The device groups for a user can also be limited so that only selected groups of Encoders and Decoders may be accessed.



1.1.1 Add User

Here you can add a user to the system by selecting **Administrator** or **User** access level, then enter a name and password for the new user. For user level access you can also select the accessible groups and functions.

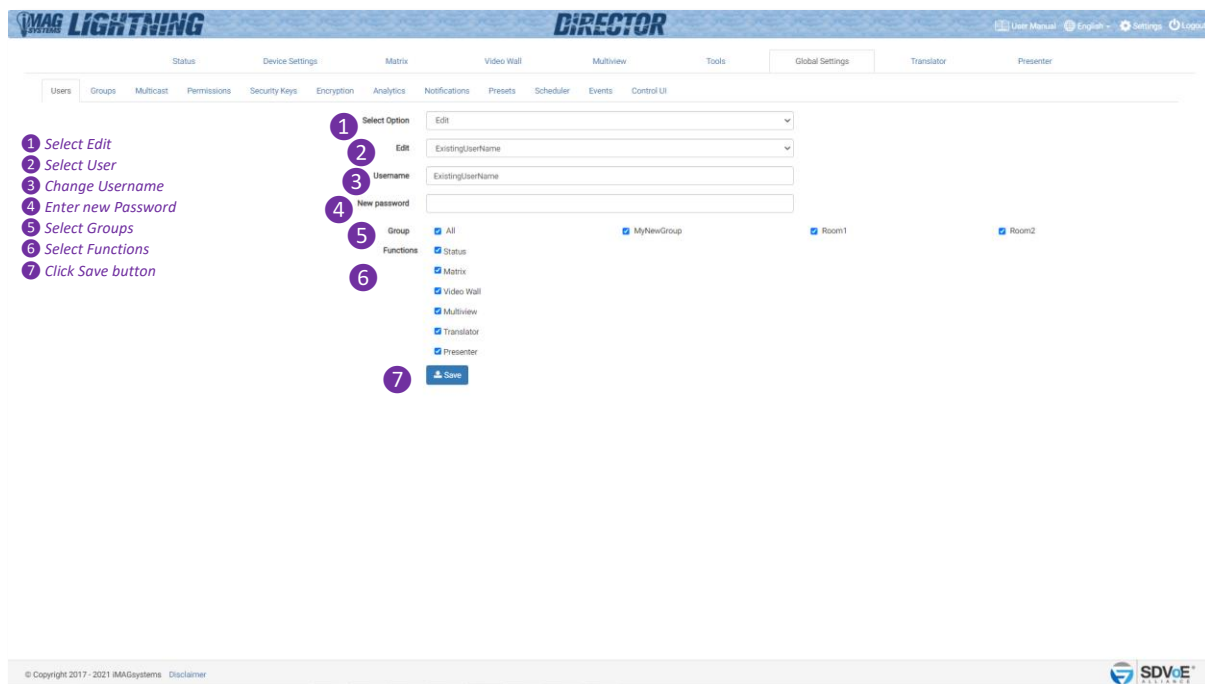


The screenshot shows the 'Add User' form in the Director Lightning interface. The form is titled 'Add' and includes fields for 'Level' (Administrator or User), 'Username', 'Password', and 'Confirm password'. Below these fields are checkboxes for 'Group' (All, MyNewGroup, Room1, Room2) and 'Functions' (Status, Matrix, Video Wall, Multiview, Translator, Presenter). A 'Save' button is at the bottom. Numbered instructions (1-8) are overlaid on the form:

- 1 Select Add
- 2 Select Level
- 3 Enter Username
- 4 Enter Password
- 5 Confirm Password
- 6 Select Groups
- 7 Select Functions
- 8 Click Save button

1.1.2 Edit User

Here you can edit an existing users Username, Password, allocated groups and functions.

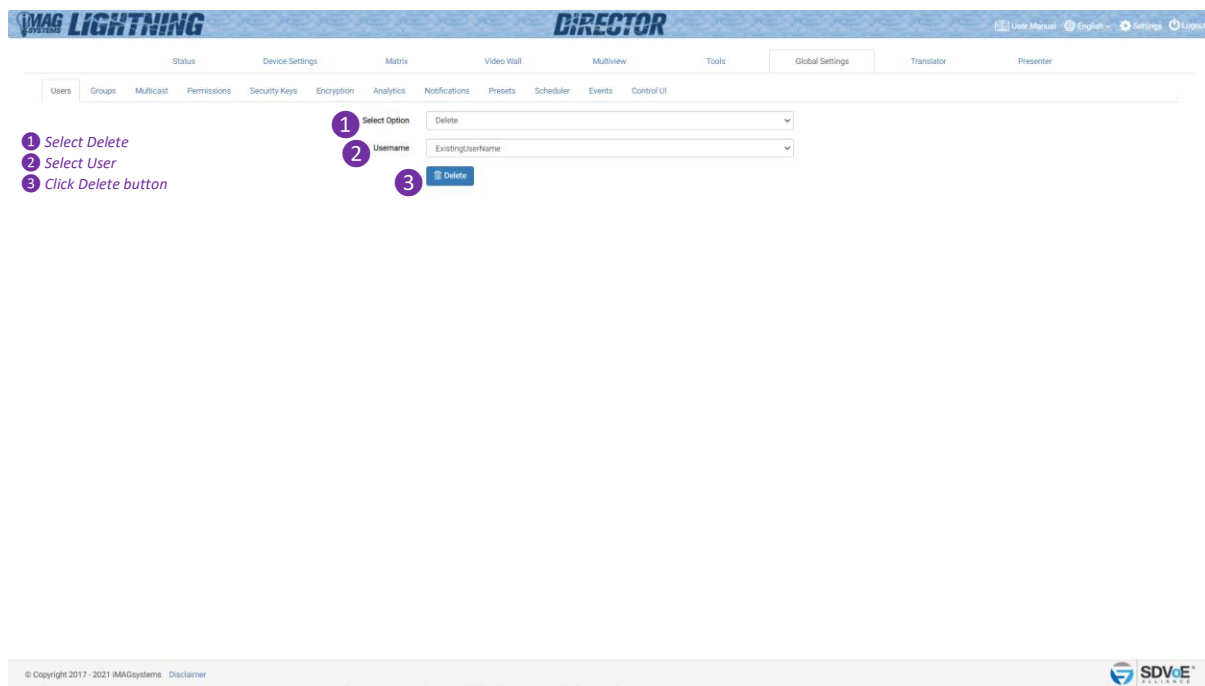


The screenshot shows the 'Edit User' form in the Director Lightning interface. The form is titled 'Edit' and includes fields for 'ExistingUsername', 'New password', and 'Group' (All, MyNewGroup, Room1, Room2). Below these fields are checkboxes for 'Functions' (Status, Matrix, Video Wall, Multiview, Translator, Presenter). A 'Save' button is at the bottom. Numbered instructions (1-7) are overlaid on the form:

- 1 Select Edit
- 2 Select User
- 3 Change Username
- 4 Enter new Password
- 5 Select Groups
- 6 Select Functions
- 7 Click Save button

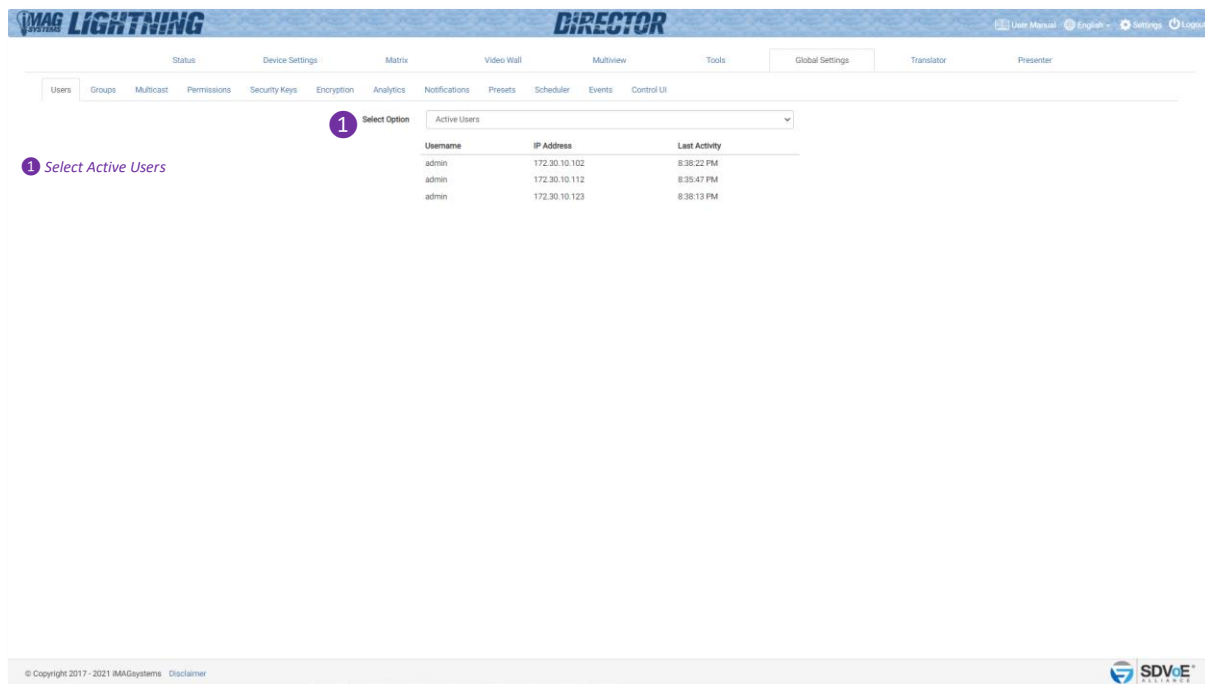
1.1.3 Delete User

Here you can delete an existing user from the system.



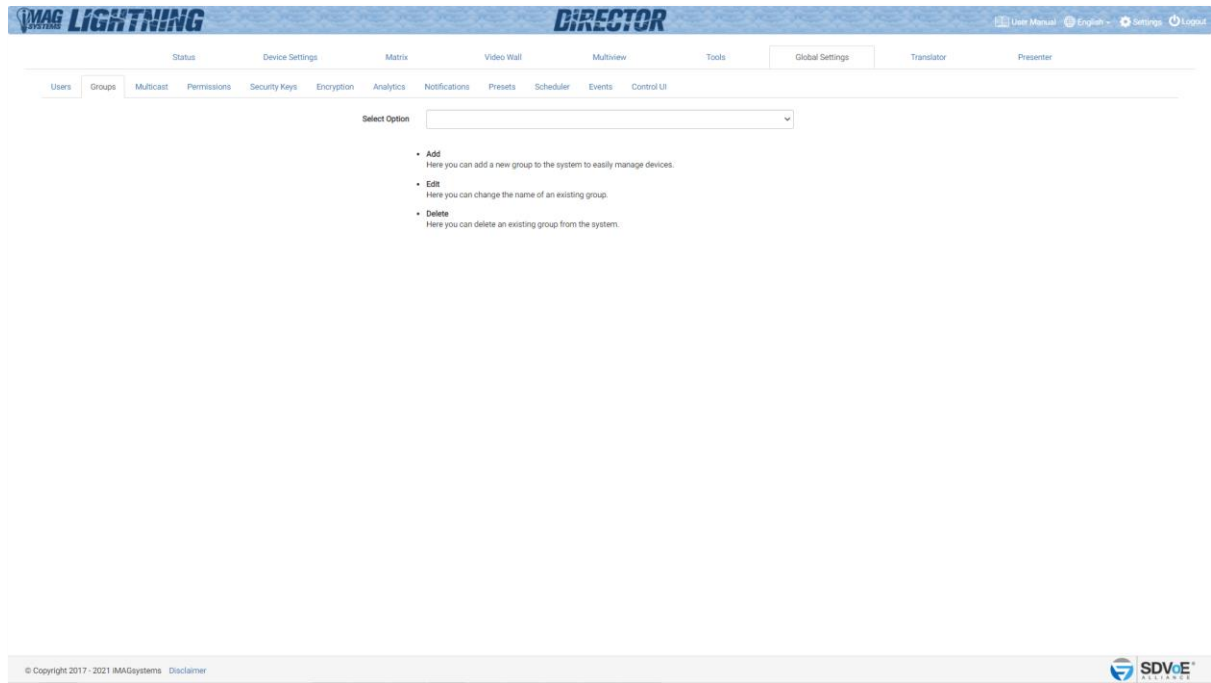
1.1.4 Active Users

Here you can see all the active users logged into the system and the time of their last activity.



1.2 Groups

System Encoders and Decoders can be arranged into various groups. These groups can then be individually controlled via the API or displayed in the UI. Here we manage the groups by adding, editing or deleting them. Once a group has been added to the system, the group can then be assigned to any or all Encoders and Decoders from the Device Settings tab.



The following group names cannot be used:

- 'all'
- 'all_rx'
- 'all_tx'
- 'ungrouped'
- 'all_devices'
- Any Device name
- Any Preset name

Here you can add a new group to the system to easily manage Encoders and Decoders. Devices can then be added to the group.

User Manual

English

Settings

Logout

Status

Device Settings

Matrix

Video Wall

Multiview

Tools

Global Settings

Translator

Presenter

Users

Groups

Multicast

Permissions

Security Keys

Encryption

Analytics

Notifications

Presets

Scheduler

Events

Control UI

1 Select Add

2 Enter a Group name

3 Select devices

4 Click Save

1 Select Option

Add

2 Group

MyNewGroup

Max 19 characters allowed

3 Select Device

☐ All Devices

☐ 341B28165A3

☒ Decoder1
 ☒ Encoder2
 ☐ TR26-2

☐ All Decoders

☐ 341B2ZF00297

☒ Decoder2
 ☐ TR25-1
 ☐ TR42-2

☐ All Encoders

☒ Individual

☐ D88039E59BAC

☒ Encoder1
 ☐ TR25-2

4

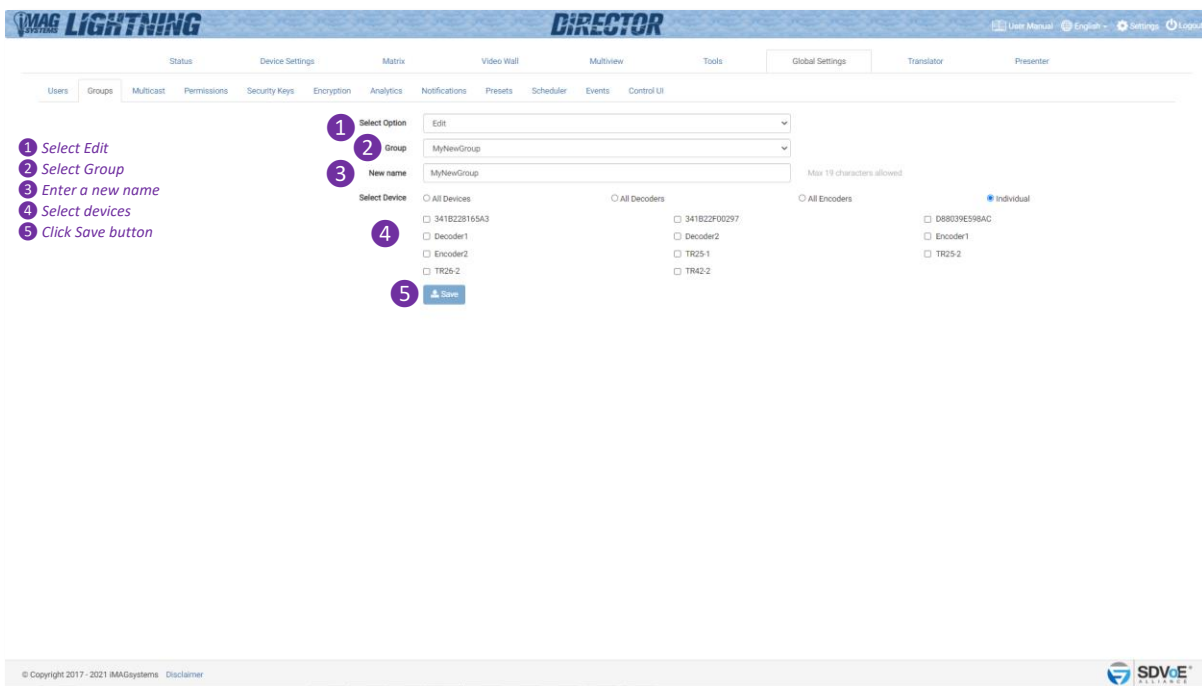
Save

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1.2.2 Edit Group

Here you can change the name of an existing group or devices associated with the group.



1.2.2 Edit Group

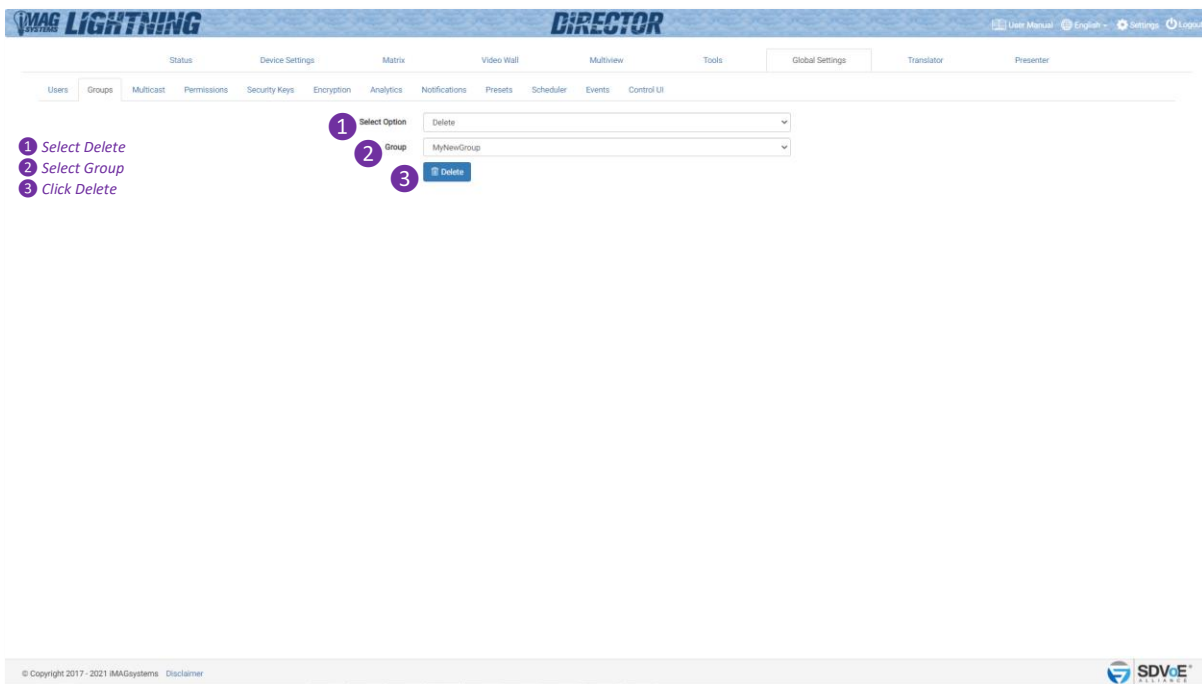
1 Select Edit
2 Select Group
3 Enter a new name
4 Select devices
5 Click Save button

1 Select Option
2 Group
3 New name
4 Select Device
5 Save

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1.2.3 Delete Group

Here you can delete an existing group from the system.



1.2.3 Delete Group

1 Select Delete
2 Select Group
3 Click Delete

1 Select Option
2 Group
3 Delete

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1.3 Multicast

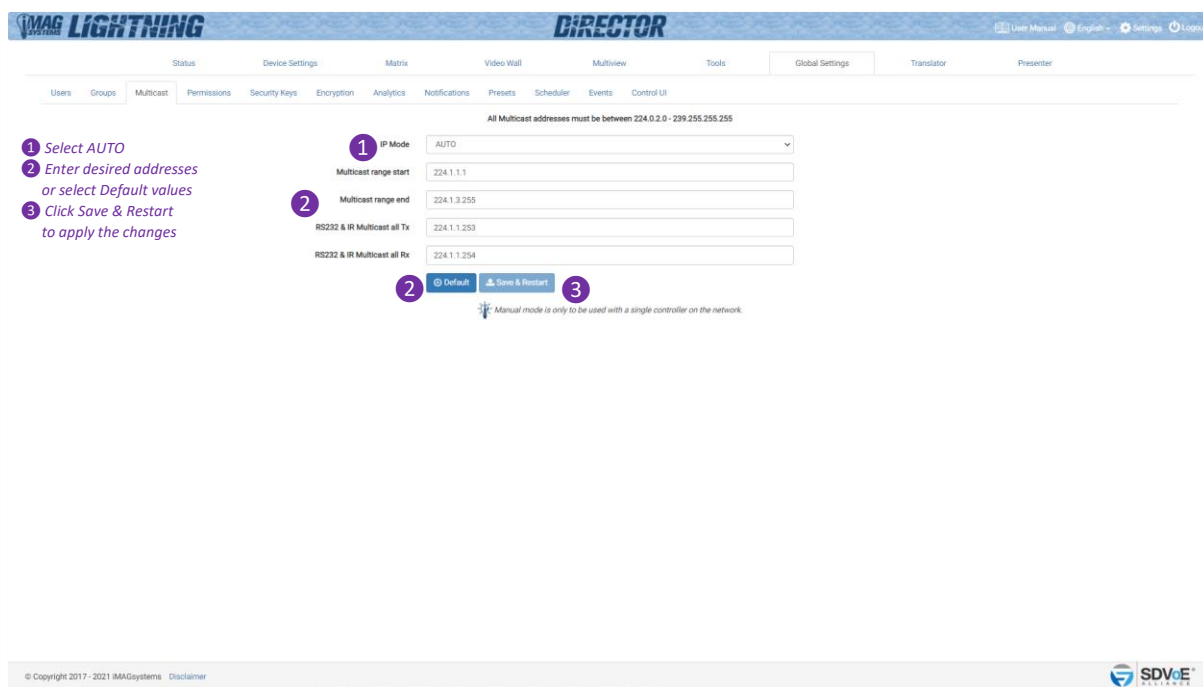
The Multicast section is used to initially set the system to use automatically assigned Multicast addresses within a specified range, or manually assign a range of Multicast addresses per stream type.

When in AUTO mode, all stream types will be assigned the next available Multicast address within the same subnet when the stream is started.

When in MANUAL mode, all streams will have their own statically assigned Multicast addresses to use. Each stream type is allocated a specific subnet so that Decoder subscriptions will always receive the correct stream type. So for example, a Decoder audio subscription can never receive a video stream.

1.3.1 Multicast Auto

Multicast Auto will automatically assign Multicast addresses to streams and is used by default. Device settings will not include a Multicast tab to assign individual Multicast addresses to streams.



iMAG LIGHTNING DIRECTOR

Users Groups **Multicast** Permissions Security Keys Encryption Analytics Notifications Presets Scheduler Events Control UI

All Multicast addresses must be between 224.0.0.0 - 239.255.255.255

1 Select **AUTO**

2 Enter desired addresses or select Default values or select Default values

3 Click Save & Restart to apply the changes

1 IP Mode: **AUTO**

Multicast range start: 224.1.1.1

Multicast range end: 224.1.3.255

RS232 & IR Multicast all Tx: 224.1.1.253

RS232 & IR Multicast all Rx: 224.1.1.254

2 Default 3 Save & Restart

Manual mode is only to be used with a single controller on the network.

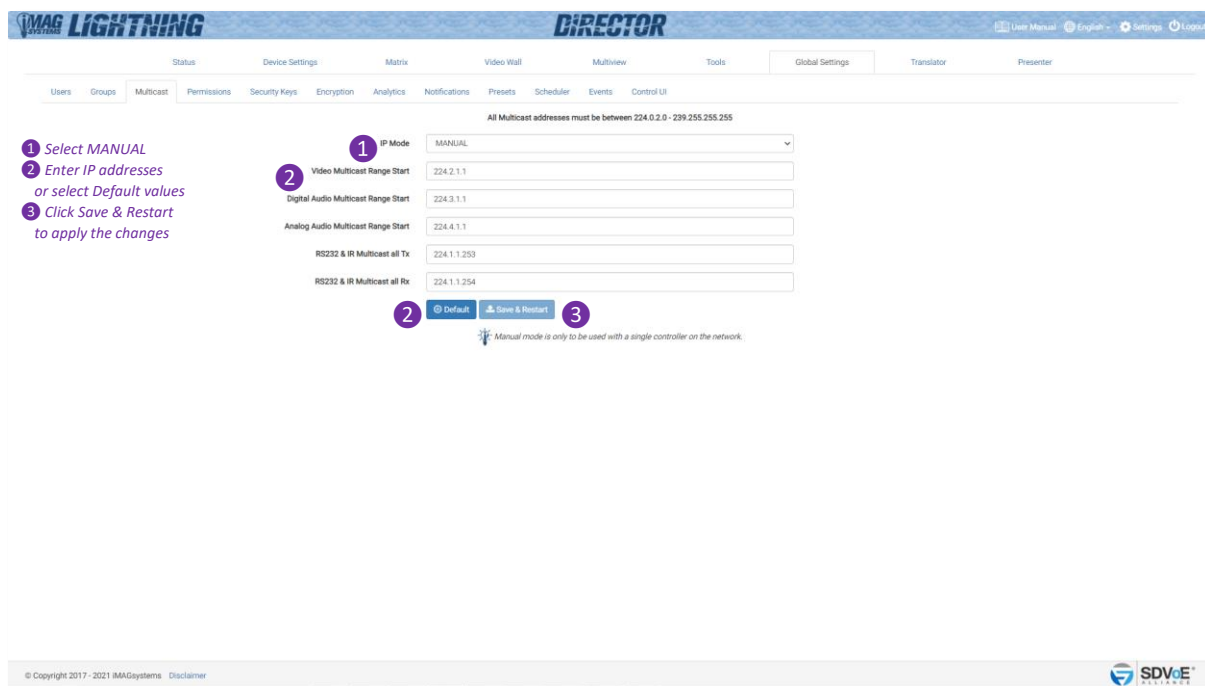
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SDVoE

1.3.2 Multicast Manual

Multicast Manual will initially assign static Multicast addresses to all Encoder stream types. Manual mode by default allocates a starting range address for the separate stream types in different subnets to ensure there is no possibility of mixed subscriptions whereby a Decoder might receive a video stream on an audio subscription. So by default all video streams will use the 224.2.x.x range, all digital audio streams will use the 224.3.x.x range and analog audio will use the 224.4.x.x range.

Device settings will now include a Multicast tab to assign individual Multicast addresses to streams.



iMAG LIGHTNING DIRECTOR

Users Manual English Settings Logout

Status Device Settings Matrix Video Wall Multiview Tools Global Settings Translator Presenter

Users Groups Multicast Permissions Security Keys Encryption Analytics Notifications Presets Scheduler Events Control UI

All Multicast addresses must be between 224.0.0.0 - 239.255.255.255

1 Select MANUAL

2 Enter IP addresses or select Default values

3 Click Save & Restart to apply the changes

1 IP Mode: MANUAL

2 Video Multicast Range Start: 224.2.1.1

Digital Audio Multicast Range Start: 224.3.1.1

Analog Audio Multicast Range Start: 224.4.1.1

RS232 & IR Multicast all Tx: 224.1.1.253

RS232 & IR Multicast all Rx: 224.1.1.254

2 Default Save & Restart 3

Manual mode is only to be used with a single controller on the network.

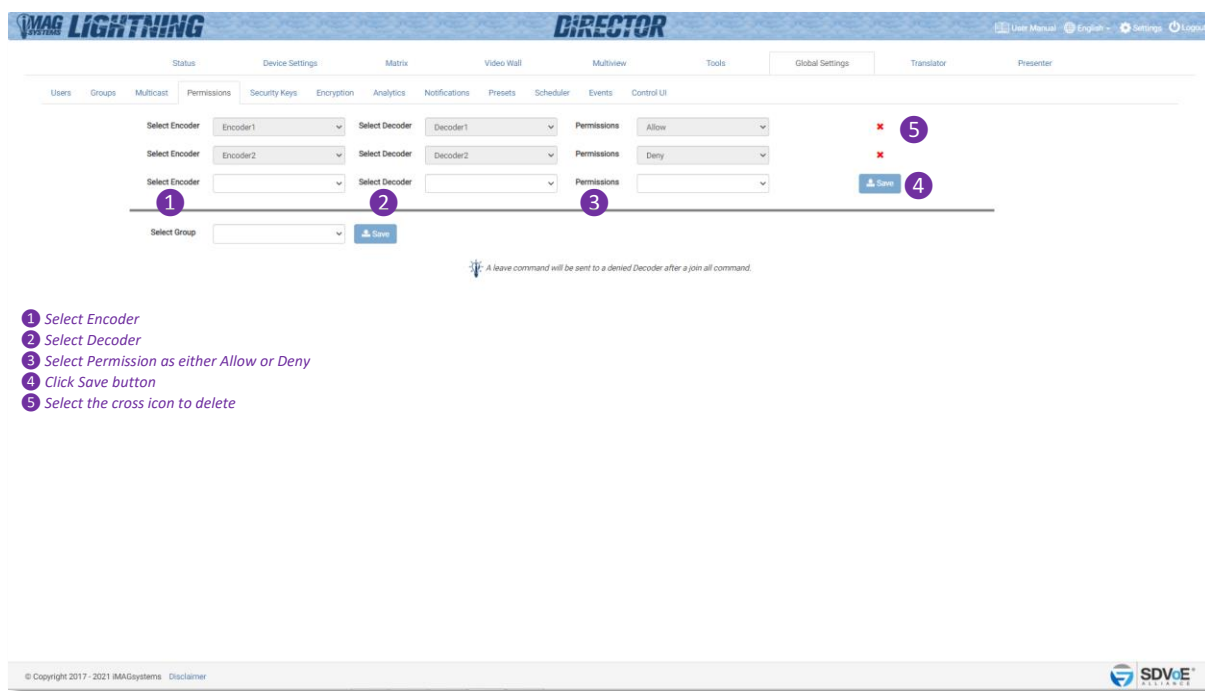
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SDVoE

1.4 Permissions

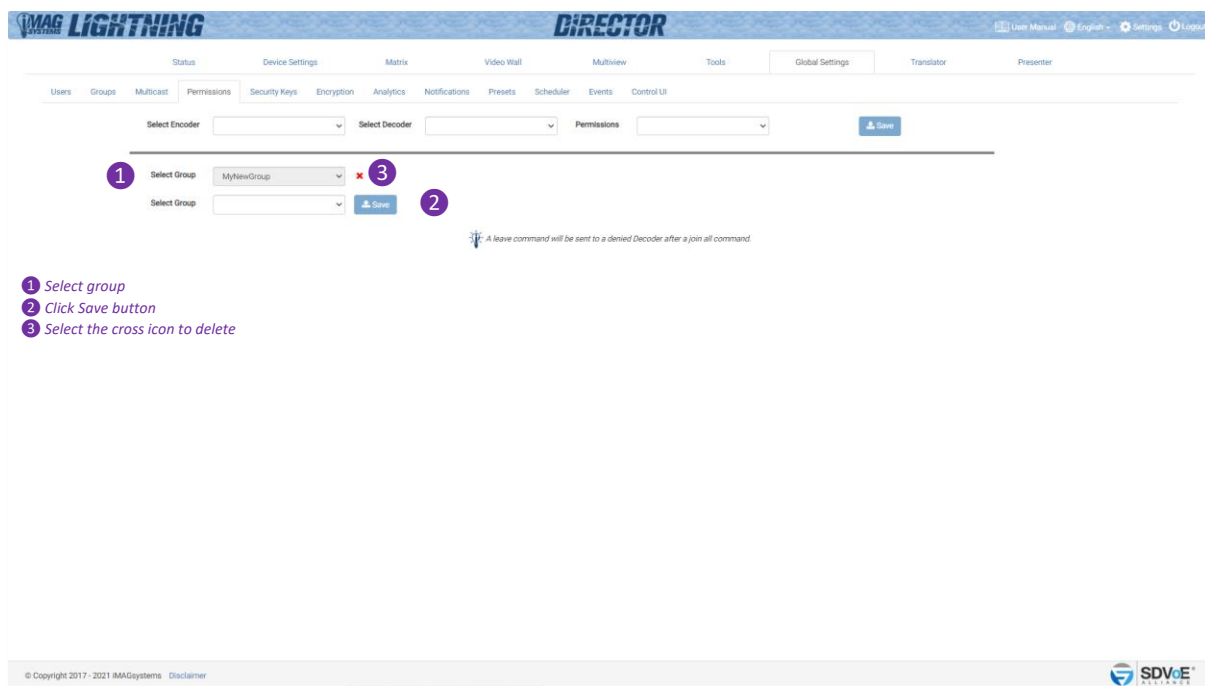
Permissions adds the ability to only allow selected Encoders to be joined with selected Decoders. Individual rules can be set per device or as a group as a whole.

Below, Decoder1 is only allowed to be joined with Encoder1, and Encoder2 can be joined with any other Decoder except for Decoder2. Multiple conditions can be applied. Joining point-to-point the following rules will be considered before applying the join. Joining point-to-all the following rules will be applied after the join by sending a leave command to denied Decoders.



1 Select Encoder
2 Select Decoder
3 Select Permission as either Allow or Deny
4 Click Save button
5 Select the cross icon to delete

Below, the Decoders in MyGroup can only be joined with the Encoders in the group unless individual allow rules are also set for the Decoders with other Encoders outside of the group.



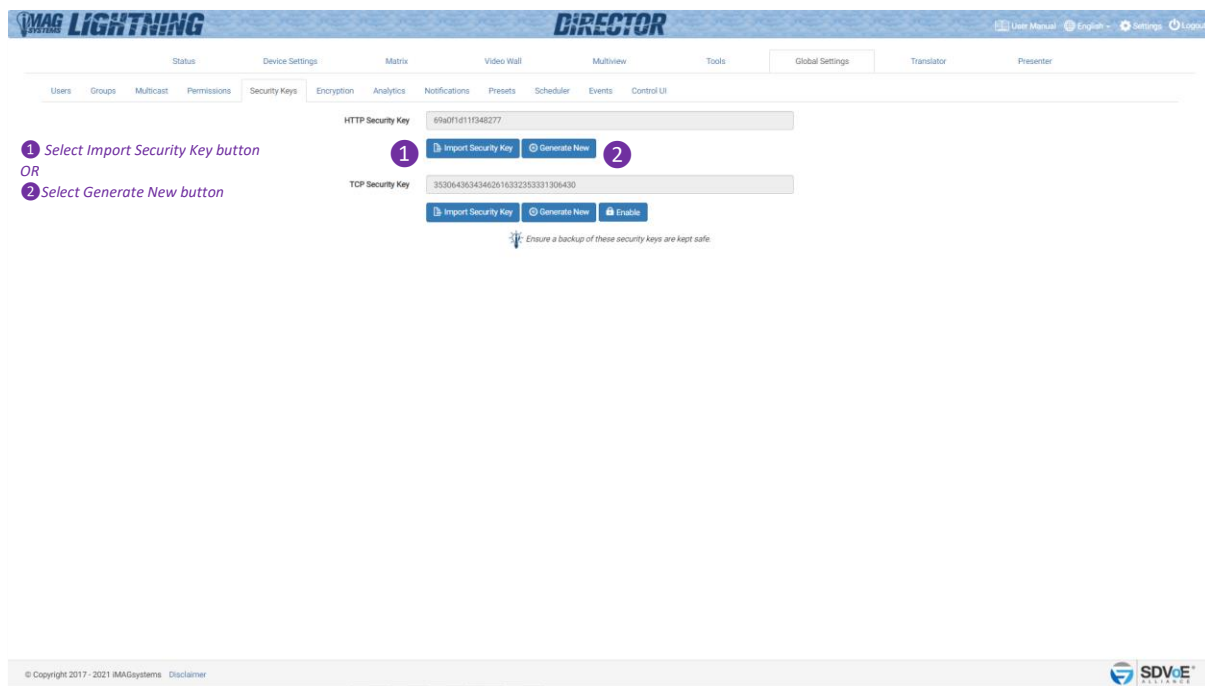
1 Select group
2 Click Save button
3 Select the cross icon to delete

1.5 Security Keys

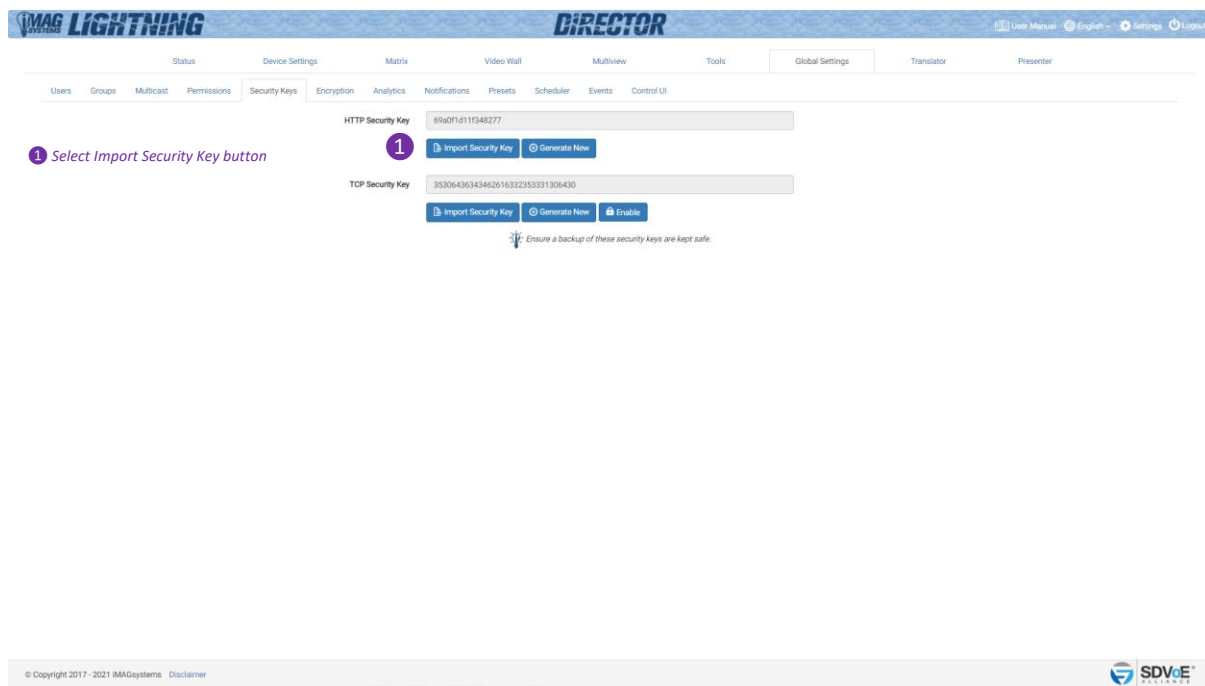
Security keys are required with all HTTP level requests and optional for TCP commands on port 6980. Only keys generated from the software can be used.

1.5.1 HTTP API Security Key

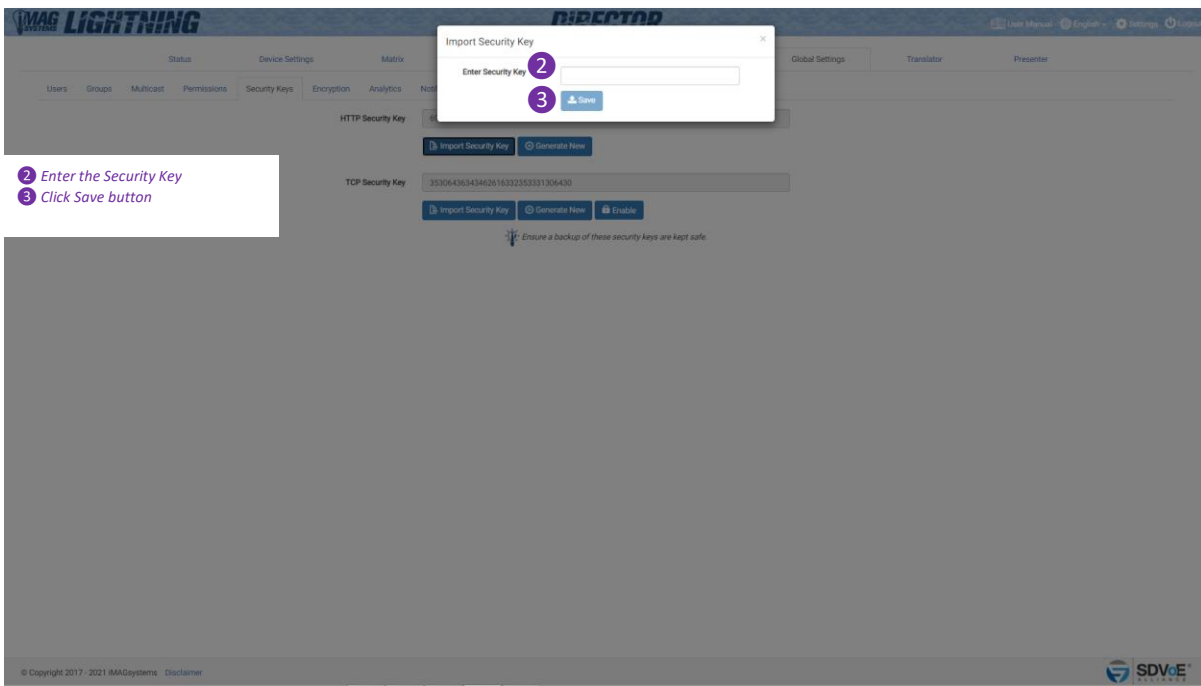
The SDVoE Director Controller can be accessed via HTTP GET and POST requests. To ensure security over the network a HTTP security key is required to be passed with all such requests. Here you can generate a new key or import a saved key that had been previously generated.



Importing a HTTP API Security Key

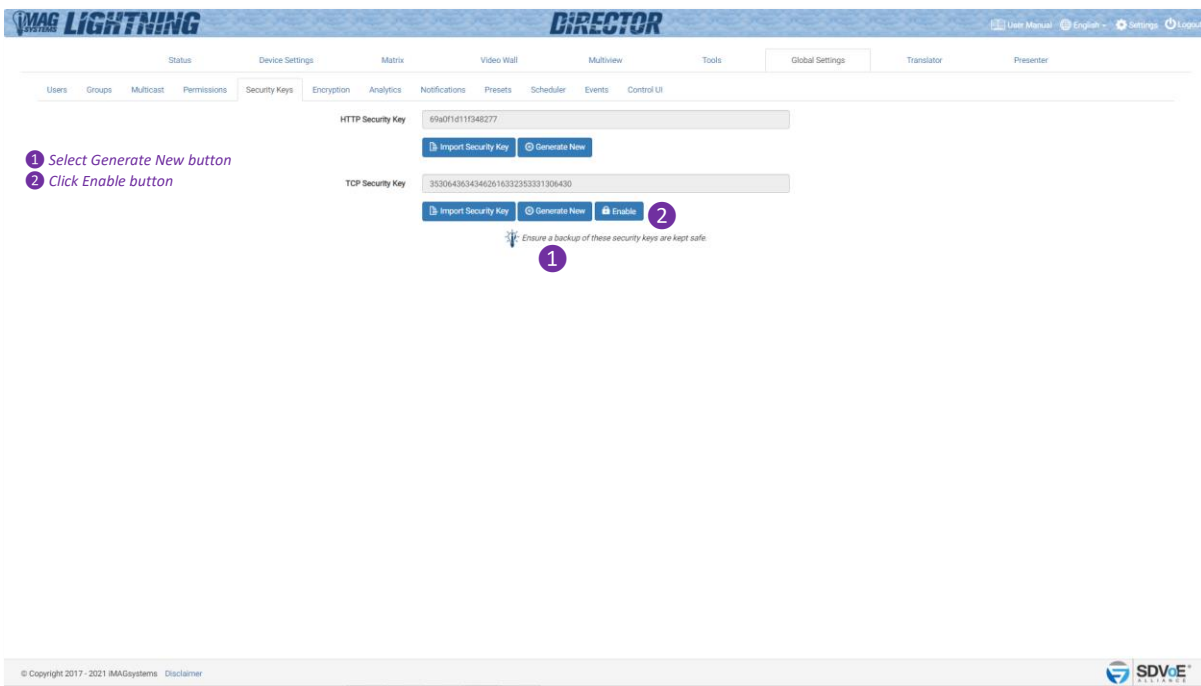


1.5.1 HTTP Security Key continued...



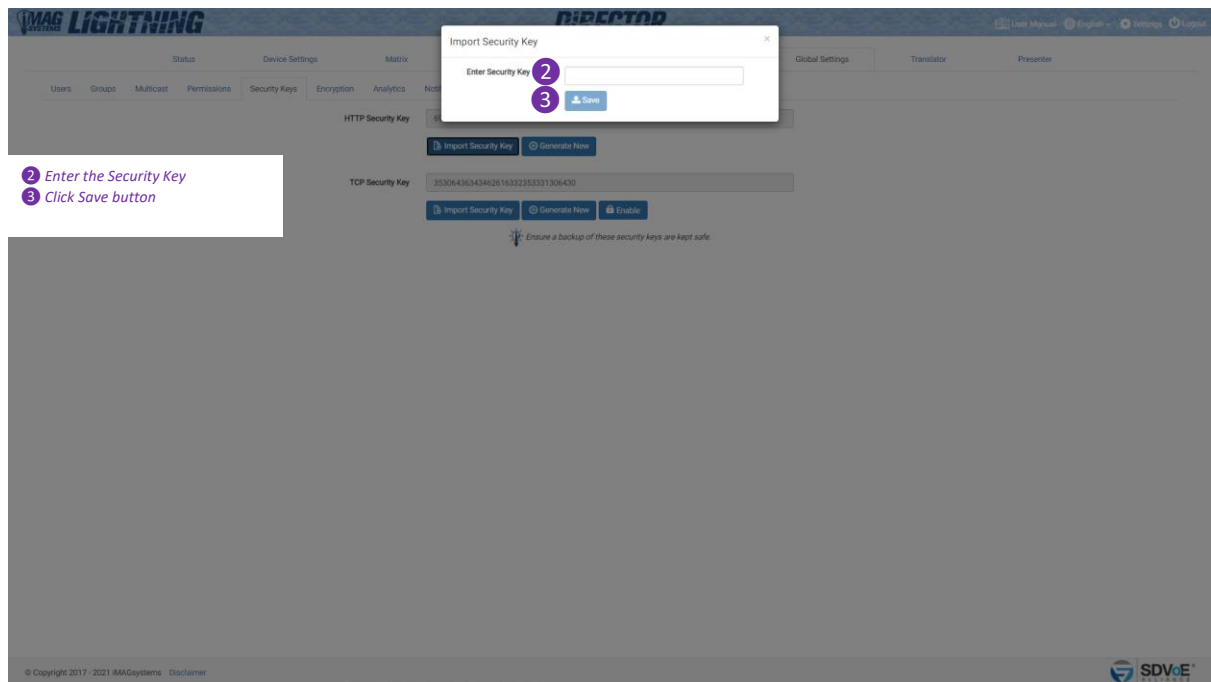
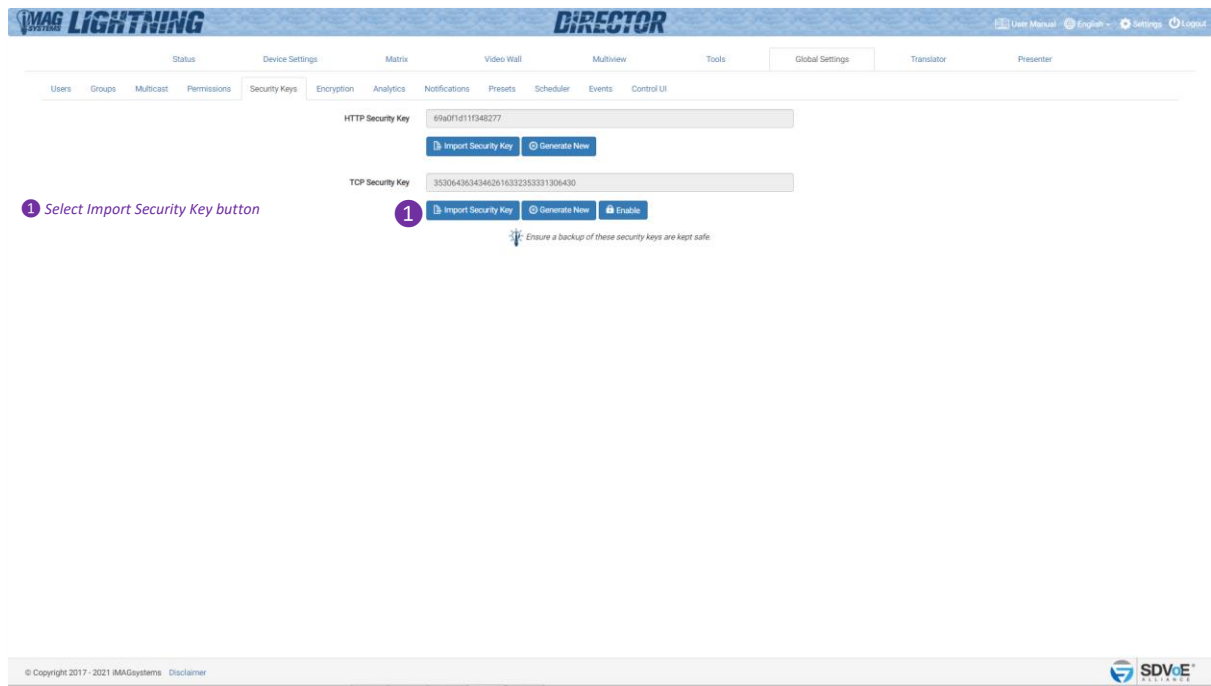
1.5.2 TCP Security Key

The SDVoE Director Controller can be accessed via Telnet requests on TCP port 6980. To ensure security over the network a TCP security key can be passed with all such commands. Here you can generate a new key or import a saved key that had been previously generated. As the TCP security key is optional its use can be Enabled or Disabled from here.

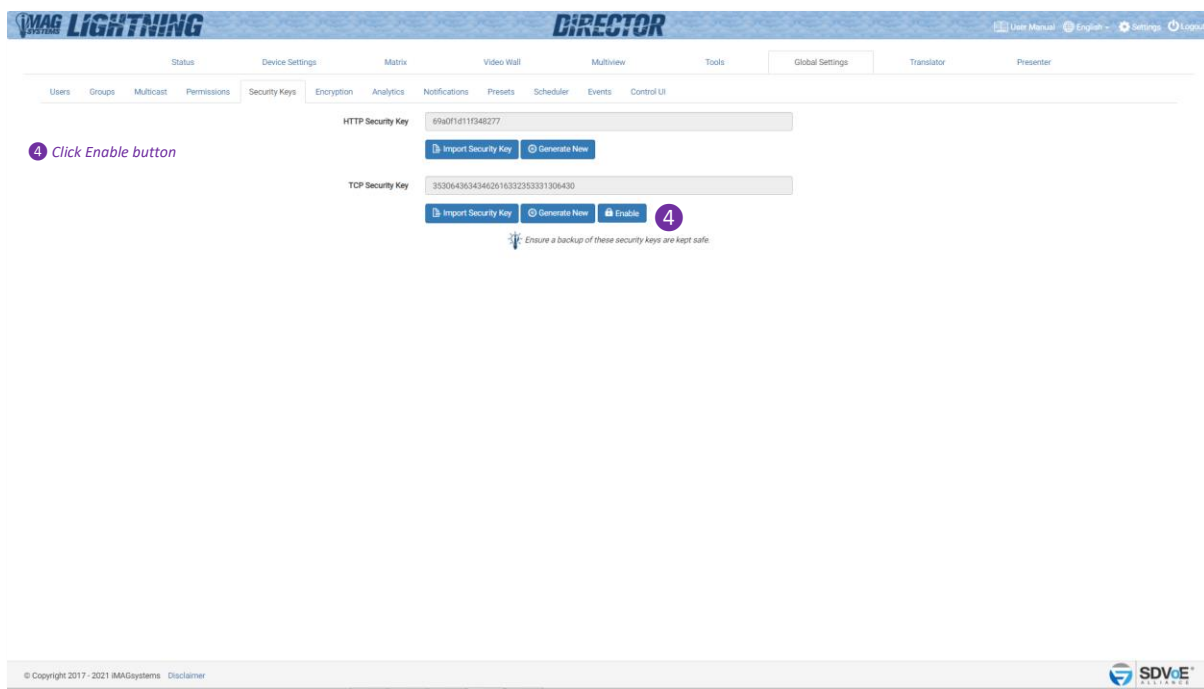


1.5.2 TCP Security Key continued...

Importing a TCP API Security Key



1.5.2 TCP Security Key continued...



4 Click Enable button

HTTP Security Key: 69a0f1d11f348277

Import Security Key Generate New

TCP Security Key: 3530643634346261632253331306430

Import Security Key Generate New Enable **4**

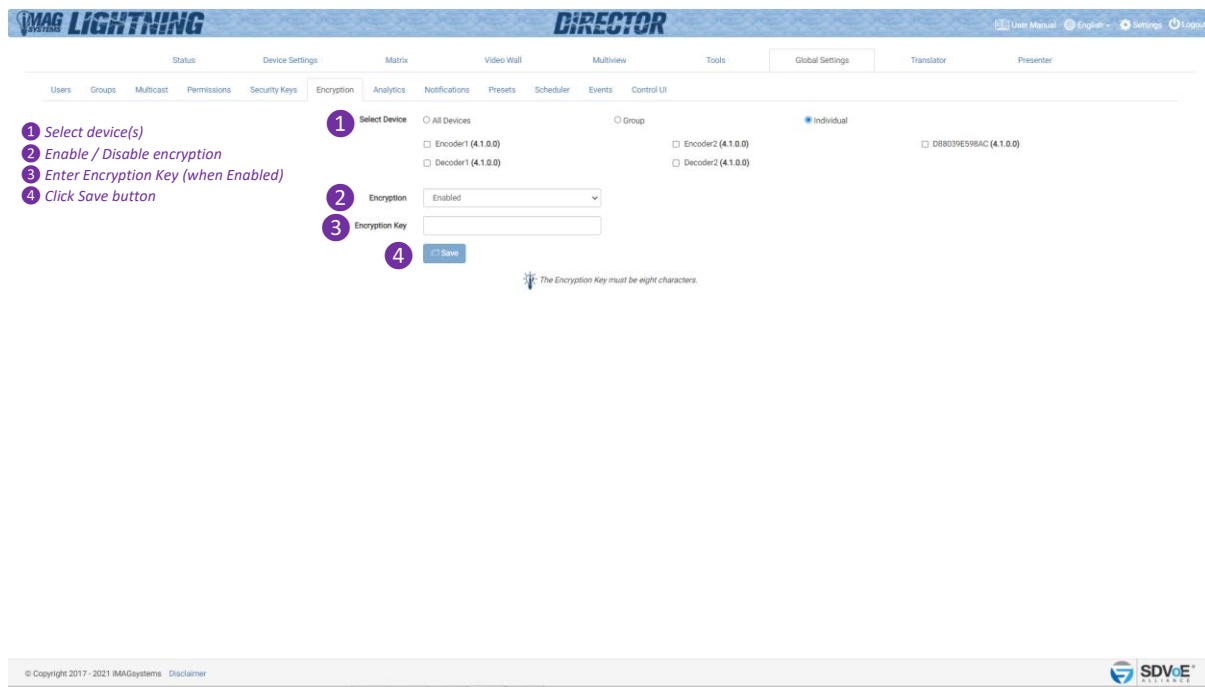
Ensure a backup of these security keys are kept safe

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SDVoE

1.6 Encryption

Encryption can be applied to an Encoder's HDMI AV network data. A user defined key is set and only Decoders with the same key will be able to decrypt the HDMI AV network data.



1.7 Analytics (Licensed feature)

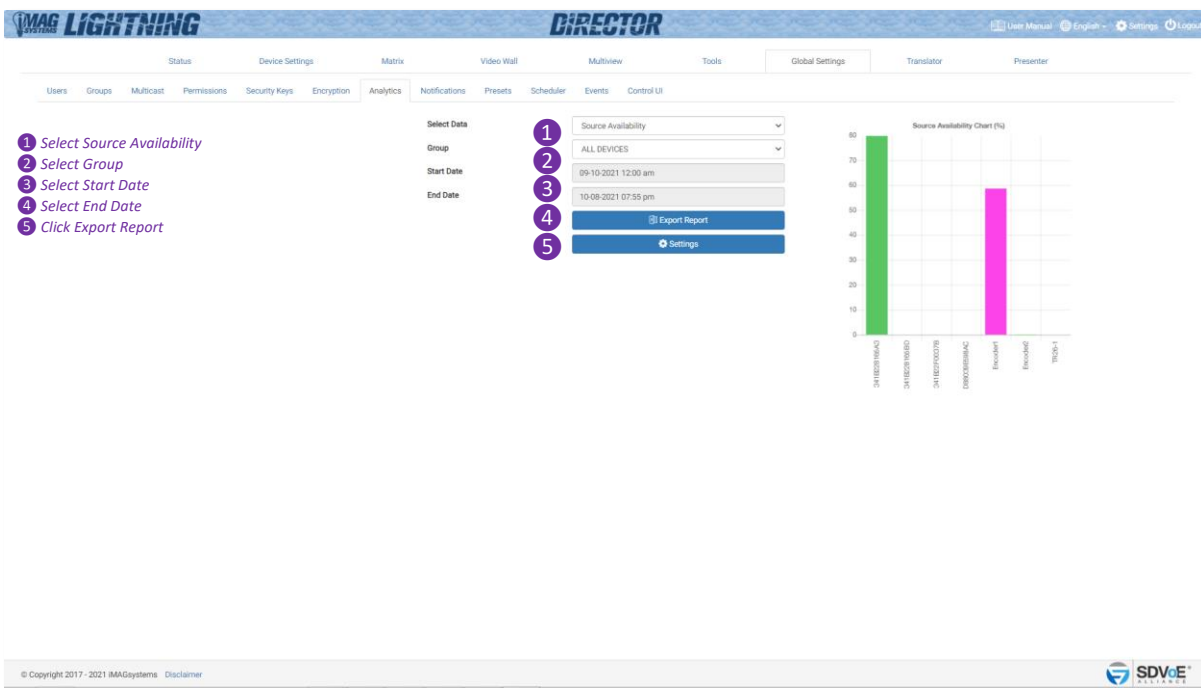
Analytical data is constantly being stored on the system. By default data will be maintained for 1 month, but this can be changed up to 12 months.

Various types of information is stored and can be exported for use in a 3rd party analytical application such as Microsoft's Power Bi. Internal results for the following can be generated from the UI:

- **Source Availability**
The Source Availability represents the percentage (%) of time an Encoder has a video signal
- **Display Availability**
The Display Availability represents the percentage (%) of time a Decoder has a monitor connected
- **Source Resolution**
The Source Resolution represents the combination of different resolutions used as a source
- **Source Count**
The Source Count represents the number of times an Encoder detects a source available
- **Display Count**
The Display Count represents the number of times a Decoder detects a display available
- **Display Source Change**
The Display Source Change represents the number of times a Decoder has been switched to an Encoder
- **Network Downtime**
The Network Downtime represents the time in hours a device is missing off the network
- **Temperature**
The Temperature represents the operating temperature in either °C or °F of a device
- **Bandwidth**
The Bandwidth represents the total bandwidth of an Encoder in Gbps
- **Control UI**
Control UI represents usage of various User Interface functions

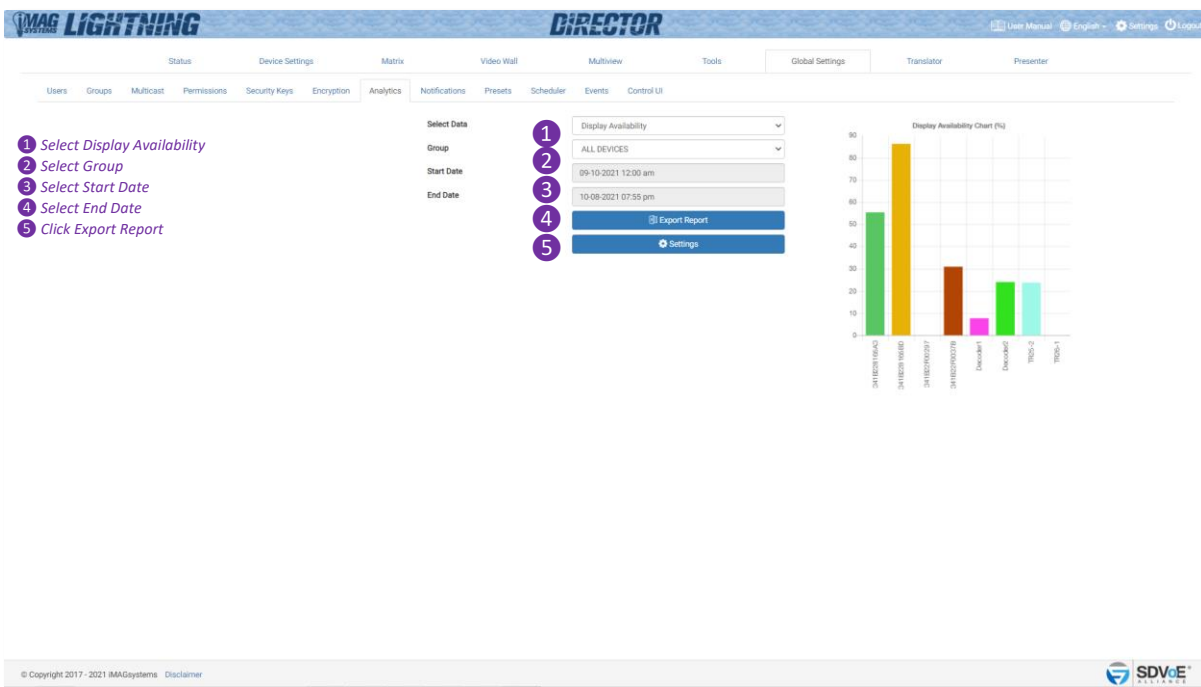
1.7.1 Source Availability

The Source Availability represents the time in hours an Encoder has video signal.



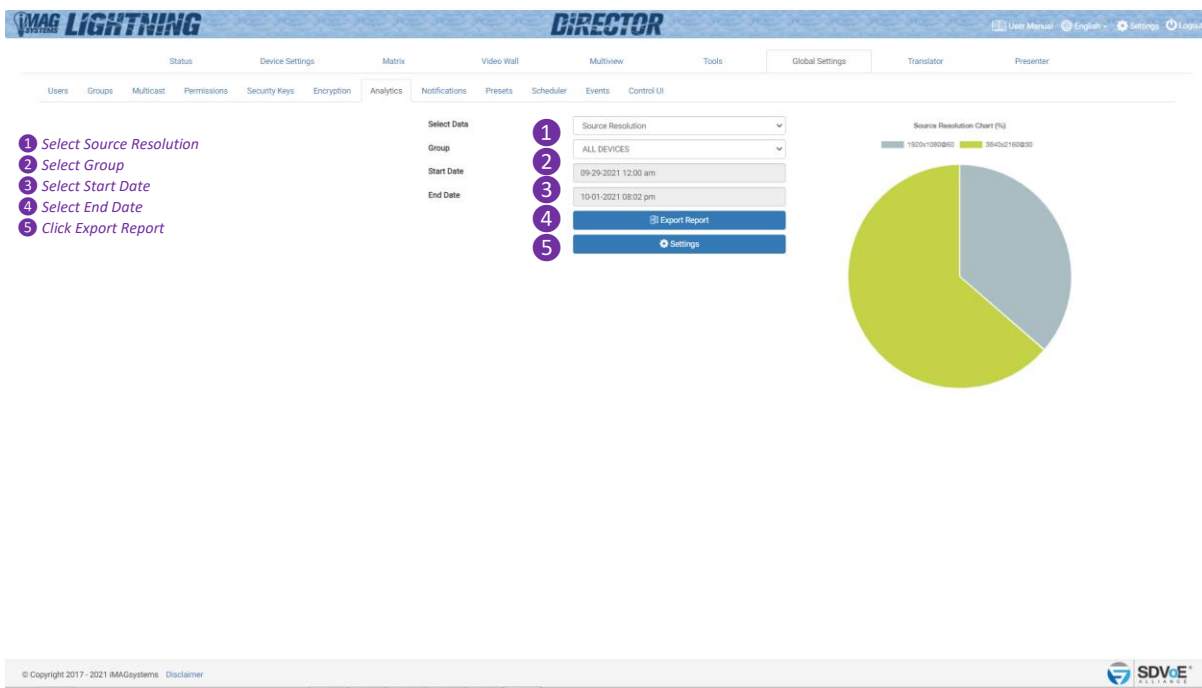
1.7.2 Display Availability

The Display Availability represents the time in hours a Decoder has a monitor connected.



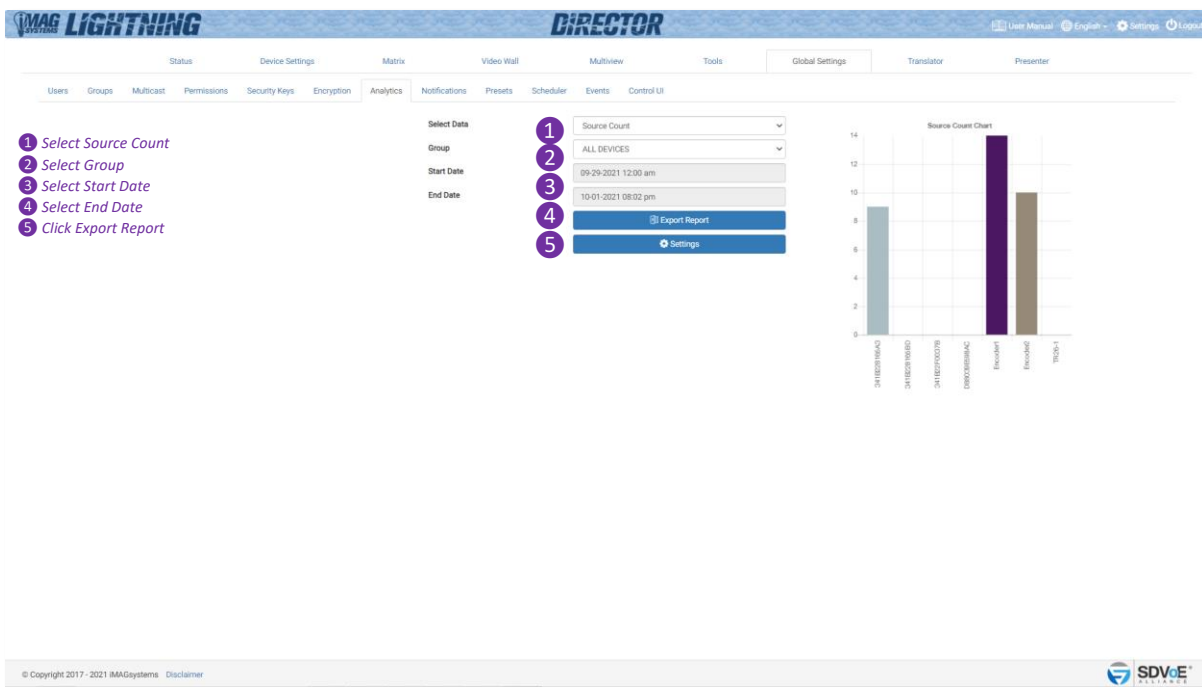
1.7.3 Source Resolution

The Source Resolution represents the combination of different resolutions used as a source.



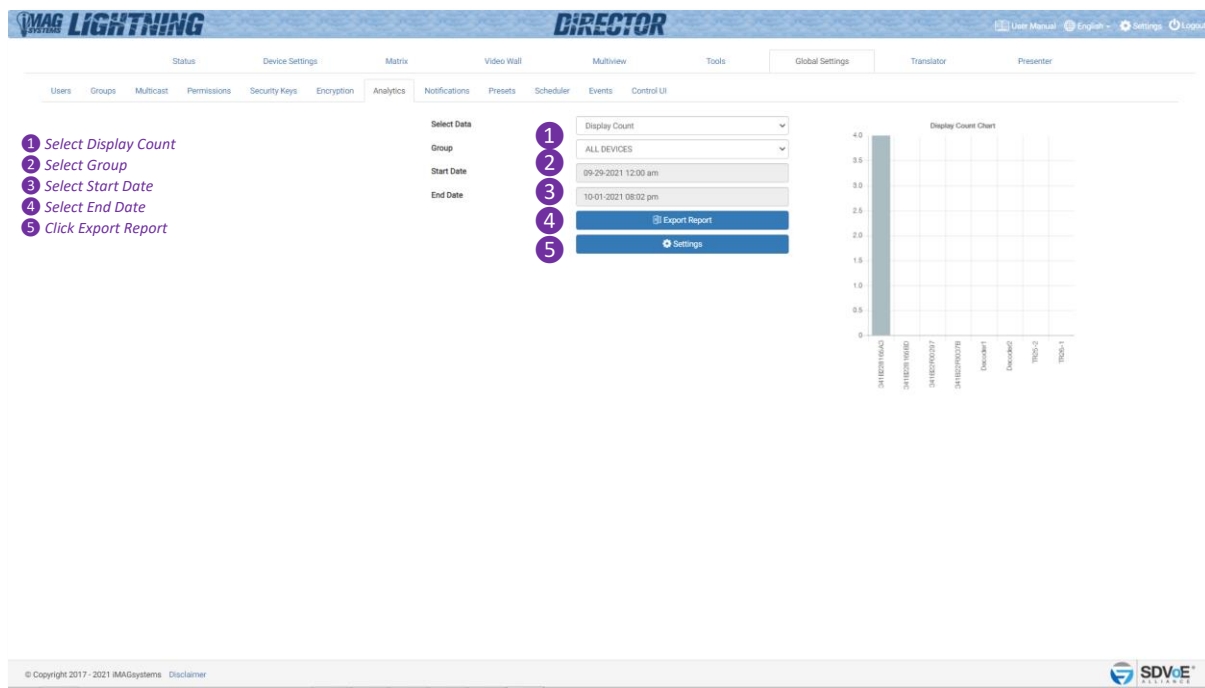
1.7.4 Source Count

The Source Count represents the number of times an Encoder detects a source available.



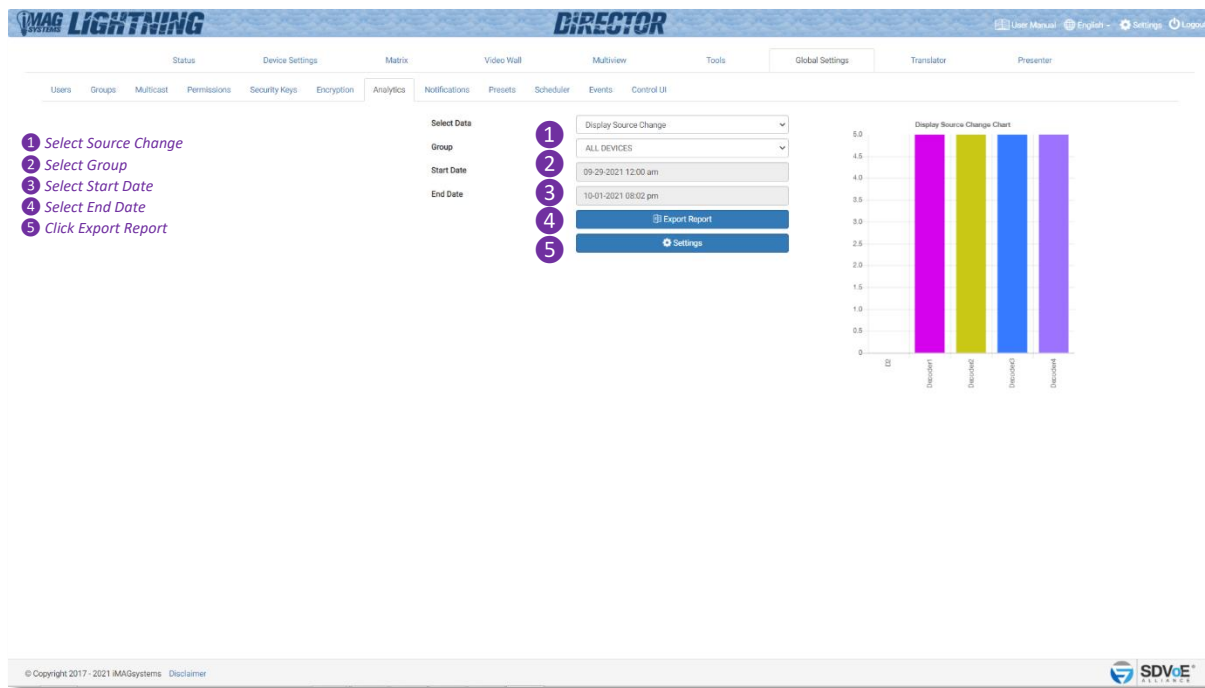
1.7.5 Display Count

The Display Count represents the number of times a Decoder detects a display available.



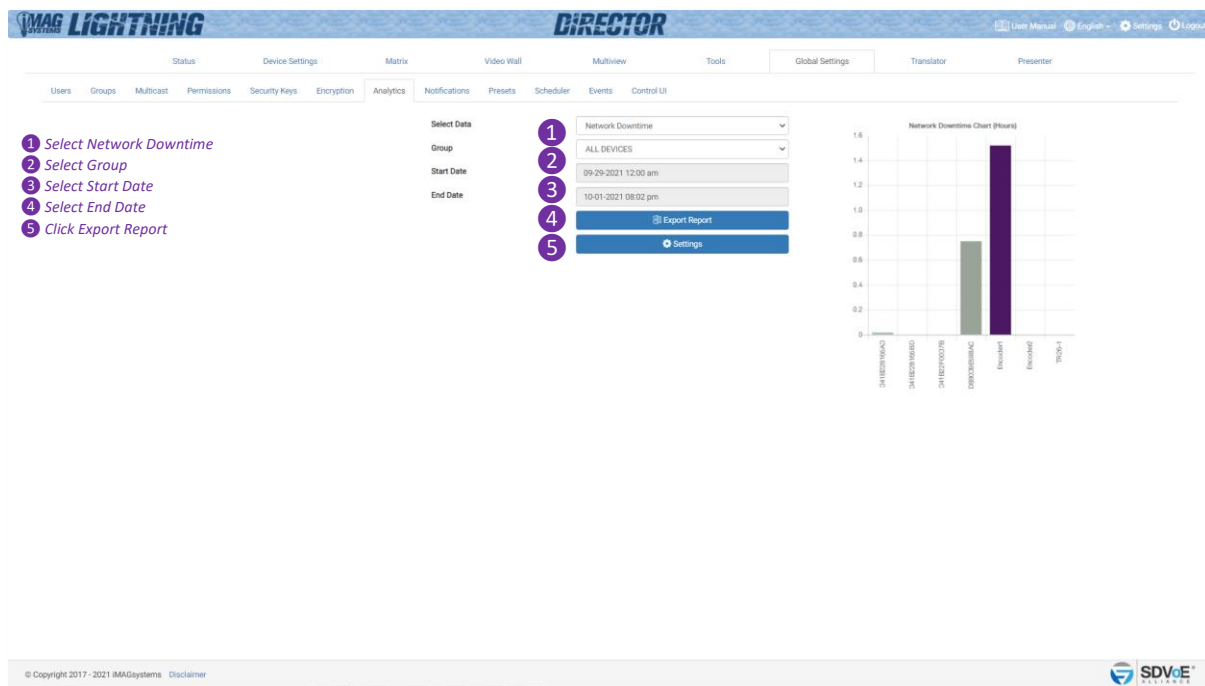
1.7.6 Display Source Change

The Display Source Change represents the number of times a Decoder has been switched to an Encoder.



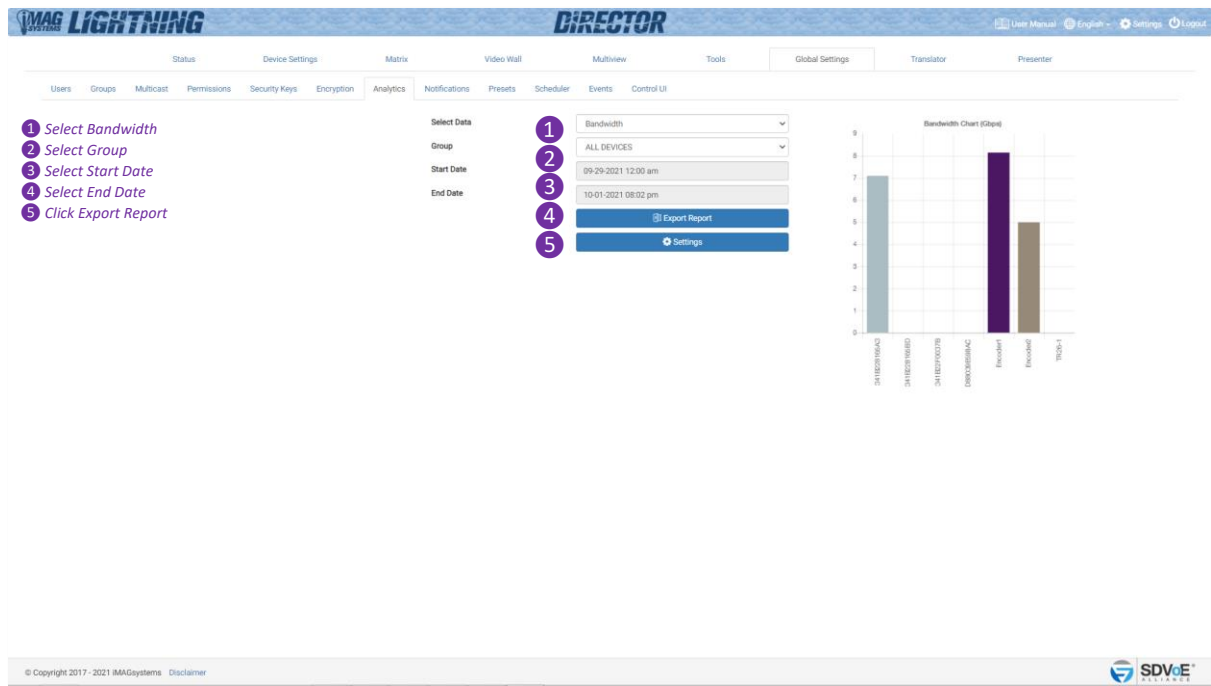
1.7.7 Network Downtime

The Network Downtime represents the time in hours a device is disconnected from the network.



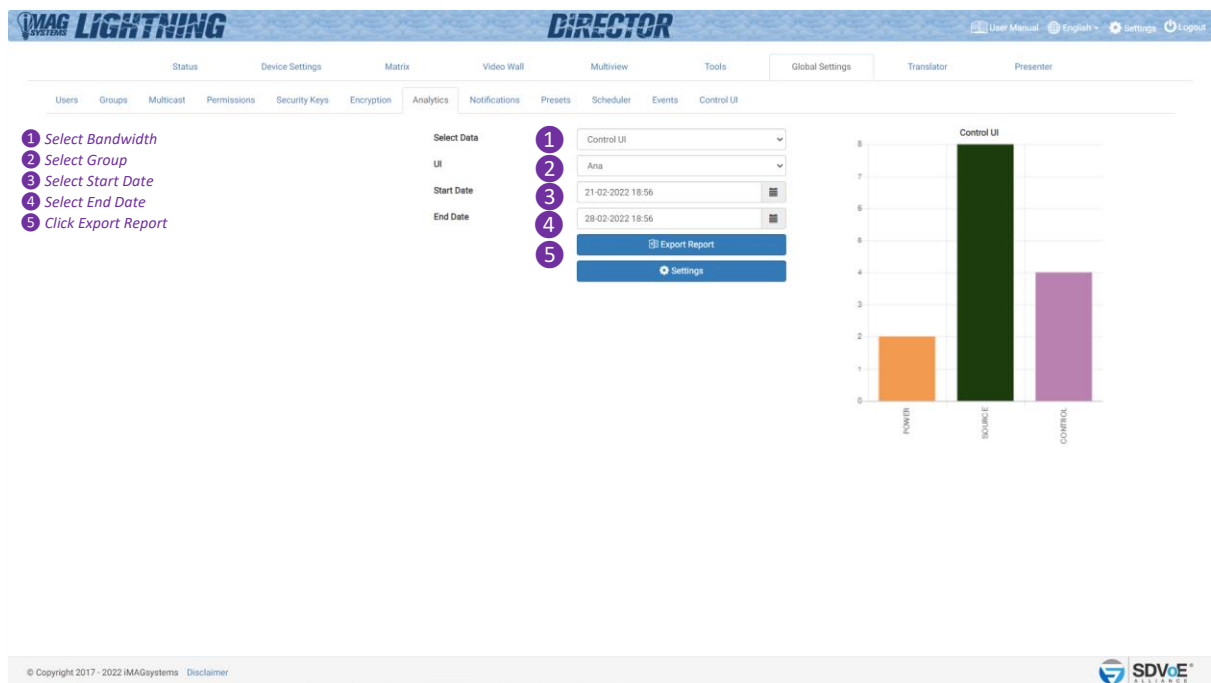
1.7.9 Bandwidth

The Bandwidth represents the total Encoder bandwidth in Gbps.



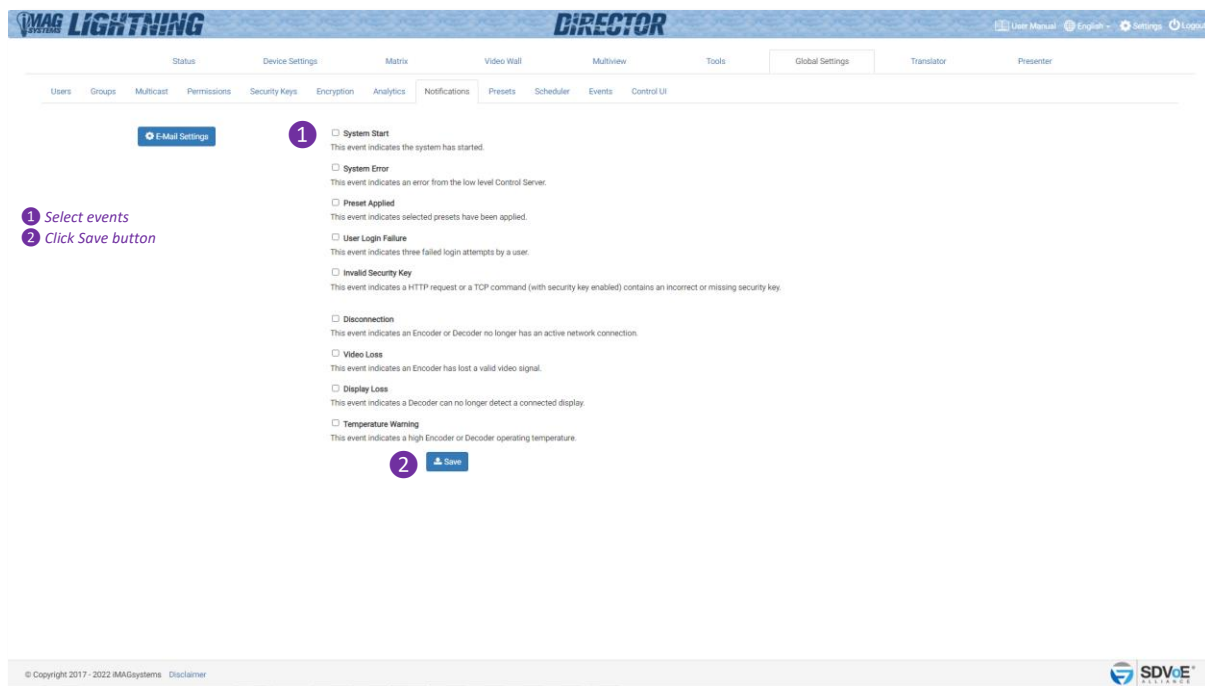
1.7.10 Control UI

The Control UI represents usage of various User Interface functions.



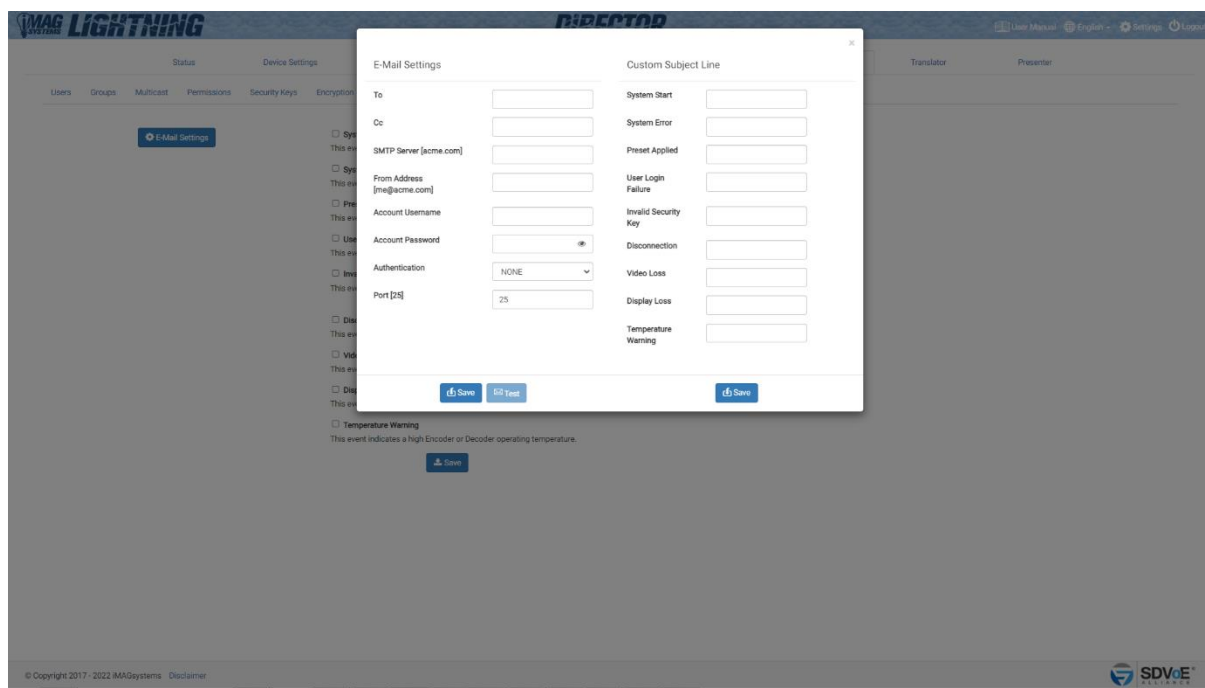
1.8 Notifications (Licensed feature)

Notifications will send E-Mail alerts whenever a selected event occurs on the system.

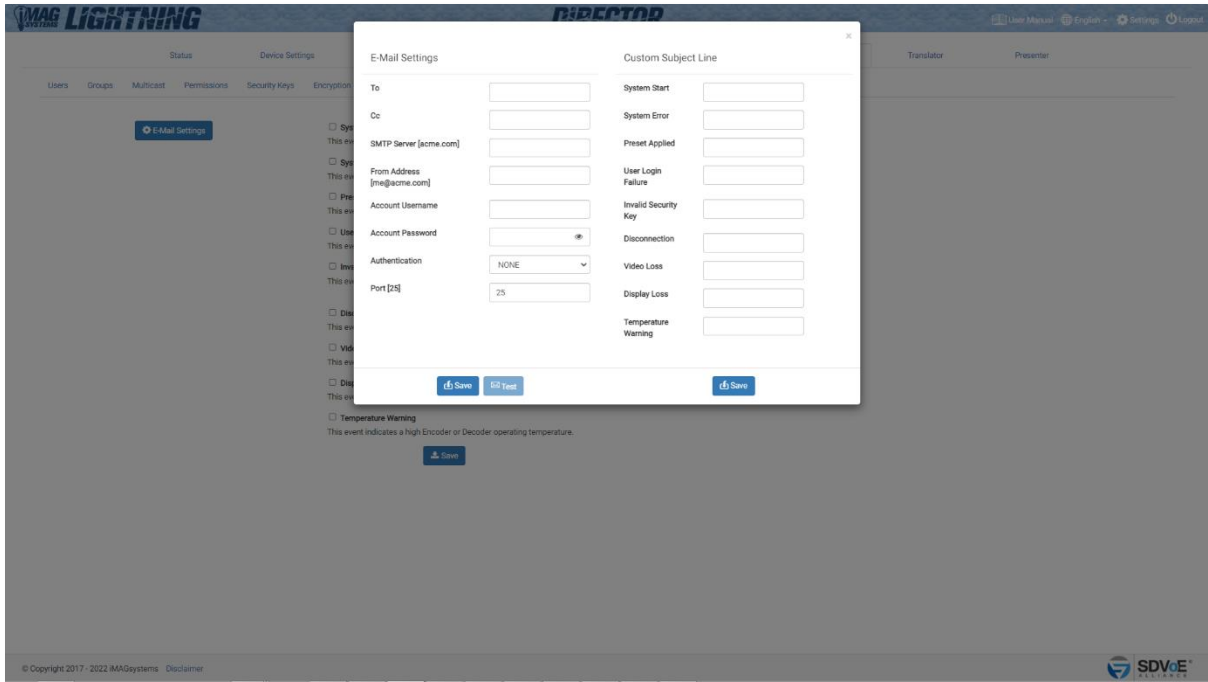


1.8.1 E-Mail Settings

Here you configure the E-Mail client to allow notification alerts to be sent from a specified E-Mail account. The Test button sends a confirmation to confirm the E-Mail Settings are correct.



1.8.1 E-Mail Settings continued...



A custom subject line can be added here to override the default message.

Within the custom subject line the following sequences can be included:

- {{hostname}} which provides the network hostname of the controller.
- {{ip}} which provides the network IP Address of the controller.

The default subject lines are as follows (*translated into selected language*):

- System Start Notification from {{hostname}}, {{ip}}
- System Error Notification from {{hostname}}, {{ip}}
- Preset Applied Notification from {{hostname}}, {{ip}}
- Login Failure Notification from {{hostname}}, {{ip}}
- Invalid Security Key Notification from {{hostname}}, {{ip}}
- Device Disconnected Notification from {{hostname}}, {{ip}}
- Video Loss Notification from {{hostname}}, {{ip}}
- Display Loss Notification from {{hostname}}, {{ip}}
- Temperature Warning Notification from {{hostname}}, {{ip}}

1.9 Presets

The system can store a virtually unlimited number of presets. A preset can be applied with a single “preset load” command. The preset can contain a virtually unlimited number of commands.

Presets can contain anything from a single command to a multiview or video wall layout.

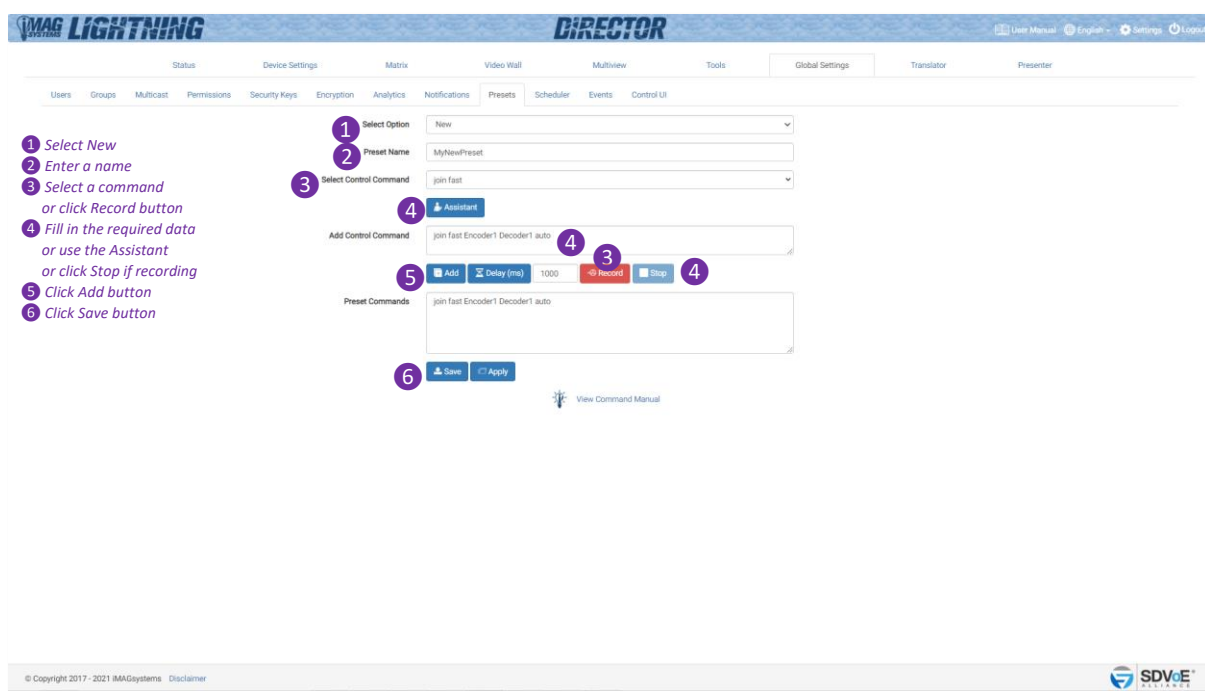
Presets can also contain basic if else logic to allow you to build some “smarts” into your system. Refer to Appendix E – Preset Logic in the command manual for further details.

The following group names cannot be used:

- ‘all’
- ‘all_rx’
- ‘all_tx’
- ‘ungrouped’
- ‘all_devices’
- Any Device name
- Any Group name

1.9.1 New Preset

Here you can create a new preset to be stored on the system. Give the preset a name and then start adding control commands as required by either entering commands directly, using the Assistant or Record function which will record interactions from the UI.



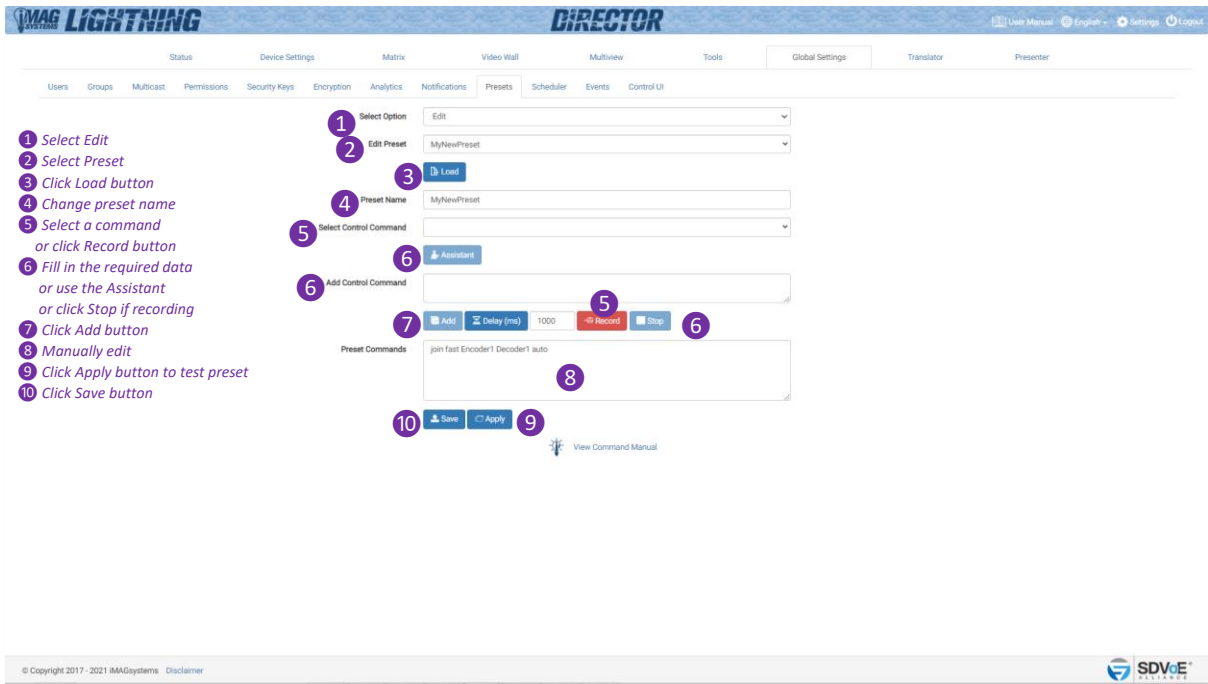
The screenshot displays the 'DIRECTOR' interface with the 'Presets' tab selected. The workflow for creating a new preset is indicated by numbered callouts:

- 1 Select New**: Points to the 'New' option in the 'Select Option' dropdown.
- 2 Enter a name**: Points to the 'Preset Name' input field, which contains 'MyNewPreset'.
- 3 Select a command or click Record button**: Points to the 'Select Control Command' dropdown, which shows 'join fast'.
- 4 Fill in the required data or use the Assistant or click Stop if recording**: Points to the 'Add Control Command' field, which contains 'join fast Encoder1 Decoder1 auto'.
- 5 Click Add button**: Points to the 'Add' button in the 'Add Control Command' section.
- 6 Click Save button**: Points to the 'Save' button at the bottom of the form.

Additional UI elements visible include the 'Assistant' button, a 'Delay (ms)' field set to 1000, a 'Record' button, and a 'Stop' button. The 'Preset Commands' section at the bottom shows the command 'join fast Encoder1 Decoder1 auto'.

1.9.2 Edit Preset

Here you can edit any existing preset by adding, deleting or changing control commands as required.

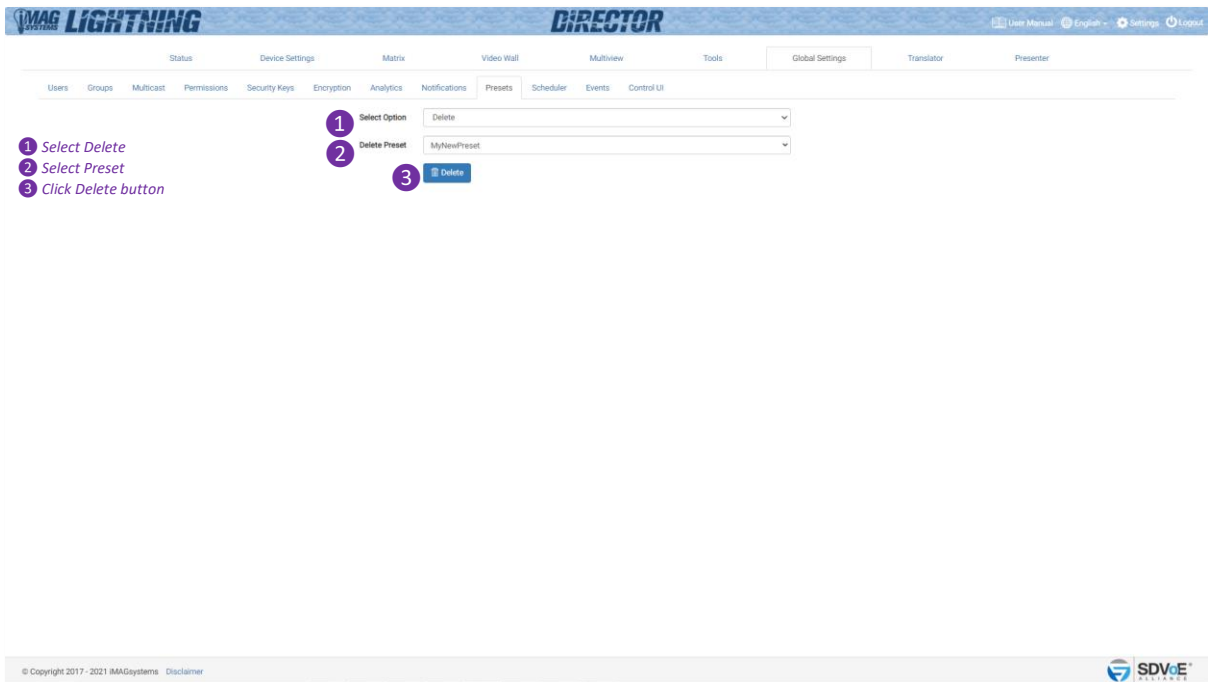


The screenshot shows the 'Presets' tab in the iMAG DIRECTOR LIGHTNING interface. The workflow for editing a preset is as follows:

1. Select Option: Click the 'Edit' dropdown menu.
2. Select Preset: Select 'MyNewPreset' from the preset list.
3. Click Load button: Click the 'Load' button to load the selected preset.
4. Change preset name: Edit the 'Preset Name' field.
5. Select a command or click Record button: Select a command from the 'Select Control Command' dropdown or click the 'Record' button.
6. Fill in the required data or use the Assistant or click Stop if recording: Fill in the 'Add Control Command' field or use the 'Assistant' button. If recording, click the 'Stop' button.
7. Click Add button: Click the 'Add' button to add the command to the list.
8. Manually edit: Manually edit the command text in the 'Preset Commands' list.
9. Click Apply button to test preset: Click the 'Apply' button to test the preset.
10. Click Save button: Click the 'Save' button to save the changes.

1.9.3 Delete Preset

Here you can delete any existing preset from the system.

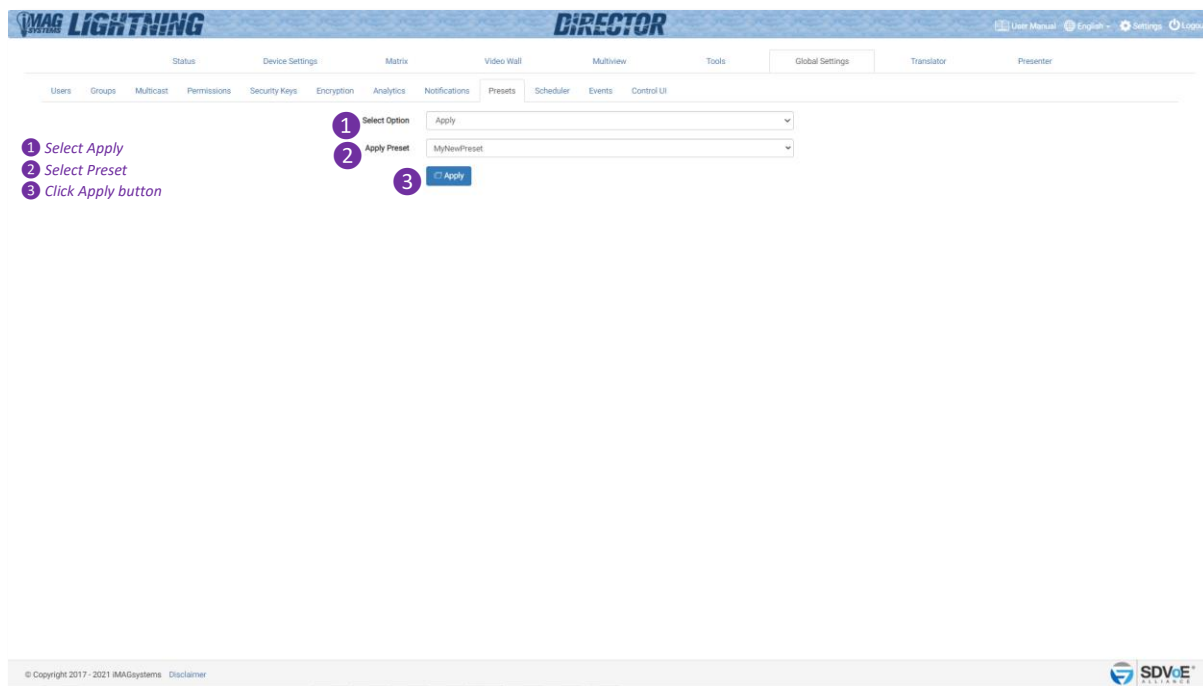


The screenshot shows the 'Presets' tab in the iMAG DIRECTOR LIGHTNING interface. The workflow for deleting a preset is as follows:

1. Select Delete: Click the 'Delete' dropdown menu.
2. Select Preset: Select 'MyNewPreset' from the preset list.
3. Click Delete button: Click the 'Delete' button to delete the selected preset.

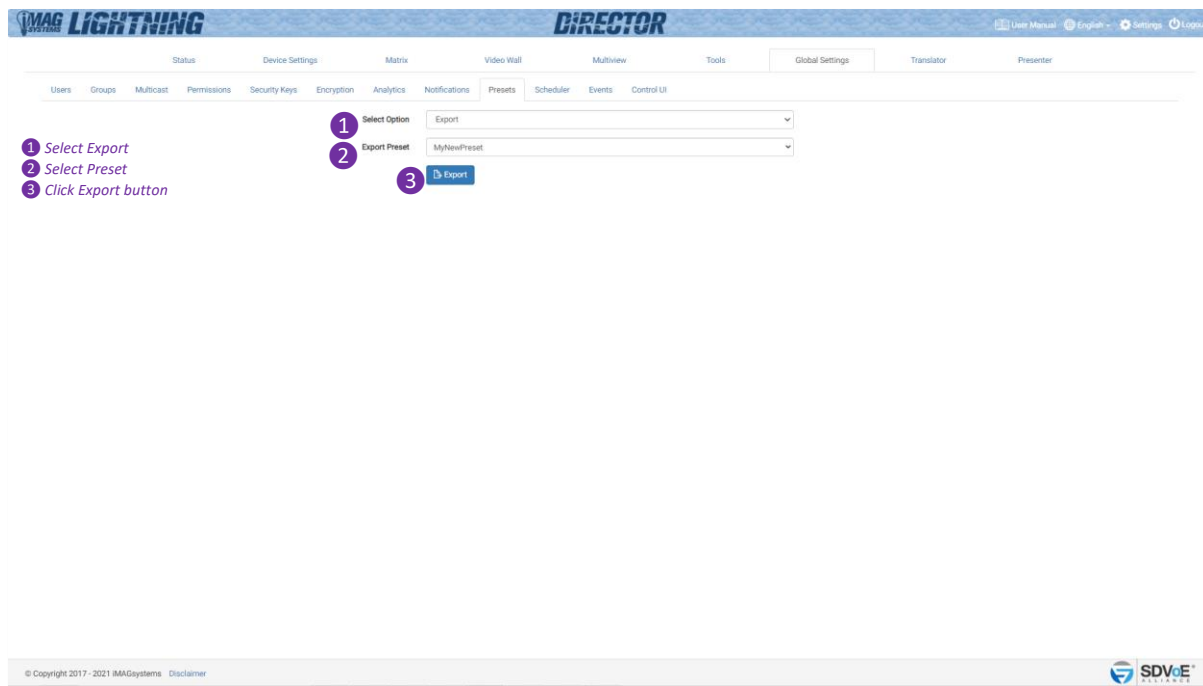
1.9.4 Apply Preset

Here you can apply any existing preset on the system.



1.9.5 Export Preset

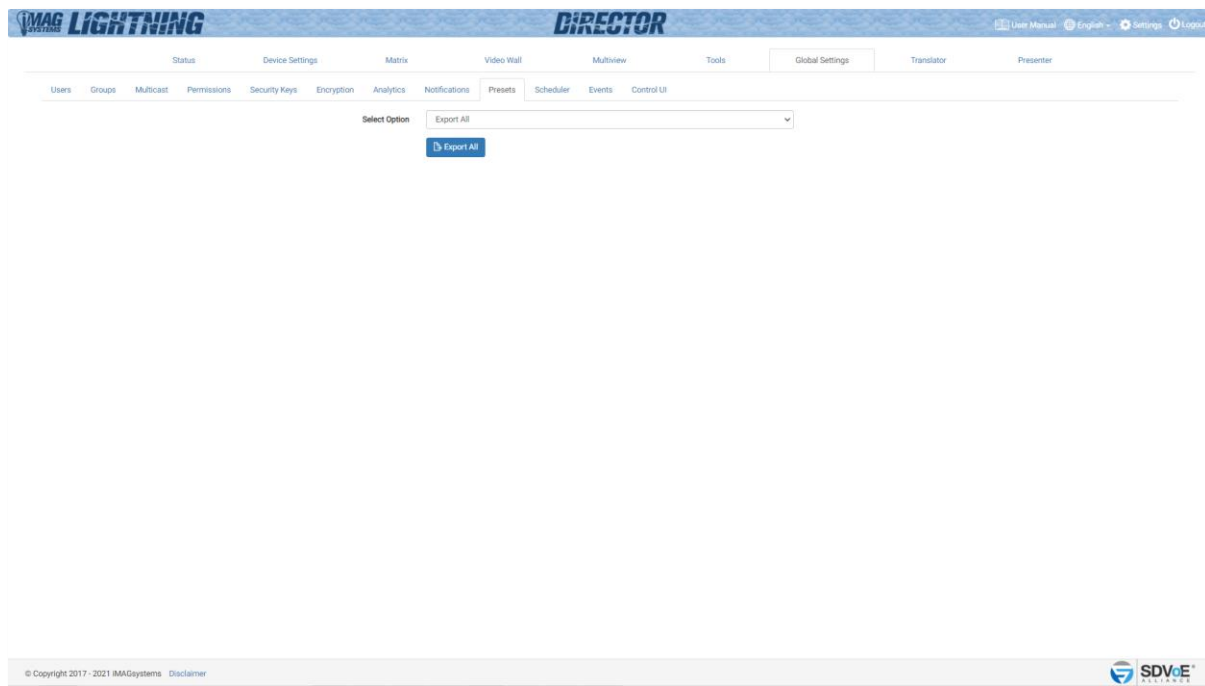
Here you can export an existing preset on the system which can then be used as a backup or edited. The preset will be saved to your Downloads folder as an ini file like *MyNewPreset.ini*.



The export preset can be edited with an application like Notepad++, right click the file and select "Open with..."

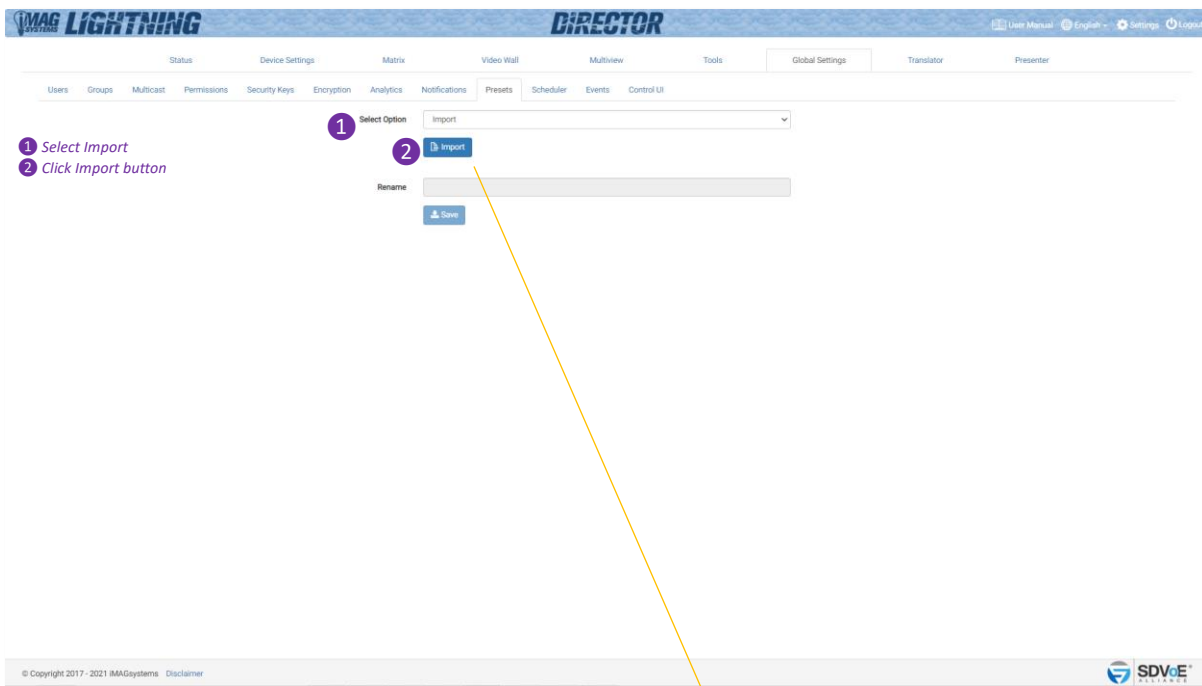
1.9.6 Export All Presets

Here you can export all existing preset on the system which can then be used as a backup or edited. The preset will be saved to your Downloads folder as a zip file named presets.exp.

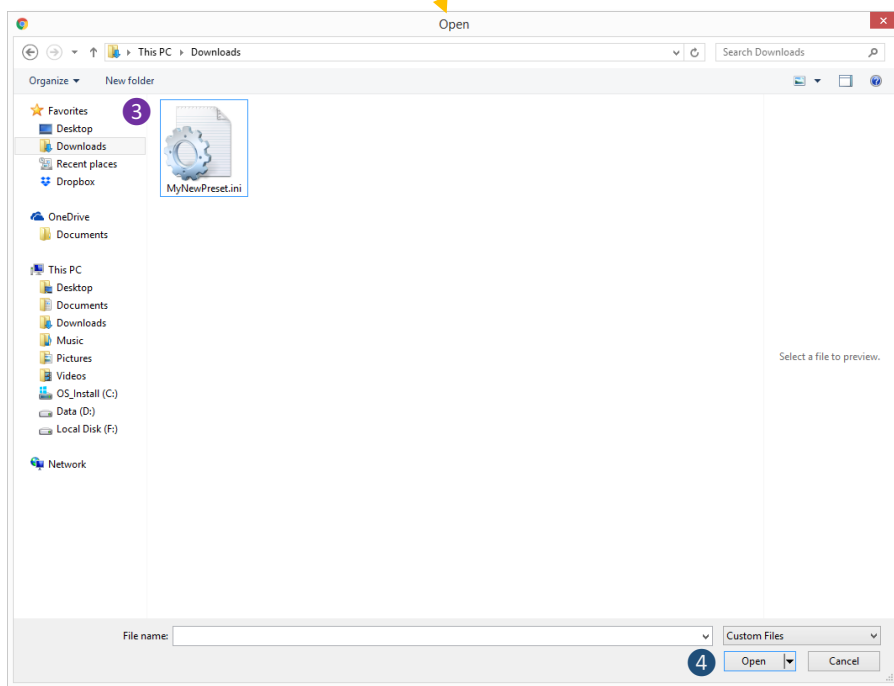


1.9.7 Import Preset

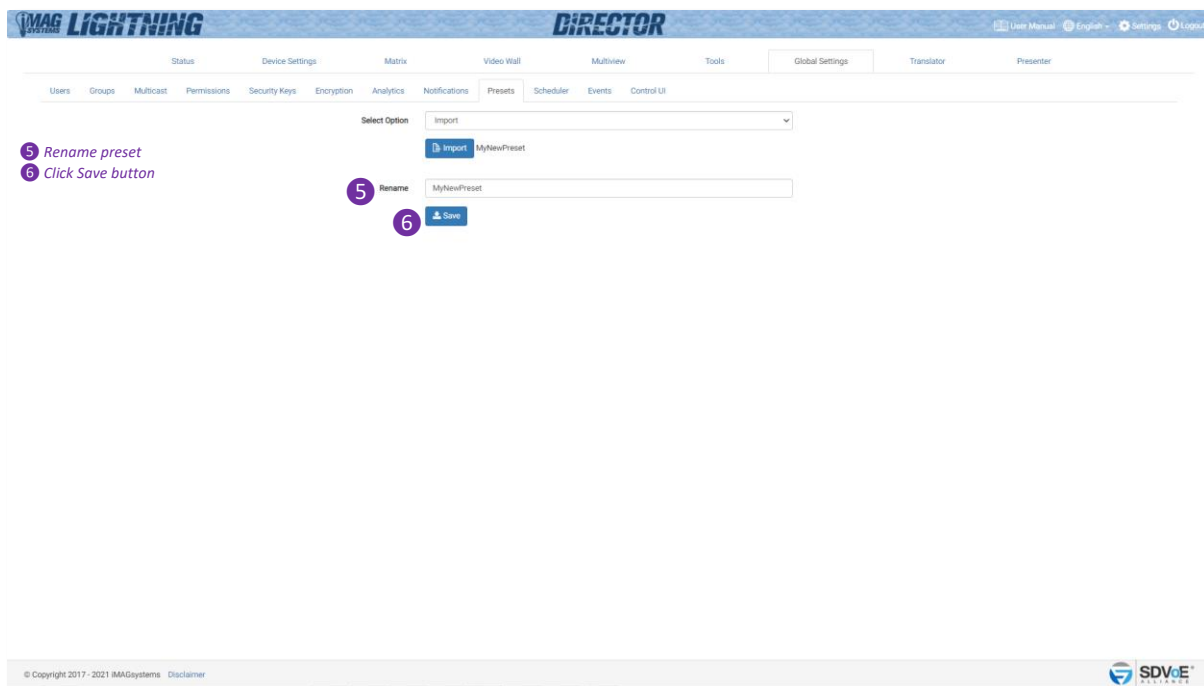
Here you can import a new preset into the system. (If updating an existing preset, the existing preset on the system will need to be deleted prior to importing.)



- 3 Select preset file
4 Click Open

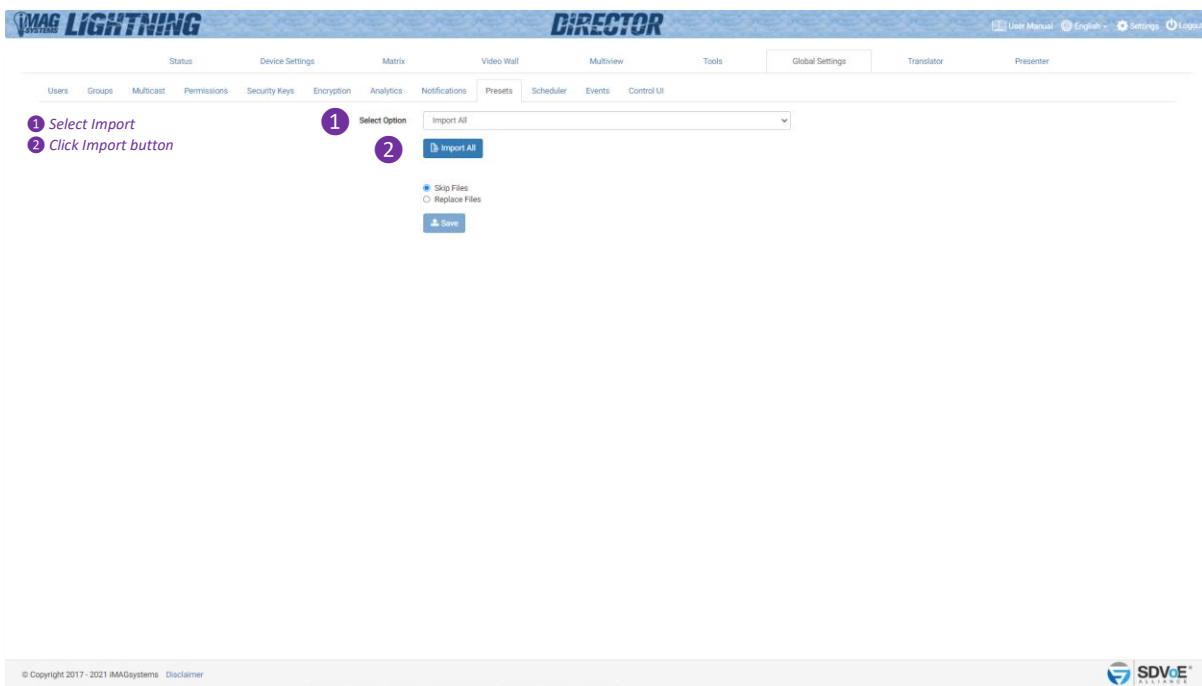


1.9.7 Import Preset continued...

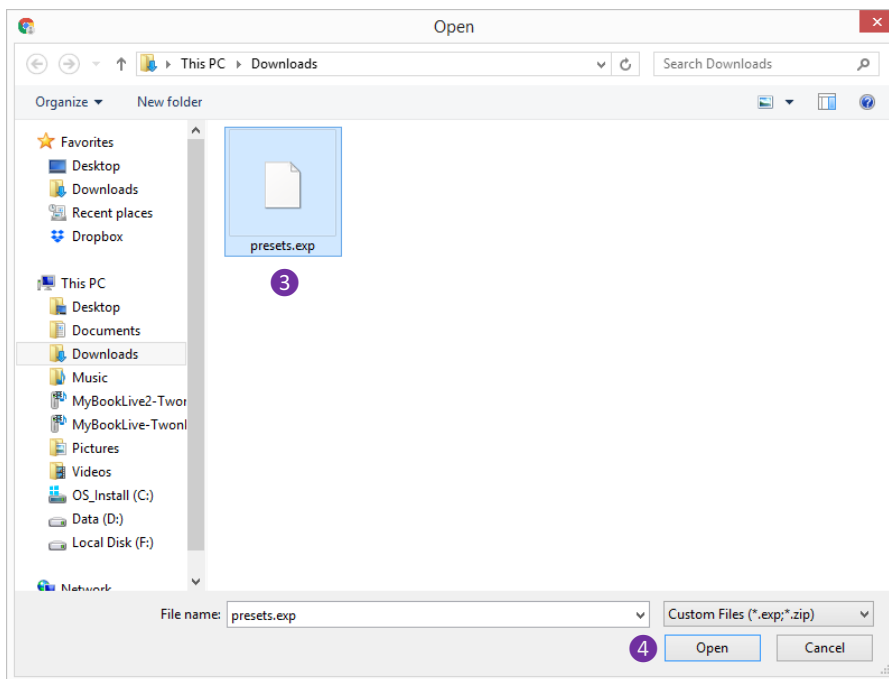


1.9.8 Import All Preset

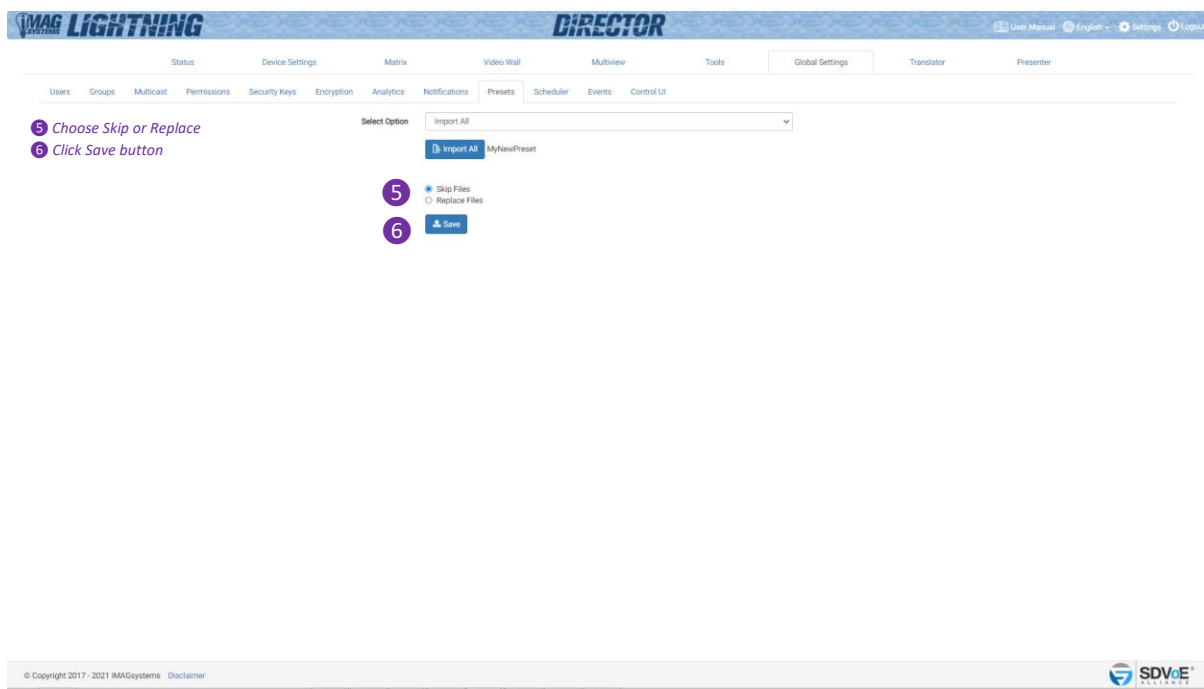
Here you can import all preset into the system from an all preset export.



- 3 Select preset file
- 4 Click Open



1.9.8 Import All Preset continued...



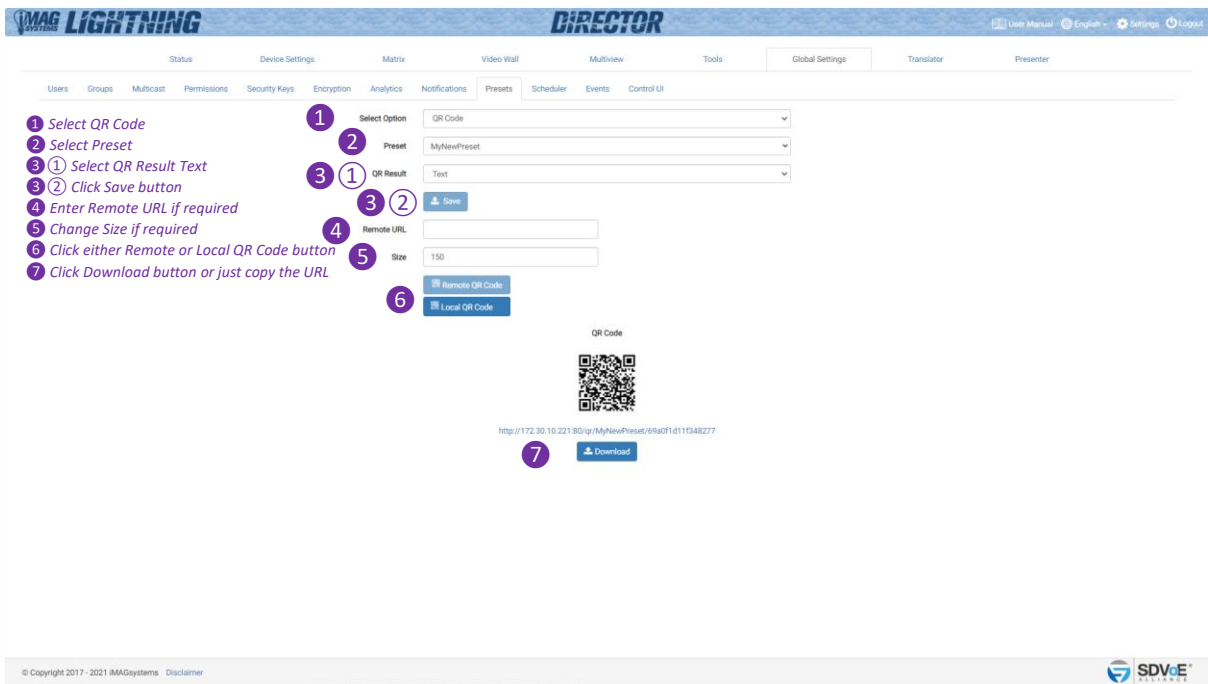
1.9.9 QR Code

A QR Code can be created to directly execute a preset. Here you can set how the result of a preset will be displayed when scanned from a QR Code will be displayed. This includes QR Code buttons used in Control UI.

After the QR Code has been scanned and opened in a browser the preset will be executed and the selected result displayed in the browser.

The QR Result can be **Text** for a standard API text response. Select **Static Image** to display a user uploaded image on success or failure of the preset. Or, select **User Interface** to be redirected to a User Interface.

The below will provide a text response: *preset load MyNewPreset success*

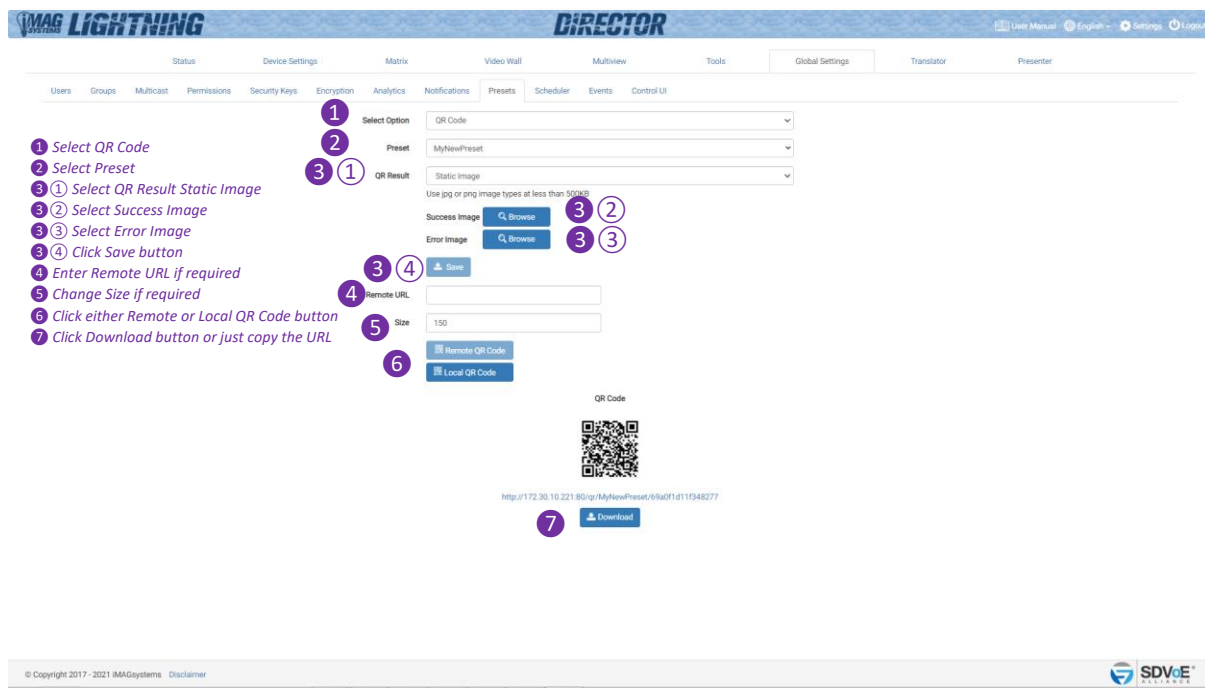


The screenshot shows the 'DIRECTOR' interface with the 'Presets' tab selected. The 'QR Code' section is active, and the 'QR Result' is set to 'Text'. The 'Preset' is 'MyNewPreset'. The 'Remote URL' is 'http://172.30.10.221:80/q/MyNewPreset/6RadFid11548277'. The 'Size' is '150'. The 'QR Code' is displayed, and the 'Download' button is visible. The interface includes a top navigation bar with 'iMAG LIGHTNING' and 'DIRECTOR' logos, and a bottom navigation bar with 'SDVoE' logo.

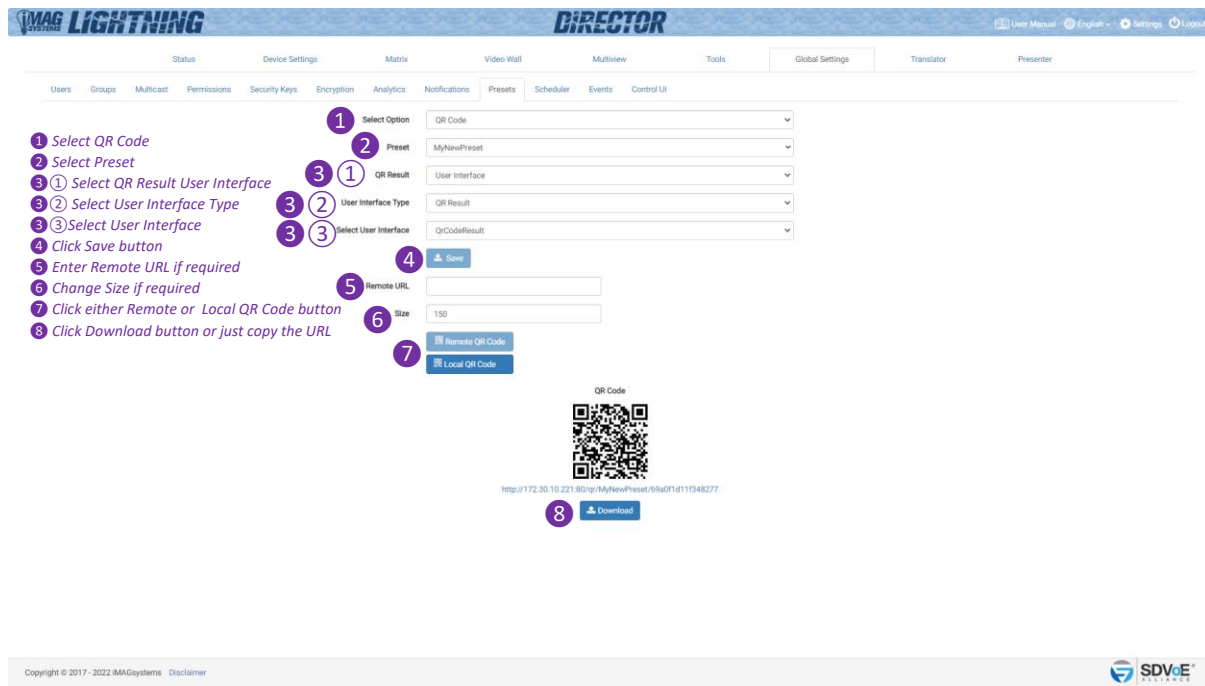
- 1 Select QR Code
- 2 Select Preset
- 3 1 Select QR Result Text
- 3 2 Click Save button
- 4 Enter Remote URL if required
- 5 Change Size if required
- 6 Click either Remote or Local QR Code button
- 7 Click Download button or just copy the URL

1.9.9 QR Code continued...

The below will provide a static image response:



The below will provide a QR Results User Interface response:

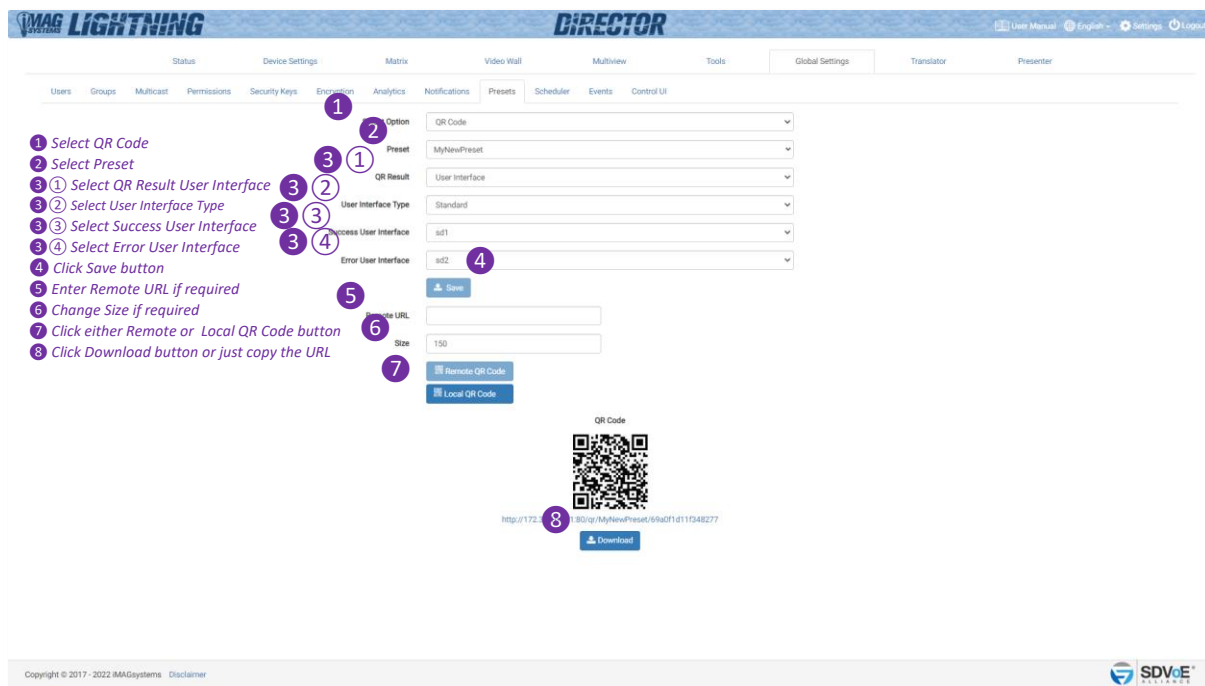


The differences between a QR Result and Standard UI result UI are as follows:

- A QR Results UI does not contain any login page or page restrictions.
- A QR Results UI contains both Success and Error result pages to be displayed.

1.9.9 QR Code continued...

The below will provide a Standard User Interface response:



1 Select QR Code

2 Select Preset

3 Select QR Result User Interface

4 Select Success User Interface

5 Select Error User Interface

6 Click Save button

7 Enter Remote URL if required

8 Change Size if required

Option: QR Code

Preset: MyNewPreset

QR Result: User Interface

User Interface Type: Standard

Success User Interface: sd1

Error User Interface: sd2

Save

Remote URL:

Size: 150

Remote QR Code

Local QR Code

QR Code

http://172.130.0.1/MyNewPreset/sd01d11048277

Download

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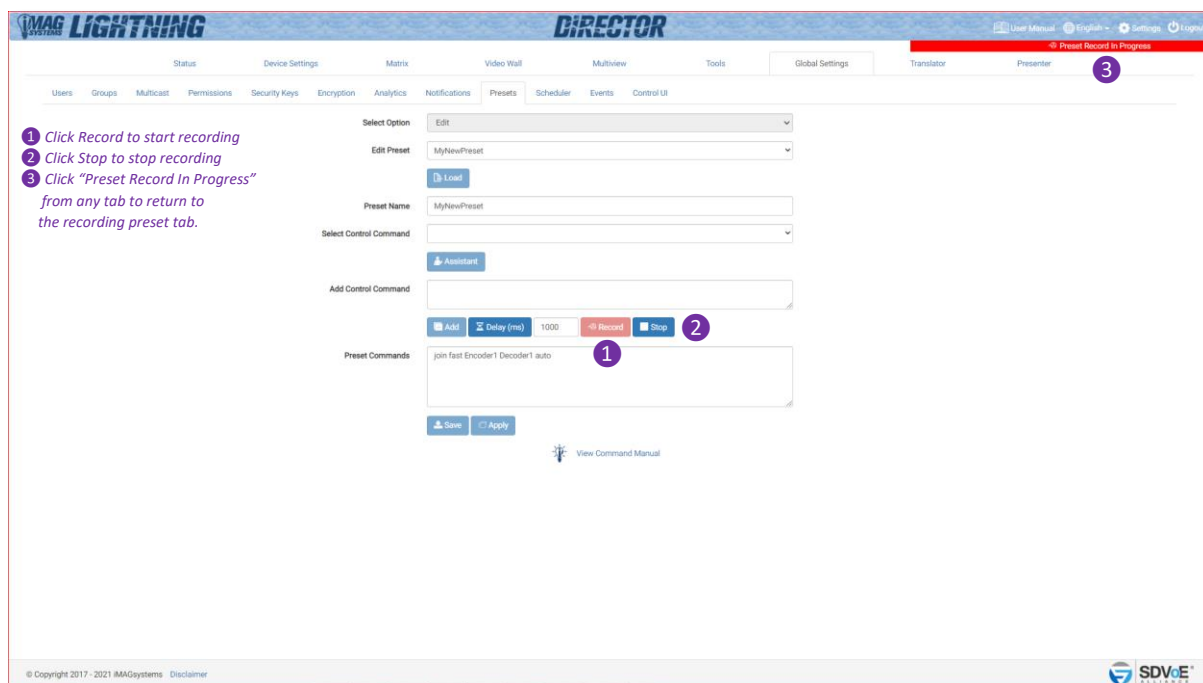
SDVCE

1.9.10 Preset Record

Selecting Record within Presets New or Presets Edit will record interactions from the UI directly into the selected preset.

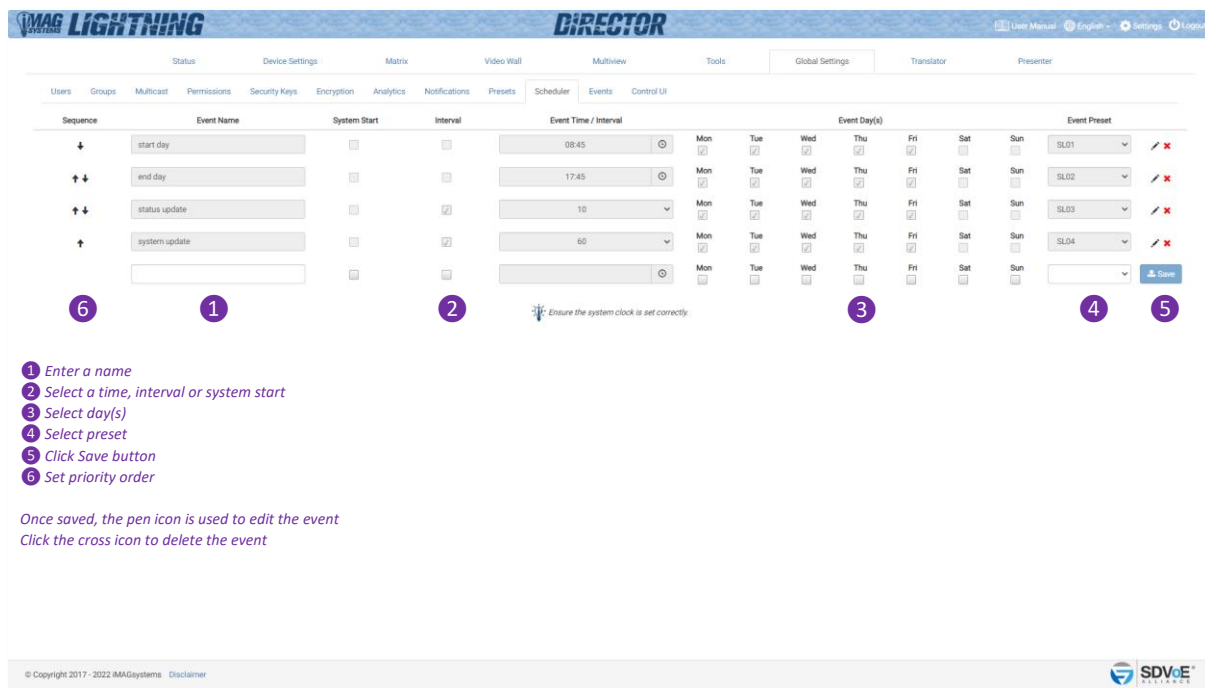
The following UI tabs will record interactions:

- Device Settings / Edit
- Status / Details
- Tools / Send Serial
- Tools / Send Infrared
- Tools / Send Control Command
- Matrix
- Video Wall
- Multiview



1.10 Scheduler (Licensed feature)

The Scheduler is used to apply presets at system start, required time or interval on selected days.



1 Enter a name
 2 Select a time, interval or system start
 3 Select day(s)
 4 Select preset
 5 Click Save button
 6 Set priority order

Once saved, the pen icon is used to edit the event
 Click the cross icon to delete the event

Intervals in 5 minute increments can be selected from 5 to 60. This is particularly useful in keeping User Interfaces up to date with current device or system status.

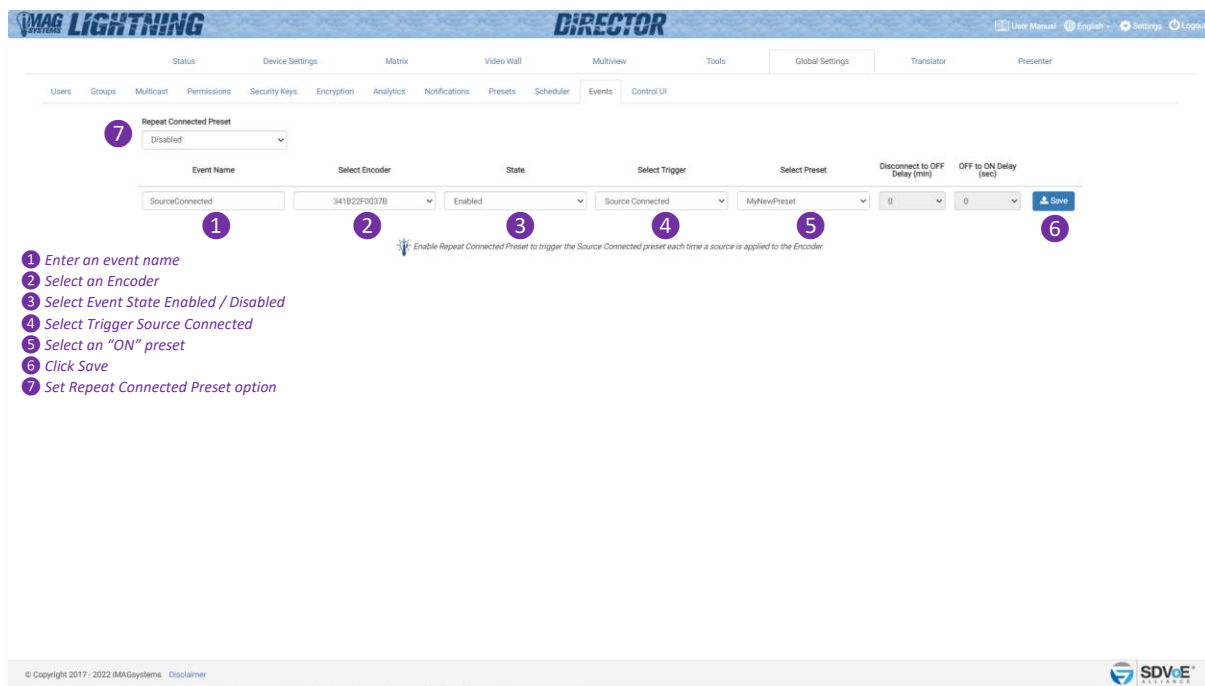
The sequence arrows are used to move the events into priority order. When event times or internals elapse at the same time the order the events are listed depicts the order they will be executed.

1.11 Events (Licensed feature)

Here you can configure presets to be applied (*controlling a display*) when an Encoder source becomes available or removed.

Select a 'Source Connected' trigger event from an Encoder then select a preset to be applied when the Encoder source becomes available. You can set the 'Repeat Connected Preset' option to apply this preset each time a source is applied or only if the display is off.

The state of the event can be enabled or disabled via the UI here or with API command 'set events'.



1 Enter an event name

2 Select an Encoder

3 Select Event State Enabled / Disabled

4 Select Trigger Source Connected

5 Select an "ON" preset

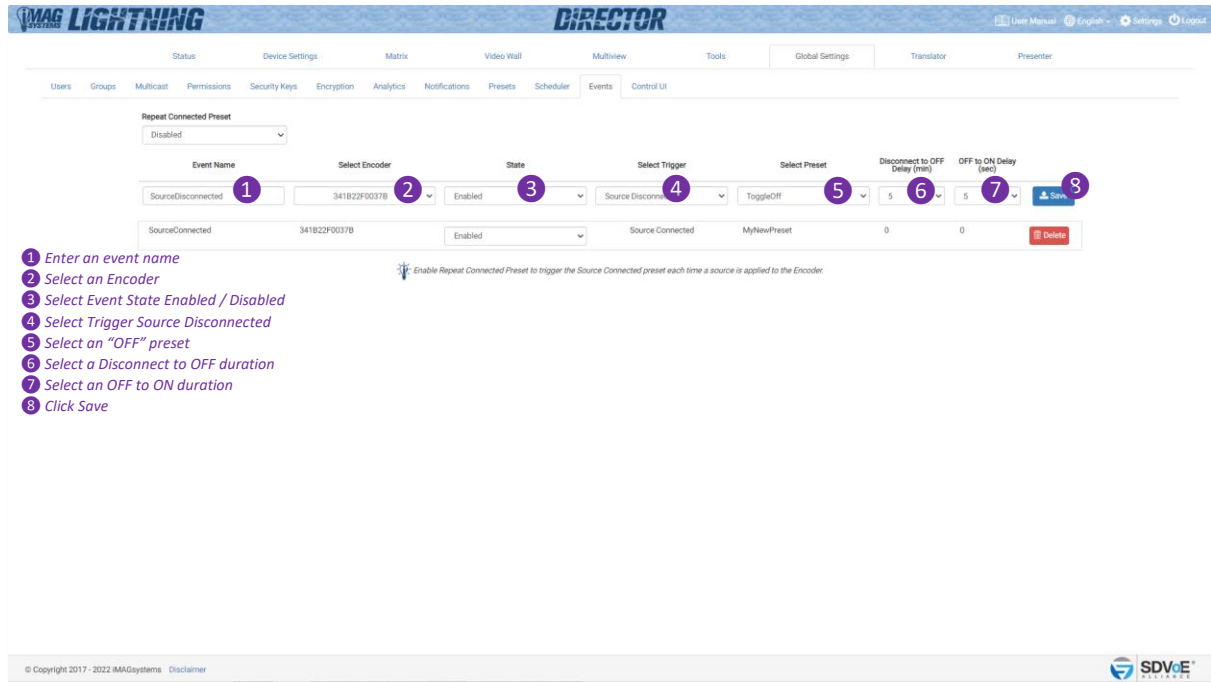
6 Click Save

7 Set Repeat Connected Preset option

1.11 Events continued...

Select a Source Disconnected trigger event from an Encoder then select a preset to be applied when the Encoder source becomes unavailable. The preset will only be applied after the Disconnect to OFF delay duration. This event is cancelled each time an Encoder source becomes available.

The OFF to ON Delay will prevent the Source Connected event for the delay duration.



1 Enter an event name

2 Select an Encoder

3 Select Event State Enabled / Disabled

4 Select Trigger Source Disconnected

5 Select an "OFF" preset

6 Select a Disconnect to OFF duration

7 Select an OFF to ON duration

8 Click Save

1.12 Control UI (Licensed feature)

The Control UI can be used instead of a 3rd party control system to fully control the functions of the system and much more. Here you can design your own User Interfaces to recall functions that have been saved as presets.

Control UI lets you create a virtually unlimited number of User Interfaces which can be viewed on any devices Google Chrome or Safari browser.

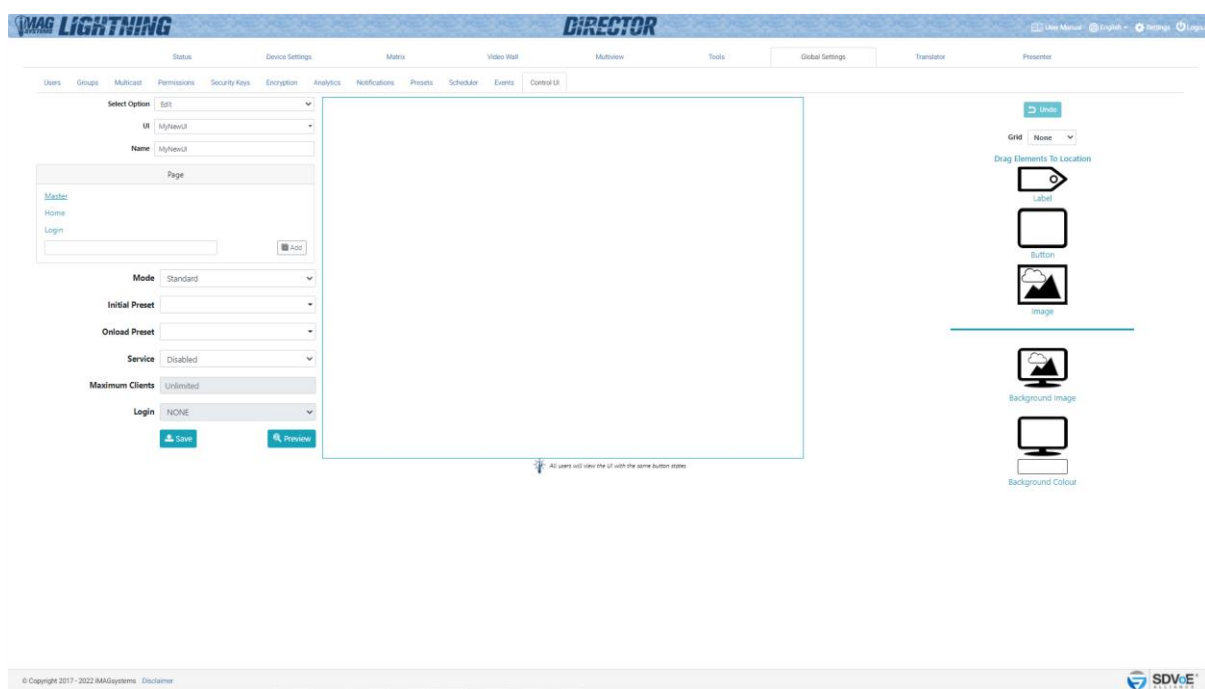
1.12.1 Mode

The Control UI has two modes of operation, Standard and QR Code Result mode. Standard being the normal mode of operation to create control system User Interfaces. While QR Code Result mode is specific to displaying the result from scanning and executing a QR Code preset. Either UI type can be selected as a QR Code Result.

1.12.1.1 Standard Mode

Standard mode provides the default pages Master Page, Home Page and Login Page. The Master Page is used to display the elements on all other pages without a background applied. The Home Page is the initial page to be displayed. The Login page is shown when a login code is required.

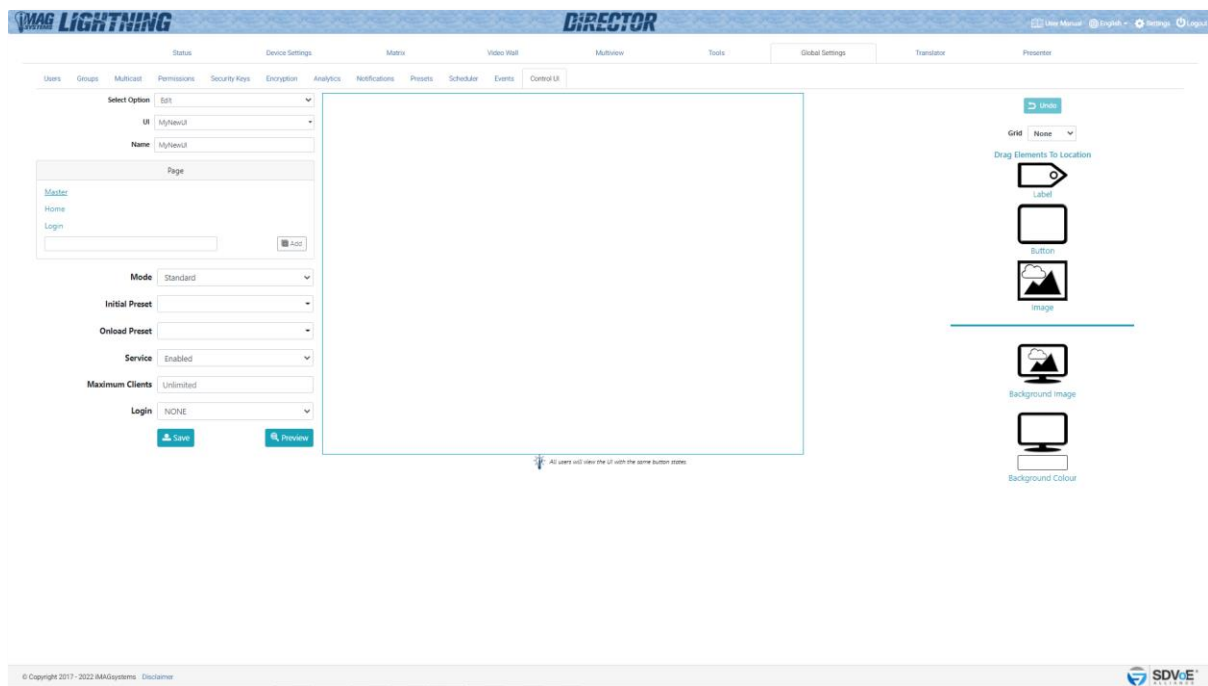
Standard mode provides options for limiting the maximum allowed clients and login with fixed or random number with a session timeout.



1.12.1.1.1 Standard Mode Initial Preset

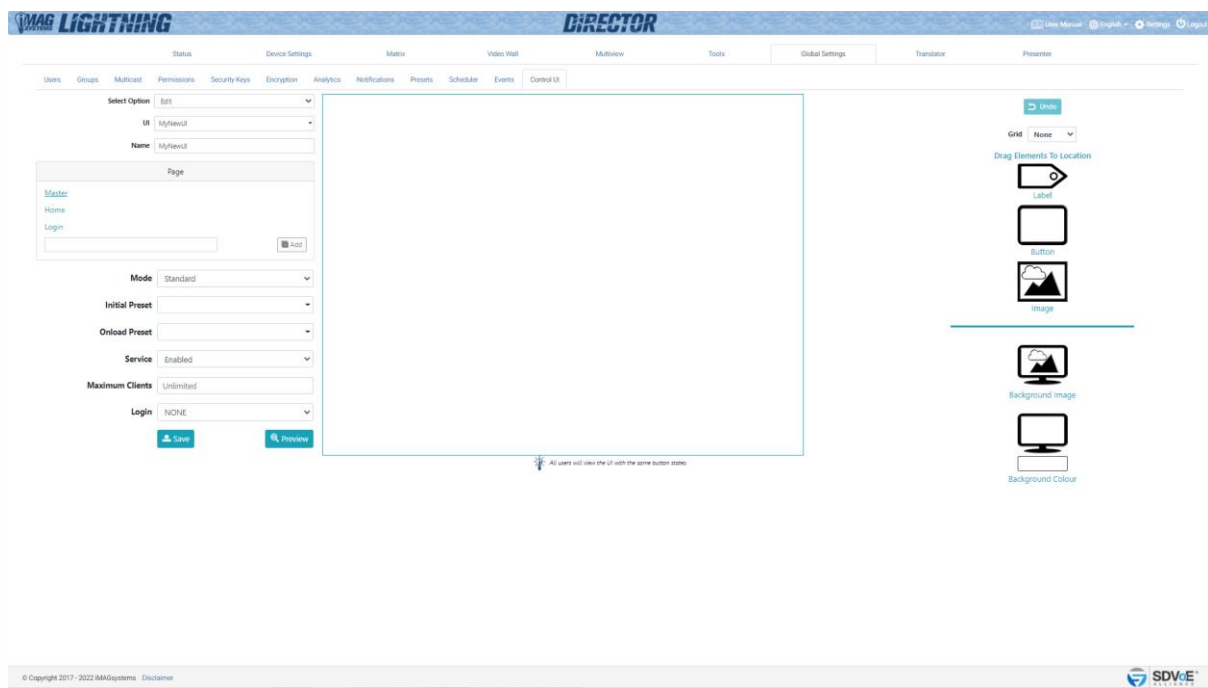
The Initial Preset is used to select a preset to be executed when the UI service is enabled. This preset can be used to set a default configuration to match User Interface initial button states.

The control command **set ui** can be used to toggle the service state.



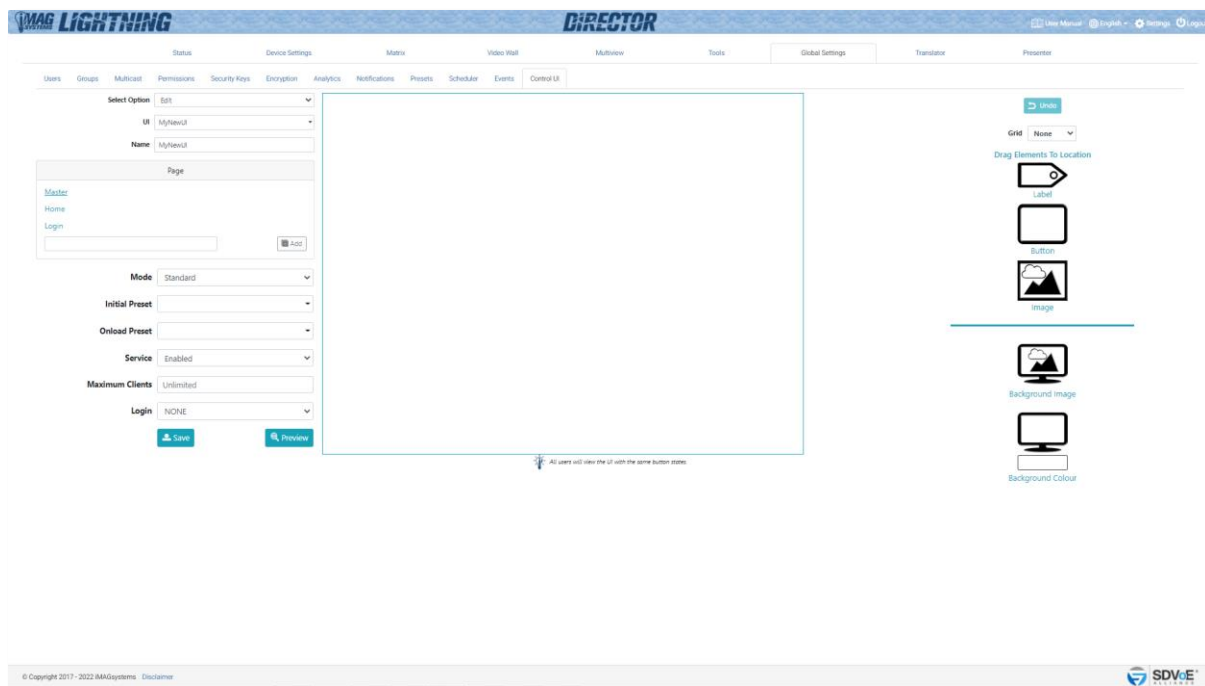
1.12.1.1.2 Standard Mode Onload Preset

The Onload Preset is used to select a preset to be executed when the UI is loaded client side.



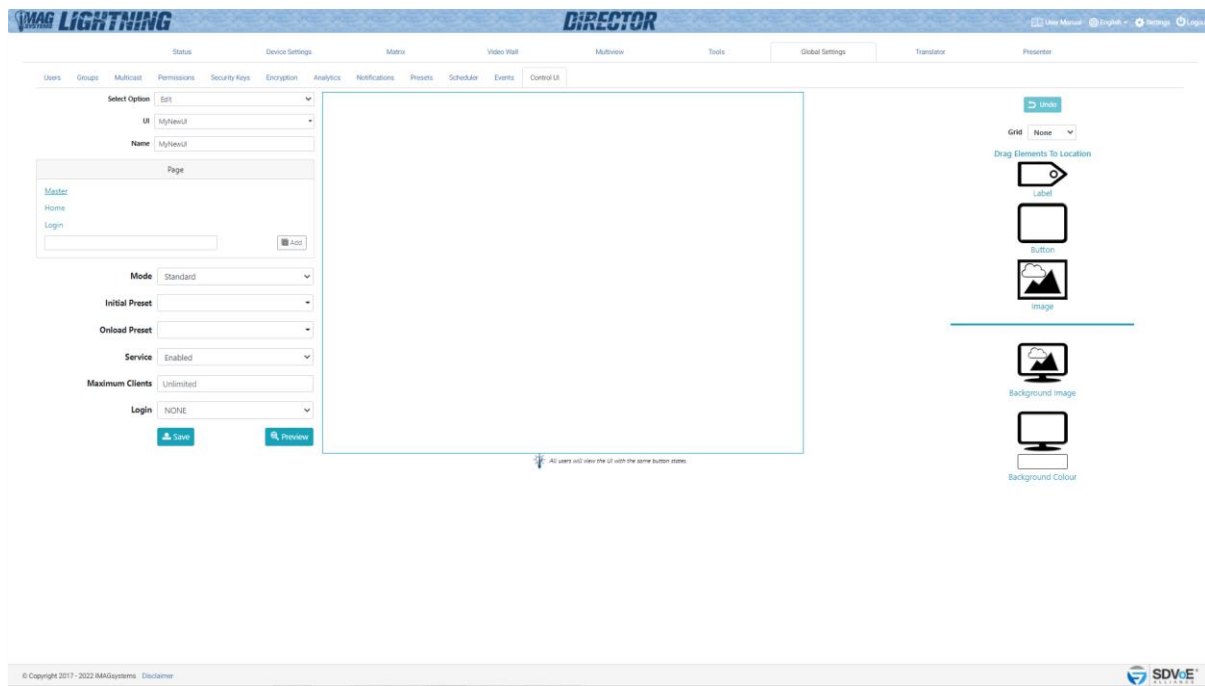
1.12.1.1.3 Standard Mode Service

Service is used to enable and disable access to the User Interface.



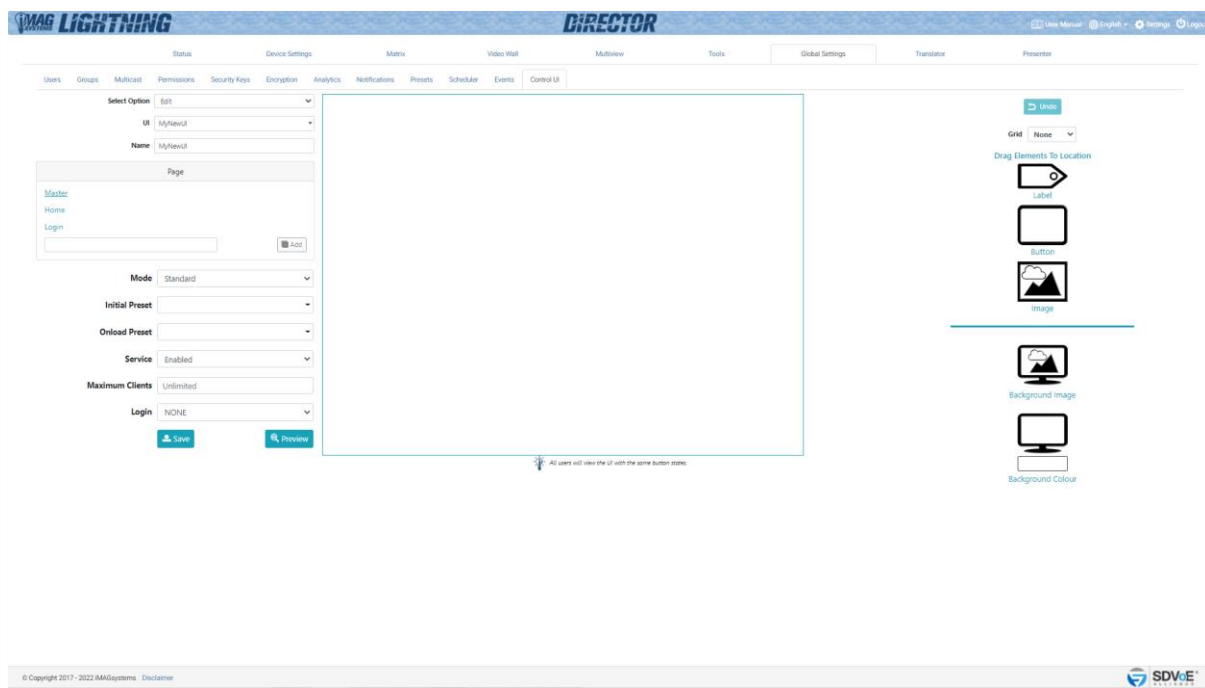
1.12.1.1.4 Standard Mode Maximum Clients

The number of simultaneous client connections can be limited by assigning a value to Maximum Clients otherwise the User Interface can be accessible to an unlimited number of users.



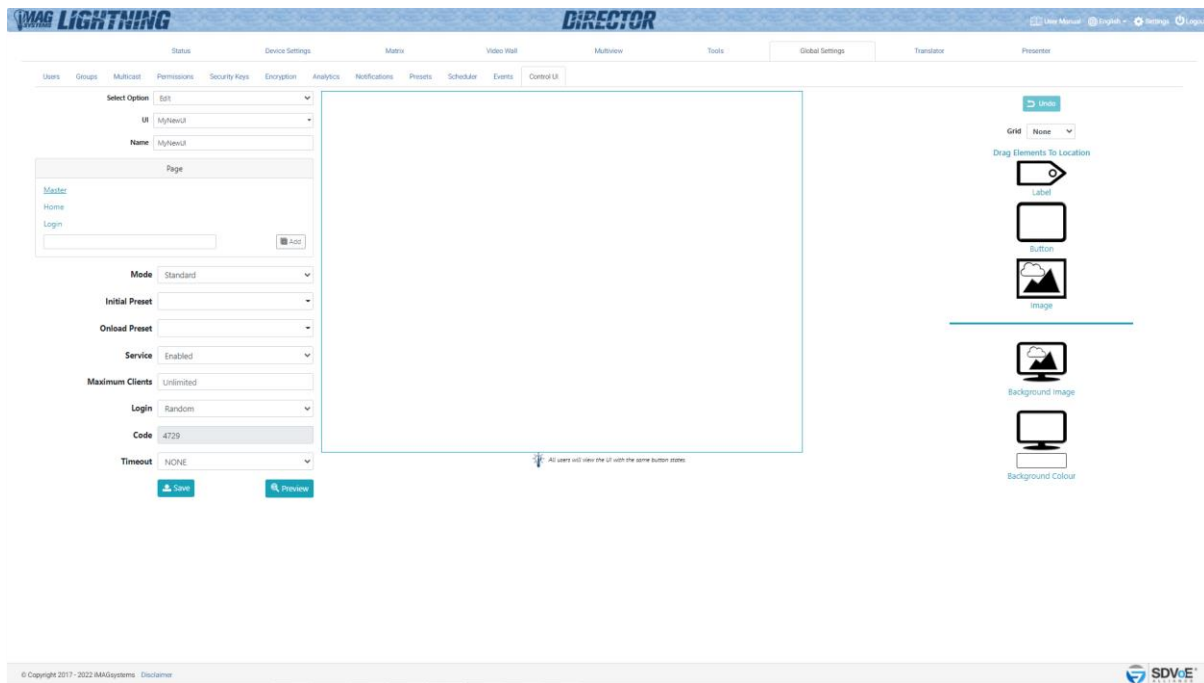
1.12.1.1.5 Standard Mode Login

If a pin code to access the User Interface is not required then leave the Login as NONE. The Login Page will not be used or shown in the case.



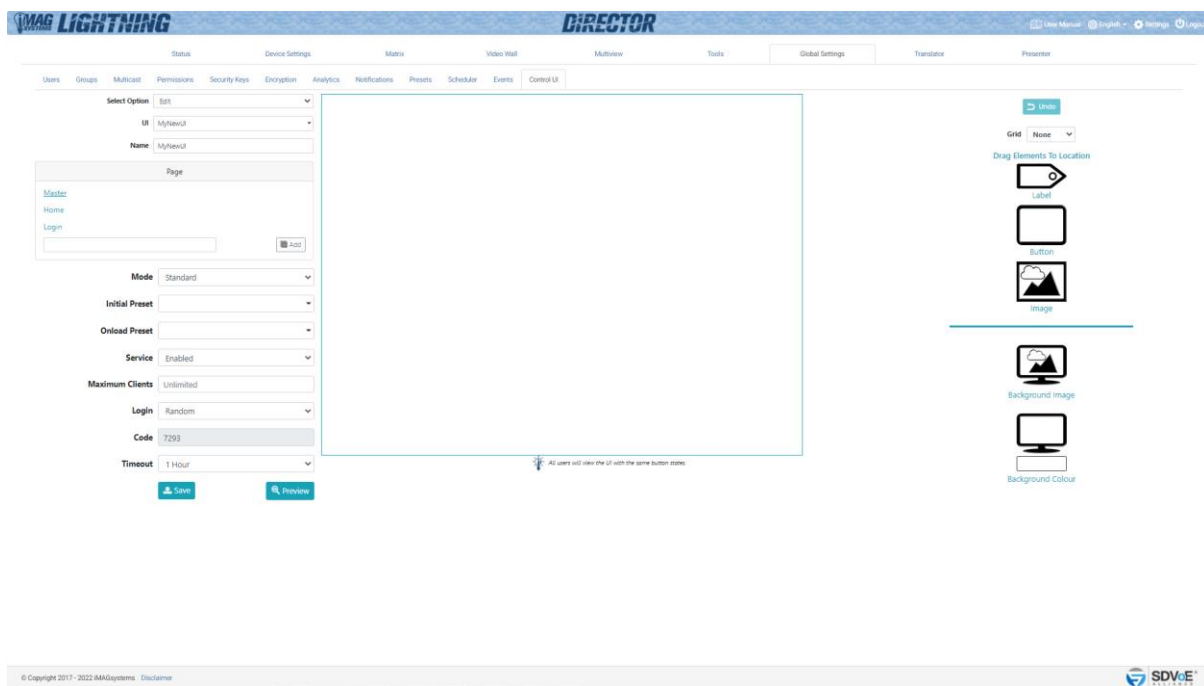
1.12.1.1.5 Standard Mode Login continued...

When a login pin code is required either a Random or Fixed 4 digit code can be selected. A random pin code will change each time the service is enabled. In these cases the Login Page will be used and displayed when accessing the User Interface.



1.12.1.1.6 Standard Mode Timeout

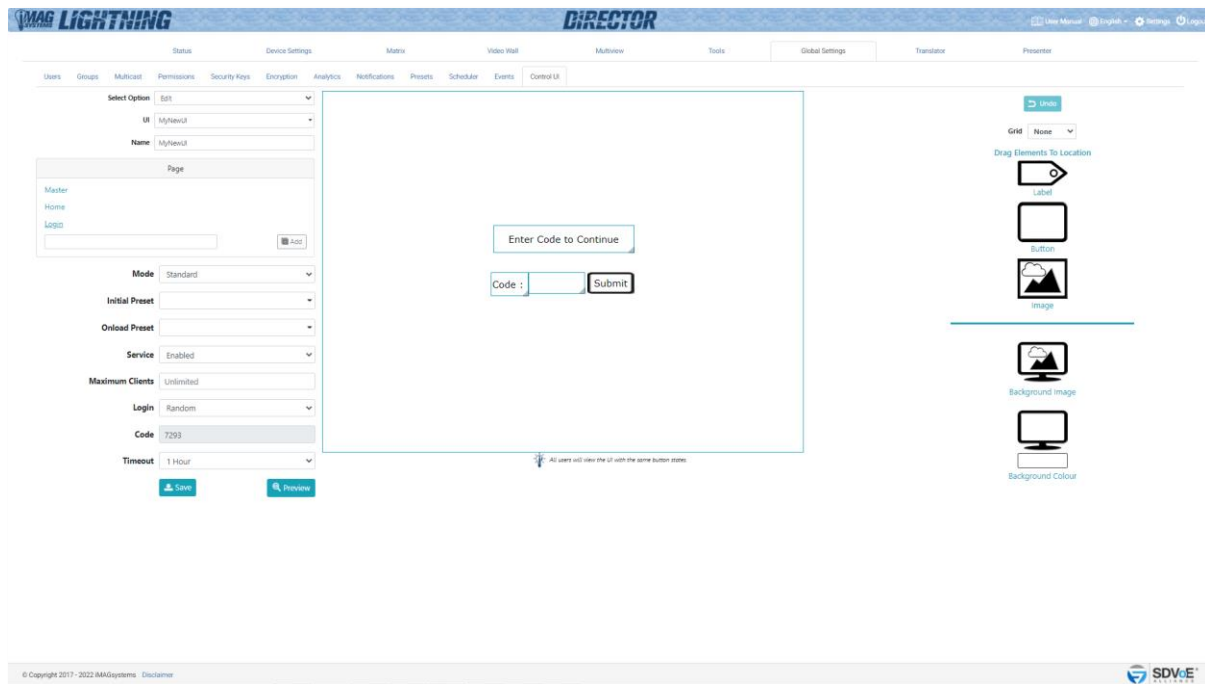
A timeout can also be applied when using a login pin code that will prevent the client access after the selected time has elapsed.



1.12.1.1.7 Standard Mode Login Page

The Login page will be displayed when a random or user defined pin code is required to access the User Interface.

This page is unique in that it already contains the main elements required. A heading label, a code label, textbox to enter the 4 digit pin code and a button to submit. These elements cannot be deleted but can be changed as required. A background and logo images can be added as required.

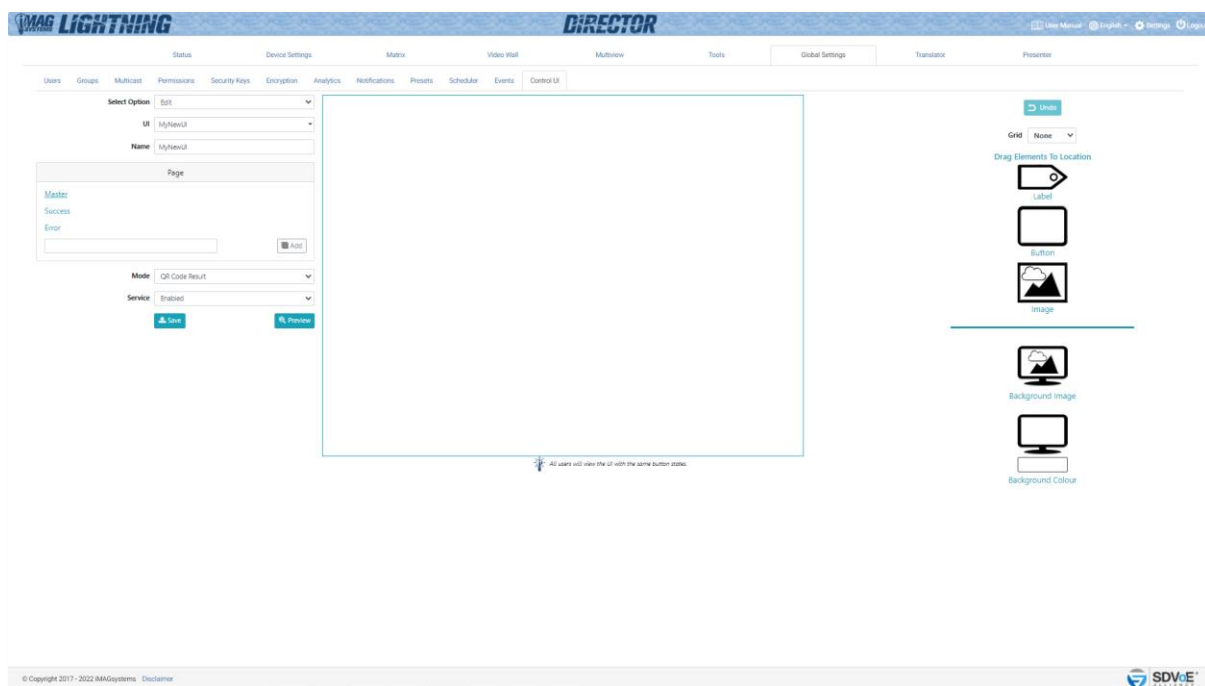


1.12.1.2 QR Code Result Mode

Standard mode provides the default pages Master, Home and Login. The Master page is used to display the elements on all other pages without a background applied. The Home page is the initial page to be displayed.

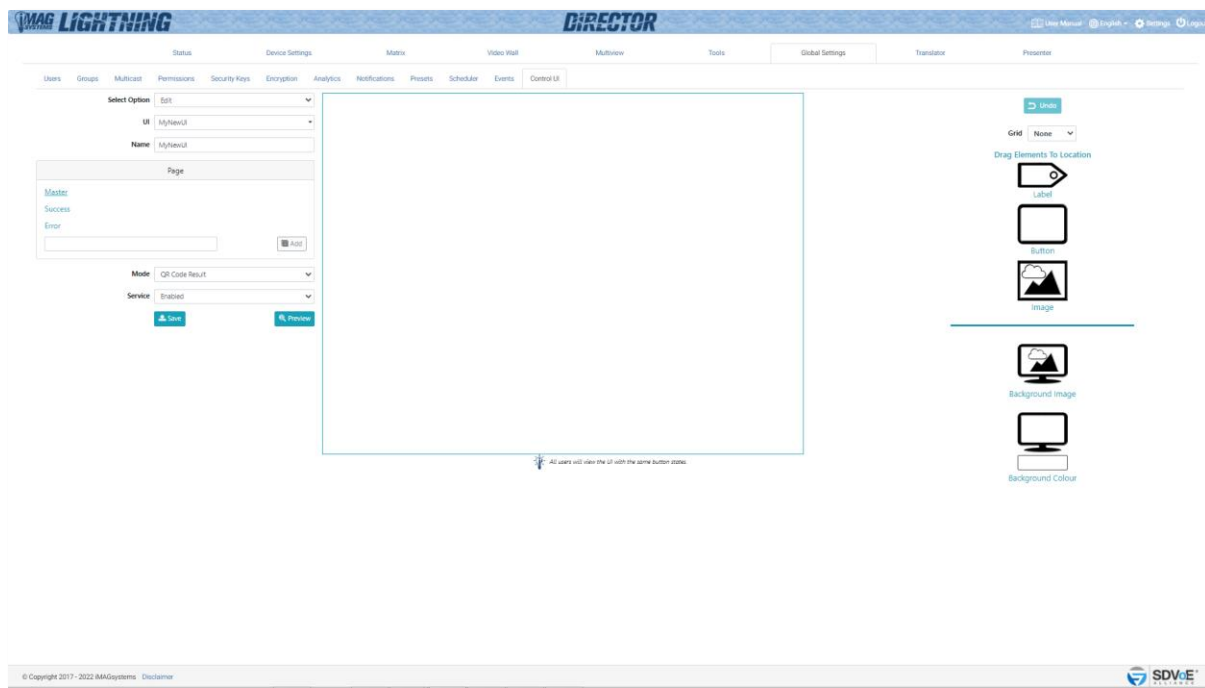
QR Code Result mode provides the default pages Master, Success and Error. The Master page is used to display the elements on all other pages without a background applied. The Success page is shown after a scanned QR Code preset is executed successfully. The Error page is shown after a scanned QR Code preset is executed with an error.

These result User Interface can be used to display a single page message or a multipage User Interface with the same abilities as standard mode.



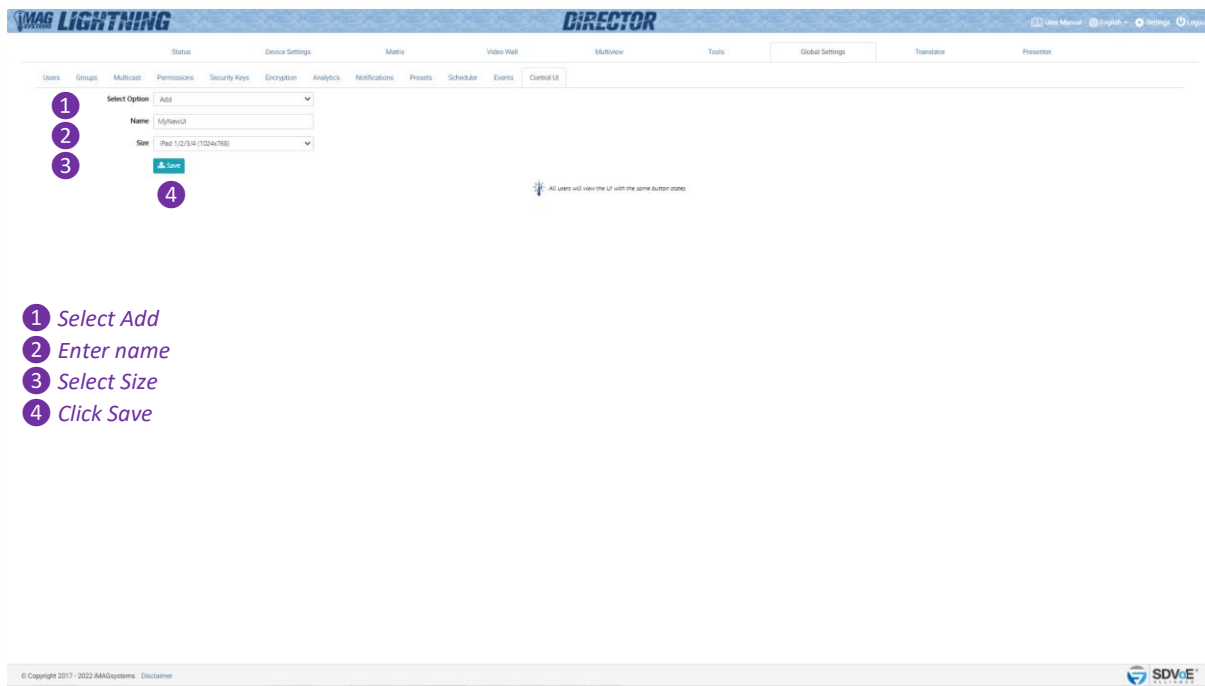
1.12.1.2.1 QR Code Result Mode Service

Service is used to enable and disable access to the User Interface.



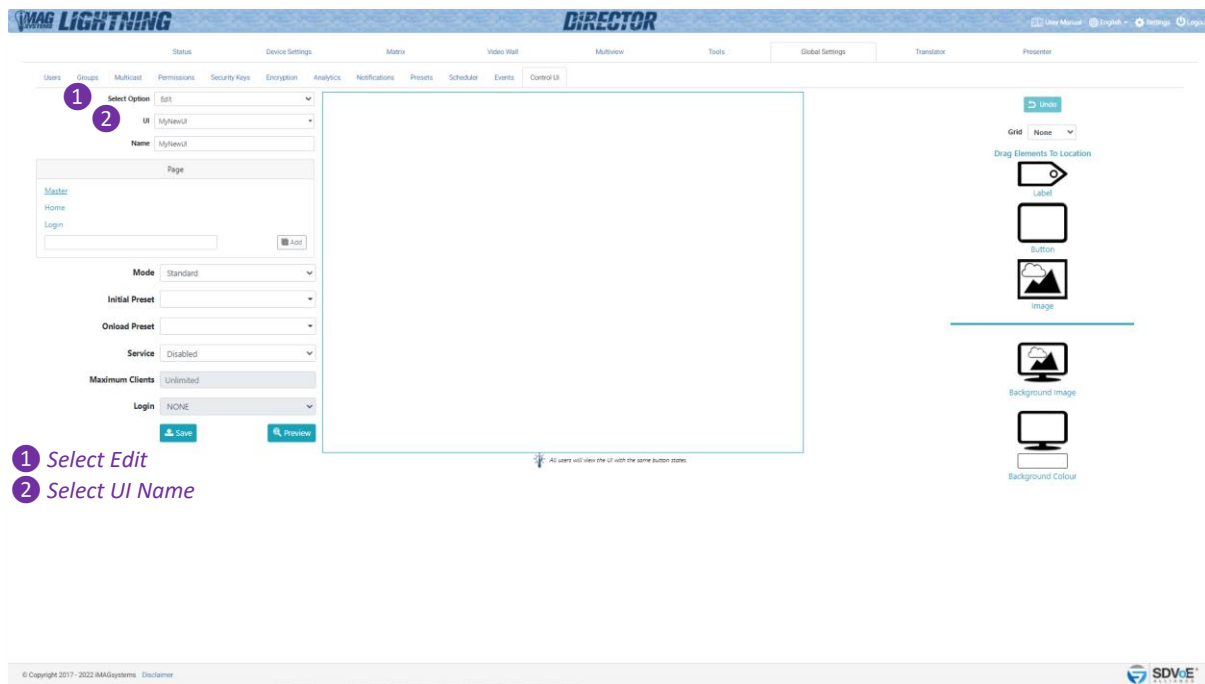
1.12.2 Add

Here you can add a new UI to the system ready to be edited as required. The UI name must be specified along with the UI resolution.

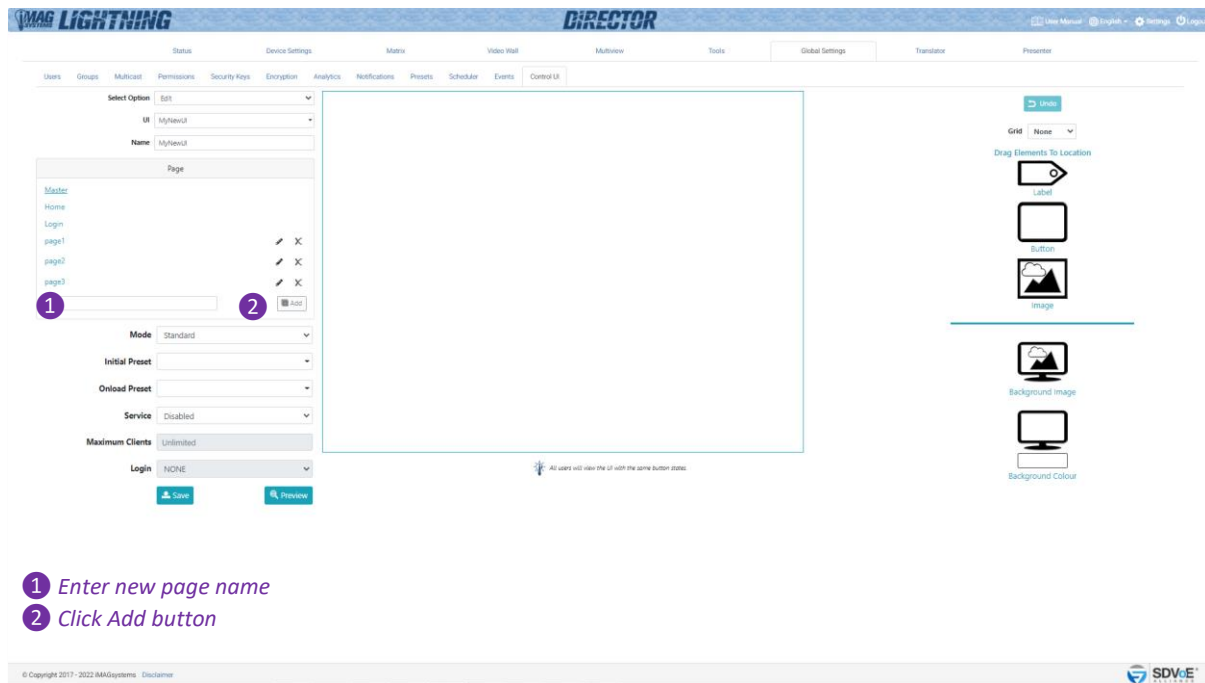


1.12.3 Edit

Here you can edit and preview an existing UI on the system. The UI service can also be enable or disable from here.



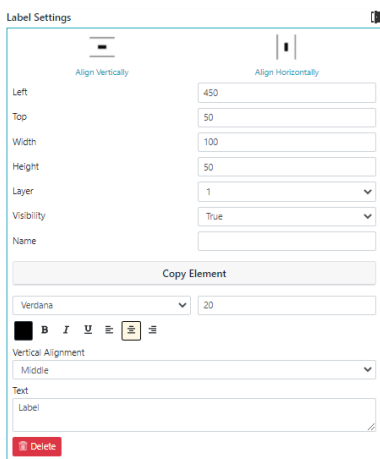
Initially only two pages are available, Master Page and Home Page. The Master Page is used for elements to be displayed on all other pages that do not have a background set. The Home Page is the displayed page when the UI is loaded. From here you can add and remove pages whenever required.



1.12.3.1 Label

A Label can be dragged to any location and used as a heading, label or where ever text is required on the UI.

The label must be given a name to change the colour, text and visibility via the control command **set ui_label**.



Label Settings

Align Vertically | Align Horizontally

Left: 450
Top: 50
Width: 100
Height: 50
Layer: 1
Visibility: True
Name:

Copy Element

Verdana | 20

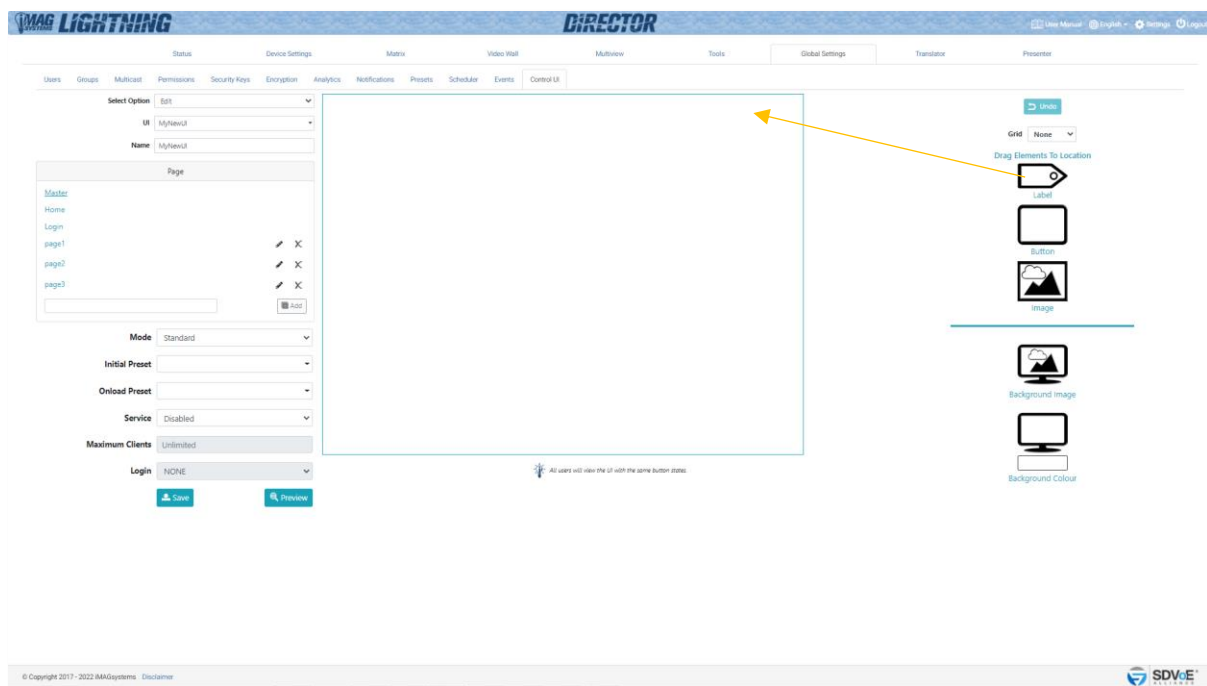
B I U | [Color] [Background Color]

Vertical Alignment: Middle

Text: Label

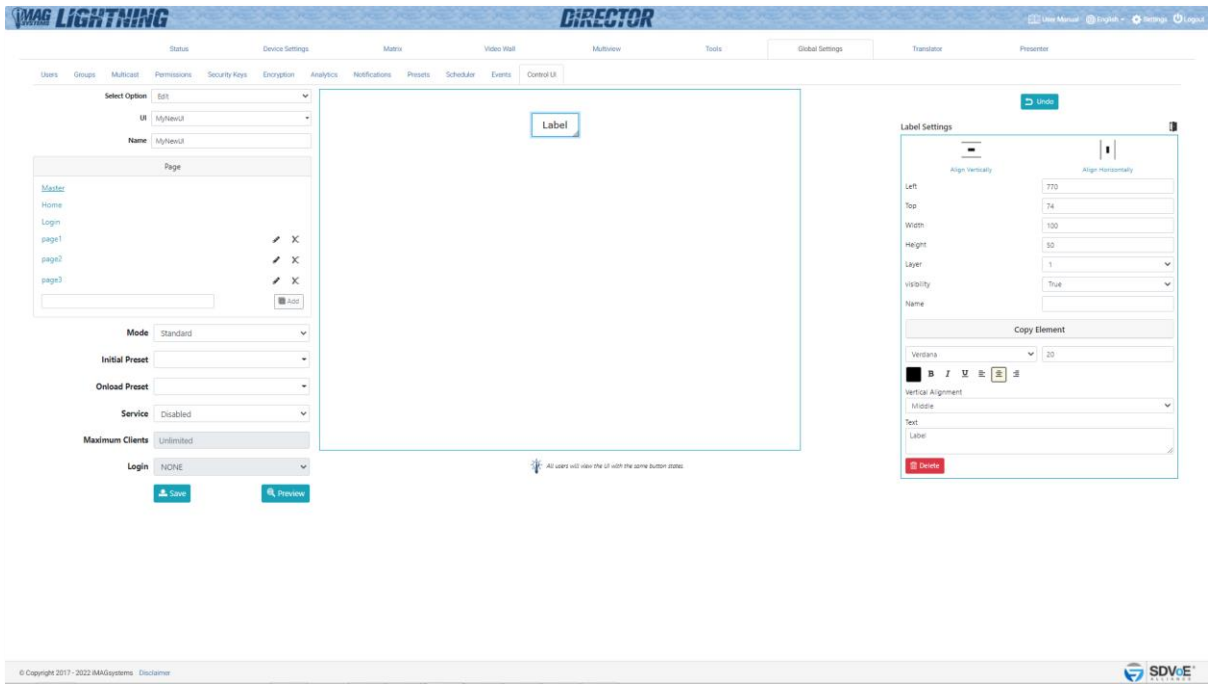
Delete

Here we are adding a title for the UI on the Master Page.



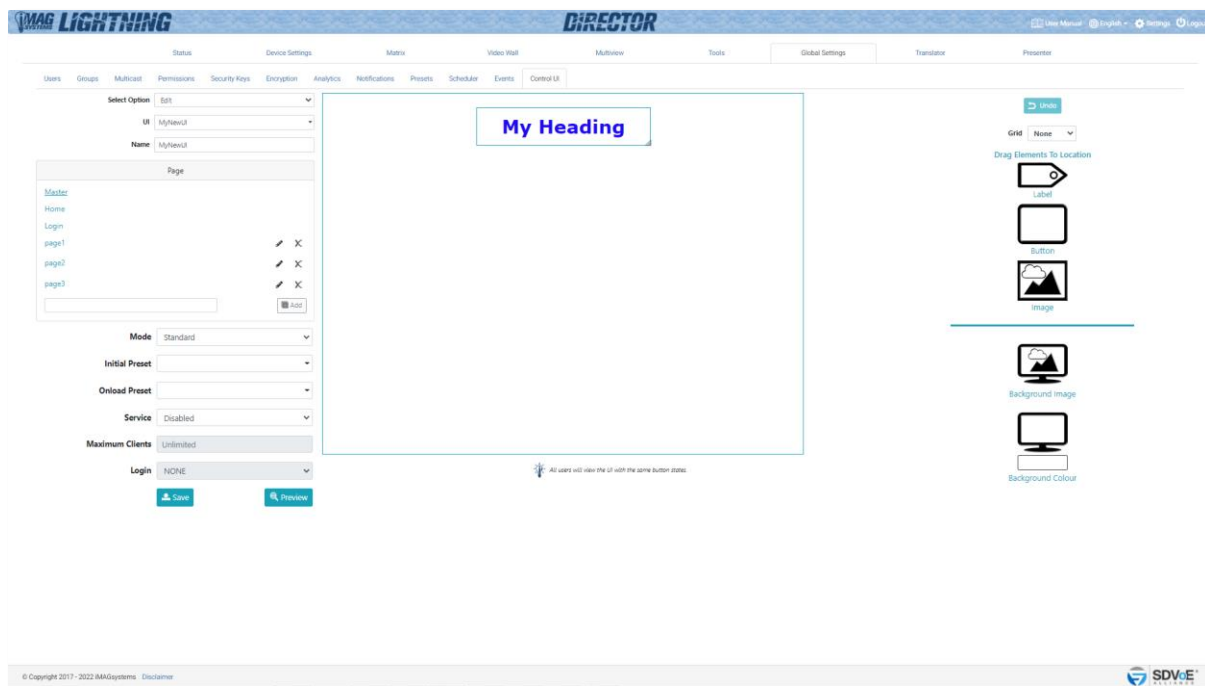
1.12.3.1 Label continued...

Edit the text font, size, style, alignment and position, or remove it from the UI.



1.12.3.1 Label continued...

Here the heading label has been defined.



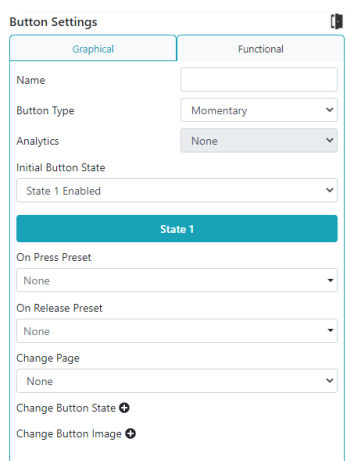
1.12.3.2 Button

Buttons are primarily used to execute presets, but can also be used to indicate the status of something by toggling their state. A button will indicate the execution status of a preset as success or failure by glowing either green for success, or red for failure.

A button can be configured to operate with 6 different functions as explained here:

Momentary button

A momentarily button will operate in a push button single state fashion where a preset is executed once for every press. Presets can be set for both button press and button release.



Here you can see the functionality of a **Momentary** button.

Name: A button name is required as a reference for analytics or when manipulating the button from another buttons functionality or via the API.

Button Type: Select the operation of the button as Momentary.

Analytics: Select a button function from the list that best matches the operation of the button or add a custom button type of your own.

Initial Button State: This is the initial state of the button when the UI is loaded.

On Press Preset: Select the preset to be executed on button press.

On Press Release: Select the preset to be executed on button release.

Change Page: This allows you to change to another page.

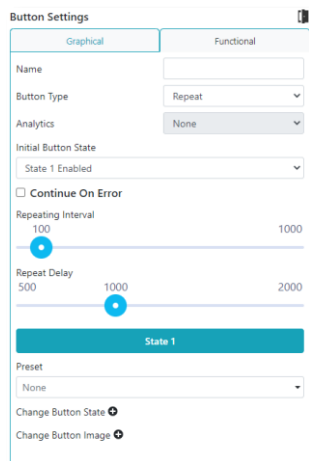
Change Button State: This allows you to change the state of a button.

Change Button Image: This allows you to change the image of a button.

1.12.3.2 Button continued...

Repeat button

A Repeat button will operate in a momentarily fashion where only a preset is assigned to state 1 but the preset will be repeated while the button is held down. The preset will be executed as soon as the button is pressed, then there is a configurable repeat delay before repeating begins and a configurable repeating interval which sets the delay time between preset executions.



Here you can see the functionality of a **Repeat** button.

Name: A button name is required as a reference for analytics or when manipulating the button from another buttons functionality or via the API.

Button Type: Select the operation of the button as Repeat.

Analytics: Select a button function from the list that best matches the operation of the button or add a custom button type of your own.

Initial Button State: This is the initial state of the button when the UI is loaded.

Continue On Error: This is an option to continue executing the preset if it returns failed.

Repeating Interval: This is the time delay in milliseconds the button preset repeats while being held down.

Repeat Delay: This is the time in milliseconds the button must remain held down before the preset starts repeating.

Preset: Select the preset to be executed on button press.

Change Page: This allows you to change to another page.

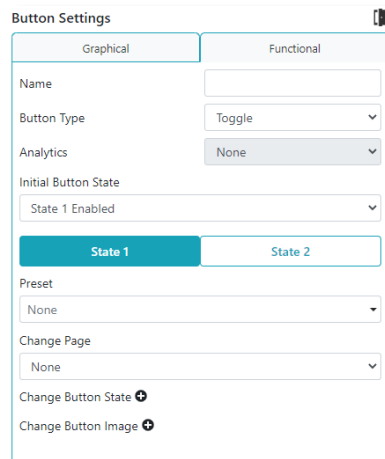
Change Button State: This allows you to change the state of a button.

Change Button Image: This allows you to change the image of a button.

1.12.3.2 Button continued...

Toggle button

A Toggle button will operate in a push on, push off fashion so a preset can be assigned to both state 1 and state2. First press of the button executes state 1 preset and puts the button into state 2 showing a state 2 button image. Second press of the button then executes state 2 preset and returns the button back to state 1.



The screenshot shows the 'Button Settings' dialog box with the 'Functional' tab selected. The 'Name' field is empty. 'Button Type' is set to 'Toggle'. 'Analytics' is set to 'None'. 'Initial Button State' is set to 'State 1 Enabled'. Below this, there are two buttons: 'State 1' (highlighted in blue) and 'State 2'. Underneath are four dropdown menus: 'Preset' (set to 'None'), 'Change Page' (set to 'None'), 'Change Button State' (with a plus icon), and 'Change Button Image' (with a plus icon).

Here you can see the functionality of a **Toggle** button.

Name: A button name is required as a reference for analytics or when manipulating the button from another buttons functionality or via the API.

Button Type: Select the operation of the button as Toggle.

Analytics: Select a button function from the list that best matches the operation of the button or add a custom button type of your own.

Initial Button State: This is the initial state of the button when the UI is loaded.

State 1 / State 2: These buttons allow you to select the following for each button state:

Preset: Select the preset to be executed on button press.

Change Page: This allows you to change to another page.

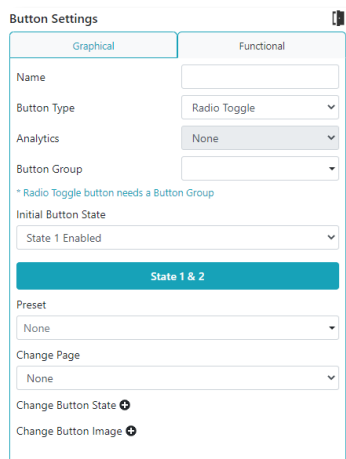
Change Button State: This allows you to change the state of a button.

Change Button Image: This allows you to change the image of a button.

1.12.3.2 Button continued...

Radio Toggle button (Exclusive Toggle button)

A Radio Toggle group of buttons will operate in an exclusive toggle fashion and must be assigned to a Button Group. When you want a group of buttons to work together as radio toggle buttons where only one button of the group can be in state 2 (down), such as a radio station selector or source selection, then define the same Button Group name for each of those buttons.



Button Settings

Graphical Functional

Name

Button Type: Radio Toggle

Analytics: None

Button Group

* Radio Toggle button needs a Button Group

Initial Button State: State 1 Enabled

State 1 & 2

Preset: None

Change Page: None

Change Button State

Change Button Image

Here you can see the functionality of a **Radio Toggle** button.

Name: A button name is required as a reference for analytics or when manipulating the button from another buttons functionality or via the API.

Button Type: Select the operation of the button as Radio Toggle.

Analytics: Select a button function from the list that best matches the operation of the button or add a custom button type of your own.

Button Group: A group name must be provided to combine Radio Toggle buttons to function together.

Initial Button State: This is the initial state of the button when the UI is loaded.

Preset: Select the preset to be executed on button press.

Change Page: This allows you to change to another page.

Change Button State: This allows you to change the state of a button.

Change Button Image: This allows you to change the image of a button.

1.12.3.2 Button continued...

Split button

A Split button group will work in a matrix type way whereby buttons are configured as either an Encoder button or Decoder Button. Encoder buttons will operate as Radio (Exclusive) toggle buttons so only one can be selected, while the Decoder buttons will operate as a Toggle button so multiple can be selected.

Once a button is configured as an **Encoder** button next the actual Encoder to be used is selected. Buttons configured as a **Decoder** button will also have the required Decoder selected along with a preset that is executed when the Decoder button is pressed.

A single **Decoder All** button can also be assigned to the Split button group. This type of button is used to join the selected Encoder to all the Decoders. No device selection is required for this button and a preset can be optionally assigned to each button state. The reason the presets are optional is depending on how the system is to be used. When all the Decoders of the system are allocated to a Split button group then the use of "all_rx" can simplify things and in some cases ensure all displays change seamlessly (*depending on the system capabilities*). So then the Decoder All button can be set with presets to control all devices. If no presets are set then the individual Decoder buttons will be sequentially executed, as if pressing the Decoder buttons one after each other.

A preset has to be created for the Decoder button state 1 as a join command and state 2 as a leave command. In the majority of cases all Decoder buttons will use the same preset. In the preset assistant you will notice in the device lists <<Encoder>> and <<Decoder>>. These are the device selections required to create presets for Split button functionality. <<Encoder>> will be replaced by the selected Encoder button and <<Decoder>> will be replaced by the selected Decoder button. A Decoder button preset can also use <<button_name>> to identify the actual Decoder button pressed by name.

Preset example Decoder button state 1 join:

```
join av <<Encoder>> <<Decoder>>
```

Preset example Decoder button state 2 leave:

```
leave av <<Decoder>>
```

Preset example Decoder All button state 1 join:

```
join av <<Encoder>> all_rx
```

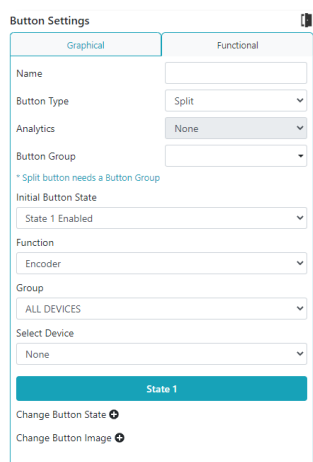
Preset example Decoder button state 2 leave:

```
leave av all_rx
```

Note: <<Decoder>> is not supported in a Decoder All button preset.

If you need to interact with buttons then a unique name for the button must be specified. The state of the button can then be changed with the functionality settings or via the control command **set ui_button**. The **set ui_button** command can also be used to change the buttons enabled state, text or be virtually pressed.

1.12.3.2 Button continued...



Here you can see the functionality of an **Encoder Split** button.

Name: A button name is required as a reference for analytics or when manipulating the button from another buttons functionality or via the API.

Button Type: Select the operation of the button as Split.

Analytics: Select a button function from the list that best matches the operation of the button or add a custom button type of your own.

Button Group: A group name must be provided to combine Split buttons to function together.

Initial Button State: This is the initial state of the button when the UI is loaded.

Function: Select the button to operate as Encoder.

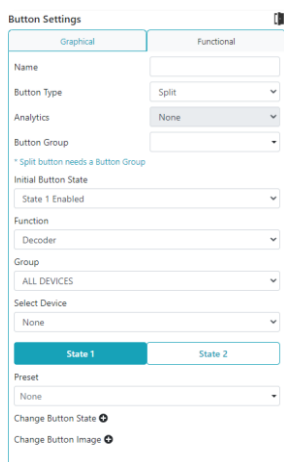
Group: Allows you to filter the Encoders by group.

Select Device: Select the required Encoder.

Change Button State: This allows you to change the state of a button.

Change Button Image: This allows you to change the image of a button.

1.12.3.2 Button continued...



Here you can see the functionality of a **Decoder Split** button.

Name: A button name is required as a reference for analytics or when manipulating the button from another buttons functionality or via the API.

Button Type: Select the operation of the button as Split.

Analytics: Select a button function from the list that best matches the operation of the button or add a custom button type of your own.

Button Group: A group name must be provided to combine Split buttons to function together.

Initial Button State: This is the initial state of the button when the UI is loaded.

Function: Select the button to operate the Encoder or Decoder.

Group: Allows you to filter the Decoders by group.

Select Device: Select the required Decoder.

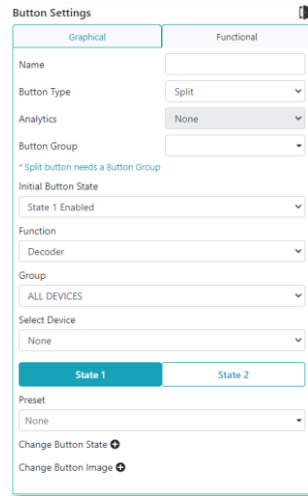
State 1 / State 2: These buttons allow you to select the following for each button state:

Preset: Select the preset to be executed on button press.

Change Button State: This allows you to change the state of a button.

Change Button Image: This allows you to change the image of a button.

1.12.3.2 Button continued...



Here you can see the functionality of a **Decoder Split** button.

Name: A button name is required as a reference for analytics or when manipulating the button from another buttons functionality or via the API.

Button Type: Select the operation of the button as Momentary, Toggle, Radio Toggle, Split, Repeat or QR Code.

Analytics: Select a button function from the list that best matches the operation of the button or add a custom button type of your own.

Button Group: A group name must be provided to combine split buttons to function together.

Initial Button State: This is the initial state of the button when the UI is loaded.

Function: Select the button to operate as Decoder.

Group: Allows you to filter the Decoders by group.

Select Device: Select the required Decoder.

State 1 / State 2: These buttons allow you to select the following for each button state:

Preset: Select the preset to be executed on button press.

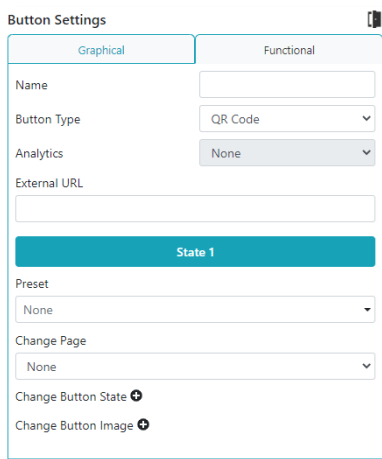
Change Button State: This allows you to change the state of a button.

Change Button Image: This allows you to change the image of a button.

1.12.3.2 Button continued...

QR Code button

Adds touchless functionality to a touchscreen control panel. A QR Code button will operate in a momentarily fashion where only a preset is assigned to state 1 and a QR Code replaces the button image. When the QR Code is scanned a virtual press of the button is performed.



Here you can see the functionality of a **QR Code** button.

Name: A button name is required as a reference for analytics or when manipulating the button from another buttons functionality or via the API.

Button Type: Select the operation of the button as QR Code.

Analytics: Select a button function from the list that best matches the operation of the button or add a custom button type of your own.

External URL: Enter the controllers external URL if working outside of the local network.

Preset: Select the preset to be executed on button press.

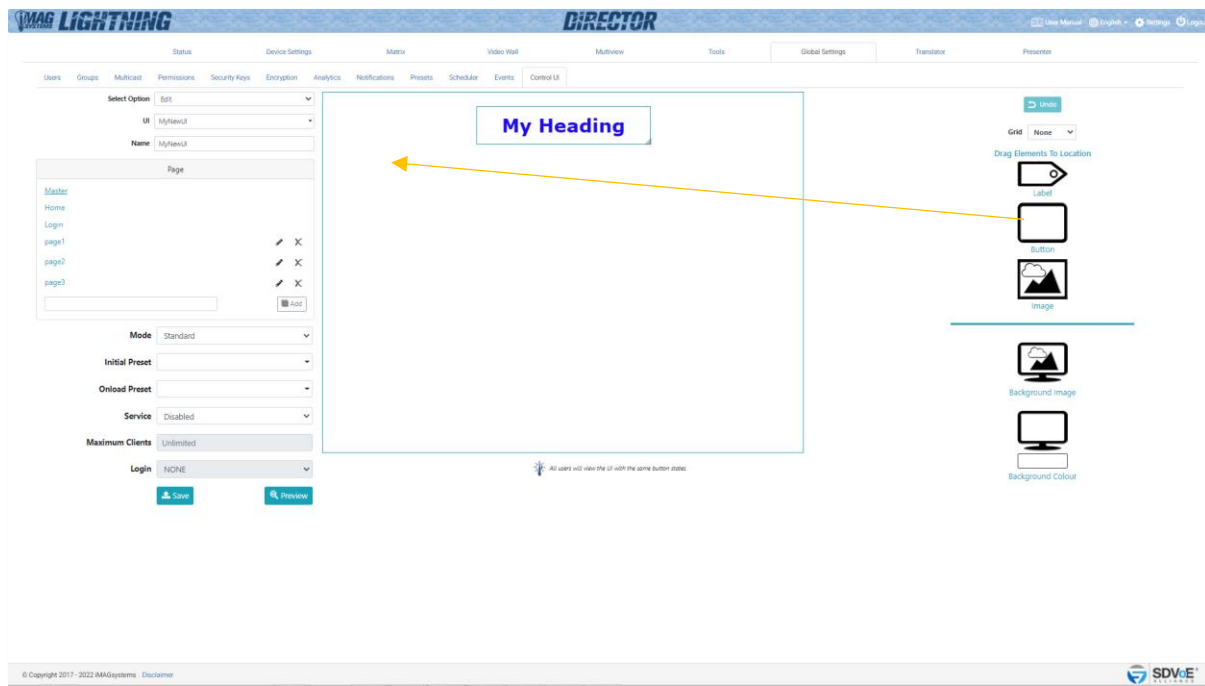
Change Page: This allows you to change to another page.

Change Button State: This allows you to change the state of a button.

Change Button Image: This allows you to change the image of a button.

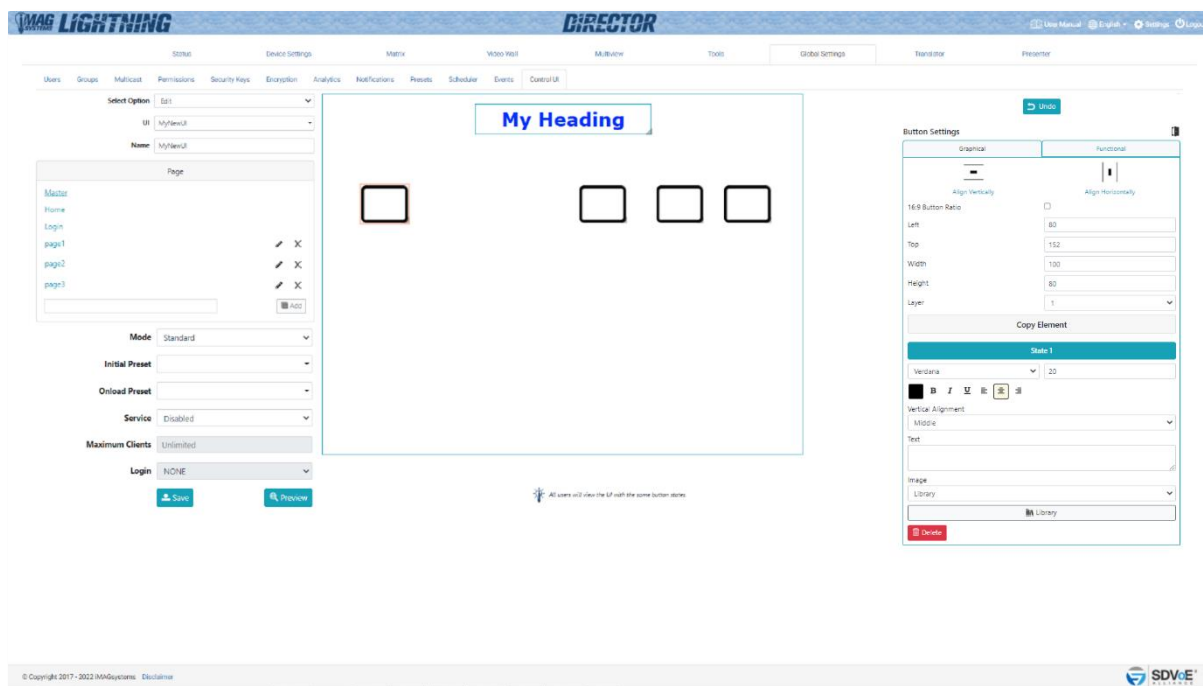
1.12.3.2 Button continued...

A Button can be dragged to any location and used as a press button, QR Code or an indicator. Here we are going to place some common buttons for the UI on the Master page.

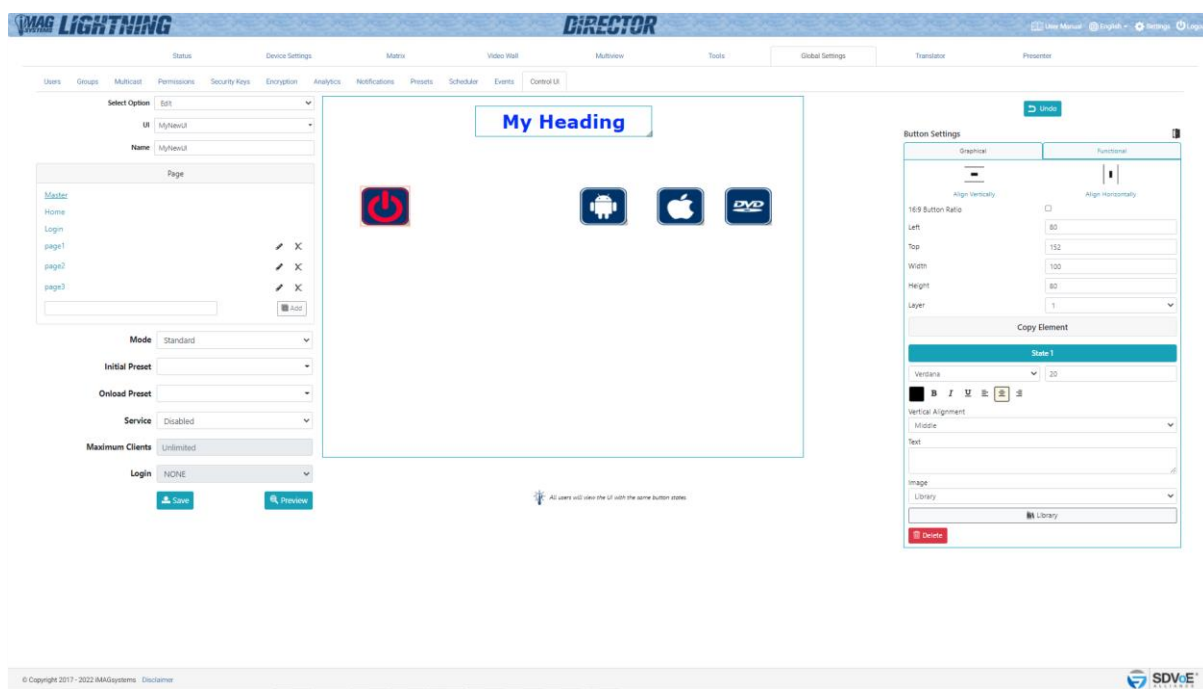


1.12.3.2 Button continued...

From the Button Settings Graphical tab, edit the button size, position and text font, size, style and alignment, or remove it from the UI.

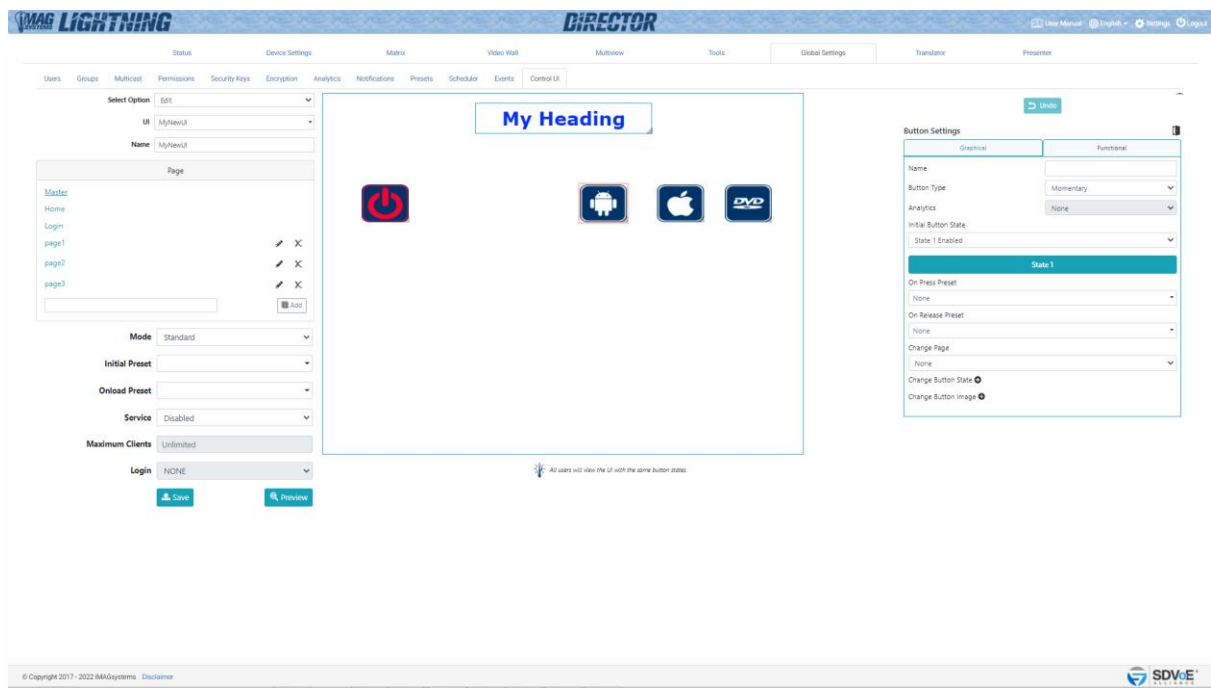


Select an image for the button by selecting either External File and browsing your own images, selecting Library to choose one from the button library or selecting Preview (when available) to display a preview stream. When selecting an image from the button library, both state 1 and state 2 images will be assigned when required. When using external file, an image must be assigned for each button state.



1.12.3.2 Button continued...

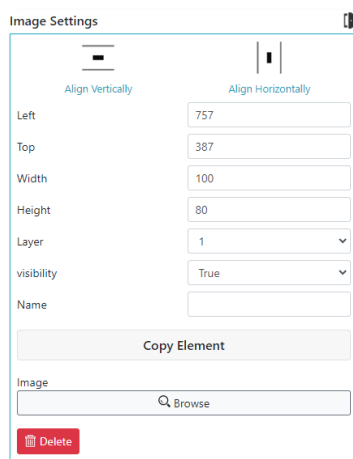
From the Button Settings Functional tab, select a preset to be triggered on button actions.



1.12.3.3 Image

An Image can be dragged to any location then resized by dragging the image placeholder or changing the Image Settings directly. The selected image will be resized to fit the size of the image placeholder. *It is recommended to use only the same sized images as the size being displayed.*

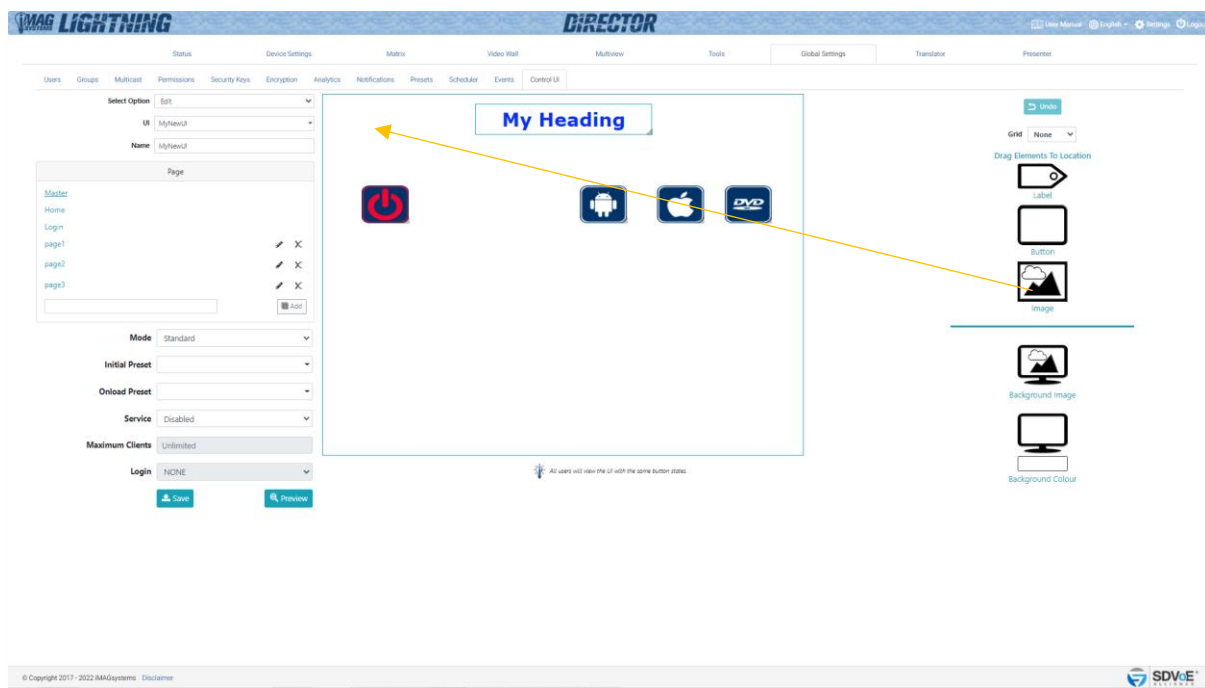
The image must be given a name to change the visibility via the control command **set ui_image**.



The Image Settings dialog box contains the following fields and controls:

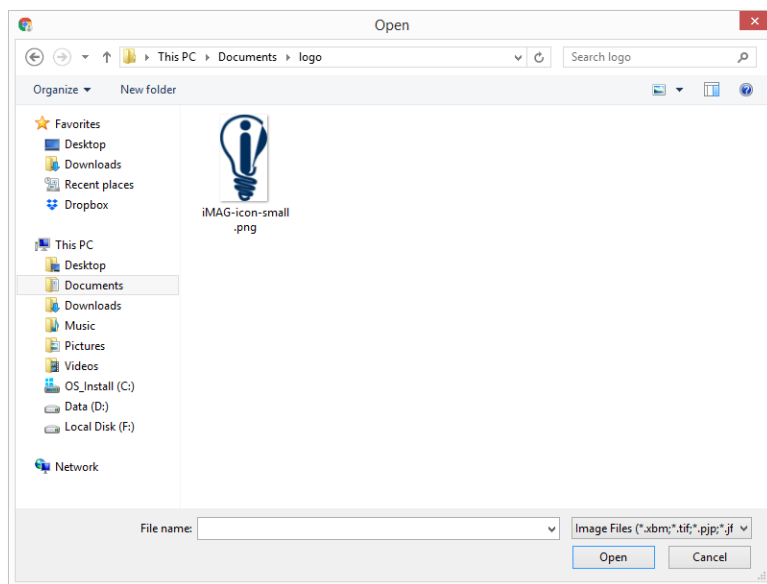
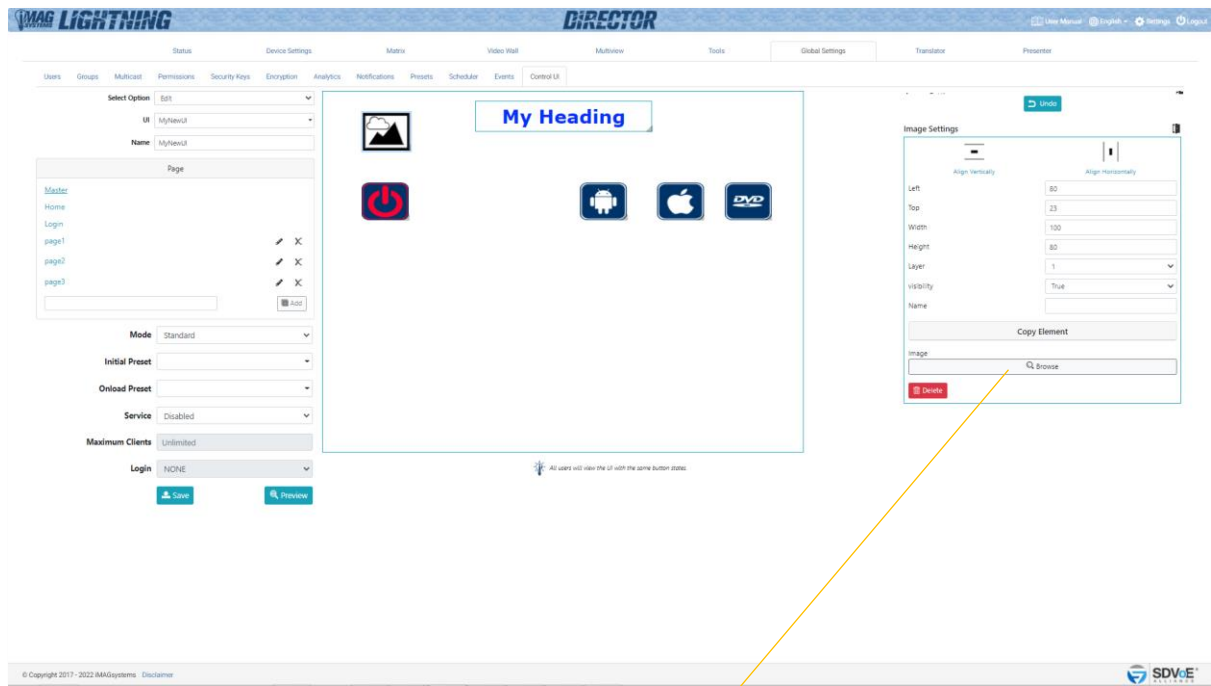
- Align Vertically** and **Align Horizontally** radio buttons.
- Left**: 757
- Top**: 387
- Width**: 100
- Height**: 80
- Layer**: 1 (dropdown)
- visibility**: True (dropdown)
- Name**: (text input)
- Copy Element** button
- Image**: (text input with a search icon and "Browse" button)
- Delete** button (with a trash icon)

Here we are going to place a logo on the Master Page.



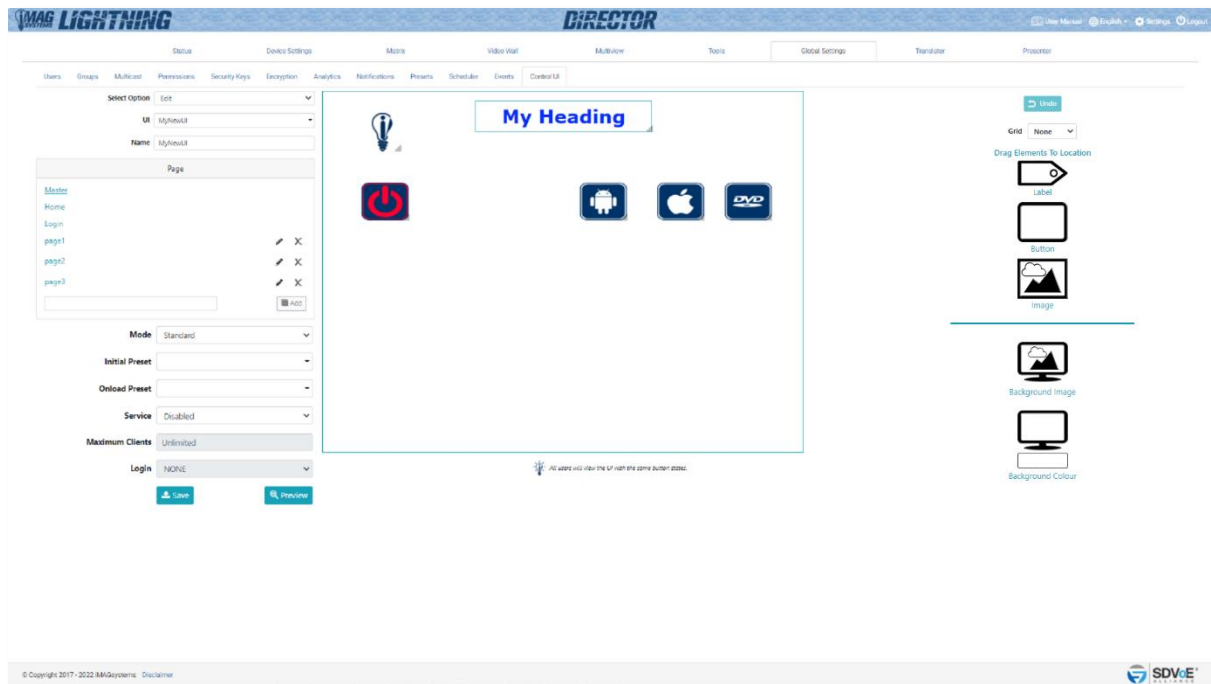
1.12.3.3 Image continued...

Use Browse to select an image from your own images.



1.12.3.3 Image continued...

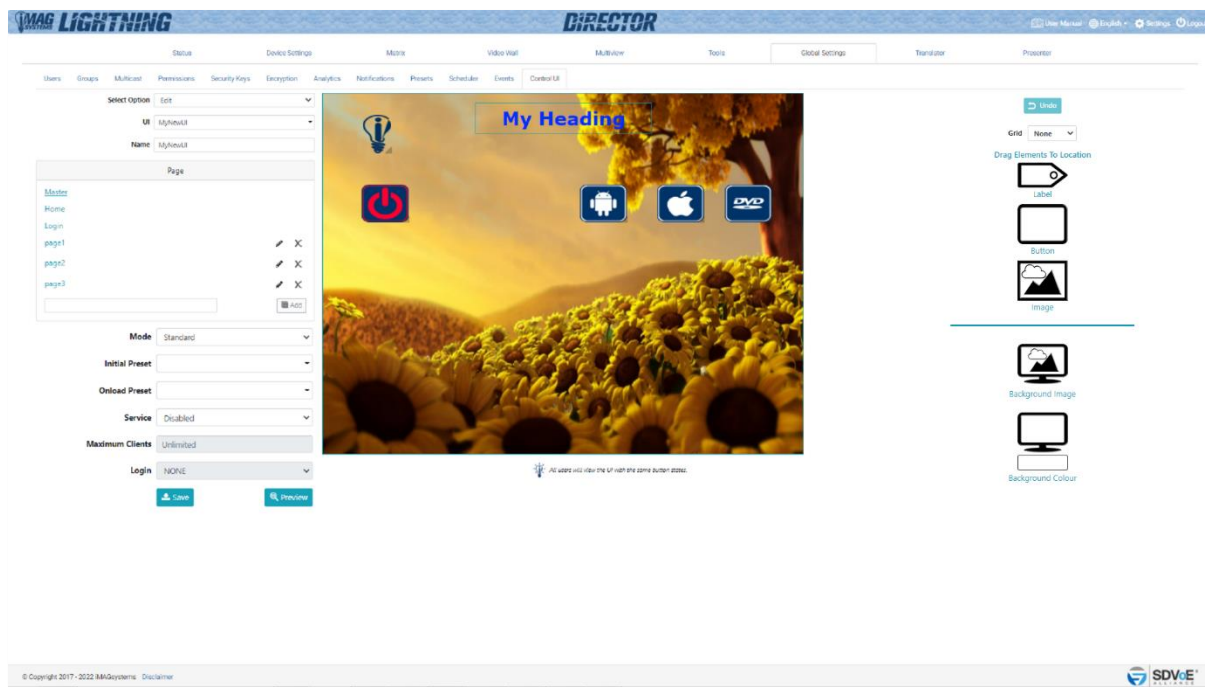
Here a logo image has now been assigned.



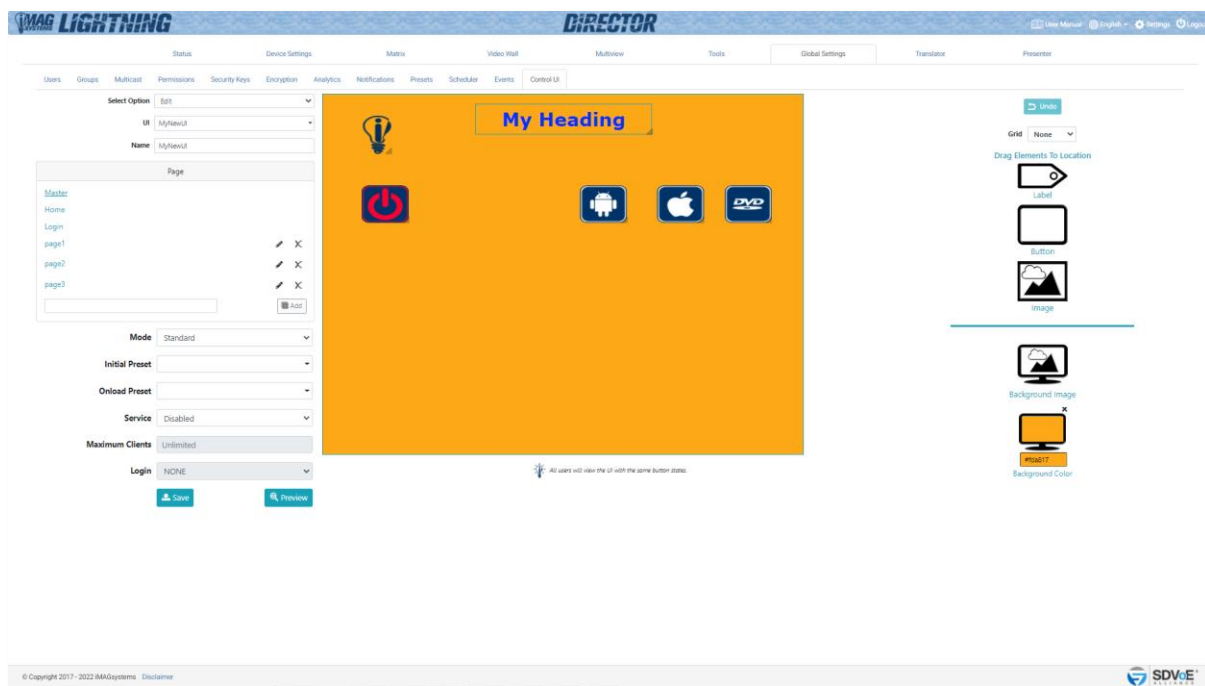
1.12.3.4 Background

Either an image or solid colour can be selected for the page background. Applying a background on the Master Page will be seen on all other pages without a background. Applying a background to any other page than the Master Page will hide the Master Page altogether.

Here a background image has been applied to the Master Page.

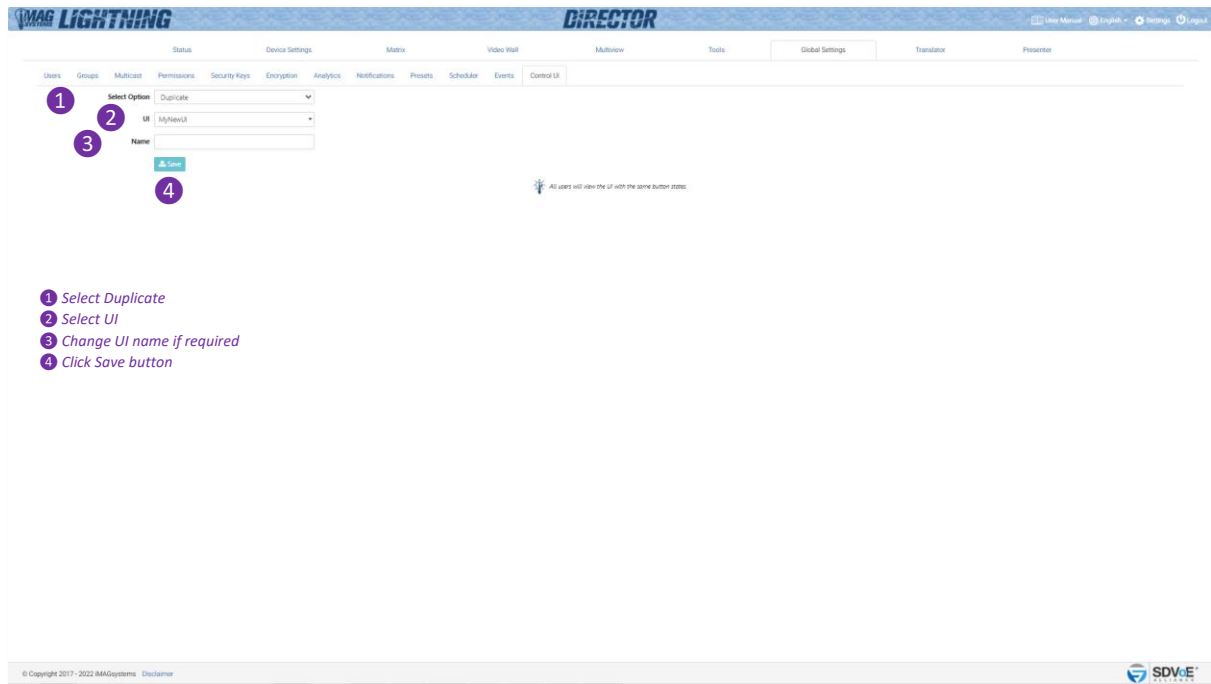


If a solid colour is required then select the Background Colour icon and select a colour from the popup colour picker.



1.12.4 Duplicate

Here you can duplicate an existing UI to be used as a backup or duplicated from a template file that can then be edited.



1 Select Duplicate

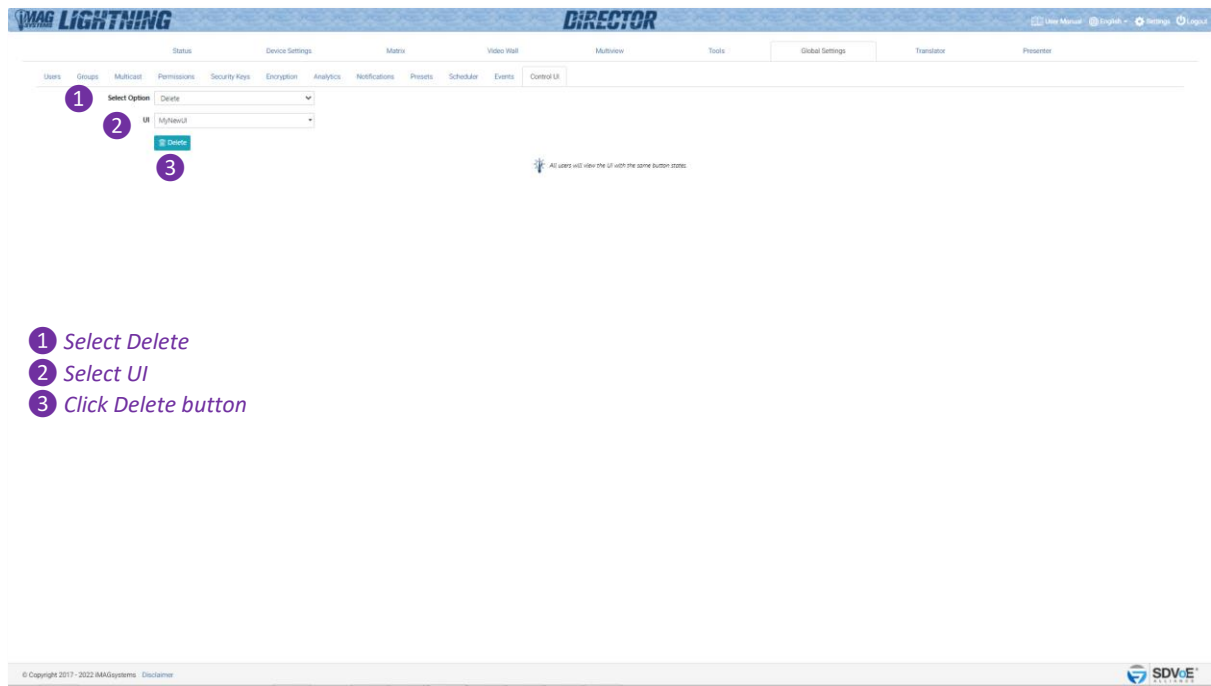
2 Select UI

3 Change UI name if required

4 Click Save button

1.12.5 Delete

To delete an existing UI select option Delete, select the User Interface and then click the Delete button.

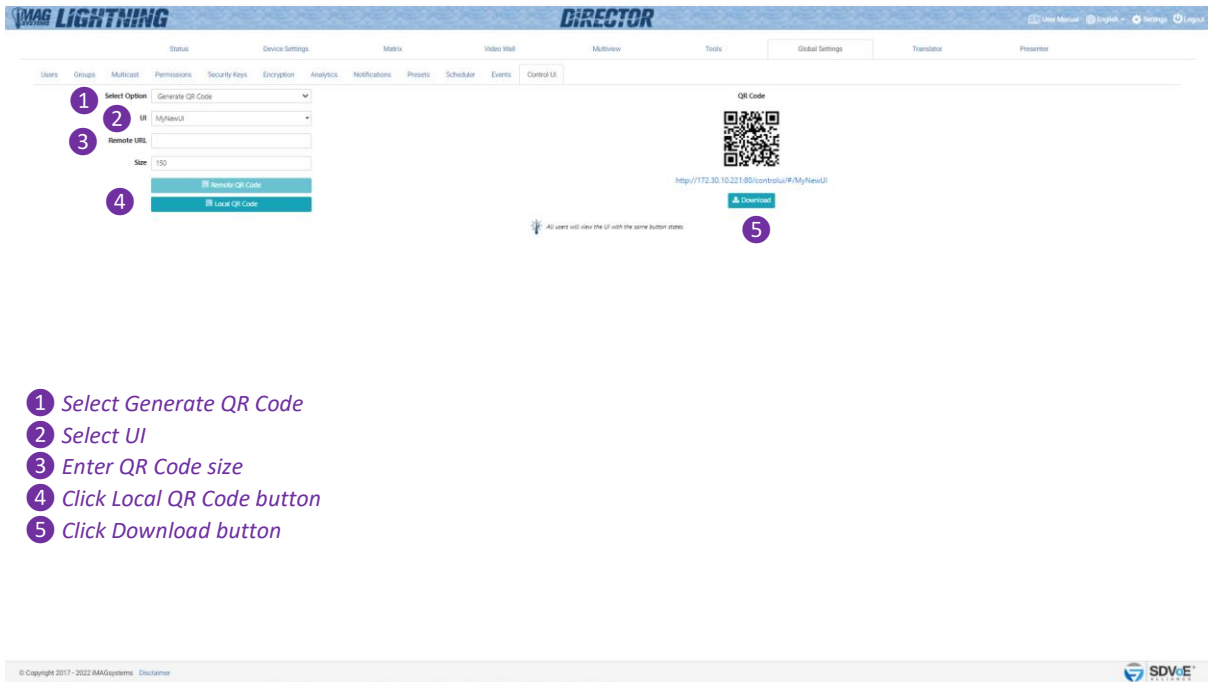


1.12.6 Generate QR Code

QR codes can be generated and downloaded to easily create the URL required to browse to the UI webpage. The size of the QR Code can be set between 100 – 2000px.

1.12.6.1 Generate Local QR Code

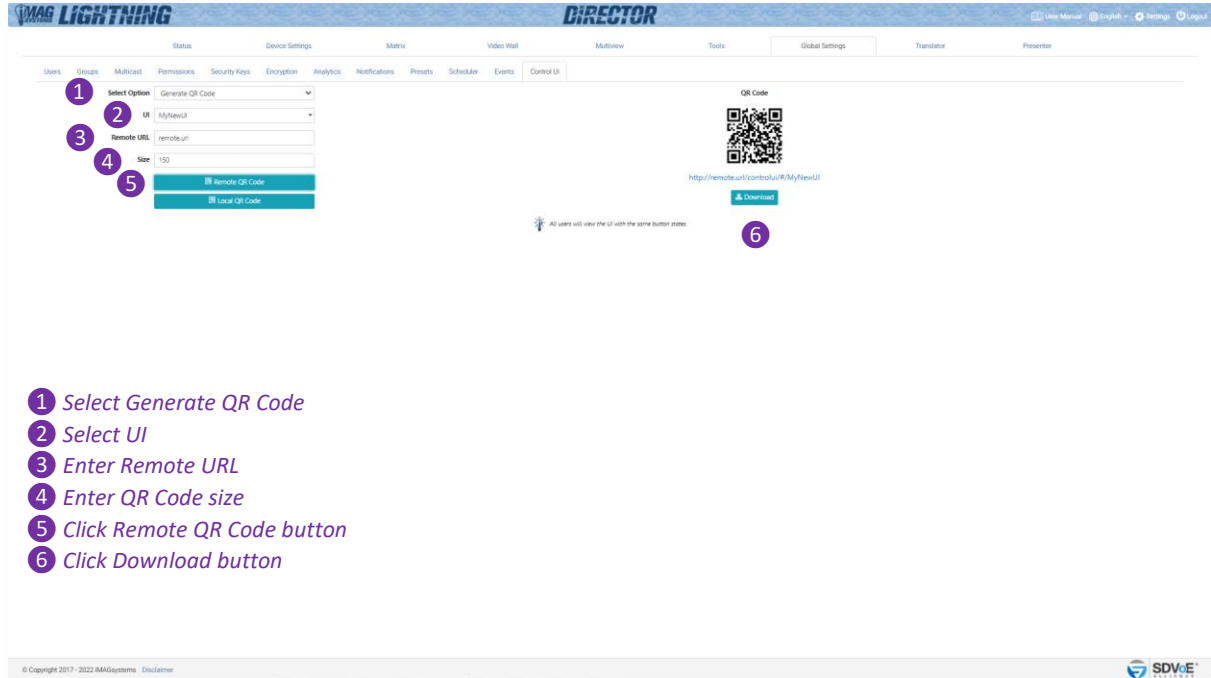
To browse to the User Interface via an internal URL select Local QR Code. The size of the QR Code image can be changed then downloaded to be used in manuals or printed as required.



- 1 Select Generate QR Code
- 2 Select UI
- 3 Enter QR Code size
- 4 Click Local QR Code button
- 5 Click Download button

1.12.6.2 Generate Remote QR Code

To browse to the UI via an external URL enter the details in the External URL box and select Remote QR Code. The size of the QR Code image can be changed then downloaded to be used in manuals or printed as required.

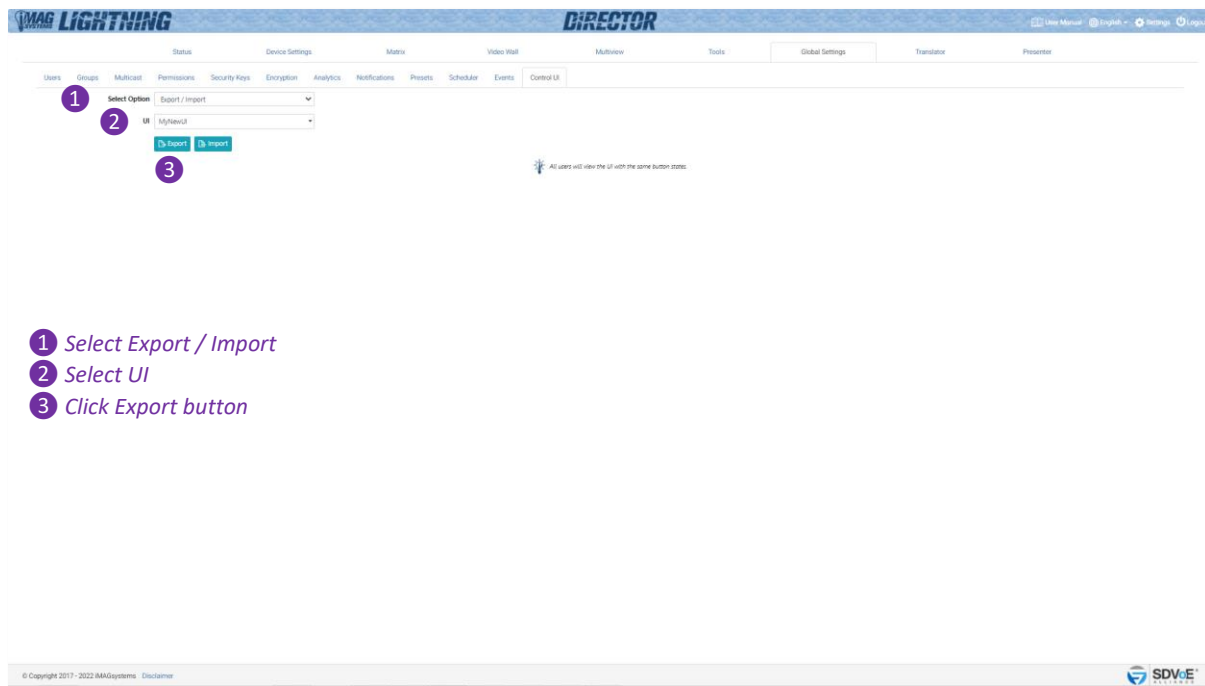


- 1 Select Generate QR Code
- 2 Select UI
- 3 Enter Remote URL
- 4 Enter QR Code size
- 5 Click Remote QR Code button
- 6 Click Download button

1.12.7 Export / Import

To keep a backup of your work select Export / Import then click the Export button.

A *.exp file will be saved to your Downloads folder.

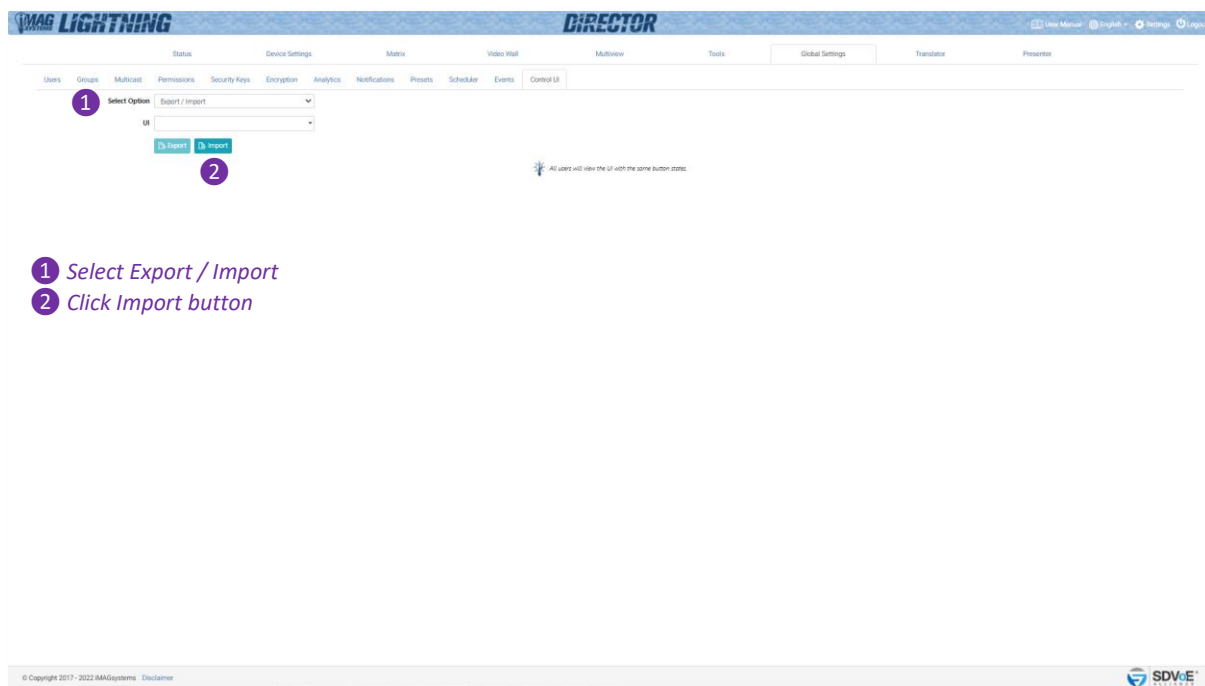


1 Select Export / Import

2 Select UI

3 Click Export button

To import a User Interface click Import then browse and select the *.exp export file to be imported back onto the system.

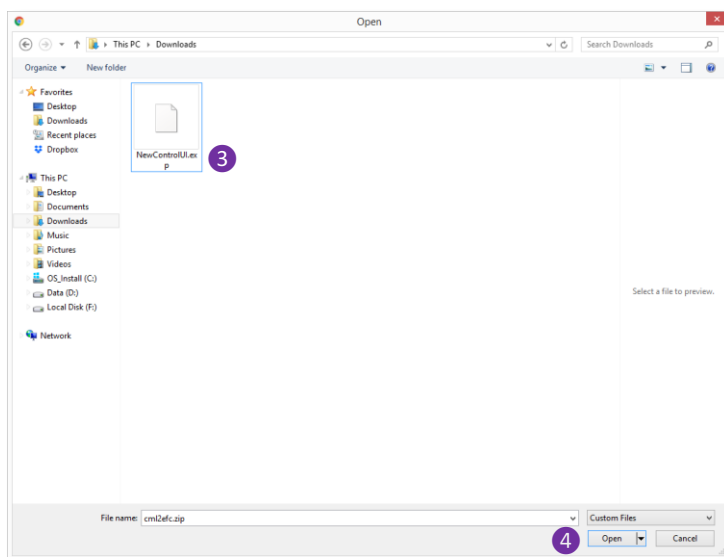


1 Select Export / Import

2 Click Import button

1.12.7 Export / Import continued...

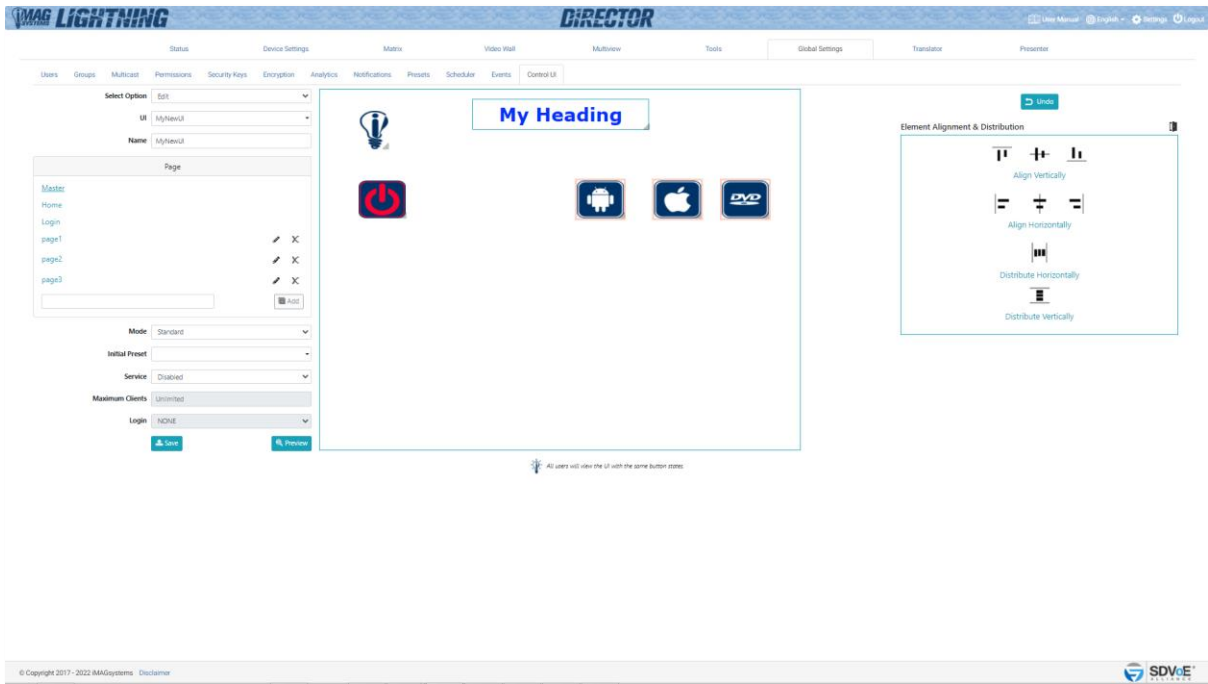
- 3 Select UI file
- 4 Click Open button



1.12.8 Element Alignment



An elements graphical tab provides vertically and horizontally page alignment.



Multiple elements can be aligned with respect to the first selected element.

Click on the first referenced element to select it, then hold Ctrl while selecting further elements to be aligned. An Element Alignment & Distribution panel will then be shown to Align Vertically, Align Horizontally, Distribute Horizontally or Distribute Vertically.

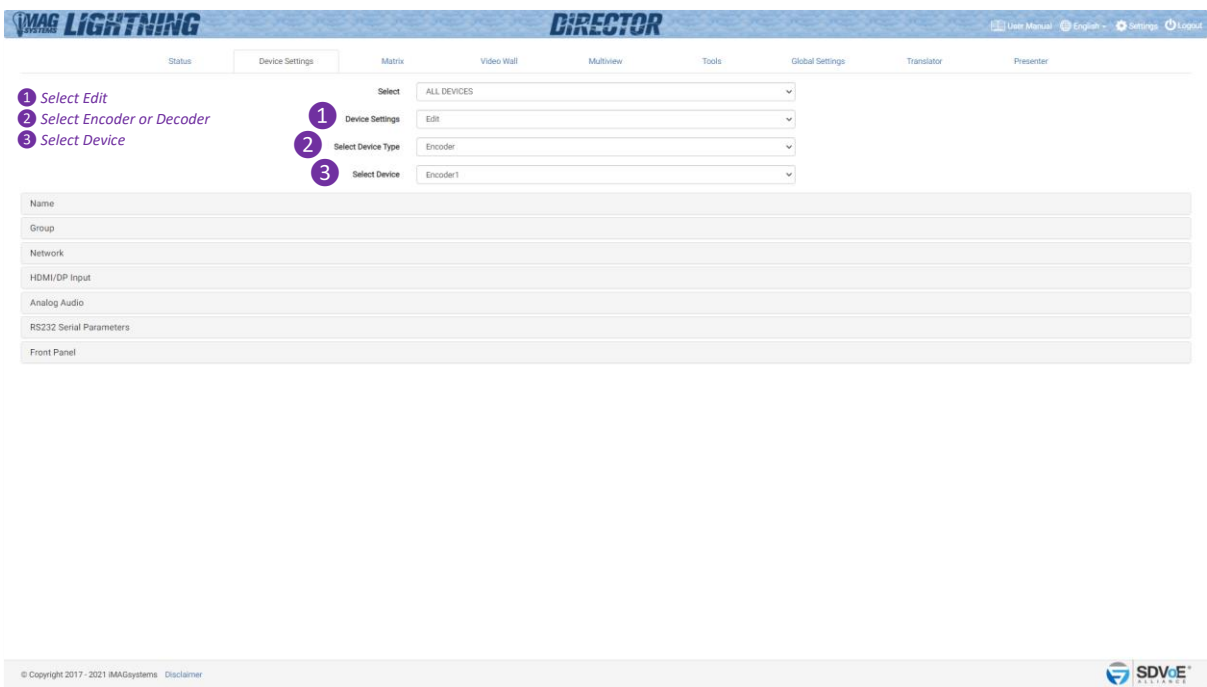
Clicking in white space will deselect selected elements.

2 Device Settings

This is where all the Encoders and Decoders are configured. Encoders and Decoders can be individually configured or all together taking advantage of exporting the csv formatted data and manipulating it as required before importing it back into the system. All changes made in the DeviceExport.csv configuration file will be applied to the Encoders and Decoders.

2.1 Edit Settings

Here you can change the device settings for all Encoders and Decoders on the system.



iMAG LIGHTNING DIRECTOR

User Manual English Settings Logout

Status **Device Settings** Matrix Video Wall Multiview Tools Global Settings Translator Presenter

1 Select Edit
2 Select Encoder or Decoder
3 Select Device

Select ALL DEVICES

1 Device Settings Edit

2 Select Device Type Encoder

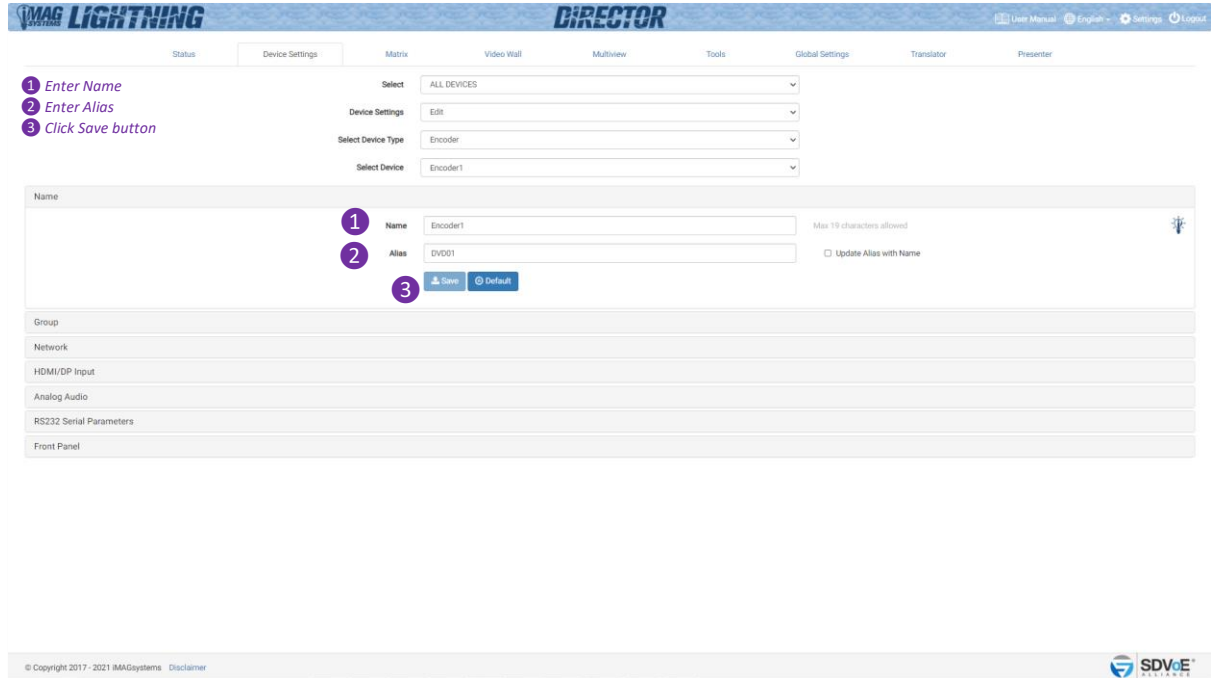
3 Select Device Encoder1

Name
Group
Network
HDMI/DP Input
Analog Audio
RS232 Serial Parameters
Front Panel

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2.1.1 Name

The name of the device is used for control. This is the device name used in API commands. The Alias is a user friendly name displayed in the matrix when a group is selected. Device and Alias names have a maximum of 19 characters and no spaces are allowed.

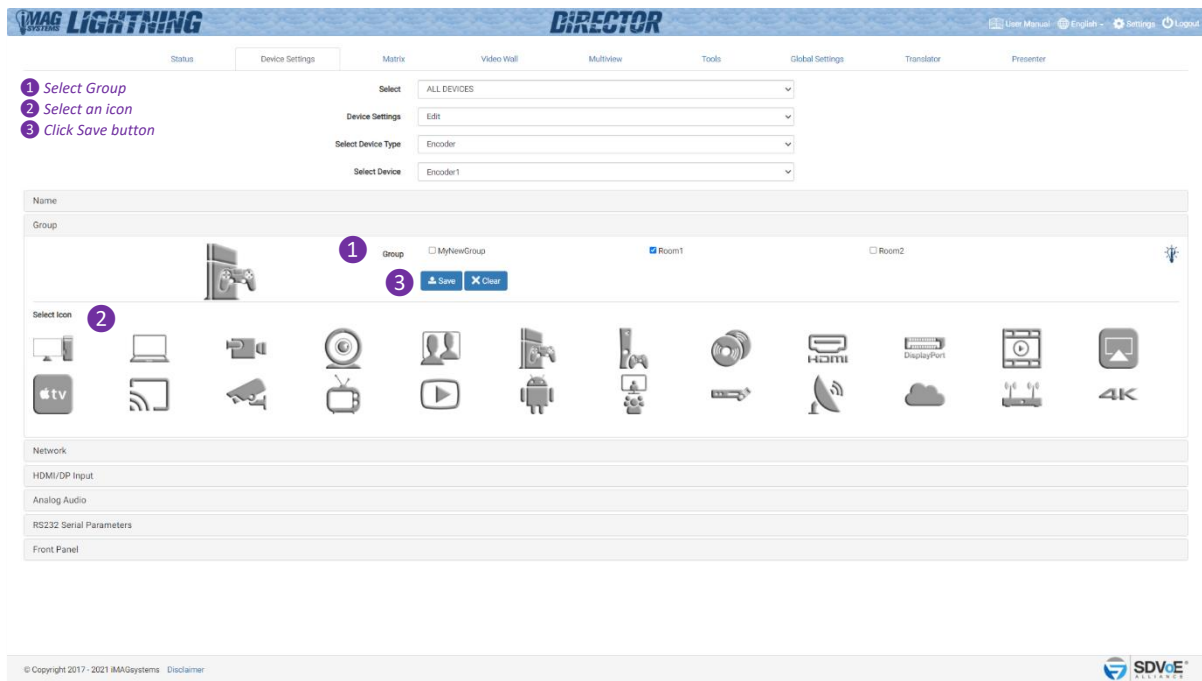


The following devices names cannot be used:

- 'all'
- 'all_rx'
- 'all_tx'
- 'ungrouped'
- 'all_devices'
- Any Group name
- Any Preset name

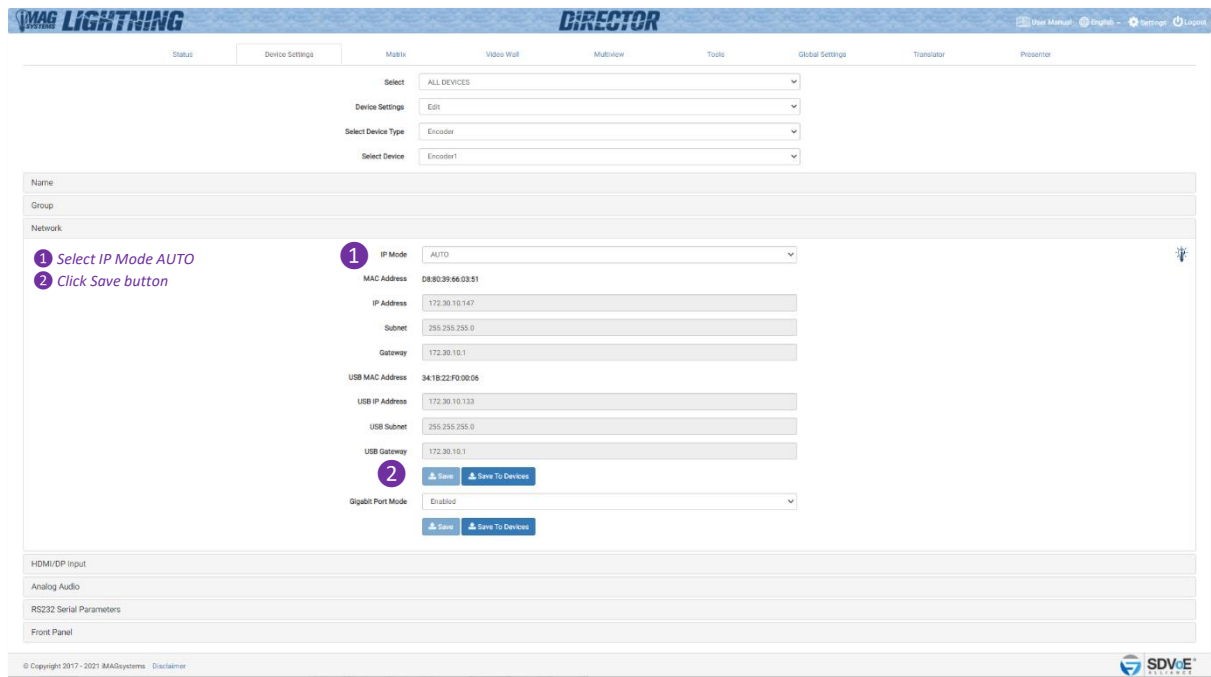
2.1.2 Group

Encoders and Decoders can be assigned to groups. These groups are created from the Global Settings tab. Once an Encoder or Decoder has been placed in a group, an icon can be assigned to it. This icon will then be used on the matrix page once a group is selected.



2.1.3.1 Network (NT2000)

To assign DHCP so the device is automatically assigned an IP address select AUTO.



Network Configuration (NT2000)

1 Select IP Mode **AUTO**

2 Click Save button

MAC Address: 08:80:39:86:02:81

IP Address: 172.30.10.147

Subnet: 255.255.255.0

Gateway: 172.30.10.1

USB MAC Address: 34:16:22:F0:00:05

USB IP Address: 172.30.10.133

USB Subnet: 255.255.255.0

USB Gateway: 172.30.10.1

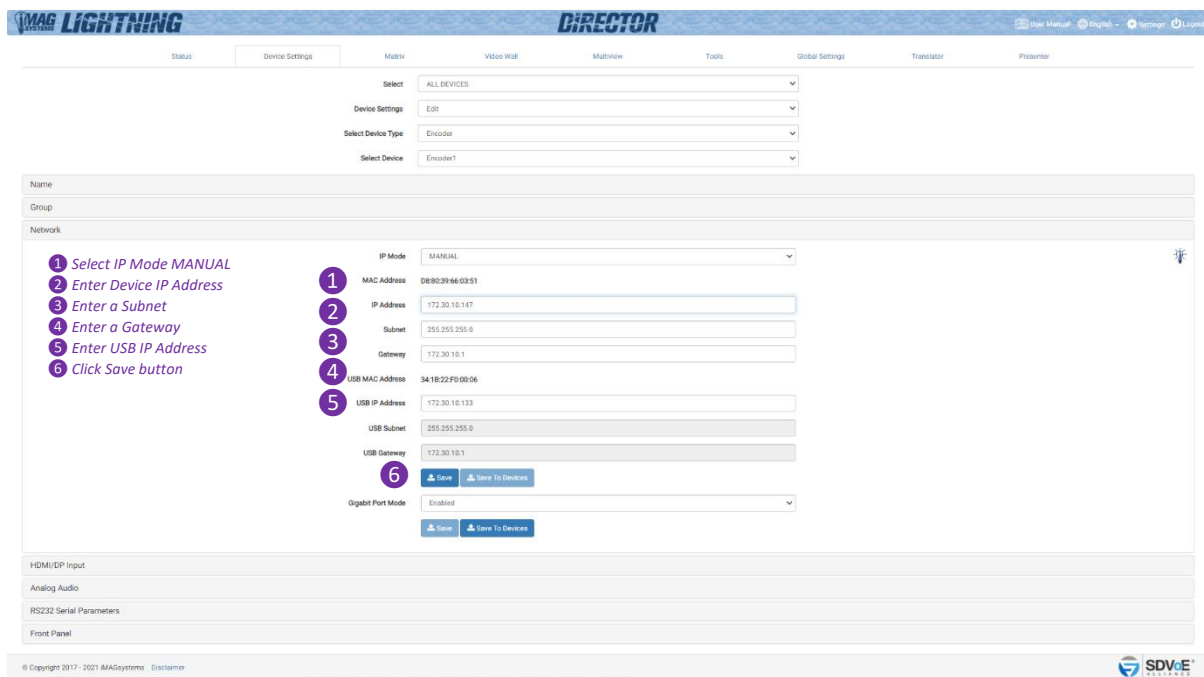
Gigabit Port Mode: Enabled

Buttons: Save, Save To Devices

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2.1.3.1 Network (NT2000) continued...

To assign a static IP address select MANUAL, then enter the details.



1 Select IP Mode MANUAL

2 Enter Device IP Address

3 Enter a Subnet

4 Enter a Gateway

5 Enter USB IP Address

6 Click Save button

IP Mode: MANUAL

MAC Address: D8:8D:39:66:03:51

IP Address: 172.30.10.147

Subnet: 255.255.255.0

Gateway: 172.30.10.1

USB MAC Address: 34:1B:22:F0:00:06

USB IP Address: 172.30.10.133

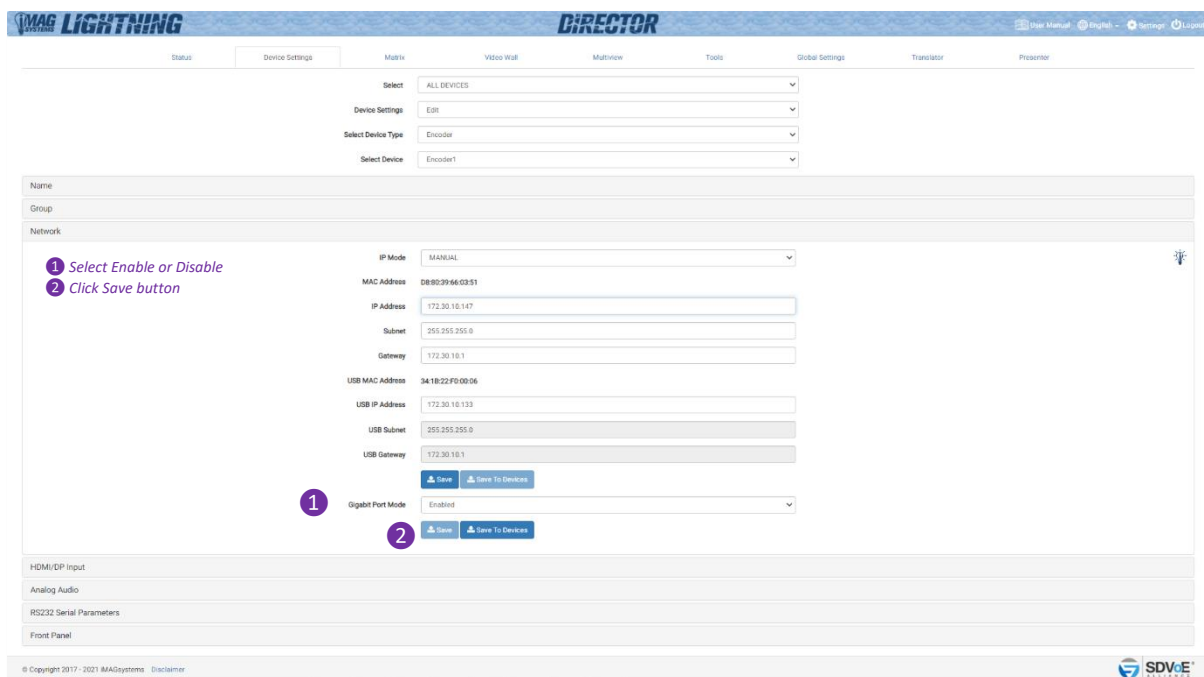
USB Subnet: 255.255.255.0

USB Gateway: 172.30.10.1

Gigabit Port Mode: Enabled

Buttons: Save, Send To Devices

The function of the local 1 Gigabit network port can be enabled or disabled from here.



1 Select Enable or Disable

2 Click Save button

IP Mode: MANUAL

MAC Address: D8:8D:39:66:03:51

IP Address: 172.30.10.147

Subnet: 255.255.255.0

Gateway: 172.30.10.1

USB MAC Address: 34:1B:22:F0:00:06

USB IP Address: 172.30.10.133

USB Subnet: 255.255.255.0

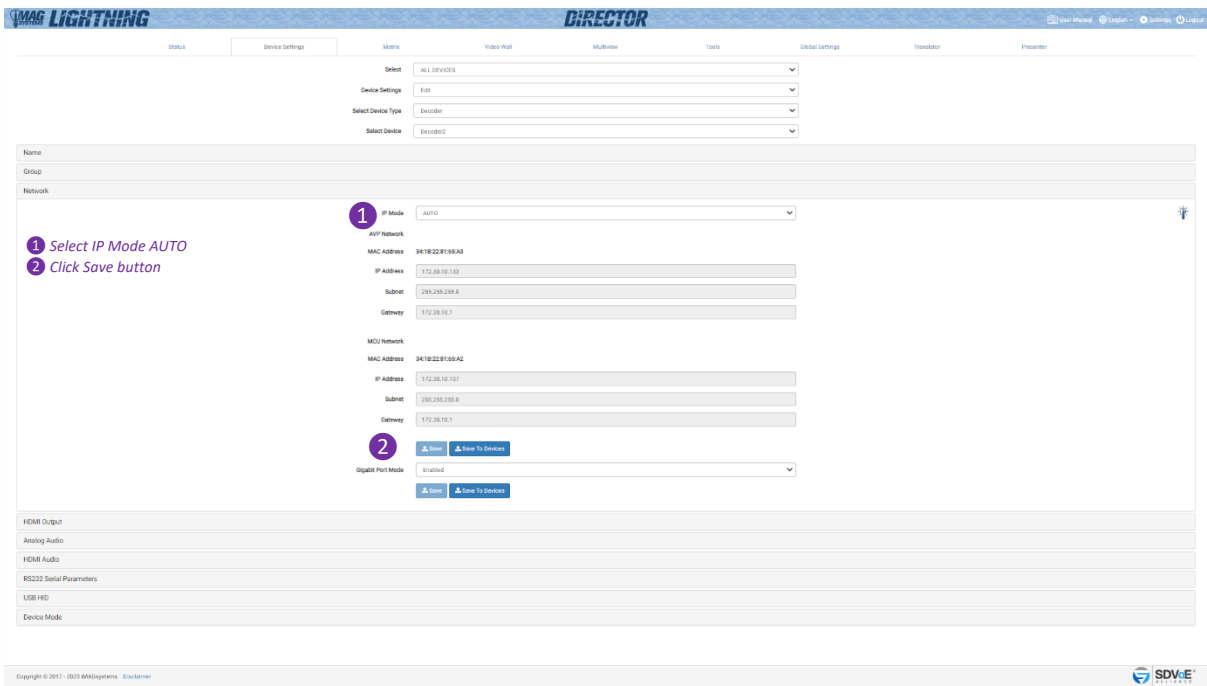
USB Gateway: 172.30.10.1

Gigabit Port Mode: Enabled

Buttons: Save, Send To Devices

2.1.3.2 Network (Transceiver)

To assign DHCP so the device is automatically assigned an IP address select AUTO.



1 Select IP Mode AUTO
2 Click Save button

1 IP Mode: AUTO

AVP Network

MAC Address: 841822B165A2

IP Address: 172.28.16.133

Subnet: 255.255.255.0

Gateway: 172.28.16.1

MCU Network

MAC Address: 841822B165A2

IP Address: 172.28.16.137

Subnet: 255.255.255.0

Gateway: 172.28.16.1

2 Save | Back To Defaults

Global Port Mode: Enabled

Save | Back To Defaults

HDMI Output

Analog Audio

HDMI Audio

RS232 Serial Parameters

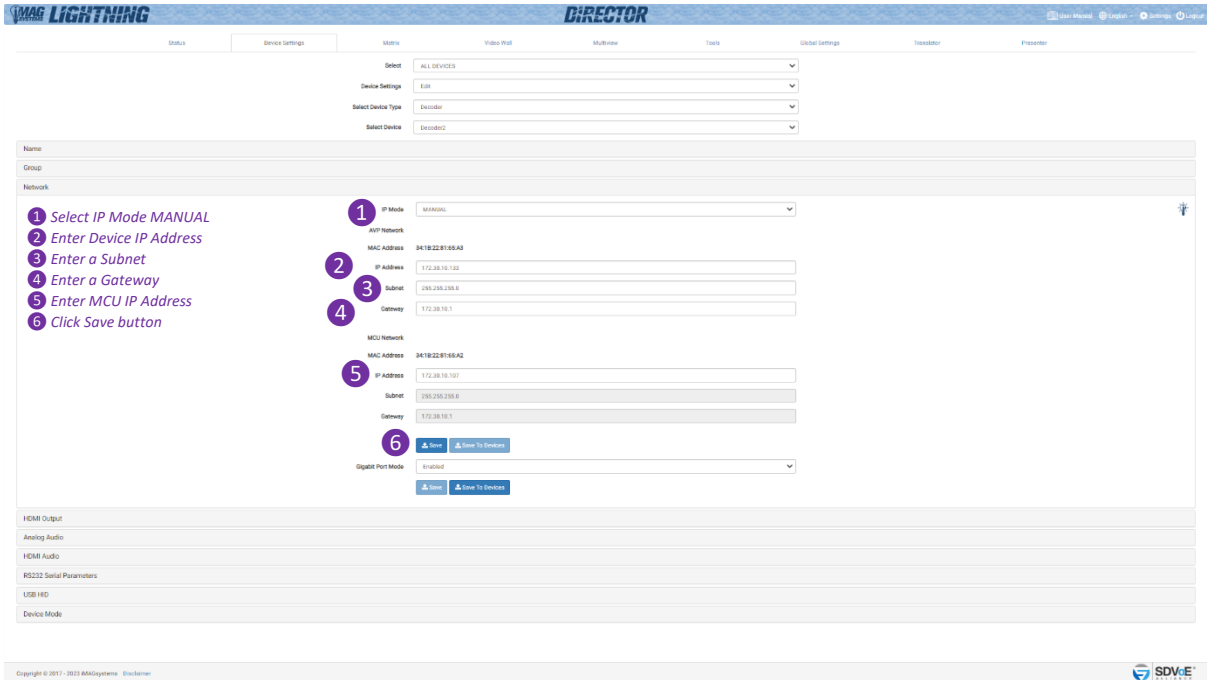
USB HID

Device Mode

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To assign a static IP address select MANUAL, then enter the details.



1 Select IP Mode MANUAL
2 Enter Device IP Address
3 Enter a Subnet
4 Enter a Gateway
5 Enter MCU IP Address
6 Click Save button

1 IP Mode: MANUAL

AVP Network

MAC Address: 841822B165A2

IP Address: 172.28.16.133

Subnet: 255.255.255.0

Gateway: 172.28.16.1

MCU Network

MAC Address: 841822B165A2

IP Address: 172.28.16.137

Subnet: 255.255.255.0

Gateway: 172.28.16.1

6 Save | Back To Defaults

Global Port Mode: Enabled

Save | Back To Defaults

HDMI Output

Analog Audio

HDMI Audio

RS232 Serial Parameters

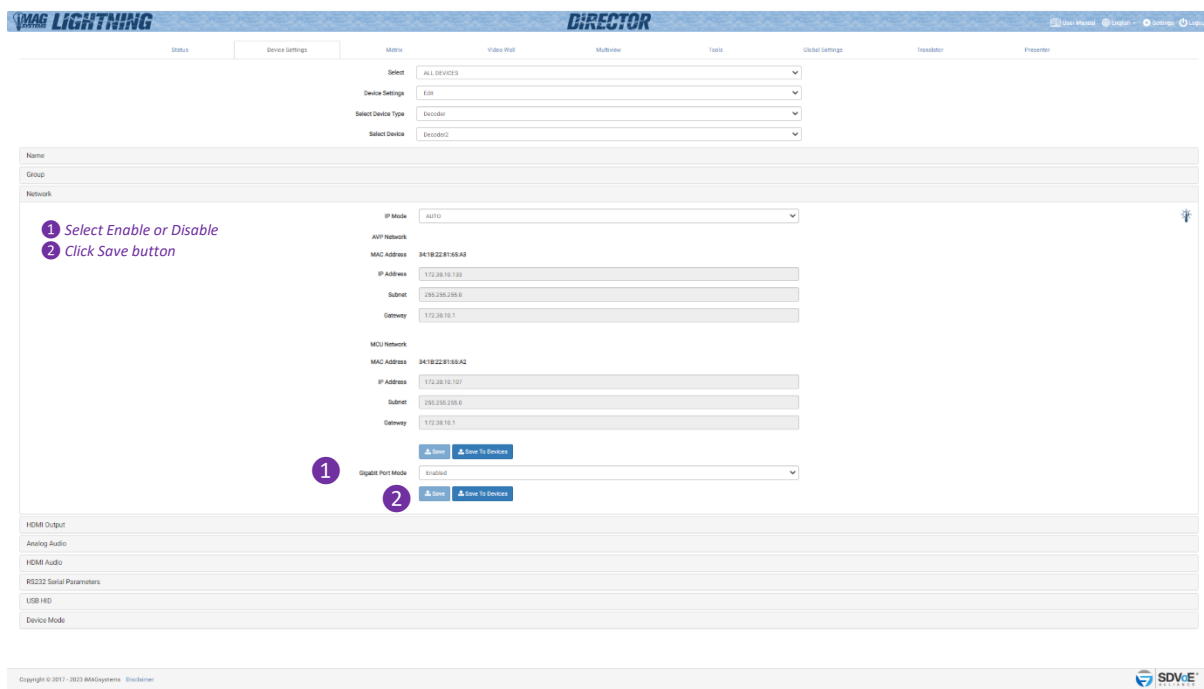
USB HID

Device Mode

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2.1.3.2 Network (Transceiver) continued...



1 Select Enable or Disable
2 Click Save button

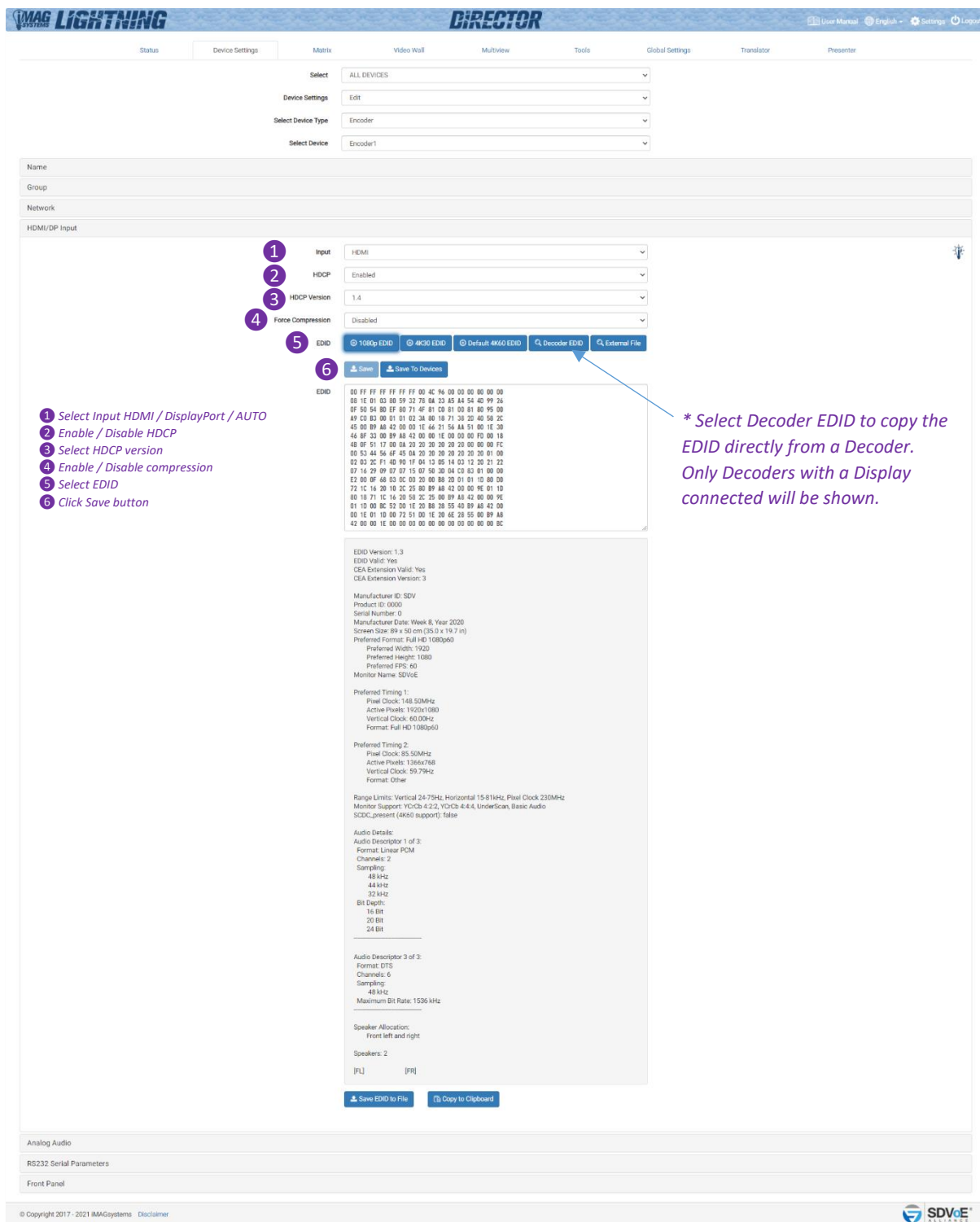
1
2

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The function of the local 1 Gigabit network port can be enabled or disabled from here.

2.1.4 HDMI/DP Input (Encoder)

Here you assign settings to the video input of an Encoder.



1 Select Input HDMI / DisplayPort / AUTO

2 Enable / Disable HDCP

3 Select HDCP version

4 Enable / Disable compression

5 Select EDID

6 Click Save button

* Select Decoder EDID to copy the EDID directly from a Decoder. Only Decoders with a Display connected will be shown.

2.1.5 HDMI Output (Decoder)

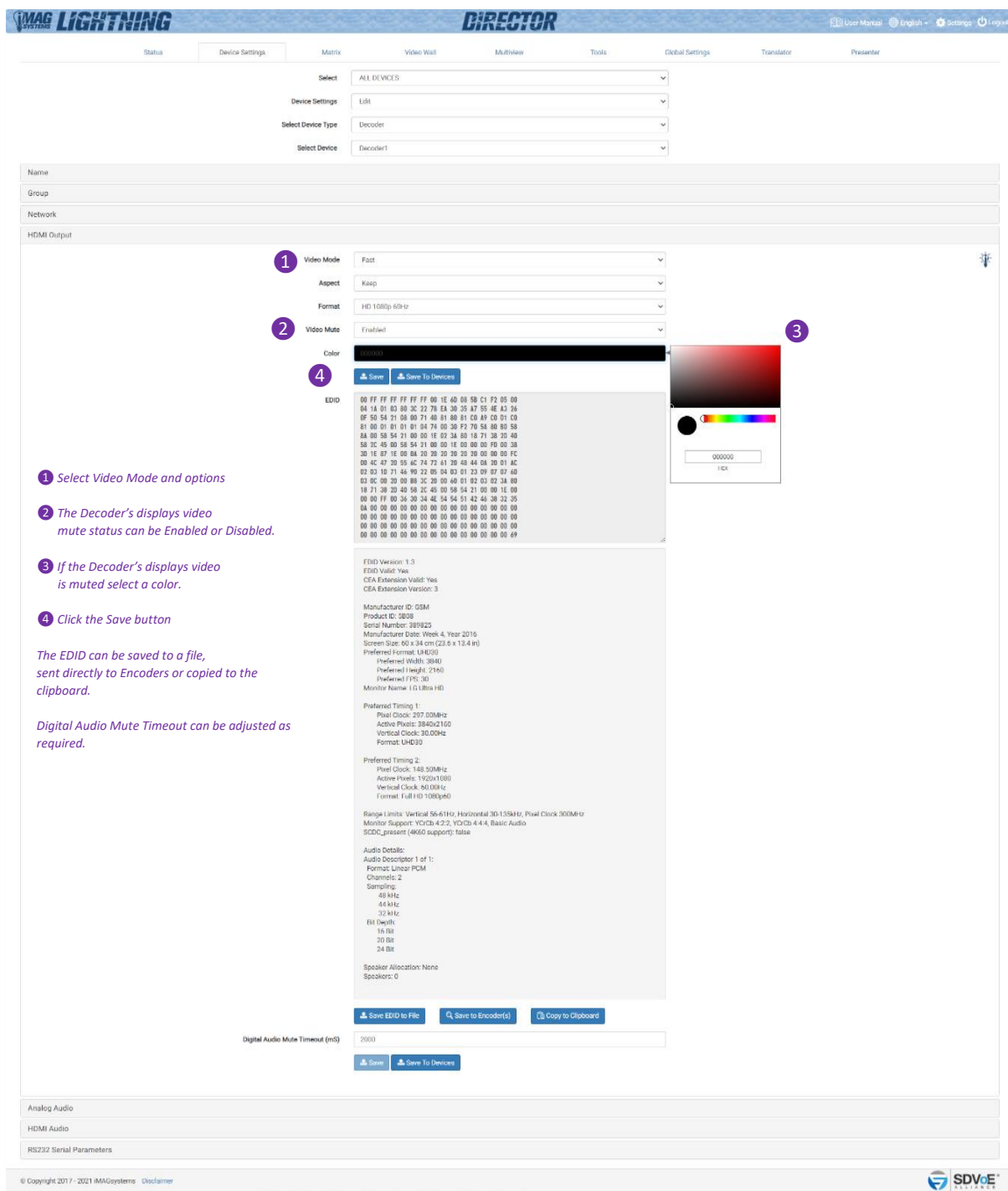
Here you can view and save the EDID from the Decoder. The EDID can also be loaded to selected Encoders.

The Decoder's output Video Mode can be set from here as either Fast, Sync or Sync (scale).

Video Mute status and color can also be set from here. This mute feature is only supported when the Decoder is in a display mode other than Sync (scale).

Digital audio mute timeout can also be adjusted if required. This is the amount of time in milliseconds the HDMI audio is muted after a join is made to prevent audio popping. Some displays require longer than others to prevent audible noise during a join. The default is 600 with a range from 0 to 5000.

2.1.5 HDMI Output (Decoder) continued...



1 Select Video Mode and options

2 The Decoder's displays video mute status can be Enabled or Disabled.

3 If the Decoder's displays video is muted select a color.

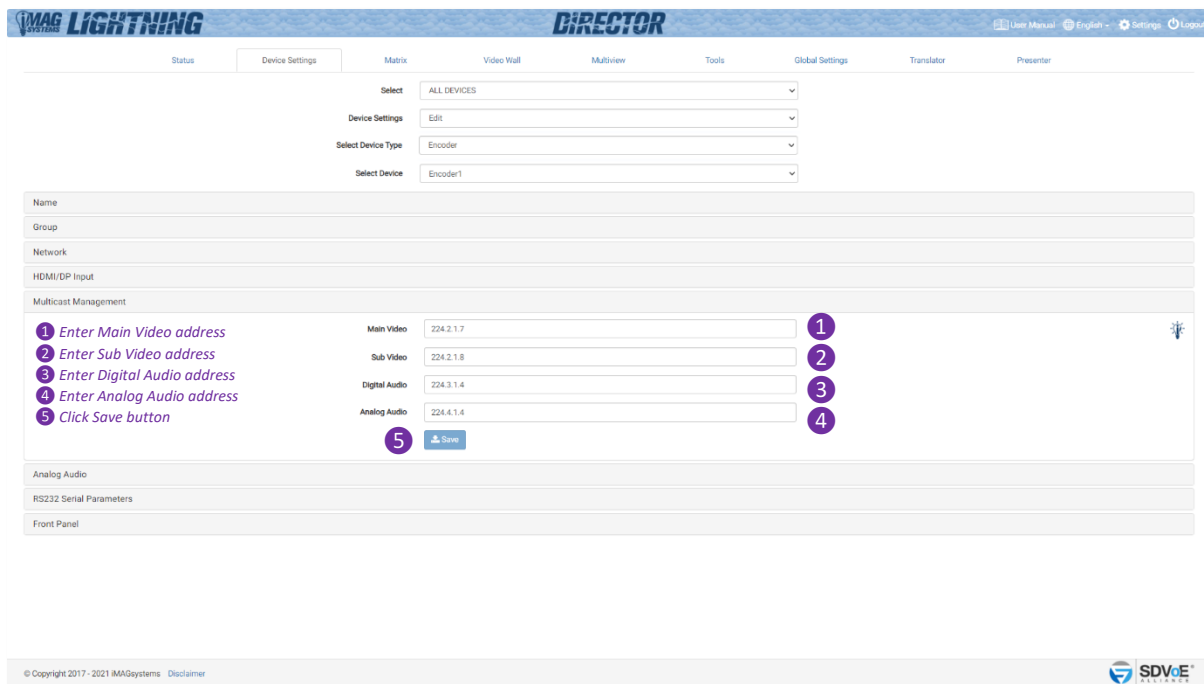
4 Click the Save button

The EDID can be saved to a file, sent directly to Encoders or copied to the clipboard.

Digital Audio Mute Timeout can be adjusted as required.

2.1.6 Multicast Management

When Multicast has been set to MANUAL from the Global Settings \ Multicast tab, an Encoder will show the Multicast Management tab. Multicast Addresses will be automatically assigned and these can be manually changed as required. Make sure Multicast addresses are assigned in the same range as specified on the Global Settings \ Multicast tab.



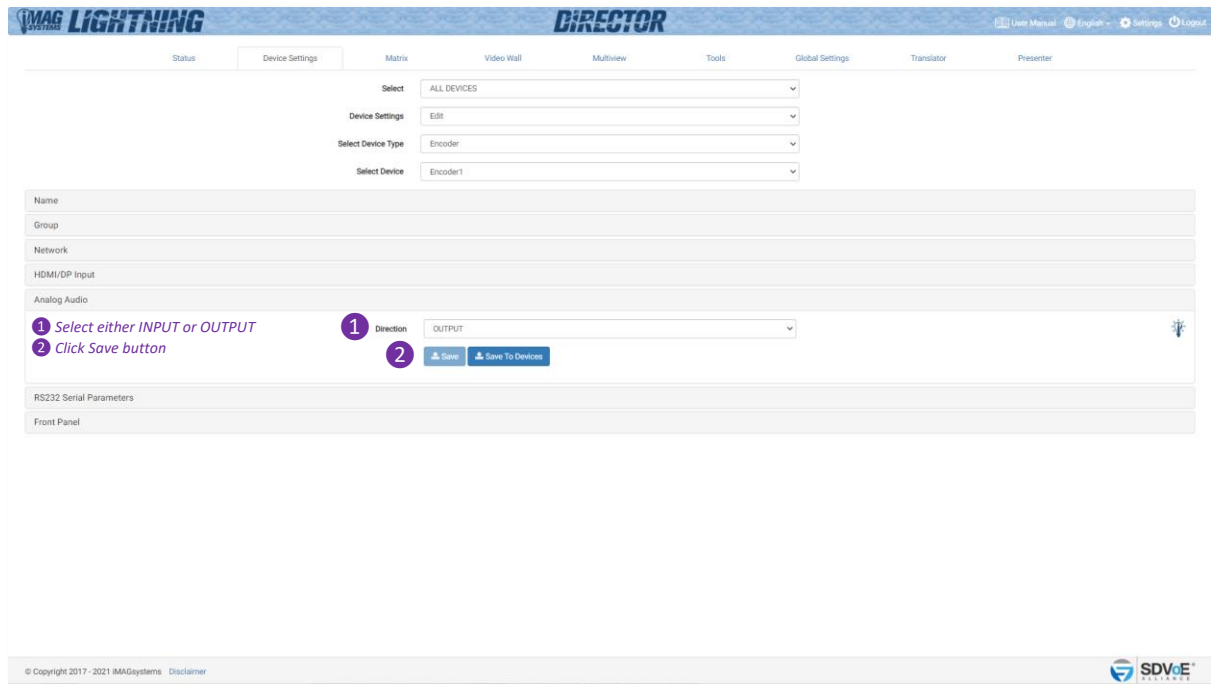
The screenshot shows the 'DIRECTOR' web interface with the 'Global Settings' tab selected. Under 'Global Settings', the 'Multicast Management' section is active. It contains the following fields and instructions:

- Main Video:** 224.2.1.7 (Callout 1: Enter Main Video address)
- Sub Video:** 224.2.1.8 (Callout 2: Enter Sub Video address)
- Digital Audio:** 224.3.1.4 (Callout 3: Enter Digital Audio address)
- Analog Audio:** 224.4.1.4 (Callout 4: Enter Analog Audio address)
- Save:** A blue button with a save icon (Callout 5: Click Save button)

Other tabs visible in the interface include Status, Device Settings, Matrix, Video Wall, Multiview, Tools, Translator, and Presenter. The footer shows copyright information for 2017-2021 iMAGsystems and the SDVoE logo.

2.1.7 Analog Audio (Encoder)

The 3.5mm analog audio jack of an Encoder can work as either an input or an output.
Below is the settings page of a dedicated Encoder or Transceiver set for Encoder mode:

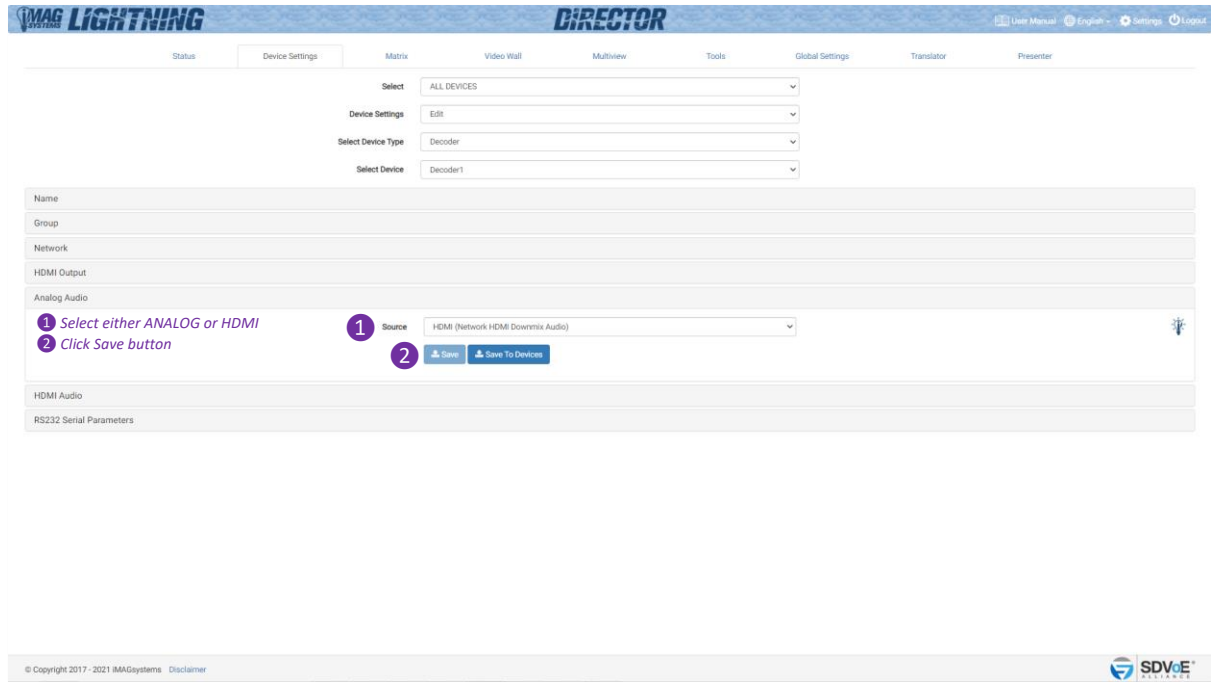


The screenshot displays the 'DIRECTOR' web interface with the 'Device Settings' tab selected. The interface includes a top navigation bar with links for Status, Device Settings, Matrix, Video Wall, Multiview, Tools, Global Settings, Translator, and Presenter. Below the navigation bar, there are several dropdown menus for configuration: 'Select' (set to ALL DEVICES), 'Device Settings' (set to Edit), 'Select Device Type' (set to Encoder), and 'Select Device' (set to Encoder1). The main content area is divided into sections: Name, Group, Network, HDMI/DP Input, and Analog Audio. The Analog Audio section is currently active and shows a 'Direction' dropdown menu set to 'OUTPUT'. Two numbered callouts are present: '1 Select either INPUT or OUTPUT' pointing to the Direction dropdown, and '2 Click Save button' pointing to the 'Save' button. Below the Direction dropdown, there are two buttons: 'Save' and 'Save To Devices'. The bottom of the interface shows the 'RS232 Serial Parameters' and 'Front Panel' sections. The footer contains the copyright information '© Copyright 2017 - 2021 iMAGsystems Disclaimer' and the 'SDVoE' logo.

2.1.8 Analog Audio (Decoder)

The 3.5mm analog audio jack of a Decoder can output analog audio either from the HDMI or Analog sources. To de-embed the HDMI audio select HDMI otherwise the analog audio source of an Encoder will be used.

Below is the settings page of a dedicated Decoder or Transceiver set for Decoder mode:

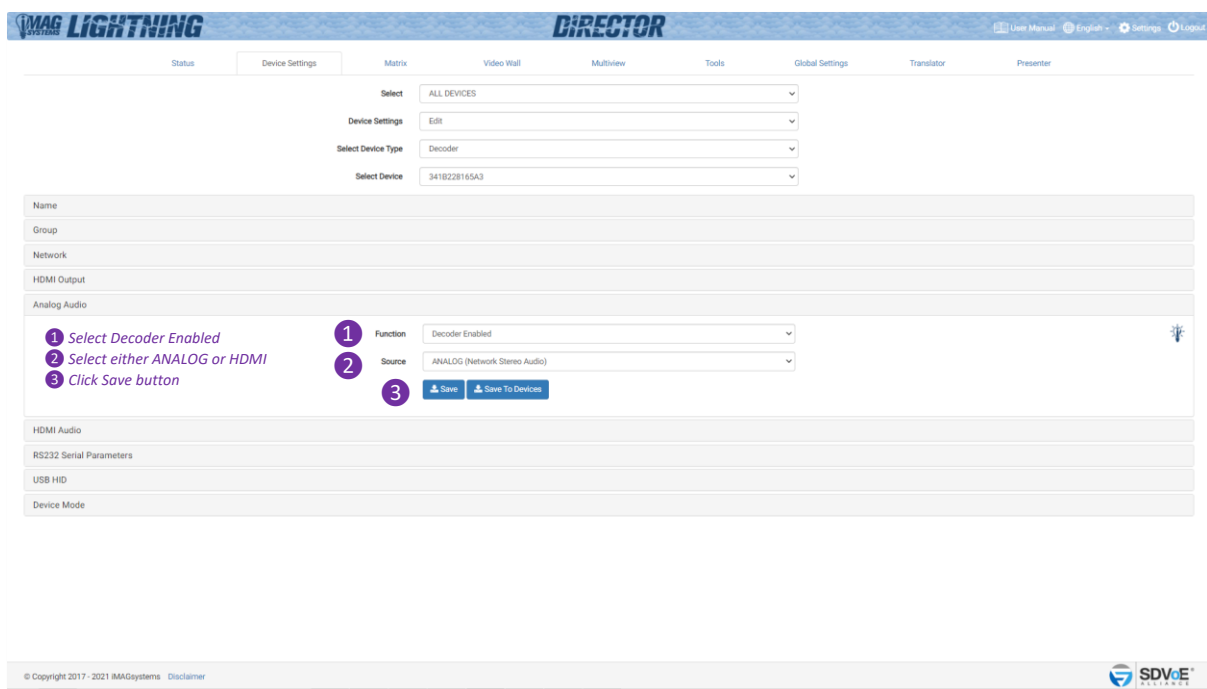


The screenshot displays the 'DIRECTOR' web interface with the 'Device Settings' tab selected. The 'Select' dropdown is set to 'ALL DEVICES', 'Device Settings' is 'Edit', 'Select Device Type' is 'Decoder', and 'Select Device' is 'Decoder1'. The 'Name' field is empty. The 'Group' field is empty. The 'Network' field is empty. The 'HDMI Output' field is empty. The 'Analog Audio' section has a 'Source' dropdown menu set to 'HDMI (Network HDMI Downmix Audio)'. Below the dropdown are two buttons: 'Save' and 'Save To Devices'. Numbered callouts 1 and 2 are present: 1 points to the 'Source' dropdown, and 2 points to the 'Save' button. The footer shows '© Copyright 2017 - 2021 iMAGsystems Disclaimer' and the 'SDVoE' logo.

2.1.9 Analog Audio (Transceiver)

A Transceiver in true transceiver mode with both Encoder and Decoder modes at the same time will share the single physical analog audio jack.

Below is the Decoder settings page of a Transceiver set for both Encoder and Decoder modes: To assign analog audio as a Decoder function select 'Decoder Enabled', then select the source as either HDMI or ANALOG.

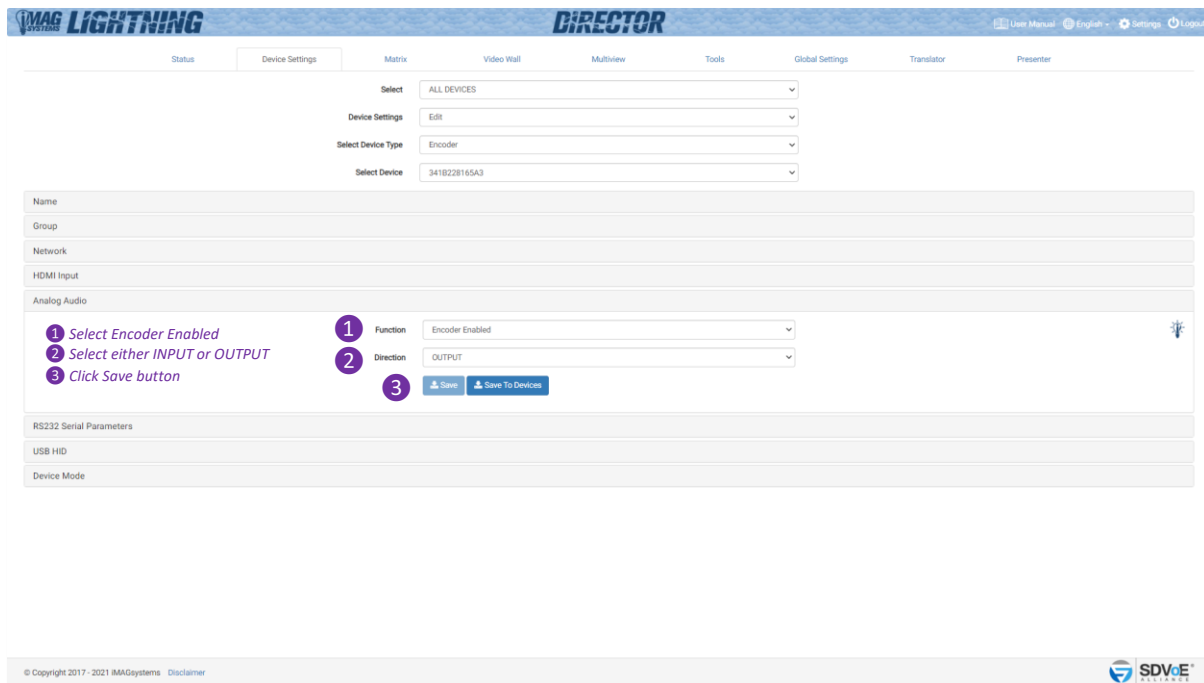


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2.1.9 Analog Audio (Transceiver) continued...

Below is the Encoder settings page of a Transceiver set for both Encoder and Decoder modes: To assign analog audio as an Encoder function select 'Encoder Enabled', then select the direction as either an INPUT or OUTPUT.

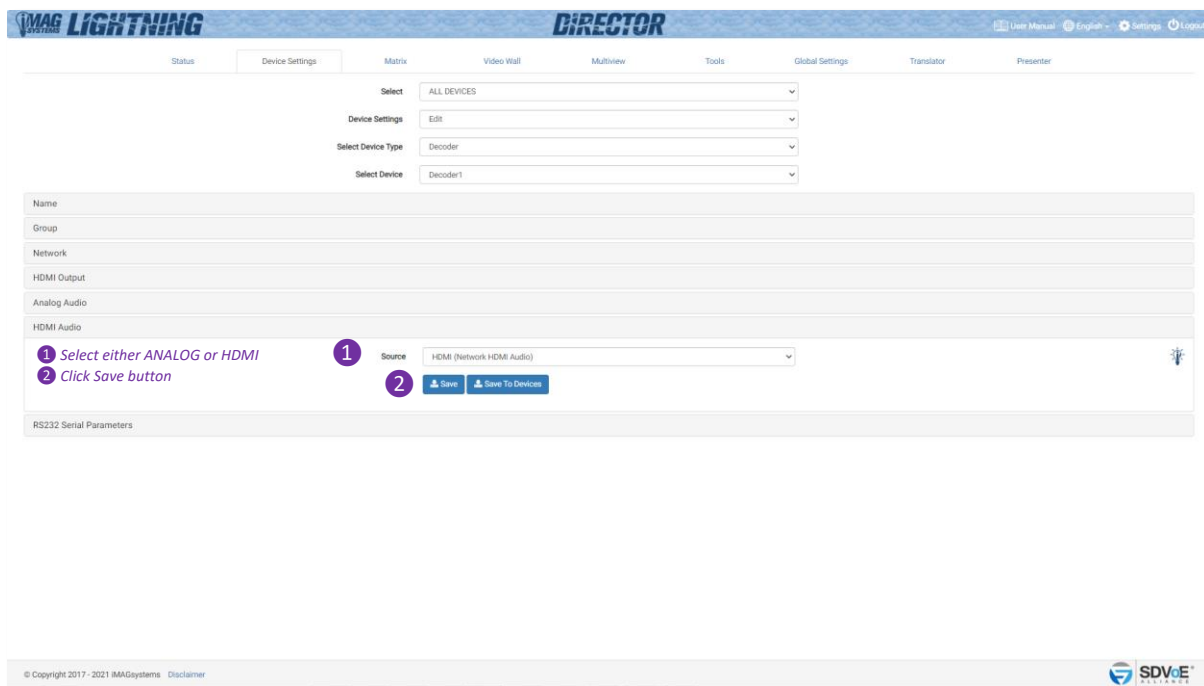


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2.1.10 HDMI Audio

The audio of the HDMI can be either the original HDMI audio or the analog audio from an Encoder.



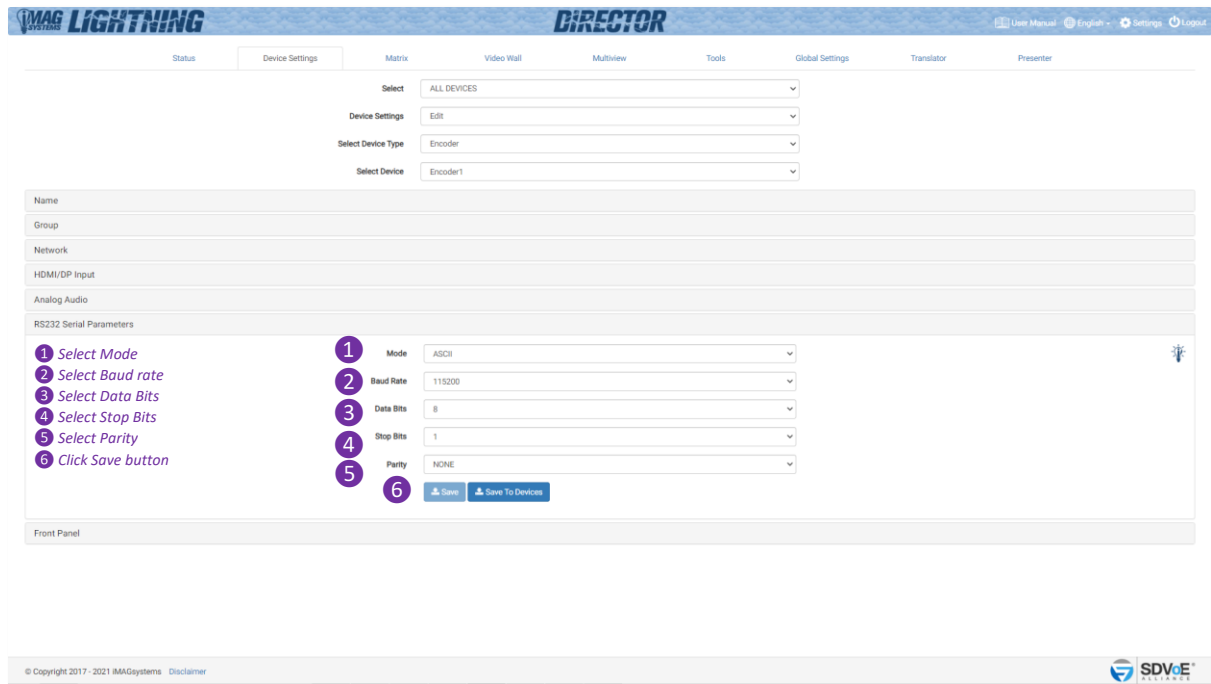
DIRECTOR LIGHTNING

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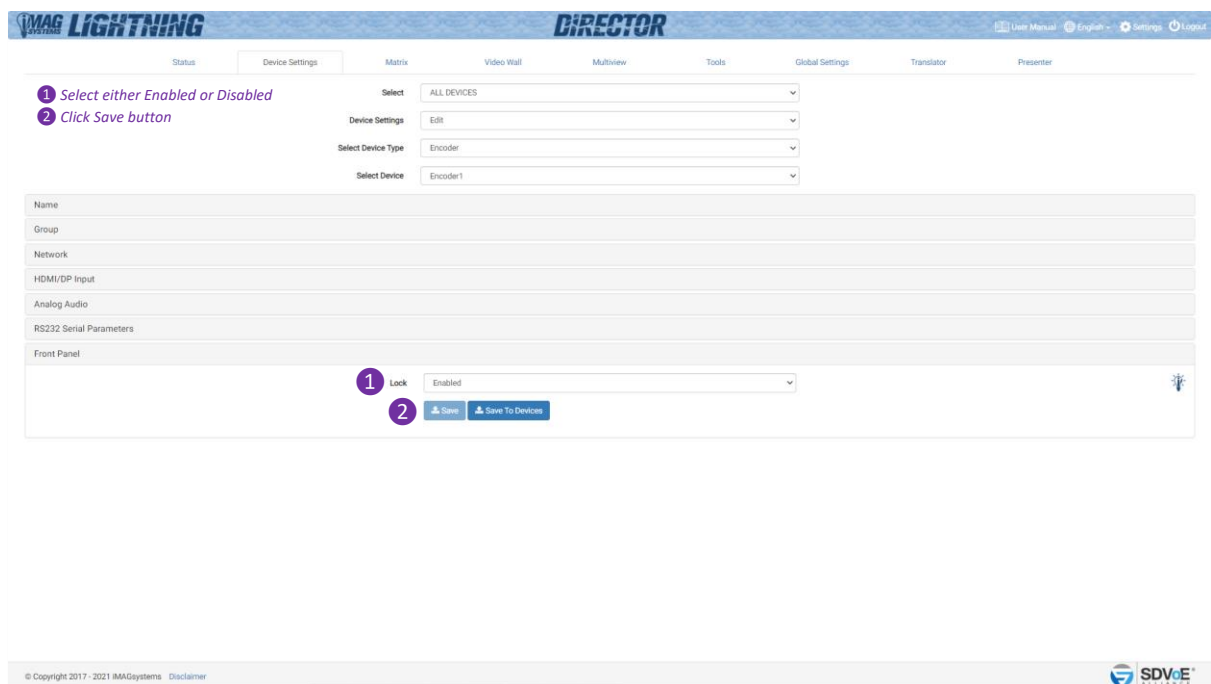
2.1.11 RS232 Serial Parameters

Here you configure the parameters for the serial RS232 port. Select the mode of communication as either ASCII or HEX. This will ensure the device feedback can be compared in the correct format.



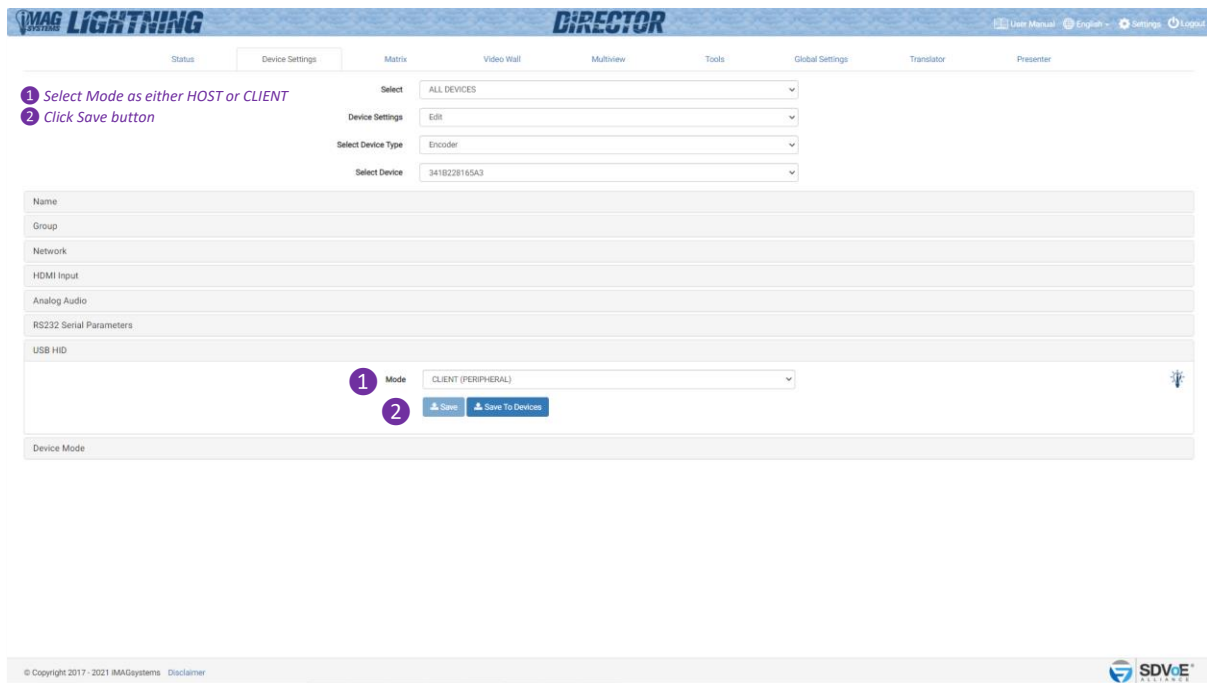
2.1.12 Front Panel

The front panel buttons of an Encoder can be enabled or disabled.



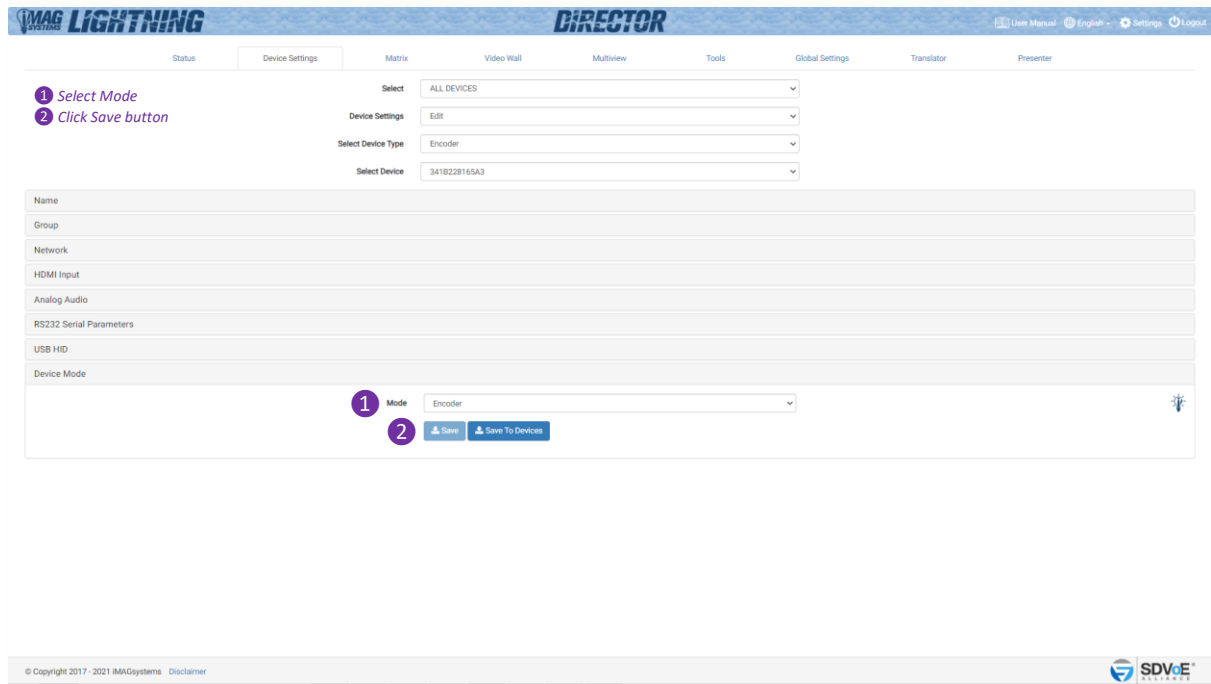
2.1.13 USB HID

Transceiver devices using HID USB can be configured either as a HOST or CLIENT depending upon being a source or destination. HOST would be a computer or destination device while CLIENT would be a peripheral device such as a mouse as a source device.



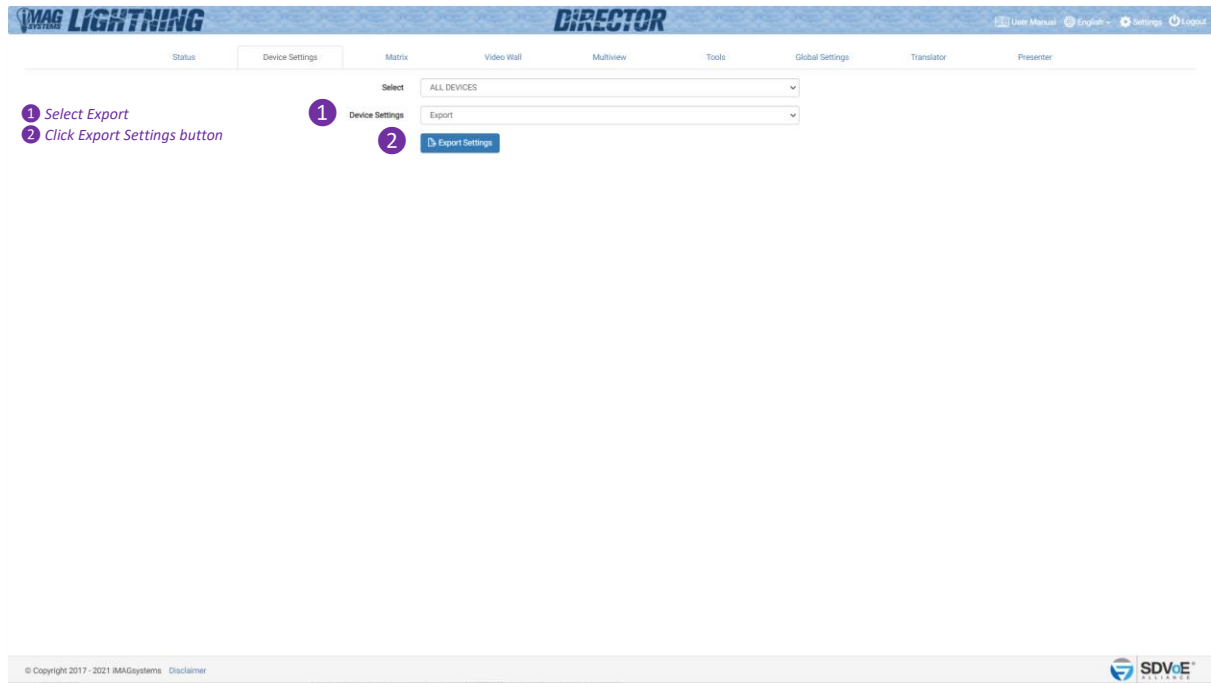
2.1.14 Device Mode

Device Mode is only available on Transceiver devices. The transceiver can be configured as an Encoder or Decoder.



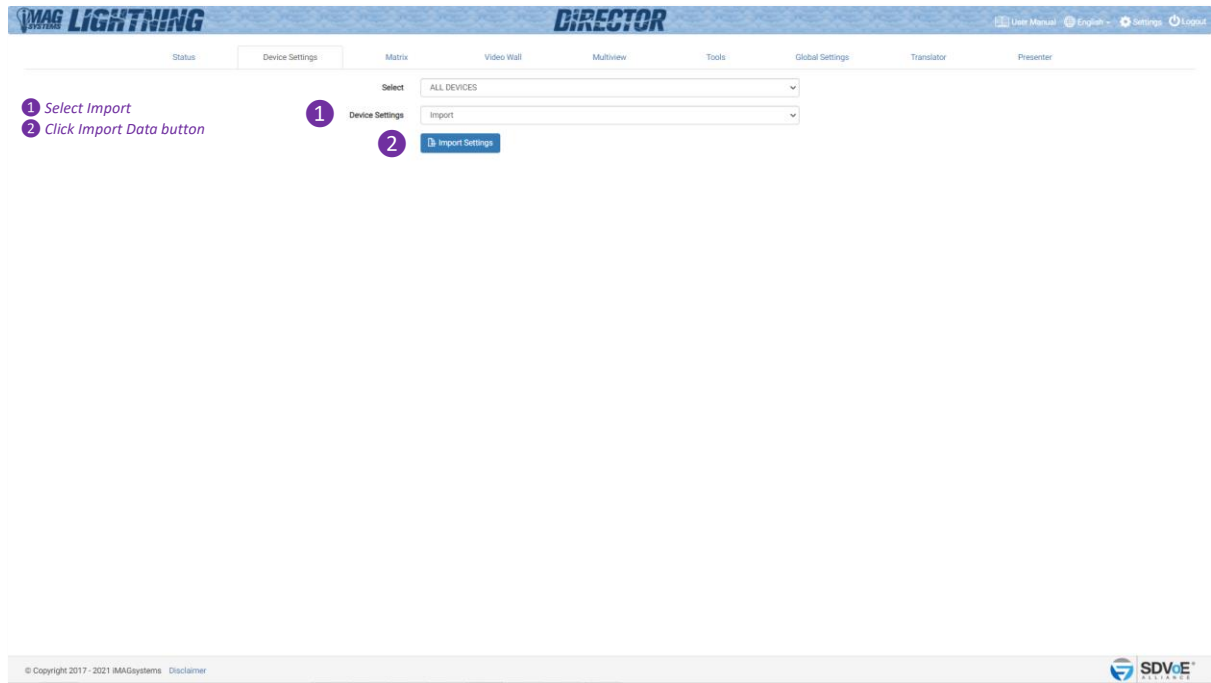
2.2 Export Settings

The current settings of all the Encoders and Decoders can be exported to a csv formatted file to be used as a configuration backup or be used to reconfigure the Encoders and Decoders by changing the required data and importing it back into the SDVoE Director Controller. A file named "DeviceExport.csv" will be exported to your Downloads folder.

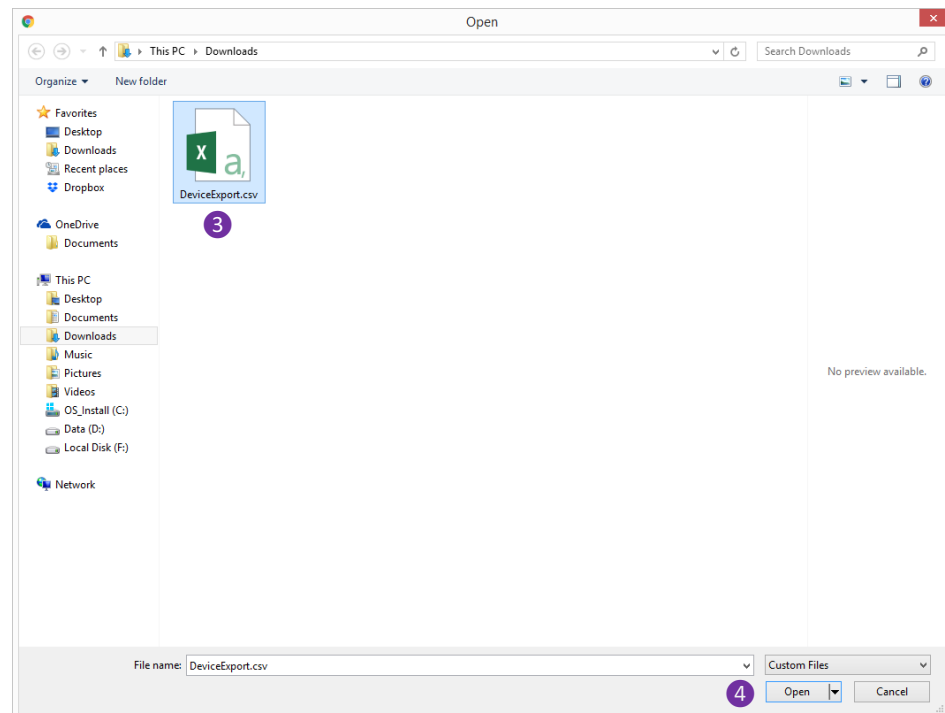


2.3 Import Settings

The exported device settings file can be imported back into the system from here. Any device configuration changes made to the DeviceExport.csv will be applied once the file has been imported. This may take some time depending on the amount of configuration changes that need to be performed.



- 3 Select file
- 4 Click Open button



3 Status

The Status tab contains information about how an Encoder or Decoder is currently functioning. Streams can also be stopped, started or frame rates halved to manage bandwidth.

Encoders and Decoders can be filtered by groups to limit the number of devices being displayed.

The status of all Encoders and Decoders can be exported to a csv formatted file using the “Export Status Report” button located at the top of the page. A StatusExport.csv file will be saved to your Downloads folder.

Icons are used to visually indicate the status of a device as follows:



Device is disconnected from the network.



Device is connected to the network, however, if the device is an Encoder it has no source, and if it is a Decoder it has no display connected.



Encoder is online and has a source connected.



Decoder is online and has a display connected.



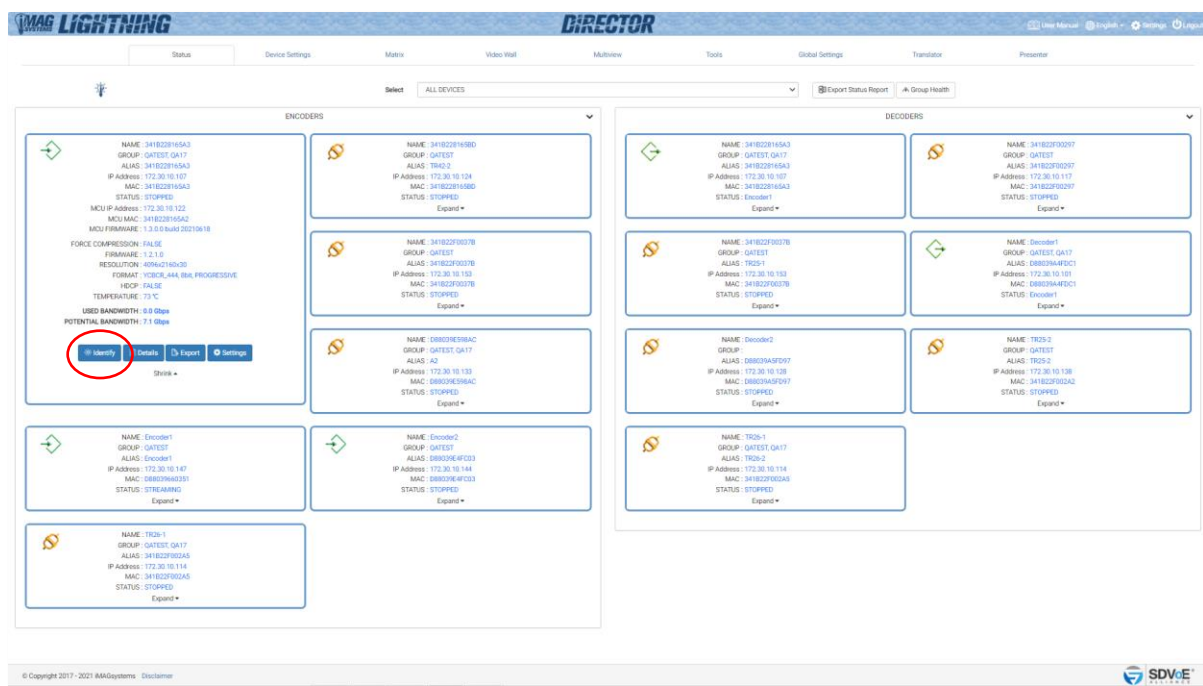
Device error.



Device has a network issue and has timed out.

3.1 Identify

To help physically find an Encoder or Decoder the LED's on the front panel will flash for 30 seconds after the Identify button has been clicked or OSD device name will appear on the display.



The screenshot shows the 'Status' tab of the iMAG DIRECTOR LIGHTNING interface. It displays a grid of device status cards for Encoders and Decoders. The first Encoder card is highlighted with a red circle around the 'Identify' button. The cards show details such as Name, Group, Alias, IP Address, MAC, Status, and various technical specifications like Resolution, Format, and Temperature. The interface also includes navigation tabs at the top and a sidebar on the left.

3.2 Details

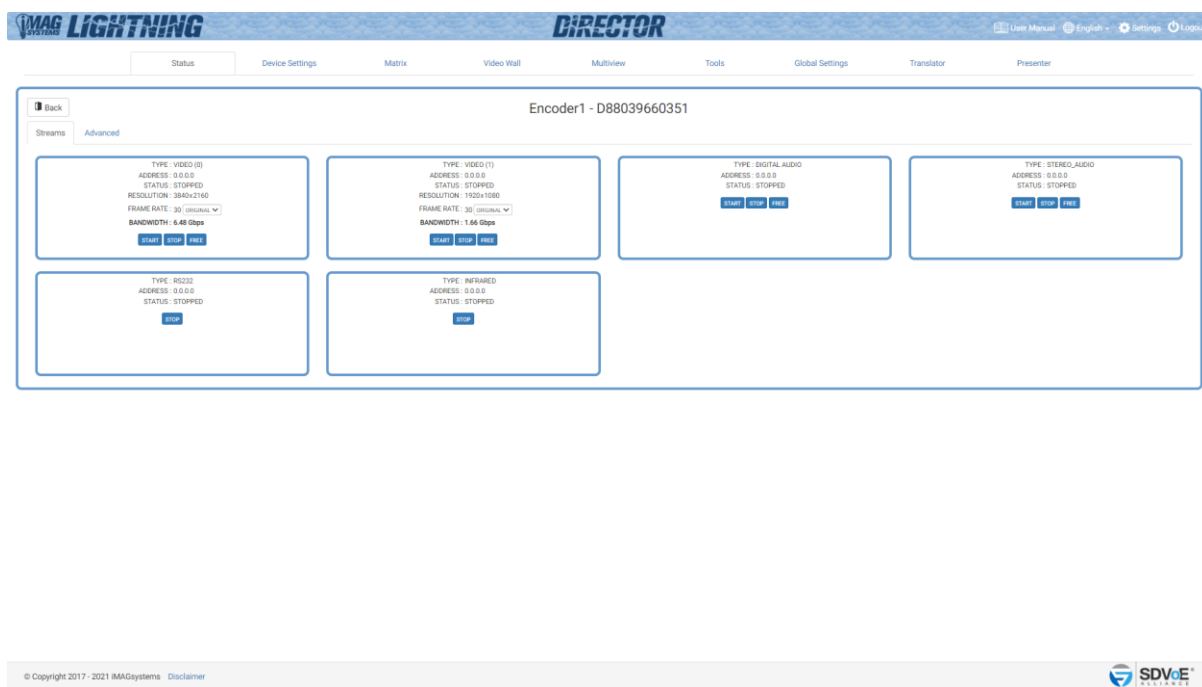
Details contains information regarding the streams and subscriptions to those streams.

3.2.1 Streams (Encoder)

The Streams tab of an Encoder will show the status of all streams along with their multicast address. The resolution, frame rate and bandwidth of the video streams is also indicated.

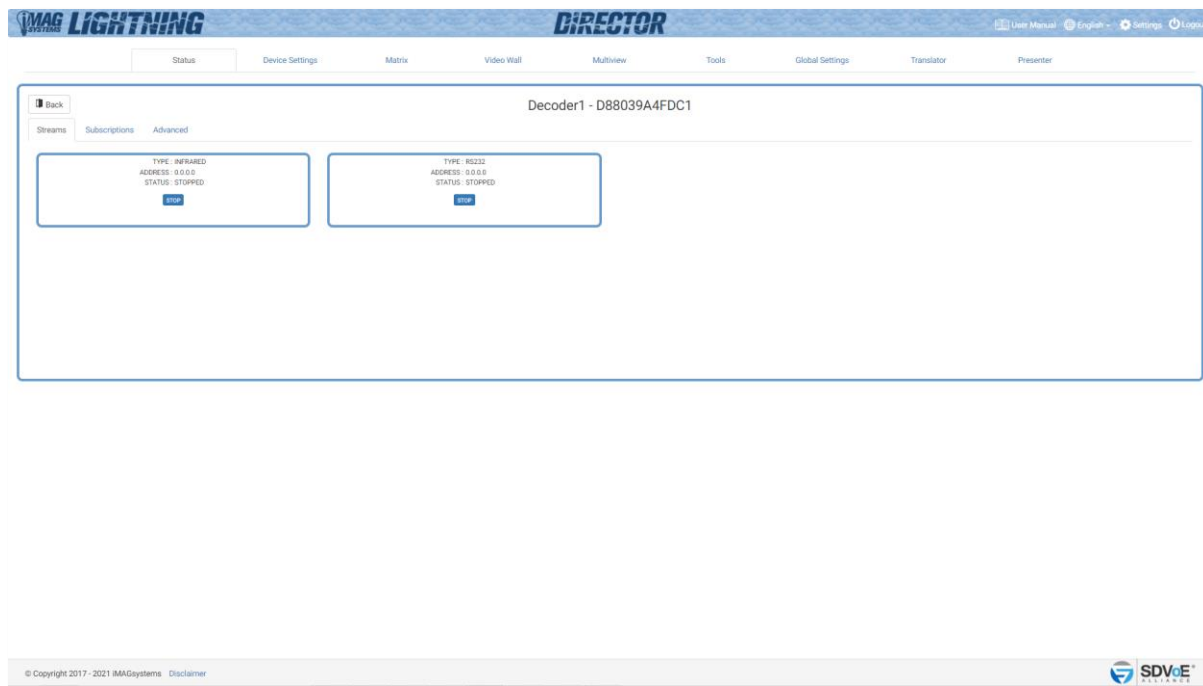
From here you can **stop** or **start** any video / audio stream. The frame rate of progressive video signals can be set to the original or half the original source frame rate.

When you **free** an Encoder stream, it will release its multicast address if working in multicast AUTO mode, and all connected Decoder subscriptions will be cleared.



3.2.2 Streams (Decoder)

The Streams tab of a Decoder will show the status of Infrared and RS232 streams as these are the only streams sent from a Decoder. From here you can stop either the Infrared or RS232 streams.



3.2.3 Subscriptions (Decoder)

The Subscriptions tab of a Decoder will show what multicast address is being used to receive data. It will also indicate from what Encoder it is receiving the streams and the video streams bandwidth. From here you can leave any of the streams.



The screenshot shows the 'Subscriptions' tab for 'Decoder1 - D88039A4FDC1'. The interface includes a top navigation bar with 'Status', 'Device Settings', 'Matrix', 'Video Wall', 'Multiview', 'Tools', 'Global Settings', 'Translator', and 'Presenter'. Below the navigation bar, there are tabs for 'Streams', 'Subscriptions', and 'Advanced'. The 'Subscriptions' tab is active, displaying a grid of 26 subscription entries. Each entry shows the following information:

- TYPE: VIDEO (0) through VIDEO (25)
- ADDRESS: 0.0.0.0
- STATUS: STOPPED
- STREAM: NONE
- BANDWIDTH: 0 Gbps
- A 'Leave' button

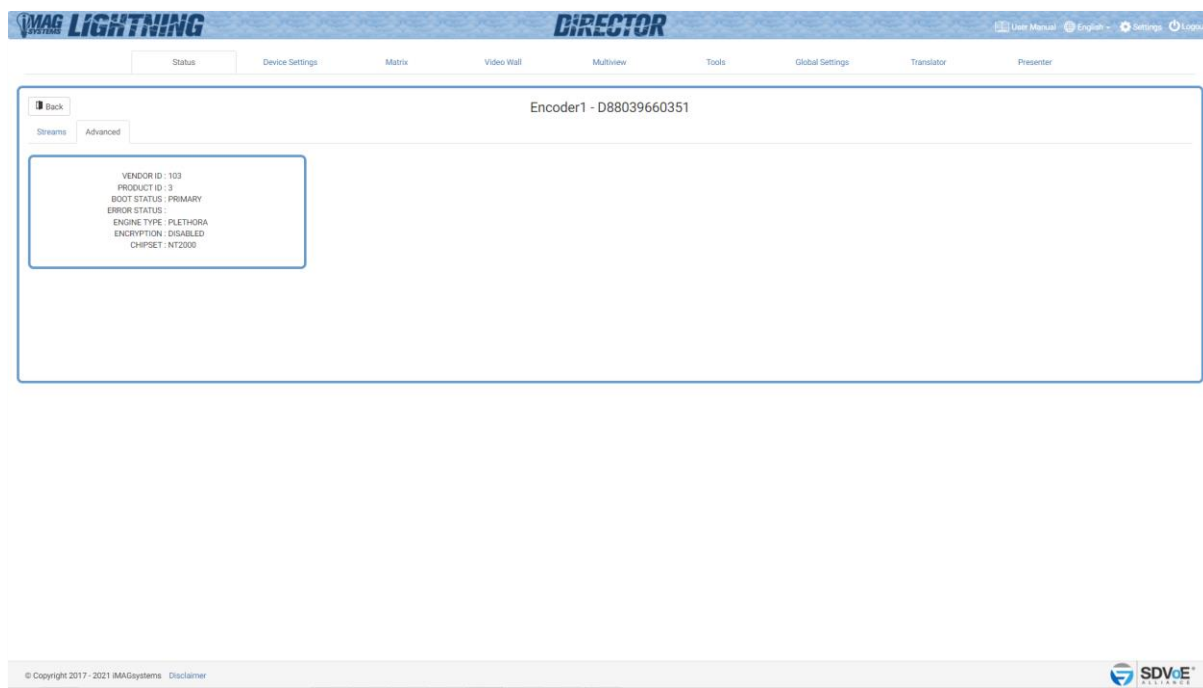
The last two entries are for audio streams:

- TYPE: STEREO AUDIO
- ADDRESS: 0.0.0.0
- STATUS: STOPPED
- STREAM: NONE
- BANDWIDTH: 0 Gbps
- A 'Leave' button
- TYPE: DIGITAL AUDIO
- ADDRESS: 0.0.0.0
- STATUS: STOPPED
- STREAM: NONE
- BANDWIDTH: 0 Gbps
- A 'Leave' button

At the bottom of the interface, there is a copyright notice: '© Copyright 2017 - 2021 iMAGsystems Disclaimer' and the SDVoE logo.

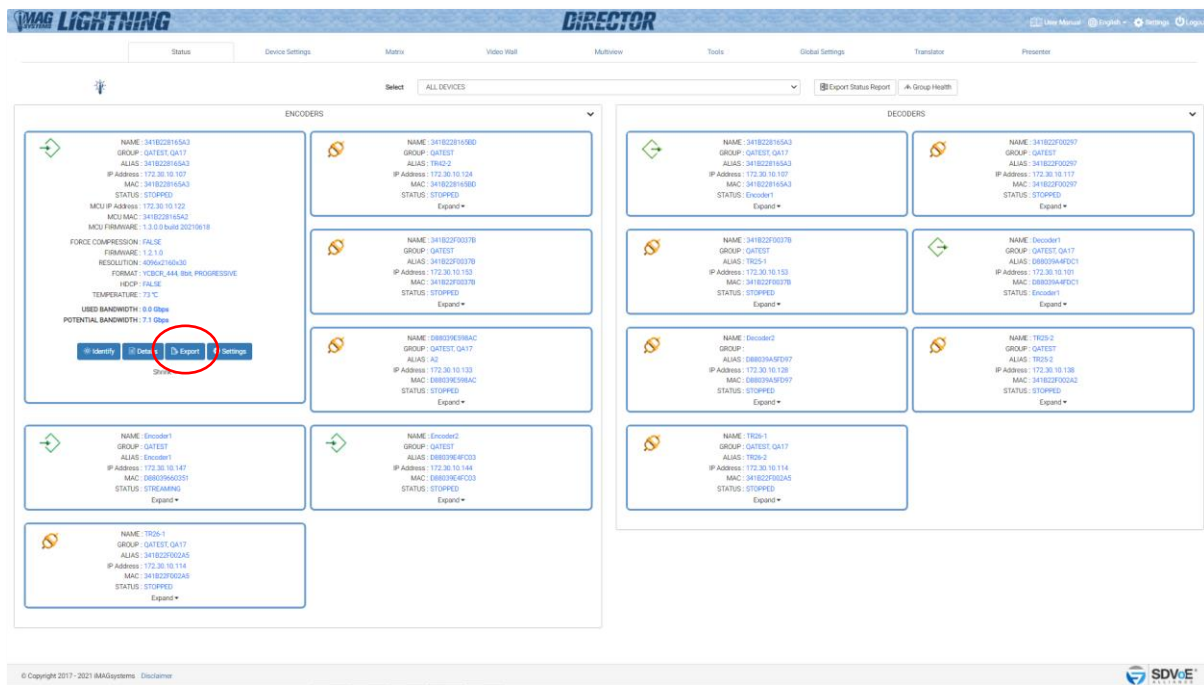
3.2.4 Advanced

The Advanced tab contains details of the device such as identification numbers, boot status along with the encryption status of the device.



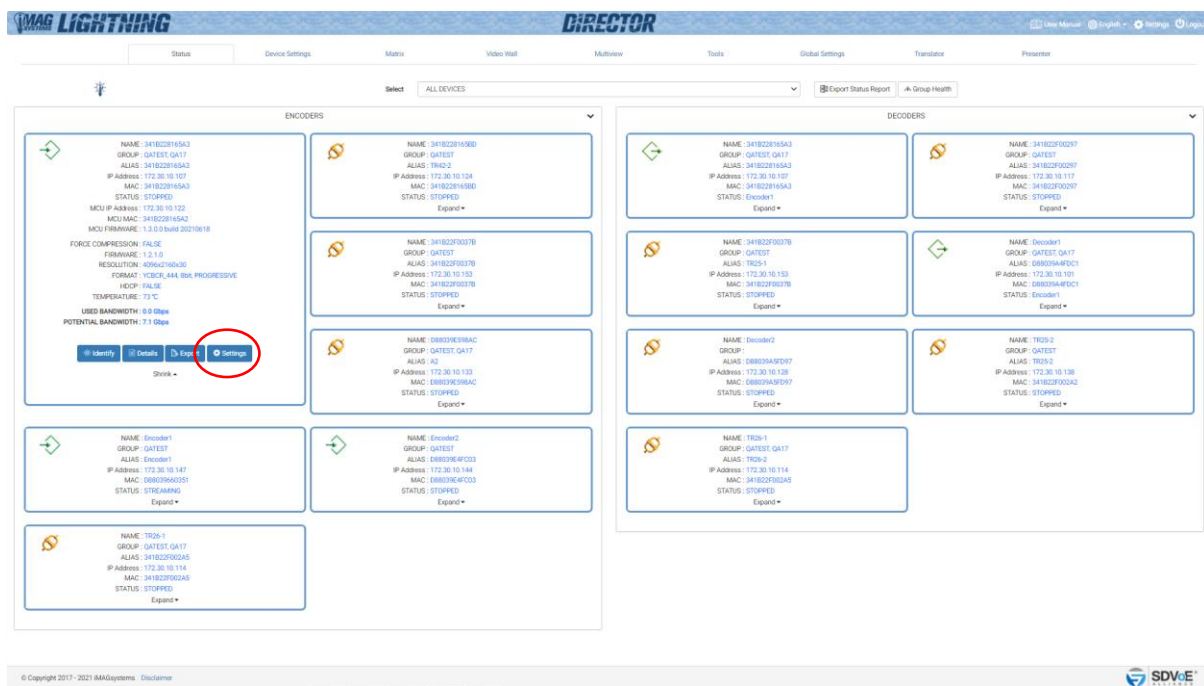
3.3 Export

A JSON formatted file will export the complete status of the selected device. This is to be used for system diagnostics. A *.ini file with the device name will be saved to your Downloads folder.



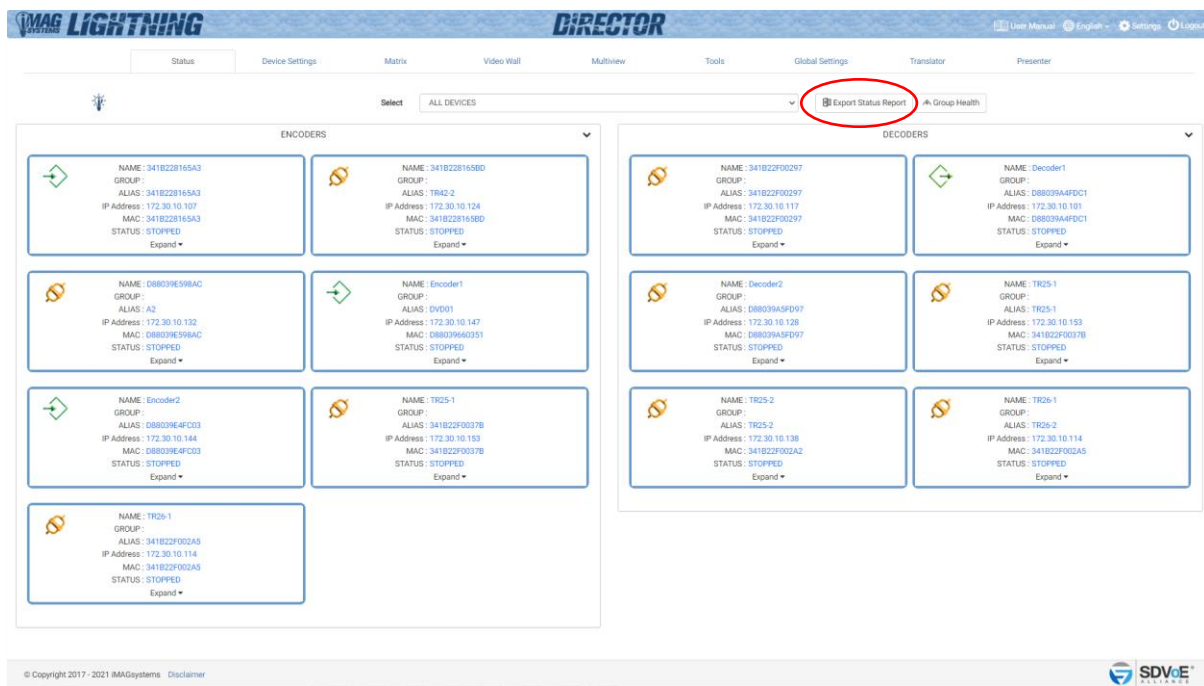
3.4 Settings

Clicking the Settings button on a device will send you directly to the device settings tab.



3.4 Export Status Report

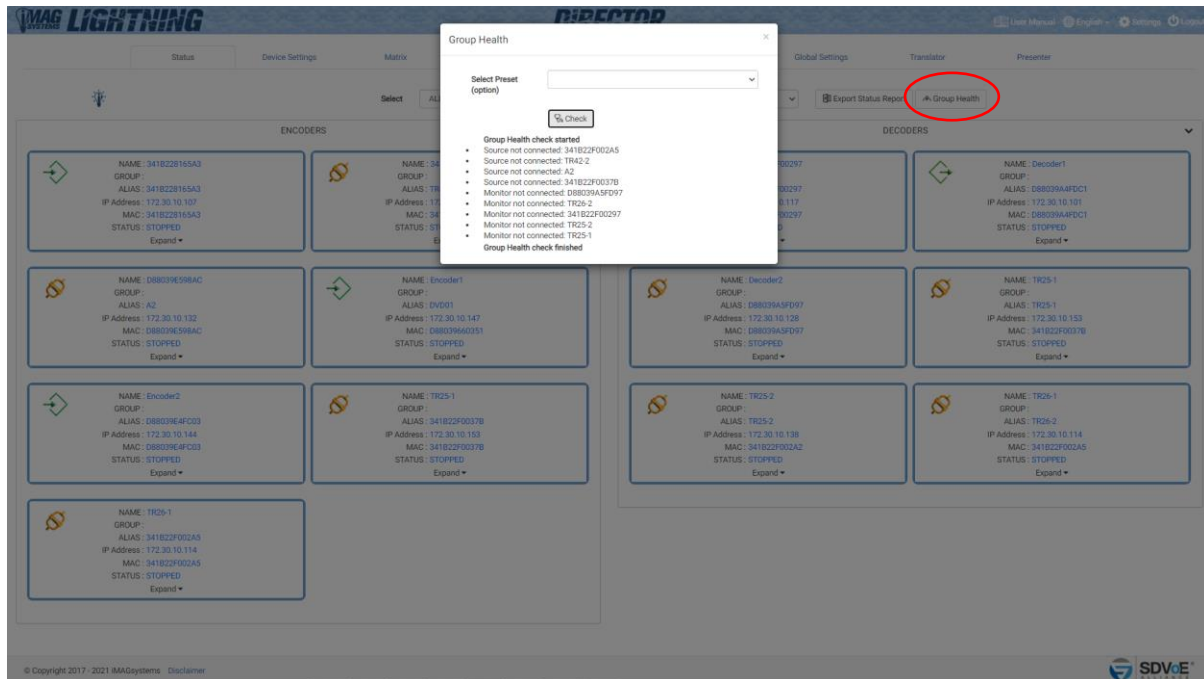
Export Status Report will save a csv formatted file with all the status details from this section.



The screenshot displays the iMAG DIRECTOR LIGHTNING web interface. The top navigation bar includes links for User Manual, English, Settings, and Logout. Below this, a secondary navigation bar contains tabs for Status, Device Settings, Matrix, Video Wall, Multiview, Tools, Global Settings, Translator, and Presenter. The 'Tools' tab is active, and within it, the 'Export Status Report' button is highlighted with a red circle. The main content area is divided into two sections: 'ENCODERS' and 'DECODERS'. Each section contains a grid of device status cards. Each card displays the device's name, group, alias, IP address, MAC address, and status (e.g., STOPPED). An 'Expand' button is located at the bottom of each card. The footer of the interface shows the copyright notice '© Copyright 2017 - 2021 iMAGsystems Disclaimer' and the SDVoE logo.

3.5 Group Health

Group Health will report the status of all the Encoders and Decoders in the selected group. If a group has a default preset associated with it, this can also be selected and applied to make sure there are no issues before the system is put into use.



4 Matrix

The Matrix tab contains up to 7 individual matrix tabs for each of the signal types, Video, Digital Audio, Analog Audio, Serial, Infrared, USB and USB HID. Here you can create or stop joins between Encoders and Decoders. The video modes of Decoders can also be changed by clicking the individual Decoder ⚙ settings buttons.

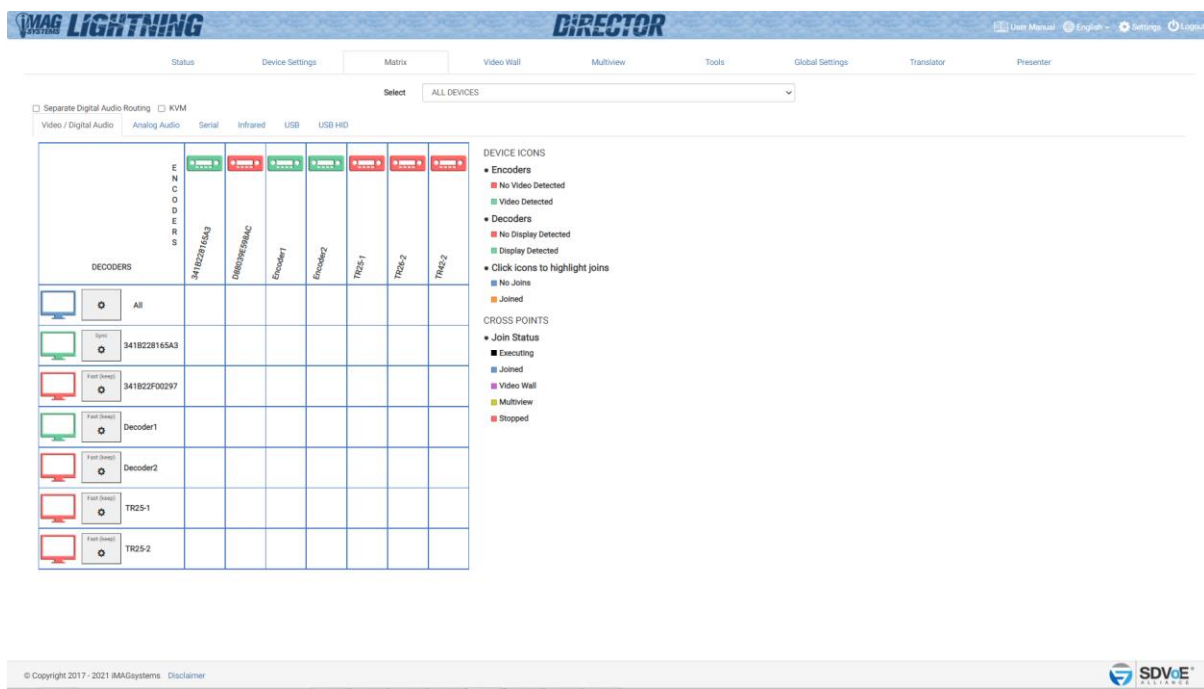
The matrix has a KVM (Keyboard Video Mouse) checkbox that will control USB along with Video routing. When Separate Digital Audio Routing is not selected, Digital Audio will also follow the Video routing.

Click a white square to make a join.

Click a blue square to remove a join.

4.1 Video / Digital Audio

Here the Video and Digital Audio are combined so they are both joined to the destination device.

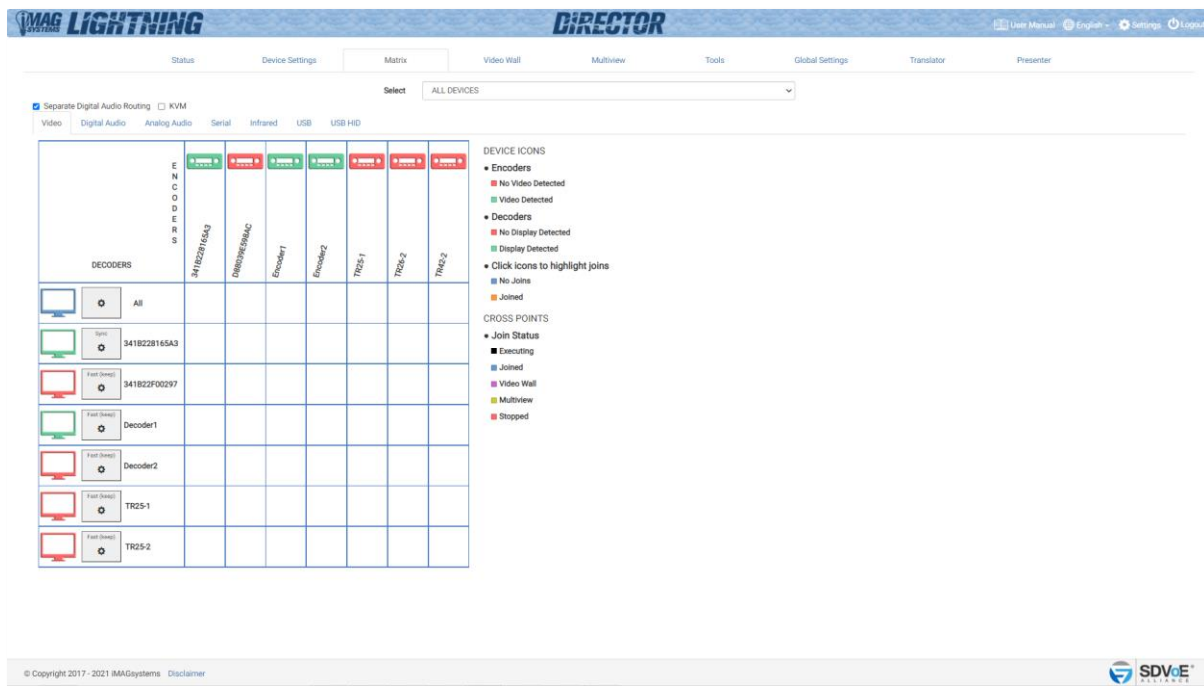


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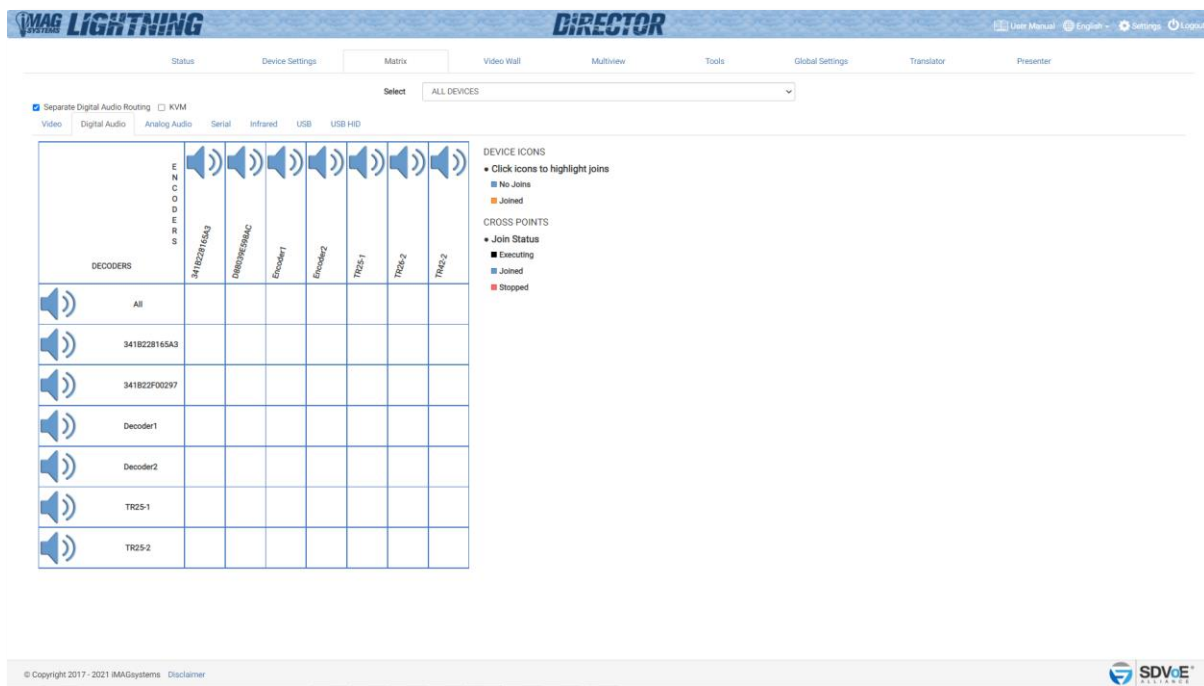
4.2 Video

When independent routing of the Video and Digital Audio is required select the Separate Digital Audio Routing checkbox. Now the Video and Digital Audio will appear in separate independent matrix tabs.



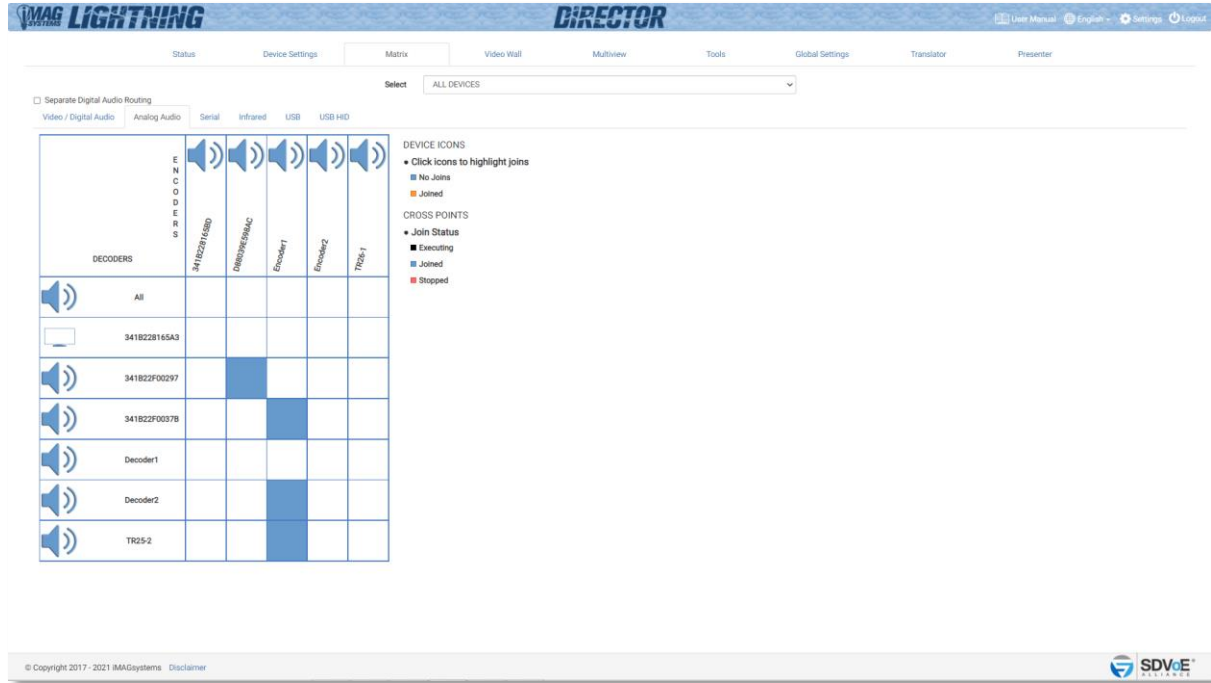
4.3 Digital Audio

When independent routing of the Video and Digital Audio is required select the Separate Digital Audio Routing checkbox. Now the Video and Digital Audio will appear in separate independent matrix tabs.



4.4 Analog Audio

The matrix Analog Audio tab is intended for making analog audio joins between Encoders and Decoders.



The screenshot shows the DIRECTOR LIGHTNING software interface. The top navigation bar includes tabs for Status, Device Settings, Matrix, Video Wall, Multiview, Tools, Global Settings, Translator, and Presenter. The 'Matrix' tab is selected. Below the navigation bar, there is a 'Select' dropdown menu set to 'ALL DEVICES'. A checkbox for 'Separate Digital Audio Routing' is present. The main area is divided into two sections: 'Video / Digital Audio' and 'Analog Audio'. The 'Analog Audio' section is active, displaying a matrix configuration table. The table has columns for 'ENCODERS' (341B22F1550, 341B22F15A3, 341B22F00297, 341B22F00378, Decoder1, Decoder2, TR25-1) and rows for 'DECODERS' (All, 341B22F1550, 341B22F00297, 341B22F00378, Decoder1, Decoder2, TR25-2). The matrix shows blue squares indicating active joins. To the right of the matrix, there are 'DEVICE ICONS' and 'CROSS POINTS' sections with legends for join status and status.

DEVICE ICONS

- Click icons to highlight joins
- No Joins
- Joined

CROSS POINTS

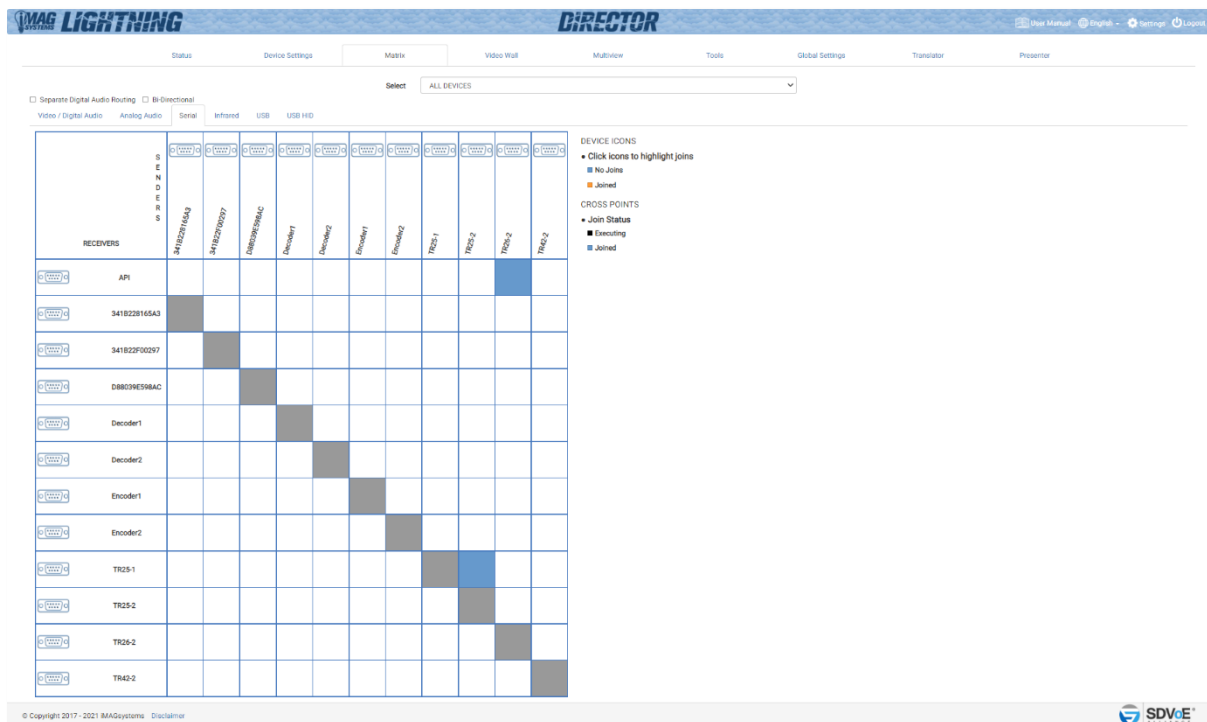
- Join Status
- Executing
- Joined
- Stopped

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4.5 Serial

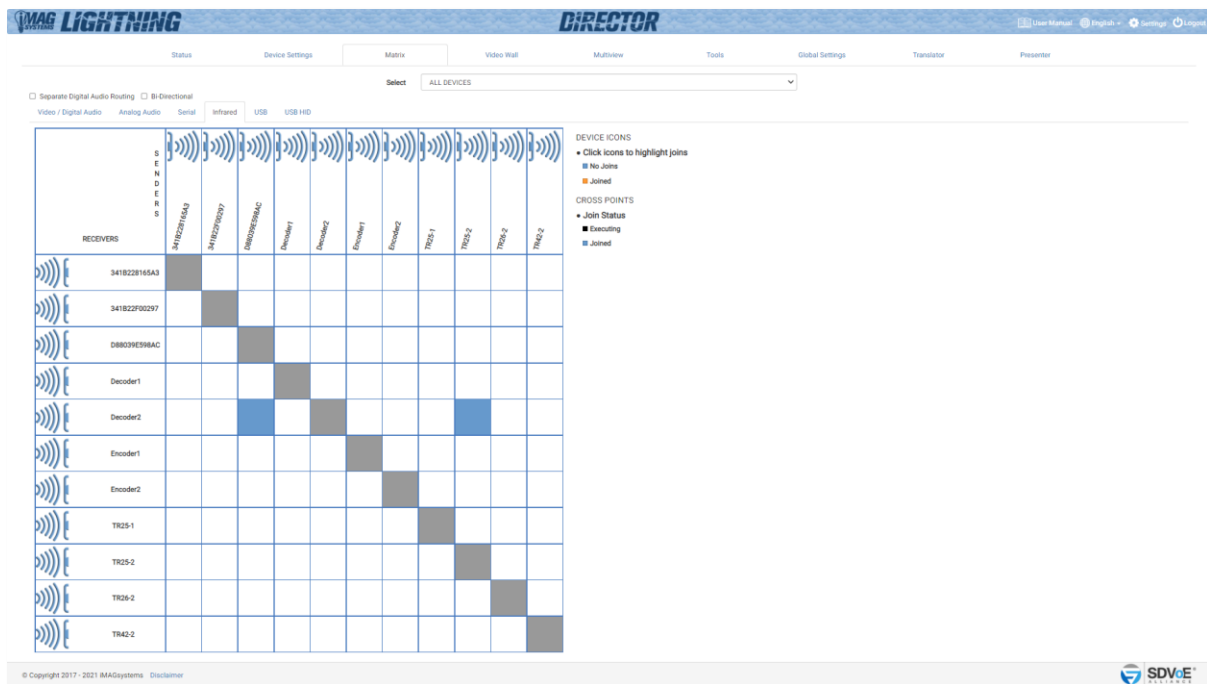
The matrix Serial tab is intended for making serial joins between Encoders and Decoders. Serial joins work on a one way principle in that the RX of the sender device is connected to the TX of the receiver device. This only creates a 1-way connection. For a 2-way (Bi-Direction) connection select the Bi-Directional checkbox before making joins.



The screenshot shows the 'Serial' tab in the iMAG DIRECTOR LIGHTNING software. The interface includes a top navigation bar with tabs for Status, Device Settings, Matrix, Video Wall, Multiview, Tools, Global Settings, Translator, and Presenter. Below the navigation bar, there are checkboxes for 'Separate Digital Audio Routing' and 'Bi-Directional'. A 'Select' dropdown menu is set to 'ALL DEVICES'. The main area is a matrix with 'RECEIVERS' on the vertical axis and 'TRANSMITTERS' on the horizontal axis. The receivers listed are API, 341B228165A3, 341B22F00297, 288039E59BAC, Decoder1, Decoder2, Encoder1, Encoder2, TR25-1, TR25-2, TR26-2, and TR42-2. The transmitters listed are 341B228165A3, 341B22F00297, 288039E59BAC, Decoder1, Decoder2, Encoder1, Encoder2, TR25-1, TR25-2, TR26-2, and TR42-2. The matrix cells contain icons representing the connection status: a blue square for 'No Joins', an orange square for 'Joined', a black square for 'Join Status', a grey square for 'Join Status', and a white square for 'Join Status'. The matrix shows a diagonal of blue squares, indicating that each receiver is connected to its corresponding transmitter. The bottom of the screen displays the copyright information: '© Copyright 2017 - 2021 iMAG Systems Disclaimer' and the SDVoE logo.

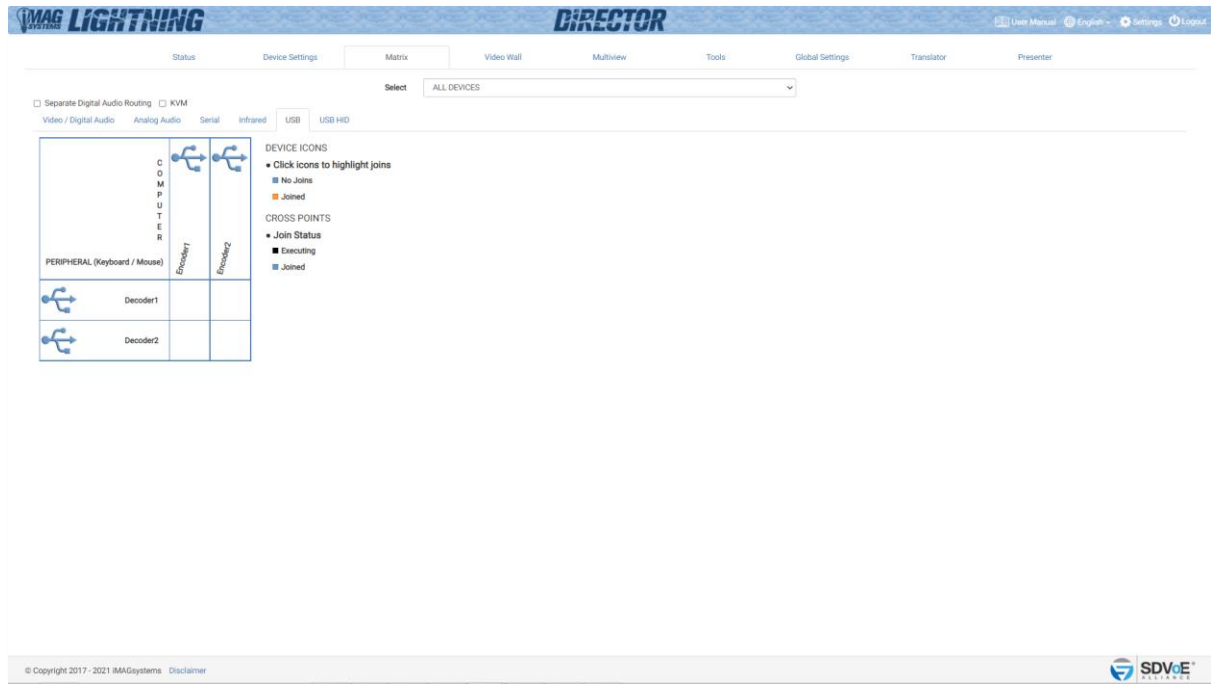
4.6 Infrared

The matrix Infrared tab is intended for making infrared joins between Encoders and Decoders. Infrared joins work on a one way principle in that the sender device is connected to the receiver device. This only creates a 1-way connection. For a 2-way (Bi-Direction) connection select the Bi-Directional checkbox before making joins.



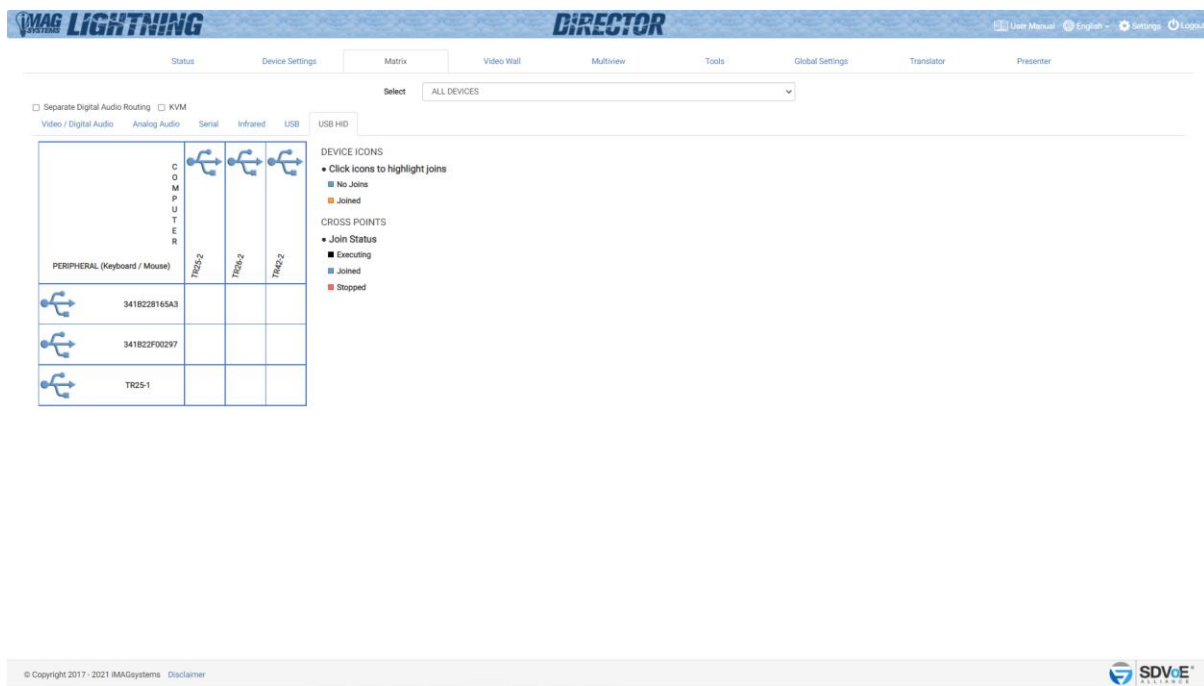
4.7 USB

The matrix USB tab will only show Devices with Icron USB installed and correctly configured.



4.8 USB HID

The matrix USB HID tab will only show Devices with USB HID installed and correctly configured.



The screenshot displays the iMAG DIRECTOR LIGHTNING software interface, specifically the USB HID configuration tab. The interface includes a top navigation bar with tabs for Status, Device Settings, Matrix, Video Wall, Multiview, Tools, Global Settings, Translator, and Presenter. Below the navigation bar, there are checkboxes for 'Separate Digital Audio Routing' and 'KVM'. The main area shows a matrix of devices and their connections to various ports (COM, P, U, T, E, R). The USB HID tab is selected, showing a list of devices with their IDs and connection status.

PERIPHERAL (Keyboard / Mouse)	TR25-2	TR25-2	TR45-2
341B228165A3			
341B22F00297			
TR25-1			

DEVICE ICONS

- Click icons to highlight joins
- No Joins
- Joined

CROSS POINTS

- Join Status
- Executing
- Joined
- Stopped

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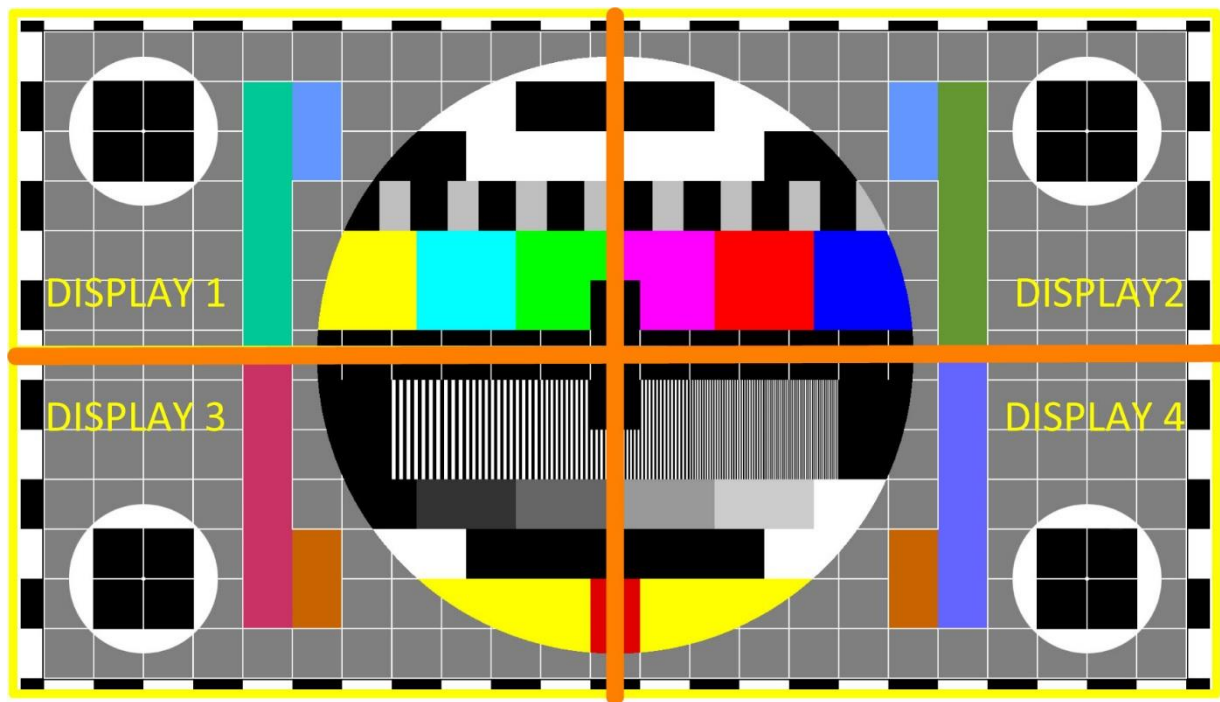
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5 Video Wall

Video Wall configuration has two modes of operation, standard and advanced.

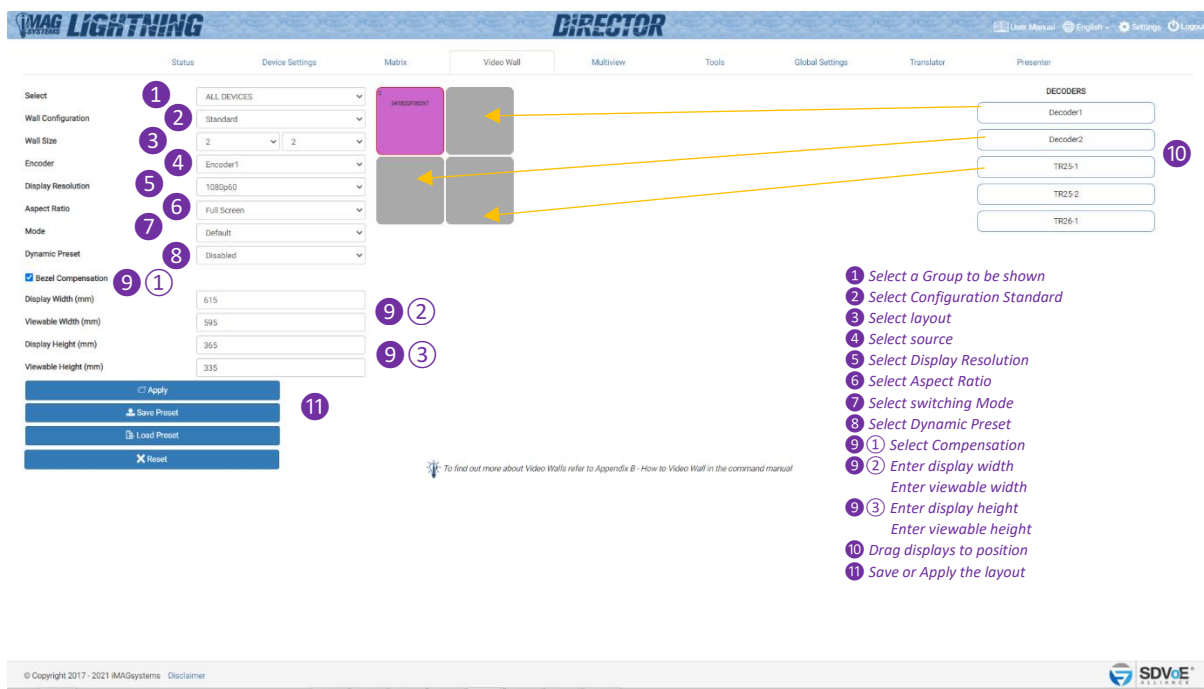
Standard mode has simple bezel compensation when a uniform bezel size is used so only the display width and viewable width are required to calculate the required bezel compensation.

Advanced mode has various types of bezel compensation and can be used to specify individual monitor bezel sizes.



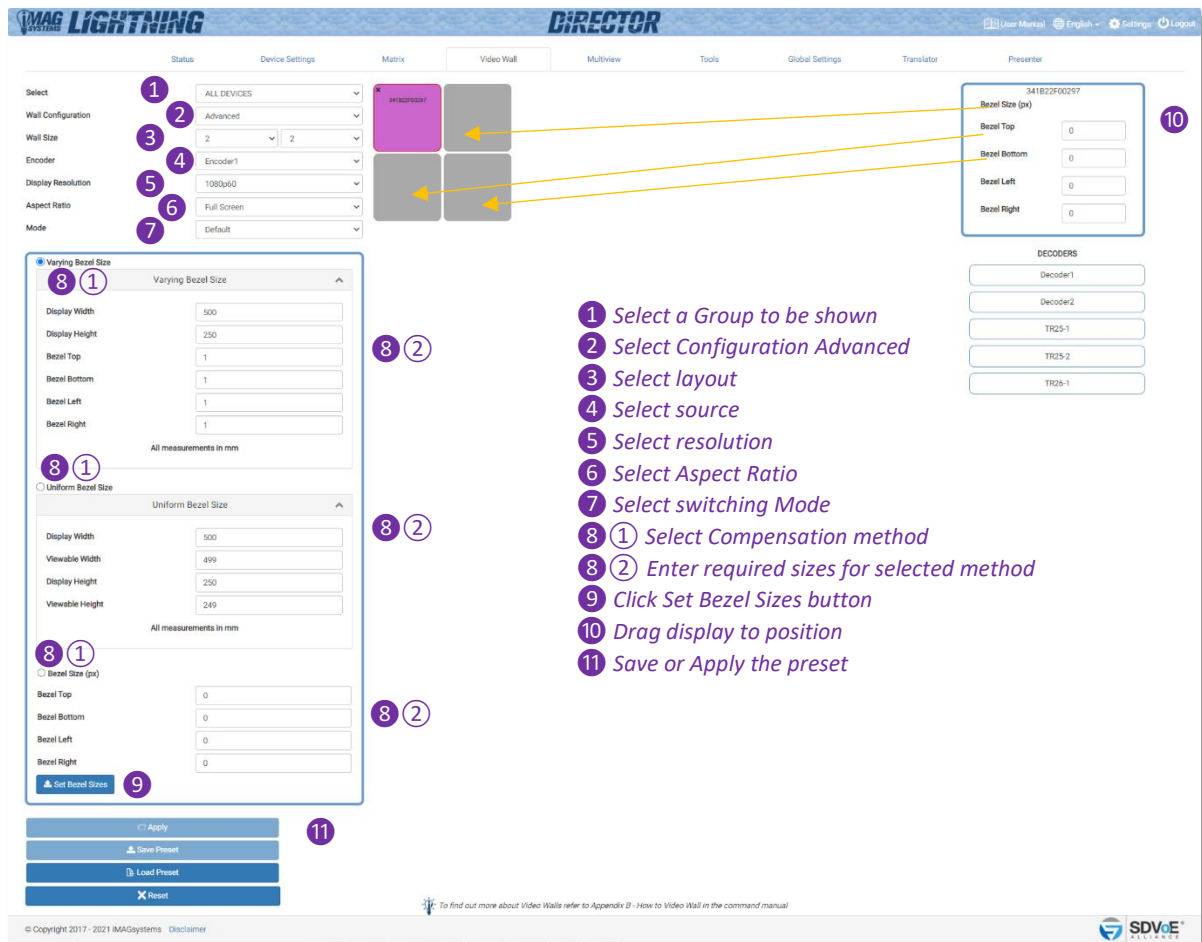
* Further Video Wall details can be found in the “How to Video Wall” appendix of the [DIRECTOR Command Guide](#).

5.1 Video Wall Standard



- 1 Select the group of Encoders and Decoders to be available
- 2 Select either Standard or Advanced mode, in this case Standard
Advanced mode provides more options for Bezel Compensation
- 3 Select the video wall layout up to 8 x 5
- 4 Select the source Encoder for the video to be displayed
Only Encoders with an active source will be shown
- 5 Select the resolution of the displays
The cropped video area from the original source content will be scaled to a display resolution. So if the cropped area is only 960x540, in this case it will be scaled to 1920x1080 for the display.
- 6 Select Aspect Ratio. Either select Full Screen or Maintain Aspect Ratio.
Full Screen may stretch the video image to fill the display area while Maintain Aspect Ratio will add black to the sides and top and bottom of the displayed image to maintain the original video aspect ratio.
- 7 Select switching Mode Normal (Sync) or Fast.
- 8 Enable or Disable Dynamic Preset. When Enabled the preset will be applied on a change of source resolution to reapply the correct crop settings for the new resolution.
- 9 1 Select Bezel Compensation to automatically compensate for the bezel widths
(Standard mode assumes a constant display bezel size)
- 9 2 Enter the physical width of the display in mm
Enter the physical viewable width of the display in mm
- 10 Drag Decoders / Displays to the correct wall position
- 11 Save or apply the layout. The layout can be saved as a preset to be recalled via the "preset load" command or loaded back into the UI.

5.2 Video Wall Advanced



1 Select a Group to be shown

2 Select Configuration Advanced

3 Select layout

4 Select source

5 Select resolution

6 Select Aspect Ratio

7 Select switching Mode

8 ① Select Compensation method

8 ② Enter required sizes for selected method

9 Click Set Bezel Sizes button

10 Drag display to position

11 Save or Apply the preset

- ①** Select the group of Encoders and Decoders to be available
- ②** Select either Stand or Advanced modes, in this case Advanced
(Advanced mode provides more options for Bezel Compensation)
- ③** Select the video wall layout up to 8 x 5
- ④** Select the source Encoder for the video to be displayed
Only Encoders with an active source will be shown
- ⑤** Select the resolution of the displays
The cropped video area from the original source content will be scaled to a display resolution.
So if the cropped area is only 960x540, in this case will be scaled to 1920x1080 for the display.
- ⑥** Select Aspect Ratio. Either select Full Screen or Maintain Aspect Ratio.
Full Screen may stretch the video image to fill the display area while Maintain Aspect Ratio will add black to the sides and top and bottom of the displayed image to maintain the original video aspect ratio.

5.2 Video Wall Advanced – continued...

- 7 Select switching Mode Normal (Sync) or Fast.
- 8 ① Select Bezel Compensation method to automatically compensate for the bezel widths.
Uniform Bezel Size is used when the display has a constant bezel size
Varying Bezel Size is used when the display has different bezel sizes
Bezel Size (px) is used when you manually want to specify the pixel compensation, otherwise this area will show the resulting pixel compensation calculated from the physical dimension of the display from either Uniform Bezel Size or Varying Bezel Size calculations.

Varying Bezel Size

- 8 ② Enter the physical width of the display in mm
Enter the physical height of the display in mm
Enter the top physical bezel width of the display in mm
Enter the bottom physical bezel width of the display in mm
Enter the left physical bezel width of the display in mm
Enter the bottom physical bezel width of the display in mm

Uniform Bezel Size

- 8 ② Enter the physical width of the display in mm
Enter the physical viewable width of the display in mm

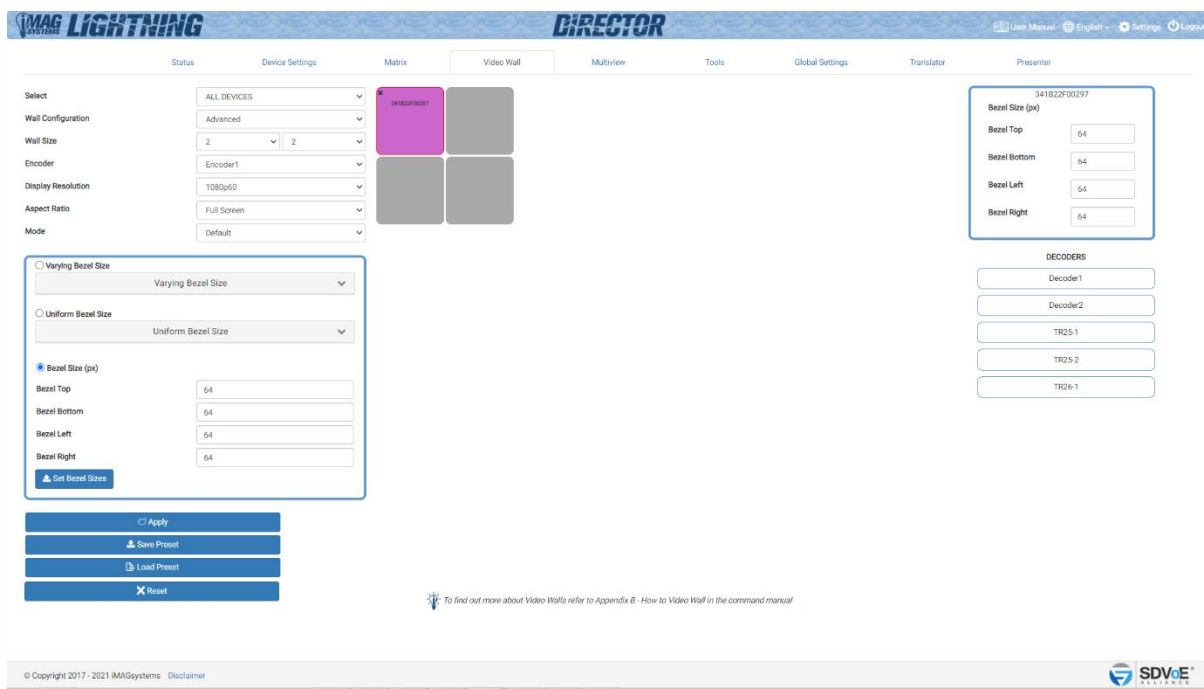
Bezel Size (px)

- 8 ② Enter the top bezel compensation in pixels
Enter the bottom bezel compensation in pixels
Enter the left bezel compensation in pixels
Enter the right bezel compensation in pixels

- 9 Load the Bezel Compensation values to the displays.
*If no displays are selected at this stage, then all will be populated with the values.
Individual displays can be selected to load the values which is useful when different display types are used in the layout, or when varying bezel sized monitors are rotated within the layout.*

- 10 Drag Decoders / Displays to the correct wall position
- 11 Save or apply the layout. The layout can be saved as a preset to be recalled via the “preset load” command or loaded back into the UI.

5.2 Video Wall Advanced – continued...



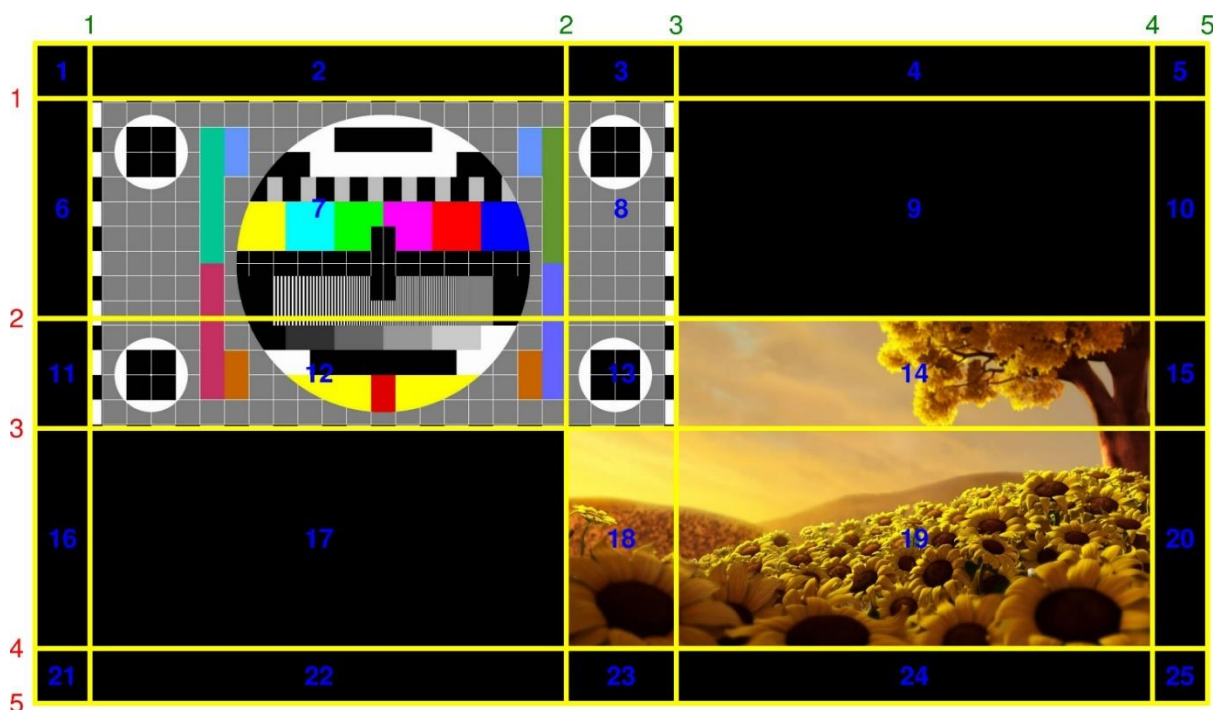
The screenshot displays the 'DIRECTOR LIGHTNING' software interface for configuring a video wall. The 'Video Wall' tab is active, showing a 2x2 grid of display positions. The top-left position is highlighted in purple. A 'Bezel Size (px)' window is open, showing settings for Bezel Top, Bottom, Left, and Right, all set to 64. The interface also includes a 'Device Settings' panel on the left with options for Wall Configuration, Wall Size, Encoder, Display Resolution, Aspect Ratio, and Mode. A 'DECODERS' panel on the right lists Decoder1, Decoder2, TR25-1, TR25-2, and TR26-1. At the bottom, there are buttons for Apply, Save Preset, Load Preset, and Reset.

In advanced mode each individual display of the video wall can have separate bezel compensation applied when using a mix of display types. Click the display position and the displays bezel compensation window will popup. Here you can change the bezel sizes as required.

6 Multiview

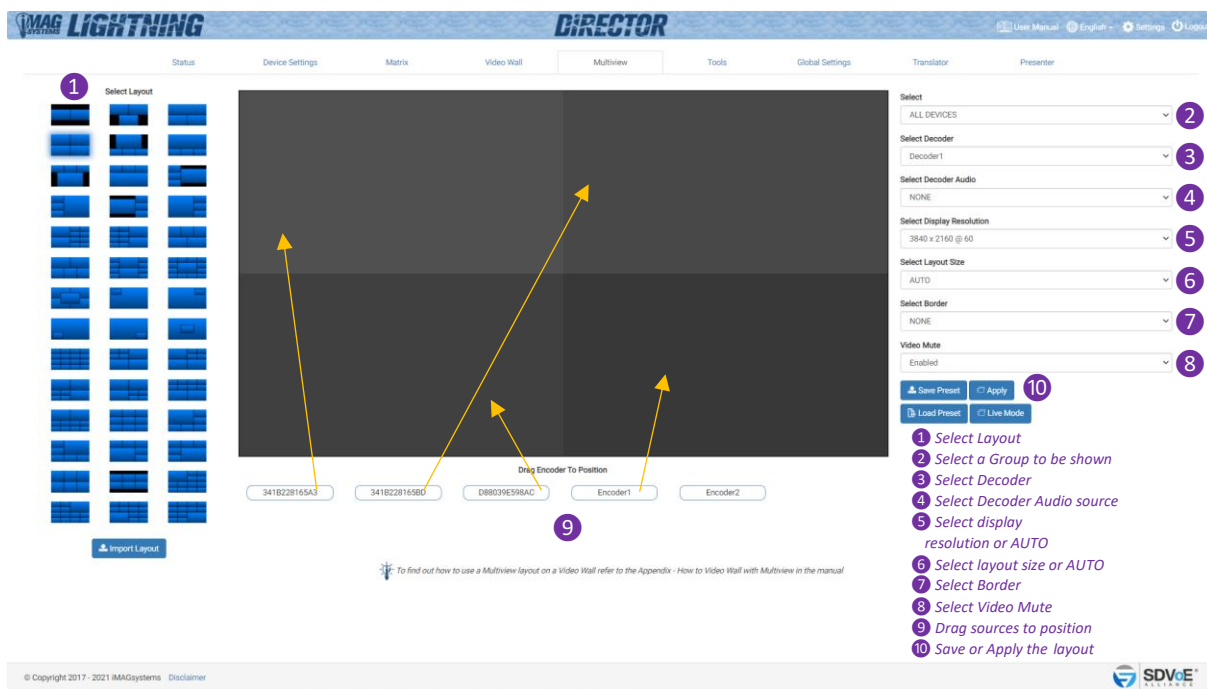
The Multiview function has a lot of bandwidth considerations to take into account if both Encoder video streams are working. Keeping in mind that an Encoder has two separate video streams. Stream 0 is the main stream used for normal video switching. This stream will automatically be slightly compressed with all streams greater than 9Gbps. Stream 1 is a dedicated RGB stream that can be scaled for use with Multiview. This stream is NOT compressed and is therefore limited to 30Hz refresh rates. In some cases stream 0 itself can use all the available bandwidth leaving no room for stream 1 on the network. In these cases the software can perform a few functions to maintain a total Encoder bandwidth less than 9Gbps.

- Both stream 0 and stream 1 are set to half frame rate for PROGRESSIVE signals over 30Hz
- Stream 0 may be used instead of stream 1 if the source video resolution matches the window size
- Stream 0 may be turned off completely if not enough bandwidth is available for stream 1
- The layout size will automatically be reduced to 1920x1080 when an Encoder with an INTERLACED source > 30Hz is dropped on a window larger than 2,073,600 pixels when the layout size has been set for 3840x2160. This is because the frame rate of an INTERLACED signal cannot be reduced so the bandwidth must be managed by reducing the video size.



* Further Multiview details can be found in the “How to Multiview” appendix of the [DIRECTOR Command Guide](#).

6.1 Multiview Layout



- 1 Select 1 of the 42 predefined layouts
- 2 Select the group of Encoders and Decoders to be available
- 3 Select the required Decoder to display the layout
- 4 Select Decoder Audio by selecting either 'None' or an Encoder
- 5 Select the display resolution as either AUTO, 3840x2160@30, 3840x2160@60, 1920x1080@60 or Custom.

AUTO will use the displays preferred resolution from the EDID.

Display resolution is independent of layout size. The Decoder will scale the output resolution to the display. So this is the resolution the layout will be shown. A 1920x1080 layout can be shown at 3840x2160 and a 3840x2160 layout can be shown as 1920x1080.

- 6 Select the layout size of AUTO, 3840x2160 or 1920x1080 (AUTO will use the Display Resolution)

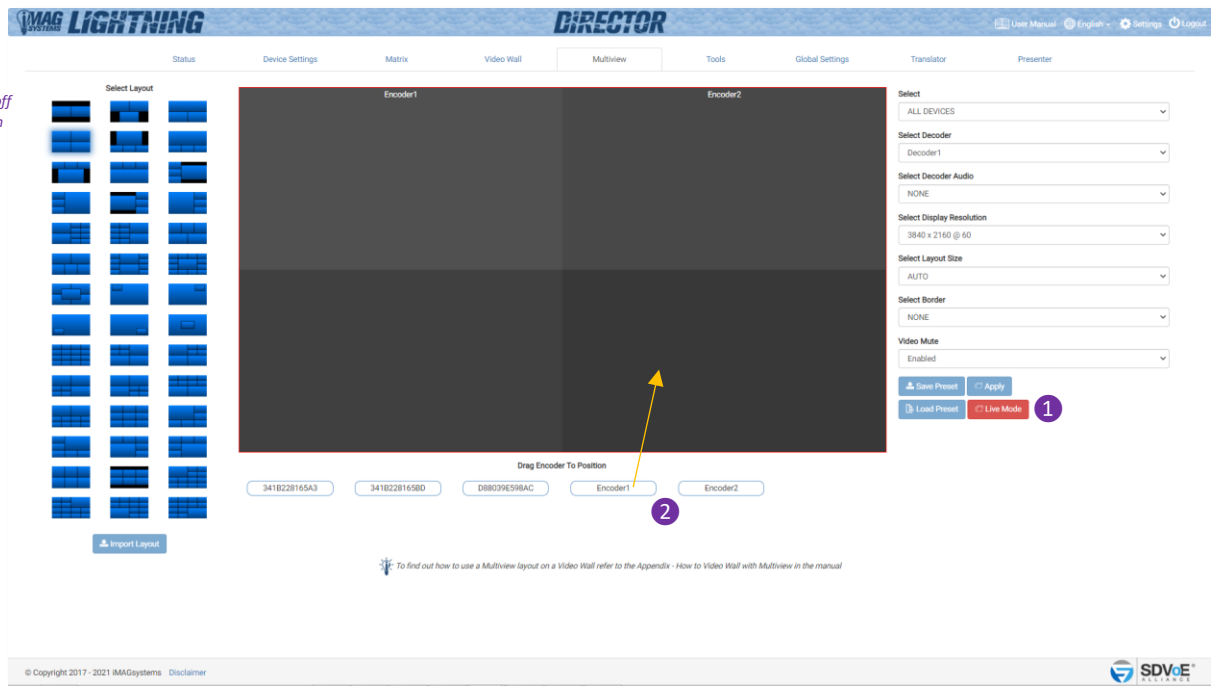
Let's look at the example shown of a 2x2 layout.

If the layout size was 3840x2160 then each window is sized 1920x1080. So the resolution of the Encoder streams will be scaled to 1920x1080.

If the layout size was 1920x1080 then each window is sized 960x540. So the resolution of the Encoder streams will be scaled to 960x540. Which in turn only uses half the network bandwidth.

- 7 Select default border or none.
- 8 Select Video Mute Enabled to leave the display black while building the Multiview Layout.
- 9 Drag the required Encoder / Source to desired window location. Only same sized windows can use the same duplicated Encoder / Source.
- 10 Save or apply the layout. The layout can be saved as a preset to be recalled via the "preset load" command or loaded back into the UI.

6.2 Multiview Live



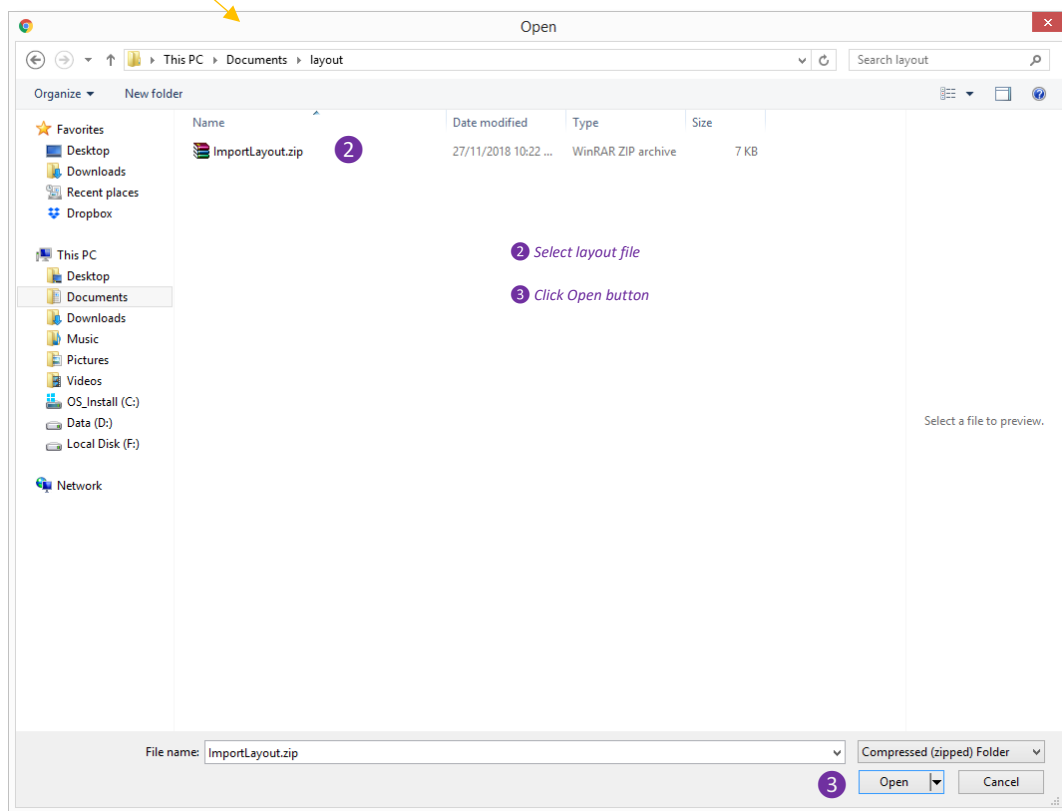
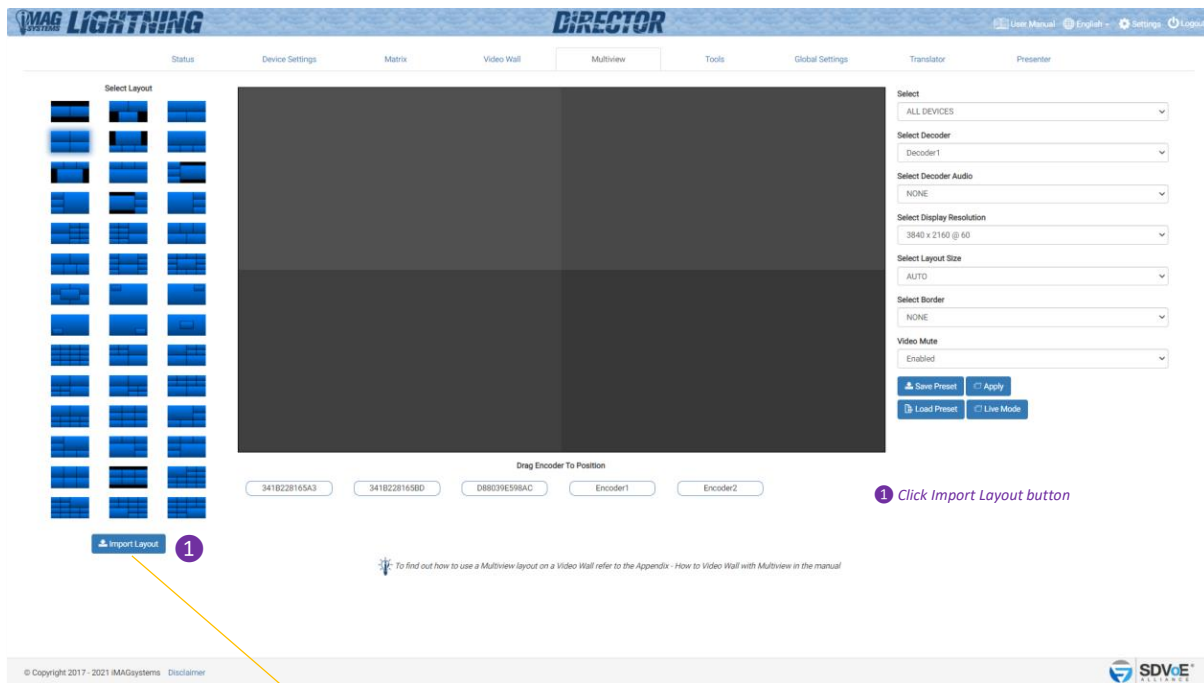
- 1 Use the “Live Mode” button to toggle the function on/off
- 2 Drag sources to window locations or remove sources from windows

Live mode will provide an instant change to the sources applied to a layout. Live mode is automatically disabled when changing layouts or any of the dropdown options.

6.3 Multiview Layout Import

Custom Multiview layouts are available on request. The supplied custom layout file can be imported here into the system and will be added to the displayed available layouts.

(Keep in mind any layout is achievable using direct API commands or editing an existing preset)



6.4 Multiview Presets

Multiview presets created and saved from the UI contain optional commands and logic that are present to manage system bandwidth and to provide a clean viewable experience. These optional commands and logic blocks can be removed or replaced with constant commands for known system conditions.

Here is an example of the code generated from the 1st UI multiview layout:

- Define a new layout

```
layout new MV_e1 3840 2160
```

- Define layout windows

```
layout window MV_e1 0 0 540 1920 1080 0
layout window MV_e1 1 1920 540 1920 1080 1
```

- Clear all previous Decoder subscriptions (**optional**)

```
leave all Decoder2
```

- Turn on video mute to blank the display until all the video streams are joined (**optional**)

```
set video_mute Decoder2 true 000000
```

- To reduce Encoder1 bandwidth workout if the main hdmi:0 stream can have half frame rate applied or if the original frame rate needs to be restored (**optional**)

```
if(get video Encoder1 sm == PROGRESSIVE){
    if(get video Encoder1 fps > 30){
        if not(get frame_converter Encoder1 main){
            set frame_converter Encoder1 main true
        }
    }else{
        if(get frame_converter Encoder1 main){
            set frame_converter Encoder1 main false
        }
    }
}
```

- To reduce Encoder2 bandwidth workout if the main hdmi:0 stream can have half frame rate applied or if the original frame rate needs to be restored (**optional**)

```
if(get video Encoder2 sm == PROGRESSIVE){
    if(get video Encoder2 fps > 30){
        if not(get frame_converter Encoder2){
            set frame_converter Encoder2 main true
        }
    }else{
        if(get frame_converter Encoder2){
            set frame_converter Encoder2 main false
        }
    }
}
```

- Set the Decoder to multiview mode with the required display resolution

```
multiview Decoder2 MV_e1 3840 2160 30
```



- To reduce bandwidth from Encoder1 workout if we can use the main hdmi:0 stream instead of the sub stream hdmi:1 (**optional**, otherwise keep "join multi Encoder1 Decoder1 0 scaled MV_e1")

- To reduce bandwidth from Encoder1 workout if we can use the main hdmi:0 stream instead of the sub stream hdmi:1 (**optional**, otherwise keep "join multi Encoder2 Decoder1 1 scaled MV_e1")

- Check Encoder1 bandwidth is not exceeding 9Gbps and turn off the main stream hdmi:0 if required (**optional**)

- Check Encoder2 bandwidth is not exceeding 9Gbps and turn off the main stream hdmi:0 if required (**optional**)

- Turn off the Decoder video mute so the multiview can now be displayed (**optional**)

- Remove any audio from the multiview Decoder (**optional**)

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6.4 Multiview Presets continued...

Here is the layout with all the optional commands and logic blocks removed. This would be a minimalistic approach to a multiview preset.

- Define a new layout

```
layout new MV_e1 3840 2160
```

- Define layout windows

```
layout window MV_e1 0 0 540 1920 1080 0  
layout window MV_e1 1 1920 540 1920 1080 1
```

- Set the Decoder to multiview mode with the required display resolution

```
multiview Decoder2 MV_e1 3840 2160 30
```

- Join Encoder1 to multiview window 0

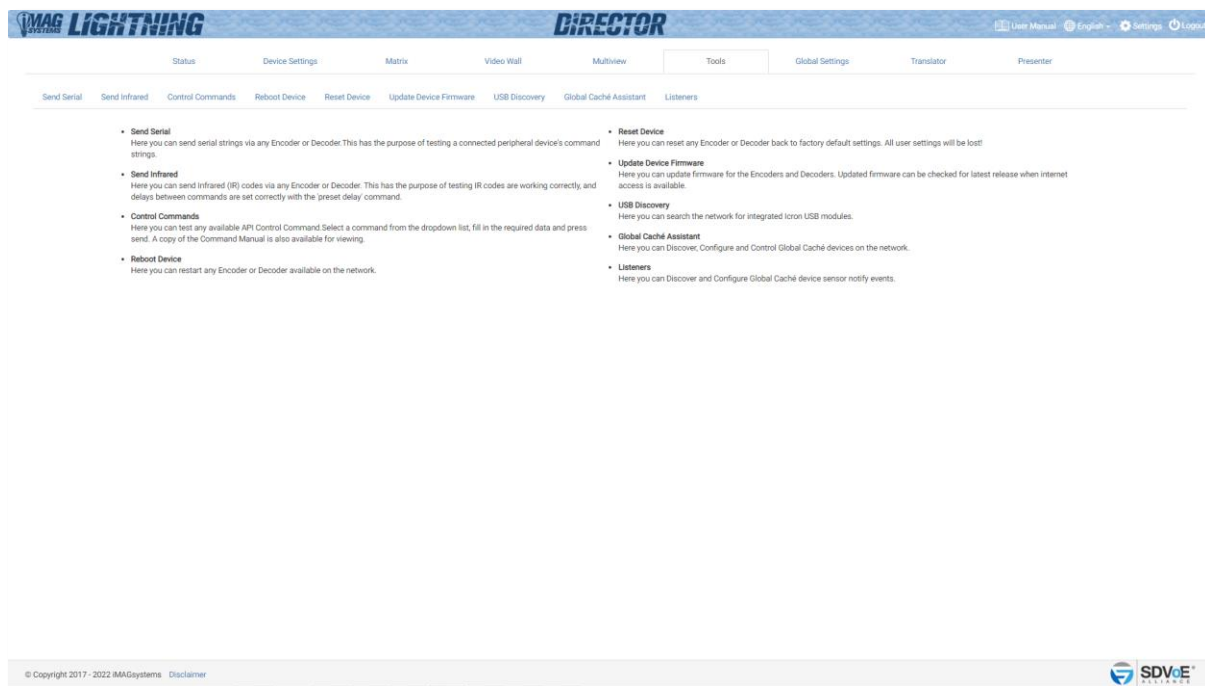
```
join multi Encoder1 Decoder1 0 scaled MV_e1
```

- Join Encoder2 to multiview window 1

```
join multi Encoder2 Decoder1 1 scaled MV_e1
```

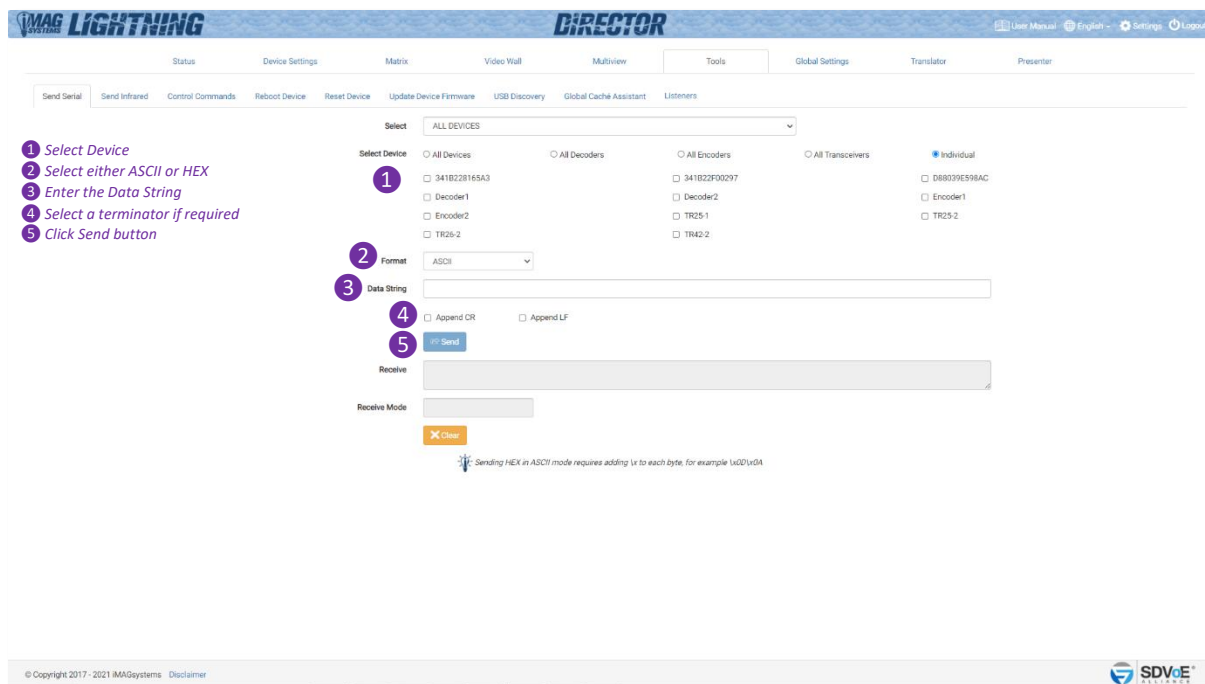
7 Tools

The Tools tab contains utilities to assist in the installation process and updating device firmware.



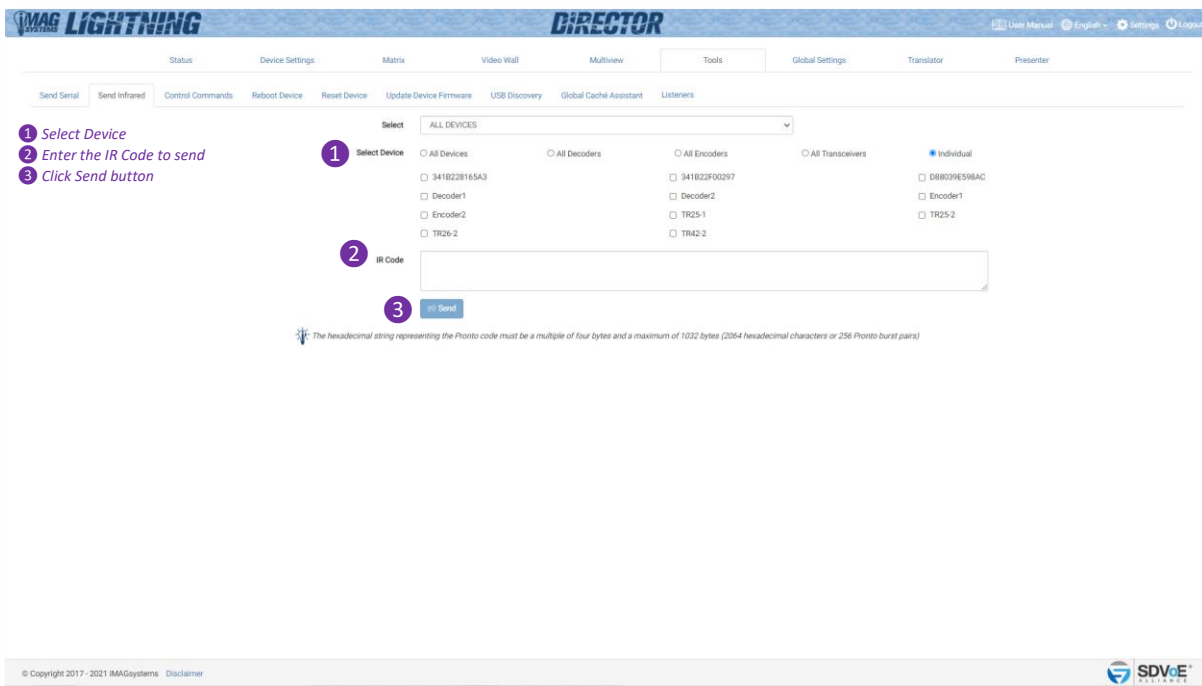
7.1 Send Serial

The Send Serial tab is used to test serial strings being sent from an Encoder or Decoder to 3rd party peripheral devices such as projectors. The Receive mode will indicate the feedback format of the selected device(s).



7.2 Send Infrared

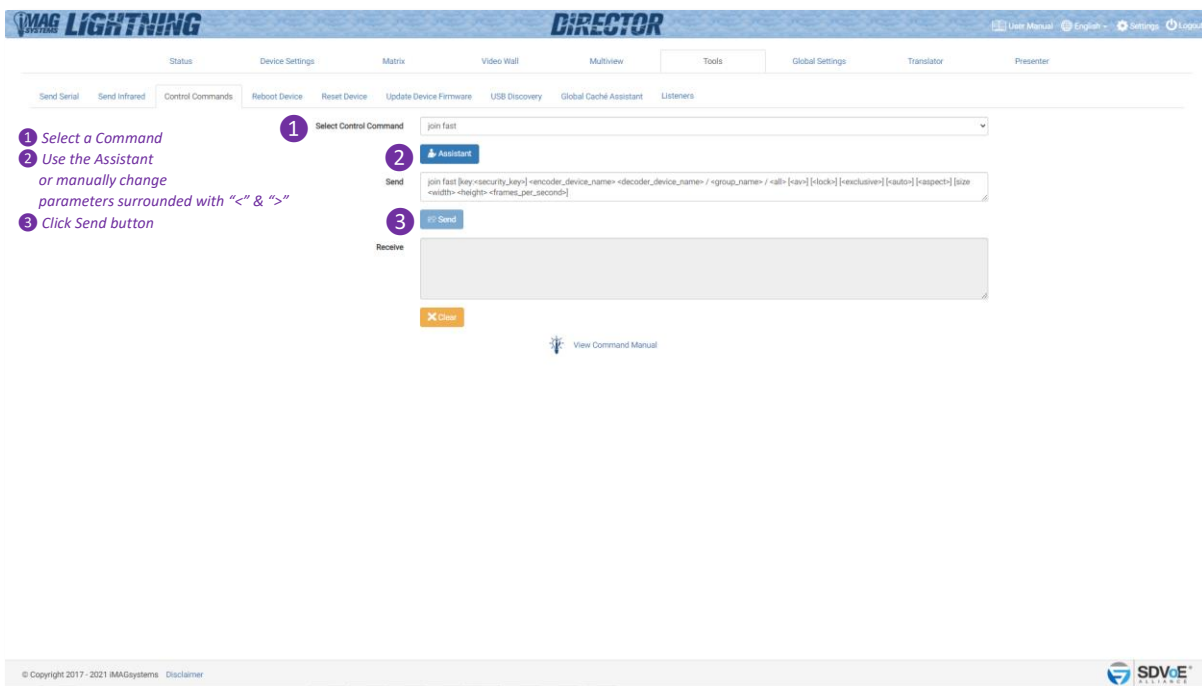
The Send Infrared tab is used to test IR signals being sent from an Encoder or Decoder to 3rd party peripheral devices such as TV's and DVD players.



The screenshot shows the 'Send Infrared' tab in the Director Lightning interface. The interface includes a top navigation bar with 'iMAG SYSTEMS LIGHTNING' and 'DIRECTOR' logos, and a right sidebar with links for 'User Manual', 'English', 'Settings', and 'Logout'. Below the navigation bar, there are several tabs: 'Status', 'Device Settings', 'Matrix', 'Video Wall', 'Multiview', 'Tools', 'Global Settings', 'Translator', and 'Presenter'. The 'Send Infrared' tab is active, showing a 'Select' dropdown menu set to 'ALL DEVICES'. Below this, there are three columns of radio buttons for selecting a device: 'All Devices', 'All Decoders', 'All Encoders', and 'All Transceivers'. The 'Individual' option is selected. Under 'All Decoders', there are checkboxes for 'Decoder1' and 'Decoder2'. Under 'All Encoders', there are checkboxes for 'Encoder1' and 'Encoder2'. Under 'All Transceivers', there are checkboxes for 'TR25-1', 'TR25-2', 'TR26-1', and 'TR26-2'. A text input field labeled 'IR Code' is present, with a note below it stating: 'The hexadecimal string representing the Pronto code must be a multiple of four bytes and a maximum of 1032 bytes (2064 hexadecimal characters or 256 Pronto burst pairs)'. A 'Send' button is located at the bottom right of the form. On the left side of the interface, there are three numbered instructions: 1. Select Device, 2. Enter the IR Code to send, and 3. Click Send button. The footer of the interface includes '© Copyright 2017 - 2021 iMAG Systems Disclaimer' and the 'SDVCE' logo.

7.3 Control Command

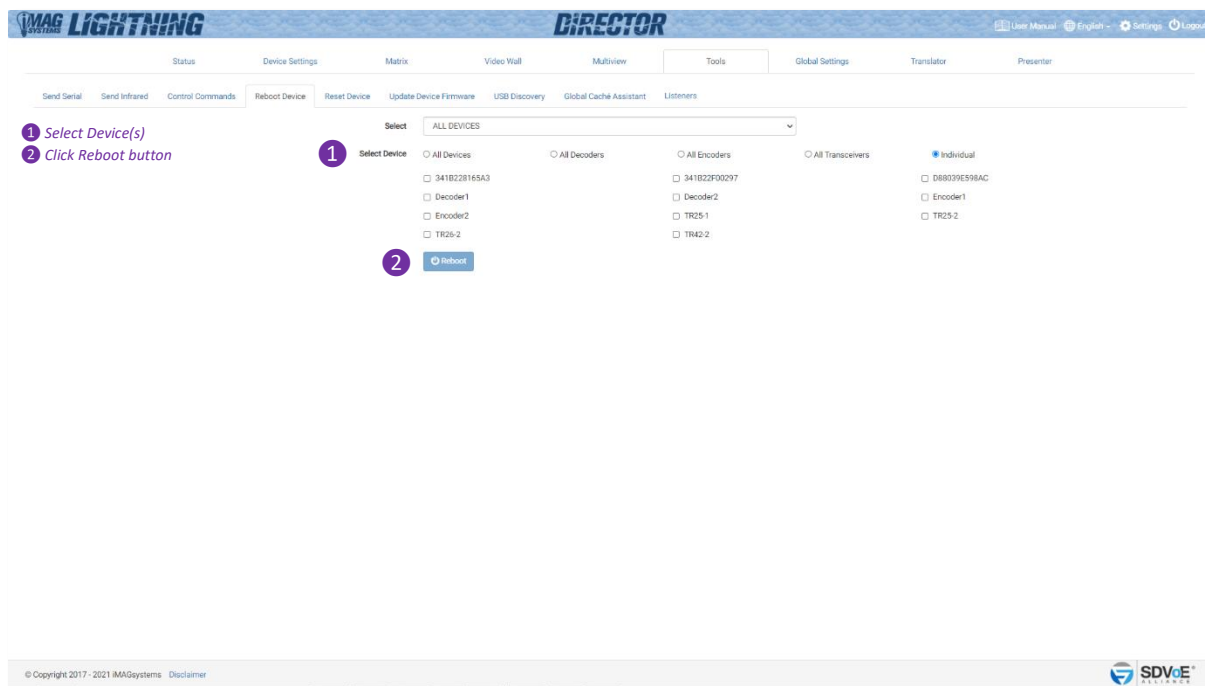
The Control Command tab is used to send any of the API commands available to the system for testing purposes.



The screenshot shows the 'Control Command' tab in the Director Lightning interface. The interface is similar to the previous one, with the same top navigation bar and sidebar. The 'Control Command' tab is active, showing a 'Select Control Command' dropdown menu set to 'join fast'. Below this, there are three numbered instructions: 1. Select a Command, 2. Use the Assistant or manually change parameters surrounded with "<" & ">", and 3. Click Send button. A 'Send' button is located at the bottom right of the form. The 'Receive' section is empty. The footer of the interface includes '© Copyright 2017 - 2021 iMAG Systems Disclaimer' and the 'SDVCE' logo.

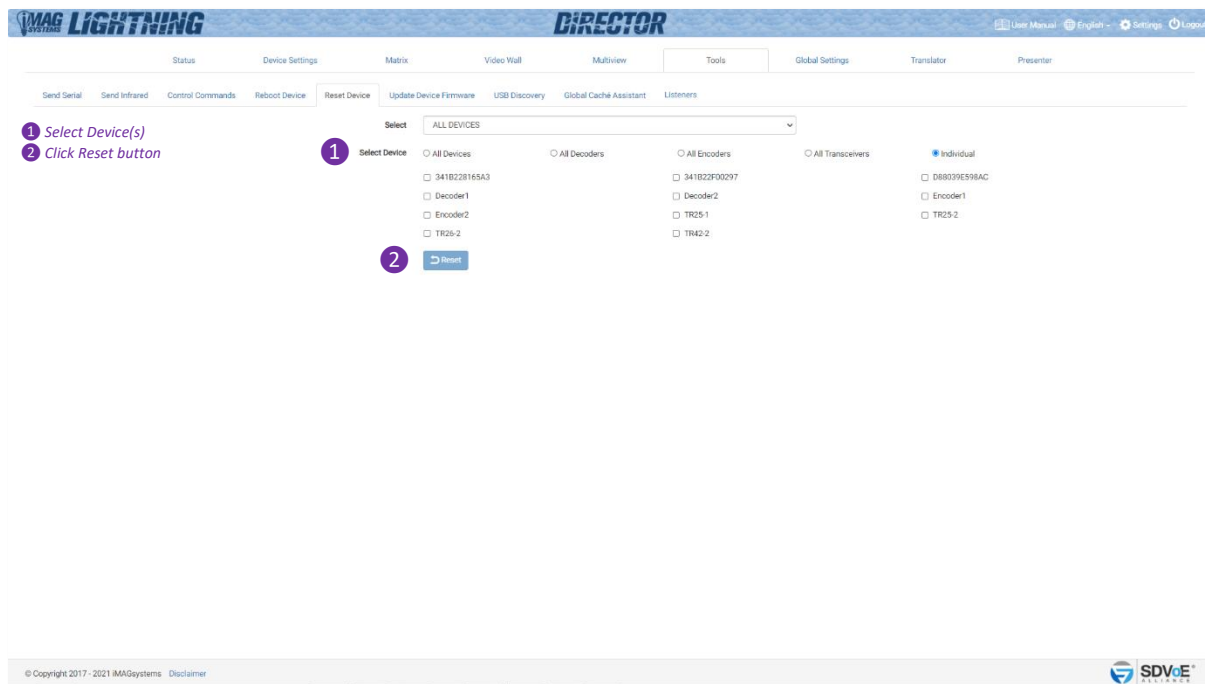
7.4 Reboot Device

The Reboot Device tab is used to reboot the selected device(s).



7.5 Reset Device

The Reset Device tab is used to reset the selected device(s) back to factory defaults.

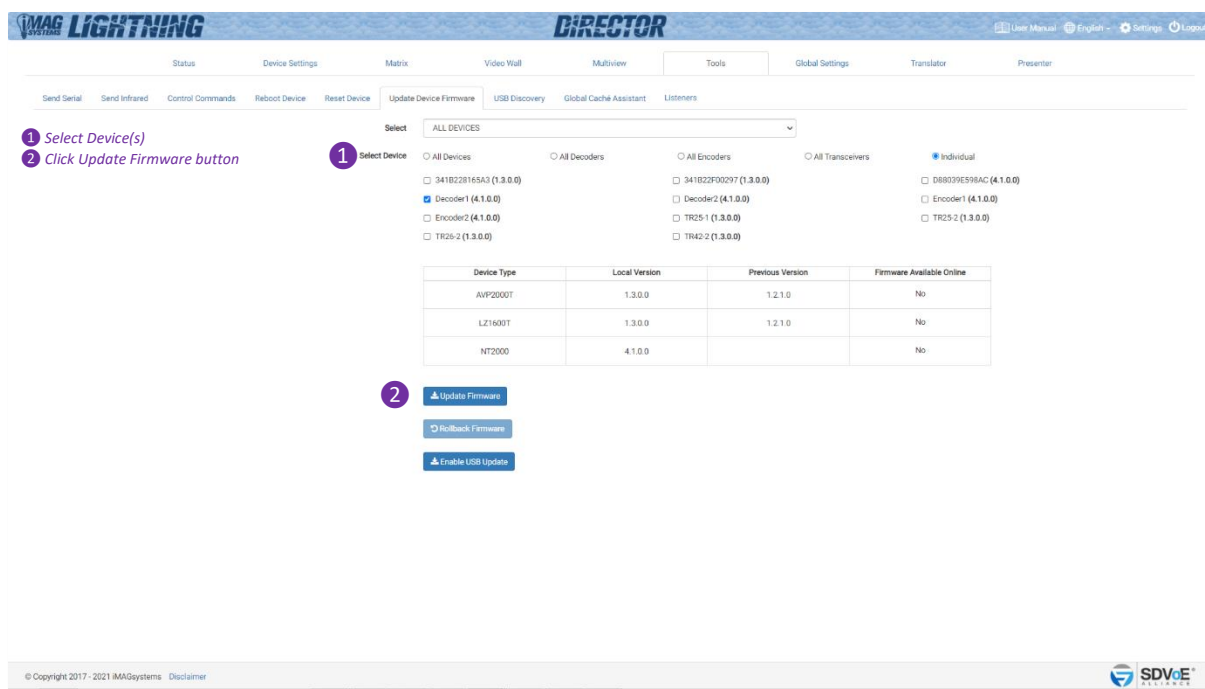


7.6 Update Device Firmware

The Update Device Firmware tab is used to update the AVP or Icron USB firmware of Encoders and Decoders. Here you can also check for updated AVP firmware from the internet when the SDVoE Director Controller has access. If a previous version of AVP firmware is on the system then rolling back the device firmware is also possible.

7.6.1 Update Device Firmware

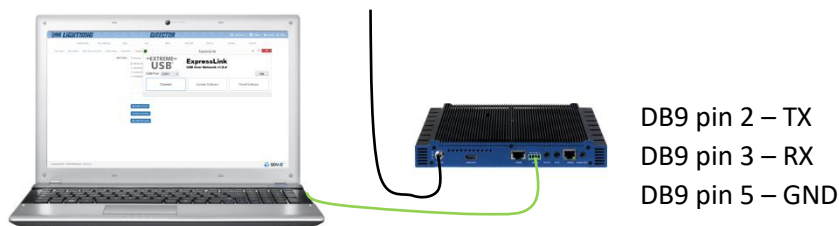
AVP firmware is the device firmware for Encoders and Decoders.



7.6.1 Update Icron USB Firmware

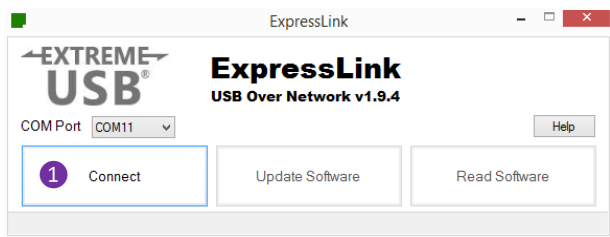
Updating the Icron USB firmware of an Encoder or Decoder requires the use of an Icron firmware updater application. Firmware is updated via the Encoder's or Decoder's RS232 serial port. Icron USB firmware can only be applied to a single unit at a time.

Connect a serial cable from a PC to the Encoder's or Decoder's serial port.

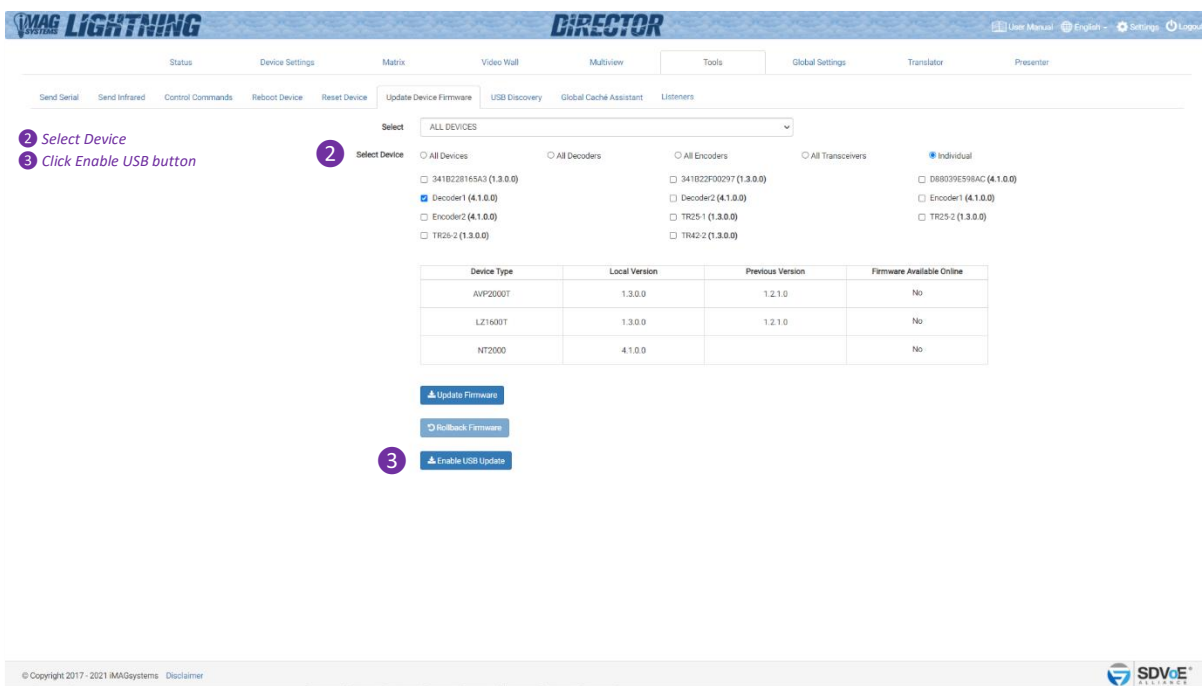


7.6.1 Update Icron USB Firmware continued...

Run the Icron USB firmware update application on the PC. Select your COM Port and click Connect.

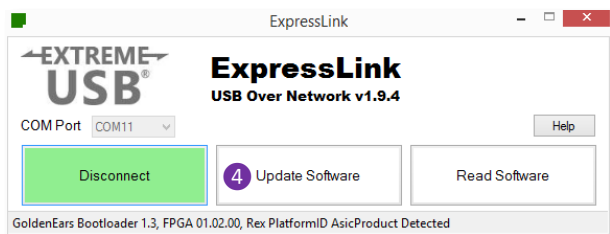


Next, enable USB update.



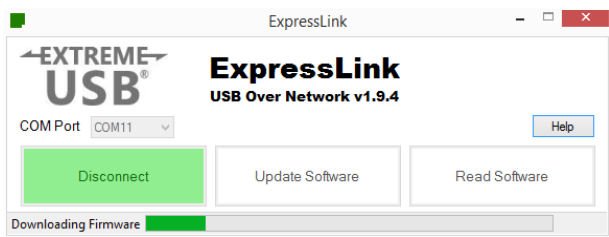
The Icron USB firmware update application will then enter boot loader mode.

Next, click the Update Software button.

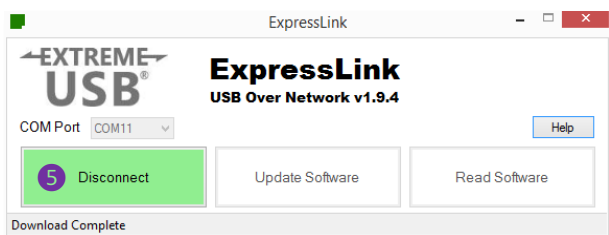


7.6.1 Update Icron USB Firmware continued...

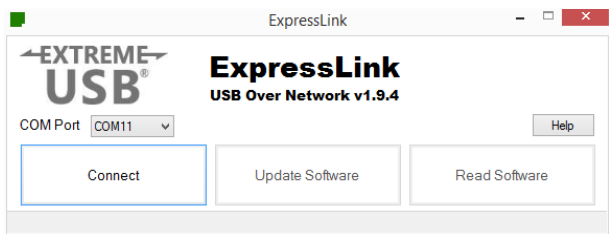
The firmware will be uploaded to the device.



When complete click the Disconnect button.

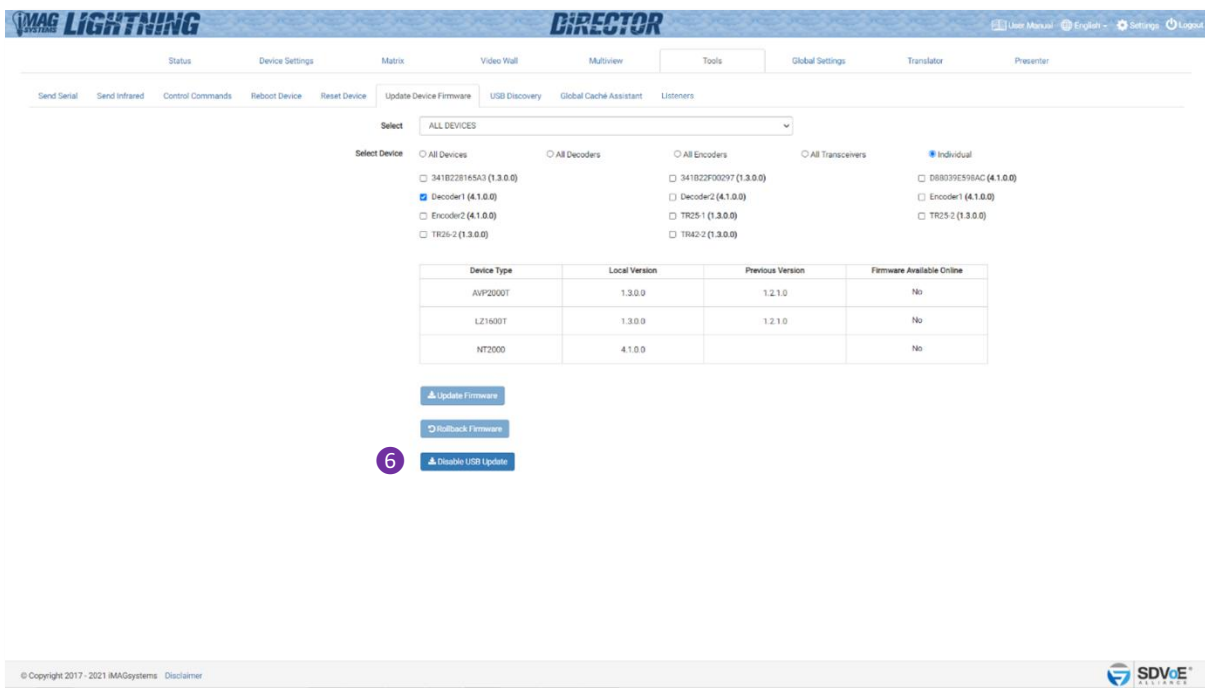


The Icron USB firmware update application will return to its initial state.

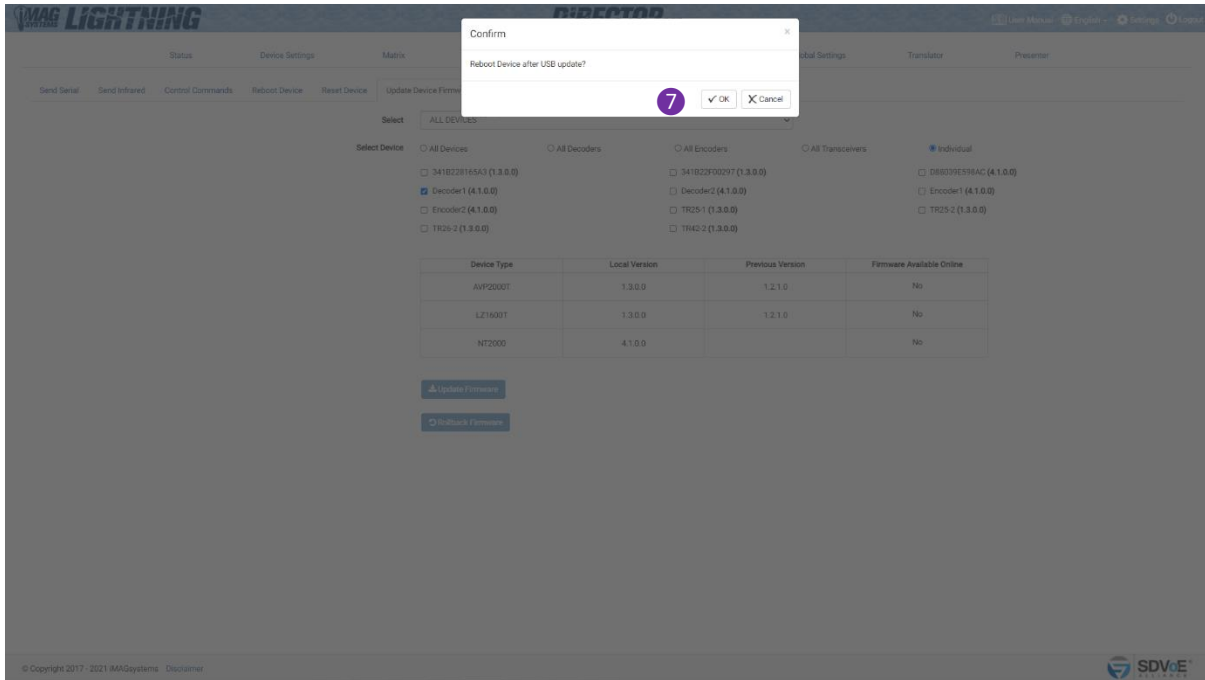


7.6.1 Update Icron USB Firmware continued...

Next, click the Disable USB Update button.



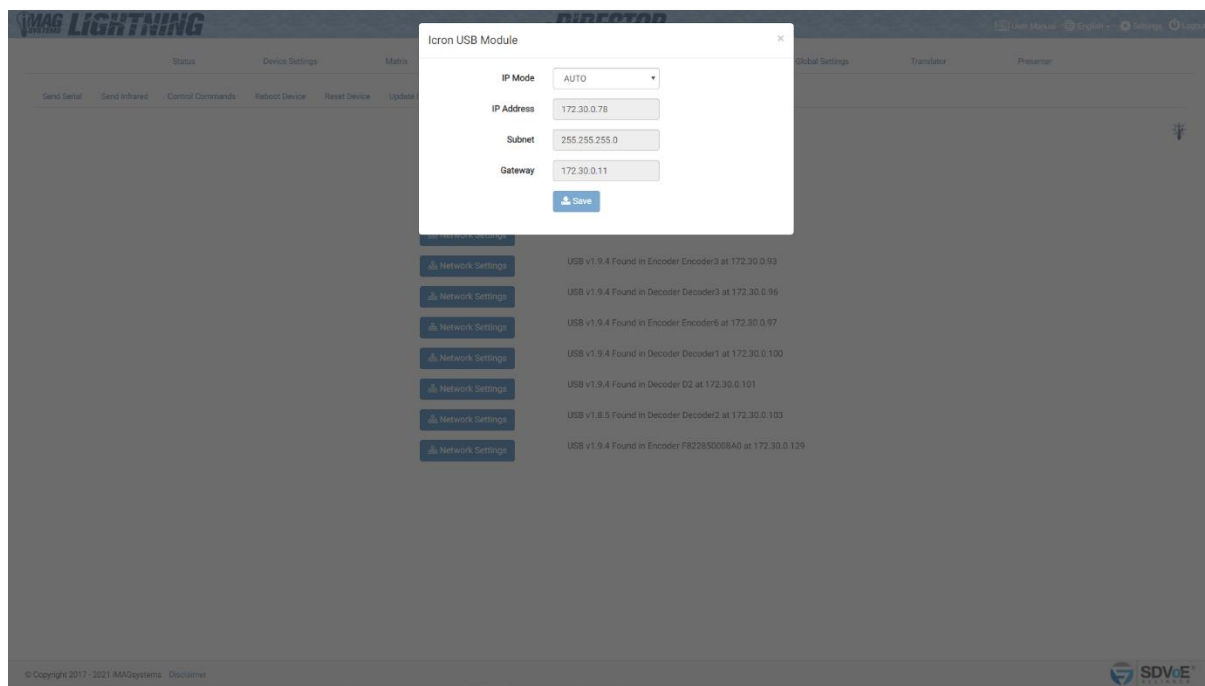
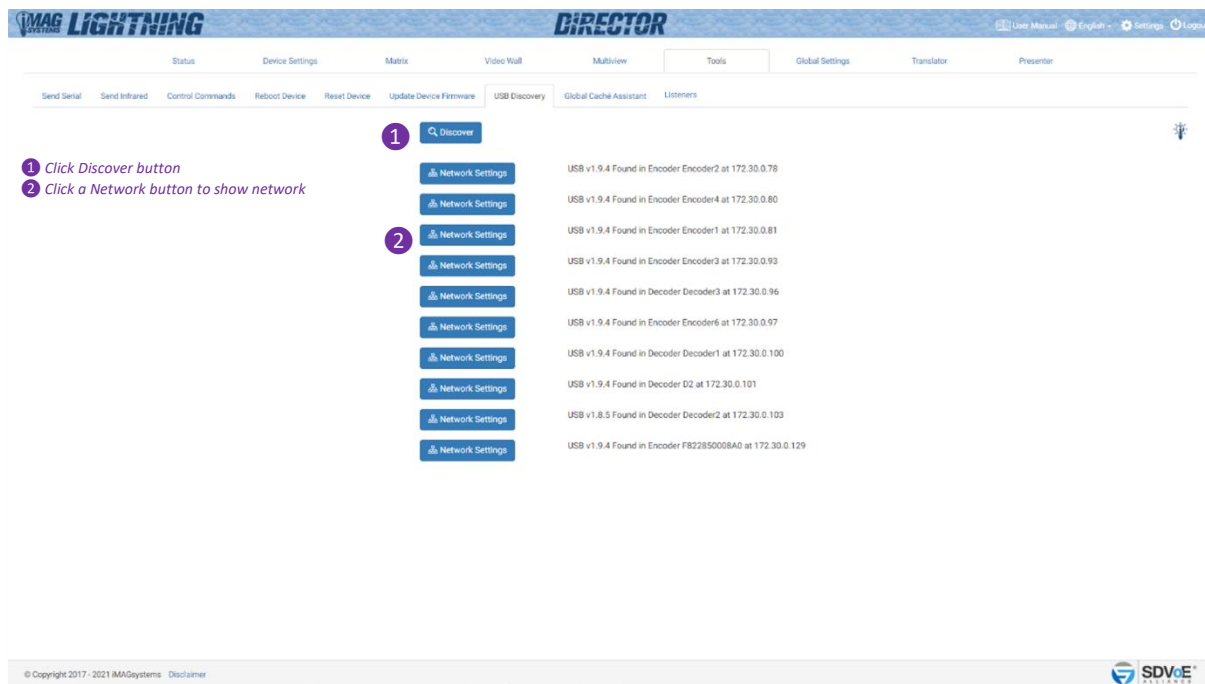
Finally, click the OK button to reboot the device.



7.7 USB Discovery

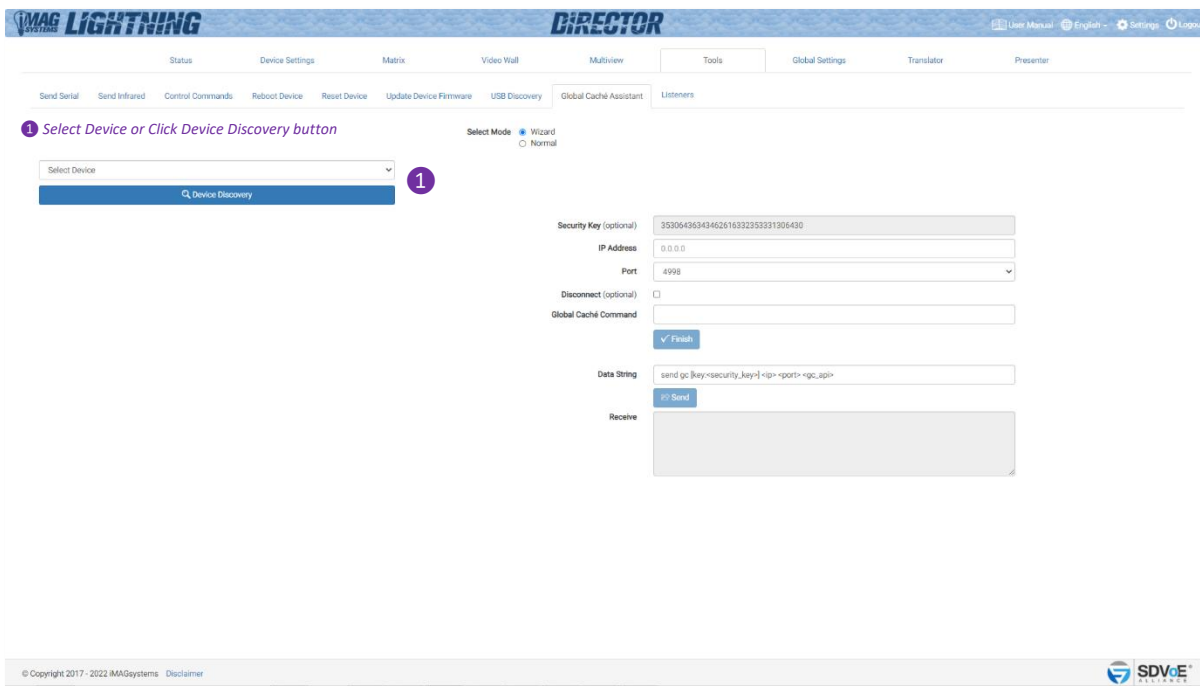
The USB Discovery tab is used to help find undiscovered Icron USB modules that might be out of range from the rest of the system or have incompatible firmware version. This not for USB HID. If the Icron USB module has had a static IP applied then it will not respond when on a different subnet to the SDVoE Director Controller (for example controller IP 169.254.1.1 and USB module IP 192.168.1.222). The SDVoE Director Controllers IP might need to be set to the same range as the Icron USB module before it can be found.

* Icron USB modules must have at least version 1.8.5 firmware to be compatible with this system.



7.8 Global Caché Assistant (Licensed feature)

The Global Caché Assistant is used to discover Global Caché devices on the network to configure or control them. The assistant will help create the command **send gc** to control the devices via the API.



1 Select Device or Click Device Discovery button

Select Mode: ☒ Wizard ☐ Normal

Select Device: **Device Discovery**

Security Key (optional): 3530643634346261632253331306430

IP Address: 0.0.0.0

Port: 4998

Disconnect (optional): ☐

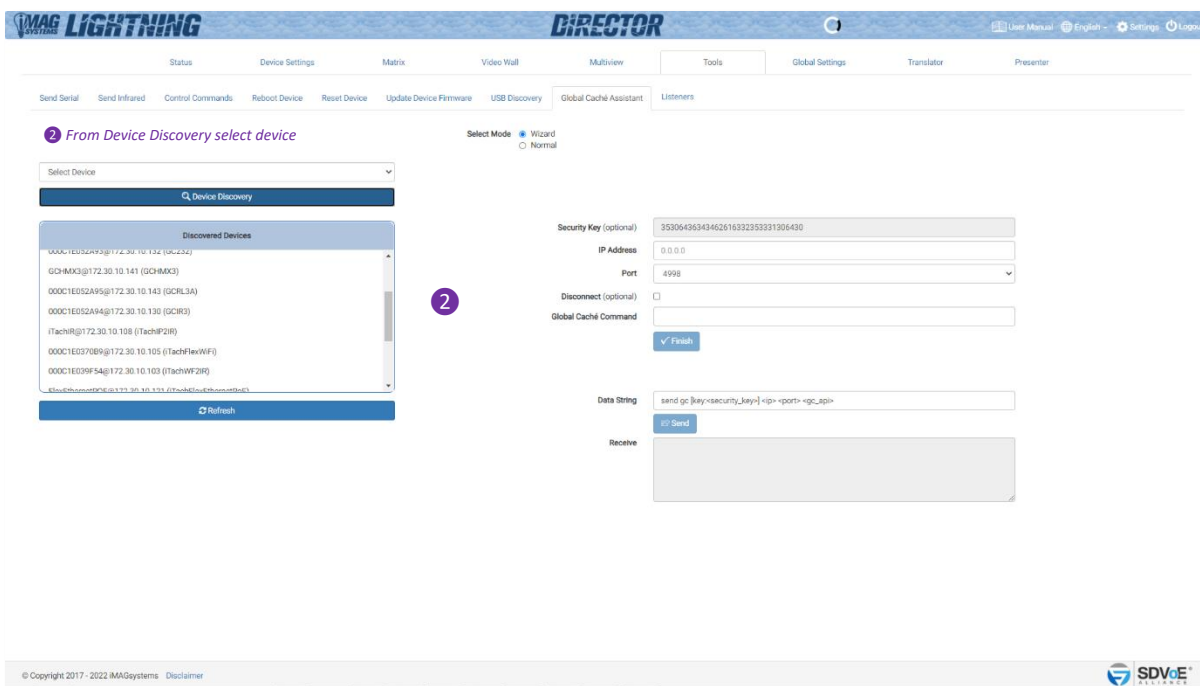
Global Caché Command: **Finish**

Data String: send gc [key=<security_key>] <ip> <port> <gc_api>

Send

Receive:

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2 From Device Discovery select device

Select Mode: ☒ Wizard ☐ Normal

Select Device: **Device Discovery**

Discovered Devices

- MAC: 1E032A95@172.30.10.141 (GC-RM03)
- 000C1E032A95@172.30.10.143 (GC-RL3A)
- 000C1E032A94@172.30.10.130 (GC-R3)
- ITachR@172.30.10.108 (ITachP2IR)
- 000C1E0370B9@172.30.10.105 (ITachFlexWF)
- 000C1E039F54@172.30.10.103 (ITachWF2IR)
- 65c4b2b000000000@172.30.10.131 (ITachM2Cofdbconatt0000)

Refresh

Security Key (optional): 3530643634346261632253331306430

IP Address: 0.0.0.0

Port: 4998

Disconnect (optional): ☐

Global Caché Command: **Finish**

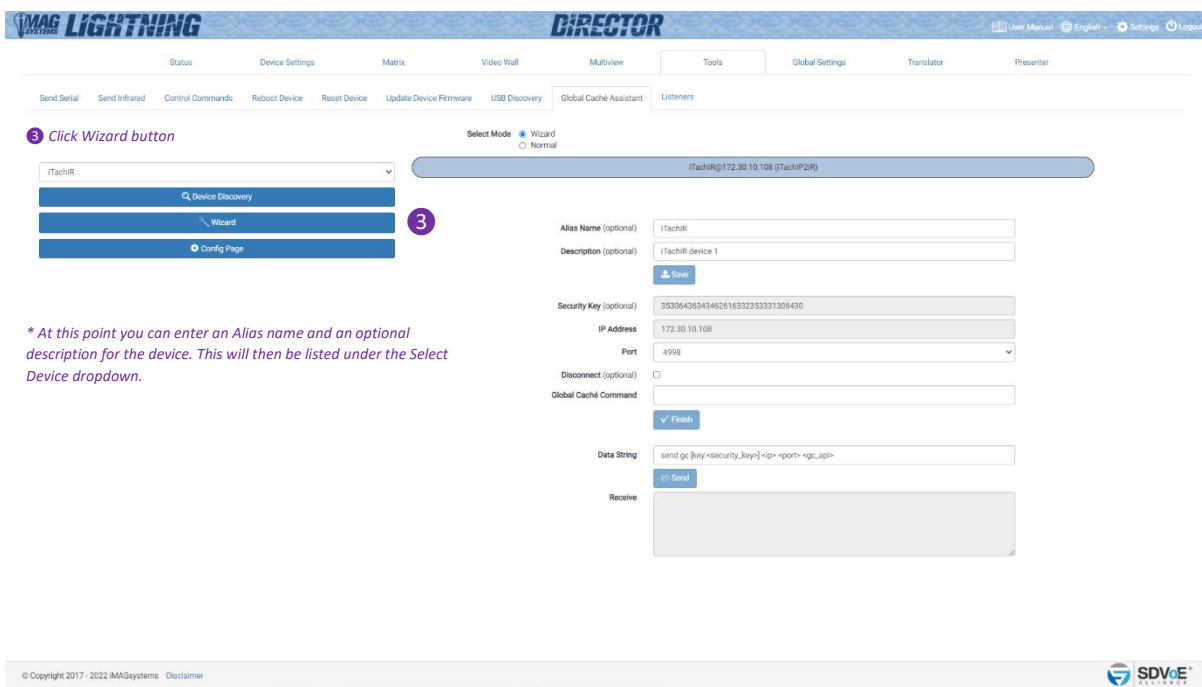
Data String: send gc [key=<security_key>] <ip> <port> <gc_api>

Send

Receive:

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7.8 Global Caché Assistant continued...



3 Click Wizard button

Select Mode: ☒ Wizard ☐ Normal

ITachIR

Device Discovery

Wizard

Config Page

3

Alias Name (optional): ITachIR

Description (optional): ITachIR device 1

Save

Security Key (optional): 353064363434626163323333106430

IP Address: 172.30.10.108

Port: 4998

Disconnect (optional): ☐

Global Caché Command:

Finish

Data String: send gc <key> <security_key> <ip> <port> <gc_app>

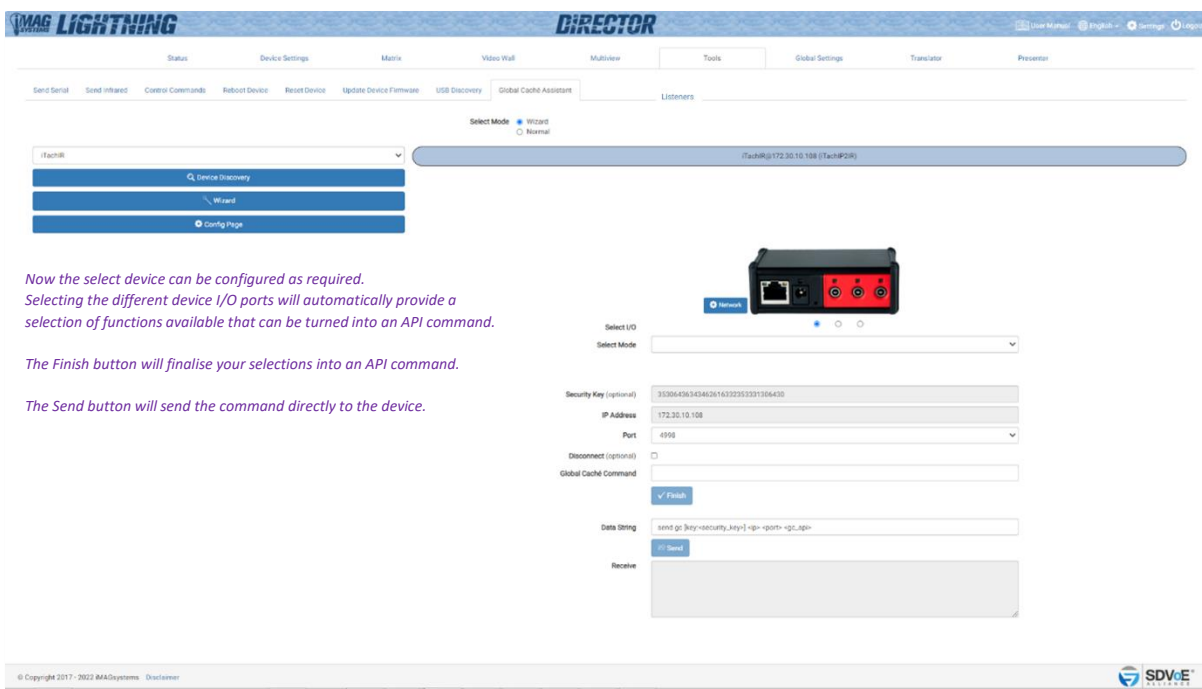
Send

Receive:

* At this point you can enter an Alias name and an optional description for the device. This will then be listed under the Select Device dropdown.

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SDVoE



Now the select device can be configured as required. Selecting the different device I/O ports will automatically provide a selection of functions available that can be turned into an API command.

The Finish button will finalise your selections into an API command.

The Send button will send the command directly to the device.

Select I/O: Network

Select Mode: ☒ Wizard ☐ Normal

ITachIR

Device Discovery

Wizard

Config Page

Alias Name (optional): ITachIR

Description (optional): ITachIR device 1

Save

Security Key (optional): 353064363434626163323333106430

IP Address: 172.30.10.108

Port: 4998

Disconnect (optional): ☐

Global Caché Command:

Finish

Data String: send gc <key> <security_key> <ip> <port> <gc_app>

Send

Receive:

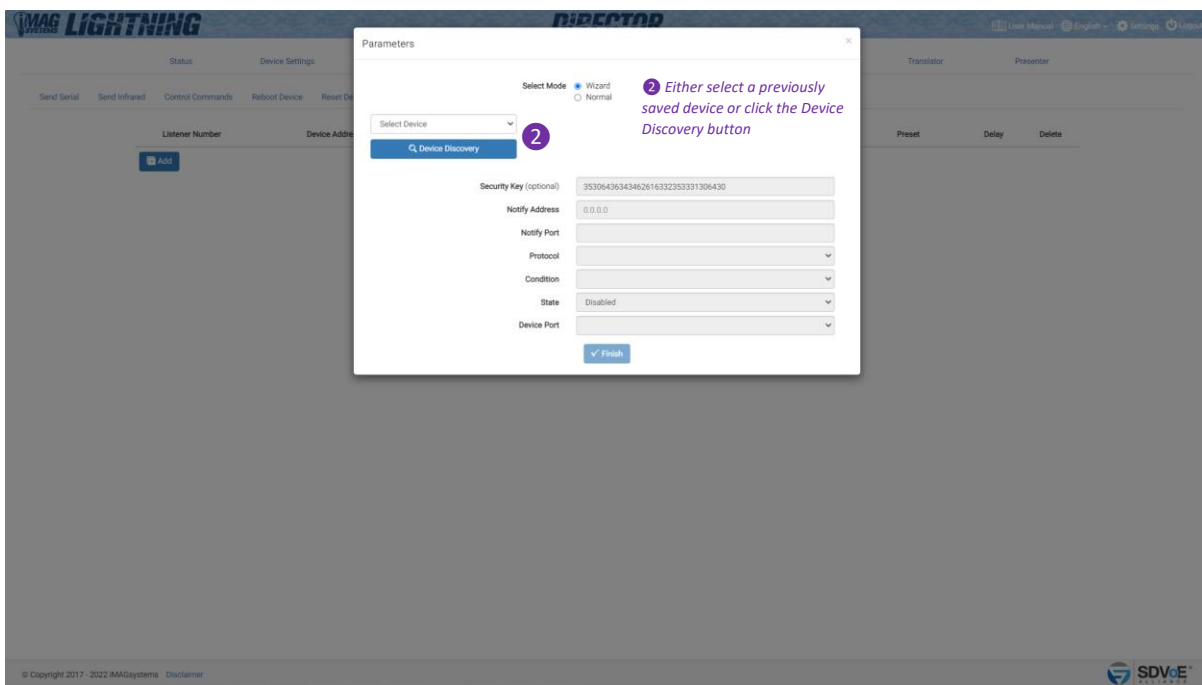
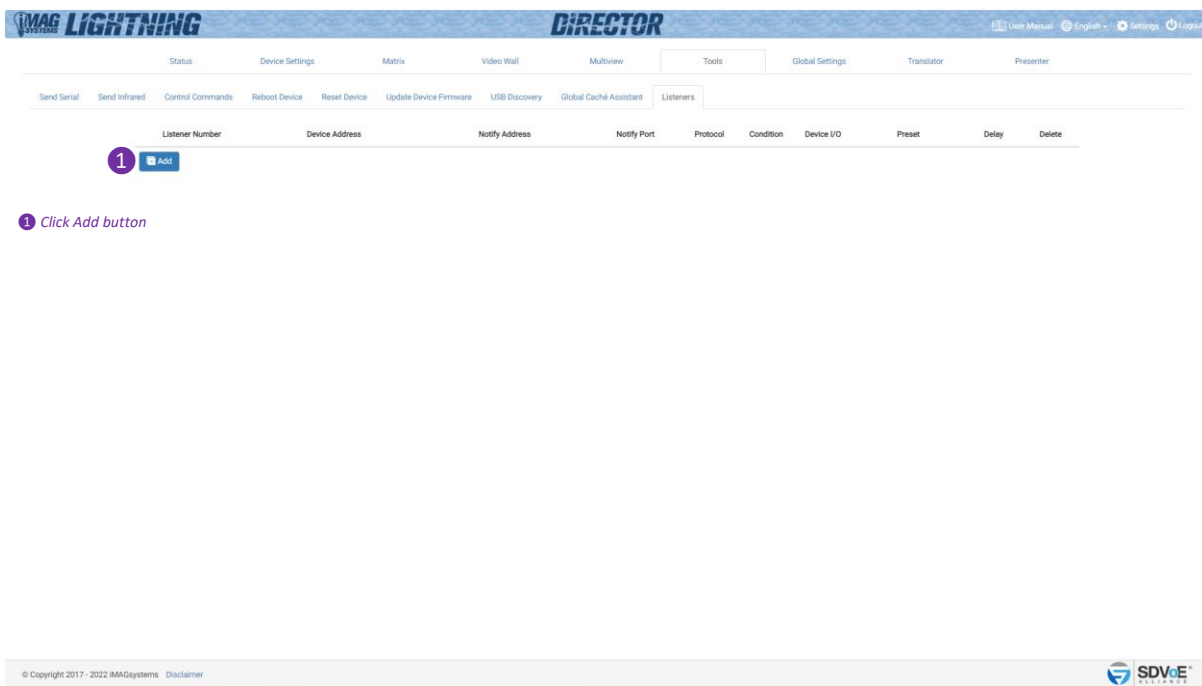
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SDVoE

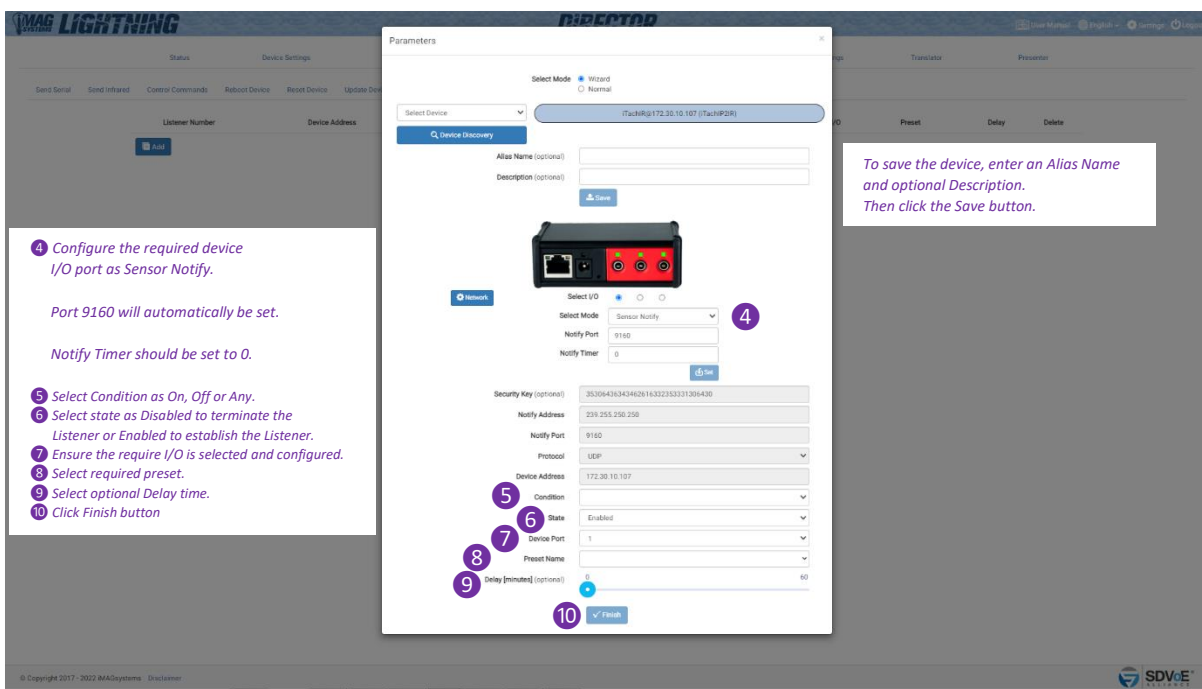
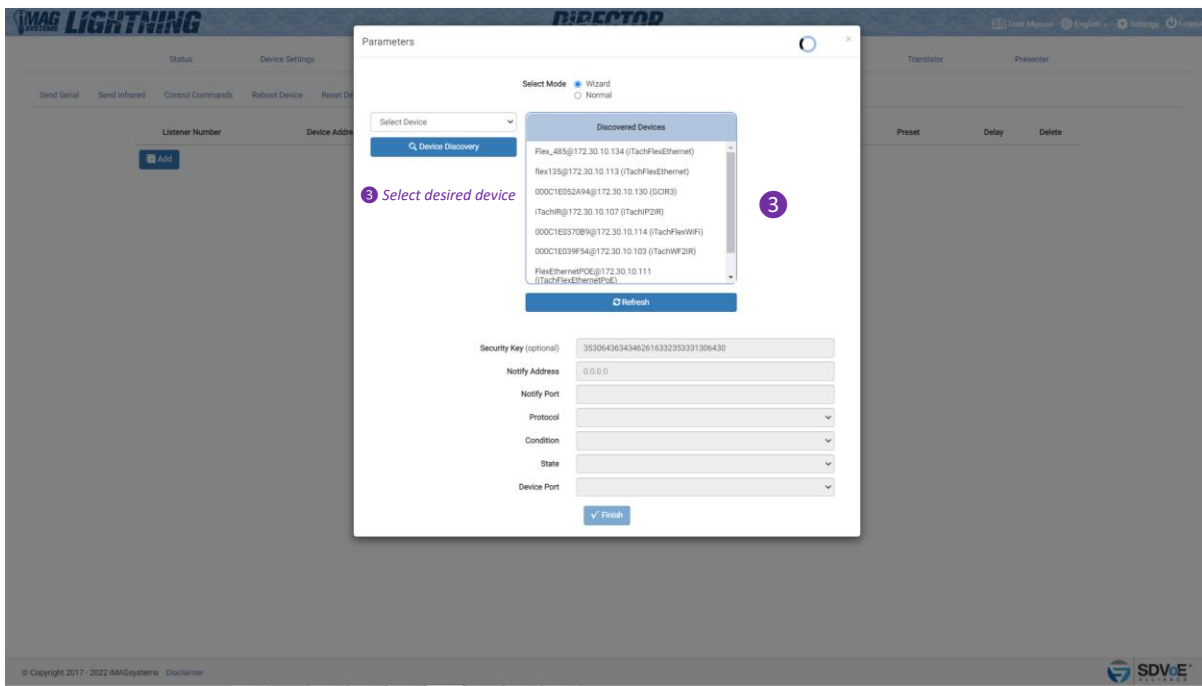
7.9 Listeners

The Listeners are Global Caché functions to apply presets when 'sensor' notifications are received from a Global Caché device as the sensor input state changes.

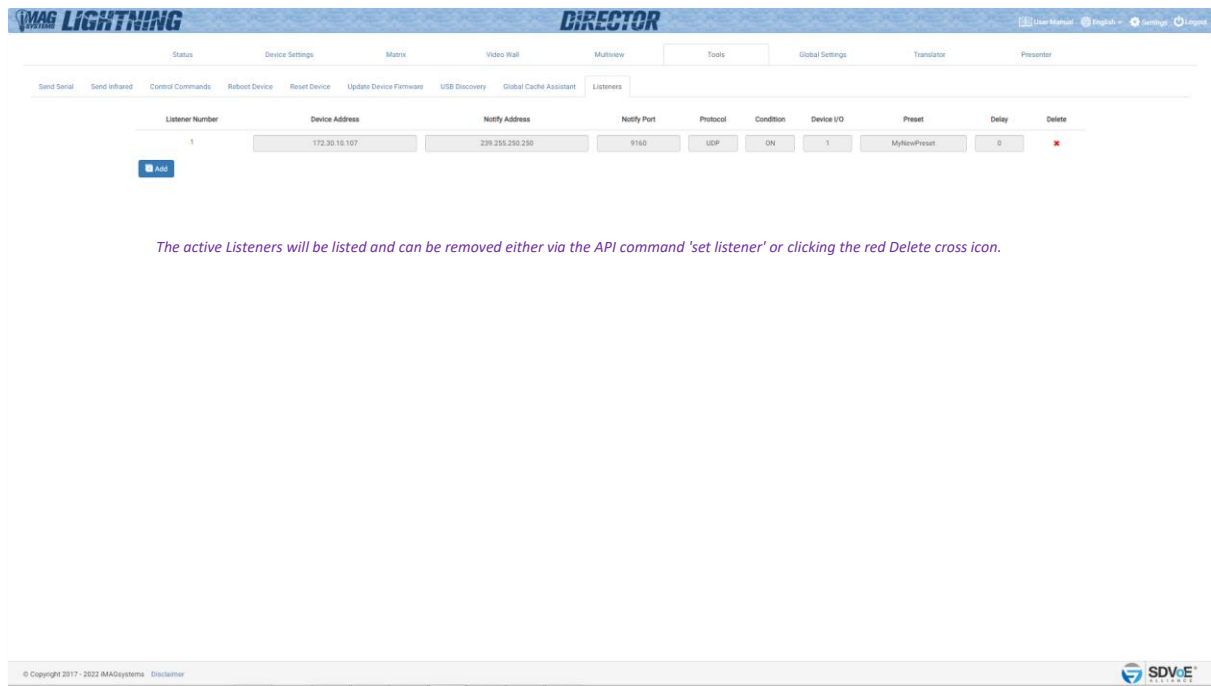
The listeners can be established either via the API command 'set listener' or directly from here.



7.9 Listeners continued...



7.9 Listeners continued...



The following Global Caché devices are supported:

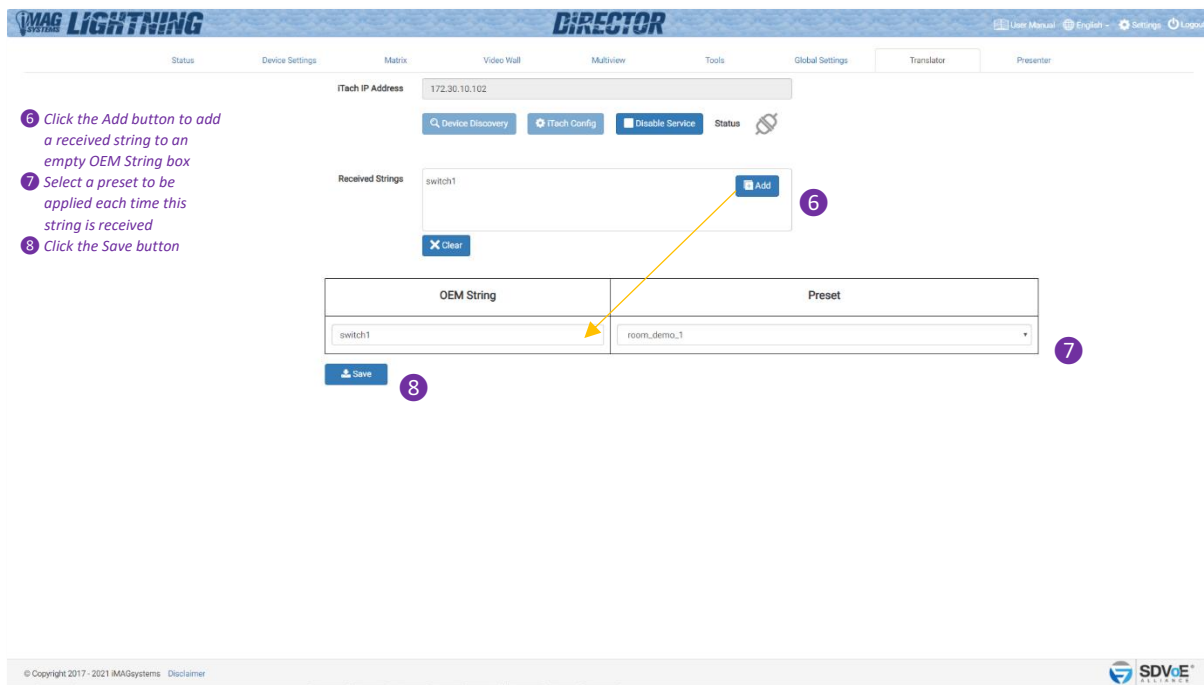
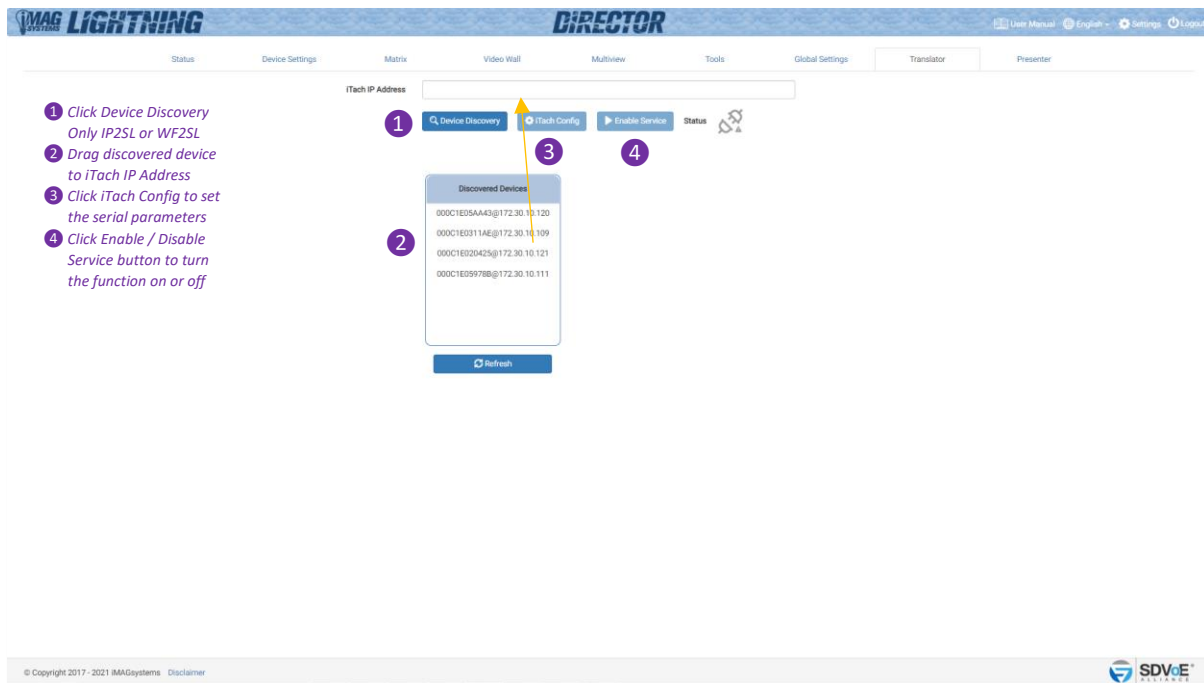
- iTach WF2IR
- iTach IP2IR
- iTach Flex *with Relay/Sensor cable attached*
- Global Connect GCIR3

Devices will be automatically configured to use UDP notification port 9160.

Networks must be configured to pass UDP Multicast traffic from 239.255.250.250.

8 Translator

Translator allows an obsolete Matrix to be replaced without reprogramming the control system. The SDVoE Director Controller can listen for serial RS232 (via Global Caché iTach IP2SL or WF2SL) commands and then trigger a preset.



From 3rd party serial controller

9 Presenter

Presenter uses physical buttons with Global Caché iTach Flex devices along with a FLC-RS cable or virtual buttons to control the switching of video in a presentation environment. Up to four (4) Global Caché iTach Flex devices can be added to the system each with four (4) button positions, so a maximum of sixteen (16) buttons can be added to the system. Buttons are assigned to a specific group to interact with each other.

For each button a Start Preset and a Stop Preset needs to be created first. A Start Preset would usually just consist of a simple join command such as *join fast Encoder1 Decoder1 auto*. The Stop Preset would usually just consist of a simple stop command such as *stop av Encoder1* or a leave command such as *leave av Decoder1*.

Virtual buttons are presented as a webpage that can be viewed with a browser on any device and also provide a moderator control panel to take full control over the presentation. Each group of buttons will have its own moderator control panel available which shows all the button in the group on a single page. The moderators control panel works in Instant mode and any waiting buttons will be cleared.

Each group of buttons can be enabled or disabled as required from the UI under Group Status and via the API with command set presenter <group> <state>.

The system has two (2) modes of operation, **Instant Mode** and **Cueing Mode**.

Instant mode works as follows:

When nobody is presenting all button lights are off. When any button is initially pressed the buttons Start Preset will be activated and the button light is turned on. Press the same button again and the buttons Stop Preset will be activated and the button light turned off.

When somebody is already presenting, a press of another button will turn the active button light off, activate the pressed buttons Start Preset and turn the button light on.

Cueing mode works as follows:

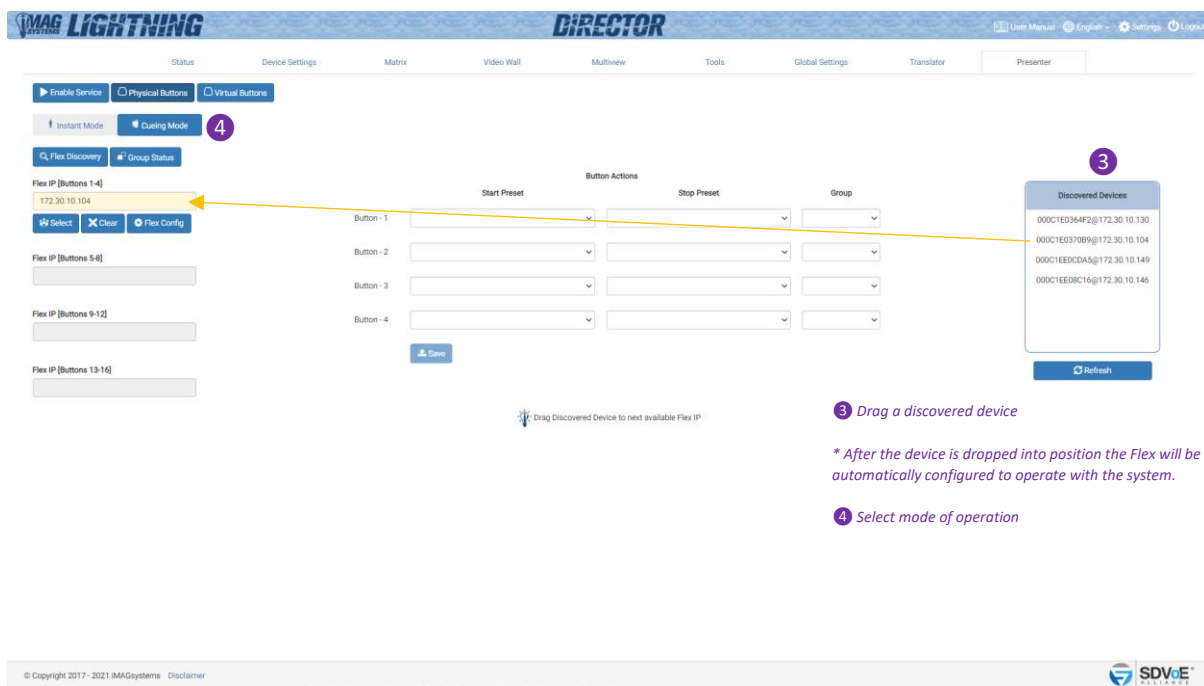
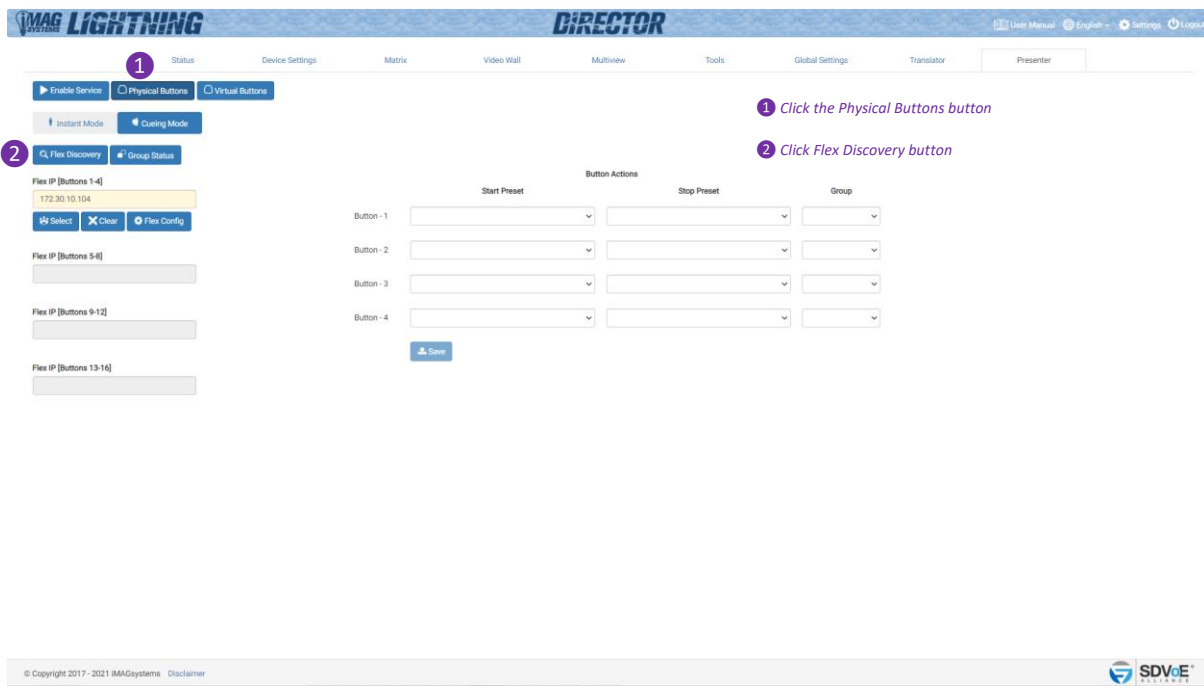
When nobody is presenting all button lights are off. When any button is initially pressed the buttons Start Preset will be activated and the button light is turned on, if the same button is pressed again the buttons Stop Preset will be activated and the buttons light will be turned off.

When somebody is already presenting, a press of another button in the same group will cause its button light to start flashing, this indicates a waiting state. When the presenting person has finished they will press their button again which will turn off their button light and the waiting buttons Start Preset will be applied and the button light will stop flashing and be turned on constantly.

This mode provides one active button and only one waiting button. When there is an active button the next button pressed (other than the active button) is waiting and will take over from any other waiting button.

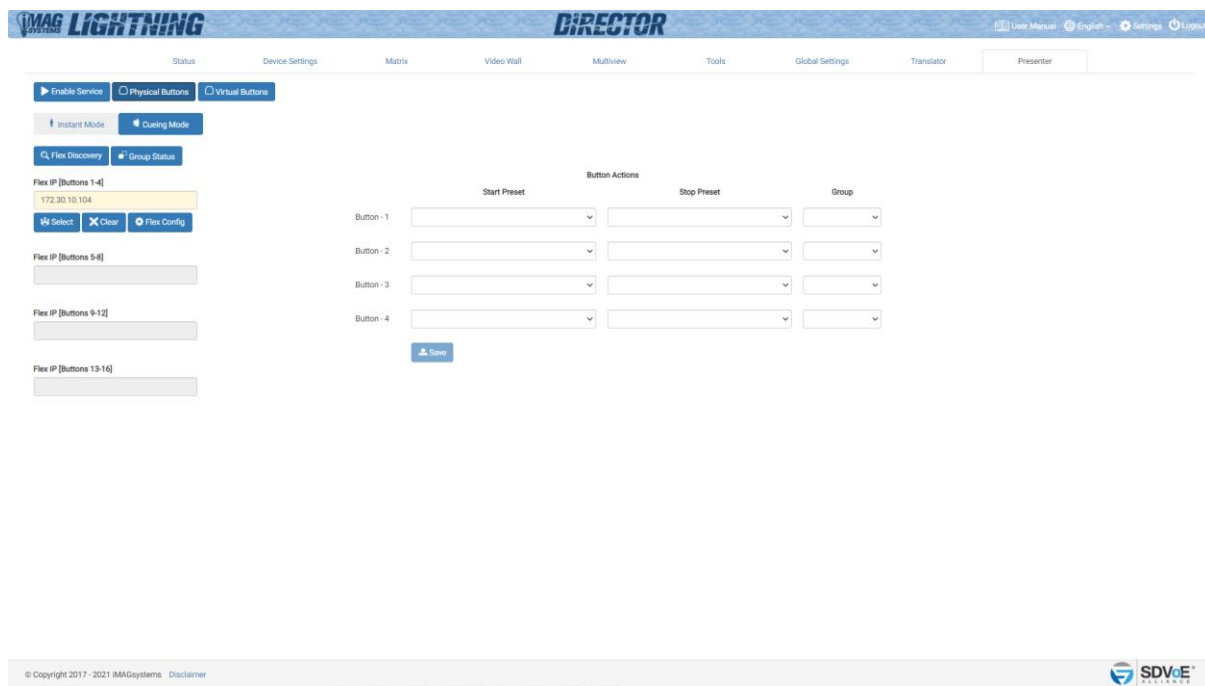
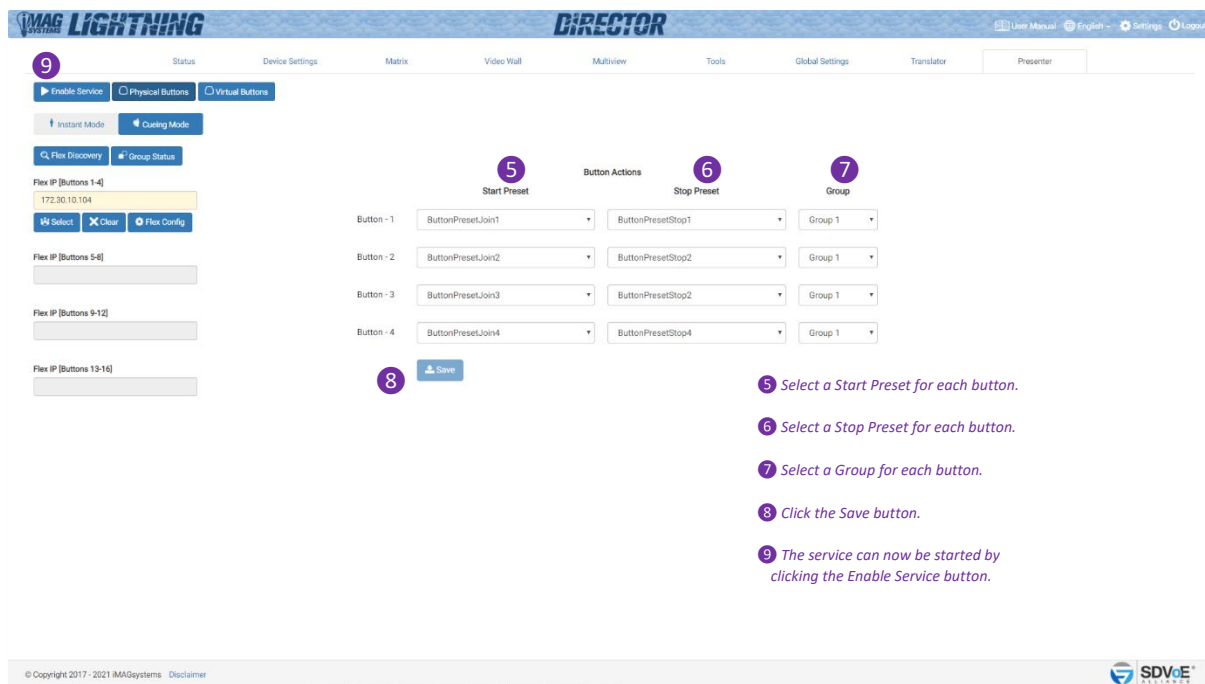
9 Presenter continued...

The following shows the configuration of physical buttons using Global Caché Flex accessible by clicking the Physical Buttons button:



9 Presenter continued...

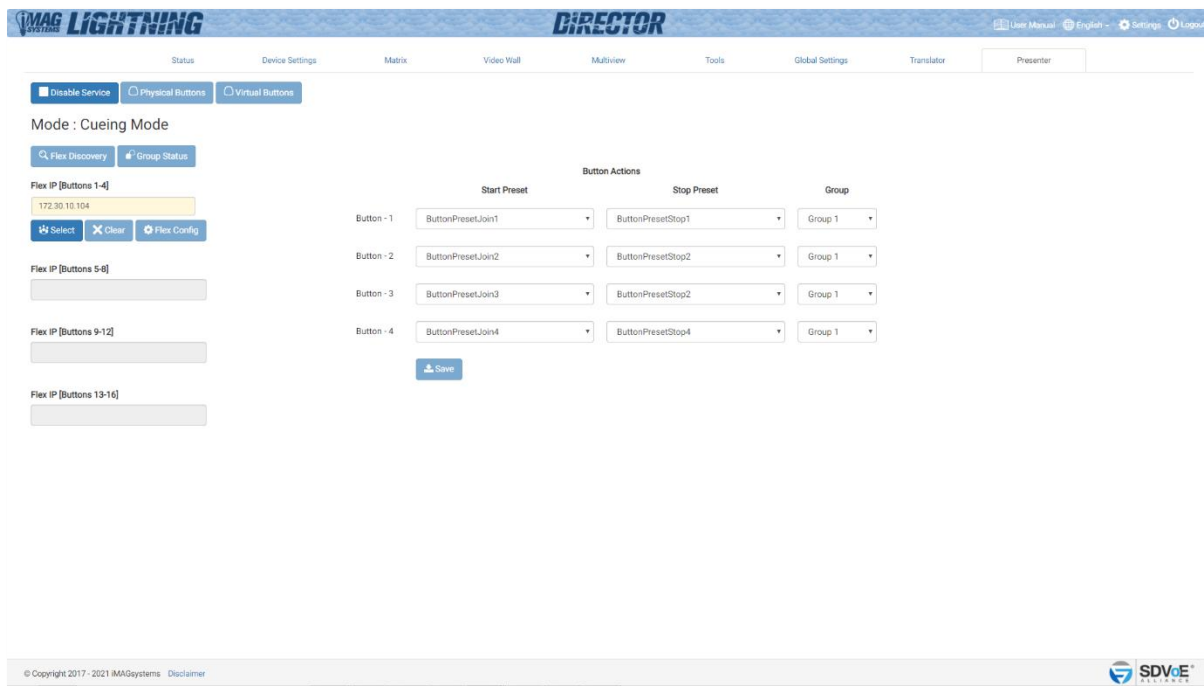
Once the iTach Flex device has been configured presets can be assigned to the buttons.

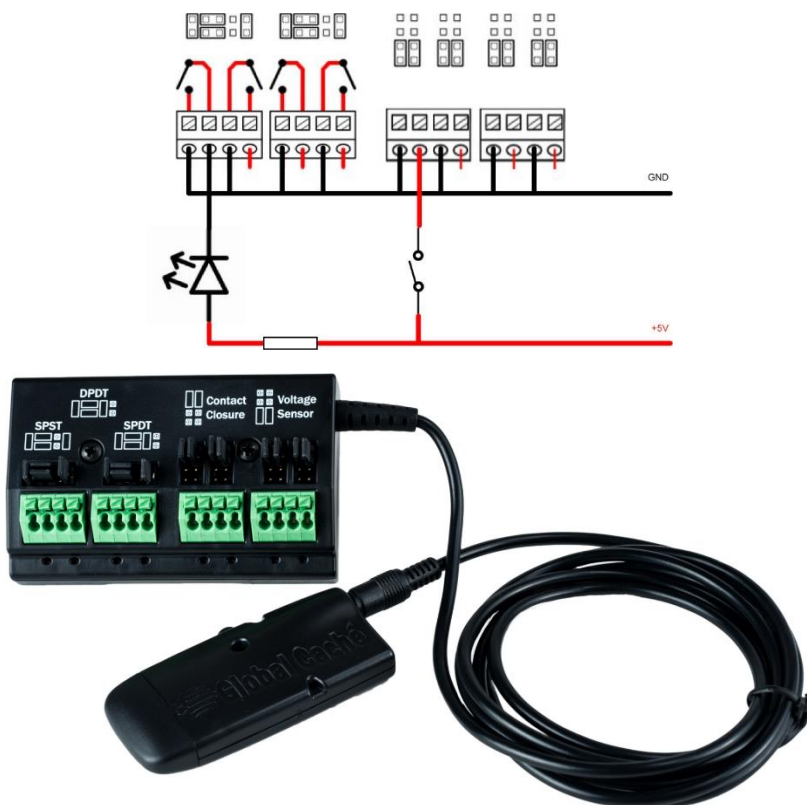
- 5 Select a Start Preset for each button.
- 6 Select a Stop Preset for each button.
- 7 Select a Group for each button.
- 8 Click the Save button.
- 9 The service can now be started by clicking the Enable Service button.

9 Presenter continued...

Now the service is running and the buttons can be used. To stop the service simple click the Disable Service button.

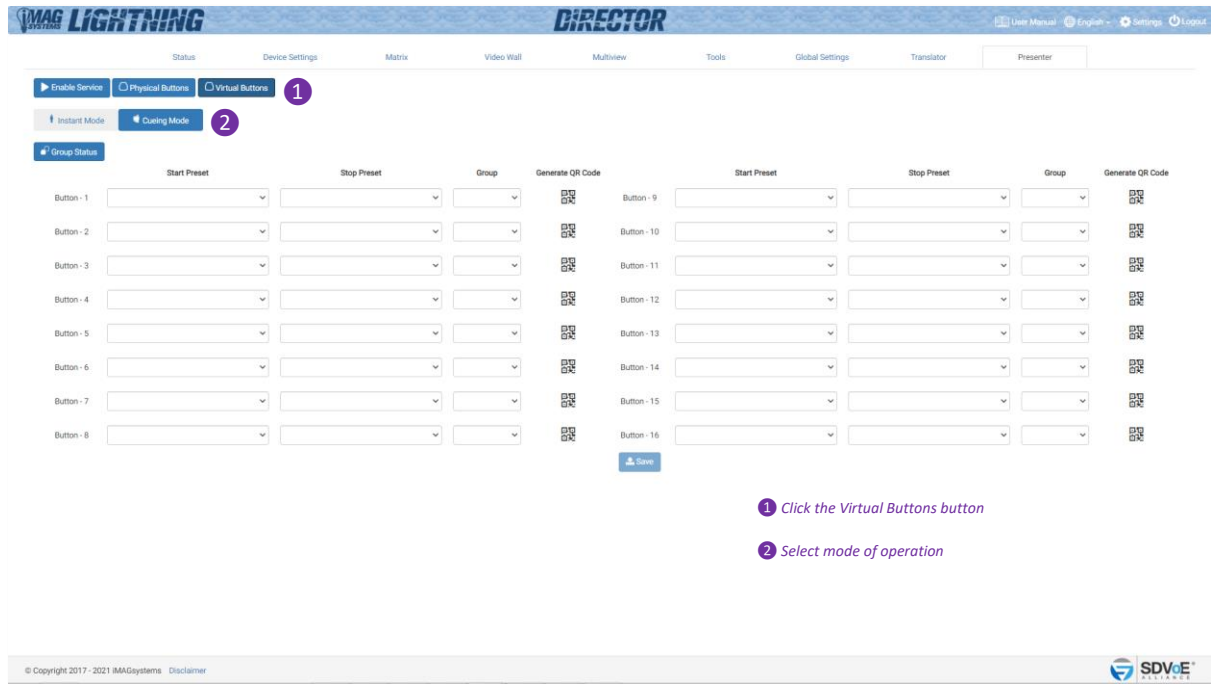


Below is an example for wiring an illuminated button to the FLC-RS cable.



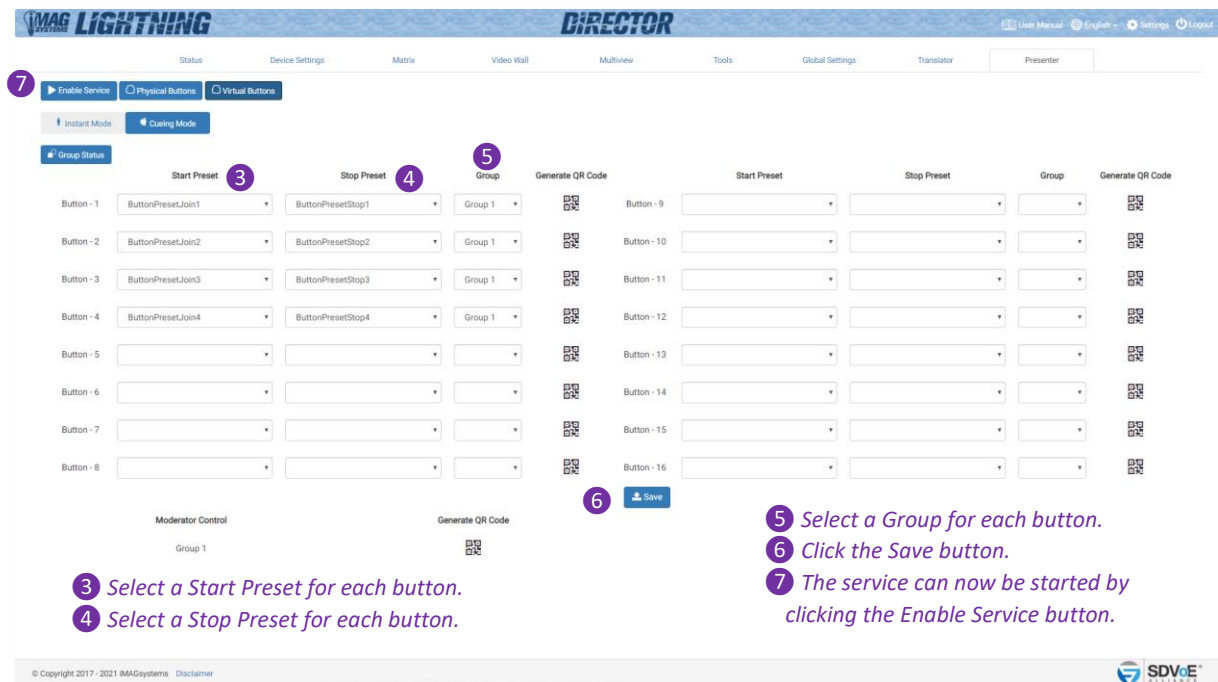
9 Presenter continued...

The following shows the configuration of virtual buttons by clicking the Virtual Buttons button:



1 Click the Virtual Buttons button

2 Select mode of operation



3 Select a Start Preset for each button.

4 Select a Stop Preset for each button.

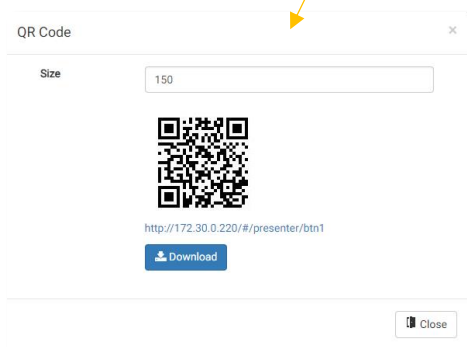
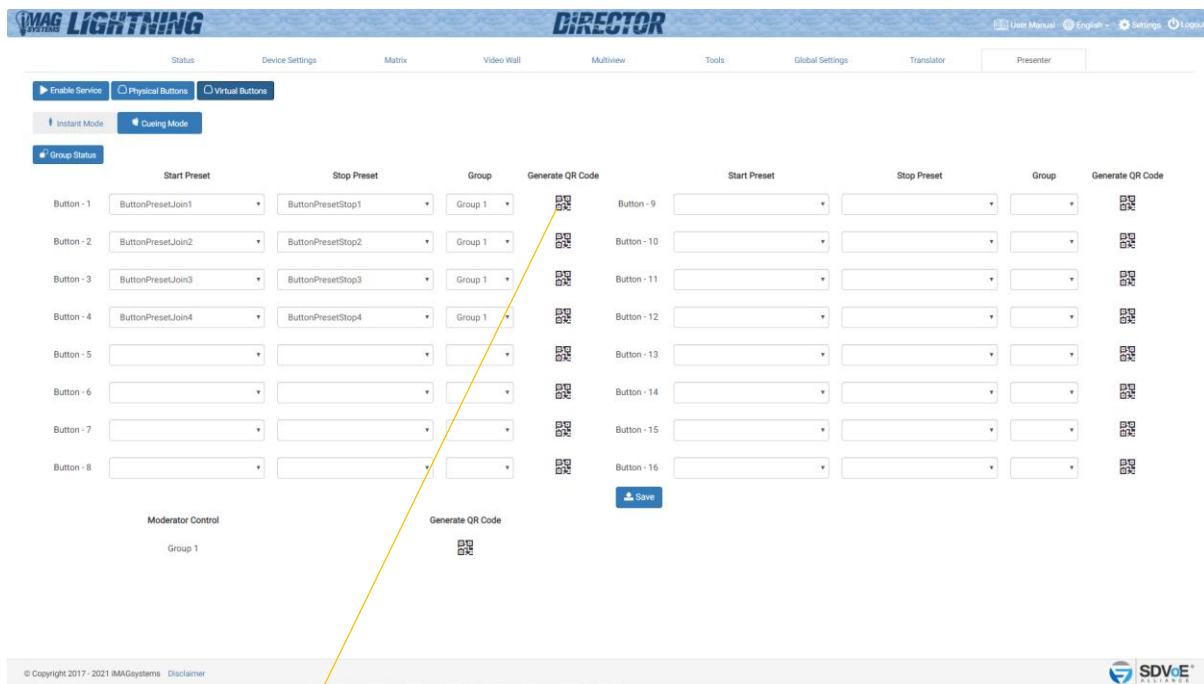
5 Select a Group for each button.

6 Click the Save button.

7 The service can now be started by clicking the Enable Service button.

9 Presenter continued...

To find the buttons URL simply click the buttons QR Code button and a QR Code pop-up will appear. From the pop-up you can copy the URL text, click on the URL text or download an image of the QR Code by clicking the Download button. The size of the downloaded QR Code can be set in Size with a range of 100 – 2000px.

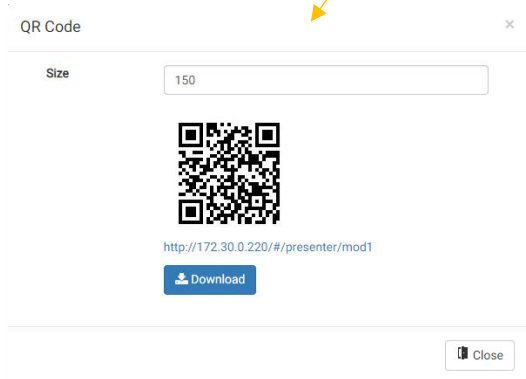
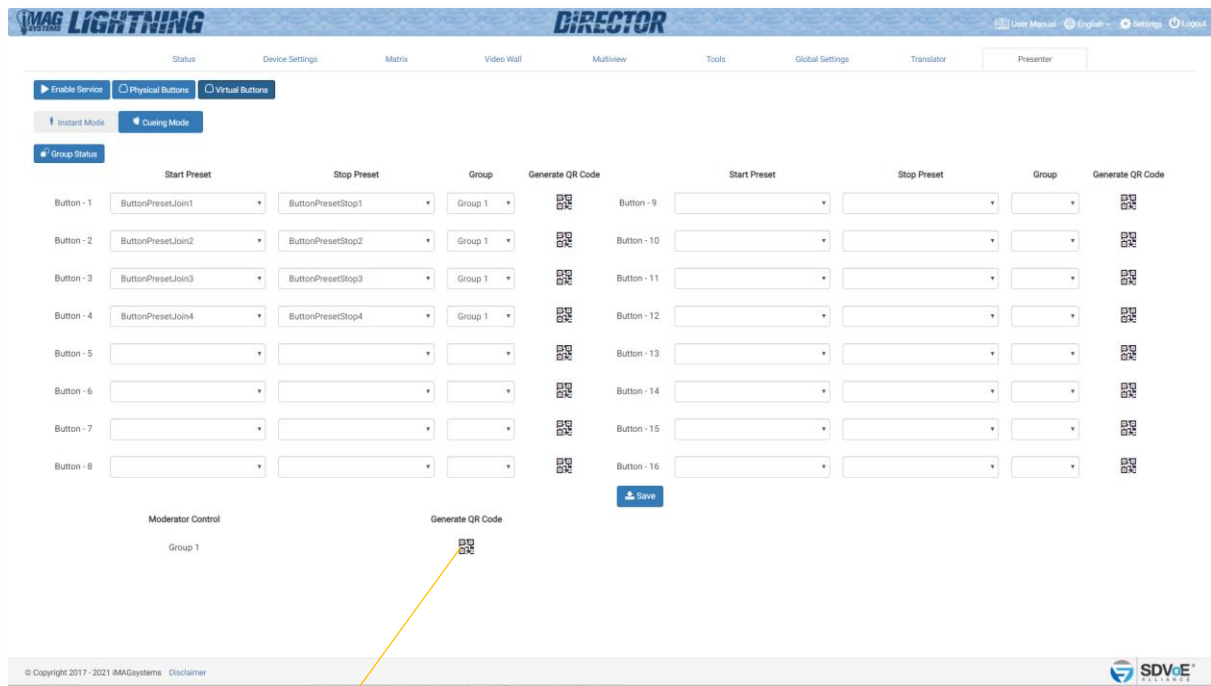


The virtual button will appear in a browser as below:

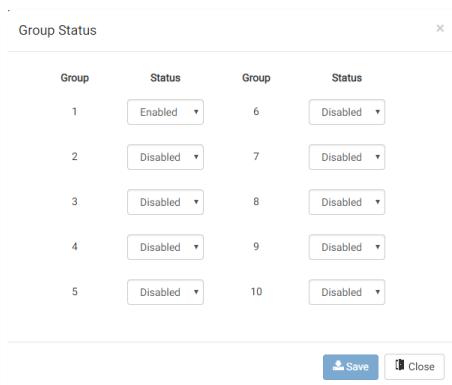


9 Presenter continued...

To print a moderators QR Code or view the pages URL, click the QR Code button next to the group.



Groups can be enabled or disabled from the Group Status button. The following pop-up will appear where each of the ten (10) possible groups can be enabled or disabled. The same is possible via the API using command set presenter <group> <state>.

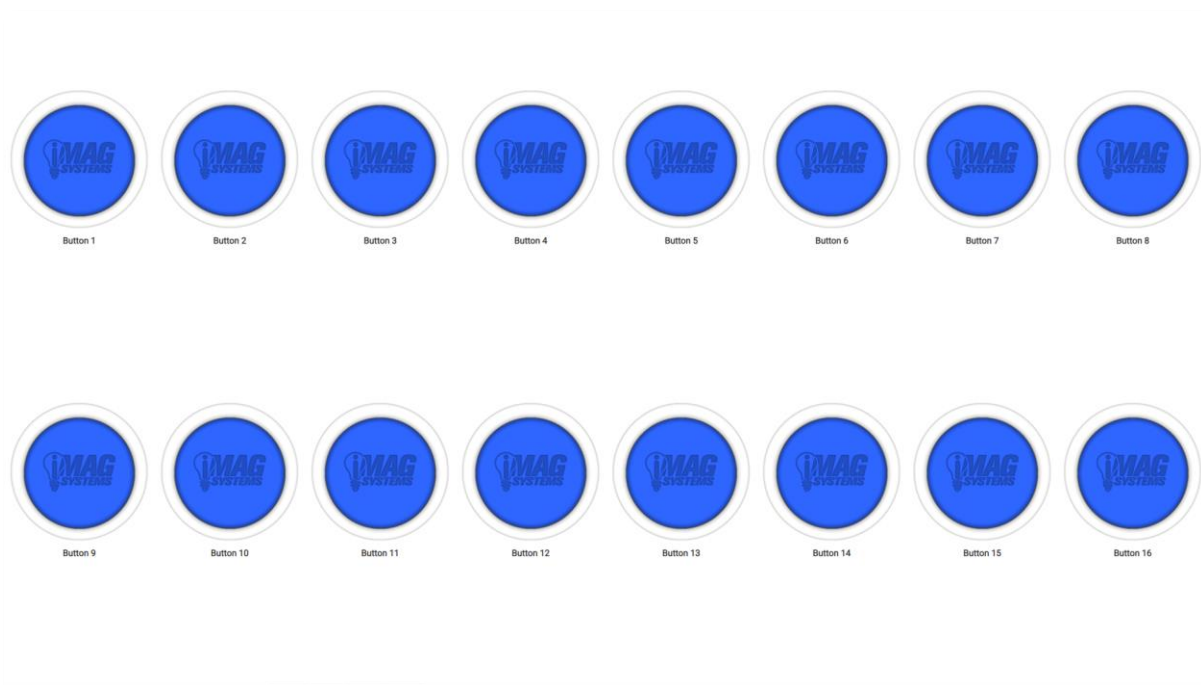


9 Presenter continued...

The moderator control panel will show all the groups buttons as the below examples show:



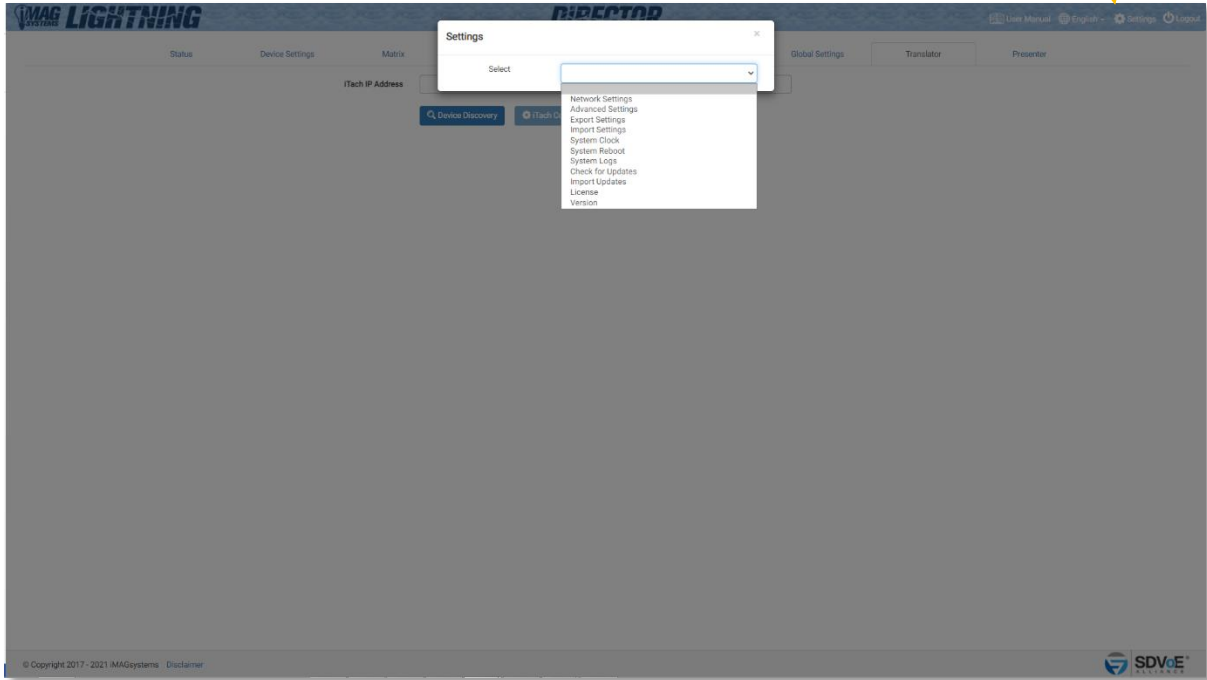
Group of 4 buttons



Group of all 16 buttons

10 System Settings

All the system level settings can be accessed by admin level users by clicking the gear icon ⚙️ on the top of the page.



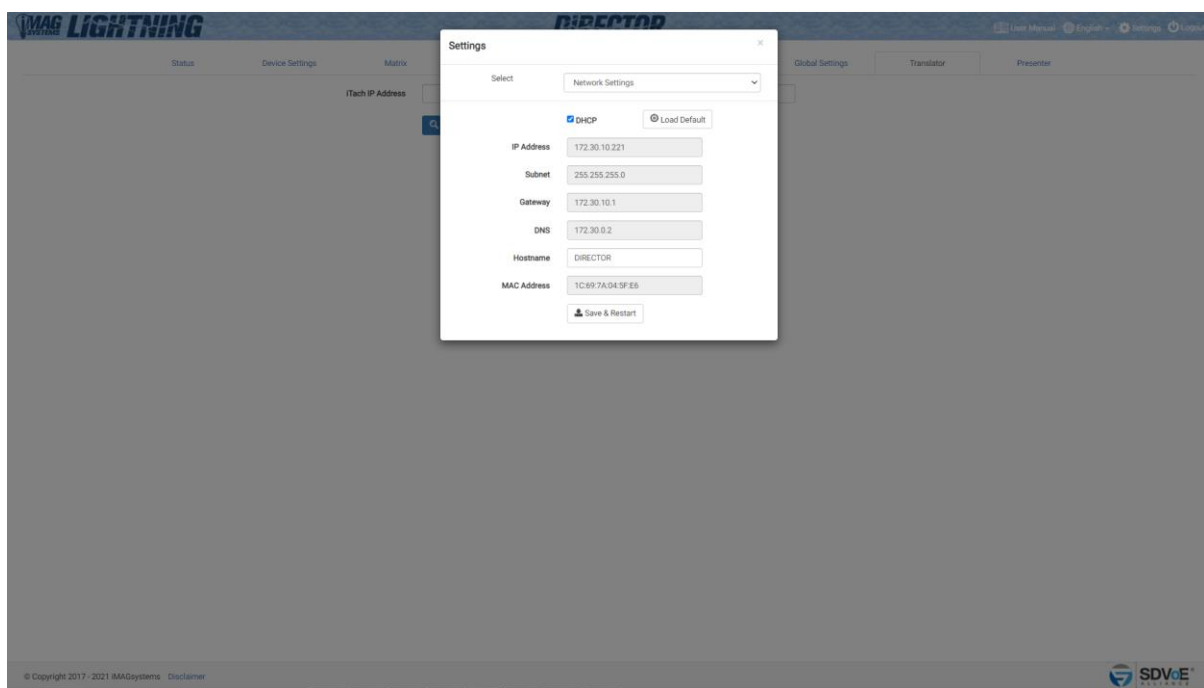
10.1 Network Settings

Here you can change the IP configuration of the Director Controller. Two types of configuration are possible, single and dual NIC (Network Interface Controller). Each of which will be described below:

Single NIC

By default the Director Controller will be found at 169.254.1.1. This address must be set in the same range as the AV Endpoints.

Use the Director Finder application if unable to locate the controller on the network or plug a display into the controllers HDMI port, a message of the controller's IP address will be displayed. Open a web-browser on your PC and enter the displayed IP address.



10.1 Network Settings continued...

Dual NIC

A USB to Gigabit Ethernet NIC Network Adapter can be attached to the controller providing a second dedicated AV Endpoint network. Approved adaptors include Tripp-Lite U236-000-GBW and Cable Matters 202013.

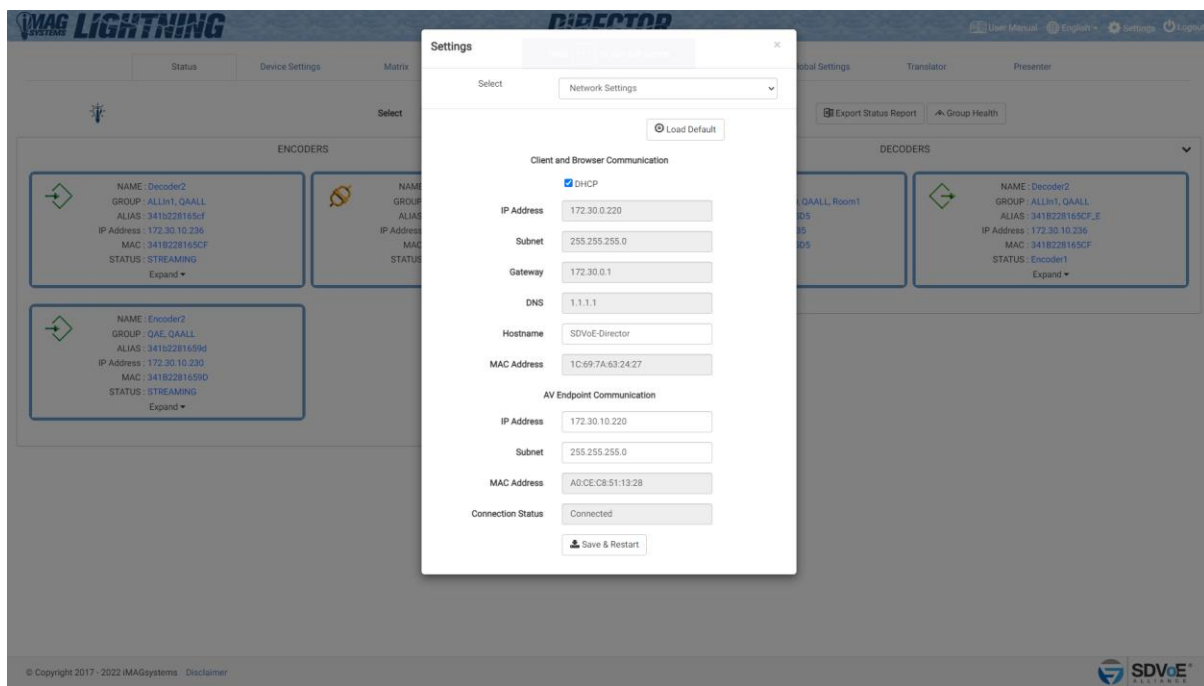
By default the Director Controller will be found on the primary NIC at 192.168.1.1 while maintaining 169.254.1.1 for the second network.

The primary NIC is dedicated for Client and Browser Communication while the secondary NIC dedicated for AV Endpoint Communication. Peripheral TCP devices can be controlled from either.

Only a static IP address can be applied to the secondary NIC, the primary NIC also supports DHCP.

All AV Endpoints must be connected to secondary NIC and set in the same IP range.

Use the Director Finder application if unable to locate the controller on the network or plug a display into the controllers HDMI port, a message of the controllers IP address will be shown.

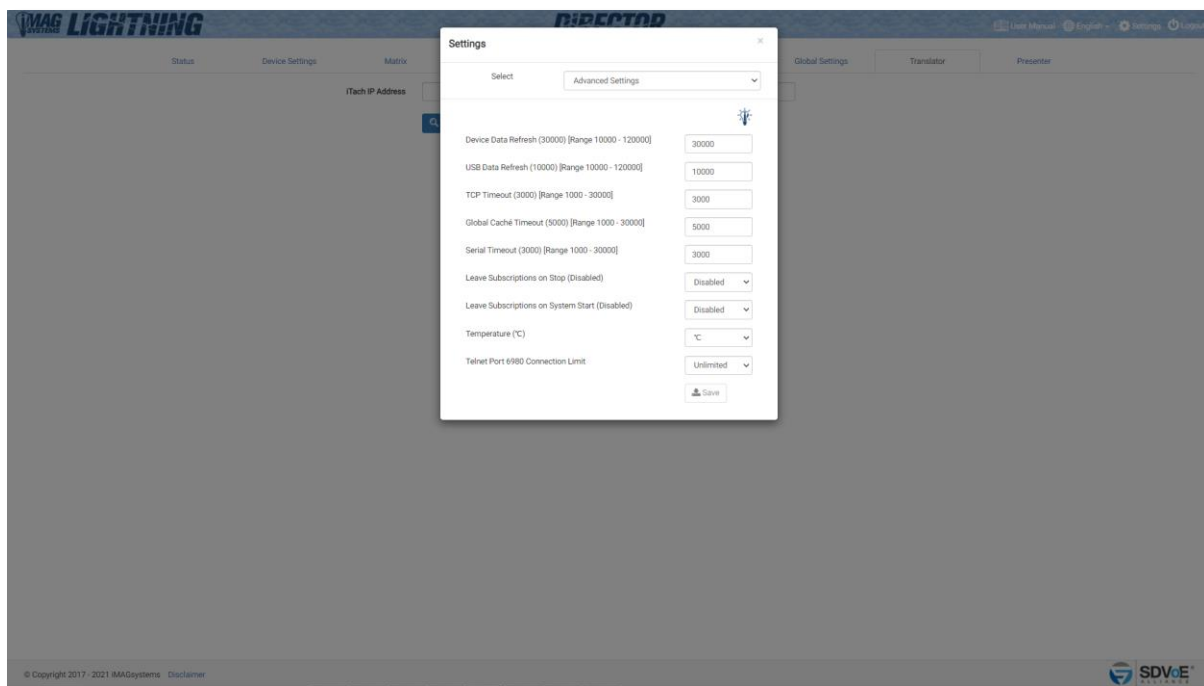


Installation of the USB to Gigabit Ethernet NIC Network Adapter

1. Power on the Director Controller and wait for at least 1 minute before continuing.
2. Plug the USB to Gigabit Ethernet NIC Network Adapter into a USB port of the controller.
3. Perform a Factory Reset.
4. Browse to the controllers default IP address at 192.168.1.1 and configure the controller's network settings as required.

10.2 Advanced Settings

The Advanced Settings section contains the settings of the SDVoE Director Controller.



10.2.1 Device Data Refresh

Device Data Refresh is the time in milliseconds the SDVoE Director Controller requests information about the Encoders and Decoders. This keeps the UI up-to-date with any changes that have occurred that do not cause an event which would automatically update data. The default is 30000 = 30 seconds with a range of 10000 – 120000.

10.2.2 USB Data Refresh

USB Data Refresh is the time in milliseconds the SDVoE Director Controller requests information about the Encoder's and Decoder's USB. This keeps the UI up-to-date with any changes that have occurred that don't cause an event which would automatically update data. The default is 10000 = 10 seconds with a range of 10000 – 120000.

10.2.3 TCP Timeout

TCP Timeout is the maximum time in milliseconds the SDVoE Director Controller will wait for a response from a TCP controlled device.

10.2.4 Global Caché Timeout

Global Caché Timeout is the maximum time in milliseconds the SDVoE Director Controller will wait for a response from a Global Caché device. The default is 5000 = 5 seconds with a range of 1000 – 30000.

10.2.5 Serial Timeout

Serial Timeout is the maximum time in milliseconds the SDVoE Director Controller will wait for a response from a RS232 serial controlled device.

10.2.6 Leave Subscriptions on Stop

Leave Subscriptions on Stop is an optional condition of the system whereby all Decoders will leave their subscription to a stream when the Encoder's stream is stopped via the API. The default is disabled.

10.2.7 Leave Subscriptions on system start

Leave Subscriptions on system start is an optional condition of the system whereby all Decoders will leave their subscription to a stream when the system starts. The default is disabled.

10.2.8 Temperature

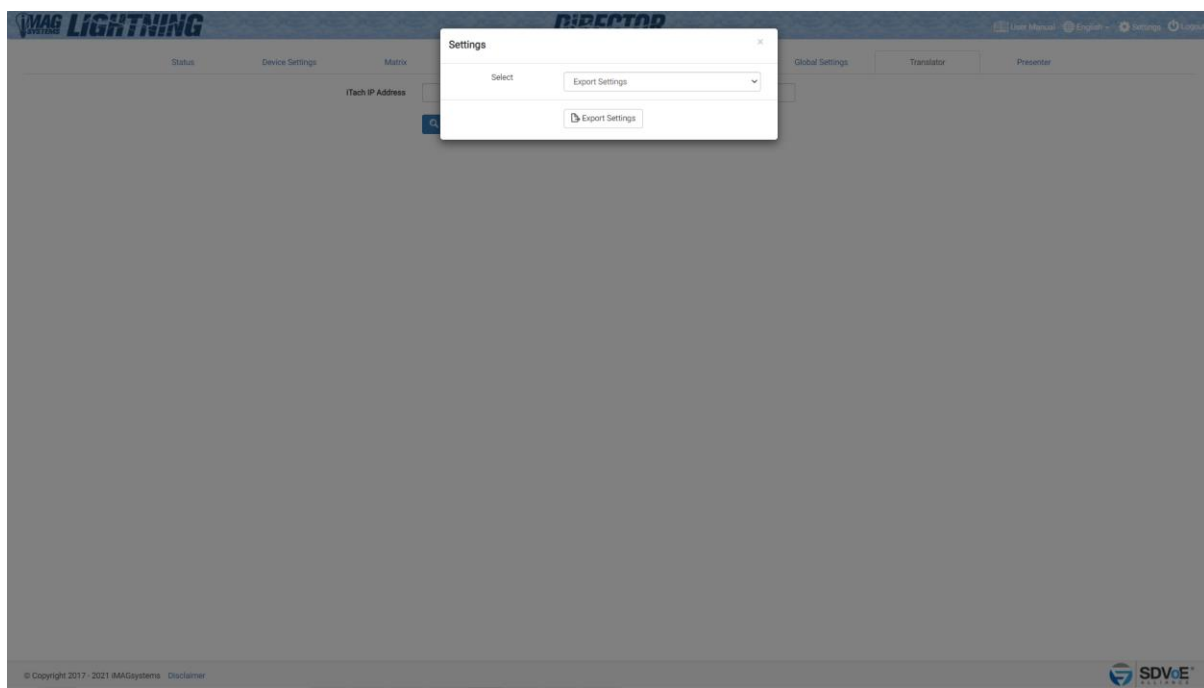
Here you can select the system to display temperature of the Encoders and Decoders in either Celsius (°C) or Fahrenheit (°F). The default is Celsius (°C).

10.2.9 Telnet Port 6980 Connection Limit

Here you can set the number of simultaneous connections to the TCP control port 6980 to unlimited or from 1 to 10 connections.

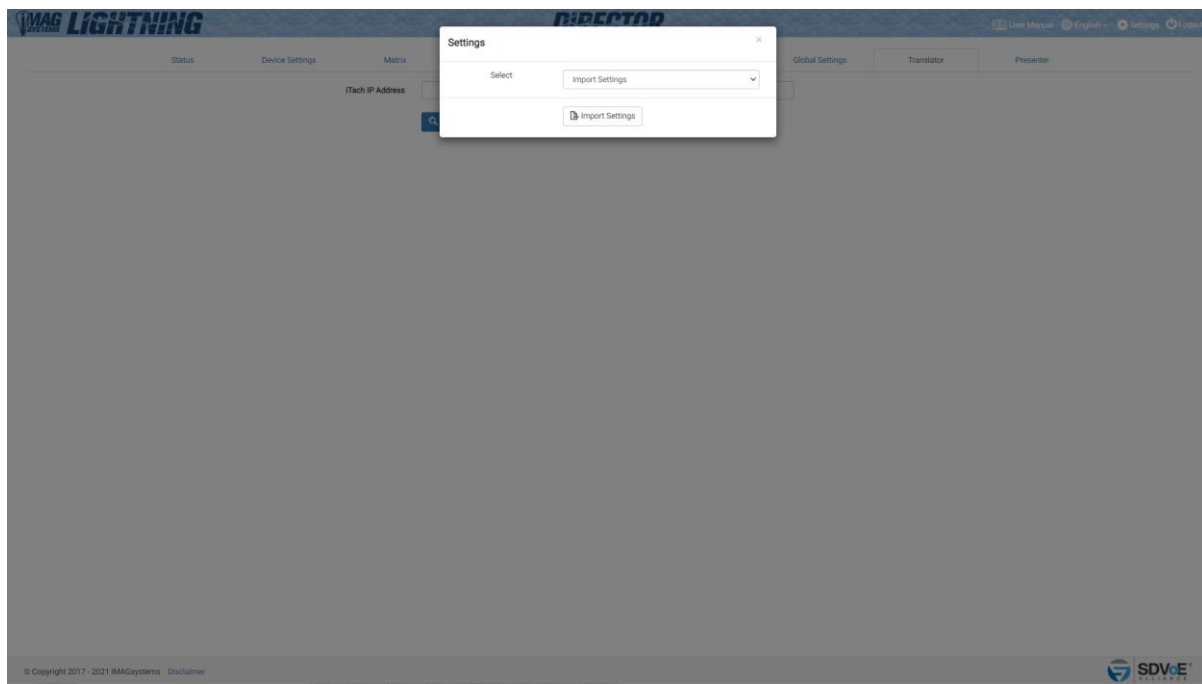
10.3 Export Settings

Export Settings will save a file named UIsettings.exp to your Downloads folder. This file contains all the settings of the SDVoE Director Controller. Use this exported file as a configuration backup that can be imported back into the system to restore the current configuration.



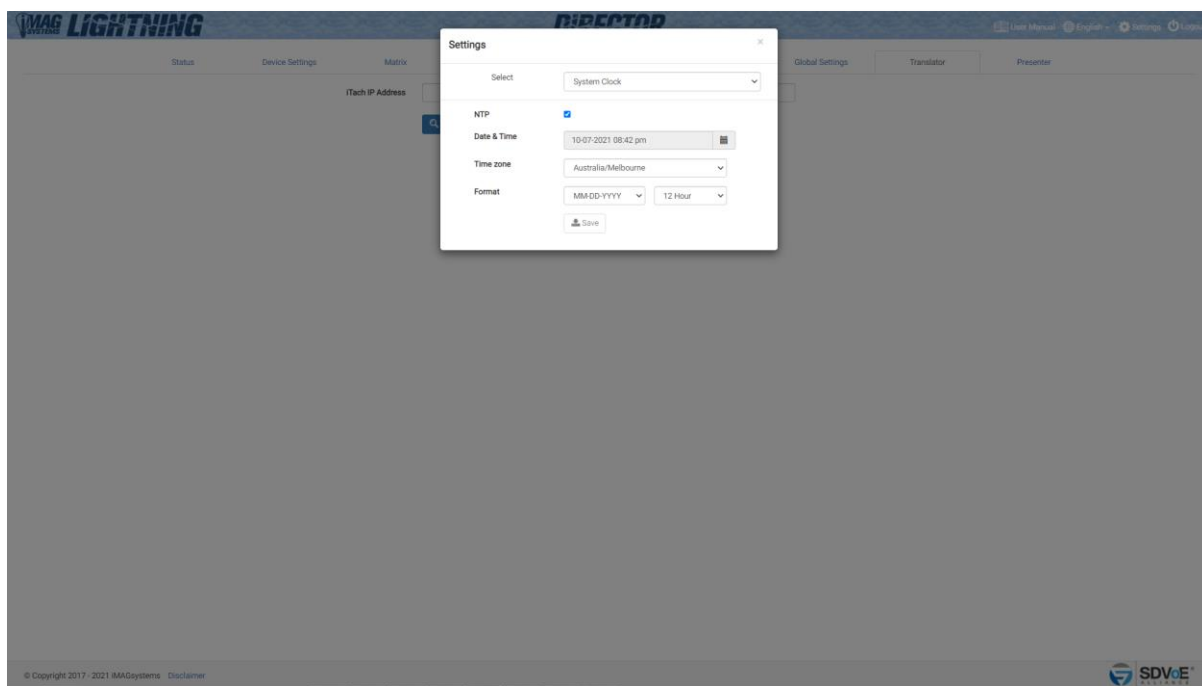
10.4 Import Settings

Use Import Settings to load an exported Uisettings.exp file which will restore the SDVoE Director Controllers settings.



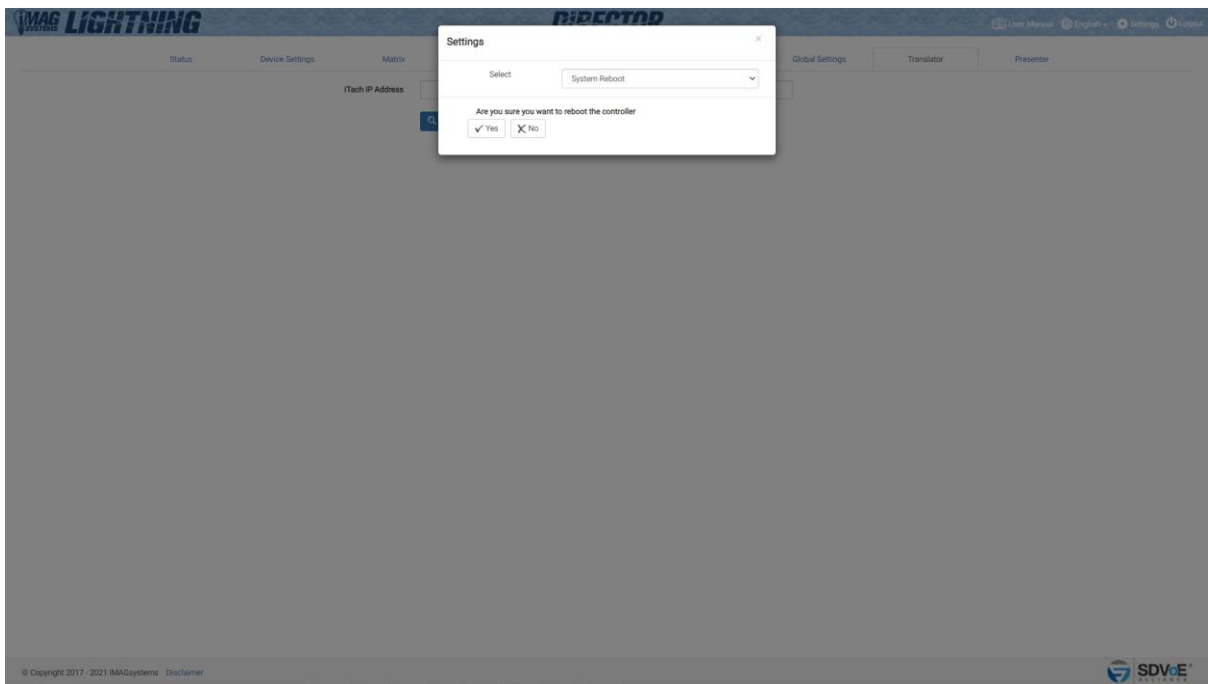
10.5 System Clock

The SDVoE Director Controller contains a RTC (Real Time Clock) to maintain the correct time and date. Set your local time and date here and click the Save button to apply the changes. The system clock is used for the scheduler and also time stamping the log entries.



10.6 System Reboot

Here you can reboot the SDVoE Director Controller. It takes 90 seconds for the controller to Reboot.

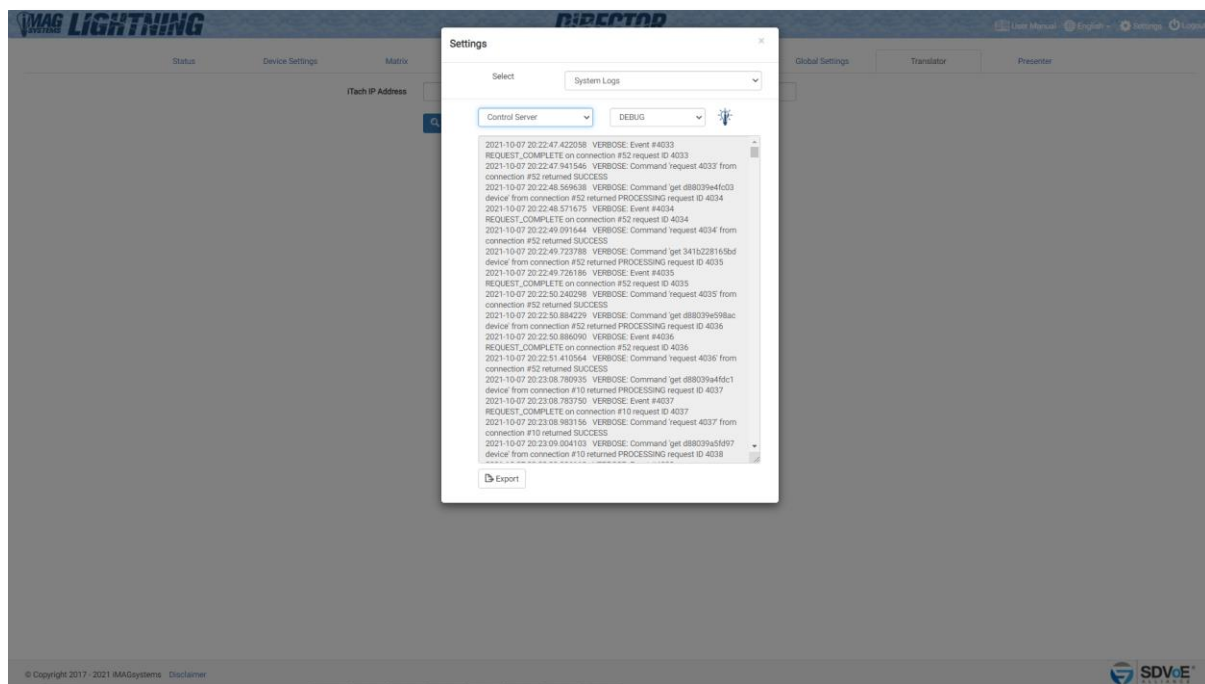


10.7 System Logs

The system keeps three (3) different log files, BlueRiver™, Software & USB. Select the required log from the dropdown list. Click the save button to export the selected log. A file named *.exp will be saved to your Downloads folder. This file has zip compression.

10.7.1 Control Server Log

A Control Server Log contains all the BlueRiver™ logged information.



A System Log contains all the control layer and UI logged information.



An USB Log contains Icron USB discovery and control logged information.

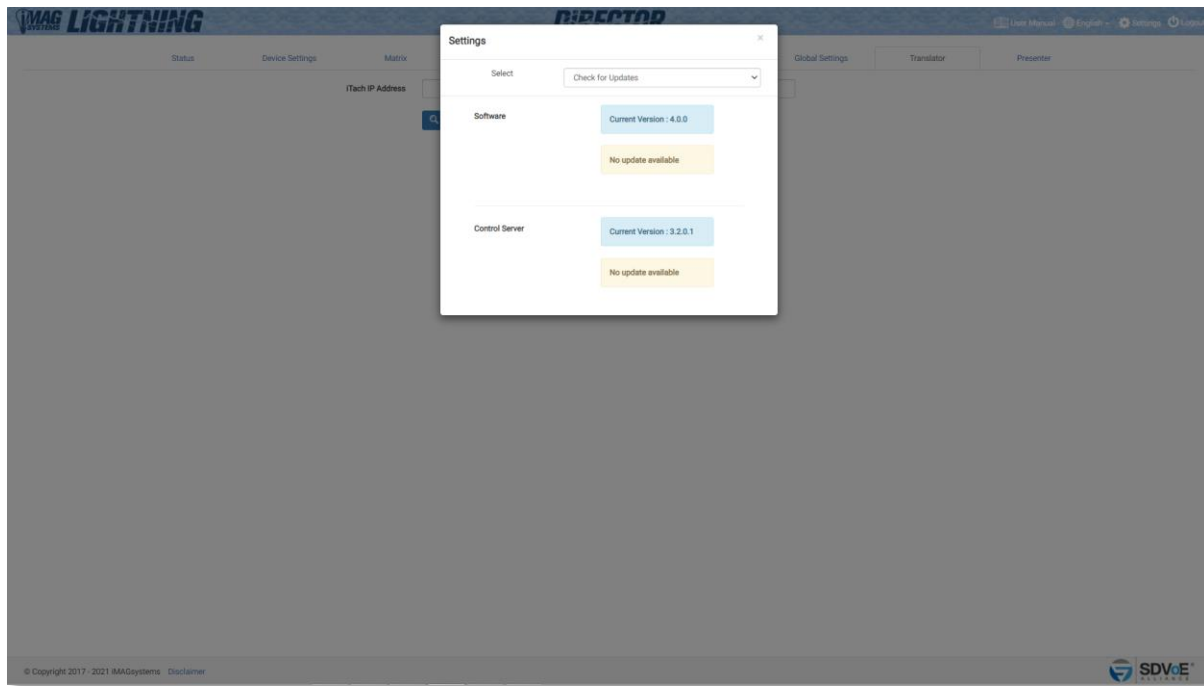


10.8 Check for Updates

Check for Updates will contact an ftp server over the internet to obtain the latest releases. These system updates are separated into different sections depending on the type of data to be updated.

Software is User Interface and Control Layer (API) updates

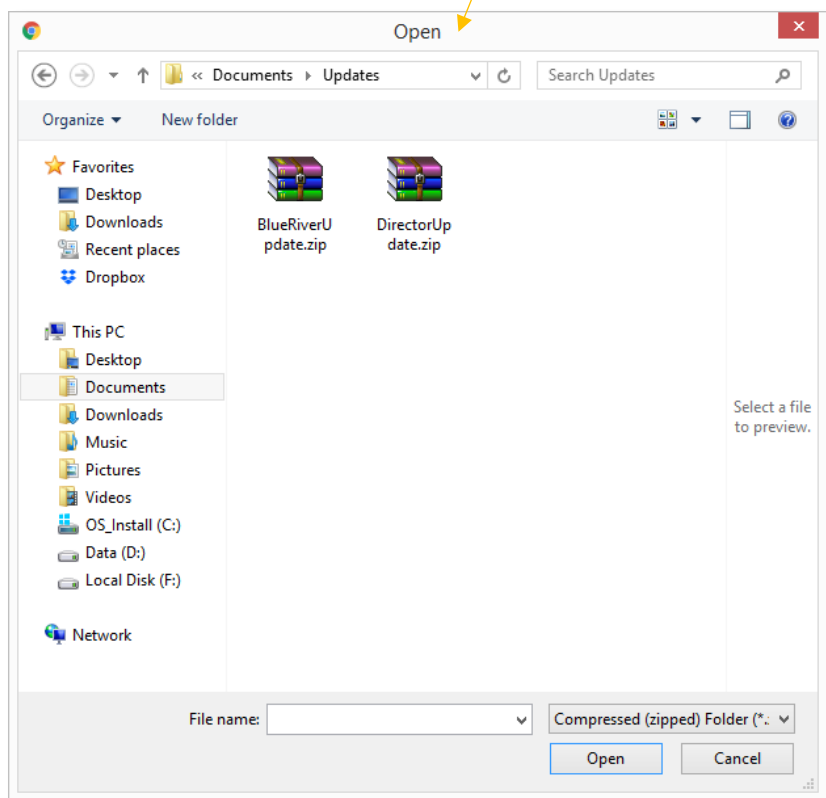
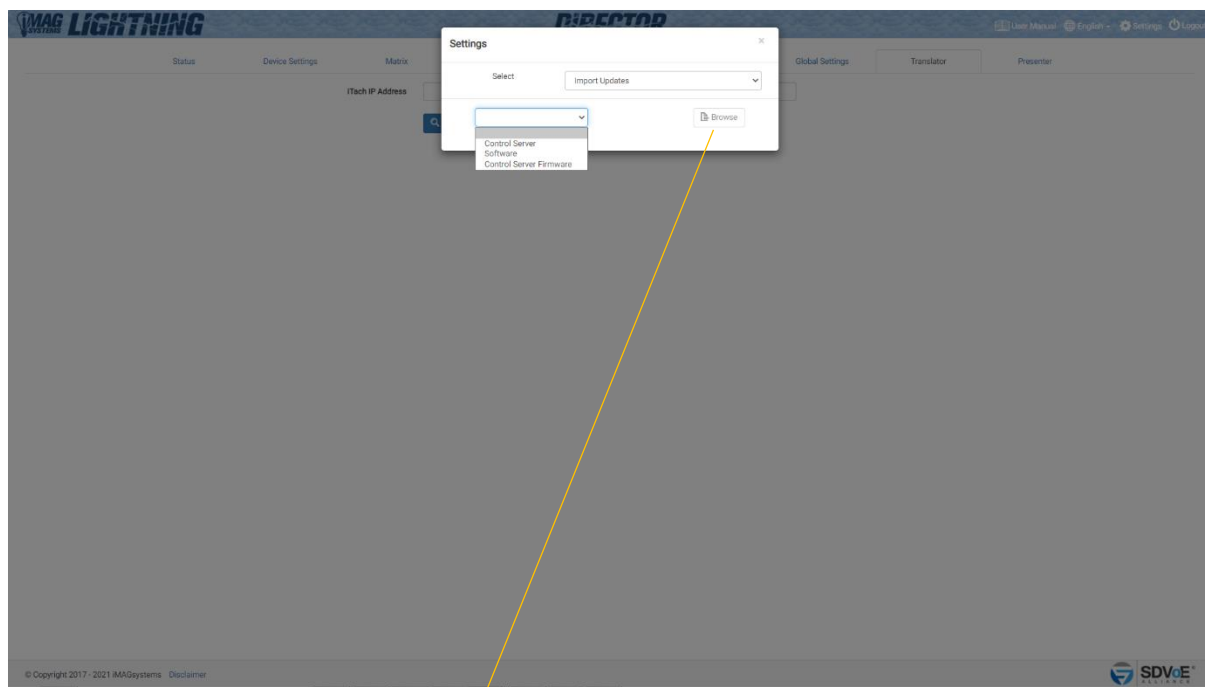
Control Server is AVP control layer updates



10.9 Import Updates

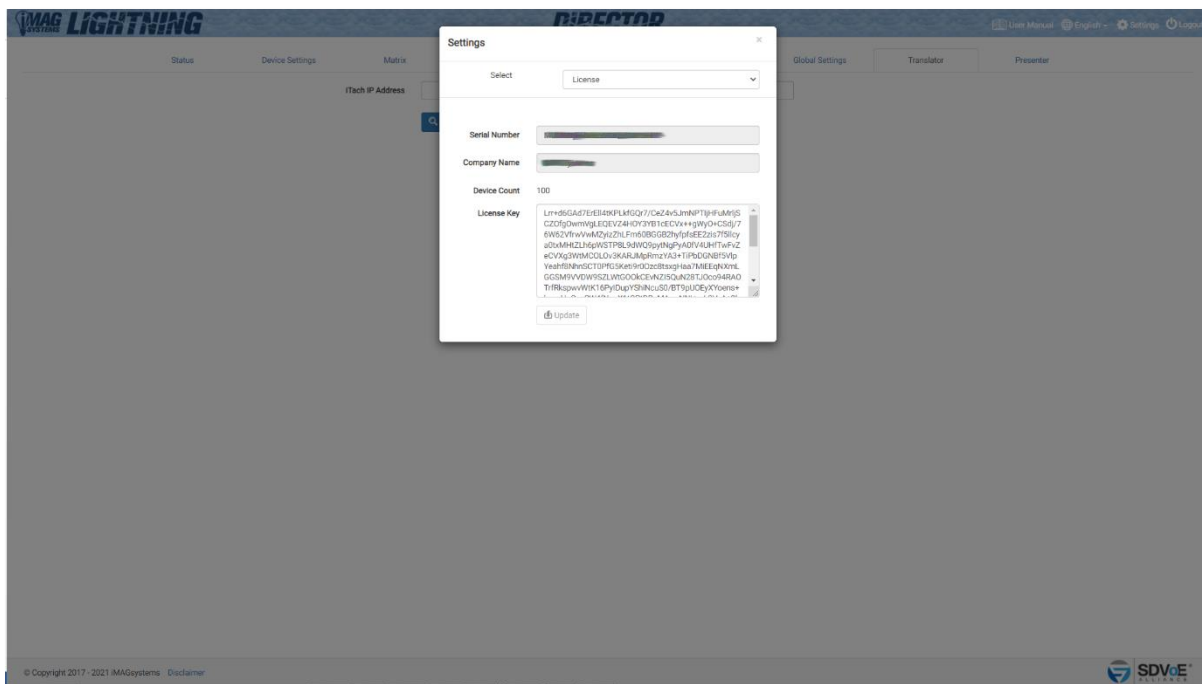
When no internet access is available or a specific update is required the files will be provided to manually update the system.

Select the type of update being performed by either selecting Control Server, Software or Control Server Firmware. Then click the browse button to select the required file from the file dialog popup.



10.10 License

The SDVoE Director Controller will not operate without a valid license. When the SDVoE Director Controller is used for the first time you will be prompted to enter a License Key. If a License Key has already been issued it can be entered into the system from here. Contact your distributor for all licensing requirements.



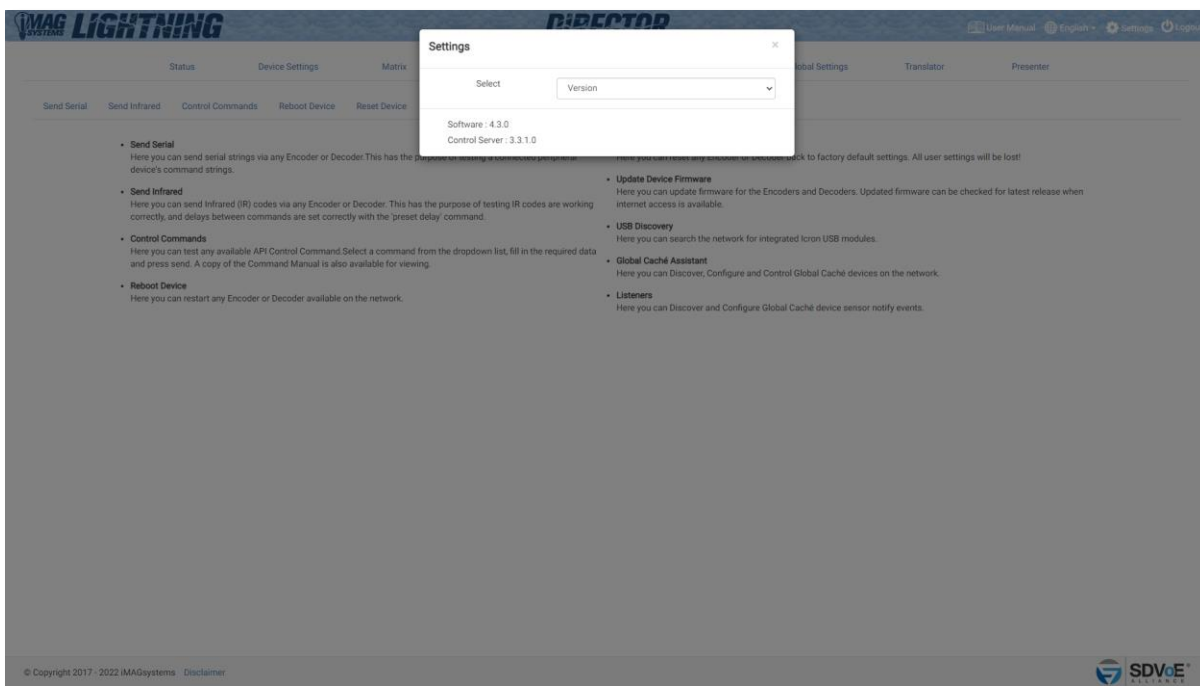
10.10 License continued...

The table below indicates standard features in green and optional licensed features in red.

Status	
Device Settings	
Matrix	
Video Wall	
Multiview	
Tools	
	Send Serial
	Send Infrared
	Control Commands
	Reboot Device
	Reset Device
	Update Device Firmware
	USB Discovery
	Global Caché Assistant
	Listeners
Global Settings	
	Users
	Groups
	Multicast
	Permissions
	Security Keys
	Encryption
	Analytics
	Notifications
	Presets
	Scheduler
	Events
	Control UI
Translator	
Presenter	

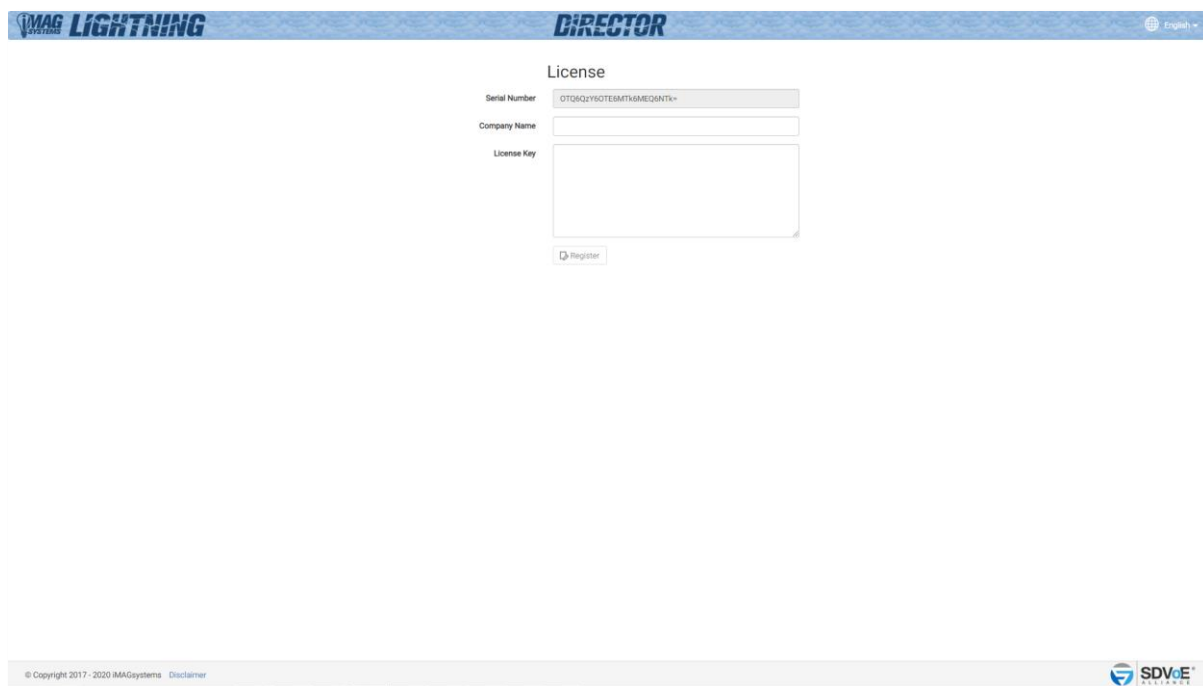
10.11 Version

Here you can find the current software and control server versions.



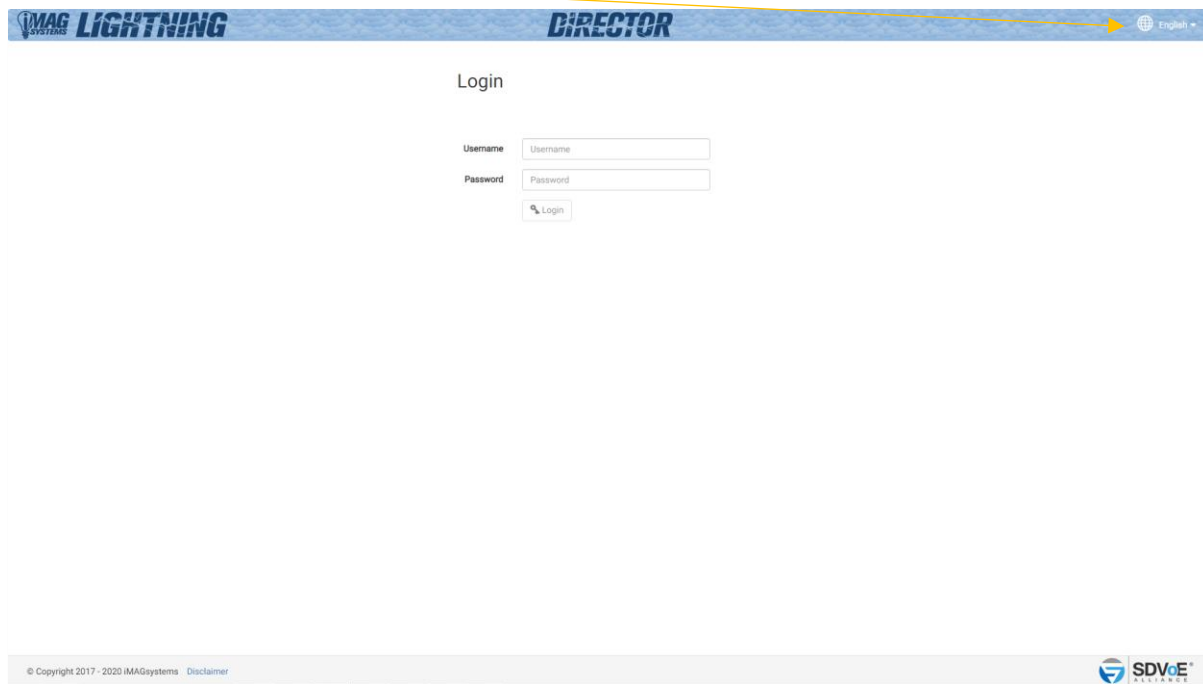
11 UI Overview

Initially when the SDVoE Director Controller is first used you will be prompted to enter a Registration Key obtained from your distributor. The controllers Serial Number (as shown) along with a company name will be provided to your distributor to create the Registration Key for you. The Registration Key is also used to unlock features of Director and the number of controllable Encoders and Decoders.



The screenshot shows the 'License' registration page of the Director Lightning interface. The page has a blue header with the 'iMAG SYSTEMS LIGHTNING' logo on the left and the 'DIRECTOR' title in the center. On the right of the header is a language dropdown menu set to 'English'. The main content area is titled 'License' and contains three input fields: 'Serial Number' (pre-filled with '0TQKQ2Y9G0TERMTM4M8EQNTS'), 'Company Name', and 'License Key'. Below these fields is a 'Register' button with a key icon. The footer contains copyright information '© Copyright 2017 - 2020 iMAGsystems Disclaimer' and the 'SDVoE ALLIANCE' logo.

After a successful Registration Key has been entered you will be prompted to login to the system. Initially the default login is **Username: admin Password: admin**. You will be forced to change the default password as the default login will no longer be allowed. From here you can change the language.

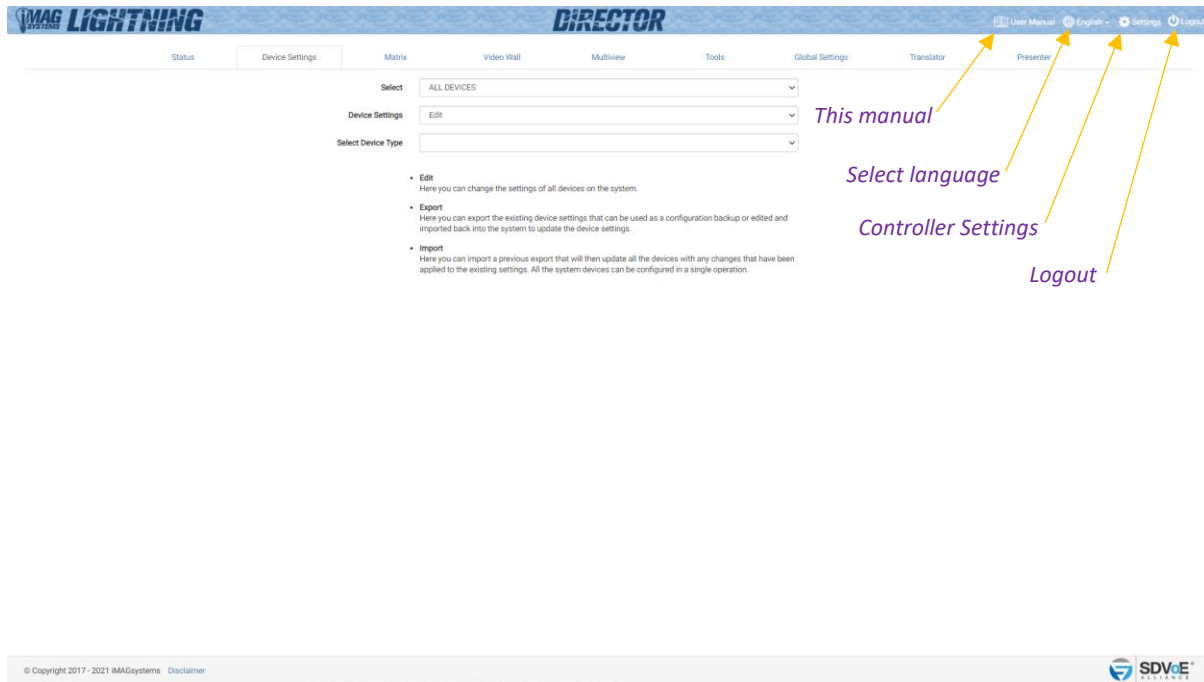


The screenshot shows the 'Login' page of the Director Lightning interface. The page has a blue header with the 'iMAG SYSTEMS LIGHTNING' logo on the left and the 'DIRECTOR' title in the center. On the right of the header is a language dropdown menu set to 'English'. The main content area is titled 'Login' and contains two input fields: 'Username' and 'Password'. Below these fields is a 'Login' button with a key icon. A yellow arrow points from the text 'From here you can change the language.' to the language dropdown menu in the header. The footer contains copyright information '© Copyright 2017 - 2020 iMAGsystems Disclaimer' and the 'SDVoE ALLIANCE' logo.

11 UI Overview – continued...

Once logged into the system the Device Settings tab will be displayed by default.

Users will automatically be logged out after 30min of inactivity.



12 Factory Reset

The method of resetting to default factory settings varies depending on the controller type.

For controllers with a headphone jack use the following procedure:

Insert a 3.5mm phono plug into the rear headphone socket for more than 10 seconds then unplug to reset to factory default settings.

WARNING: All data will be removed and the device will return to a default IP address.



12 Factory Reset continued...

For controllers without a headphone jack use the following procedure:

- 1) Using a PC, create a new text file named factoryreset.txt and save it to a USB Flash Drive.
(Recommended to use a Flash Drive with a LED)
- 2) Apply power to controller for at least 1 min before continuing.
- 3) Insert USB Flash Drive into any USB port. The USB Flash Drive LED will begin to flash.
- 4) Within a few seconds the USB Flash Drive LED will turn off as the controller reboots to factory default settings at which point remove the USB Flash Drive.

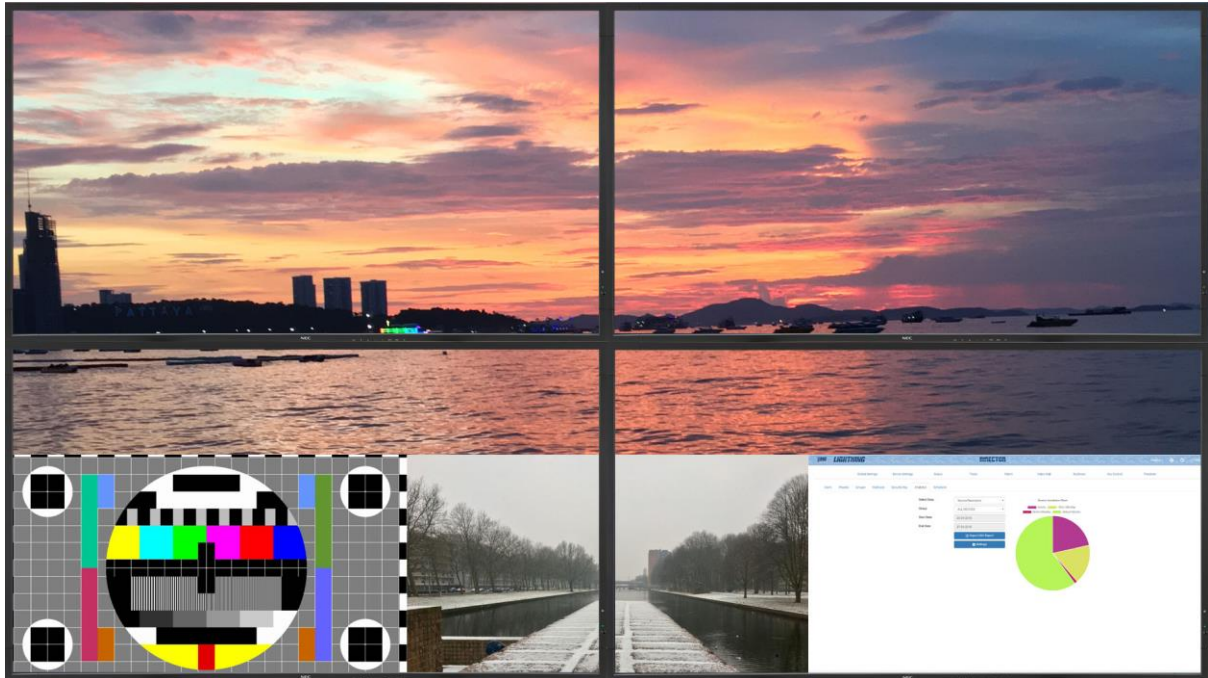
A confirmation text file named OK.txt will be saved to the USB Flash Drive.

WARNING: All data will be removed and the device will return to a default IP address.



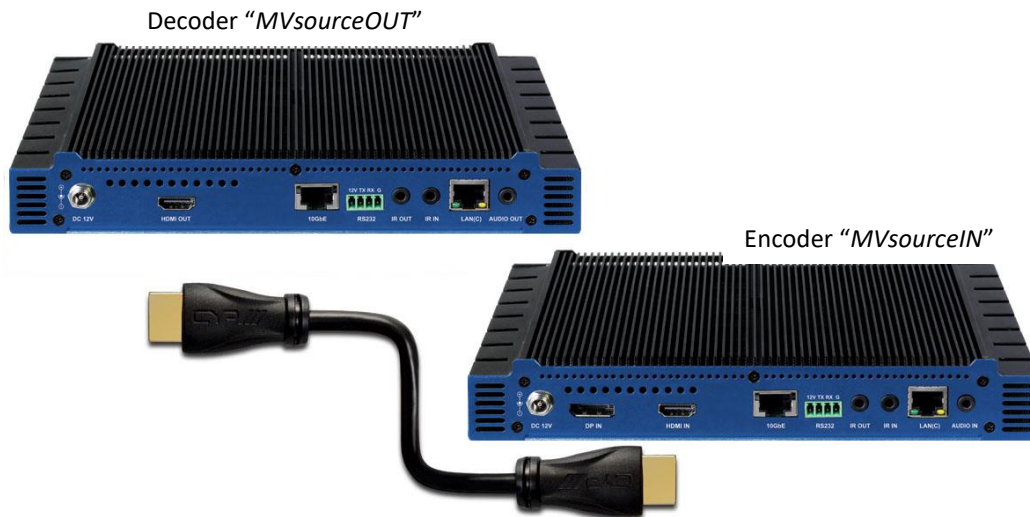
Appendix A - How to Video Wall with Multiview

Here is an explanation on how to create a Multiview layout on a video wall. To do this there are four (4) simple steps, make a physical HDMI connection between a dedicated Decoder and Encoder, create a Video Wall preset along with Multiview presets, and lastly execute the presets. The Video Wall preset is only required to be executed once to set up the Video Wall and to select the Multiview Encoder as the video source. Multiple Multiview presets can then be executed to change the layout as required.

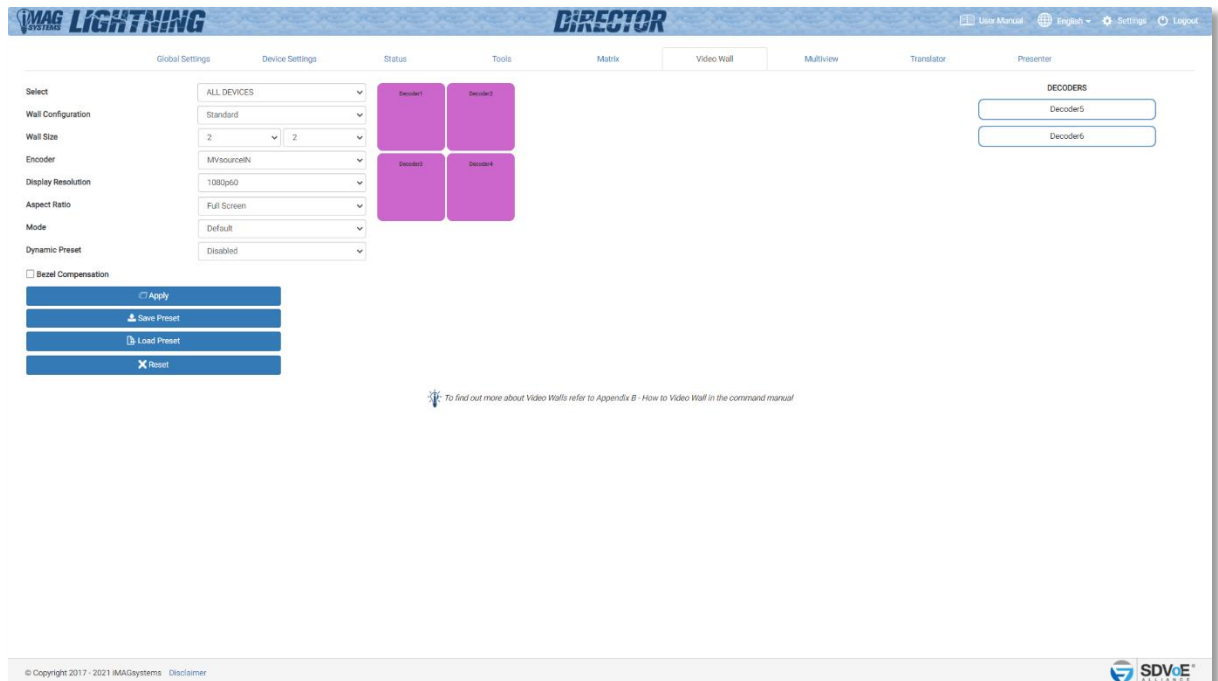


Appendix A - How to Video Wall with Multiview continued...

1. Firstly a dedicated Decoder is required to create a HDMI video signal containing the Multiview Layout. Let's name this Decoder "*MVsourceOUT*". The HDMI output of this Decoder is connected to a dedicated Encoder's HDMI input which will then convert the Multiview layout video into a stream accessible on the network for any other Decoder to display. Let's name this Encoder "*MVsourceIN*".

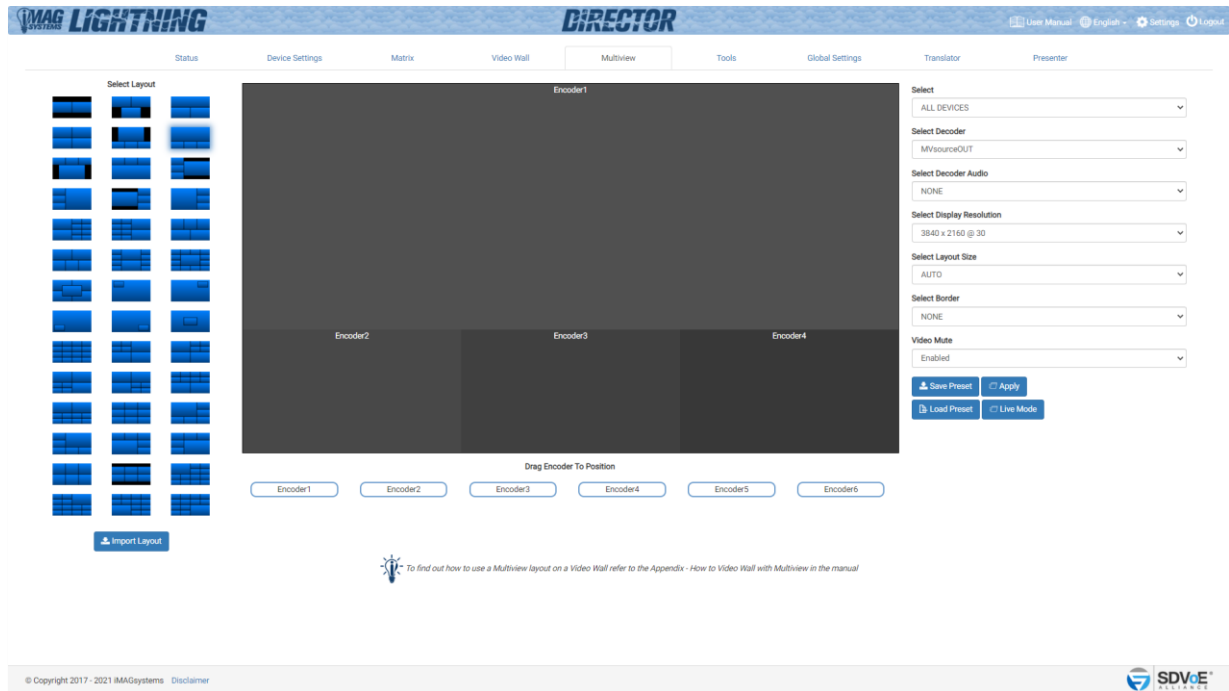


2. Now create a Video Wall preset using the required display layout. For this example a 2x2 Video Wall is used and the preset is saved as "*sample_VideoWall_2x2*".



Appendix A - How to Video Wall with Multiview continued...

3. Now create a Multiview layout as required using the Decoder “MVsourceOUT”. For this example layout #6 is used and the preset is saved as “sample_Multiview_6”.
4. Now these two presets just need to be executed. Whenever a change of the layout is required, only a different Multiview layout preset is required to be executed as the Video Wall configuration will remain the same.



Note: The two presets can be combined into a single preset by editing one of them and pasting the contents of the other.

Appendix B – Security Features

The Director software has many security features built in which will be described in detail below. Some of these features are optional and can be enabled or disabled depending on your system security requirements.

1. Required security key with all HTTP requests

The API of the system is accessible via HTTP PUT & GET requests which are protected with the addition of a security key that must be passed with each request.

The security key is accessible from the Global Settings – Security Keys tab.

2. Optional security key with all TCP commands

The API of the system is accessible via TCP port 6980 which can be optionally protected with a security key that must be passed with each command.

The security key is accessible from the Global Settings – Security Keys tab.

3. Leave Subscriptions on new Decoder detection

Without this feature there is a possibility that connecting a Decoder to the network could receive video and audio if already subscribed (joined) to a used Encoder's multicast address.

To eliminate this possibility any newly discovered Decoder will be issued a leave all command which will cause the Decoder to leave all video and audio subscriptions (remove joins). This feature is active only after system start and connected Encoders and Decoders are detected.

4. Leave Subscriptions on Stop

This is an optional feature which can be enabled or disabled from the Settings – Advanced Settings tab. Without this feature there is a possibility of Decoders unexpectedly receiving video and audio when an Encoder starts streaming on the same subscribed multicast address. This is optional depending on system use.

Stopping a stream can be used as a mute function for video and audio. Stop and start the stream as required and all subscribed (joined) Decoders will respond.

But on the other hand if streams are stopped because they are no longer to be used then it could be a security issue if a bunch of Decoders were left subscribed (joined) to this multicast address because even though a point-to-point join may be made between the Encoder and a single Decoder, all Decoders left subscribed to the same multicast address will receive the signal.

To eliminate this possibility when the feature is enabled a leave command will be sent to all Decoders automatically on a stop command.

5. Leave Subscriptions on System Start

This is an optional feature which can be enabled or disabled from the Settings – Advanced Settings tab. Without this feature all Decoders will still be subscribed (joined) to the same Encoders as before the system was powered off.

Some systems will be required to power on in the same state with the same joins as when powered off, while other situations this could be a security risk.

To eliminate this possibility when the feature is enabled a leave all command will be sent to all Decoders automatically on system start.

6. Permissions

Permissions has the ability to only allow certain Encoders to be joined with certain Decoders. Example: Encoder1 is only allowed to be joined with Decoder1, and Encoder2 can be joined with any Decoder except for Decoder2. Multiple conditions can be applied.

Appendix B – Security Features continued...

7. Encryption

Encryption can be applied to an Encoder's HDMI AV network data. A user defined key is set and only Decoders with the same key will be able to decrypt the HDMI AV network data.

8. User Login Failure

This is an optional feature that is part of the system Notifications functions available from the Global Settings – Notifications tab.

An email can be sent after three (3) failed login attempts to the system.

9. Limiting simultaneous TCP connections to control port 6980

By default there is no limitation to the number of simultaneous TCP connections to control port 6980. The number of simultaneous TCP connections can be limited between 1 and 10 from the UI Settings Advanced tab Connections Limit.

Appendix C – Multicast Management

Using the default BlueRiver™ allocation of multicast addresses can lead to many issues which are all managed by the Director software when in multicast manual mode.

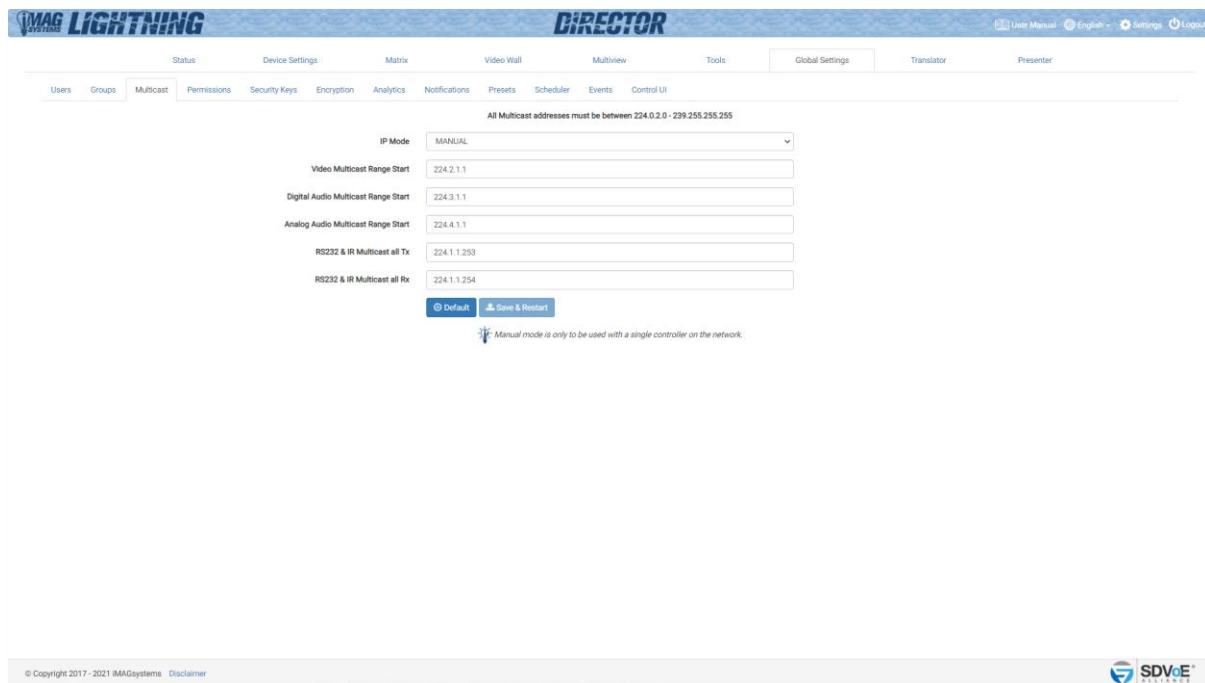
All SDVoE systems work with IGMP multicast. An Encoder sends a stream on a given multicast address. HDMI video, HDMI audio and analog audio all have separate streams with a unique multicast address assigned to each of them. Then any given Decoder on the network subscribes to these multicast addresses to receive the streams. Due to IGMP only Decoders subscribed to these streams will receive the network data.

If multicast addresses are not properly managed then it can lead to issues like mixed subscriptions whereby a Decoder expecting an audio stream can in fact start receiving a video stream and vice versa.

Why?

For example let's say a Decoder is subscribed to an audio multicast address 224.1.1.10, so we also have an Encoder streaming audio on the same multicast address. If the Encoder is stopped and freed of its multicast address, the next stream to start is then allocated by BlueRiver™ that very same address because the next available address is used. So if a video stream is started it would be using the same multicast address. Any Decoders still subscribed to this address expecting an audio stream will now be receiving a video stream incorrectly.

Setting the Director software to Multicast Manual mode will ensure these types of mixed subscriptions can never occur by assigning a static multicast address to each stream and keeping the allocation of multicast addresses for the different stream types in different ranges.



The screenshot displays the 'DIRECTOR' web interface for 'iMAG LIGHTNING'. The 'Multicast' tab is selected in the top navigation bar. A warning message states: 'All Multicast addresses must be between 224.0.0.0 - 239.255.255.255'. The 'IP Mode' is set to 'MANUAL'. Below this, several fields are provided for configuring multicast ranges:

Stream Type	Range Start
Video Multicast Range Start	224.2.1.1
Digital Audio Multicast Range Start	224.3.1.1
Analog Audio Multicast Range Start	224.4.1.1
RS232 & IR Multicast all Tx	224.1.1.253
RS232 & IR Multicast all Rx	224.1.1.254

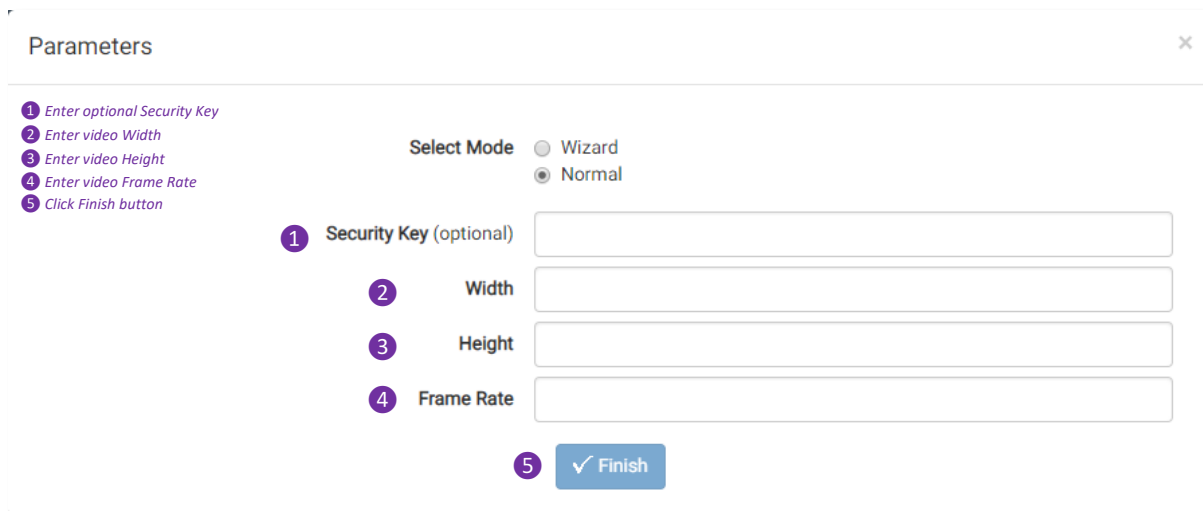
At the bottom of the form, there are buttons for 'Default', 'Save & Restart', and a note: 'Manual mode is only to be used with a single controller on the network.'

Appendix D – Using Command Assistant

When dealing with direct API control commands or creating presets, the Command Assistant is available for all commands to help make the construction of command strings as simple as possible.

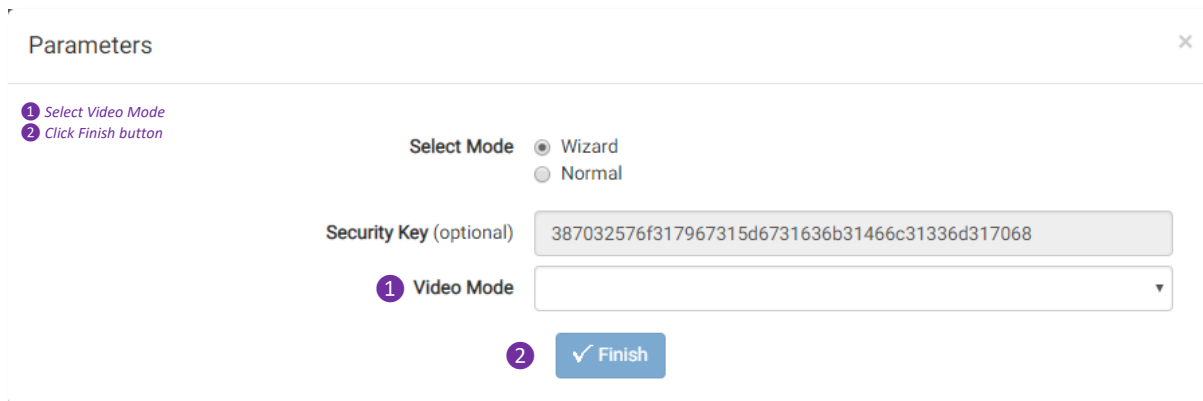
Most commands have a Normal and Wizard mode of creation. In Normal mode most parameters are set by entering the details into the various text boxes, while in Wizard mode parameters are mostly set with dropdown selections.

Command default – Normal Mode



The screenshot shows the 'Parameters' dialog box in Normal Mode. On the left, a numbered list of instructions: 1 Enter optional Security Key, 2 Enter video Width, 3 Enter video Height, 4 Enter video Frame Rate, 5 Click Finish button. The main area has 'Select Mode' with 'Normal' selected. Below are input fields for 'Security Key (optional)', 'Width', 'Height', and 'Frame Rate'. A 'Finish' button with a checkmark is at the bottom right, labeled with a circled 5.

Command default – Wizard Mode



The screenshot shows the 'Parameters' dialog box in Wizard Mode. On the left, a numbered list of instructions: 1 Select Video Mode, 2 Click Finish button. The main area has 'Select Mode' with 'Wizard' selected. Below is a 'Security Key (optional)' field containing a long alphanumeric string. Then, a 'Video Mode' dropdown menu is shown, labeled with a circled 1. A 'Finish' button with a checkmark is at the bottom right, labeled with a circled 2.

Command reboot – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device or Group name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device / Group

3

✓ Finish

Command reboot – Wizard Mode

Parameters

1 1 Select Device(s)

1 2 Select Device or Group name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 1 Select

☒ Device Name

☐ Group Name

☐ All

☐ All Decoders

☐ All Encoders

1 2

2

✓ Finish

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Enter Decoder or Group name

4 Select options

5 Enter display format

6 Select Aspect

7 Click Finish button

Select Mode

Wizard

Normal

1 Security Key (optional)

2 Encoder Device Name

3 Decoder / Group

4 1 Combine AV (optional)

4 2 Lock (optional)

4 3 Exclusive (optional)

4 4 AUTO (optional)

5 1 Width (optional)

5 2 Height (optional)

5 3 Frame Rate (optional)

6 Aspect (optional)

KEEP

7

✓ Finish

Command join fast – Wizard Mode

Parameters

1 Select Encoder Device Name

2 1 Select Device(s)

2 2 Select Decoder or Group name

3 Select options

4 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All

2 2

3 1 Combine AV (optional)

☐

3 2 Lock (optional)

☐

3 3 Exclusive (optional)

☐

3 4 AUTO (optional)

☐

3 5 Video Mode (optional)

3 6 Aspect (optional)

KEEP

4

✓ Finish

Command join sync – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Enter Decoder or Group name

4 Select options

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Decoder / Group

4 1 Combine AV (optional)

☐

4 2 Exclusive (optional)

☐

5

✓ Finish

Command join sync – Wizard Mode

Parameters

1 Select Encoder Device Name

2 1 Select Device(s)

2 2 Select Decoder or Group name

3 Select options

4 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

2 2

3 1 Combine AV (optional)

☐

3 2 Exclusive (optional)

☐

4

✓ Finish

Command join sync_scale – Normal Mode

Parameters ×

¹ Enter optional Security Key
² Enter Encoder Device Name
³ Enter Decoder or Group name
⁴ Select options
⁵ Click Finish button

Select Mode ☐ Wizard ☒ Normal

¹ Security Key (optional)

² Encoder Device Name

³ Decoder / Group

⁴ ¹ Combine AV (optional) ☐

⁴ ² Lock (optional) ☐

⁴ ³ Exclusive (optional) ☐

⁴ ⁴ AUTO (optional) ☐

⁴ ⁵ ¹ Width (optional)

⁴ ⁵ ² Height (optional)

⁵

Command join sync_scale – Wizard Mode

Parameters ×

¹ Select Encoder Device Name
² ¹ Select Device(s)
² ² Select Decoder or Group name
³ Select options
⁴ Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

¹ Encoder Device Name

² ¹ Select ☒ Decoder Device Name ☐ Group Name ☐ All Decoders

² ²

³ ¹ Combine AV (optional) ☐

³ ² Lock (optional) ☐

³ ³ Exclusive (optional) ☐

³ ⁴ AUTO (optional) ☐

³ ⁵ Video Mode (optional)

⁴

Command join adv – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter Encoder Device Name
- Enter Decoder or Group name
- Select Display Mode
- Select options
- Click Finish button

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Decoder / Group

4 Display Mode

5 1 Combine AV (optional) ☐

5 2 Exclusive (optional) ☐

5 3 AUTO (optional) ☐

6

Command join adv – Wizard Mode

Parameters ×

- Select Encoder Device Name
- 1 Select Device(s)
- 2 Select Decoder or Group name
- Select Display Mode
- Select options
- Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

1 Encoder Device Name

2 1 Select ☒ Decoder Device Name ☐ Group Name ☐ All

2 2

3 Display Mode

4 1 Combine AV (optional) ☐

4 2 Exclusive (optional) ☐

4 3 AUTO (optional) ☐

5

Command join audio_a – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Enter Decoder or Group name

4 Select optional Exclusive

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Decoder / Group

4 Exclusive (optional)

☐

5

✓ Finish

Command join audio_a – Wizard Mode

Parameters

1 Select Encoder Device Name

2 1 Select Device(s)

2 2 Select Decoder or Group name

3 Select optional Exclusive

4 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

2 2

3 Exclusive (optional)

☐

4

✓ Finish

Command join audio_d – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Enter Decoder or Group name

4 Select optional Exclusive

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Decoder / Group

4 Exclusive (optional)

☐

5

✓ Finish

Command join audio_d – Wizard Mode

Parameters

1 Select Encoder Device Name

2 1 Select Device(s)

2 2 Select Decoder or Group name

3 Select optional Exclusive

4 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

2 2

3 Exclusive (optional)

☐

4

✓ Finish

Command join ir – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Source name

3 Enter Destination name

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Source

3 Destination

4

Command join ir – Wizard Mode

Parameters

1 Select Source name

2 Select Destination name

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Source

2 Destination

3

Command join serial – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Source name

3 Enter Destination name

4 Select options

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Source

3 Destination

4 1 Bi-Directional (optional)

☐

4 2 Exclusive (optional)

☐

5

✓ Finish

Command join serial – Wizard Mode

Parameters

1 Select Source name

2 Select Destination name

3 Select options

4 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Source

2 Destination

3 1 Bi-Directional (optional)

☐

3 2 Exclusive (optional)

☐

4

✓ Finish

Command join usb – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Enter Decoder Device Name

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Decoder Device Name

4

✓ Finish

Command join usb – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Select Decoder Device Name

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 Decoder Device Name

3

✓ Finish

Command join usb_hid – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter HOST (LEX) Device Name

3 Enter CLIENT (RX) Device Name

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 HOST (COMPUTER)

3 CLIENT (PERIPHERAL)

4

✓ Finish

Command join usb_hid – Wizard Mode

Parameters

1 Select HOST (LEX) Device Name

2 Select CLIENT (REX) Device Name

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

36623361303033323765663332303064

1 HOST (COMPUTER)

2 CLIENT (PERIPHERAL)

3

✓ Finish

Command join multi – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter Encoder Device Name
- Enter Decoder Device Name
- Select Subscription
- Select optional Scaled
 - Enter Layout Name
- Click Finish button

Select Mode ☐ Wizard ☒ Normal

- Security Key (optional)
- Encoder Device Name
- Decoder Device Name
- Subscription

0 31
- Scaled (optional) ☒
 - Layout Name (optional)

- ✓ Finish

Command join multi – Wizard Mode

Parameters ×

- Select Encoder Device Name
- Select Decoder Device Name
- Select Subscription
- Select optional Scaled
 - Select Layout
- Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

- Encoder Device Name
- Decoder Device Name
- Subscription

0 31
- Scaled (optional) ☒
 - Layout Name (optional)

- ✓ Finish

Command join wall – Normal Mode

Parameters
×

1 Enter optional Security Key
2 Enter Encoder Device Name
3 Enter Decoder Device Name
4 Select Wall Size
5 Select Display Position
6 Select optional Wall Mode
7 Enter optional video out Width
Enter optional video out Height
Enter optional video out Frame Rate
8 Enter optional Display Width
Enter optional Viewable Width
Enter optional Display Height
Enter optional Viewable Height
9 Select optional Keep Aspect
10 Click Finish button

Select Mode
☐ Wizard
☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Decoder Device Name

4 Wall Size

5 Display Position

6 Wall Mode (optional)

7 1 Width (optional)

7 2 Height (optional)

7 3 Frame Rate (optional)

8 1 Display Width (mm) (optional)

8 2 Viewable Width (mm) (optional)

8 3 Display Height (mm) (optional)

8 4 Viewable Height (mm) (optional)

9 Keep Aspect (optional)

10 ✓ Finish

Command join wall – Wizard Mode

Parameters ×

- 1 Select Encoder Device Name
- 2 Select Decoder Device Name
- 3 Select Wall Size
- 4 Select Display Position
- 5 Select optional Wall Mode
- 6 Enter optional Video Mode
- 7 Enter optional Display width
Enter optional Viewable Width
Enter optional Display Height
Enter optional Viewable Height
- 8 Select optional Keep Aspect
- 9 Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional) 6864325966314b6d315c6931576b314f6e312d73316774

1 Encoder Device Name

2 Decoder Device Name

3 Wall Size

4 Display Position

5 Wall Mode (optional)

6 Video Mode (optional)

7 1 Display Width (mm) (optional)

7 2 Viewable Width (mm) (optional)

7 3 Display Height (mm) (optional)

7 4 Viewable Height (mm) (optional)

8 Keep Aspect (optional) ☐

9

Command join walladv – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter Encoder Device Name
- Enter Decoder Device Name
- Select optional Wall Mode
- Enter Width
Enter Height
- Enter Horizontal Offset
Enter Vertical Offset
- Enter Keep Width
Enter Keep Height
- Enter Viewport Horizontal
Enter Viewport Vertical
Enter Viewport Width
Enter Viewport Height
- Enter Frame Rate
- Click Finish button

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Decoder Device Name

4 Wall Mode (optional)

5 1 Width

5 2 Height

6 1 Horizontal Offset

6 2 Vertical Offset

7 1 Keep Width

7 2 Keep Height

8 1 Viewport Horizontal

8 2 Viewport Vertical

8 3 Viewport Width

8 4 Viewport Height

9 Frame Rate

10

Command join walladv – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Select Decoder Device Name

3 Select optional Wall Mode

4 Select Video Mode

5 Enter Horizontal Offset
Enter Vertical Offset

6 Enter Keep Width
Enter Keep Height

7 Enter Viewport Horizontal
Enter Viewport Vertical
Enter Viewport Width
Enter Viewport Height

8 Click Finish button

Select Mode ☒ Wizard
☐ Normal

Security Key (optional) 656b32566a313c6d31486931676831597431476d316a6d

1 Encoder Device Name

2 Decoder Device Name

3 Wall Mode (optional)

4 Video Mode

5 1 Horizontal Offset

5 2 Vertical Offset

6 1 Keep Width

6 2 Keep Height

7 1 Viewport Horizontal

7 2 Viewport Vertical

7 3 Viewport Width

7 4 Viewport Height

8

Command leave video – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder or Group name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder / Group

3

✓ Finish

Command leave video – Wizard Mode

Parameters

1 1 Select Device(s)

1 2 Select Decoder or Group name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

1 2

2

✓ Finish

Command leave sub – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder Device Name

3 Select Subscription

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 Subscription (optional)

1

31

4

✓ Finish

Command leave sub – Wizard Mode

Parameters

1 Select Decoder Device Name

2 Select Subscription

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Decoder Device Name

2 Subscription (optional)

1

31

3

✓ Finish

Command leave av – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder or Group name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder / Group

3

✓ Finish

Command leave av – Wizard Mode

Parameters

1 1 Select Device(s)

1 2 Select Decoder or Group name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

1 2

2

✓ Finish

Command leave audio_a – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder or Group name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder / Group

3

✓ Finish

Command leave audio_a – Wizard Mode

Parameters

1 1 Select Device(s)

1 2 Select Decoder or Group name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

1 2

2

✓ Finish

Command leave audio_d – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder or Group name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder / Group

3

✓ Finish

Command leave audio_d – Wizard Mode

Parameters

1 1 Select Device(s)

1 2 Select Decoder or Group name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

1 2

2

✓ Finish

Command leave all – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3

✓ Finish

Command leave all – Wizard Mode

Parameters

1 1 Select Decoder Device Name or All Decoders

1 2 Select Decoder

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Decoder Device Name

☐ All Decoders

1 2

2

✓ Finish

Command stop all – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder / Group name

3 Select optional Free
FREE MULTICAST AND SUBSCRIPTIONS /
FREE MULTICAST

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Free (optional)

4 ✓ Finish

Command stop all – Wizard Mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 Select optional Free
FREE MULTICAST AND SUBSCRIPTIONS /
FREE MULTICAST

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

35306436343462616332353331306430

1 1 Select

☒ Encoder Device Name

☐ Group Name

☐ All Encoders

1 2

2 Free (optional)

3 ✓ Finish

Command stop video – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder / Group name

3 Select optional Free

FREE MULTICAST AND SUBSCRIPTIONS / FREE MULTICAST

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Free (optional)

4

Command stop video – Wizard Mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 Select optional Free

FREE MULTICAST AND SUBSCRIPTIONS / FREE MULTICAST

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2 Free (optional)

3

Command stop sub – Normal Mode

Parameters ×

① Enter optional Security Key
 ② Enter Encoder / Group name
 ③ Select optional Free
 FREE MULTICAST AND SUBSCRIPTIONS /
 FREE MULTICAST
 ④ Click Finish button

Select Mode ☐ Wizard ☒ Normal

① Security Key (optional)

② Encoder / Group

③ Free (optional)

④

Command stop sub – Wizard Mode

Parameters ×

① ① Select Device(s)
 ① ② Select Encoder or Group name
 ② Select optional Free
 FREE MULTICAST AND SUBSCRIPTIONS /
 FREE MULTICAST
 ③ Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

① ① Select ☒ Encoder Device Name ☐ Group Name

① ②

② Free (optional)

③

Command stop av – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Select optional Free
FREE MULTICAST AND SUBSCRIPTIONS /
FREE MULTICAST

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Free (optional)

4

Command stop av – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Select optional Free
FREE MULTICAST AND SUBSCRIPTIONS /
FREE MULTICAST

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Encoder Device Name

2 Free (optional)

3

Command stop audio_a – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder / Group name

3 Select optional Free
FREE MULTICAST AND SUBSCRIPTIONS /
FREE MULTICAST

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Free (optional)

4

✓ Finish

Command stop audio_a – Wizard Mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 Select optional Free
FREE MULTICAST AND SUBSCRIPTIONS /
FREE MULTICAST

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2 Free (optional)

3

✓ Finish

Command stop audio_d – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder / Group name

3 Select optional Free
FREE MULTICAST AND SUBSCRIPTIONS /
FREE MULTICAST

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Free (optional)

4 ☒ Finish

Command stop audio_d – Wizard Mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 Select optional Free
FREE MULTICAST AND SUBSCRIPTIONS /
FREE MULTICAST

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2 Free (optional)

3 ☒ Finish

Command stop ir – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3

✓ Finish

Command stop ir – Wizard Mode

Parameters

1 Select Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Device Name

2

✓ Finish

Command stop serial – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device Name

3 Select optional Bi-Directional

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3 Bi-Directional (optional)

☐

4

✓ Finish

Command stop serial – Wizard Mode

Parameters

1 Select Device Name

2 Select optional Bi-Directional

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Device Name

2 Bi-Directional (optional)

☐

3

✓ Finish

Command stop usb – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3

✓ Finish

Command stop usb – Wizard Mode

Parameters

1 Select Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Device Name

2

✓ Finish

Command stop usb_hid – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3

✓ Finish

Command stop usb_hid – Wizard Mode

Parameters

1 Select Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Device Name

2

✓ Finish

Command start video – Normal Mode – Multicast Manual mode

Parameters

1 Enter optional Security Key

2 Enter Encoder or Group name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3

Command start video – Normal Mode – Multicast Auto mode

Parameters

1 Enter optional Security Key

2 Enter Encoder or Group name

3 Enter optional Multicast Address

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Multicast Address (optional)

4

Command start video – Wizard Mode – Multicast Manual mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2

✓ Finish

Command start video – Wizard Mode – Multicast Auto mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 Enter optional Multicast Address

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2 Multicast Address (optional)

0.0.0.0

3

✓ Finish

Command start sub – Normal Mode – Multicast Manual mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3

✓ Finish

Command start sub – Normal Mode – Multicast Auto mode

Parameters

1 Enter optional Security Key

2 Enter Encoder or Group name

3 Enter optional Multicast Address

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Multicast Address (optional)

0.0.0.0

4

✓ Finish

Command start sub – Wizard Mode – Multicast Manual mode

Parameters

1 Select Encoder Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2

✓ Finish

Command start sub – Wizard Mode – Multicast Auto mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 Enter optional Multicast Address

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2 Multicast Address (optional)

0.0.0.0

3

✓ Finish

Command start av – Normal Mode – Multicast Manual mode

Parameters

1 Enter optional Security Key

2 Enter Encoder or Group name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3

✓ Finish

Command start av – Normal Mode – Multicast Auto mode

Parameters

1 Enter optional Security Key

2 Enter Encoder or Group name

3 Enter optional Audio Multicast Address

4 Enter optional Video Multicast Address

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Audio Multicast Address (optional)

4 Video Multicast Address (optional)

5

✓ Finish

Command start av – Wizard Mode – Multicast Manual mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2

✓ Finish

Command start av – Wizard Mode – Multicast Auto mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 Enter optional Audio Multicast Address

3 Enter optional Video Multicast Address

4 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2 Audio Multicast Address (optional)

0.0.0.0

3 Video Multicast Address (optional)

0.0.0.0

4

✓ Finish

Command start audio_a – Normal Mode – Multicast Manual mode

Parameters

1 Enter optional Security Key

2 Enter Encoder or Group name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3

✓ Finish

Command start audio_a – Normal Mode – Multicast Auto mode

Parameters

1 Enter optional Security Key

2 Enter Encoder or Group name

3 Enter optional Multicast Address

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Multicast Address (optional)

4

✓ Finish

Command start audio_a – Wizard Mode – Multicast Manual mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2

✓ Finish

Command start audio_a – Wizard Mode – Multicast Auto mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 Enter optional Multicast Address

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2

Multicast Address (optional)

0.0.0.0

3

✓ Finish

Command start audio_d – Normal Mode – Multicast Manual mode

Parameters

1 Enter optional Security Key

2 Enter Encoder or Group name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3

Command start audio_d – Normal Mode – Multicast Auto mode

Parameters

1 Enter optional Security Key

2 Enter Encoder or Group name

3 Enter optional Multicast Address

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Multicast Address (optional)

4

Command start audio_d – Wizard Mode – Multicast Manual mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2

✓ Finish

Command start audio_d – Wizard Mode – Multicast Auto mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 Enter optional Multicast Address

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2

Multicast Address (optional)

0.0.0.0

3

✓ Finish

Command set audio_io – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Select Audio Port Function INPUT / OUTPUT

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Select Audio Port Function

4

Command set audio_io – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Select Audio Port Function INPUT / OUTPUT

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Encoder Device Name

2 Select Audio Port Function

3

Command set audio_out – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder Device Name

3 Select Audio Source HDMI / ANALOG

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 Select Audio Source

4

Command set audio_out – Wizard Mode

Parameters

1 Select Decoder Device Name

2 Select Audio Source HDMI / ANALOG

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Decoder Device Name

2 Select Audio Source

3

Command set audio_source – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder Device Name

3 Select Audio Source HDMI / ANALOG

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 Select Audio Source

4

✓ Finish

Command set audio_source – Wizard Mode

Parameters

1 Select Decoder Device Name

2 Select Audio Source HDMI / ANALOG

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Decoder Device Name

2 Select Audio Source

3

✓ Finish

Command set edid – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder or Group name

3 1 Enter EDID or

3 2 Select a Decoder's EDID or

3 3 Select an EDID file or

3 4 Select a default EDID

4 Click Finish button

Select Mode

Wizard

Normal

1 Security Key (optional)

2 Encoder / Group

EDID

3 1

3 2

Decoder EDID

3 3

External File

1080p EDID

4K30 EDID

Default 4K60 EDID

3 4

4 Finish

Command set edid – Wizard Mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group name

2 1 Enter EDID or

2 2 Select a Decoder's EDID or

2 3 Select an EDID file or

2 4 Select a default EDID

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

35306436343462616332353331306430

1 1 Select

☒ Encoder Device Name

☐ All Encoders

☐ Group Name

1 2

EDID

2 1

2 2

2 3

Decoder EDID

External File

1080p EDID

4K30 EDID

Default 4K60 EDID

2 4

3

Finish

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Command set events – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Event Name

3 Enter Function "state"

4 Enter Value

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Events

3 Function

4 Value

5

✓ Finish

Command set events – Wizard Mode

Parameters

1 Select Event Name

2 Select Value

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Events

Function

2 Value

3

✓ Finish

Command set frame_converter – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Select Stream

4 Select Frame Rate

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Streams

4 Frame Rate

5

✓ Finish

Command set frame_converter – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Select Stream

3 Select Frame Rate

4 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 Streams

3 Frame Rate

4

✓ Finish

Command set listener – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Notification IP Address

3 Enter Notify Port

4 Select Protocol UDP / TCP

5 Select State On / Off / Any

6 Select Service Enabled / Disabled

7 Select Device I/O Port

8 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Notify Address

3 Notify Port

4 Protocol

5 State

6 Service

7 Device Port

8

Command set listener – Wizard Mode

Parameters

1 Click Device Discovery button

2 Select device from list

Select Mode ☒ Wizard
☐ Normal

1 Select Device

Device Discovery

2

Discovered Devices

000C1EC01DB1@172.30.10.138 (GC-100-12)

000C1EE08C16@172.30.10.134 (iTachFlexEthernet)

000C1E0364F2@172.30.10.113 (iTachFlexEthernet)

000C1E052A94@172.30.10.130 (GCIR3)

iTachIR@172.30.10.107 (iTachIP2IR)

000C1E0370B9@172.30.10.115 (iTachFlexWiFi)

Refresh

Security Key (optional) 35306436343462616332353331306430

Notify Address 0.0.0.0

Notify Port

Protocol

State

Service

Device Port

Finish

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Command set listener – Wizard Mode continued...

Parameters

Select Mode
☒ Wizard
☐ Normal

Select Device


Device Discovery


iTachIR@172.30.10.107 (iTachIP2IR)

Alias Name (optional)

Description (optional)

Save

 Network



3 Select I/O
☒
☐
☐

4 Select Mode
Sensor Notify

5

Notify Port
9160

Notify Timer
0

Set

Security Key (optional)
35306436343462616332353331306430

Notify Address
239.255.250.250

Notify Port
9160

Protocol
UDP

Device Address
172.30.10.107

6 State

7 Service
Disabled

Device Port
1

8
Finish

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Command set presenter – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Group name

3 Select State Enabled / Disabled

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Group

3 State

4

✓ Finish

Command set presenter – Wizard Mode

Parameters

1 Select Group

2 Select State Enabled / Disabled

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Group

2 State

3

✓ Finish

Command set scaler – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Enter resolution Width

4 Enter resolution Height

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Width

4 Height

5

✓ Finish

Command set scaler – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Select Size

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Encoder Device Name

2 Size

3

✓ Finish

Command set security – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device / Group name

3 Enter Encryption Key

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device / Group

3 Encryption Key

4

✓ Finish

Command set security – Wizard Mode

Parameters

1 Select Group or Device

2 Select NONE or Enter Encryption Key

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Select

☐ Device Name

☐ Group Name

NONE (optional)

☐

2 Encryption Key

3

✓ Finish

Command set video_compress – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Select State

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 State

4

✓ Finish

Command set video_compress – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Select State

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 State

3

✓ Finish

Command set video_mode – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder / Group Name

3 Select Display Mode [SYNC]

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder / Group

3 Display Mode

SYNC

4

✓ Finish

Parameters

1 Enter optional Security Key

2 Enter Decoder / Group Name

3 Select Display Mode SYNC (SCALE)

4 1 Enter Width

4 2 Enter Height

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder / Group

3 Display Mode

SYNC (SCALE)

4 1 Width (optional)

4 2 Height (optional)

5

✓ Finish

Parameters

1 Enter optional Security Key

2 Enter Decoder / Group Name

3 Select Display Mode FAST

4 Select Aspect Ratio

5 1 Enter Width

5 2 Enter Height

5 3 Enter Frame Rate

6 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder / Group

3 Display Mode

FAST

4 Aspect (optional)

KEEP

5 1 Width (optional)

5 2 Height (optional)

5 3 Frame Rate (optional)

6

✓ Finish

Command set video_mode – Wizard Mode

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group Name

2 Select Display Mode SYNC

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

1 2

2 Display Mode

SYNC

3

✓ Finish

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group Name

2 Select Display Mode SYNC (SCALE)

3 Select FORMAT

4 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

1 2

2 Display Mode

SYNC (SCALE)

3 FORMAT (optional)

4

✓ Finish

Command set video_mode – Wizard Mode continued...

Parameters

1 1 Select Device(s)

1 2 Select Encoder or Group Name

2 Select Display Mode FAST

3 Select Aspect Ratio

4 Select FORMAT

5 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

1 2

2 Display Mode

FAST

3 Aspect (optional)

KEEP

4 FORMAT (optional)

5

✓ Finish

Command set video_mute – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder Device Name

3 1 Select State

3 2 Enter HEX Colour code

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 1 State

ENABLED

3 2 Colour (optional)

000000

4

✓ Finish

Command set video_mute – Wizard Mode

Parameters

1 Select Decoder Device Name

2 1 Select State

2 2 Select Colour

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Decoder Device Name

2 1 State

ENABLED

2 2 Colour (optional)

000000

3

✓ Finish

Command set video_source – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Select Video Input HDMI / DISPLAYPORT / AUTO

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Select Video Input

4

Command set video_source – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Select Video Input HDMI / DISPLAYPORT / AUTO

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Encoder Device Name

2 Select Video Input

3

Command get api

Parameters

1 Click Finish button

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1

✓ Finish

Command get audio_io – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3

✓ Finish

Command get audio_io – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Encoder Device Name

2

✓ Finish

Command get audio_out – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3

✓ Finish

Command get audio_out – Wizard Mode

Parameters

1 Select Decoder Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Decoder Device Name

2

✓ Finish

Command get audio_source – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3

✓ Finish

Command get audio_source – Wizard Mode

Parameters

1 Select Decoder Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Decoder Device Name

2

✓ Finish

Command get bandwidth – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device Name

3 Select optional Index

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

Index (optional)

☒

3

0

31

4

✓ Finish

Command get bandwidth – Wizard Mode

Parameters

1 Select Device Name

2 Select optional Index

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Device Name

Index (optional)

☒

2

0

31

3

✓ Finish

Command get devices

Parameters

1 Select Devices

2 Click Finish button

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Select Devices

2

✓ Finish

Command get display_status – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3

✓ Finish

Command get display_status – Wizard Mode

Parameters

1 Select Decoder Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Decoder Device Name

2

✓ Finish

Command get edid – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3

✓ Finish

Command get edid – Wizard Mode

Parameters

1 Select Decoder Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Decoder Device Name

2

✓ Finish

Command get joins – Normal Mode

Parameters

1 Enter optional Security Key

2 Select Subscription

3 Enter Device Name

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Subscription

3 Device Name

4

✓ Finish

Command get joins – Wizard Mode

Parameters

1 Select Subscription

2 Select Device Name

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Subscription

2 Device Name

3

✓ Finish

Command get events – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Event Name

3 Enter Function as State

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Events

3 Function

4

✓ Finish

Command get events – Wizard Mode

Parameters

1 Select Event Name

2 Select Function as State

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Events

2 Function

3

✓ Finish

Command get frame_converter – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Select stream

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Streams

4

✓ Finish

Command get frame_converter – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Select stream

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 Streams

3

✓ Finish

Command get matrix – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Stream type

3 Select a video index

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Streams

3 Index (optional)

4

✓ Finish

Command get matrix – Wizard Mode

Parameters

1 Select Stream type

2 Select a video index

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Streams

2 Index (optional)

0

31

3

✓ Finish

Command get json – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3

✓ Finish

Command get json – Wizard Mode

Parameters

1 Select Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Device Name

2

✓ Finish

Command get preferred – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder Device Name

3 Select Resolution

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 Resolution

4

✓ Finish

Command get preferred – Wizard Mode

Parameters

1 Select Decoder Device Name

2 Select Resolution

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Decoder Device Name

2 Resolution

3

✓ Finish

Command get presenter – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Group name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Group

3

✓ Finish

Command get presenter – Wizard Mode

Parameters

1 Select Group

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Group

2

✓ Finish

Command get scaler – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Select Option

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Option

4

✓ Finish

Command get scaler – Normal Mode

Parameters

1 Select Encoder Device Name

2 Select Option

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 Option

3

✓ Finish

Command get security – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3

✓ Finish

Command get security – Wizard Mode

Parameters

1 Select Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

656b32566a313c6d31486931676831597431476d316a6d

1 Device Name

2

✓ Finish

Command get status – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device Name

3 1 Select optional stream

3 2 Select video index

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3 1 Streams (optional)

VIDEO

3 2 Index

4 ✓ Finish

Command get status – Wizard Mode

Parameters

1 Select Device Name

2 1 Select optional stream

2 2 Select video index

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Device Name

2 1 Streams (optional)

VIDEO

2 2 Index

3 ✓ Finish

Command get temp – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3

✓ Finish

Command get temp – Wizard Mode

Parameters

1 Select Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Device Name

2

✓ Finish

Command get ver – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3

✓ Finish

Command get ver – Wizard Mode

Parameters

1 Select Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Device Name

2

✓ Finish

Command get video / get rt_video – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Select Option

4 Optionally select Real-time

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Option

4 Real-time (optional)

☐

5

✓ Finish

Command get video / get rt_video – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Select Option

3 Optionally select Real-time

4 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

33343162376161336334353430316233

1 Encoder Device Name

2 Option

3 Real-time (optional)

☐

4

✓ Finish

Command get video_compress – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3

✓ Finish

Command get video_compress – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2

✓ Finish

Command get video_mode – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3

✓ Finish

Command get video_mode – Wizard Mode

Parameters

1 Select Decoder Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Decoder Device Name

2

✓ Finish

Command get video_mute – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3

✓ Finish

Command get video_mute – Wizard Mode

Parameters

1 Select Decoder Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Decoder Device Name

2

✓ Finish

Command get video_source – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3

✓ Finish

Command get video_source – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Encoder Device Name

2

✓ Finish

Command get_video_status – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Encoder Device Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3

✓ Finish

Command get_video_status – Wizard Mode

Parameters

1 Select Encoder Device Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2

✓ Finish

Command get window – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Layout Name

3 Select Option

4 Select Index

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Layout Name

3 Option

4 Index

031

5

✓ Finish

Command get window – Wizard Mode

Parameters

1 Select existing Layout Name

2 Select Option

3 Select Index

4 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Layout Name

2 Option

3 Index

031

4

✓ Finish

Command send ir – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device Name

3 Enter IR HEX code

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3 IR Code

4

✓ Finish

Command send ir – Wizard Mode

Parameters

1 1 Select Device(s)

1 2 Select Device or Group name

2 Enter IR HEX code

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

35306436343462616332353331306430

1 1 Select

☒ Device Name

☐ Group Name

☐ All

☐ All Decoders

☐ All Encoders

1 2

IR Code

2

3

✓ Finish

Command send serial – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device Name

3 Enter ASCII formatted string

4 1 Select optional Reply

4 2 Select optional Timeout

5 Click Finish button

Select Mode

Wizard

Normal

1 Security Key (optional)

2 Device Name

3 Data String

4 1 Reply (optional)

4 2 Timeout (optional)

1

3

9

5

✓ Finish

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Command send serial – Wizard Mode

Parameters

1 1 Select Device Name

1 2 Select Device

2 Select Format

3 Enter Data String

4 Select optional termination

5 Select optional Reply

6 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

35306436343462616332353331306430

1 1

Select Device

Alias Name (optional)

Description (optional)

Save

1 2 Select

☒ Device Name

☐ Group Name

☐ All

☐ All Decoders

☐ All Encoders

5 2

2 Format

ASCII

3 Data String

4 1 Append CR (optional)

☐

4 2 Append LF (optional)

☐

5 Feedback (optional)

NONE

6

✓ Finish

Command send cec – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Device Name

3 Enter CEC Code

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3 CEC Code

4

✓ Finish

Command send cec – Wizard Mode

Parameters

1 1 Select Device(s)

1 2 Select Device or Group name

2 Select CEC Code

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

32353131383536623232313634323930

1 1 Select

☒ Encoder Device Name

☐ Decoder Device Name

☐ Group Name

☐ All

☐ All Decoders

☐ All Encoders

1 2

▼

2 CEC Code

▼

3

✓ Finish

Command send gc – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter device IP Address
- Select device Port
- Enter ASCII formatted string
- Click Finish button

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Address

3 Port

4 Global Cachè Command

5

Command send gc – Wizard Mode

Parameters ×

- Click Device Discovery button
- Select required device

Select Mode ☒ Wizard ☐ Normal

1

Discovered Devices

- 000C1EC01DB1@172.30.0.108 (GC-100-12)
- 000C1E0364F2@172.30.0.99 (iTachFlexEthernet)
- 000C1E052A93@172.30.0.94 (GC232)
- 2 000C1E052A92@172.30.0.91 (GCHMX3)
- 000C1E052A95@172.30.0.92 (GCRL3A)
- 000C1E052A94@172.30.0.90 (GCIR3)
- 000C1E05019E@172.30.0.96 (iTachIP2IR)

Security Key (optional)

Address

Port

Global Cachè Command

Command send gc – Wizard Mode continued...

Parameters

Select Mode

☒ Wizard
☐ Normal

Device Discovery

000C1EC01DB1@172.30.0.108 (GC-100-12)

Wizard

Config Page

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

Address

172.30.0.108

Port

4999

Global Cache Command

Finish

** The selected devices IP Address and available ports are now automatically populated. At this point you can select the required port and enter the required command or continue with the Wizard by clicking the Wizard button.*

This example shows sending a serial string from RS232 port #1 of a GC-100-12.

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This example shows setting relay #1 of a GC-100-12.

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Command send gc – Wizard Mode continued...

When selecting an I/O port the “Select Mode” option will become available. From this selection you can configure the I/O port to any supported condition. This will send the configuration commands direct to the device.

The SDVoE Director Controller must have internet access to obtain the Global Caché cloud IR database.

This example shows sending an Infrared signal from I/O #3 of a GC-100-12.

Parameters ×

Select Mode

☒ Wizard
 ☐ Normal

Select Device


000C1EC01DB1@172.30.10.106 (GC-100-12)

Device Discovery

Wizard

Config Page

Network



1 Select I/O

☐ ☐ ☐ ☒ ☐ ☐ ☐ ☐

2 Select Mode

Infrared

3 1 Acquire Mode

Cloud Database

Global Cache

3 2 Manufacturer

Samsung

Device Type

TV

Device

Most Models

Function

POWER ON

4

Set

Stop

1 Select I/O

2 Select I/O mode of operation

3 1 Enter IR HEX Code or

3 2 Navigate the IR database

4 Click Set button

5 Click Finished button

Security Key (optional)

33343162376161336334353430316233

IP Address

172.30.10.106

Port

4998

Disconnect (optional)

☐

Global Caché Command

sendir,4:1,1,38000,1,1,172,172,22,64,22,64,22,64,22,21,22,21,22,21,22,4

5

Finish

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Command send gc – Wizard Mode continued...

The iTach Flex range of controllers are configured by selecting the cable connected to the device. Once the cable type has been selected all the controllable options will become available. The iTach Flex will automatically be configured for the selected cable.

Parameters


Select Mode
☒ Wizard
☐ Normal


Device Discovery


Wizard


Config Page


000C1E0364F2@172.30.0.99 (iTachFlexEthernet)



FLC-SL



FLC-SL-MJ



FLC-SL-485



FLC-RS


FLC-1E


FLC-BL


FLC-T3


FLC-3E


FLC-2E1B

Network

Config

Security Key (optional)
387032576f317967315d6731636b31466c31336d317068

Address
172.30.0.99

Port
4998

Global Cachè Command

Finish

Command send tcp – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter device IP Address

3 Enter device Port

4 Enter ASCII formatted string

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Address

0.0.0.0

3 Port

4 Command

5

✓ Finish

Command send tcp – Wizard Mode

Parameters

1 Enter device IP Address

2 Enter device Port

3 Select string Format

4 Enter Command

5 Select optional termination

6 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Address

0.0.0.0

2 Port

3 Format

ASCII

4 Command

5 1

Append CR (optional)

☐

5 2

Append LF (optional)

☐

6

✓ Finish

Command multiview – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Decoder Device Name

3 Enter Layout Name

4 Enter Resolution Width

5 Enter Resolution Height

6 Enter Frame Rate

7 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 Layout Name

4 Resolution Width

5 Resolution Height

6 Frame Rate

7

Command multiview – Wizard Mode

Parameters

1 Select Decoder Device Name

2 Select existing Layout Name

3 Select Video Mode

4 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Decoder Device Name

2 Layout Name

3 Video Mode

4

Command layout new – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter new Layout Name

3 Enter layout Width

4 Enter layout Height

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Layout Name

3 Width

4 Height

5

✓ Finish

Command layout new – Wizard Mode

Parameters

1 Enter new Layout Name

2 Select layout Size

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Layout Name

2 Size

3

✓ Finish

Command layout window – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter Layout Name
- Select window Index
- Enter Horizontal Position
- Enter Vertical Position
- Enter window Width
- Enter window Height
- Select window Subscription
- Click Finish button

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Layout Name

3 Index

4 Horizontal Position

5 Vertical Position

6 Width

7 Height

8 Subscription

9

Command layout window – Wizard Mode

Parameters ×

- Select existing Layout Name
- Select window Index
- Enter Horizontal Position
- Enter Vertical Position
- Enter window Width
- Enter window Height
- Select window Subscription
- Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

1 Layout Name

2 Index

3 Horizontal Position

4 Vertical Position

5 Width

6 Height

7 Subscription

8

Command layout black – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Layout Name

3 Select window Index

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Layout Name

3 Index

0

31

4

✓ Finish

Command layout black – Wizard Mode

Parameters

1 Select existing Layout Name

2 Select window Index

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Layout Name

2 Index

0

31

3

✓ Finish

Command layout delete – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Layout Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Layout Name

3

✓ Finish

Command layout delete – Wizard Mode

Parameters

1 Select existing Layout Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Layout Name

2

✓ Finish

Command preset add

Parameters

1 Enter new Preset Name

2 Enter Preset Data

3 Click Finish button

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Preset Name

2 Preset Data

3

✓ Finish

Command preset load – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Preset Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Preset Name

3

✓ Finish

Command preset load – Wizard Mode

Parameters

1 Select existing Preset Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Preset Name

2

✓ Finish

Command preset delete – Normal Mode

Parameters

1 Enter optional security key

2 Enter Preset Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Preset Name

3

✓ Finish

Command preset delete – Wizard Mode

Parameters

1 Select existing Preset Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Preset Name

2

✓ Finish

Command preset dynamic – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter Preset Name

3 Select State Enabled / Disabled

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Preset Name

3 State

4

✓ Finish

Command preset dynamic – Wizard Mode

Parameters

1 Select existing Preset Name

2 Select State Enabled / Disabled

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Preset Name

2 State

3

✓ Finish

Command set ui_button – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter UI Name

3 Enter Button Name

4 Select Function
Position / State / Text / Press

5 Enter Value

6 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 UI Name

3 Button Name

4 Function

5 Value

6

✓ Finish

Command set ui_button – Wizard Mode

Parameters

1 Select UI Name

2 Select Button Name

3 Select Function
Position / State / Text / Press

4 Select or Enter Value

5 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 UI Name

2 Button Name

3 Function

4 Value

5

✓ Finish

Command set ui_label – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter UI Name

3 Enter Label Name

4 Select Function
Color / Visibility / Text

5 Enter Value

6 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 UI Name

3 Label Name

4 Function

5 Value

6 ✓ Finish

Command set ui_label – Wizard Mode

Parameters

1 Select UI Name

2 Select Label Name

3 Select Function
Color / Visibility / Text

4 Select or Enter Value

5 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 UI Name

2 Label Name

3 Function

4 Value

5 ✓ Finish

Command set ui_image – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter UI Name

3 Enter Image Name

4 Select Function Visibility

5 Enter Value

6 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 UI Name

3 Image Name

4 Function

5 Value

6 ✓ Finish

Command set ui_image – Wizard Mode

Parameters

1 Select UI Name

2 Select Image Name

3 Select Function Visibility

4 Enter Value

5 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 UI Name

2 Image Name

3 Function

4 Value

5 ✓ Finish

Command set ui_page – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter UI Name

3 Enter Page Name

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 UI Name

3 Page Name

4

✓ Finish

Command set ui_page – Wizard Mode

Parameters

1 Select UI Name

2 Select Page Name

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 UI Name

2 Page Name

3

✓ Finish

Command set ui – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter UI Name

3 Select Service > Enabled

4 Enter optional UI Timeout (minutes)

5 Enter optional Client Limit (1 – 100)

6 Enter optional 4 digit code (0000 – 9999)

7 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 UI Name

3 Service

4 Timeout (optional)

5 Client Limit (optional)

6 Code (optional)

7

✓ Finish

Parameters

1 Enter optional Security Key

2 Enter UI Name

3 Select Service > Disabled

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 UI Name

3 Service

4

✓ Finish

Parameters

1 Enter optional Security Key

2 Enter UI Name

3 Select Service > Disabled

4 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 UI Name

3 Service

4

✓ Finish

Command set ui – Wizard Mode

Parameters

1 Select UI Name

2 Select Service > Enabled

3 Select optional UI Timeout

4 Select optional Client Limit (1 – 100)

5 Select optional Login None / Random / Fixed

6 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

35306436343462616332353331306430

1 UI Name

2 Service

Enabled

3 Timeout (optional)

4 Client Limit (optional)

☒

110100

5 Login (optional)

6 ✓ Finish

Parameters

1 Select UI Name

2 Select Service > Disabled

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

35306436343462616332353331306430

1 UI Name

2 Service

Disabled

3 ✓ Finish

Parameters

1 Select UI Name

2 Select Service > Logout

3 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

35306436343462616332353331306430

1 UI Name

2 Service

Logout

3 ✓ Finish

Command get ui – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter UI Name

3 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 UI Name

3

✓ Finish

Command get ui – Wizard Mode

Parameters

1 Select UI Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 UI Name

2

✓ Finish

Command get ui_button – Normal Mode

Parameters

1 Enter optional Security Key

2 Enter UI Name

3 Enter Button Name

4 Enter Function > down

5 Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 UI Name

3 Button Name

4 Function

5

✓ Finish

Command get ui_button – Wizard Mode

Parameters

1 Select UI Name

2 Select Button Name

3 Select Function > Down

4 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 UI Name

2 Button Name

3 Function

4

✓ Finish

Appendix E – Using Custom Resolutions

While the UI mainly uses standard VESA resolutions it is possible to use virtually any custom resolution required within the limits of the scaler. The scaler has a scaling limit of a factor of eight (8) and the resolution must be even. So the source resolution will be the determining factor as to what resolution the Decoder can output.

The following table indicates the scaler limits for some common resolutions:

Source Resolution	1280 x 720	1920 x 1080	3840 x 2160
Scale up max	4096 x 2160	4096 x 2160	4096 x 2160
Scale down max	160 x 90	240 x 136	480 x 270

The Multiview Tab provides a custom resolution for the display but for anything else a preset will need to be created and manipulated. Look for the keyword “size” in a join command.

join fast Encoder1 Decoder1 size 1280 720 50

Following the keyword “size” is the width then height then frame rate of the Decoder output resolution. Change these values as required within the limits of the scaler.

join fast Encoder1 Decoder1 size 480 756 50

FAQ

#1

Q: In Video Wall mode why do I see the video as a small image over a larger image?



A: The source resolution has reduced since the crop settings were applied.

Cropping of the source video is based on the video resolution when the source is switched to a wall layout. So when the source resolution changes, the previous crop settings are no longer valid. Re-apply the Video Wall preset so the crop settings can be applied for the current source resolution, or select **Dynamic Preset** which will automatically apply the correct crop settings on a change of source resolution for a **standard** Video Wall preset.

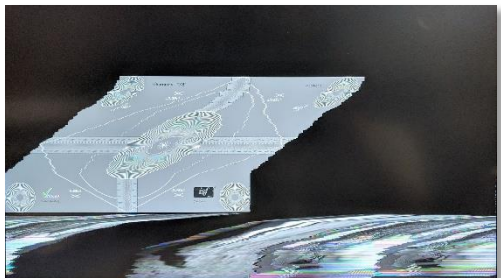
#2

Q: Why do I see video scrolling and or tearing in Multiview mode?



A: The network bandwidth of the Encoder and / or Decoder has been exceeded.

Check the bandwidth indicated on the Status page. Try reducing the Frame Rates of the multiview and /or main streams, or turn off the main video stream completely.



A: Incorrect layout window size.

Check the layout configuration and make sure all the windows are inline and the actual window sizes match the area available. Also check that all windows are of an even size.

FAQ continued...

#3

Q: How does an 18Gbps 4K60 4:4:4 video signal fit down a 10Gbps network?

A: The 17.82Gbps bandwidth noted for 4K60 is the bandwidth of the total HDMI signals sent down a HDMI cable, but we don't need to send the same data via the network.

A 4K60 video signal has active 3840x2160 visual pixels and actually has a total of 4400x2250 pixels including timing information. We do not need to send any of this extra information via the network as timing and other data is re-established at the Decoder before being sent to the display. So basically we don't need to send as much data over the network as there is in the HDMI cable itself. A 4K60 stream becomes about 12Gbps of video data.

Video streams are limited to around 9Gbps to allow room for 1Gbps general purpose network data. All but a few resolutions will fit down this 9Gbps pipe uncompressed and when exceeded low-latency light compression of 1.4:1 is applied for the following resolutions:

- 4K50-60 8-bit RGB / YCbCr 4:4:4
- 4K50-60 10-bit YCbCr 4:2:2
- 4K50-60 12-bit YCbCr 4:2:2
- 4K50-60 12-bit YCbCr 4:2:0
- 4K30 12-bit RGB / YCbCr 4:4:4

A unique compression algorithm was specifically developed with a compression ratio of just 1.4:1. When enabled, this lightweight compression ration results is visually indistinguishable image quality. The compression codec functions in-line with the rest of the various BlueRiver™ AV processing and adds only seven (7) lines of latency (<15µs for 4K60Hz). The resulting algorithm provides the industry's best results – video quality that is indistinguishable from native video, and with imperceptible latency.

#4

Q: Why are video walls limited to 8x5?

A: This is a simple matter of the number of pixels available from the original source to be displayed full screen on a given display. With a source video resolution of 3840x2160 on an 8x5 video wall results in each display rendering only 480x432 of the original video. Any less than this would result in poor picture quality with a very pixelated image. A 1920x1080 video source is worst as this only leaves 240x216 of the original video. This 480x432 / 240x216 pixel area of the original video content is then scaled up the monitor resolution of 1920x1080 or 3840x2160.

display pixel width = resolution width / number of horizontal displays

display pixel height = resolution height / number of vertical displays

FAQ continued...**#5**

Q: What are the resolution limits of the scaler?

A: The scaler can multiply or divide by eight (8). This applies horizontally and vertically. So for example a 480x270 image can be scaled up to 3840x2160 and a 240x135 image can be scaled up to 1920x1080. Or, a 3840x2160 image can be scaled down to 480x270 and a 1920x1080 image can be scaled down to 240x136 (must be even numbers).

#6

Q: Is there a limit to the number of Encoders or Decoders I can use on the system?

A: The simple answer is no. Limiting factors will be:

- Number of licenced devices
- Network capabilities
- Multicast IP allocations

#7

Q: Why can I only have 2 or 3 video streams enabled before I loose video on the displays?

A: Flooding of the network switch, most likely due to IGMP (Internet Group Management Protocol) not being implemented or set-up incorrectly on the network switch. Without correctly configured IGMP all network switch ports will receive the multicast data from all Encoders. Once the bandwidth of a network switch port is exceed undesirable affects will occur, such as total loss or corrupted video. IGMP insures that a given network port connected to a Decoder only receives multicast data from its subscribed Encoder.

#8

Q: How many simultaneous TCP connections are allowed on control port 6980?

A: Unlimited by default but this can be limited in the UI Advanced Settings section from 1 to 10 connections.

#9

Q: Is there a limit to the number of users that can access the system at any given time?

A: There are no built-in limits to the number of users that can access the system.

#10

Q: How do I find the SDVoE Director Controller on the network?

A: The default IP of the SDVoE Director Controller will be 169.254.1.1. Use the [iMAGfinder](#) application if unable to locate the controller on the network. If still unable to locate the SDVoE Director Controller it may need to be reset back to factory default. Refer FAQ #11.

FAQ continued...**#11**

Q: How do I reset the SDVoE Director Controller to factory default?

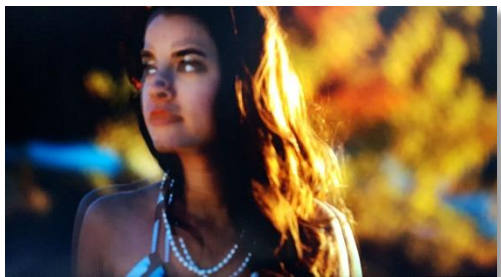
A: Insert a 3.5mm phono plug into the rear headphone socket for more than 10 seconds then unplug it.

**#12**

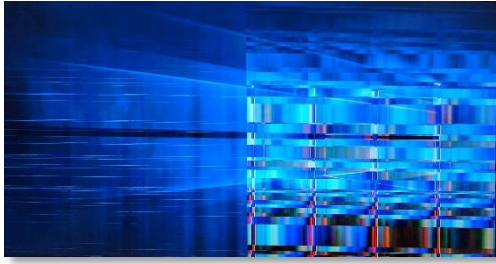
Q: What is the actual video latency of the system?

A: This depends on the mode of operation as follows:

- Latency for unscaled video transport
 - 12 lines without compression (< 3840x2160@50)
 - 17 lines with compression (> 3840x2160@30)
- Latency for scaled video transport
 - Sync scaling: Approximately 200 lines (this varies by input and output formats)
 - Fast scaling: 1 to 2 frames
- Latency for incorporating Multiview functionality
 - 1 to 2 frames

FAQ continued...**#13****Q:** Why do I just see noise as the image?**A:** This is the result of a Decoder in fast mode with an invalid encryption key.**#14****Q:** Why does an Encoder not detect a video signal higher than 4K30?**A:** The Encoder EDID is most likely missing the SCDC_present bit so it is not compliant with HDMI 2.0 for resolutions greater than 4K 30Hz. Load the default 4K60 EDID into the Encoder.**#15****Q:** What can cause a displays image to flicker?**A:** Video signals at 30Hz in sync modes with the frame rate set to half will cause the image to flicker. Make sure all 30Hz signals do not have the frame rate set to half.**#16****Q:** Can there be a redundant SDVoE Director Controller on the system?**A:** As long as Multicast IP Mode is kept in "AUTO" mode more than one SDVoE Director Controller can be safely connected to the network on different IP addresses. If "MANUAL" multicast is required then both controllers must have the same multicast addresses applied for all streams.

FAQ continued...



#17

Q: What causes the image to break up?

A: This is the result of the Encoder exceeding the network bandwidth. If using the main stream, turn off the sub stream or reduce the Frame Rate to HALF.

#18

Q: Why is there video from an Encoder's HDMI port but not the DisplayPort input?

A: The Encoder's EDID is not compatible for the DisplayPort source. Set the Encoder's EDID to either the displays EDID or use the default 4k30 or 4k60 EDID.