

# **DIRECTOR**

## **USER MANUAL**

# **THUNDER THUNDER**



Les technologies pour voir et entendre plus loin

# **SAHFETECH<sup>®</sup>**

See And Hear Further **TECH**nologies

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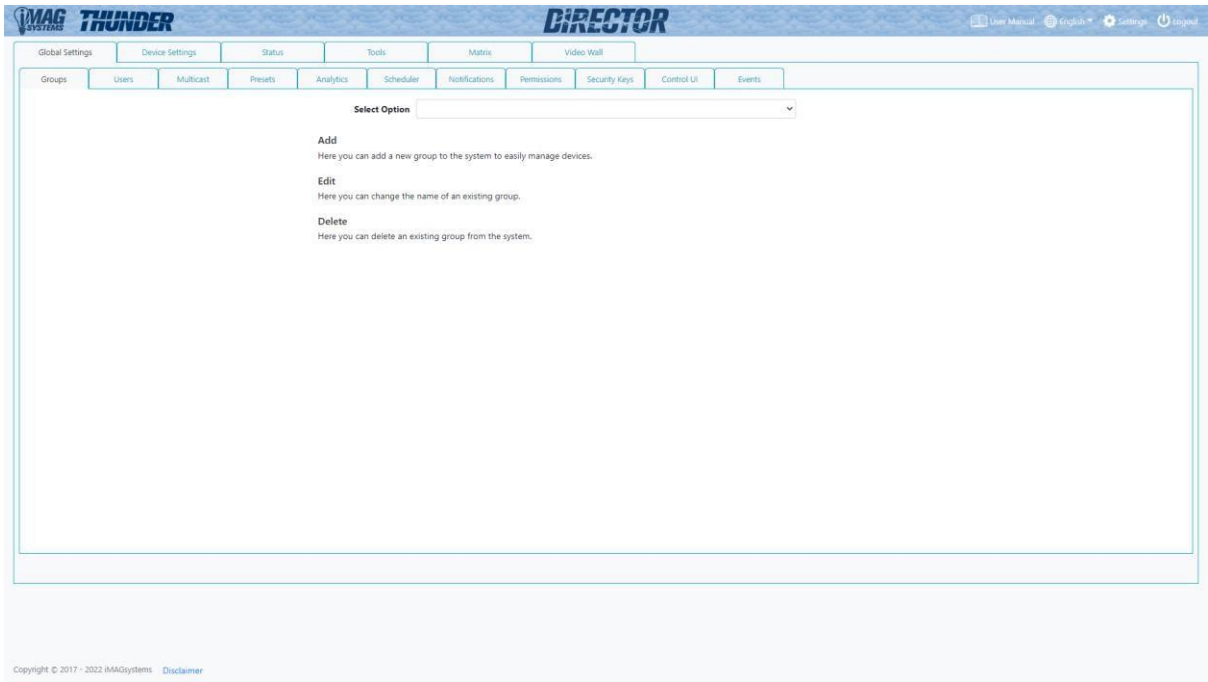
## 1 Global Settings

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



### 1.1 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

### 1.1.1 Add Group

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

Encoders or Decoders can also be assigned to groups from Device Settings / Group.

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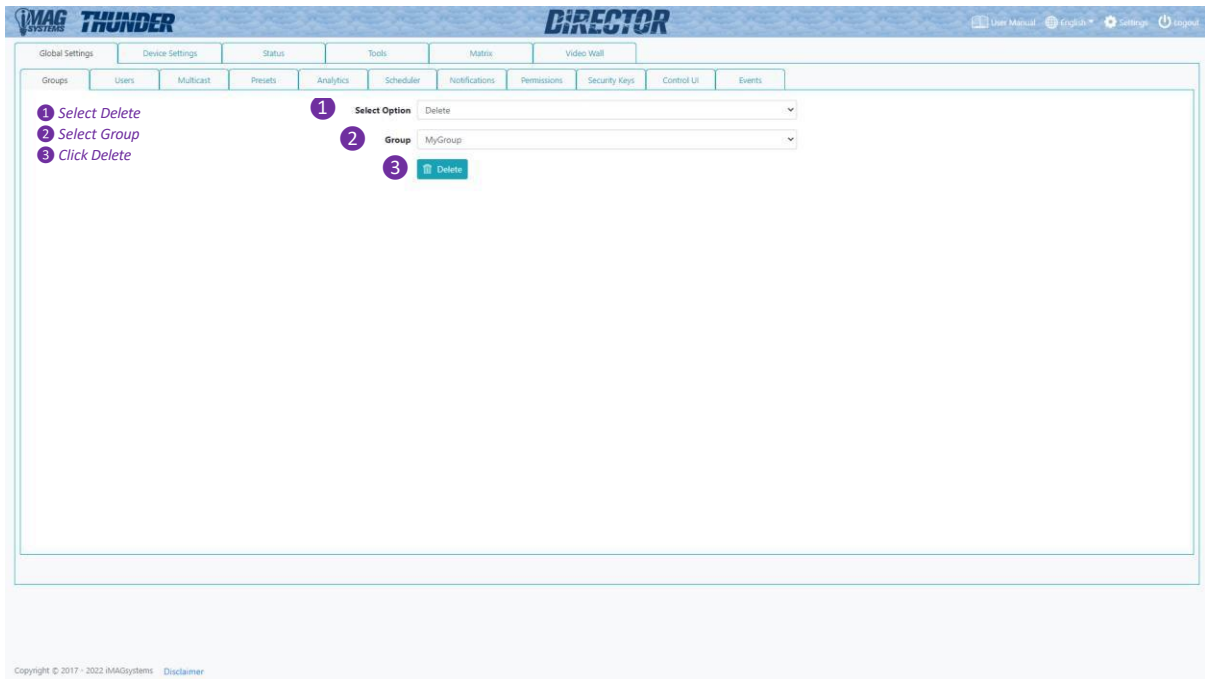
### 1.1.2 Edit Group

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

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### 1.1.3 Delete Group

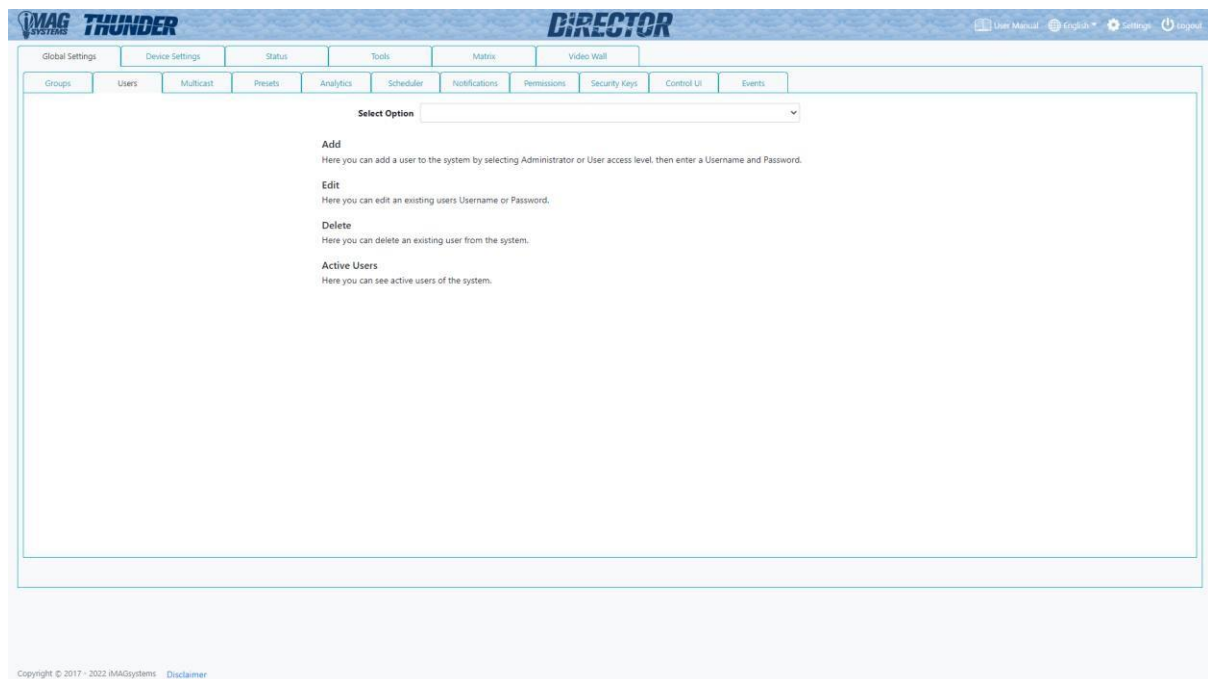
Here you can delete an existing group from the system.



## 1.2 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
- 
- The device groups for a user can also be limited so that only selected groups of Encoders and Decoders may be accessed.



### 3.2.1 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.

**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** Select Option: Add  
**2** Level: ☐ Administrator ☒ User  
**3** Username:   
**4** Password:   
**5** Confirm Password:   
**6** Group: ☒ All ☒ group1 ☒ group2  
**7** Functions: ☒ Status ☒ Video Wall ☒ Matrix  
**8** Save

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### 3.2.2 Edit User

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

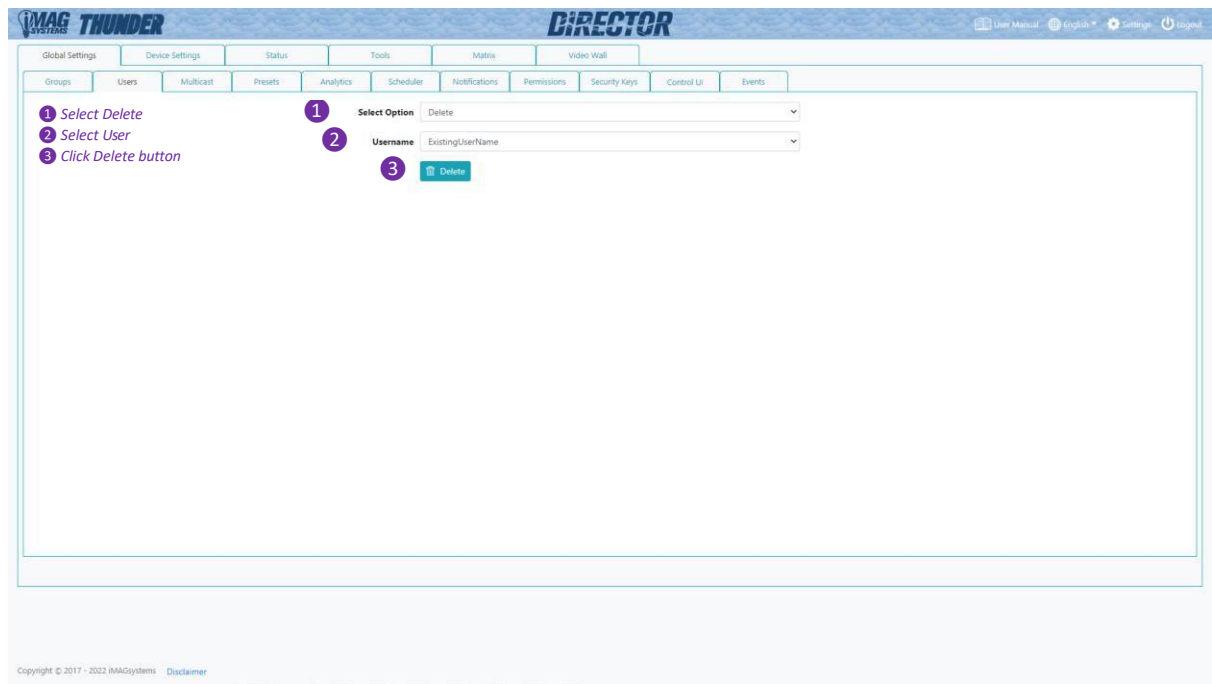
**1** Select Edit  
**2** Select User  
**3** Change Username  
**4** Enter new Password  
**5** Confirm Password  
**6** Change Groups  
**7** Change Functions  
**8** Click Save button

**1** Select Option: Edit  
**2** Edit: ExistingUserName  
**3** Username: ExistingUserName  
**4** New Password:   
**5** Confirm Password:   
**6** Group: ☒ All ☒ group1 ☒ group2  
**7** Functions: ☒ Status ☒ Video Wall ☒ Matrix  
**8** Save

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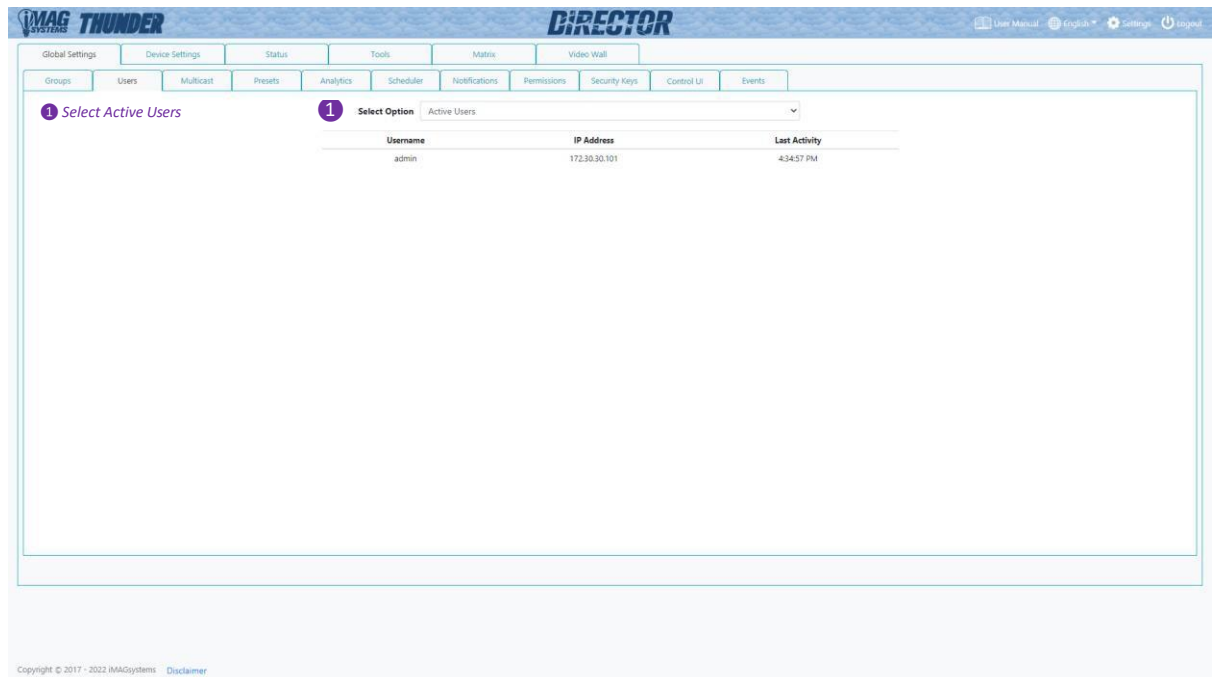
### 3.2.3 Delete User

Here you can delete an existing user from the system.



### 3.2.4 Active Users

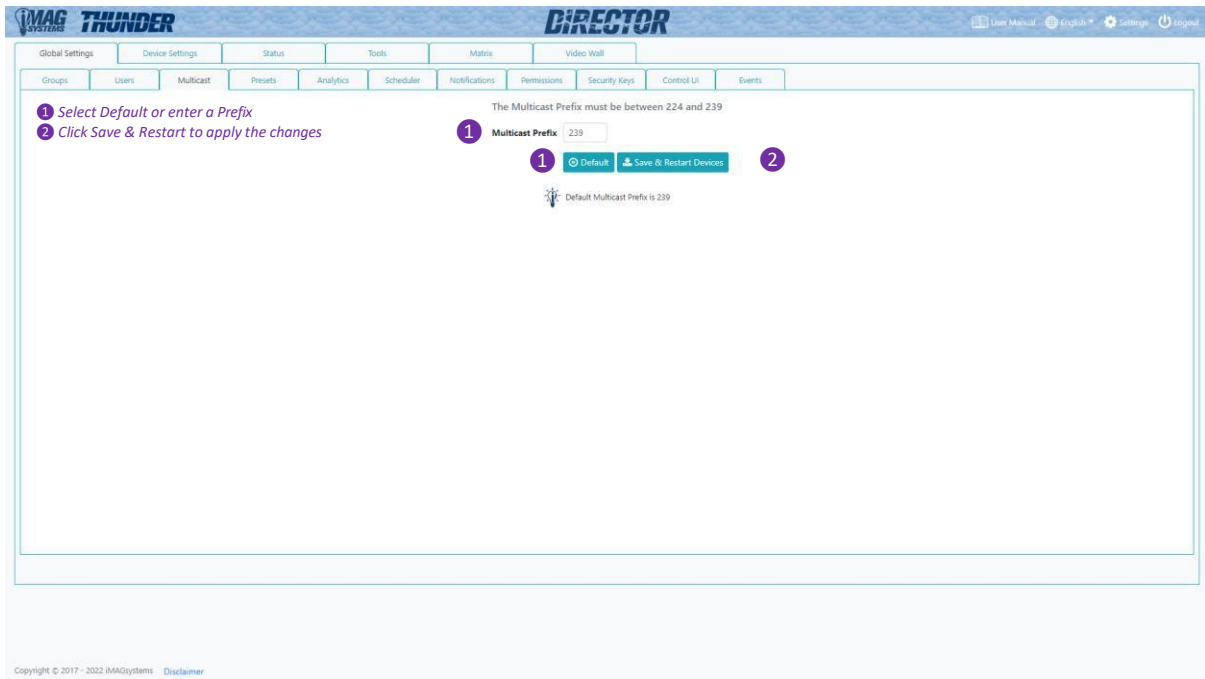
Here you can see all the active users logged into the system and the time of their last activity.



### 4 3 Multicast

The Multicast section is used to configure the multicast range of the devices from between 224.x.x.x and 239.x.x.x with a default of 234.x.x.x or 239.x.x.x.

All devices must be set to the same multicast prefix.





## 1.4 Presets

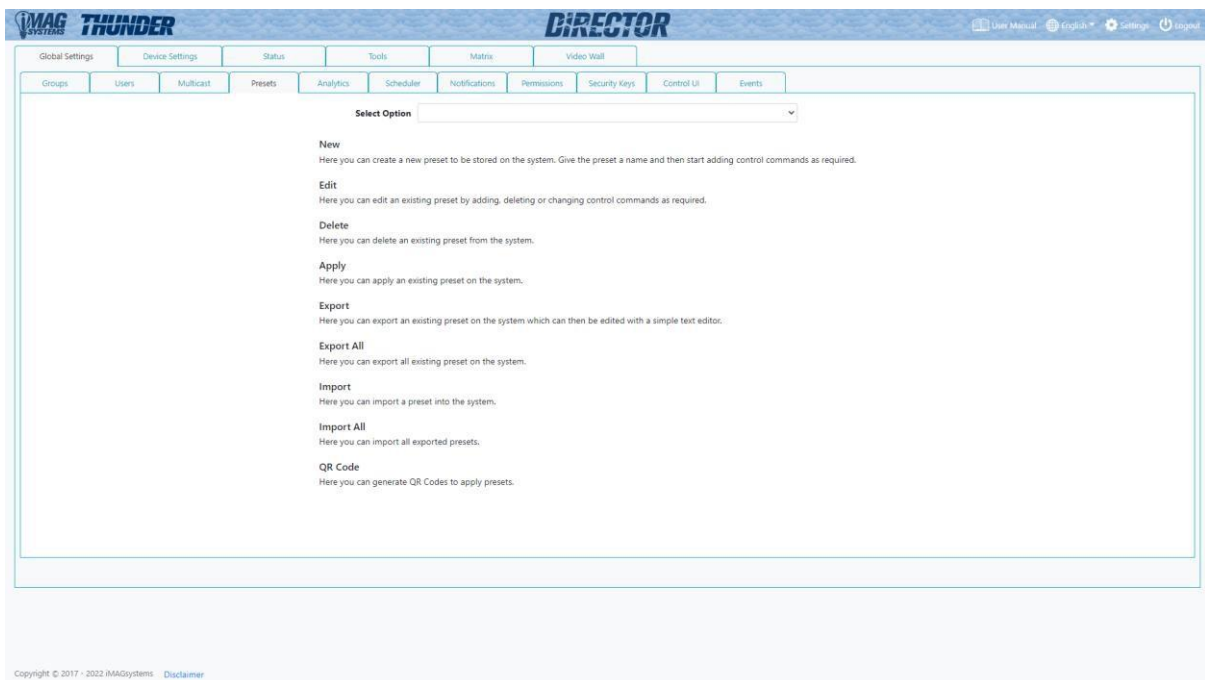
The system can store a virtually unlimited number of presets. A preset can be applied with a single “preset load” command. The preset can contain a virtually unlimited number of commands.

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

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

The following preset names cannot be used:

- ‘all’
- ‘all\_rx’
- ‘all\_tx’
- ‘ungrouped’
- ‘all\_devices’
- Any Device name
- Any Group name



### 1.4 Multicast Preset New

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 or using the Assistant.

**1.4 Multicast Preset New**

1 Select New  
2 Enter a name  
3 Select a command  
4 Fill in the required data or use the Assistant  
5 Click Add button  
6 Click Save button

Optionally insert a delay where required with the Delay (ms) button.

1 Select Option: New  
2 Preset Name: MyNewPreset  
3 Select Control Command: join all  
4 Assistant  
Add Control Command: join all Encoder1 Decoder1  
5 Add Delay (ms): 1000  
Preset Commands: join all Encoder1 Decoder1  
6 Save Apply

View Command Manual

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### 1.4.2 Preset Edit

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

1 Select Edit  
 2 Select Preset  
 3 Click Load button  
 4 Change preset name  
 5 Select a command  
 6 Fill in the required data or use the Assistant  
 7 Click Add button  
 8 Manually edit  
 9 Click Apply button to test preset  
 10 Click Save button

1 Select Option Edit  
 2 Edit Preset MyNewPreset  
 3 Load  
 4 Preset Name MyNewPreset  
 5 Select Control Command join all  
 6 Assistant  
 Add Control Command join all Encoder2 Decoder2  
 7 Add Delay (ms) 1000  
 8 Preset Commands join all Encoder1 Decoder1  
 join all Encoder2 Decoder2  
 9 Apply  
 10 Save

View Command Manual

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### 1.4.3 Preset Delete

Here you can delete any existing preset from the system.

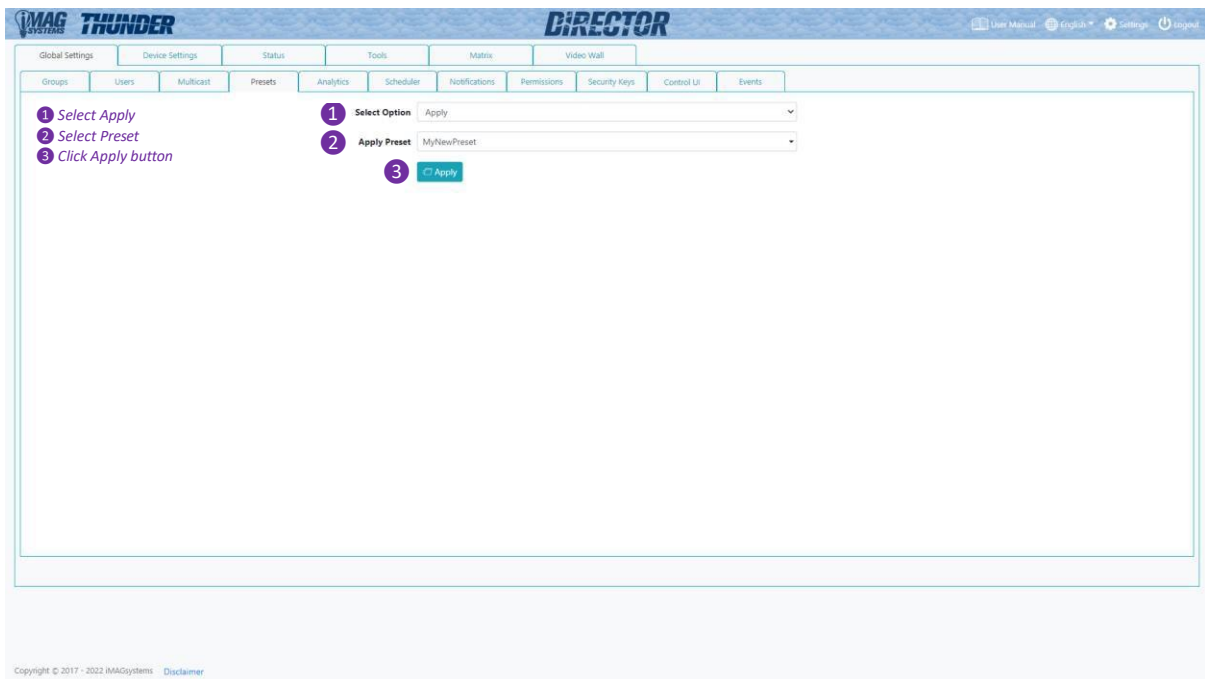
1 Select Delete  
 2 Select Preset  
 3 Click Delete button

1 Select Option Delete  
 2 Delete Preset MyNewPreset  
 3 Delete

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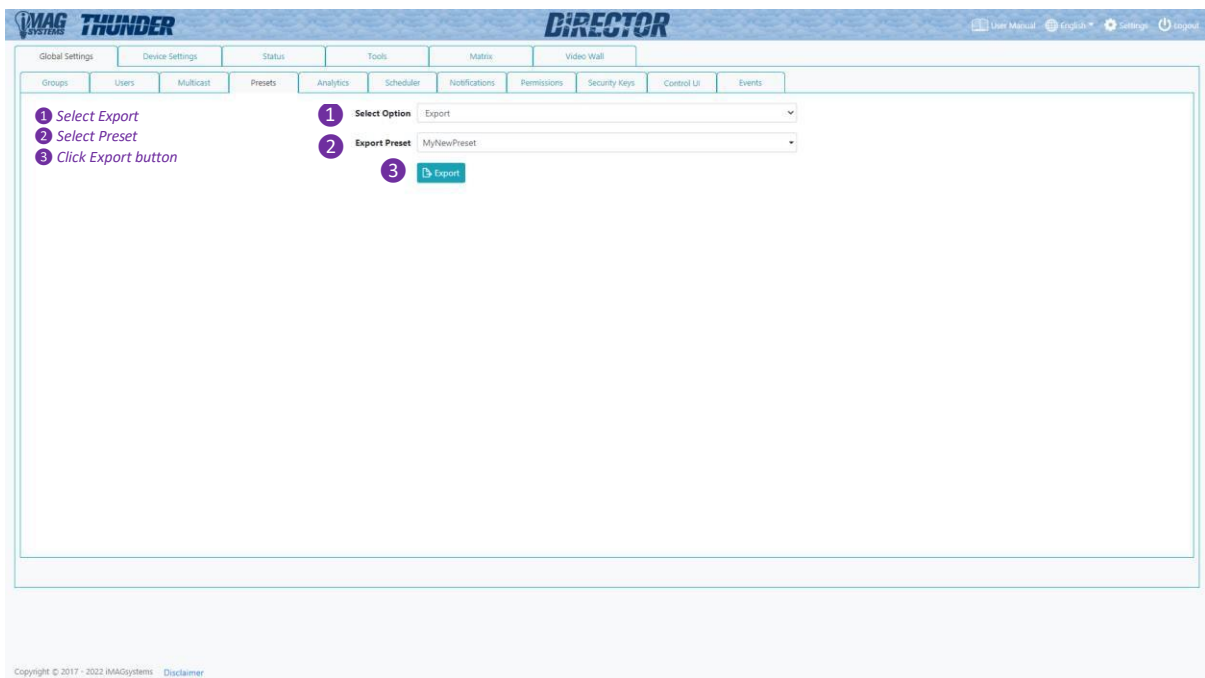
### 1.5 Preset Apply

Here you can apply any existing preset on the system.



### 1.5 Preset Export

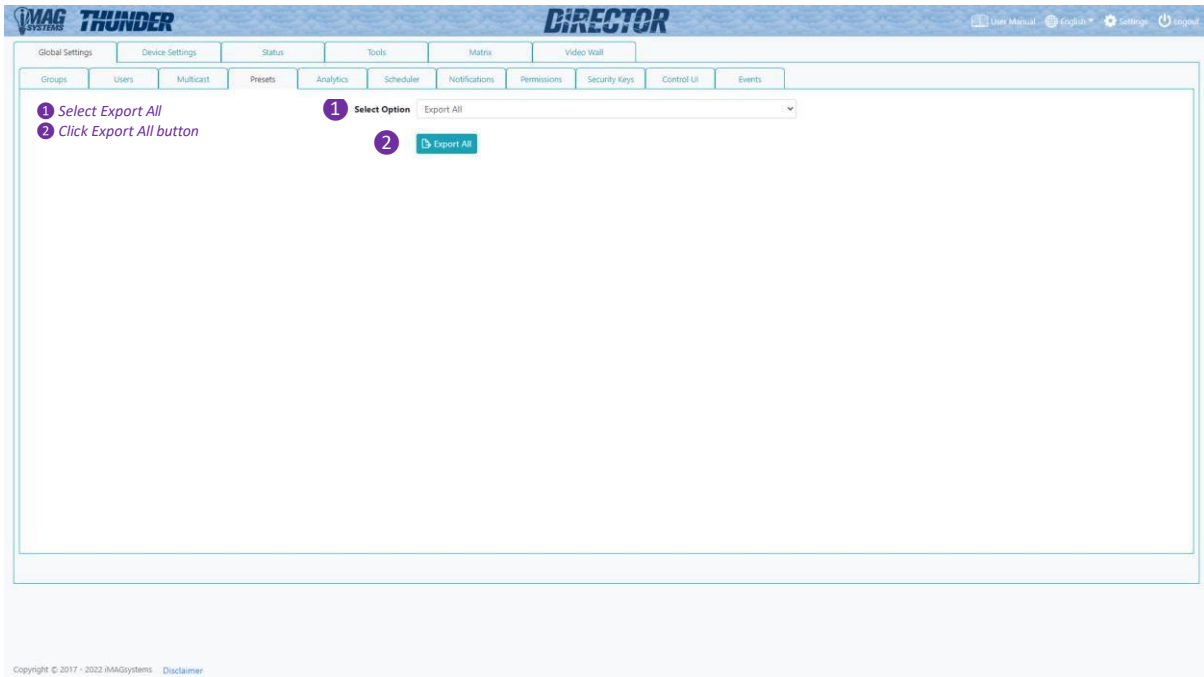
Here you can export an existing preset on the system which can then be used as a backup or edited. The preset will be saved to your Downloads folder as an ini file like *MyNewPreset.ini*.



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

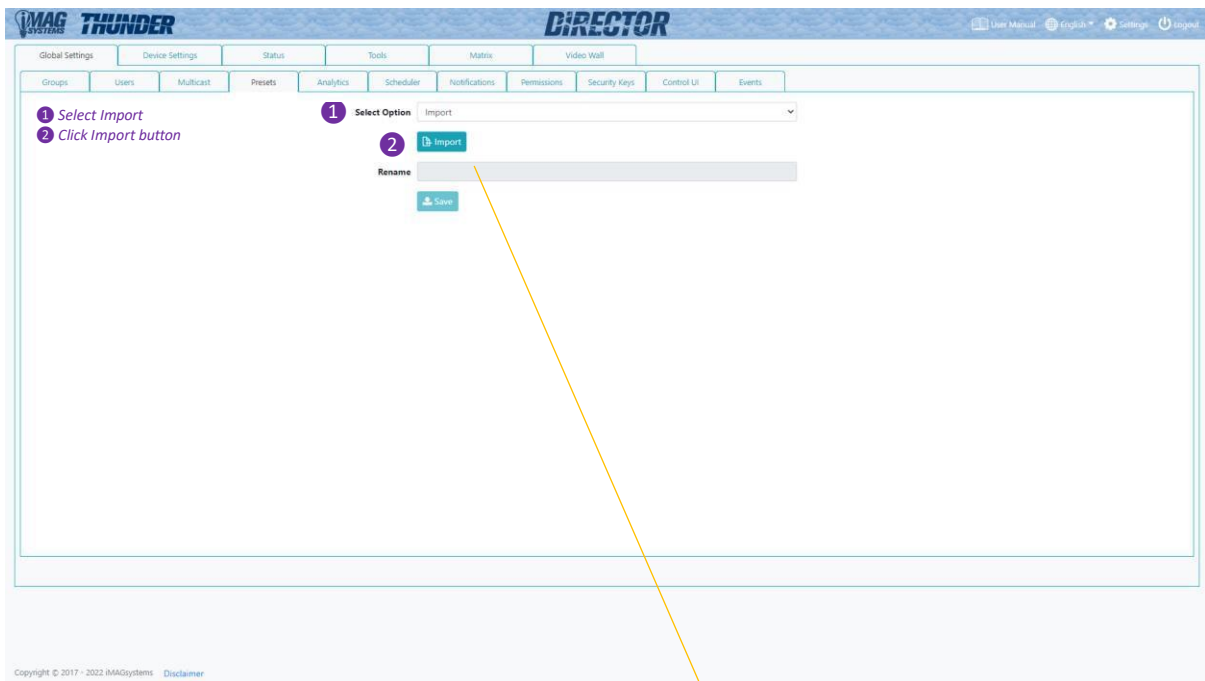
### 1.6 Preset Export All

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

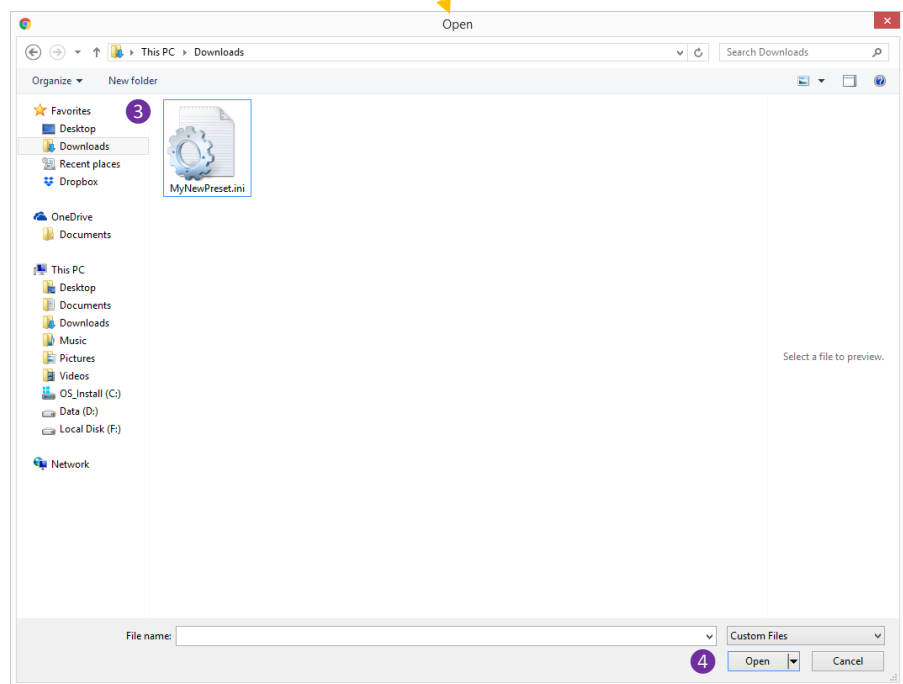


### 1 Preset Import

Here you can import a preset into the system.



- 3 Select preset file
- 4 Click Open



### 17 Import Preset continued...

**5** Rename preset

**6** Click Save button

Select Option: Import

Import MyNewPreset

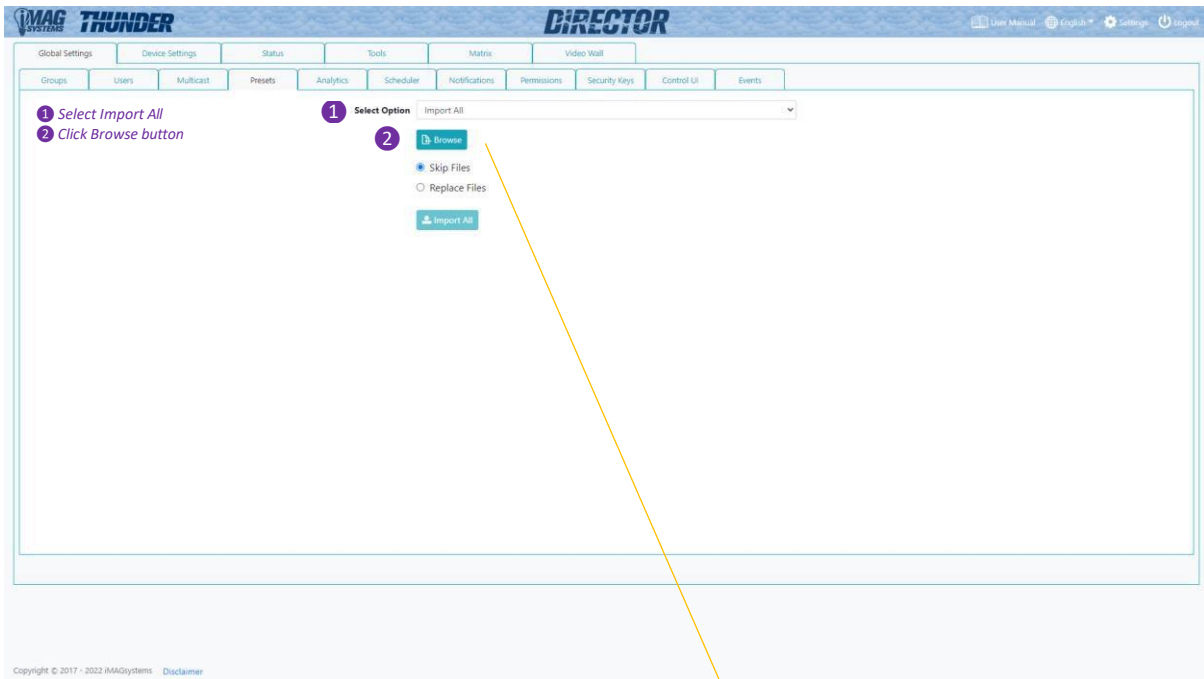
**5** Rename: MyNewPreset

**6** Save

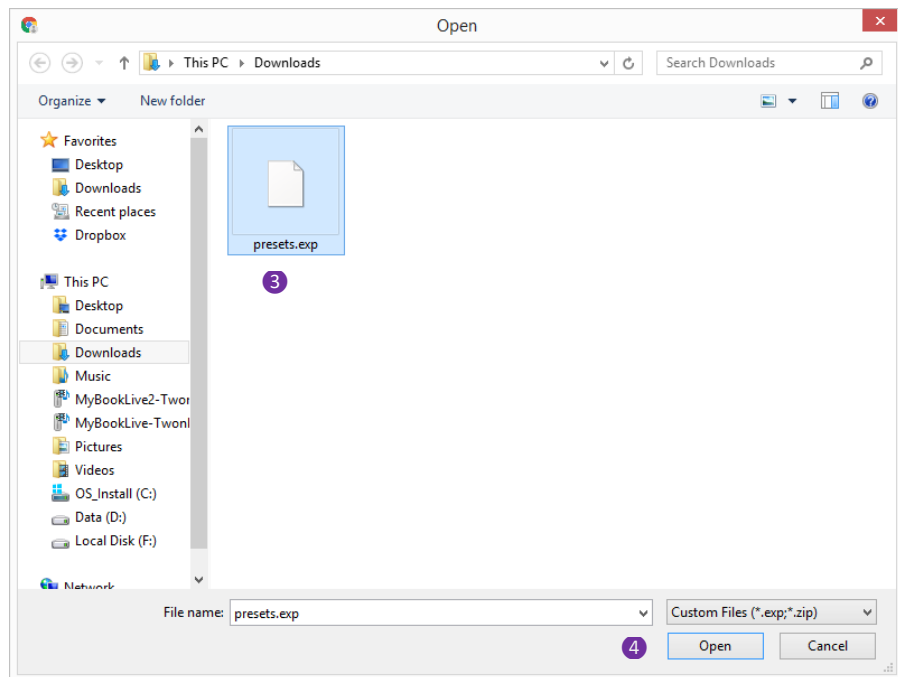
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### 1.8 Preset Import All

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

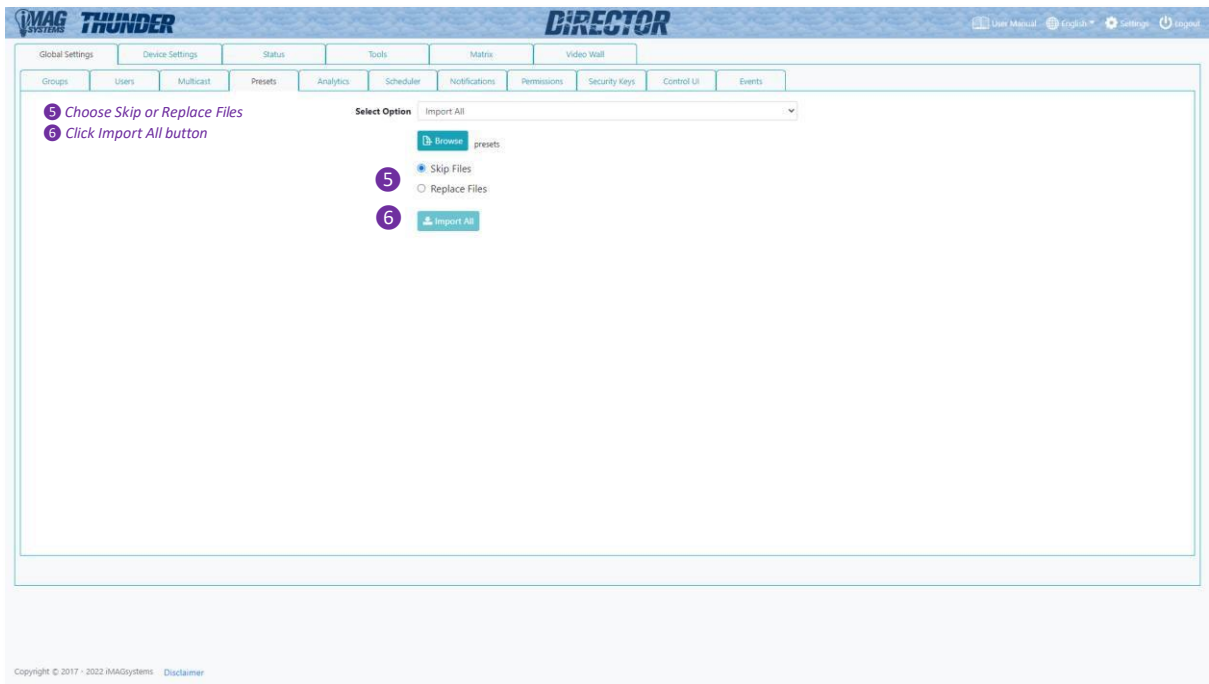


- 3 Select preset file
- 4 Click Open





### 1. Preset Import All continued...



### 1. Preset QR Code

A QR Code can be created to directly execute a preset. Here you can set how the result of a preset 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 Code 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. [Refer 1.10.1.2 Control UI QR Code Result mode.](#)

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

The screenshot shows the 'DIRECTOR THUNDER' interface with the 'Presets' tab selected. The 'QR Code' section is active, and the 'QR Result' is set to 'Text'. The interface includes a sidebar with navigation options and a main content area with a form for creating a QR code. The form has the following fields and buttons:

- Select Option:** A dropdown menu with 'QR Code' selected.
- Preset:** A dropdown menu with 'MyNewPreset' selected.
- QR Result:** A dropdown menu with 'Text' selected.
- Save:** A blue button to save the preset.
- Remote URL:** A text input field.
- Size:** A text input field with '150' entered.
- Remote QR Code:** A button to generate a remote QR code.
- Local QR Code:** A button to generate a local QR code.
- QR Code:** A QR code image generated from the preset.
- Download:** A blue button to download the QR code.

Numbered steps (1-7) are overlaid on the interface to guide the user through the process:

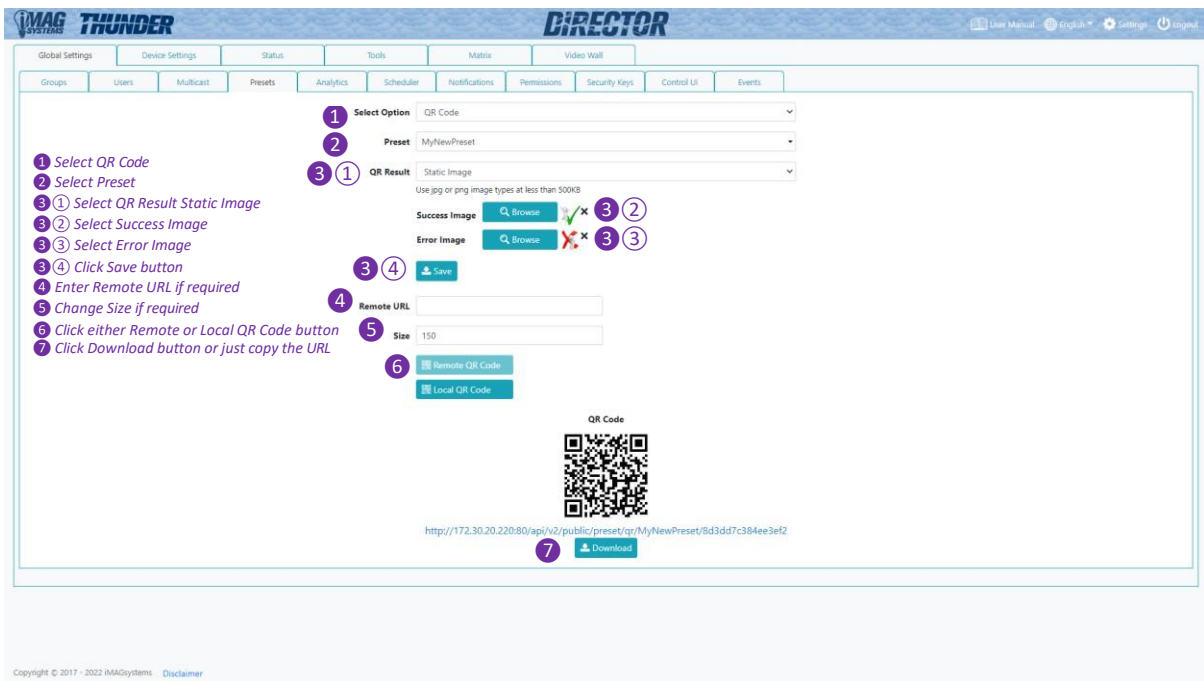
- Select QR Code
- Select Preset
- Select QR Result Text
- Click Save button
- Enter Remote URL if required
- Change Size if required
- Click either Remote or Local QR Code button

The QR code image shows the URL: <http://172.30.20.220:80/api/v2/public/preset/qc/MyNewPreset/50c717fbd78de119>

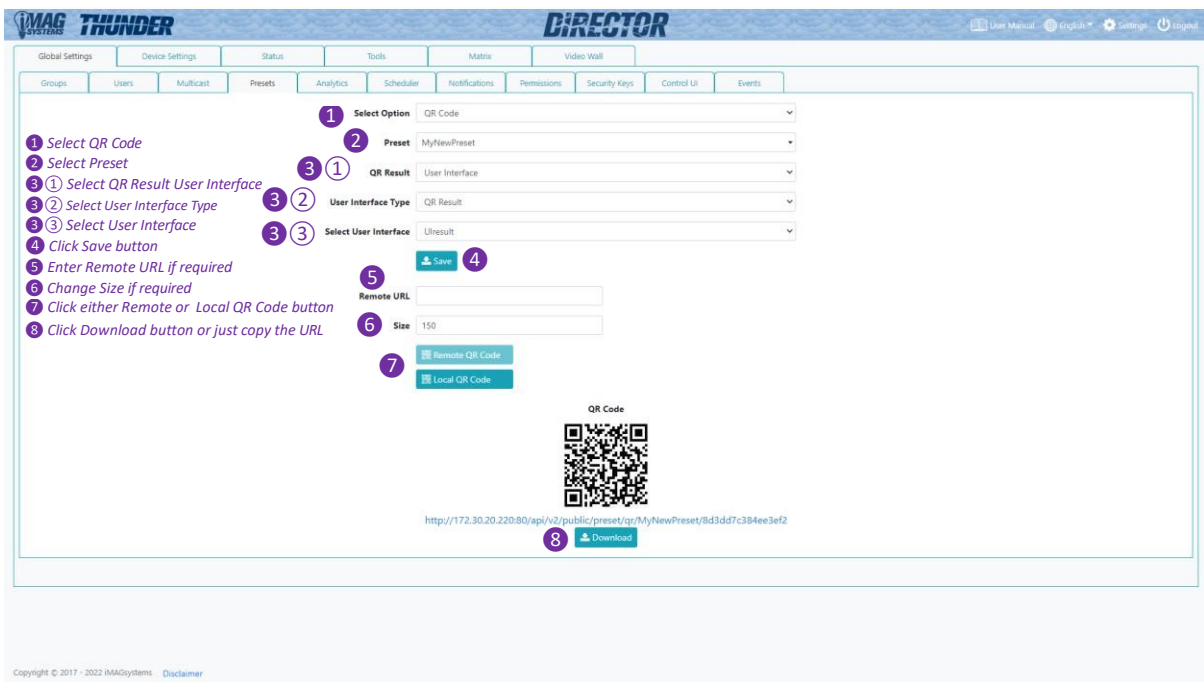
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### 1. Preset 9 QR Code continued...

The below will provide a static image response:



The below will provide a QR Results User Interface response:



The differences between a QR Result or 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. Preset QR Code continued...

The below will provide a Standard User Interface response:

**1** Select Option QR Code

**2** Preset MyNewPreset

**3** **1** QR Result User Interface

**3** **2** User Interface Type Standard

**3** **3** Success User Interface sb\_ui1

**3** **4** Error User Interface sb\_ui2

**4** Click Save button

**5** Enter Remote URL if required

**6** Change Size if required

**7** Click either Remote or Local QR Code button

**8** Click Download button or just copy the URL

QR Code

http://172.30.20.220:80/api/v2/public/preset/qr/MyNewPreset/8d3dd7c384ee3ef2

Download

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## 1.5 Analytics (Licensed feature)

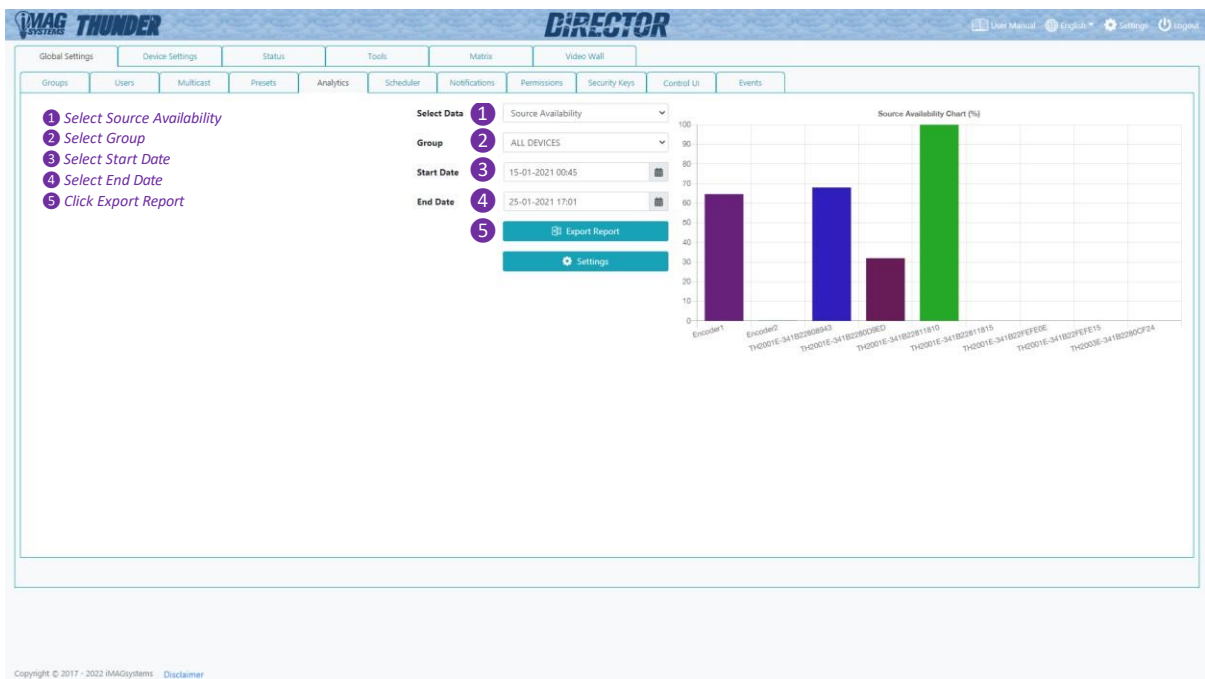
Analytical data is constantly being stored on the system. By default data will be maintained for 1 month, but this can be changed up to 12 months.

Various types of information is stored and can be exported for use in a 3<sup>rd</sup> 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
- **Control UI**  
Control UI represents usage of various User Interface functions

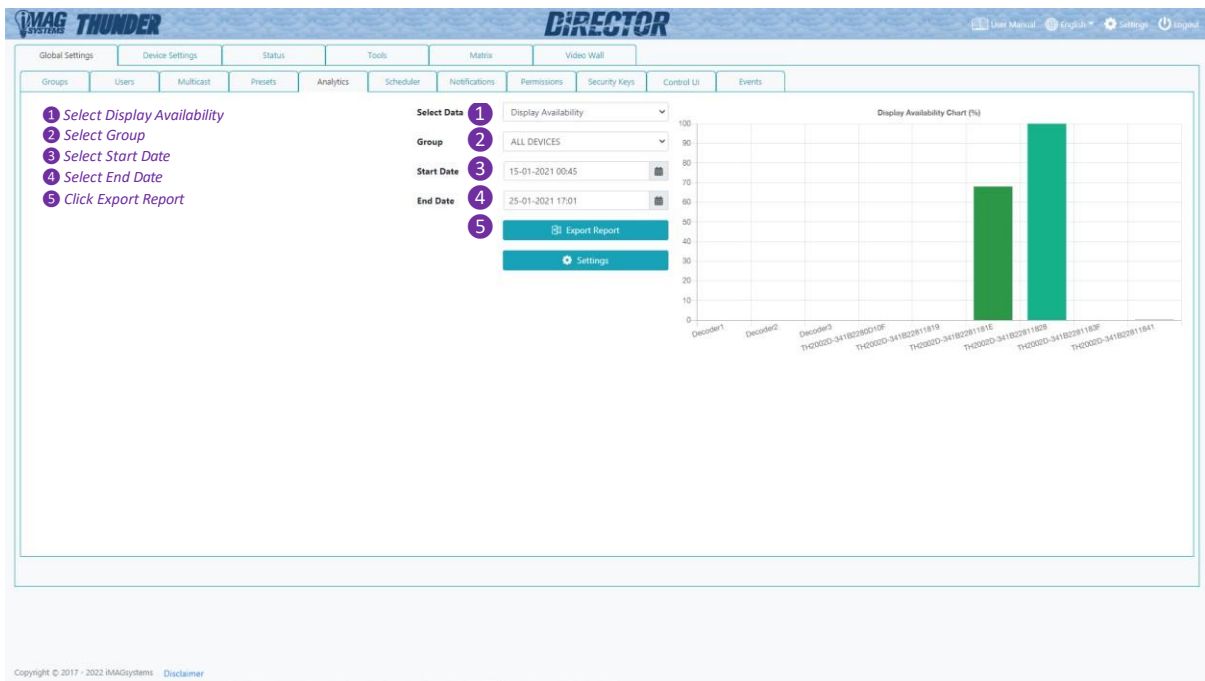
### 1.9.1 Source Availability

The Source Availability represents the percentage (%) of time an Encoder has video signal.



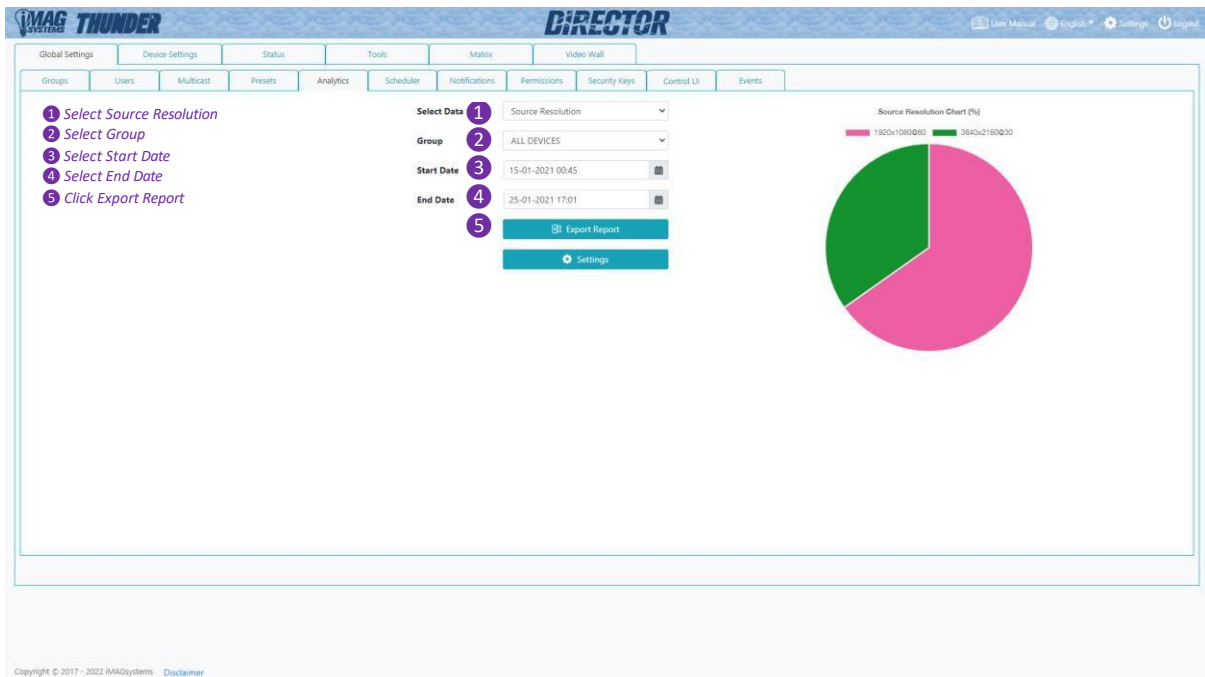
### 1.9.2 Display Availability

The Display Availability represents the percentage (%) of time a Decoder has a monitor connected.



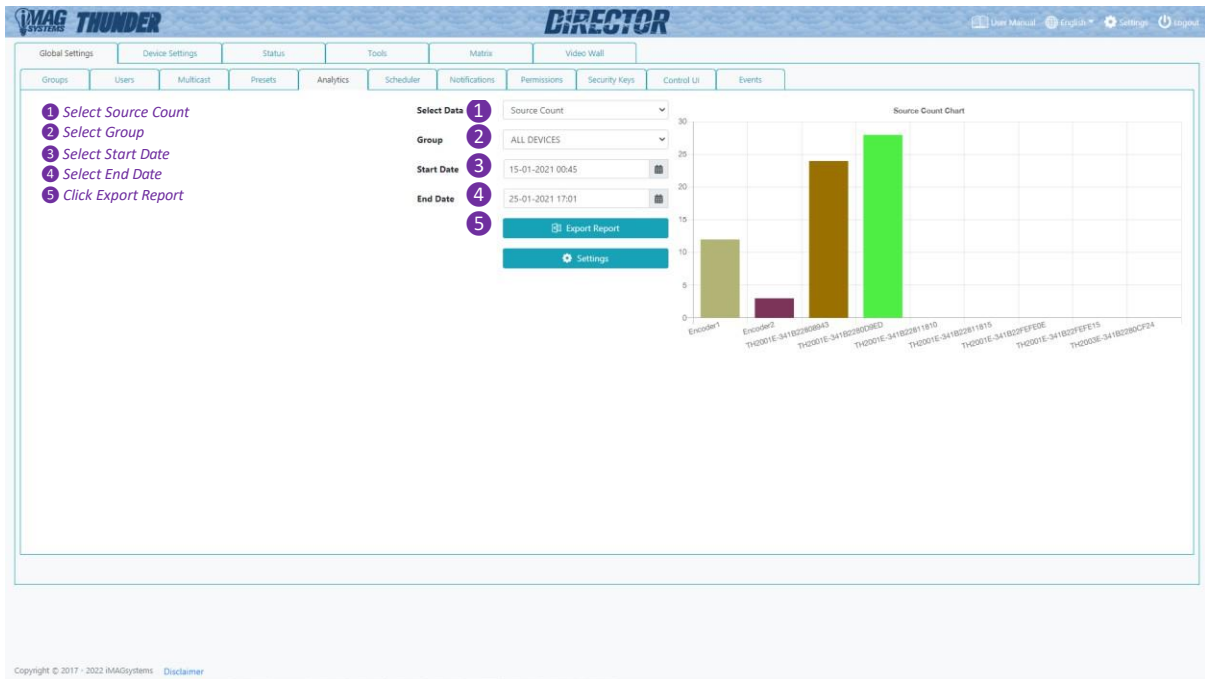
### 1.9.3 Source Resolution

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



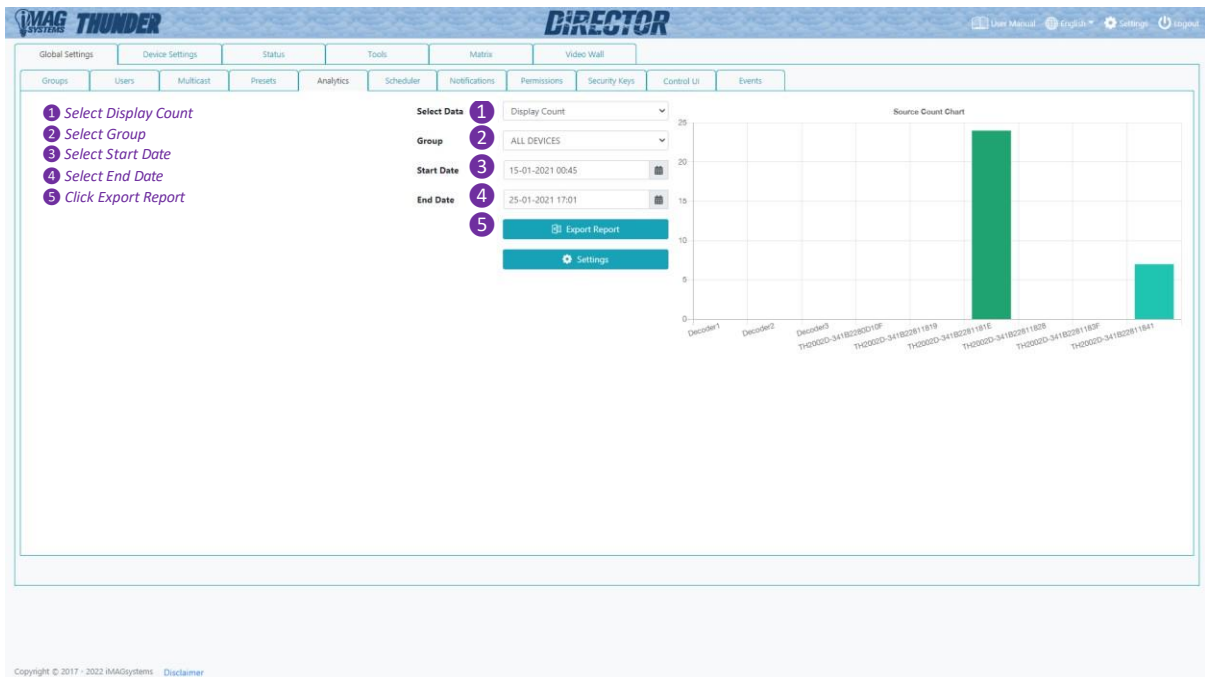
### 1.6.4 Source Count

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



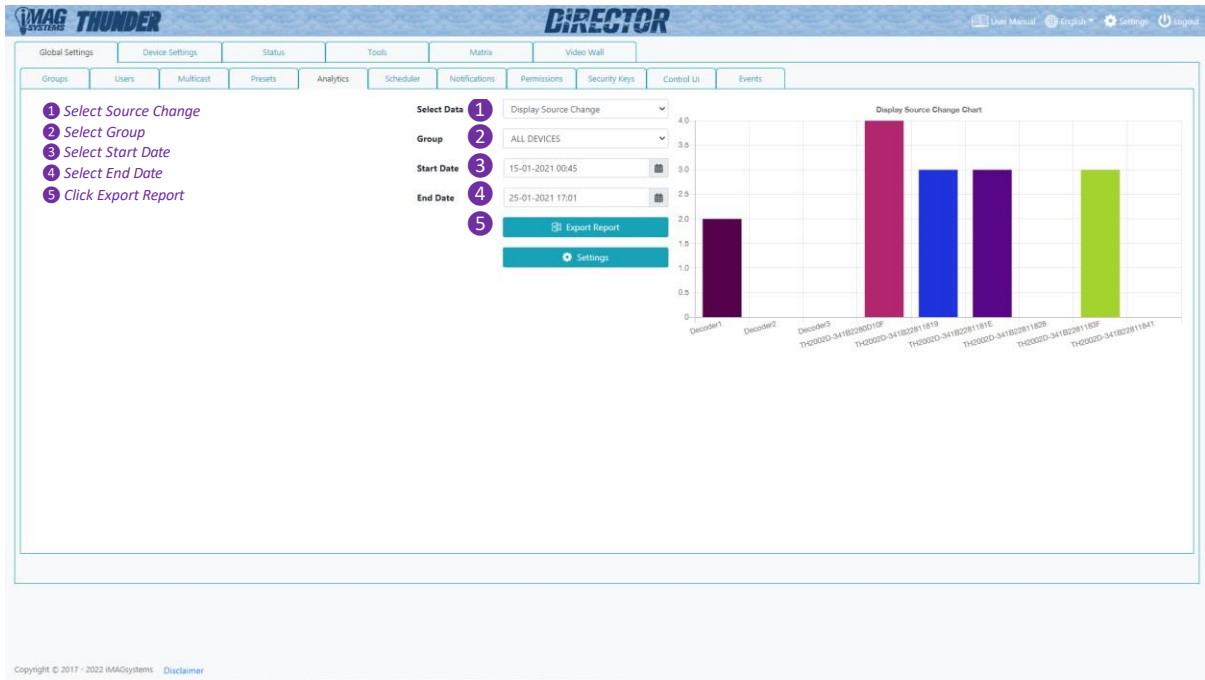
### 1.9.9 Display Count

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



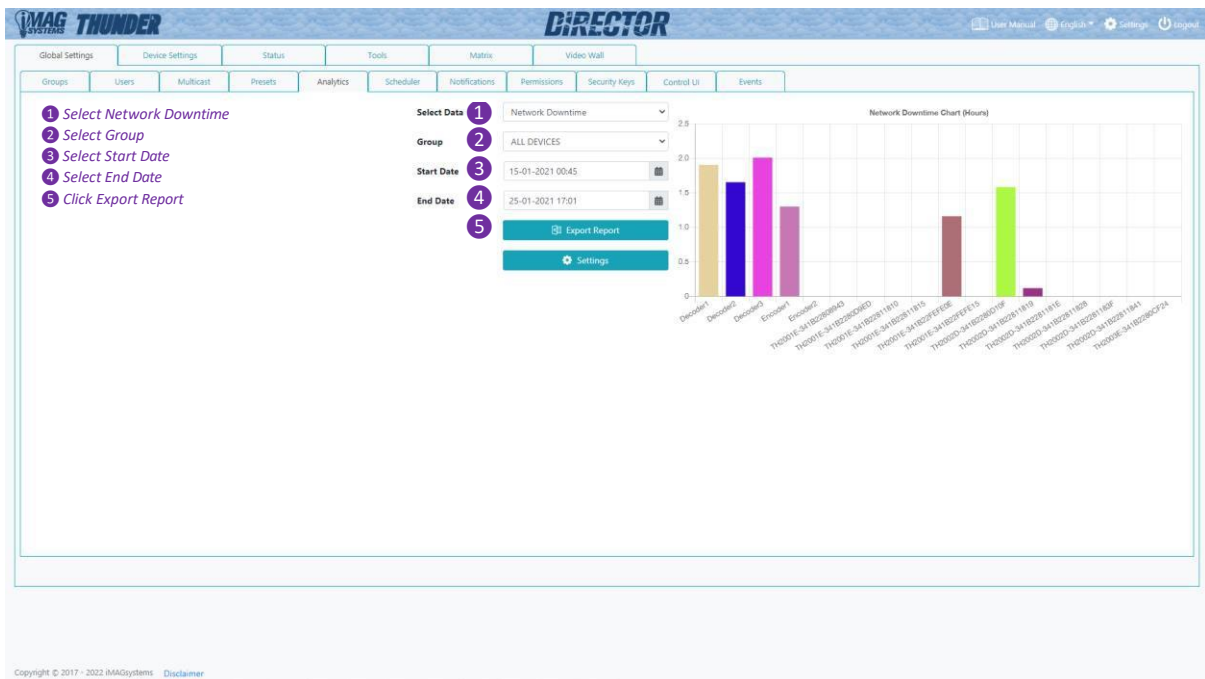
### 1.9.6 Display Source Change

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



### 1.9.7 Network Downtime

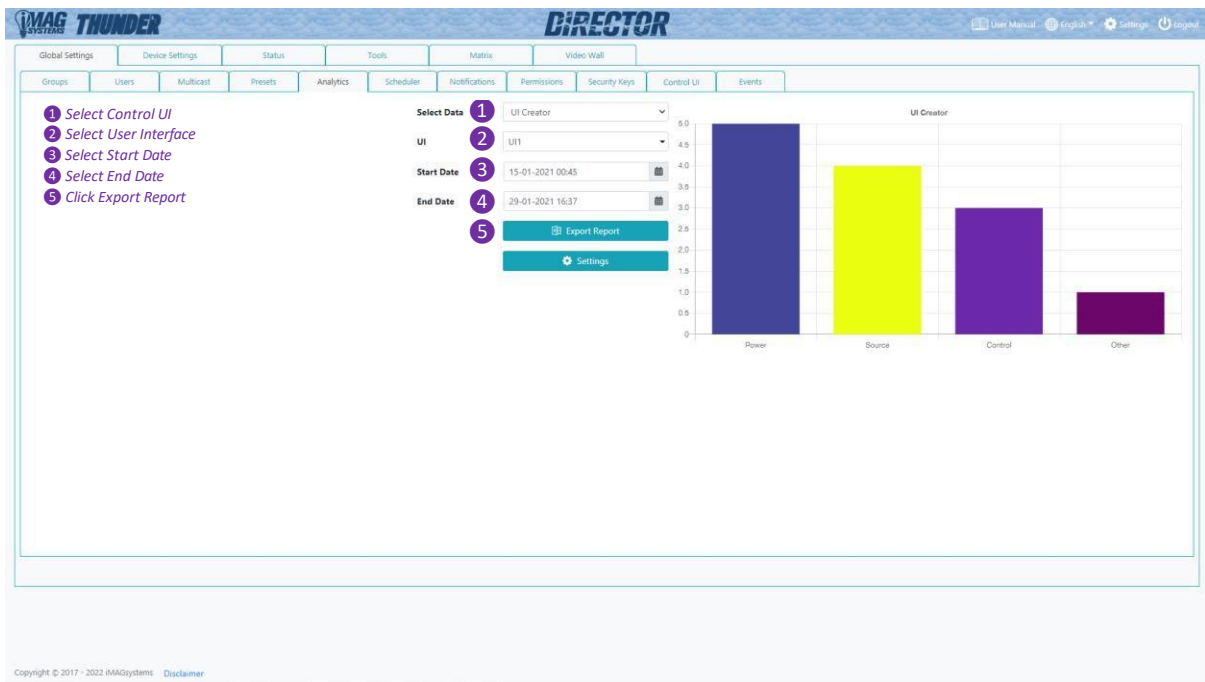
The Network Downtime represents the time in hours a device is disconnected from the network.





### 1.9.8 Control UI

The Control UI represents usage of various User Interface functions.



Buttons in the UI can be assigned an analytics button type of the following:

- Power
- Source
- Control
- Custom

The custom option allows an unlimited number of user defined button types to be added to the list of available analytical button types.

The button press count will increase each time the button is pressed.

## 1.6 Scheduler (Licensed feature)

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

The screenshot shows the 'Scheduler' tab in the DIRECTOR THUNDER interface. It contains a table with columns: Sequence, Event Name, State, System Start, Interval, Event Time / Interval, Event Day(s), and Event Preset. There are four rows of events: 'startday', 'endday', 'statusupdate', and 'systemupdate'. Each row has a 'Sequence' column with up/down arrows, an 'Event Name' column, a 'State' column with an 'Enabled' dropdown, a 'System Start' column with a checkbox, an 'Interval' column with a dropdown (5, 60), an 'Event Time / Interval' column with a time input and a clock icon, an 'Event Day(s)' column with checkboxes for days of the week, and an 'Event Preset' column with a dropdown and edit/delete icons. A 'Save' button is at the bottom right. Numbered callouts 1-7 point to specific elements: 1. Event Name, 2. Interval, 3. Event Day(s), 4. Event Preset, 5. Save button, 6. State dropdown, 7. Sequence arrows. Below the table, there is a note: 'Once saved, the pen icon is used to edit the event. Click the cross icon to delete the event.'

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

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

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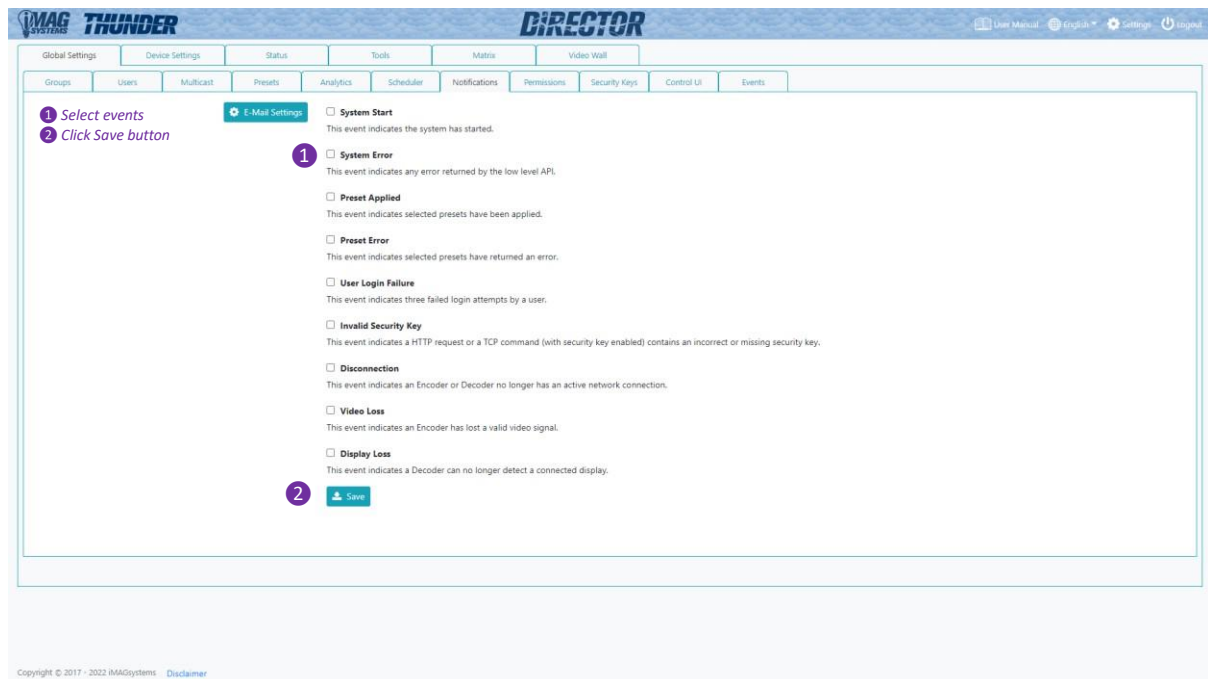
The state of the event can be enabled and disabled here or via API command set event.

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.

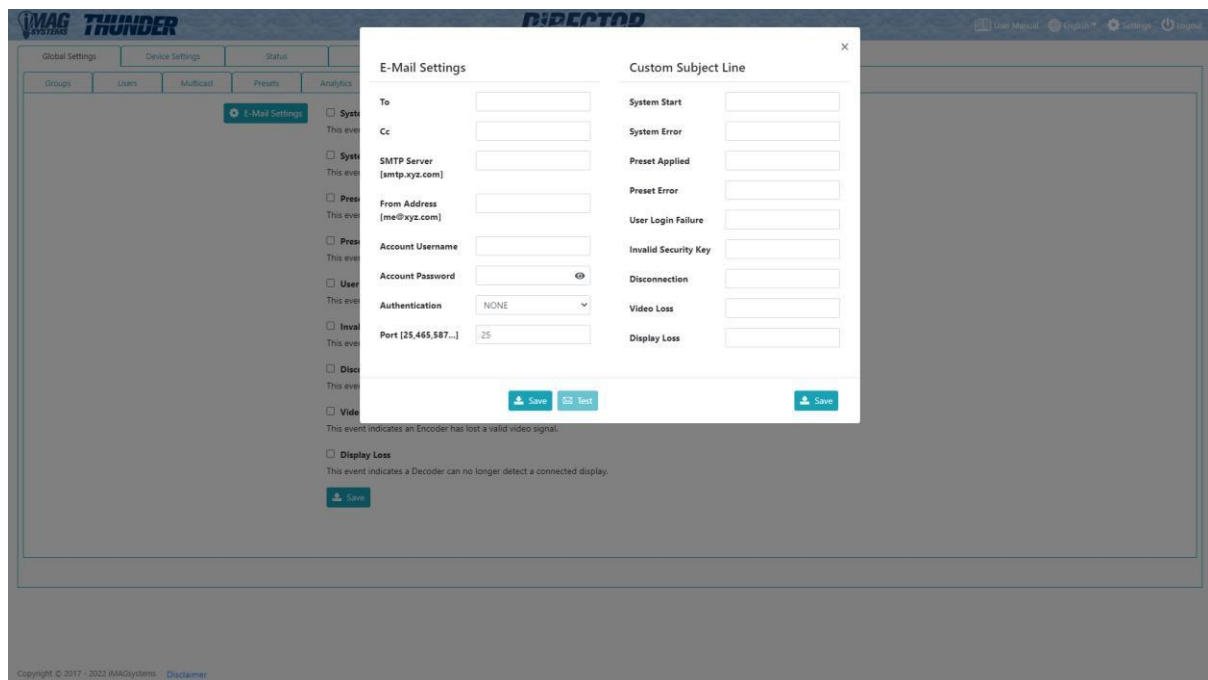
## 1.7 Notifications (Licensed feature)

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



### 1.7.1 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 E-Mail to confirm the settings are correct.



### 1.7.1 E-Mail Settings continued...

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

Within the custom E-Mail 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}}
- Preset Error 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}}

## 1.8 Permissions (Licensed feature)

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. Rules are applied to the Decoder.

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.

The screenshot shows the 'Permissions' tab in the DIRECTOR THUNDER interface. It features a table with three main columns: 'Select Encoder', 'Select Decoder', and 'Permissions'. The first row shows 'Encoder1' selected for the encoder and 'Decoder1' for the decoder, with the permission set to 'Allow'. The second row shows 'Encoder2' for the encoder and 'Decoder2' for the decoder, with the permission set to 'Deny'. Below the table, there are fields for 'Select Encoder', 'Select Decoder', and 'Permissions', each with a corresponding 'Save' button. A 'Select Group' dropdown is also present. Numbered callouts 1-4 point to the 'Select Encoder' dropdown, the 'Select Decoder' dropdown, the 'Permissions' dropdown, and the 'Save' button respectively. A legend at the bottom explains the callouts: 1 Select Encoder, 2 Select Decoder, 3 Select Permission as either Allow or Deny, 4 Click Save button. It also notes that a group permission allows all Decoders to join with all Encoders in the group.

1 Select Encoder  
 2 Select Decoder  
 3 Select Permission as either Allow or Deny  
 4 Click Save button

Or Select the cross icon to delete

A Group permission allows all Decoders to join with all Encoders in the group.

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.

The screenshot shows the 'Permissions' tab in the DIRECTOR THUNDER interface. It features a table with three main columns: 'Select Encoder', 'Select Decoder', and 'Permissions'. The first row shows 'Encoder1' selected for the encoder and 'Decoder1' for the decoder, with the permission set to 'Allow'. The second row shows 'Encoder2' for the encoder and 'Decoder2' for the decoder, with the permission set to 'Deny'. Below the table, there are fields for 'Select Encoder', 'Select Decoder', and 'Permissions', each with a corresponding 'Save' button. A 'Select Group' dropdown is also present. Numbered callouts 1-3 point to the 'Select Encoder' dropdown, the 'Select Decoder' dropdown, and the 'Permissions' dropdown respectively. A legend at the bottom explains the callouts: 1 Select group, 2 Click Save button, 3 Or Select the cross icon to delete. It also notes that a group permission allows all Decoders to join with all Encoders in the group.

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

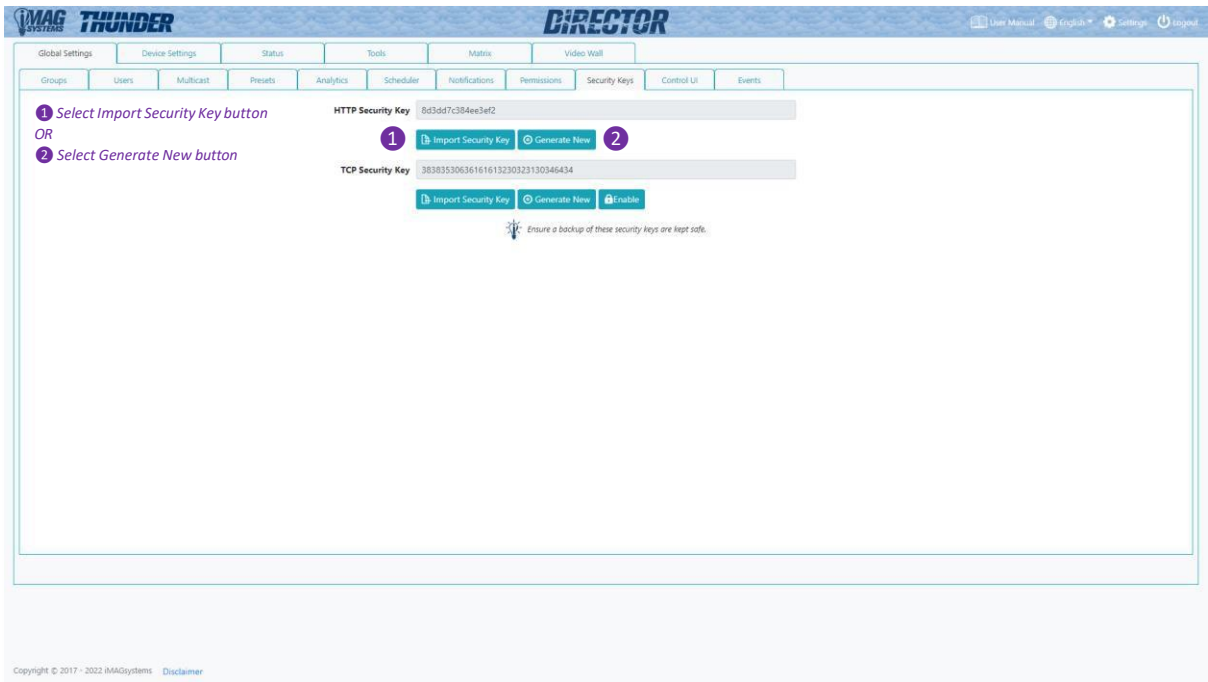
A Group permission allows all Decoders to join with all Encoders in the group.

## 1.9 Security Keys

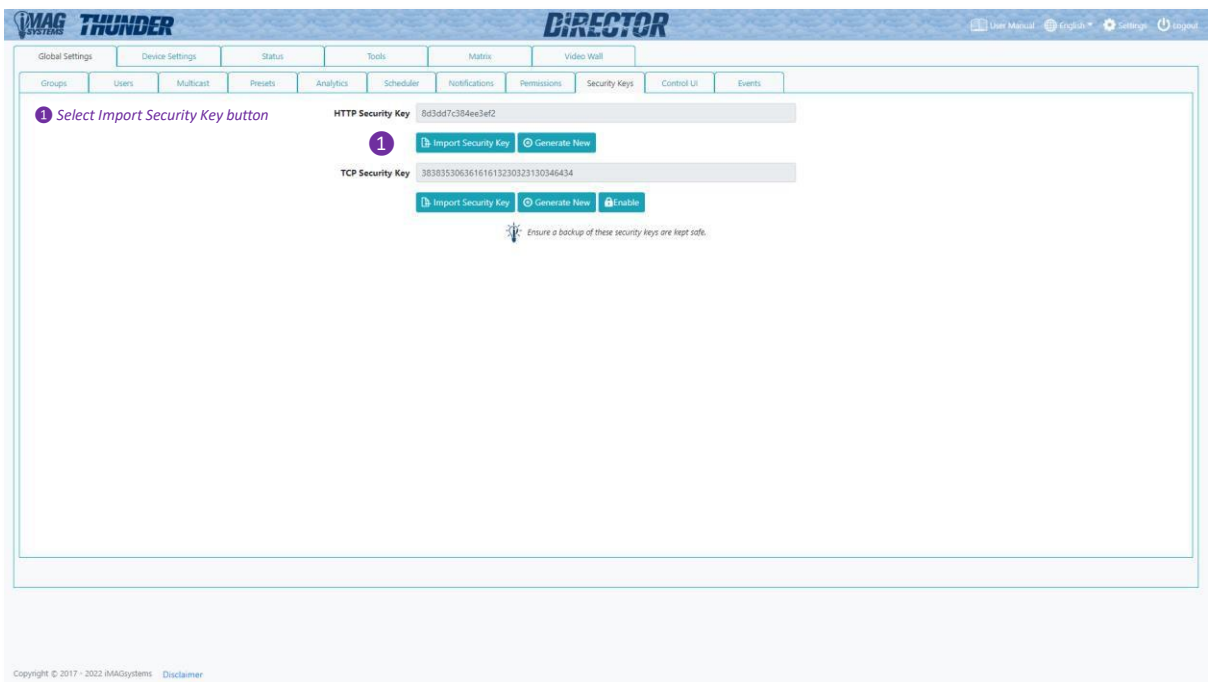
Security keys are required with all HTTP level requests and optional for TCP commands on port 6980. Only keys generated from the software can be used.

### 1.1 HTTP API Security Key

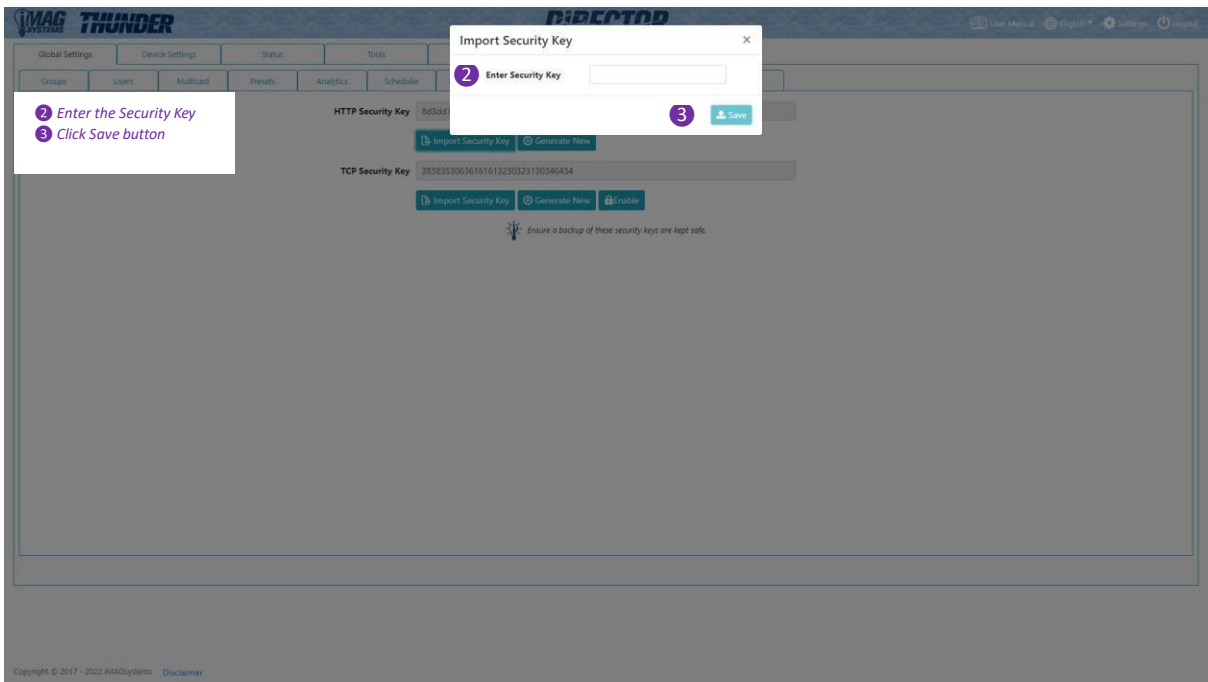
The Director Controller API can be accessed via HTTP GET and POST requests. To ensure security over the network a HTTP security key is required to be passed with all such requests. Here you can generate a new key or import a saved key that had been previously generated.



### Importing a HTTP API Security Key

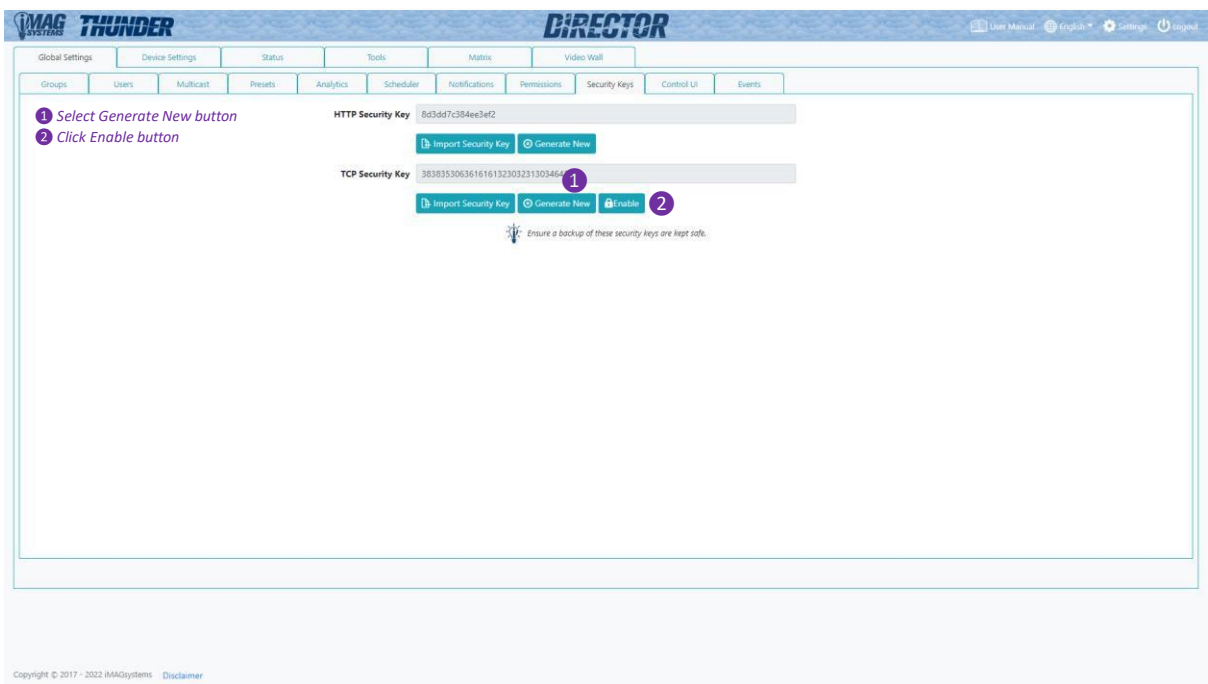


### 1 Overview 1 HTTP Security Key continued...



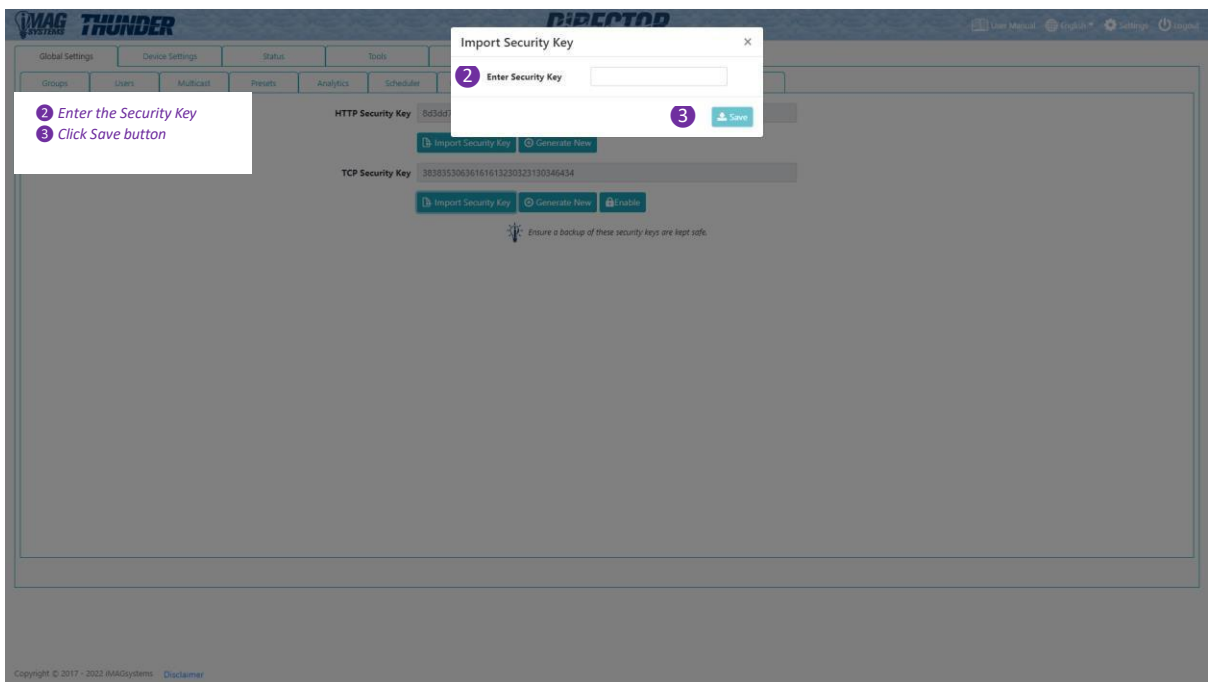
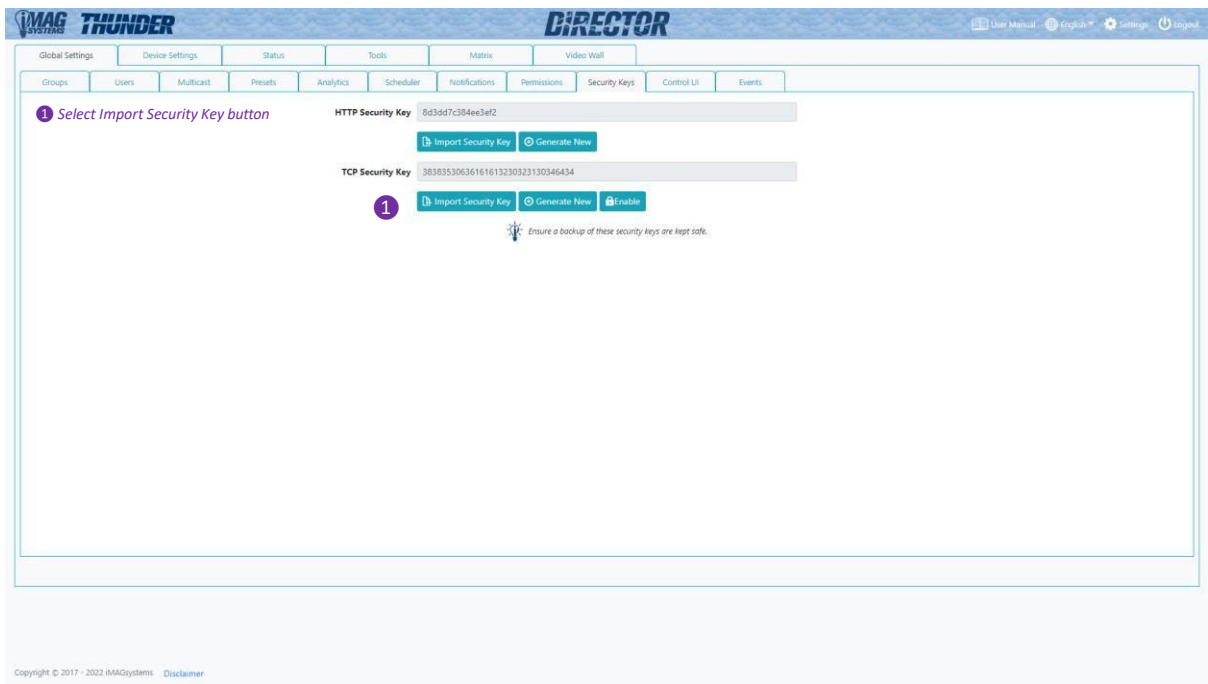
### 1 Overview 2 TCP Security Key

The Director Controller API 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.



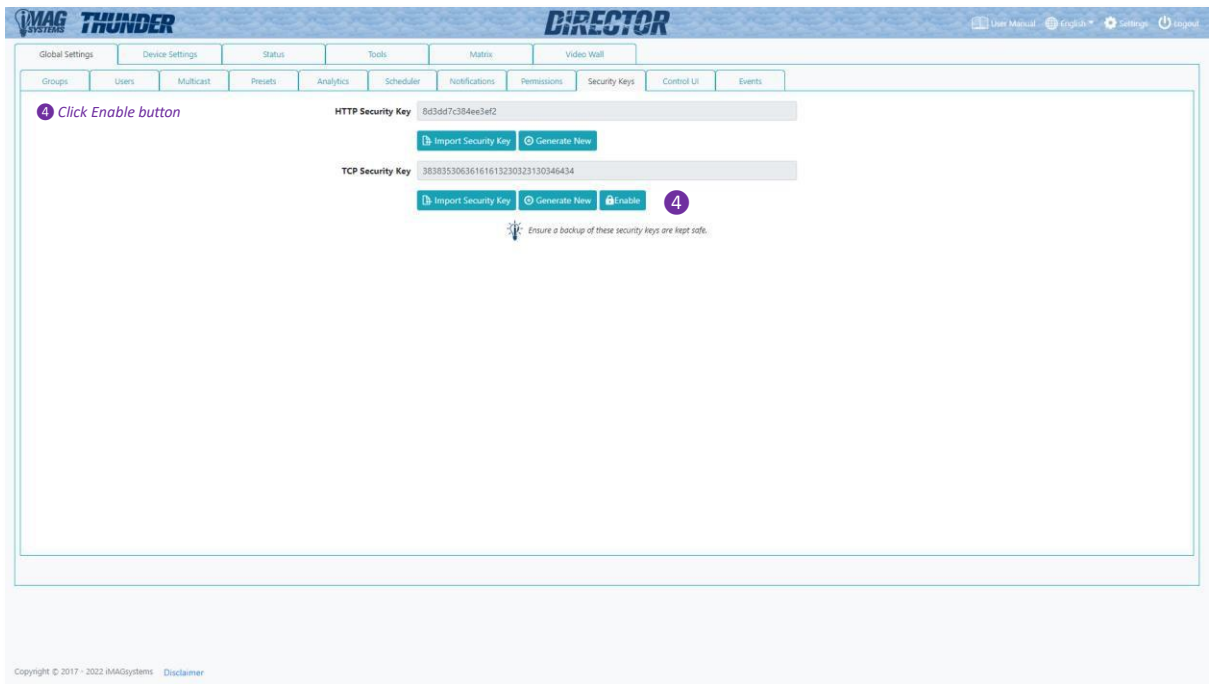
## 1.2 TCP Security Key continued...

## Importing a TCP API Security Key





### 1 Overview 2 TCP Security Key continued...



## 1.10 Control UI (Licensed feature)

The Control UI can be used instead of a 3<sup>rd</sup> 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 device with supported browser Google Chrome or Safari.

After controller start-up, User Interface services are not enabled until devices have been discovered. This ensures devices are available for initial preset and UI use. To force the UI service to run without devices, the UI service firstly needs to be disabled then enabled again.

### 1.10.1 Mode

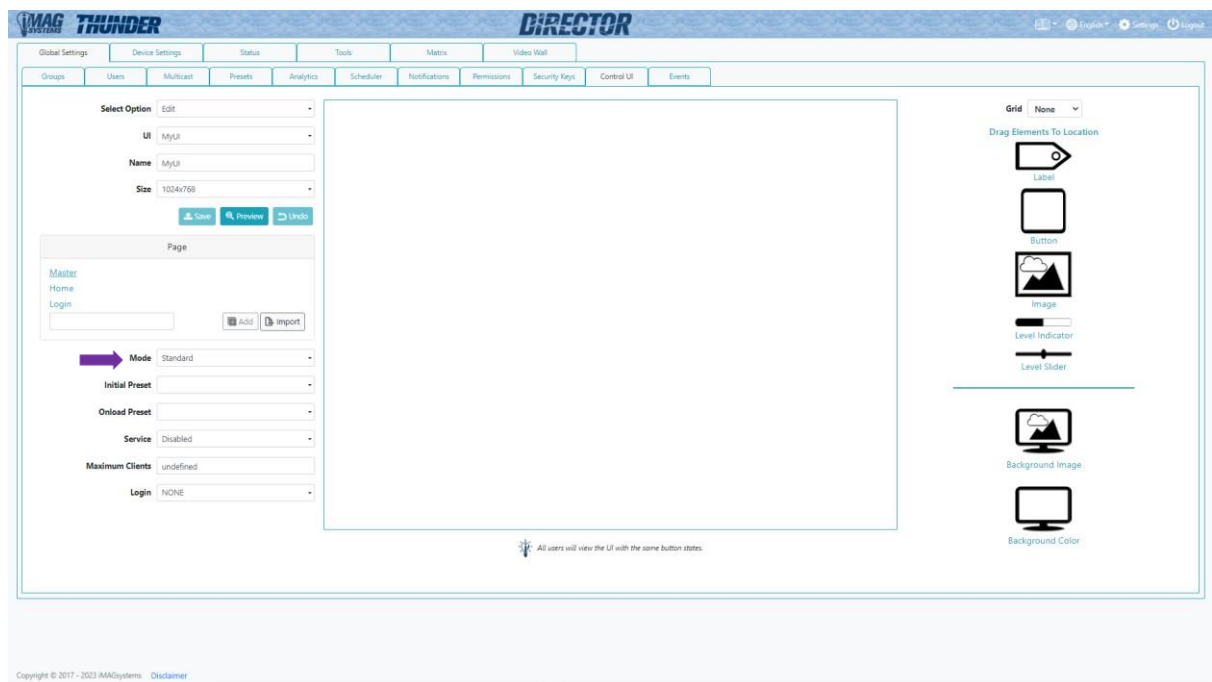
The Control UI has two modes of operation, Standard and QR Code Result mode. Standard being the normal mode of operation to create control system User Interfaces. While QR Code Result mode is specific to displaying the result from scanning and executing a QR Code preset.

Refer also to [1.4.9 Preset QR Code](#).

#### 1.10.1.1 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.

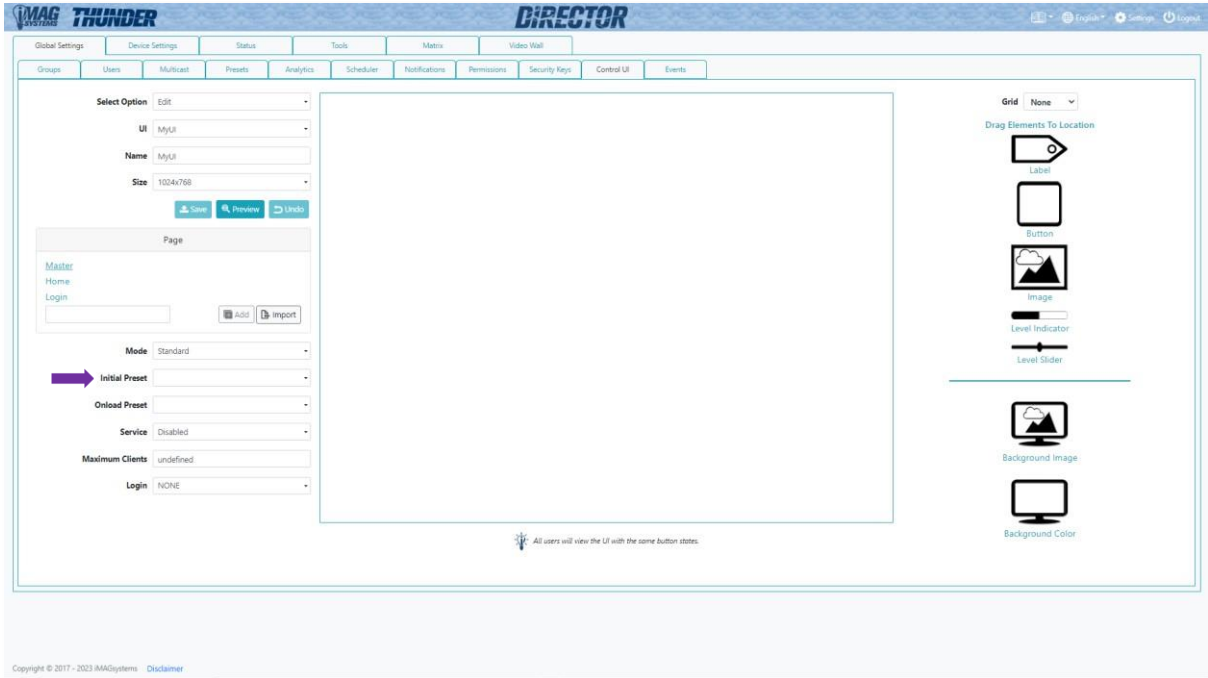
Standard mode provides options for limiting the maximum allowed clients and login with fixed or random number with a session timeout.



### 1.10.1.1.1 Standard Mode Initial Preset

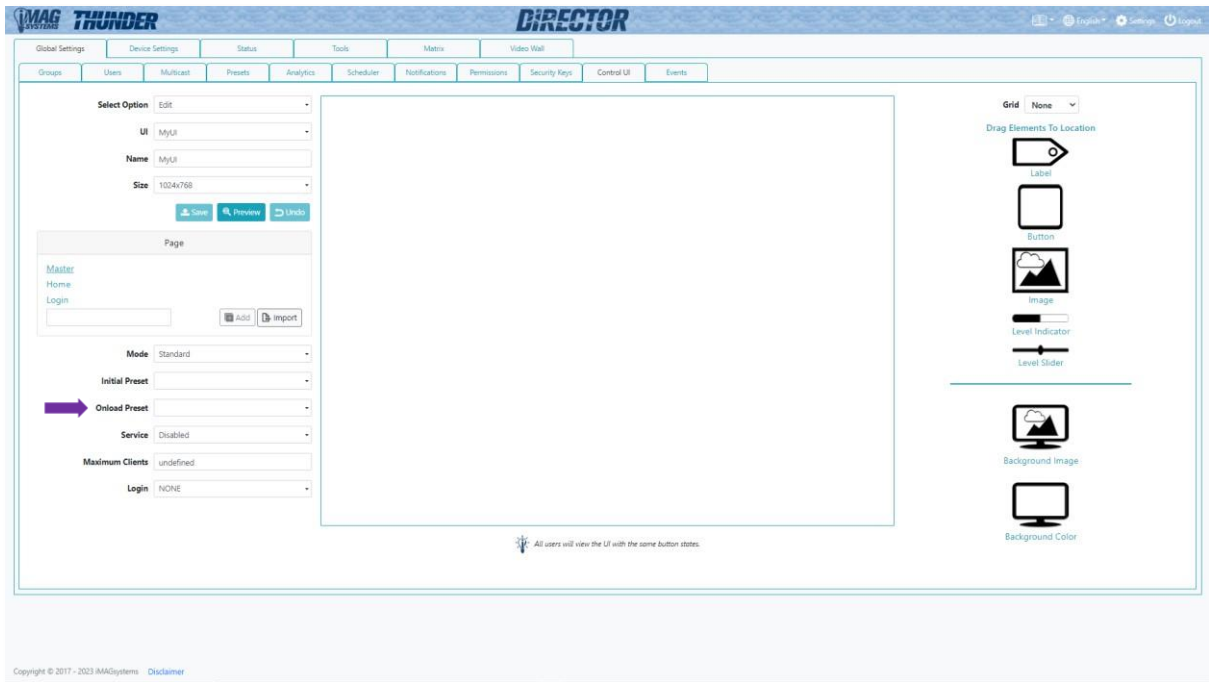
The Initial Preset is used to select a preset to be executed when the UI service is enabled. This preset can be used to set a default configuration to match User Interface initial button states.

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



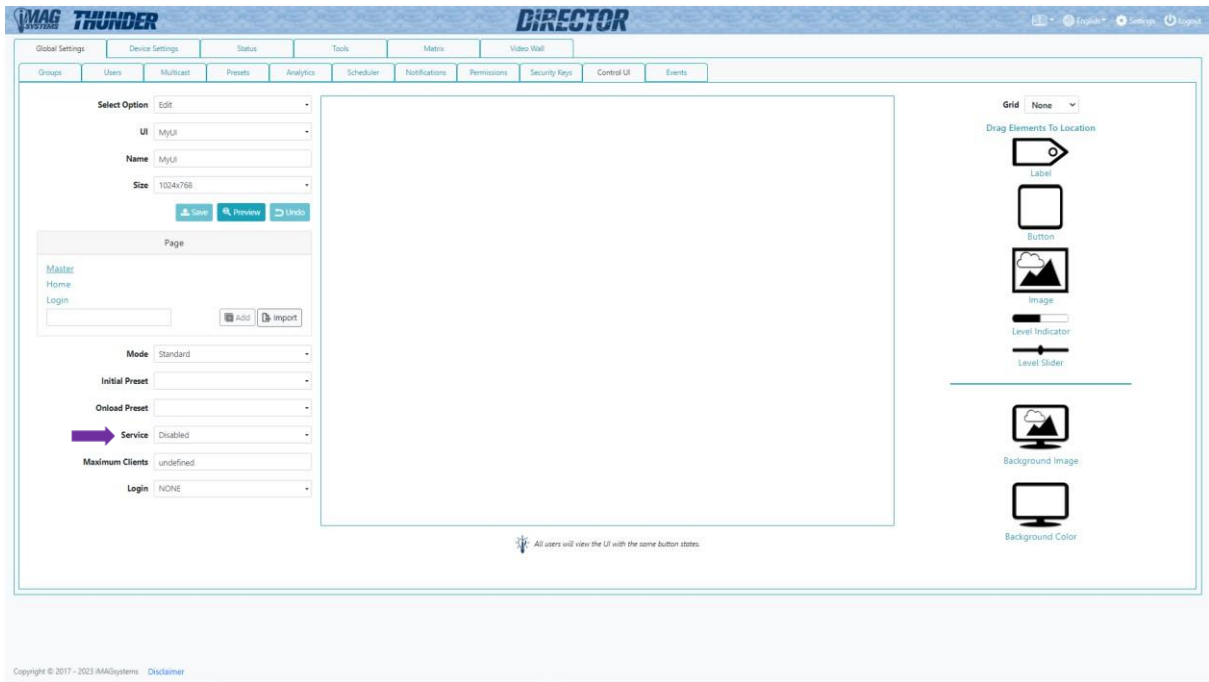
### 1.10.1.1.2 Standard Mode Onload Preset

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



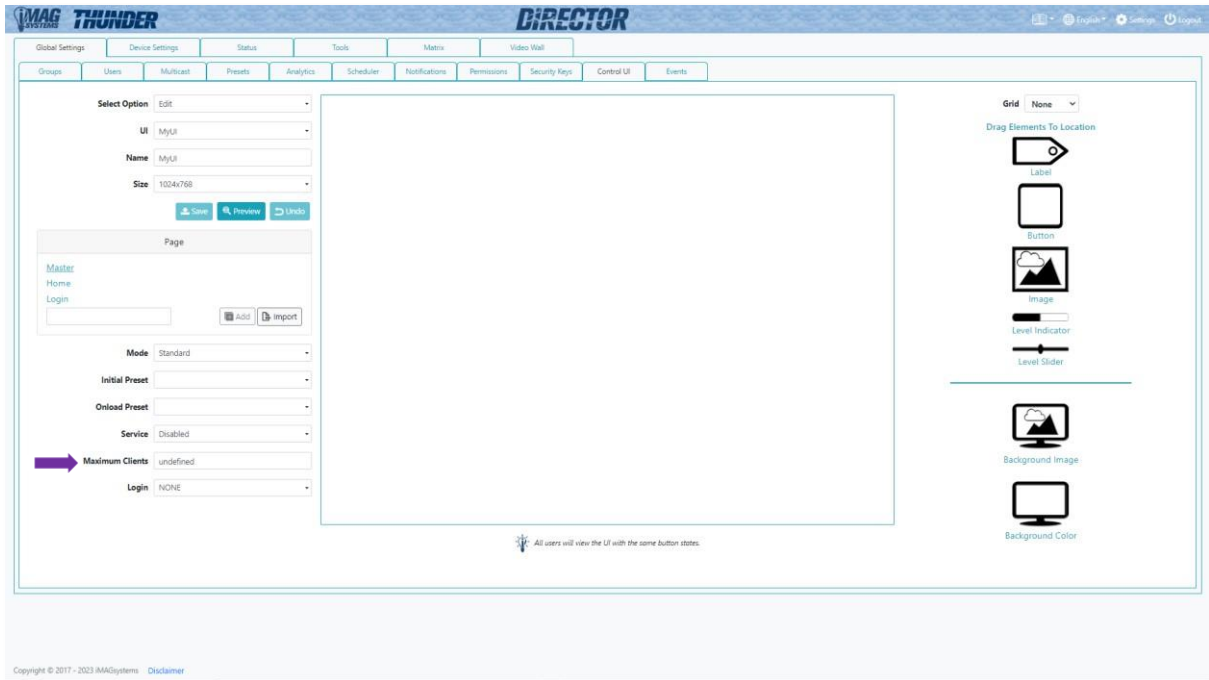
### 1.10.1.1.3 Standard Mode Service

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



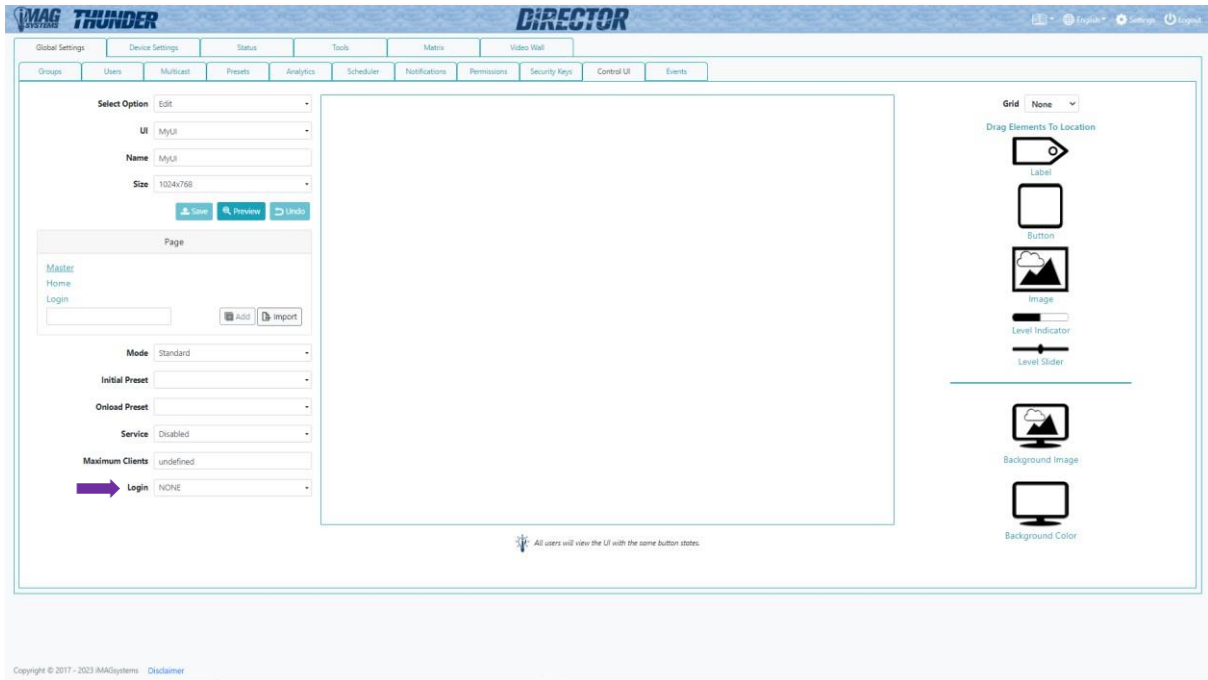
### 1.10.1.1.4 Standard Mode Maximum Clients

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.



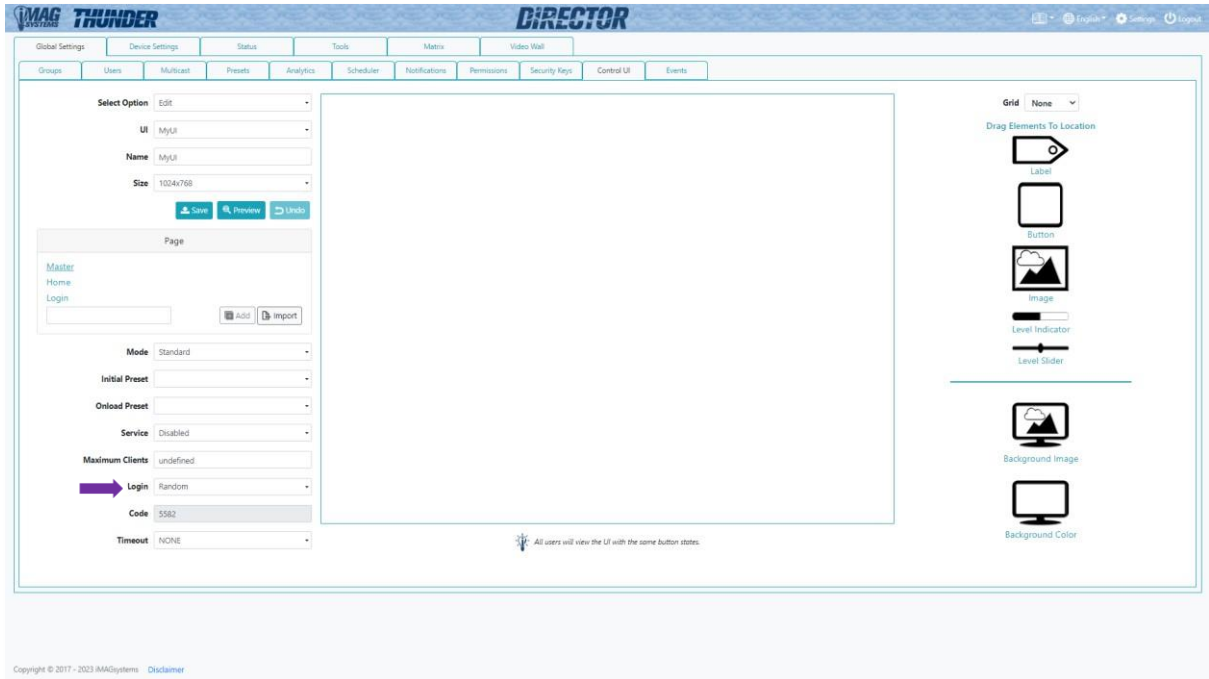
### 1.10.1.1.9 Standard Mode Login

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.



### 1.10.1.1.9 Standard Mode Login continued...

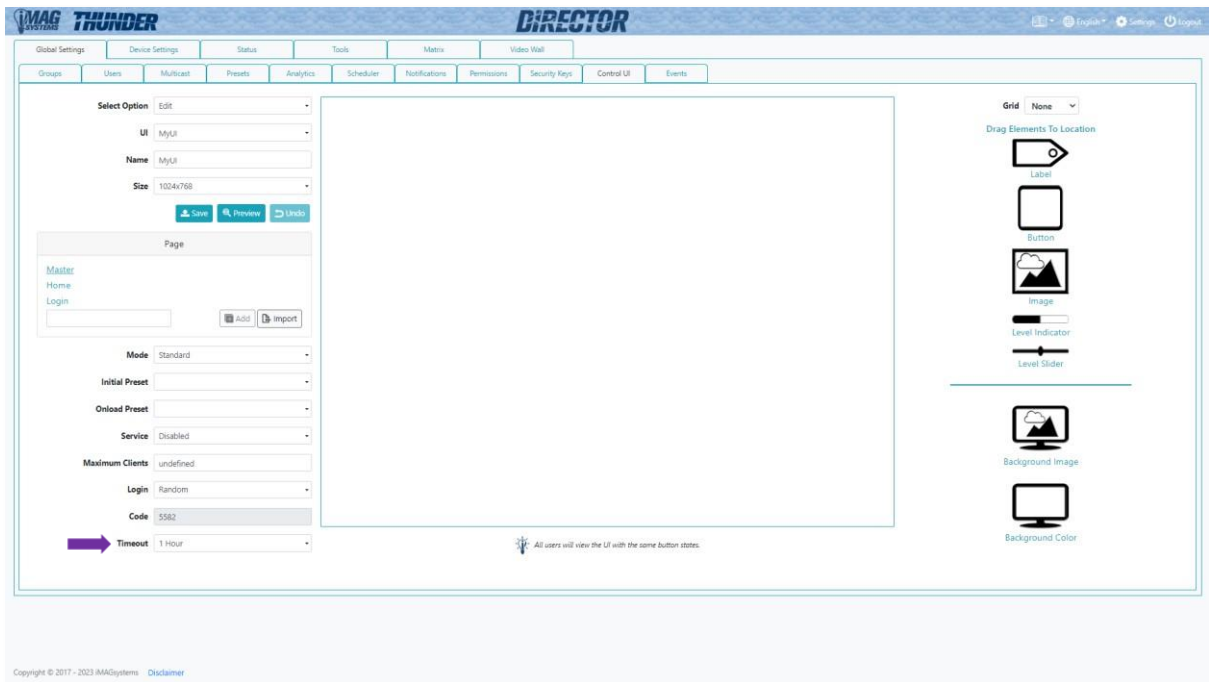
When a login pin code is required either a Random or Fixed 4 digit code can be selected. A random pin code will change each time the service is enabled. In these cases the Login Page will be used and displayed when accessing the User Interface.





### 1.10.1.1.6 Standard Mode Timeout

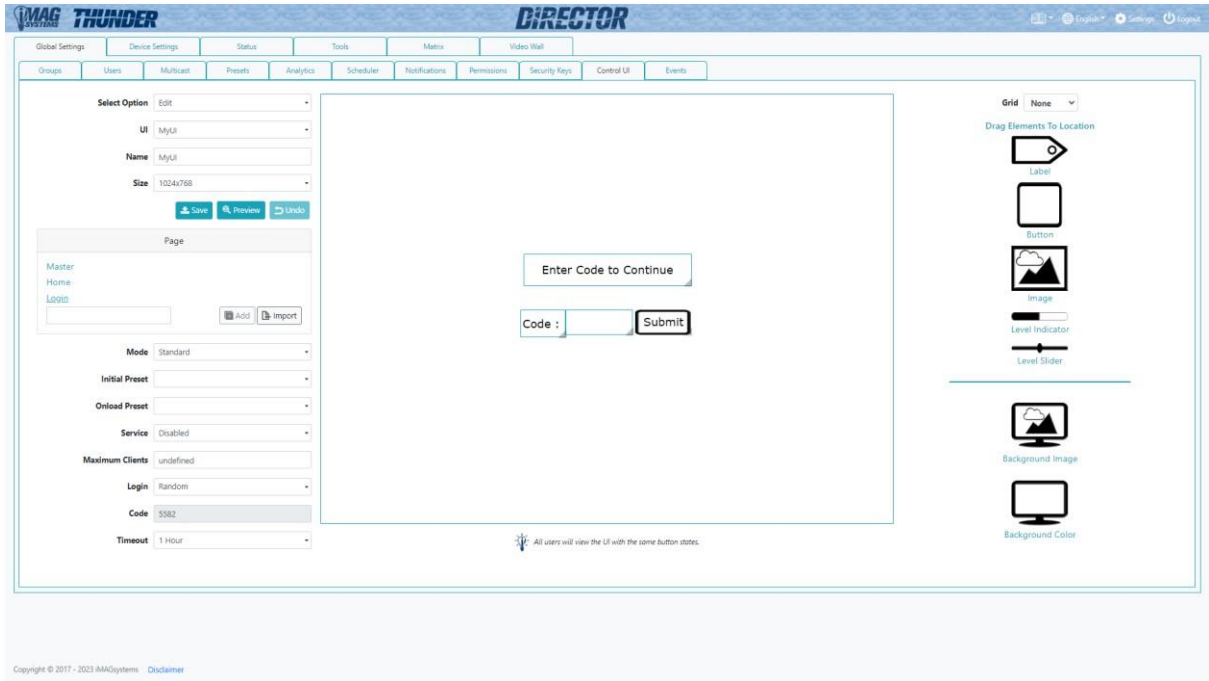
A timeout can also be applied when using a login pin code that will prevent the client access after the selected time has elapsed.



### 1.10.1.1.7 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.



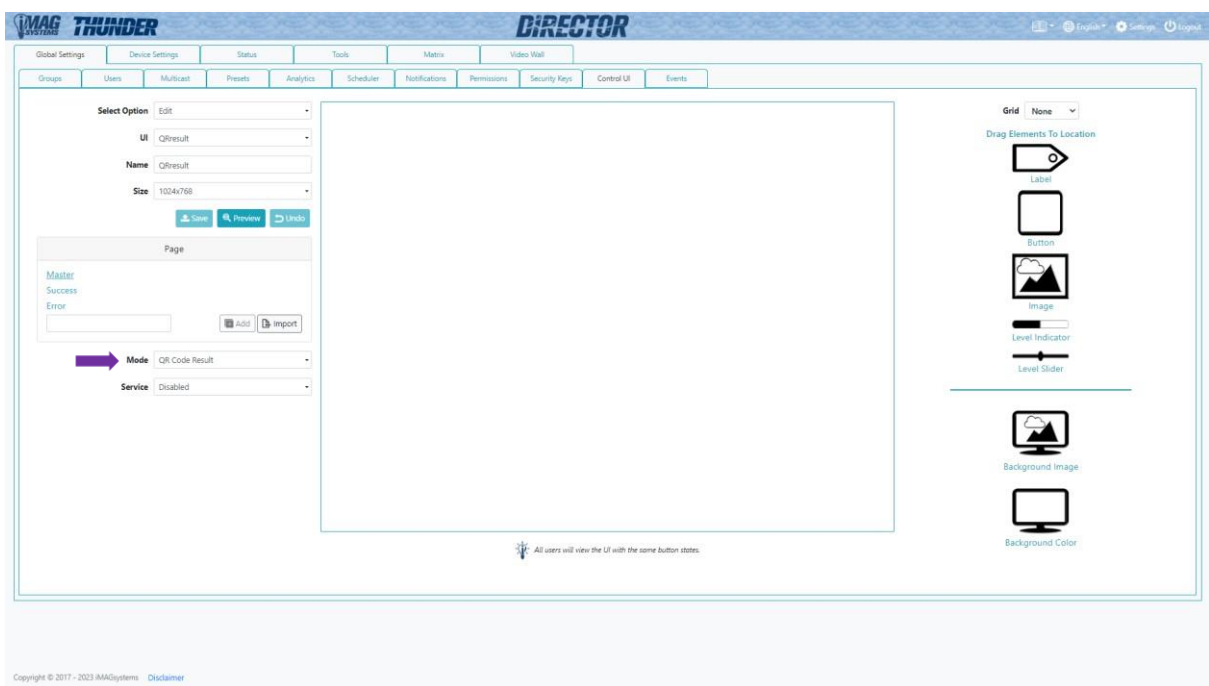
### 1.10.1.2 QR Code Result Mode

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.

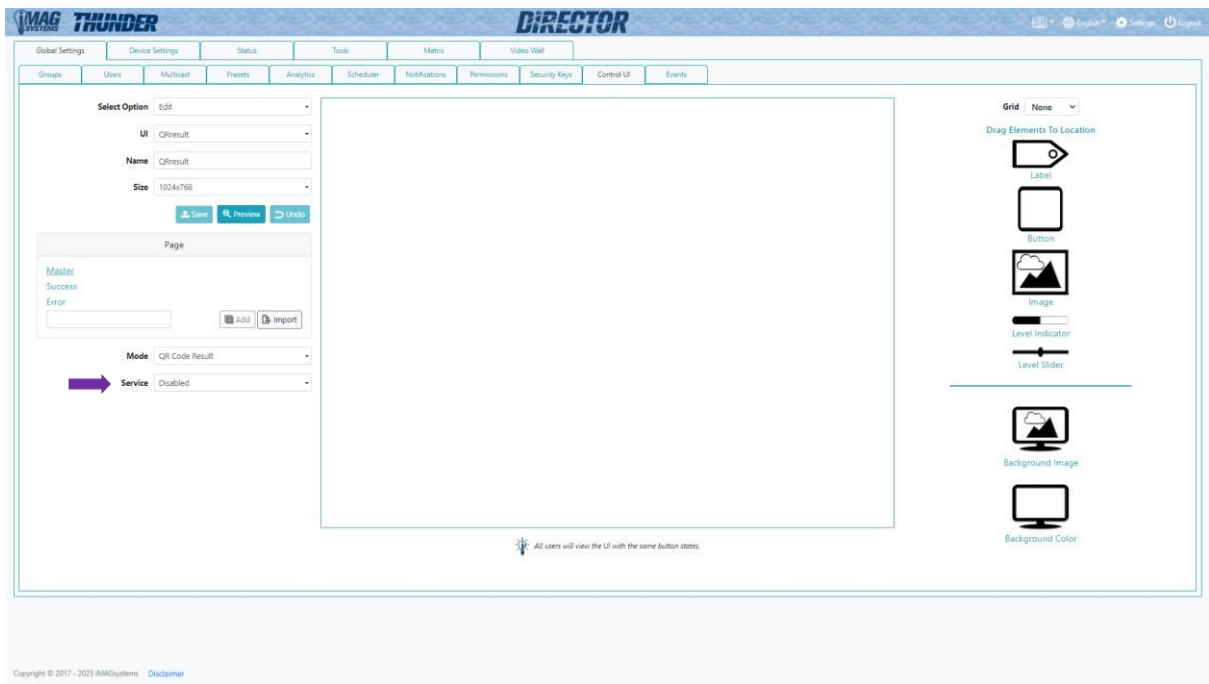
These result User Interface can be used to display a single page message or a multipage User Interface with the same abilities as standard mode.

[Refer 1.4.9 Preset QR Codes](#)



### 1.10.1.2.1 QR Code Result Mode Service

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



### 1.10.2 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. A selection of standard sized displays are available or user can enter their own size from 100x100 to 3820x2160.

**DIRECTOR THUNDER**

Global Settings | Device Settings | Status | Tools | Matrix | Video Wall

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

1 Select Option: Add

2 Name: MyUI

3 Size: 1024x768

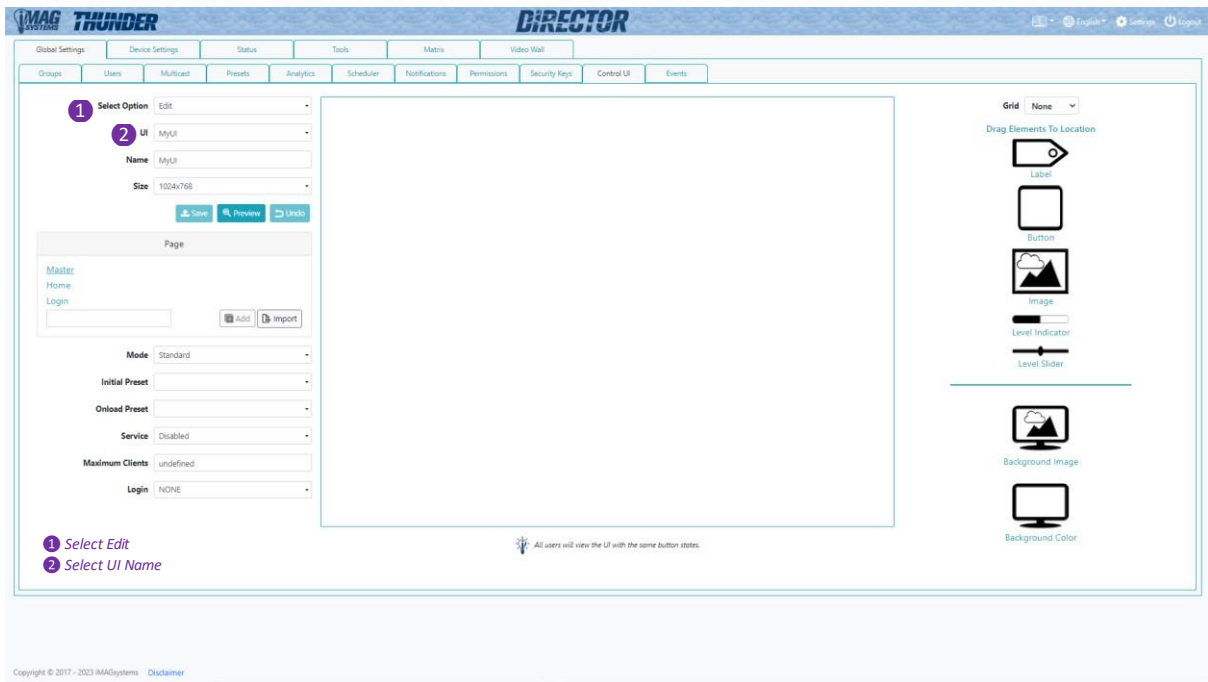
4 Save

1 Select Add  
2 Enter UI Name  
3 Select UI size  
4 Click Save button

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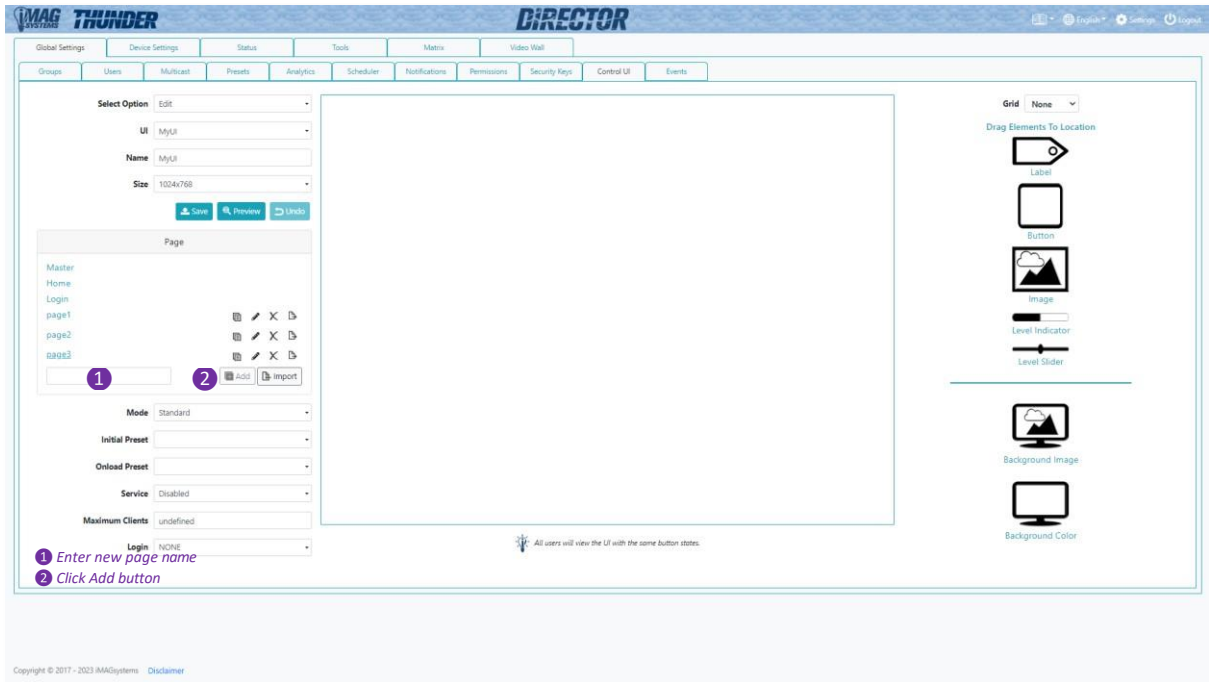
### 1.10.3 Edit

Here you can change the UI name or edit and preview an existing UI on the system. The UI service and login requirements can also be set from here.



### 1.10.3 Edit continued...

Initially only 3 pages are available, Master, Home and Login. 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 User Interface is loaded. The Login page is displayed when a pin code is required to access the User Interface. From here you can add and remove pages whenever required.



Duplicate page



Rename page



Delete page

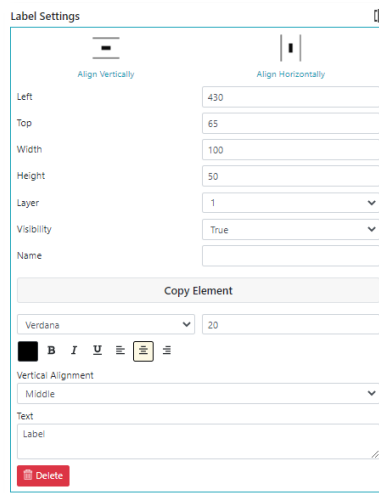


Export page

### 1.10.3.1 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: 430  
 Top: 65  
 Width: 100  
 Height: 50  
 Layer: 1  
 Visibility: True  
 Name:

Copy Element

Verdana | 20

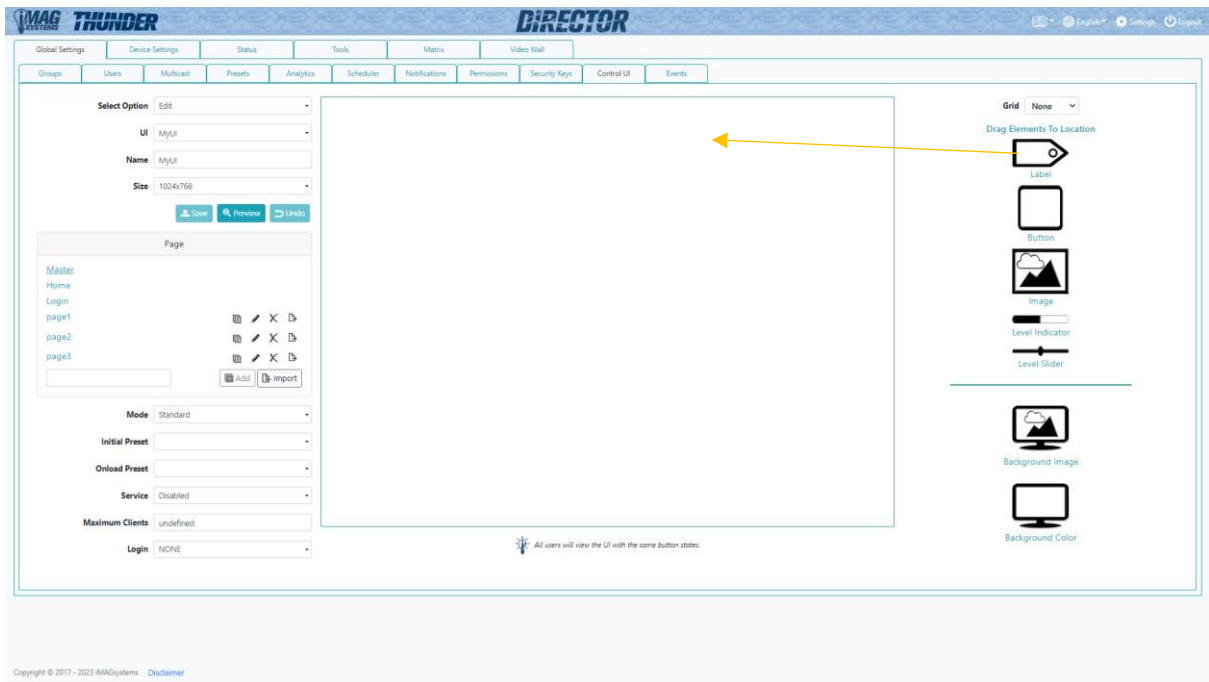
**B I U** | 

Vertical Alignment: Middle

Text: Label

Delete

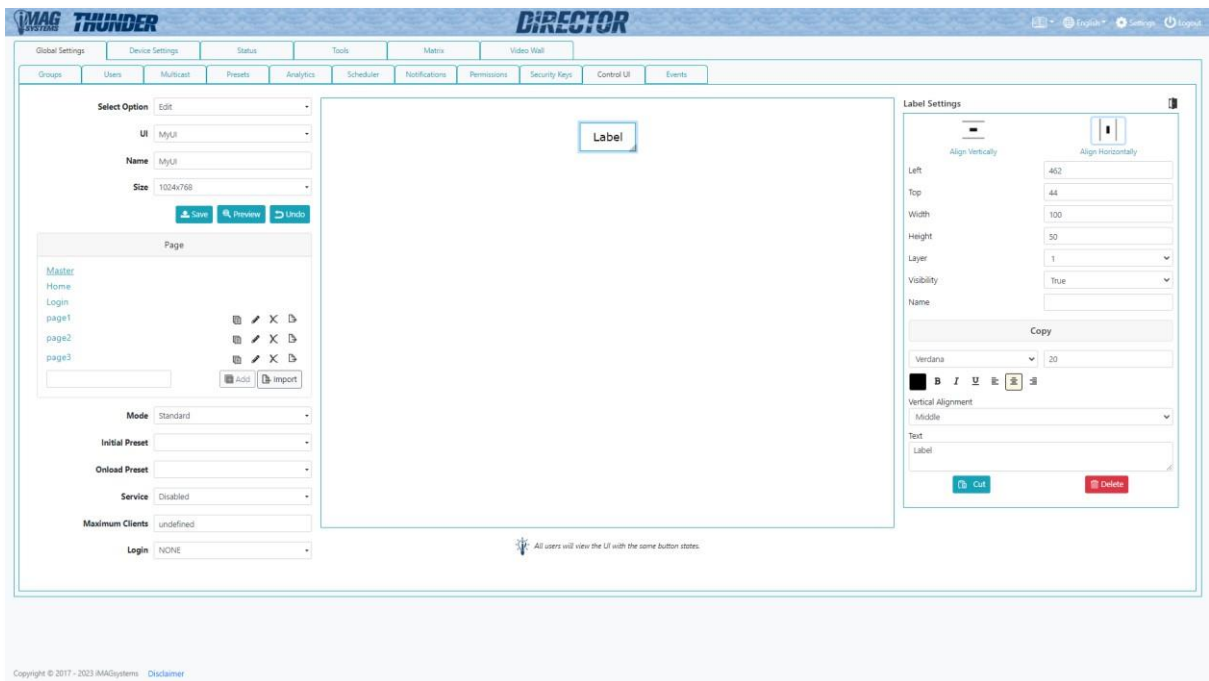
Here we are adding a title for the UI on the Master page.





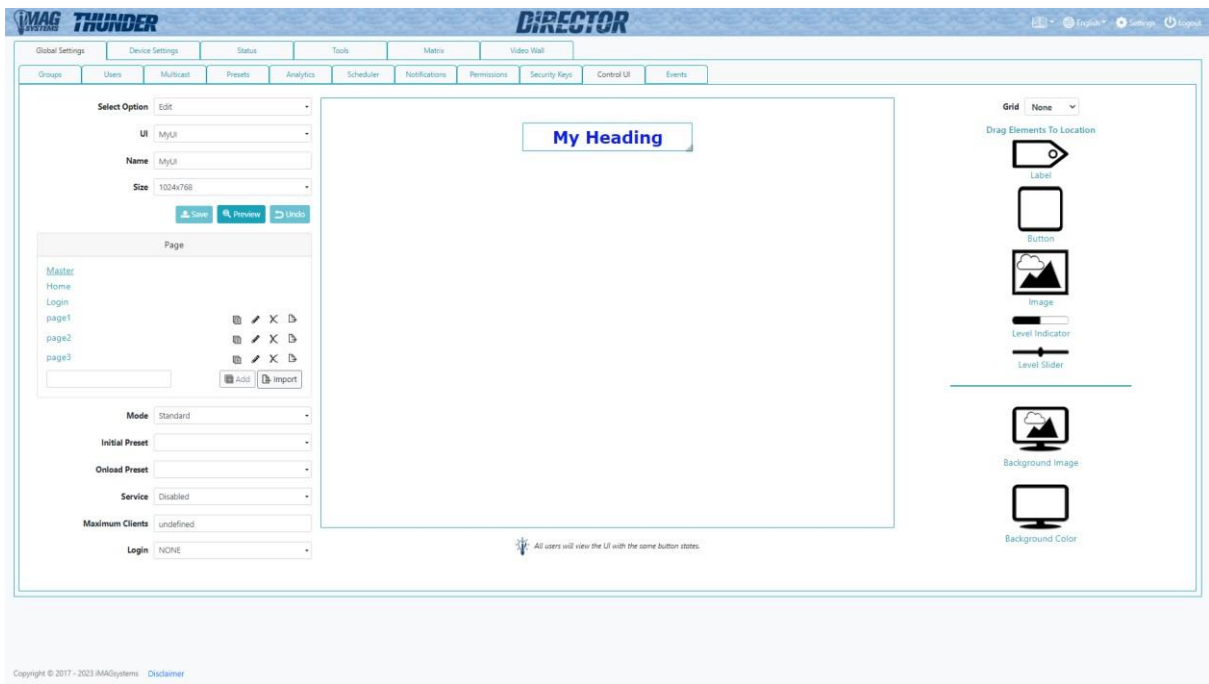
### 1.10.3.1 Label continued...

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



### 1.10.3.1 Label continued...

Here the heading label has been defined.



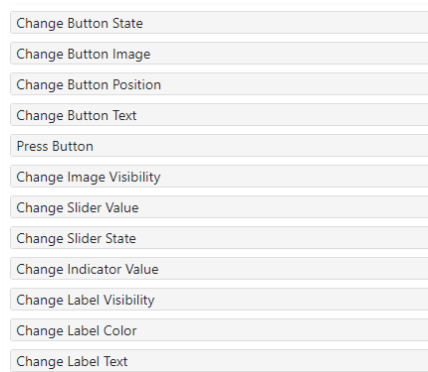
### 1.10.3.2 Button

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

The button must be given a name to change the state, position or text via button functionality or via the API control command **set ui\_button**.

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

- **Momentary**
- **Repeat**
- **Toggle**
- **Radio Toggle**
- **Split**
- **QR Code**



Each button includes functionality to control all UI elements the same as possible via the API. This allows a button basic manipulation of the UI without any coding required.

### 1.10.3.2.1 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 button press, button release and button hold.

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, 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.

**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 Release Preset:** Select the preset to be executed on button release.

**On Hold Preset:** Select the preset to be executed on button hold.

**Hold Delay:** Select the hold trigger delay time.

**Change Page:** This allows you to change to another page on release of the button.

### 1.10.3.2.2 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.

The screenshot shows the 'Button Settings' dialog box with two tabs: 'Graphical' and 'Functional'. The 'Functional' tab is active. The settings are as follows:

- Name:** (Empty text field)
- Button Type:** Repeat (Selected from a dropdown menu)
- Analytics:** None (Selected from a dropdown menu)
- Initial Button State:** State 1 Enabled (Selected from a dropdown menu)
- Continue On Error:** ☐ (Unchecked)
- Repeating Interval:** 1000 (Set on a slider between 100 and 1000)
- Repeat Delay:** 1000 (Set on a slider between 500 and 2000)
- State 1:** (A blue button labeled 'State 1')
- On Press Preset:** None (Selected from a dropdown menu)
- On Release Preset:** None (Selected from a dropdown menu)

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.

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

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

### 1.10.3.2.3 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' (white with a blue border). 'Preset' is set to 'None'. 'Change Page' is also set to 'None'.

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.

#### 1.10.3.2.4 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.

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.

#### 1.10.3.2.5 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 All 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.



#### 1.10.3.2.5 Split Button continued...

The screenshot shows the 'Button Settings' dialog box with the 'Functional' tab selected. The 'Graphical' tab is also visible. The 'Functional' tab contains the following fields:

- Name:** A text input field.
- Button Type:** A dropdown menu with 'Split' selected.
- Analytics:** A dropdown menu with 'None' selected.
- Button Group:** A text input field with a red border and a red 'X' icon, indicating it is required. A note below it says '\* Split button needs a Button Group'.
- Initial Button State:** A dropdown menu with 'State 1 Enabled' selected.
- Function:** A dropdown menu with 'Encoder' selected.
- Group:** A dropdown menu with 'ALL DEVICES' selected.
- Select Device:** A dropdown menu with 'None' selected.

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.

### 1.10.3.2.5 Split 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.

### 1.10.3.2.6 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.

The screenshot shows the 'Button Settings' window with two tabs: 'Graphical' and 'Functional'. The 'Functional' tab is active. The settings are as follows:

Graphical	Functional
Name	QRbtn01
Button Type	QR Code
Analytics	None
Initial Button State	State 1 Enabled
External URL	
State 1	
Preset	None
Change Page	None

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.

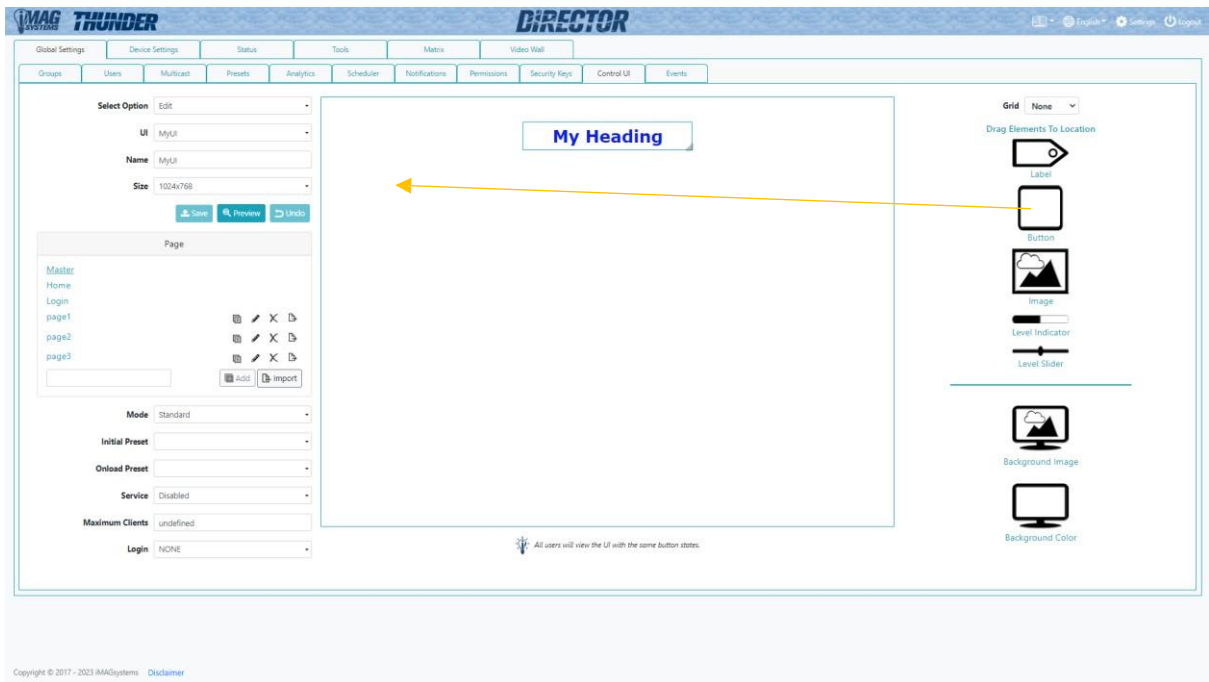
**External URL:** Enter the controllers external URL if working outside of the local network.

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

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

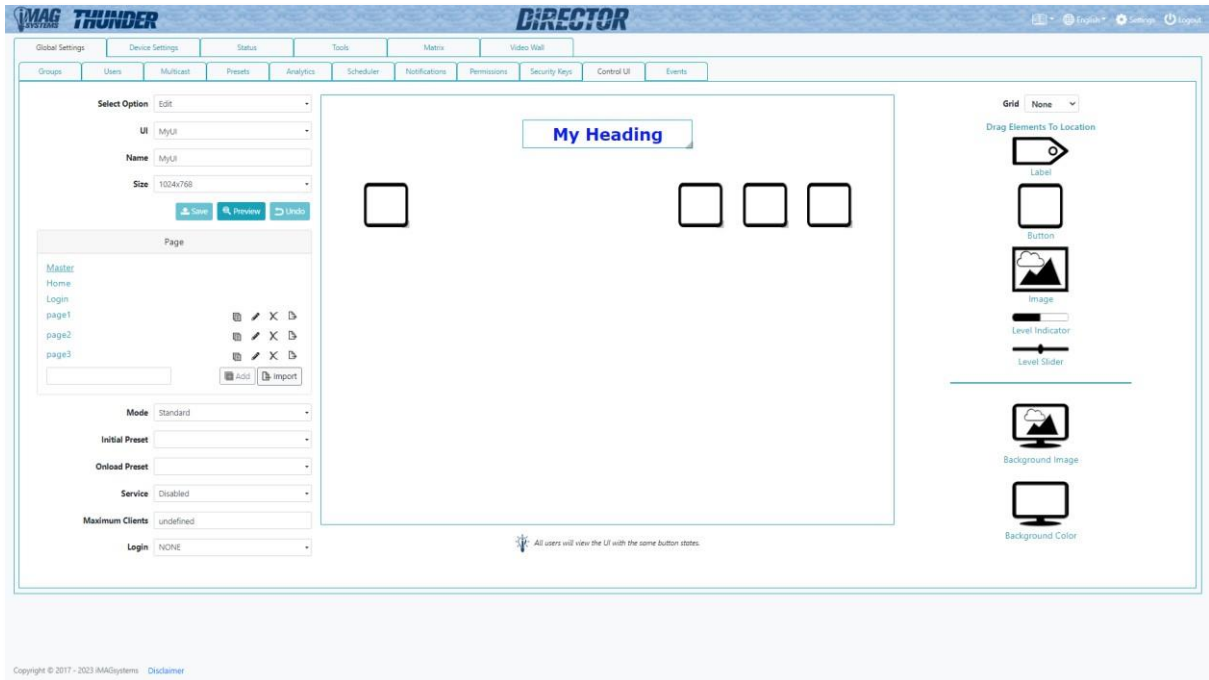
## 13.2 Button continued...

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.



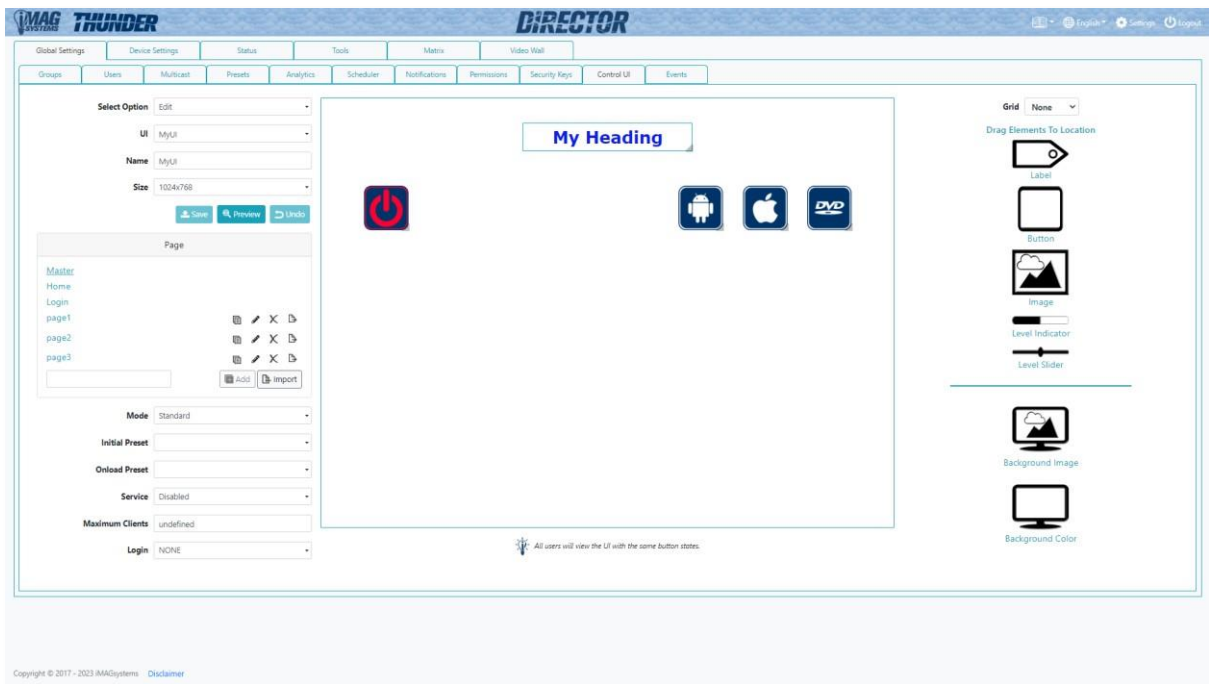
### 1.11 Monterey 3.2 Button continued...

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



## 13.2 Button continued...

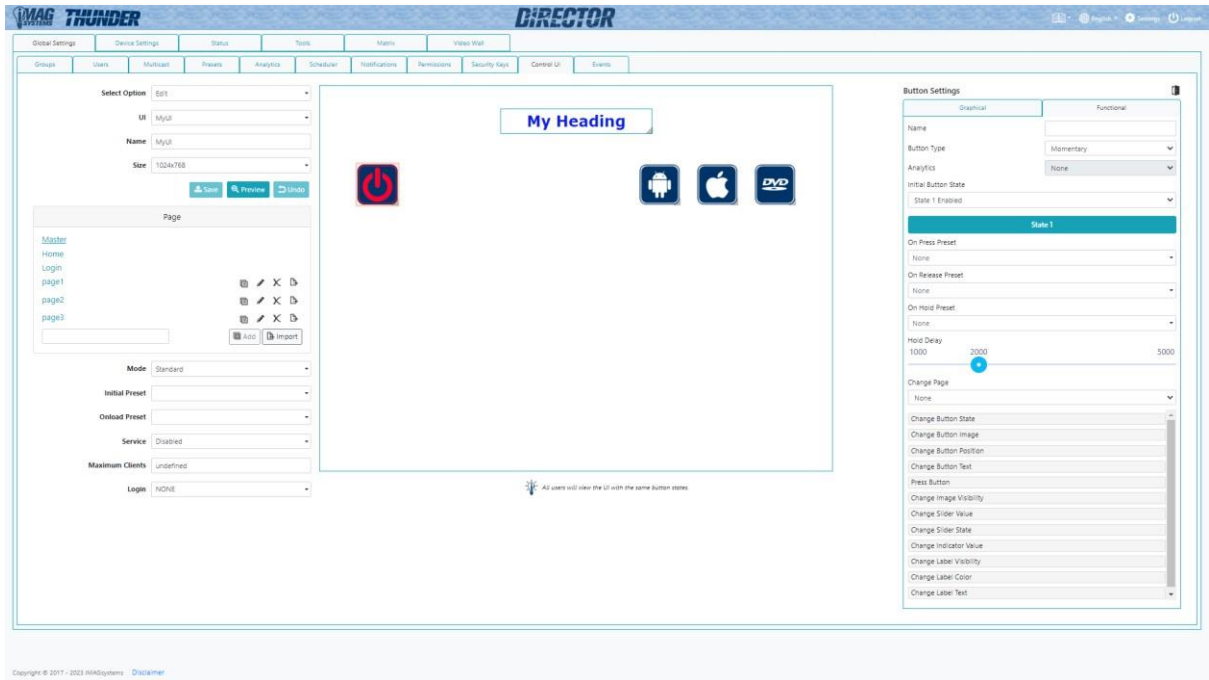
Select an image for the button by selecting either External File and browsing your own images, selecting Library to choose one from the button library or selecting Preview (when available) to display a preview steam. When selecting an image from the button library, both state 1 and state 2 images will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



Here button sizes and images have been assigned to the master page buttons.

### 1.3.2 Button continued...

From the Button Settings Functional tab, select a preset to be triggered on button press along with any other required button actions.



## 1.3.3 Level Indicator

A Level Indicator can be dragged to any location then resized by dragging the placeholder or changing the size and location values directly. The Level Indicator must be given a name to change the value with button functionality and via API control command **set ui\_indicator**.

Refer to Level Slider settings to link a Level Indicator automatically with Level Slider value. Once the Level Indicator is link with a Level Slider, the Level Indicators values will be set to match the Level Slider.

The screenshot shows the 'Level Indicator Settings' dialog box with the 'Graphical' tab selected. It features two sub-tabs: 'Graphical' and 'Functional'. Under 'Graphical', there are options for 'Align Vertically' and 'Align Horizontally'. The 'Orientation' is set to 'Horizontal'. The 'Left' value is 529, 'Top' is 377, and 'Width' is 280. The 'Layer' is set to 1, and 'Show Value' is set to 'False'. There is a 'Copy' button. Below these are color selection options: 'Background Color' (black), 'Start Color' (green), and 'End Color' (red). A 'Color Gradient' slider is shown with values 0, 75, and 100. At the bottom are 'Cut' and 'Delete' buttons.

Graphical settings allow for horizontal or vertical orientation and option to show the current value within the Level Indicator.

The background and level colors can be set and the color gradient set to required levels.

The screenshot shows the 'Level Indicator Settings' dialog box with the 'Functional' tab selected. It contains four input fields: 'Name' (empty), 'Minimum Value' (0), 'Maximum Value' (100), and 'Current Value' (50).

Here you can see the functionality of a Level Slider.

**Name:** A name is required as a reference for when manipulating the Level Indicator from a buttons functionality or via the API control command **set ui\_indicator**.

**Minimum Value:** Enter the minimum value (limit -1000)

**Maximum Value:** Enter the maximum value (limit 1000)

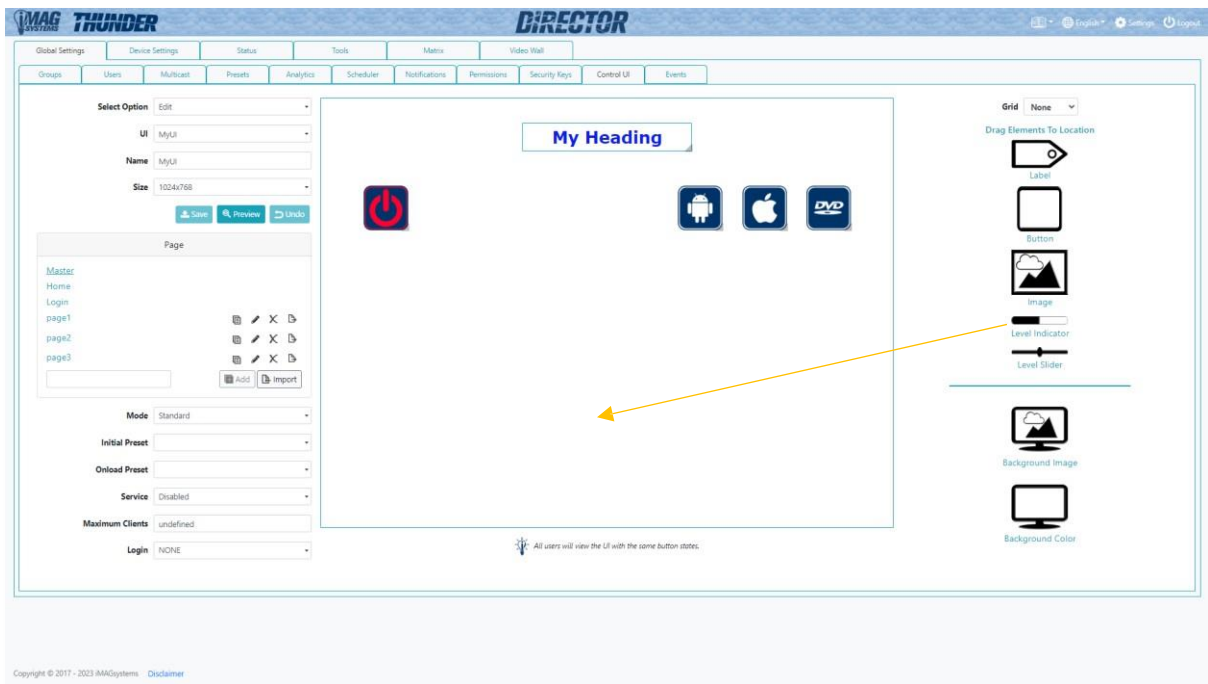
**Current Value:** Enter the current value

The range of values that can be used are from -1000 to 1000.

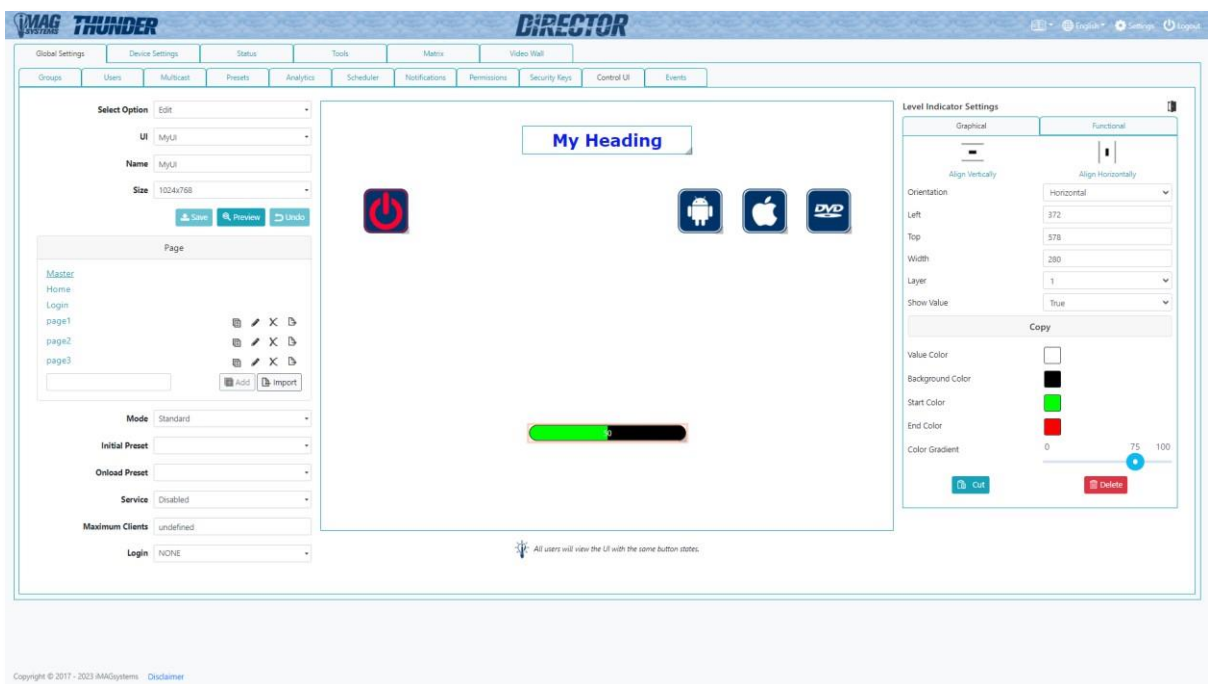


### 3.3 Level Indicator continued...

Here we are adding a Level Indicator on the Master page.



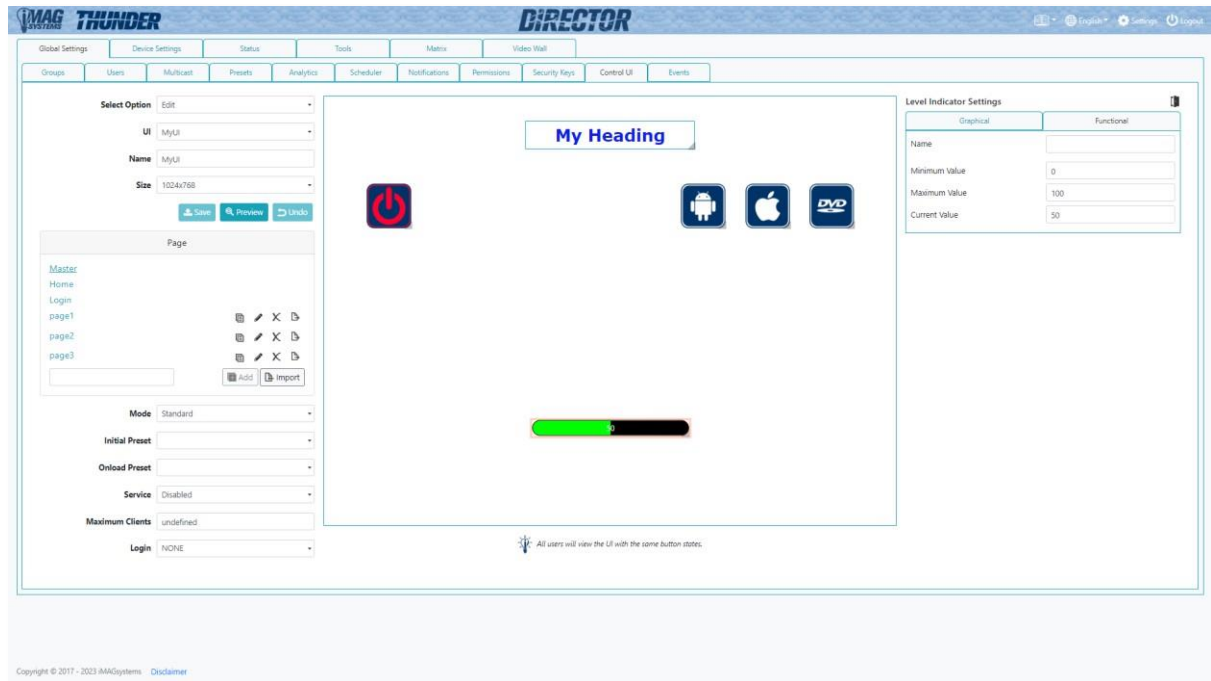
In the Graphical settings the visual effects of the Level Indicator can be applied.



### 3.11 Monterey 3.3 Level Indicator continued...

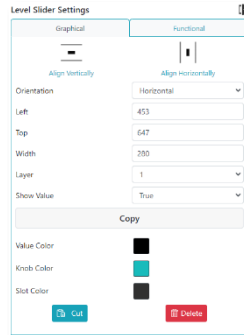
In the Functional settings a name needs to be added to control the value of the Level Indicator. Values can be applied here if not being combined with a Level Slider.

Once a Level Indicator is combined with a Level Slider, the Level Slider values will be applied.

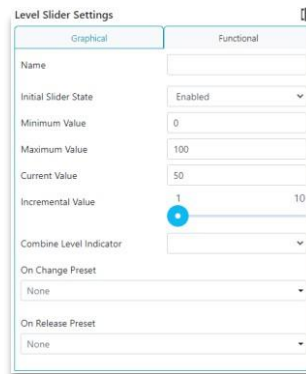


### 3.4 Level Slider

A Level Slider can be dragged to any location then resized by dragging the placeholder or changing the size and location values directly. The Level Slider must be given a name to change its value and state with button functionality and via API control command **set ui\_slider**.



Graphical settings allow for horizontal or vertical orientation and an option to show the current Level Slider value. The color of the value text, knob and slot can also be changed.



Here you can see the functionality of a Level Slider.

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

**Initial Slider State:** This is the initial state of the slider when the UI is loaded.

**Minimum Value:** Enter the minimum value [-1000 to 999]

**Maximum Value:** Enter the maximum value [(if min < 0 then 0 else min + 1) to 1000]

**Current Value:** Enter the current value [Minimum to Maximum]

**Incremental Value:** Select the incremental change value from 1 to 10

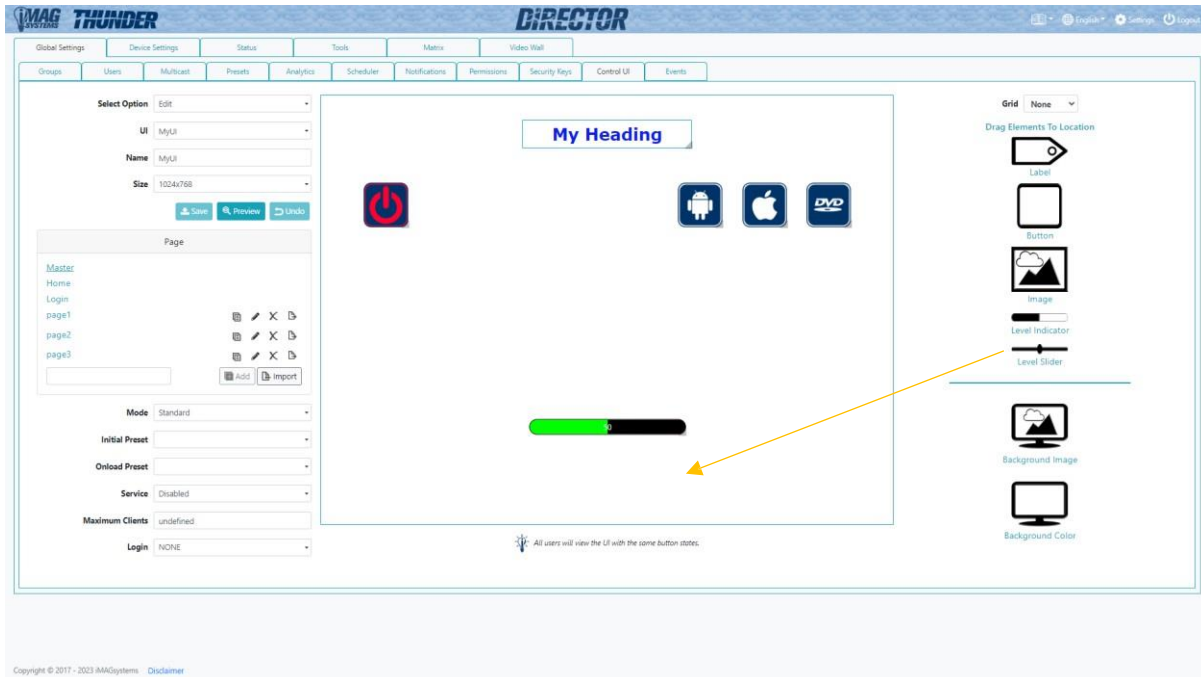
**Combine Level Indicator:** Select a Level Indicator to be combined and controlled automatically.

**On Change Preset:** Select a preset to be applied on a change of the slider value.

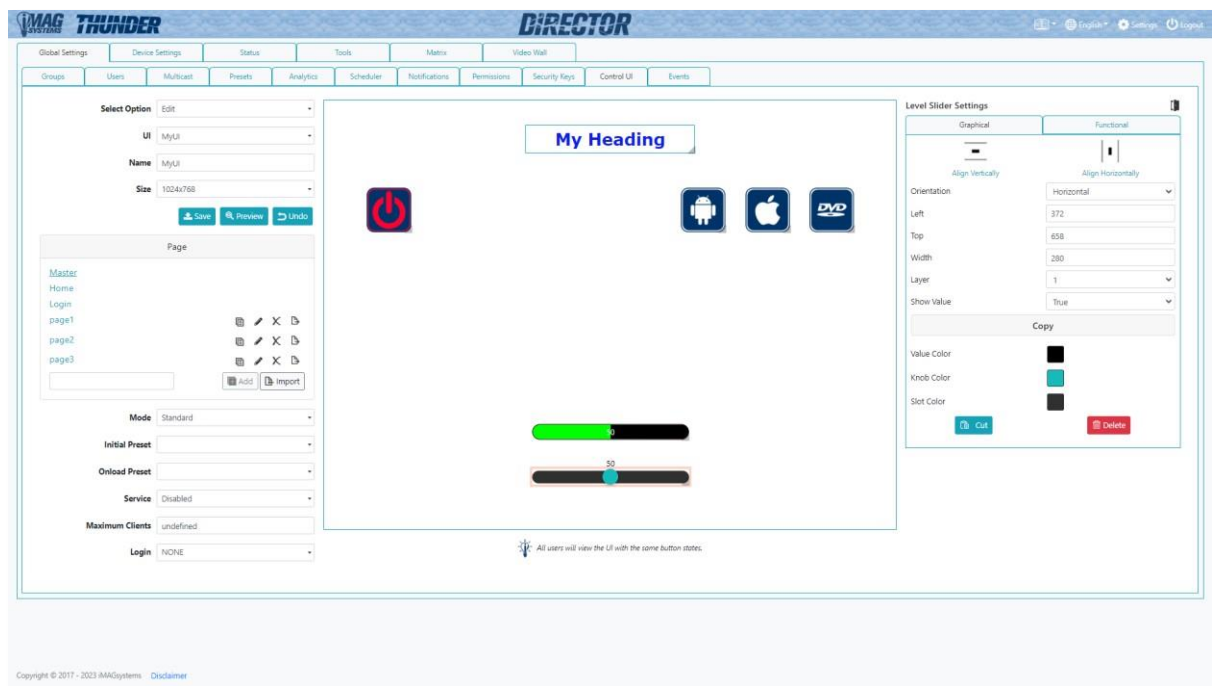
**On Release Preset:** Select a preset to be applied on release of the slider.

### 3.11 Monterey 3.4 Level Slider continued...

Here we are adding a Level Indicator on the Master page.



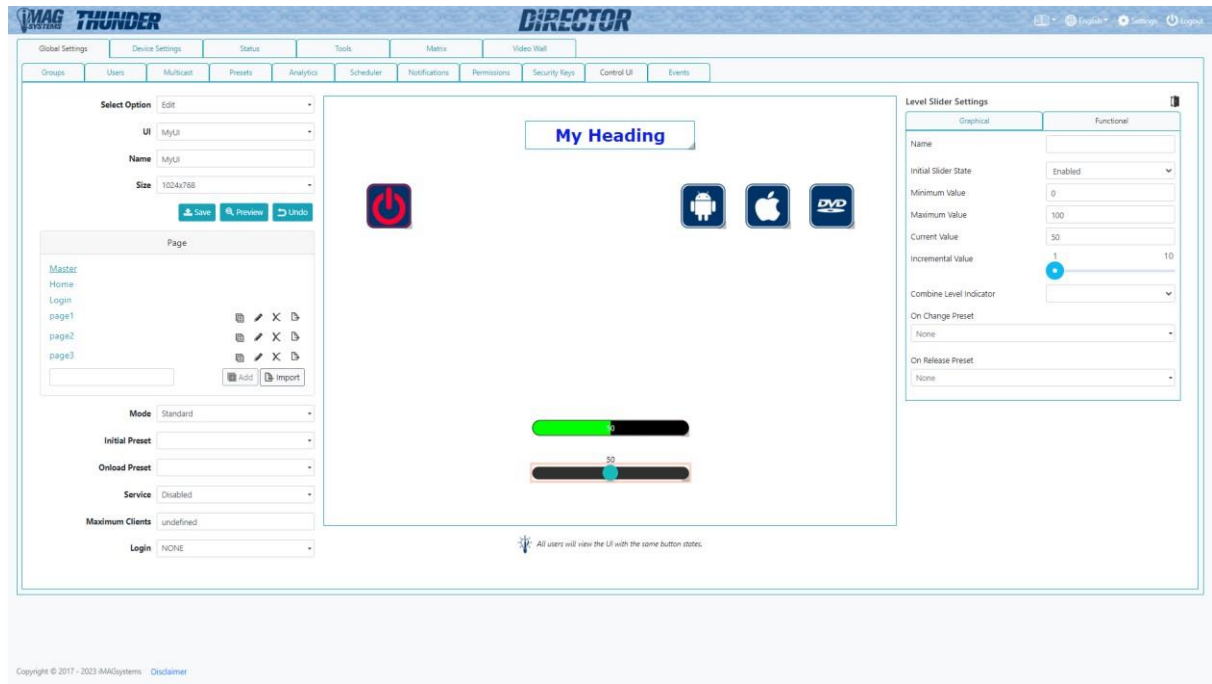
In the Graphical settings the visual effects of the Level Slider can be applied.



### 3.11 Money 3.4 Level Slider continued...

In the Functional settings a name can be added to control the value and state of the Level Slider. Range and current Level Slider values are applied here.

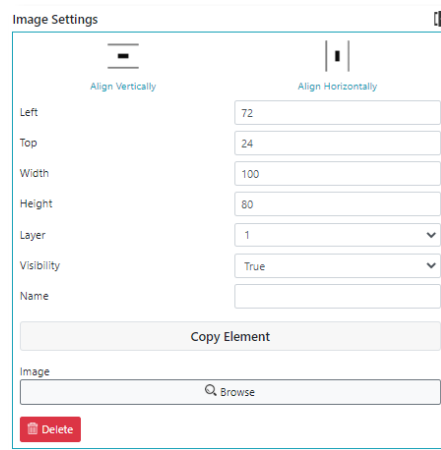
A Level Indicator can be selected to combine operation with the Level Slider. The Level Indicator will automatically display the value of the combined Level Slider.



### 3.1 Monterey 3.5 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.*

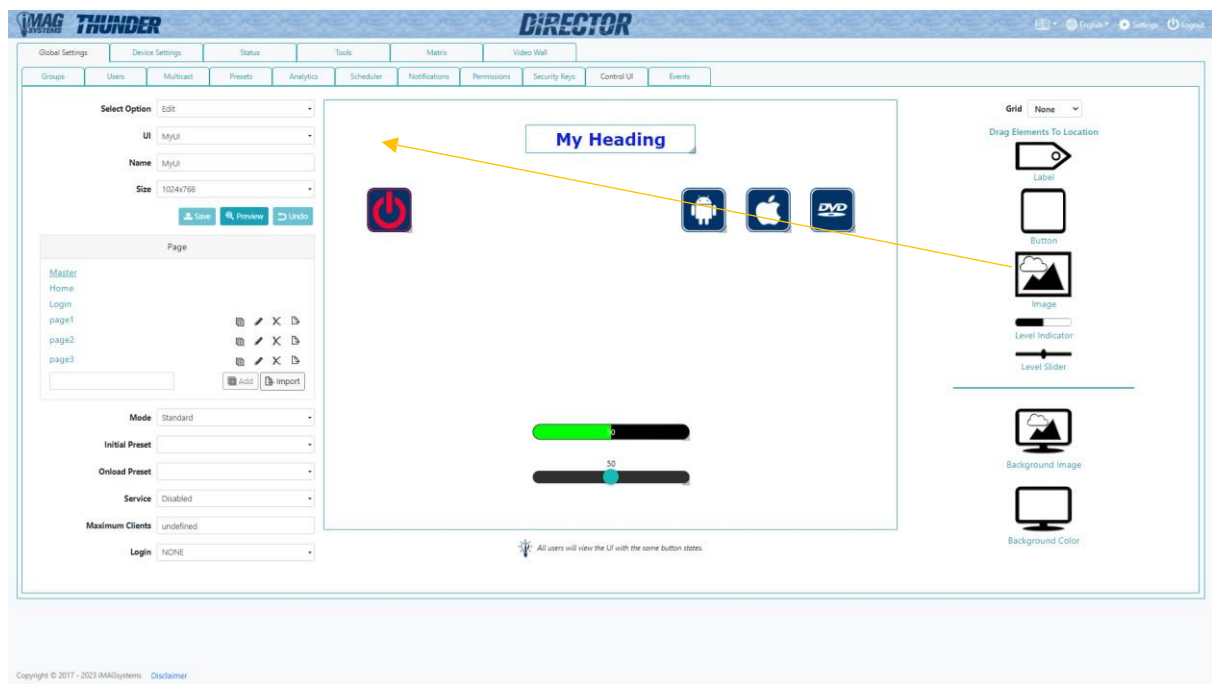
The image must be given a name to change the visibility via the control command **set ui\_image**.



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

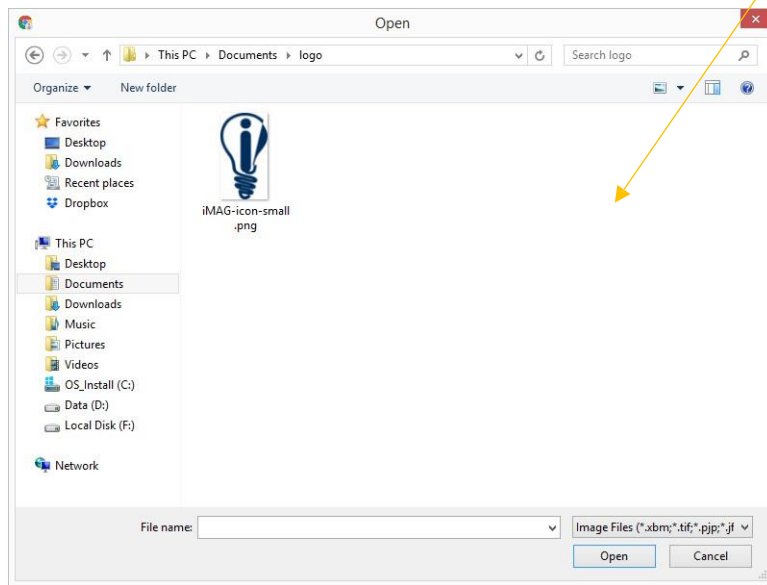
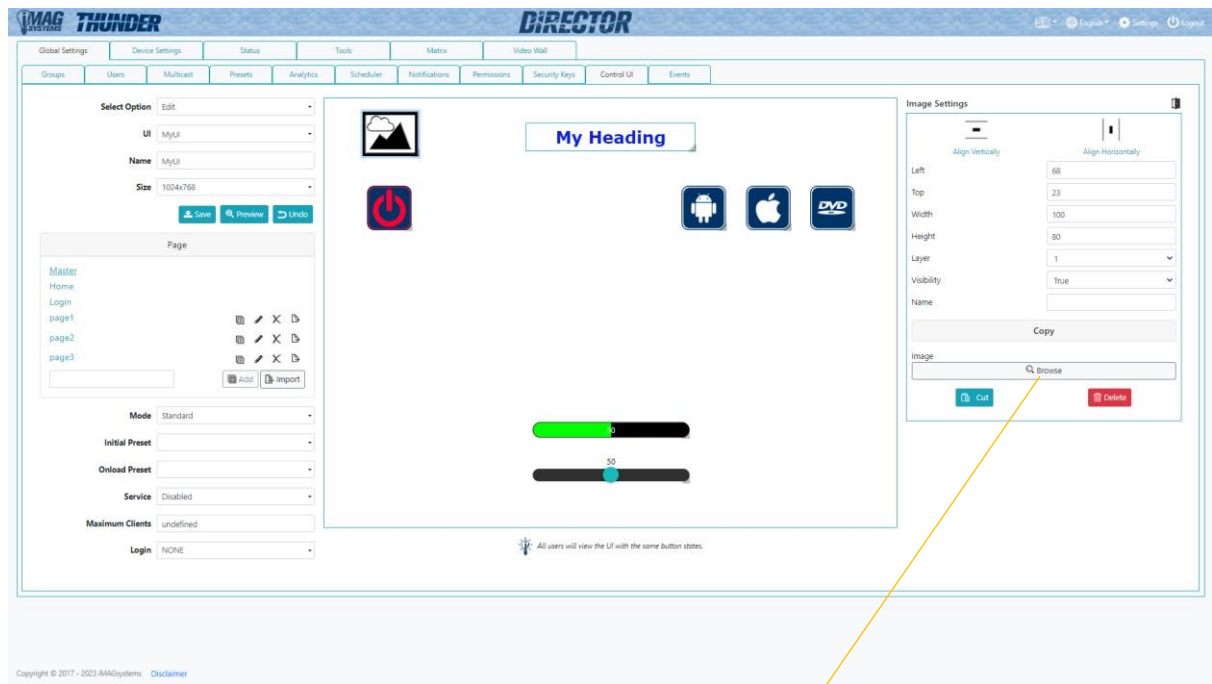
- Alignment: 'Align Vertically' and 'Align Horizontally' buttons.
- Left: Input field with value 72.
- Top: Input field with value 24.
- Width: Input field with value 100.
- Height: Input field with value 80.
- Layer: Dropdown menu with value 1.
- Visibility: Dropdown menu with value True.
- Name: Empty input field.
- Buttons: 'Copy Element' and 'Delete'.
- Image: Input field with a 'Browse' button.

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



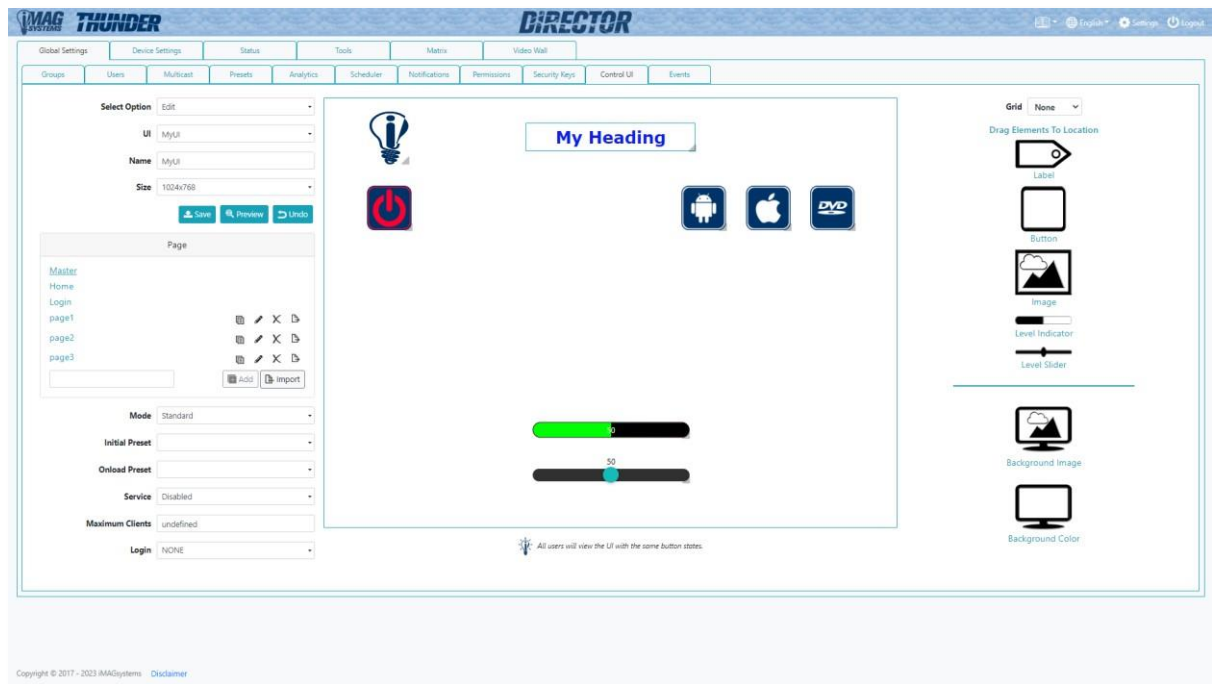
### 3.1 Money 3.5 Image continued...

Select Browse to select an image from your own images.



### 3.11 Money Gun 3.5 Image continued...

Here a logo image has now been assigned.

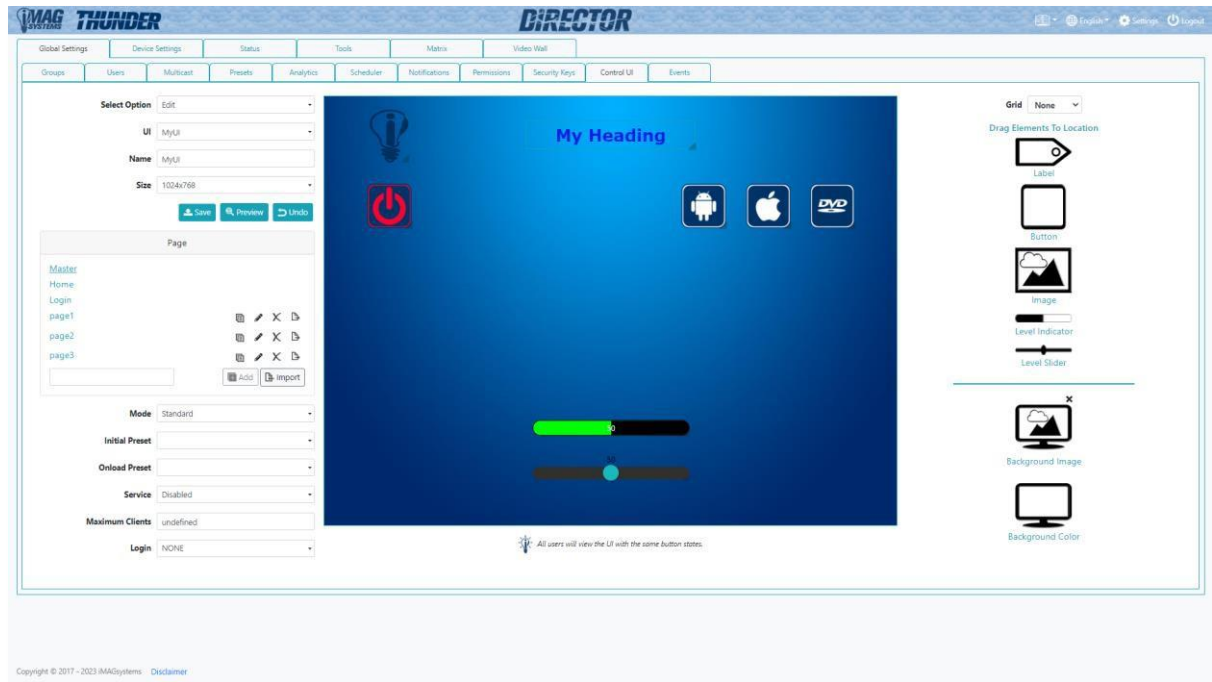




### 3.11 Master Page 3.6 Background

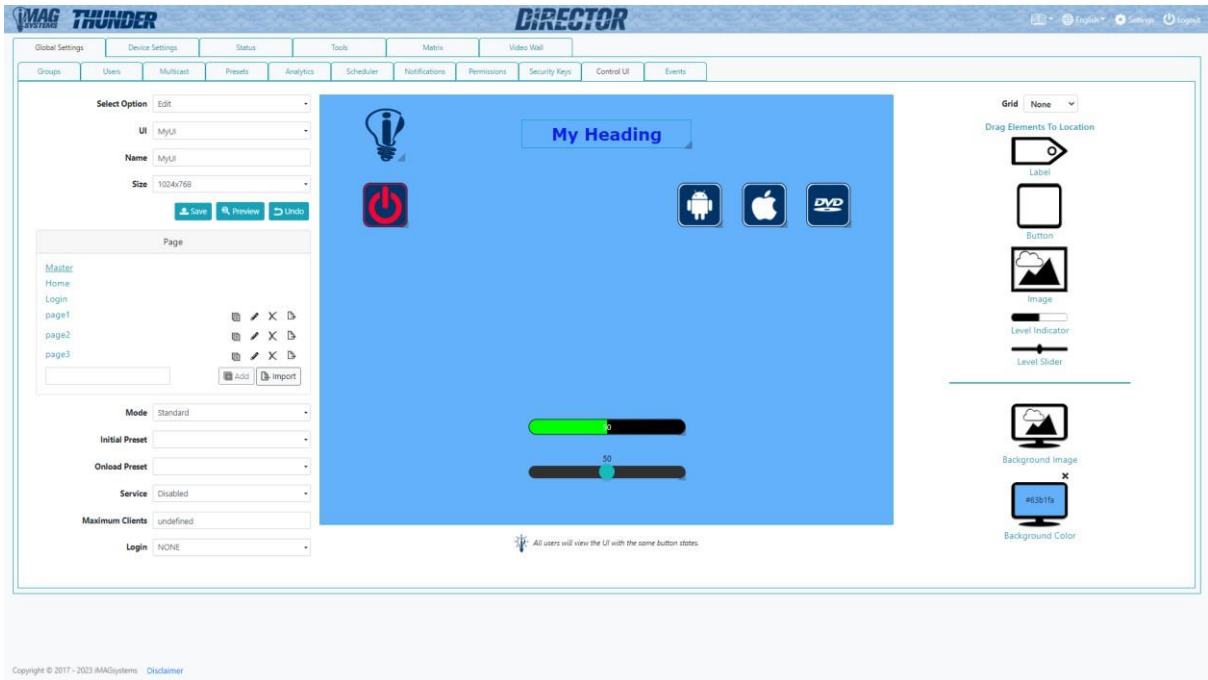
Either an image or solid colour can be selected for the page background. Applying a background on the Master Page will be seen on all other pages without a background. Applying a background to any other page than the Master Page will hide the Master Page altogether.

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



### 3.11 Money Gun 3.6 Background continued...

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



### 3.11.11.4 Duplicate

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

**SAHF THUNDER DIRECTOR**

Global Settings | Device Settings | Status | Tools | Matrix | Video Wall

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

1 Select Option Duplicate

2 UI MyUI

3 Name

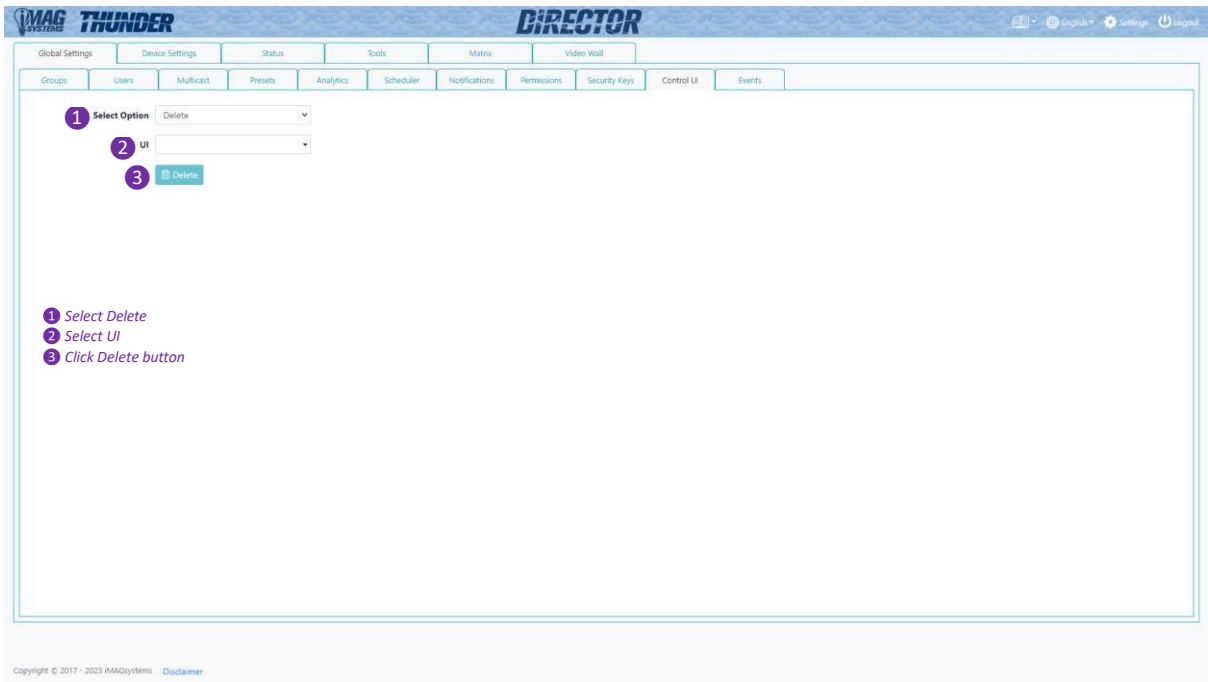
4 Save

1 Select Duplicate  
2 Select UI  
3 Change UI name if required  
4 Click Save button

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### 3.11 Delete

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

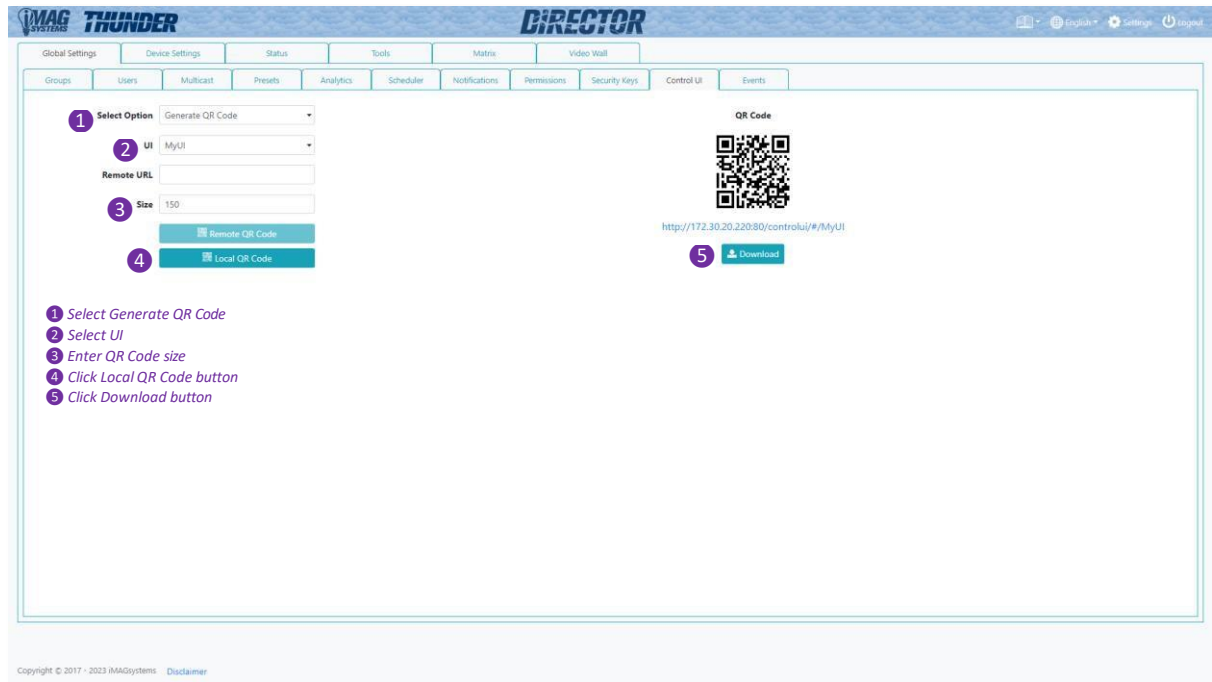


### 3.1 Monitory 3.1.6 Generate QR Code

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

#### 3.1.6.1 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.



### 3.11 Monitory And 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 Option: Generate QR Code

**2** UI: MyUI

**3** Remote URL: remote.url

**4** Size: 150

**5** Remote QR Code button

**6** Local QR Code button

**QR Code**

http://remote.url/controlui/#/MyUI

**6** Download

**Legend:**

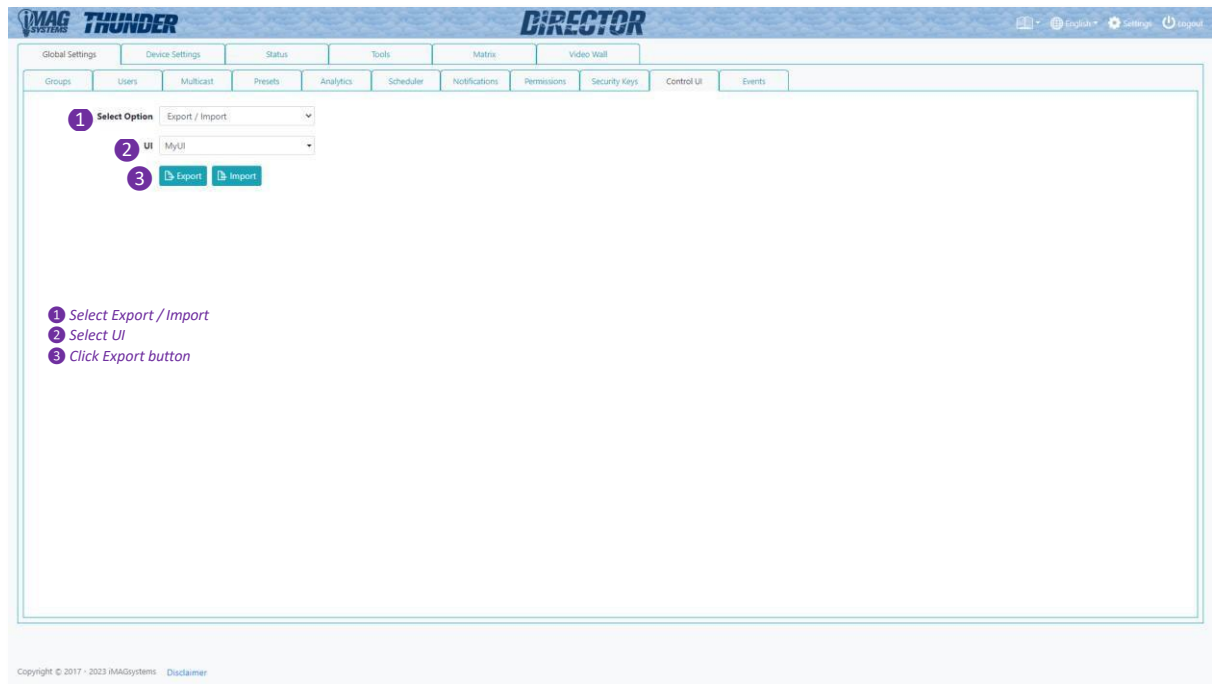
- 1** Select Generate QR Code
- 2** Select UI
- 3** Enter remote URL
- 4** Enter QR Code size
- 5** Click Remote QR Code button
- 6** Click Download button

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### 3.1.1 Monetary Rule 7 Export / Import

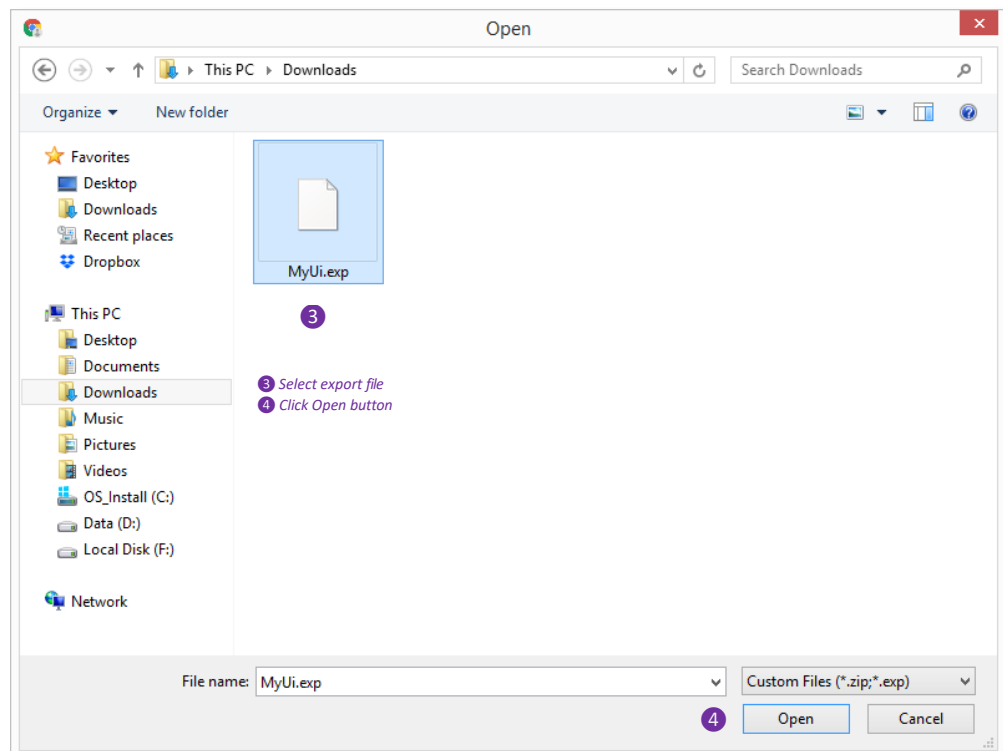
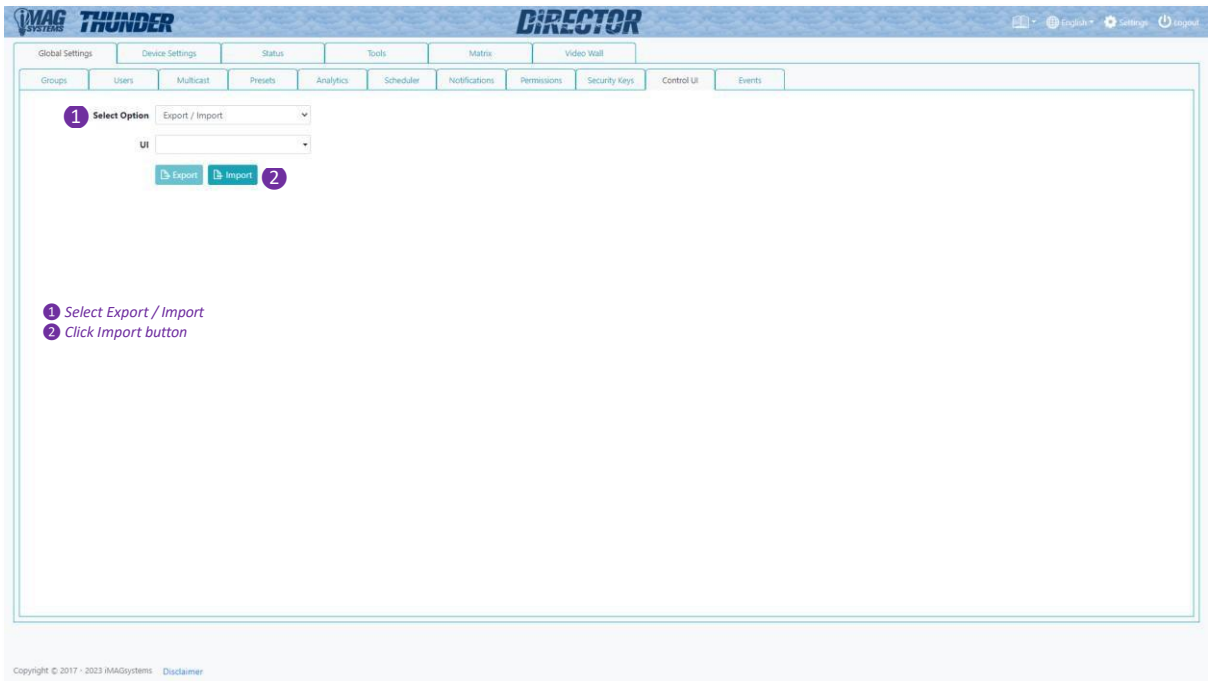
To keep a backup of your UI work select Export / Import then click the Export button.

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



### 3...11 Monitory Cam7 Export / Import continued...

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

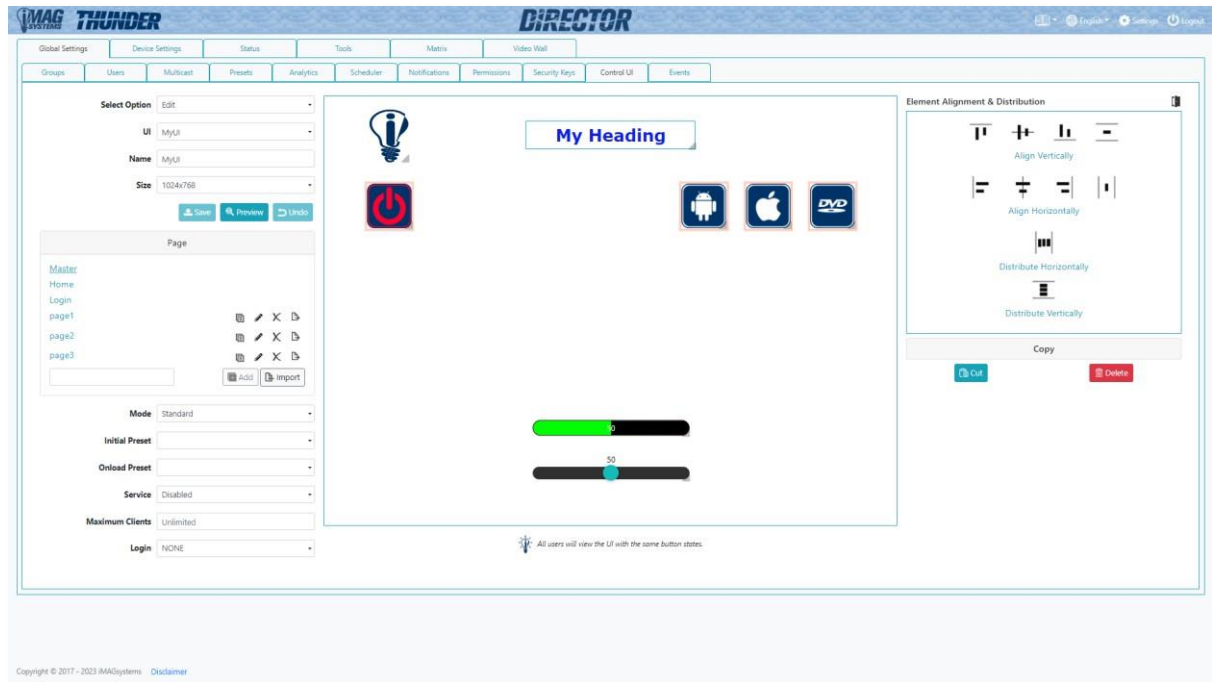




### 3.11 Monterey 18 Element Alignment



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.

## 1.11 Events (Licensed feature)

Events is a buttonless control system to operate a display device such as a TV or projector automatically depending on the source status of a selected Encoder. The triggered presets can contain any number of functions to select source, volume and even raise and lower projector screens.

Here you configure presets to be applied controlling a display and other devices 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'.

**DIRECTOR THUNDER**

Global Settings | Device Settings | Status | Tools | Matrix | Video Wall

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

Repeat Connected Preset: Disabled (6)

Event Name	Select Encoder	State	Select Trigger	Select Preset	Disconnect to OFF Delay (min)	OFF to ON Delay (sec)
SourceConnected (1)	Encoder1 (2)	Enabled (3)	Source Connected (4)	1event (5)	0	0

Enable Repeat Connected Preset to trigger the Source Connected preset each time a source is applied to the Encoder.

Save (7)

- 1 Enter an event name
- 2 Select an Encoder
- 3 Select State Enabled
- 4 Select Source Connected trigger
- 5 Select an "ON" preset
- 6 Set Repeat Connected Preset option
- 7 Click Save

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## 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.

**Global Settings** | **Device Settings** | **Status** | **Tools** | **Matrix** | **Video Wall**

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

Repeat Connected Preset: Disabled

Event Name	Select Encoder	State	Select Trigger	Select Preset	Disconnect to OFF Delay (min)	OFF to ON Delay (sec)	
SourceDisconnected	Encoder1	Enabled	Source Disconnected	2event	5	5	Save
SourceConnected	Encoder1	Enabled	Source Connected	1event	0	0	Delete

1 Enter an event name  
 2 Select an Encoder  
 3 Select State Enabled  
 4 Select Source Disconnected trigger  
 5 Select an "ON" preset  
 6 Select a Disconnect to OFF duration  
 7 Select an OFF to ON duration  
 8 Click Save

Enable Repeat Connected Preset to trigger the Source Connected preset each time a source is applied to the Encoder.

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## 2 Device Settings

This is where all the devices 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 devices on the system.

### 2.1.1 Name

The name of the device is used for control. This is the device name used in all control commands. Device names have a maximum of 23 characters and no spaces are allowed.

The Alias name will be used on the matrix once a group is selected.

Global Settings | Device Settings | Status | Tools | Matrix | Video Wall

1 Enter Name or click Default button  
2 Enter Alias Name  
3 Click Save button

Select: ALL DEVICES  
Device Settings: Edit  
Select Device Type: Encoder  
Select Device: Encoder1

Name: Encoder1 \* Max 23 characters allowed  
Alias: DVD01 \* Max 23 characters allowed

3 Save Default Update Alias with Name

Group  
Network  
HDMI Input  
Audio Output  
RS232 Serial Parameters

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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 > Groups tab. An icon can be assigned to the device. The matrix will show the device with the selected icon.

**1** Select Group  
**2** Select an icon  
**3** Click Save button

Select: ALL DEVICES  
 Device Settings: Edit  
 Select Device Type: Encoder  
 Select Device: Encoder1

Name: \_\_\_\_\_  
 Group: \_\_\_\_\_

**1** Group ☒ MyGroup **3** Save Clear

Select icon **2**

Network  
 HDMI Input  
 Audio Output  
 RS232 Serial Parameters

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### 2.1.3 Network Interface

To assign DHCP so the device is automatically assigned an IP address from a DHCP server on the network select DHCP.

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

### 2.1.3 Network Interface continued...

To assign automatically assigned a 169.x.x.x IP address select AUTO IP.

**1** Select IP Mode AUTO IP  
**2** Click Save button

Select: ALL DEVICES  
 Device Settings: Edit  
 Select Device Type: Encoder  
 Select Device: Encoder1

Name  
 Group  
 Network

MAC Address: 34-1B-22-82-24-E0  
**1** IP Mode: AUTO IP  
 IP Address: 172.16.20.118  
 Subnet: 255.255.255.0  
 Gateway: 172.16.20.1  
**2** Save Save To Devices

HDMI Input  
 Audio Output  
 RS232 Serial Parameters

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### 2.1.4 HDMI Input

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

**1** Enable / Disable Preview Image  
**2** Preview Image  
**3** Select Video Quality AUTO / 0..5  
**4** Select Bit Rate AUTO / 10..200MB  
**5** Select EDID  
**5** **1** Select Default EDID or Decoder EDID  
**5** **2** Select External File  
**6** Click Save button

**1** Preview: Enabled

**2** [Preview Image]

**3** Video Quality: AUTO

**4** Bit Rate: AUTO

**5** **1** EDID: 4K 2CH HDR (DEFAULT)

**5** **2** [External File]

**6** [Save] [Save To Devices]

EDID: 00 FF FF FF FF FF FF 00 0A 74 00 00 82 00 00 00  
 20 19 01 02 00 59 32 78 0A EE 91 A3 54 4C 99 26  
 0F 50 54 21 08 00 81 C0 81 00 81 00 90 40 95 00  
 83 00 01 00 01 61 04 74 00 30 F2 70 5A 00 80 58  
 84 00 C4 8E 21 00 00 1E 02 3A 80 10 71 38 20 40  
 58 2C 45 00 50 10 74 00 00 1E 00 00 00 FD 00 18  
 3C 1E 9A 1E 00 0A 20 20 20 20 20 20 00 00 FC  
 80 46 44 40 49 0A 20 20 20 20 20 20 00 01 72  
 02 03 38 F1 AE DF 10 1F 04 13 20 21 23 50 5E 5F  
 01 12 03 23 09 07 07 83 01 00 00 40 03 0C 00 10  
 00 88 3C 21 00 60 01 03 03 E2 00 0F E4 0E 50 5E  
 5F 40 41 E3 05 C0 00 E3 06 05 01 01 10 00 72 51  
 00 1E 20 4E 28 55 00 60 59 21 00 00 1E 66 21 56  
 AA 51 00 1E 30 46 8F 33 00 50 10 74 00 00 1E 00  
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  
 00 00 00 00 00 00 00 00 00 00 00 00 00 00 AE

EDID Version: 1.3  
 EDID Valid: Yes  
 CEA Extension Valid: Yes  
 CEA Extension Version: 3

Manufacturer ID: AST  
 Product ID: 0000  
 Serial Number: 130  
 Manufacturer Date: Week 32, Year 2015  
 Screen Size: 89 x 50 cm (35.0 x 19.7 in)  
 Preferred Format: UHD30  
 Preferred Width: 3840  
 Preferred Height: 2160  
 Preferred FPS: 30  
 Monitor Name: HDMI

Preferred Timing 1:  
 Pixel Clock: 297.00MHz  
 Active Pixels: 3840x2160  
 Vertical Clock: 30.00Hz

[Save EDID to File] [Copy to Clipboard]

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

## 2.1.5 HDMI Output (Decoder)

Here you can preview the display image and change all the Decoder video output related settings.

Detect Video Loss is a function of the Decoder to detect while joined with an Encoder that the Encoders video is no longer available. Once Encoder video is stopped or disconnected the Decoder will wait the Timeout period then turn off display video.

MAG THUNDER

DIRECTOR

Global SettingsDevice SettingsStatusToolsMatrixVideo Wall

SelectALL DEVICES  
Device SettingsEdit  
Select Device TypeDecoder  
Select DeviceDecoder1

Name  
Group  
Network  
HDMI Output

PreviewPREVIEW NOT AVAILABLE

ResolutionHD 1080 60Hz  
HDCPHDCP 1.x  
Video MuteDisabled  
Detect Video LossEnableTimeout (seconds) 5Turn Video OffDisableRotationNoneAspect RatioFit To Display

Save Save To Devices

EDID

```
00 FF FF FF FF FF FF 00 0A 72 66 04 22 37 50 52
19 19 01 03 80 2E 1A 7B 2A 35 25 A3 56 4F 9A 27
00 50 54 B3 0C 00 01 C0 B3 00 95 00 81 80 81 00
81 CB 71 AF 01 01 02 3A 00 10 71 30 2D 40 50 2C
45 00 CA 02 11 00 00 1E 00 00 FD 00 37 4C 1E
53 11 00 DA 20 20 20 20 20 20 00 00 FF 00 54
33 50 53 41 30 30 31 34 32 30 30 0A 00 00 FC
00 41 63 65 72 20 48 41 32 31 30 48 51 0A 00 BC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

EDID Version: 1.3  
EDID Valid: Yes  
  
Manufacturer ID: ACR  
Product ID: 0466  
Serial Number: 1380988706  
Manufacture Date: Week 25 Year 2015  
Screen Size: 46 x 26 cm (18.1 x 10.2 in)  
Preferred Format: HD60  
    Preferred Width: 1920  
    Preferred Height: 1080  
    Preferred FPS: 60  
Monitor Name: Acer KA21QHq  
  
Preferred Timing 1:  
Pixel Clock 148.50MHz  
Active Pixels 1920x1080  
Vertical Clock 60.00Hz  
Format HD60

Save EDID to FileSave to Encoder(s)Copy to Clipboard

Audio OutputRS232 Serial ParametersDisplay ControlIdle Image

### 2.1.6 Audio Output (Encoder)

The 3.5mm analog audio output jack of an Encoder is an output of embedded HDMI audio.

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### 2.1.7 Audio Output (Decoder)

The 3.5mm analog audio output jack of a Decoder is an output of embedded HDMI audio.

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## 2.1.8 RS232 Serial Interface 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.

The Mode of operation is either MATRIX or CONTROL. When in MATRIX mode the device will appear in the serial matrix and can be routed. When in CONTROL mode it will not appear in the matrix and can be used to send and receive from external serial peripherals.

The screenshot shows the DIRECTOR THUNDER web interface. The top navigation bar includes tabs for Global Settings, Device Settings, Status, Tools, Matrix, and Video Wall. The RS232 Serial Parameters section is active, displaying the following configuration options:

- Select:** ALL DEVICES
- Device Settings:** Edit
- Select Device Type:** Encoder
- Select Device:** Encoder1
- Name:**
- Group:**
- Network:**
- HDMI Input:**
- Audio Output:**
- RS232 Serial Parameters:**
  - Baud Rate:** 9600
  - Data Bits:** 8
  - Stop Bits:** 1
  - Parity:** NONE
  - Mode:** MATRIX
  - Buttons:** Save, Save To Devices

A numbered list on the left side of the RS232 Serial Parameters section provides instructions:

- 1 Select Baud rate
- 2 Select Data Bits
- 3 Select Stop Bits
- 4 Select Parity
- 5 Select Mode
- 6 Click Save button

### 2.1. Display Control

Here you can turn the displays power on or off with CEC or RS232.

With CEC selected and a compatible display the power can be switched with no other commands.

The screenshot shows the 'DIRECTOR' web interface with the 'Device Settings' tab selected. The 'Display Control' section is active, showing the 'Method' set to 'CEC'. Below this, there are buttons for 'Save', 'Save To Devices', 'ON', and 'OFF'. The 'Idle Image' section is empty.

With RS232 selected and a compatible display the power can be switched with ASCII or HEX commands depending on the serial port setting applied.

Enter a command for power ON and power OFF, save and now the power buttons are functional.

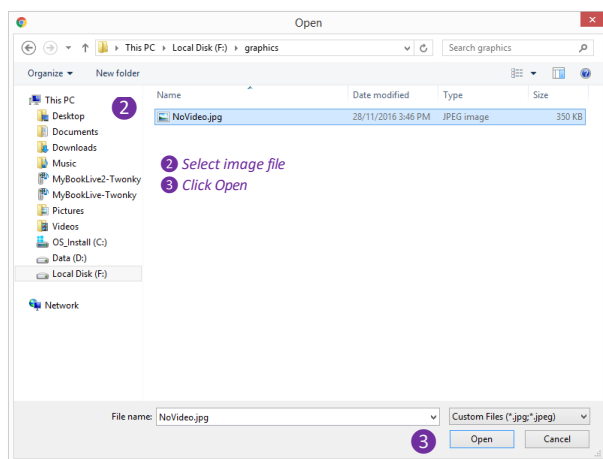
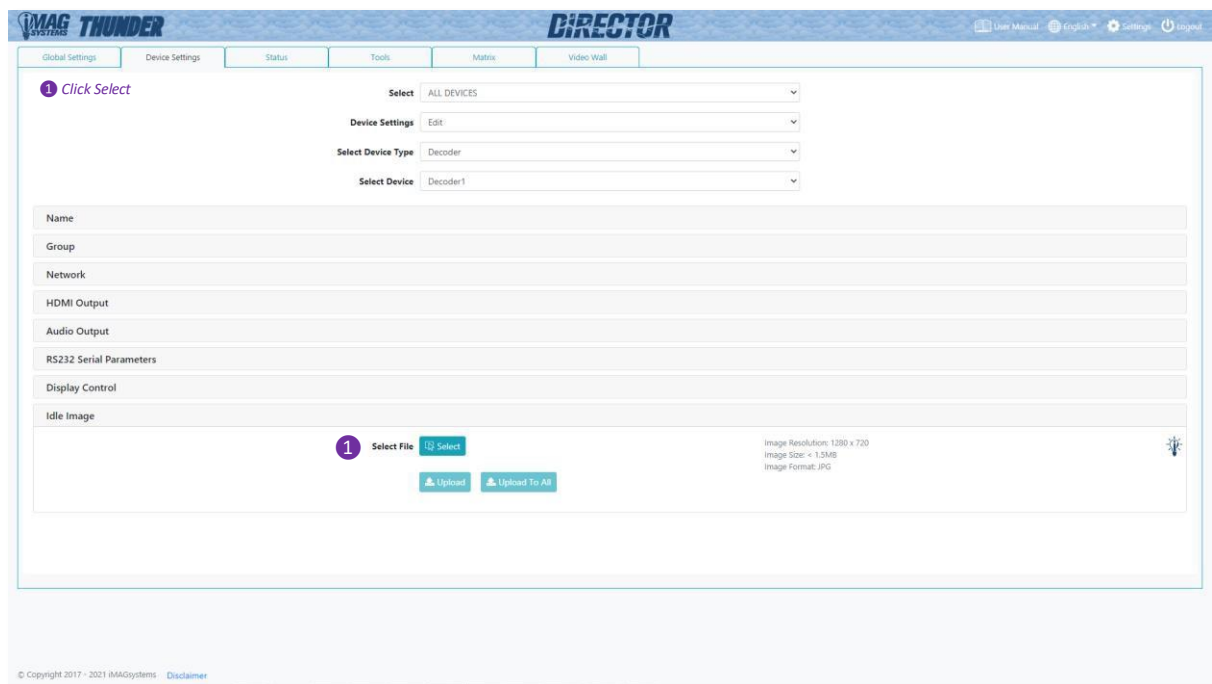
The screenshot shows the 'DIRECTOR' web interface with the 'Device Settings' tab selected. The 'Display Control' section is active, showing the 'Method' set to 'RS232'. Below this, there are input fields for 'On Command' (containing 'PWSON') and 'Off Command' (containing 'PWROFF'). There are also checkboxes for 'Append CR' (checked) and 'Append LF' (unchecked). Below these are buttons for 'Save', 'Save To Devices', 'ON', and 'OFF'. The 'Idle Image' section is empty.

### 2.1.30 Idle Image

Here is where you can change the default splash screen shown when no video is displayed.



The format of the image must be jpg with a resolution of 1280x720 and a maximum size of 1.5MB.



### 2.1.30 Idle Image continued...

Global Settings | Device Settings | Status | Tools | Matrix | Video Wall

Select: ALL DEVICES  
Device Settings: Edit  
Select Device Type: Decoder  
Select Device: Decoder1

Name  
Group  
Network  
HDMI Output  
Audio Output  
RS232 Serial Parameters  
Display Control  
Idle Image

4 Select Upload

Select File: Select noVideo.jpg  
Image Resolution: 1280 x 720  
Image Size: < 1.5MB  
Image Format: JPG

4 Upload Upload To All

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Global Settings | Device Settings | Status | Tools | Matrix | Video Wall

Select: ALL DEVICES  
Device Settings: Edit  
Select Device Type: Decoder  
Select Device: Decoder1

Name  
Group  
Network  
HDMI Output  
Audio Output  
RS232 Serial Parameters  
Display Control  
Idle Image

4 Select Upload

Select File: Select noVideo.jpg  
Upload progress: 64%  
Image Resolution: 1280 x 720  
Image Size: < 1.5MB  
Image Format: JPG

4 Upload Upload To All

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The upload status will indicate progress of the image upload.

The Decoder will require a reboot after the image has uploaded.

### 2.1.11 Locate Device (USB Extender)

Here you can physically identify USB Extenders by starting the locator to flash an indicator LED on the USB extender. The devices indicator will continue to flash until Stop Locator clicked.

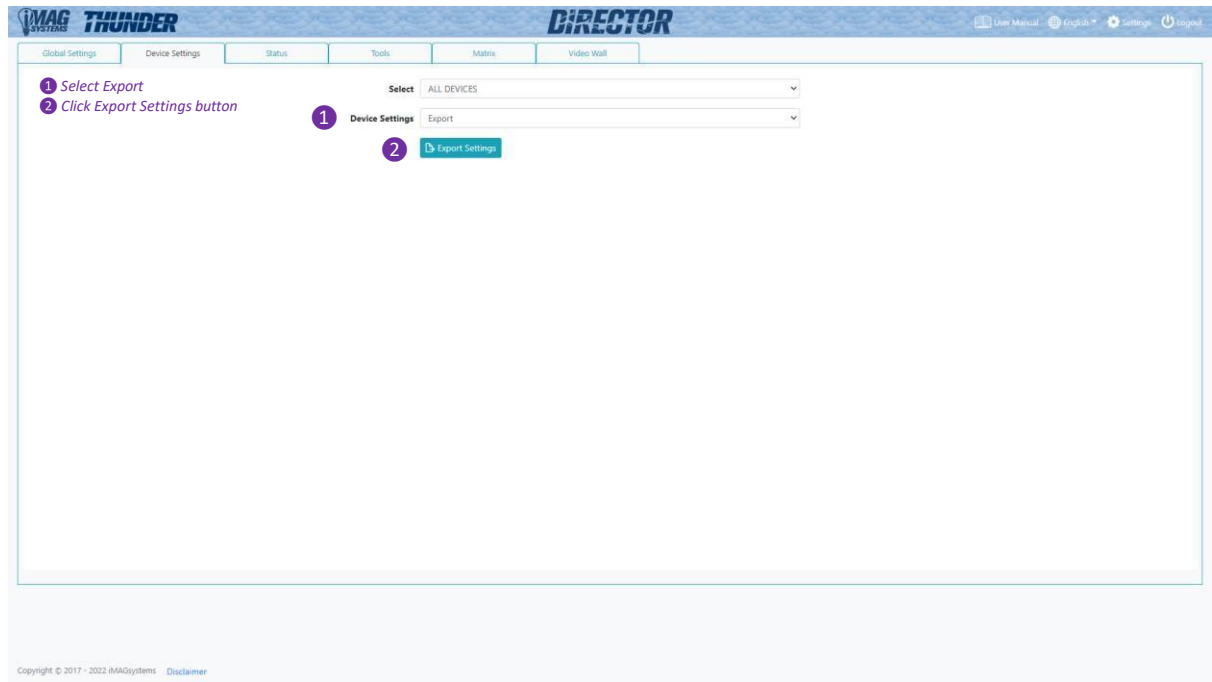
The screenshot displays the DIRECTOR THUNDER web interface. At the top, there is a navigation bar with tabs: Global Settings, Device Settings, Status, Tools, Matrix, and Video Wall. The 'Device Settings' tab is active. Below the navigation bar, there are several dropdown menus for configuration: 'Select' (set to ALL DEVICES), 'Device Settings' (set to Edit), 'Select Device Type' (set to USB HOST), and 'Select Device' (set to 001B13FFFF00). Below these menus, there are three input fields labeled 'Name', 'Network', and 'Locate Device'. The 'Locate Device' field contains a 'Start Locator' button (with a play icon) and a 'Stop Locator' button (with a stop icon). A small lightbulb icon is visible in the bottom right corner of the main content area. At the bottom of the page, there is a footer with the text: Copyright © 2017 - 2023 iMAGSystems. Disclaimer



### 2.2 Export Settings

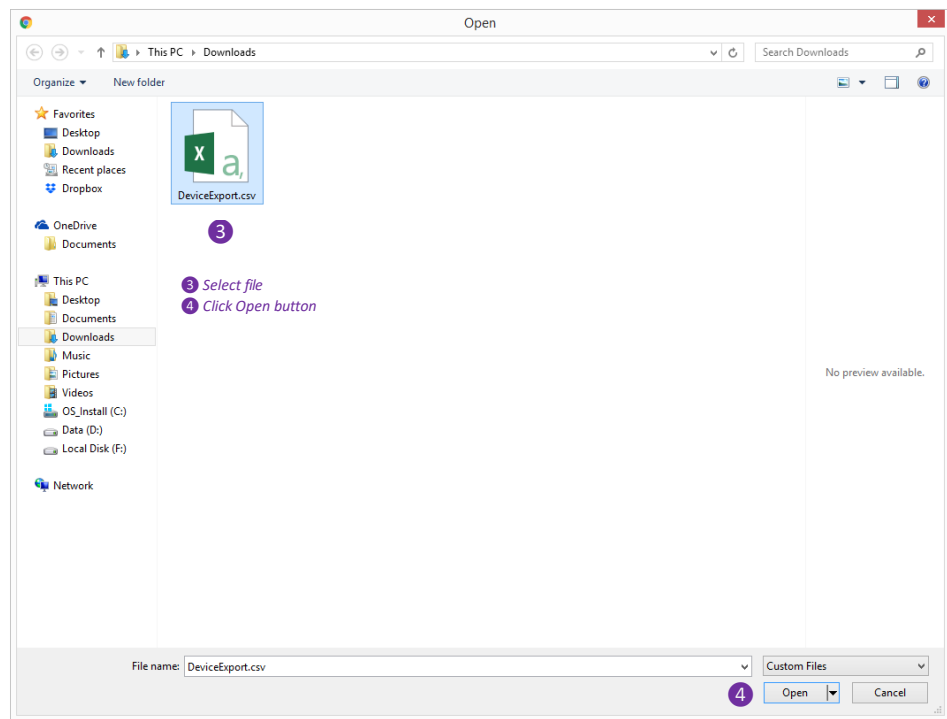
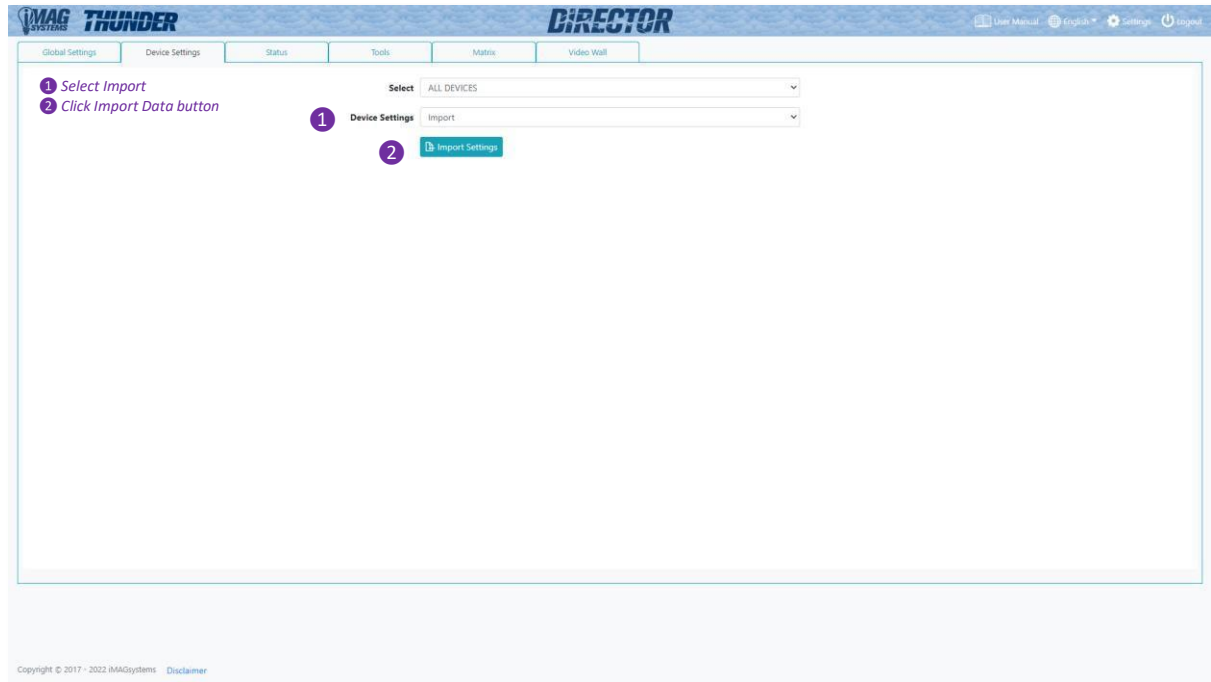
The current settings of all the Encoders and Decoders can be exported to a csv formatted file to be used as a configuration backup or be used to reconfigure the Encoders and Decoders by changing the required data and importing it back into the Director Controller.

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 Status






The Status tab contains information about how a device is currently functioning. Streams can also be stopped or started.

When external Icron USB Extenders are discovered a **Device Type** selection will appear for either **AV Endpoints** or **USB Extenders** to be displayed.

Devices can be filtered by groups to limit the number of them 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:

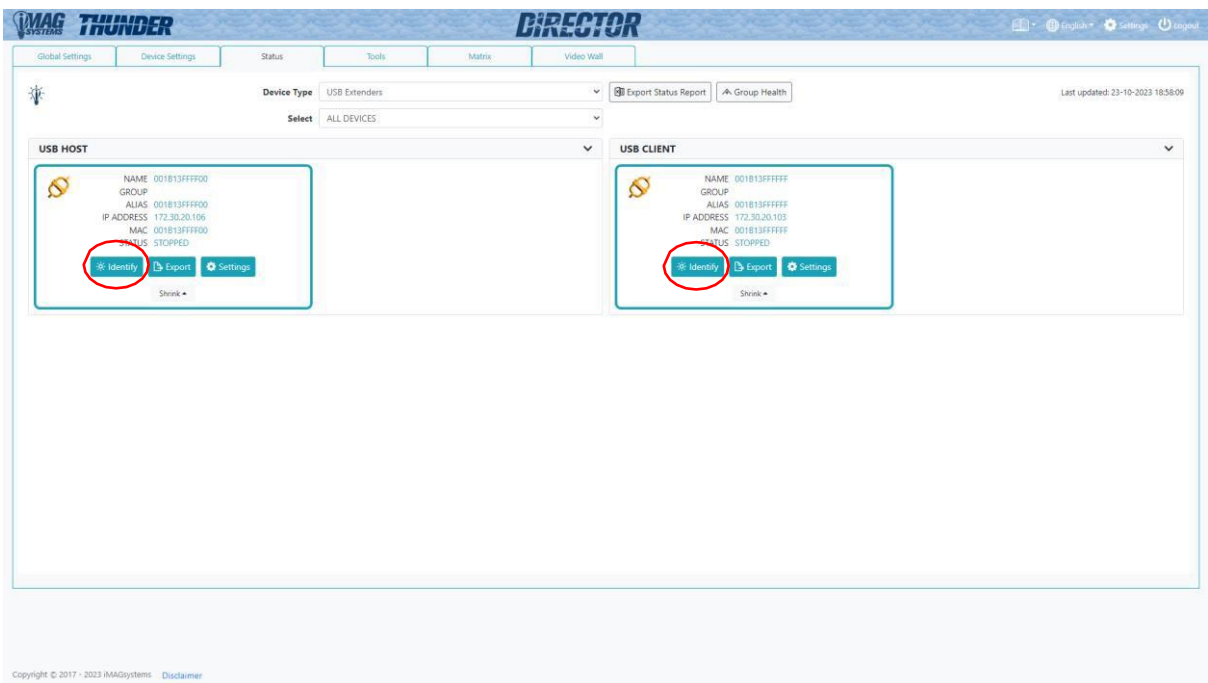
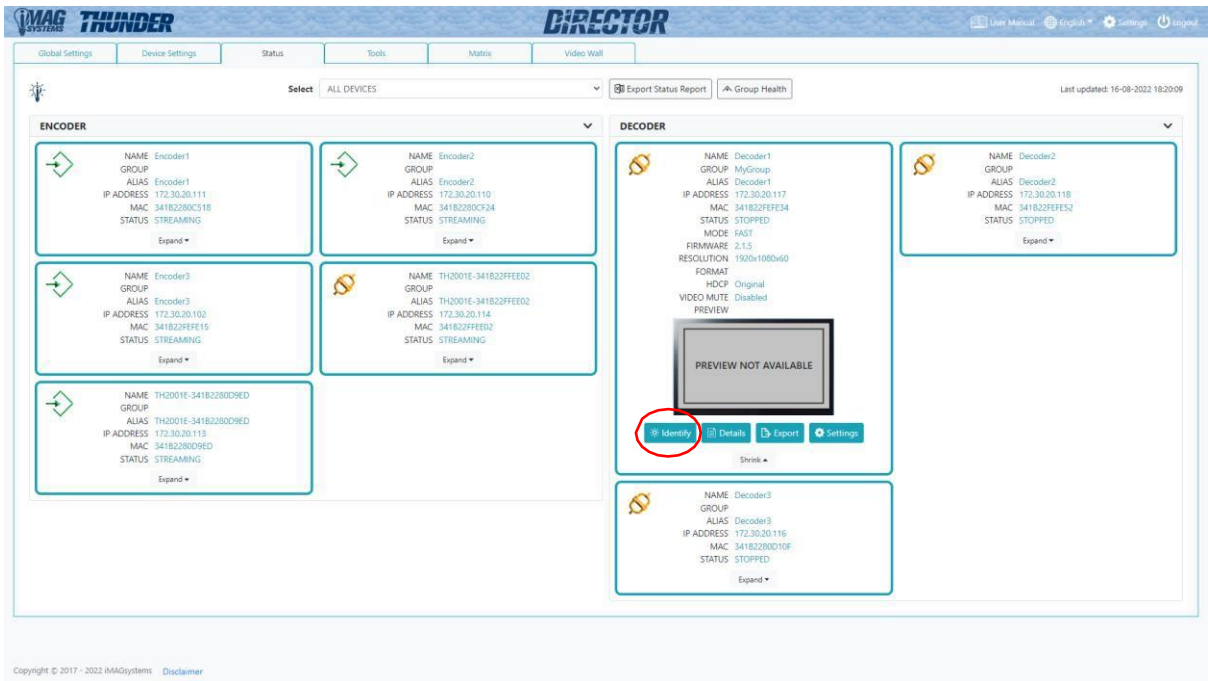
-  Device is disconnected from the network.
-  Device is connected to the network, however, if the device is an Encoder it has no source, and if it is a Decoder it has no display connected.
-  Encoder is online and has a source connected.
-  Decoder is online and has a display connected.
-  Device error.

### 3.1 Identify

Identify is found either on a Decoder or USB Extender.

Decoder will display its details on the connected display OSD for 30 seconds.

USB Extender will flash indicator LED for 30 seconds.



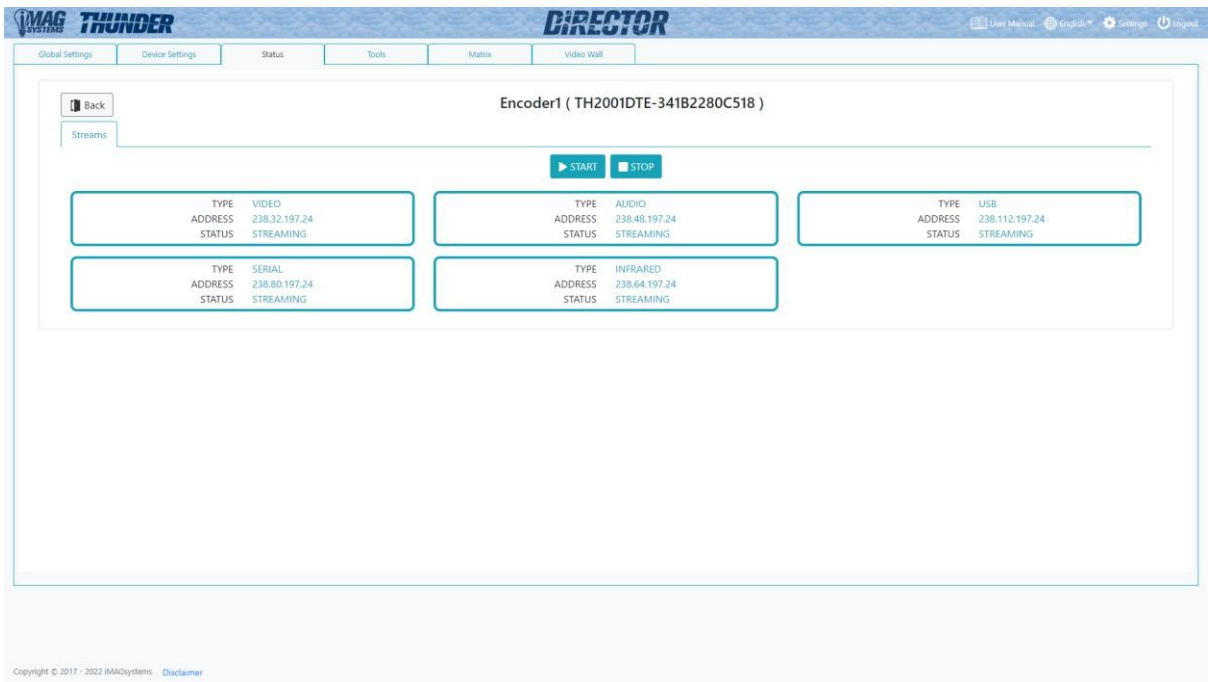
### 3.2 Details

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.

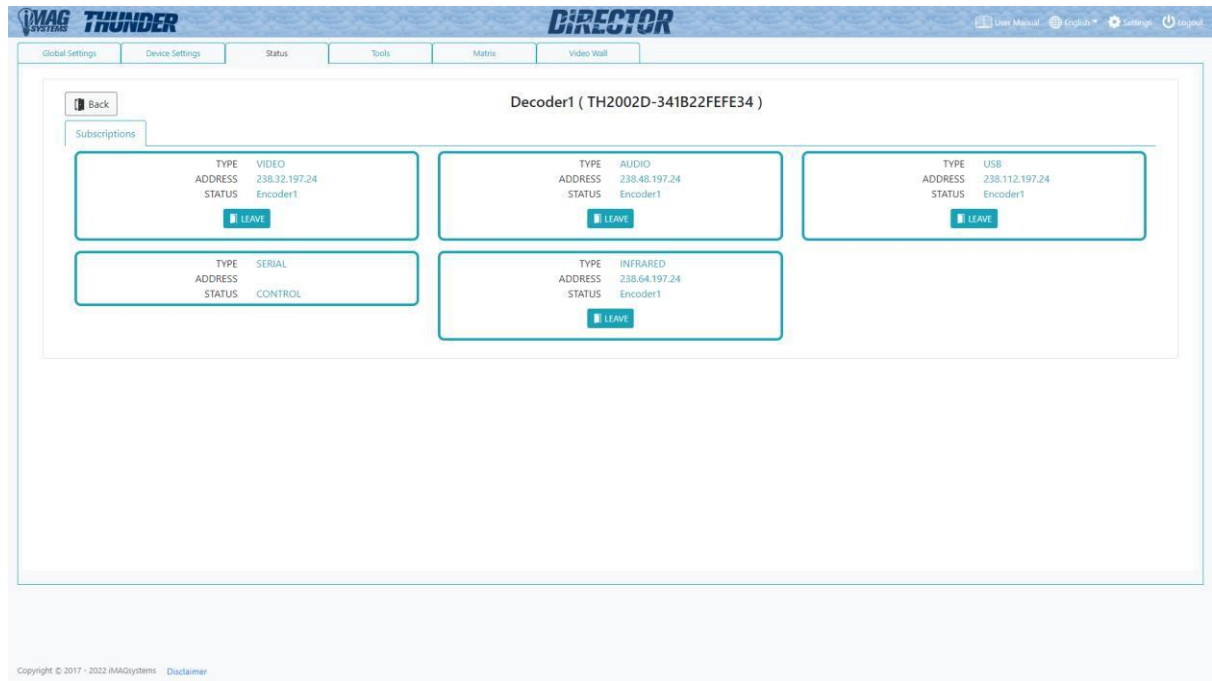
From here you can **stop** or **start** all streams.



### 3.2.2 Subscriptions (Decoder)

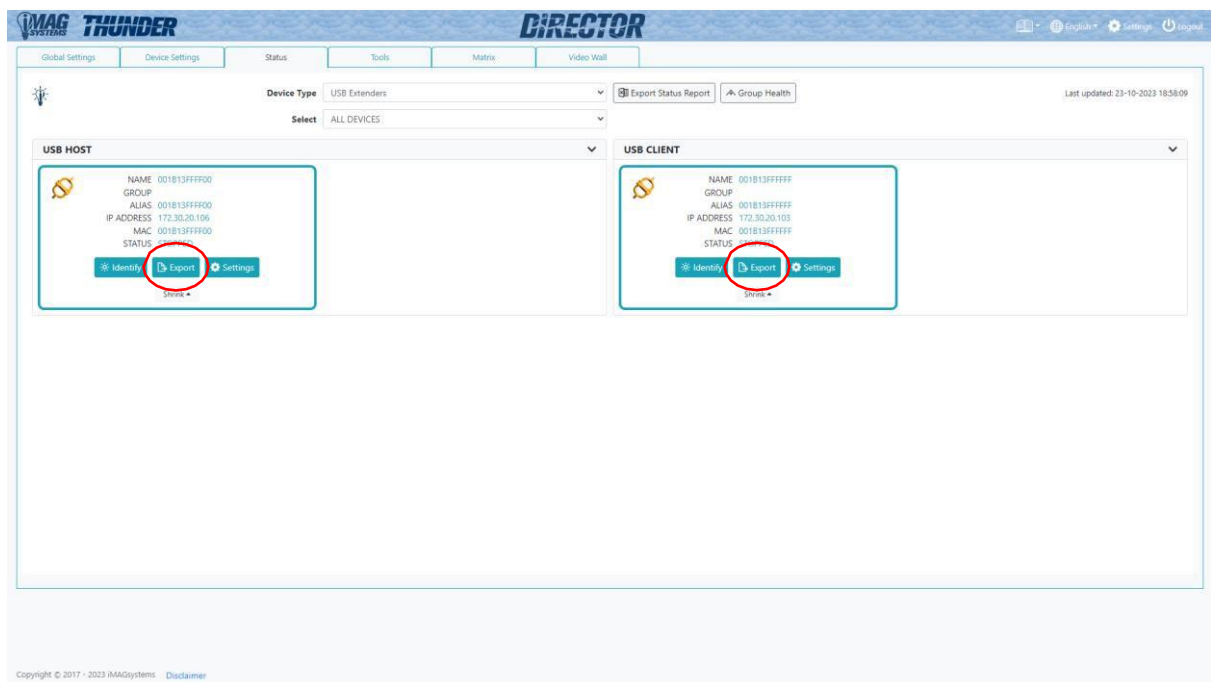
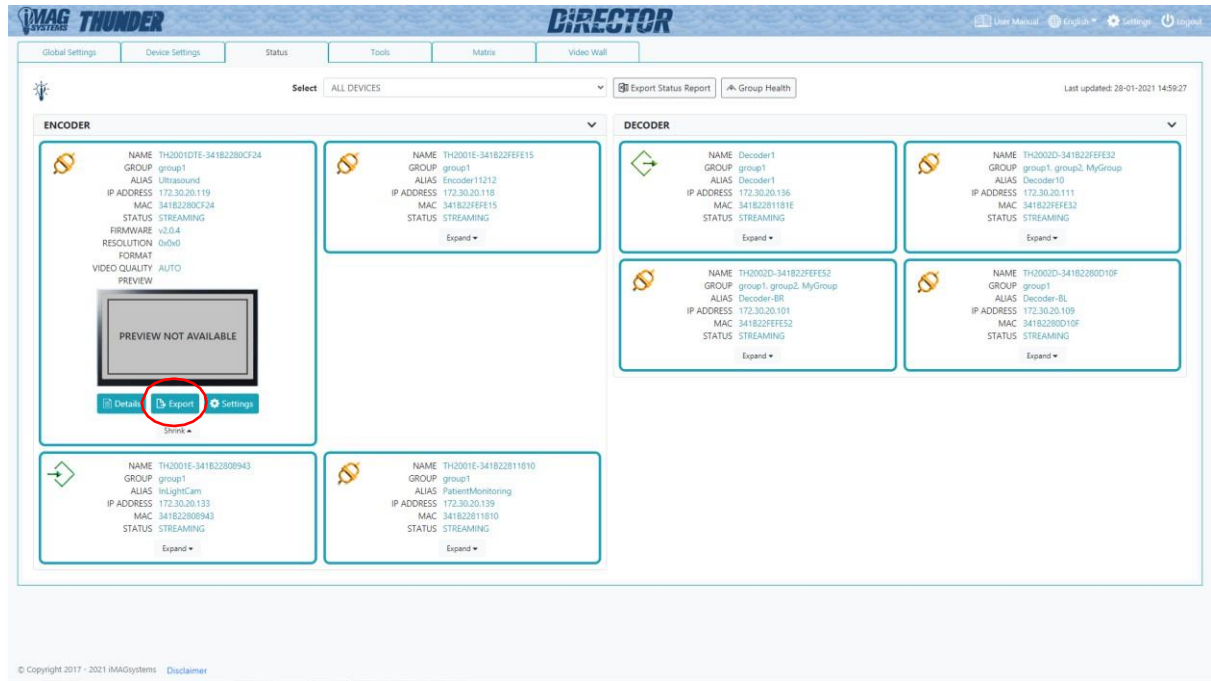
The Subscriptions tab of a Decoder will show what multicast address is being used to receive data. It will also indicate from what Encoder it is receiving the streams.

From here you can leave any of the streams.



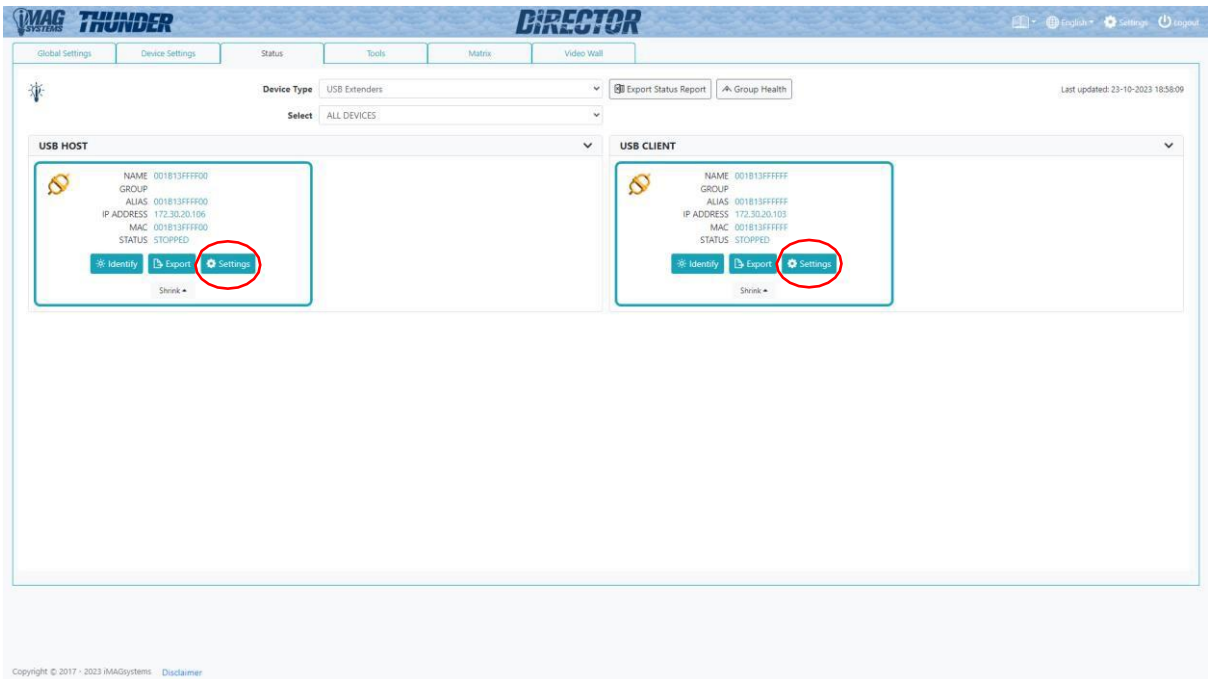
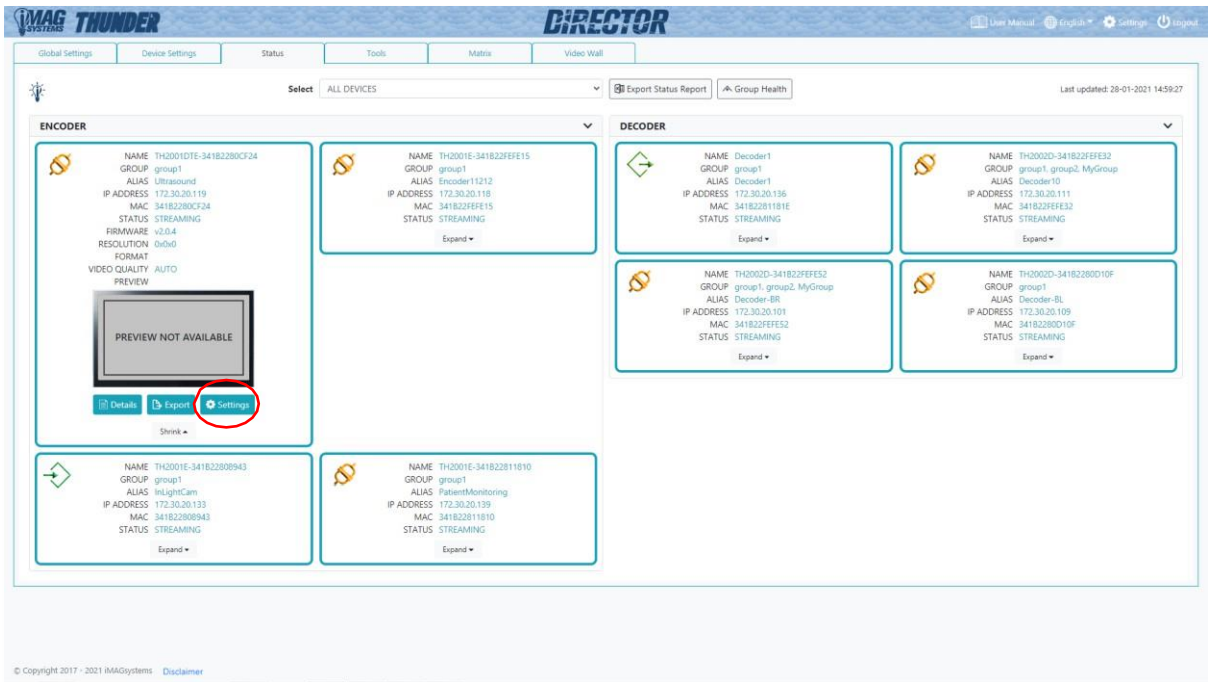
### 3.3 Export

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

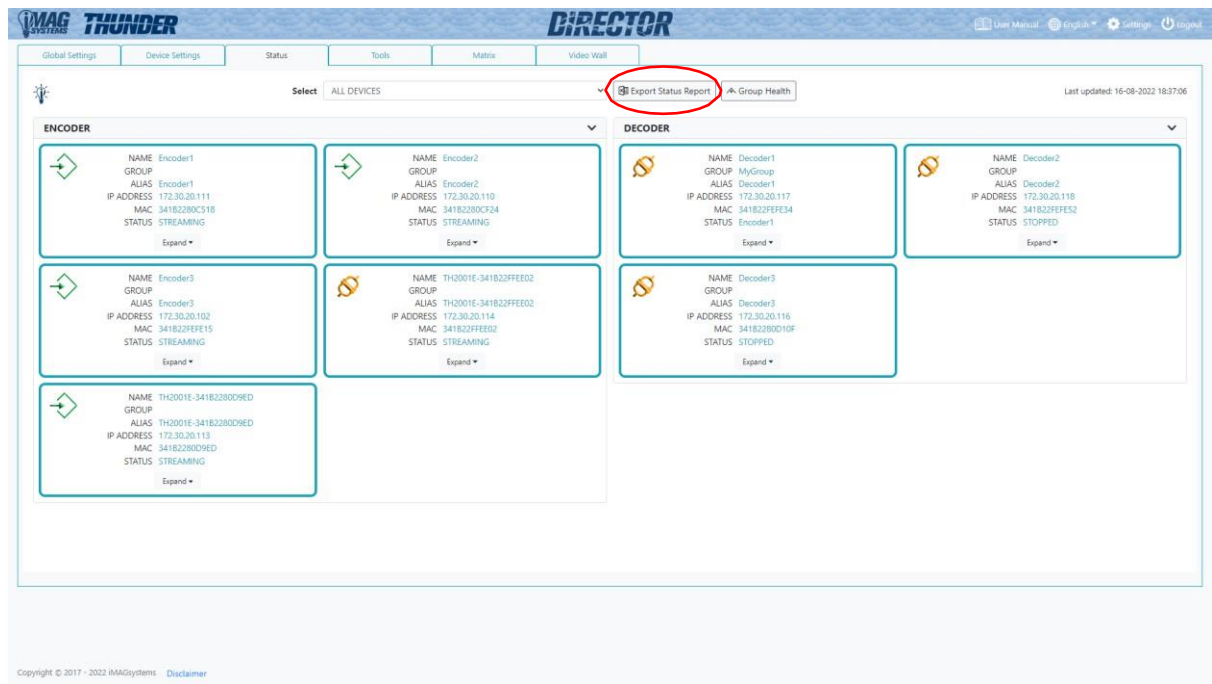
Clicking the Settings button on a device will send you directly to the device settings tab.





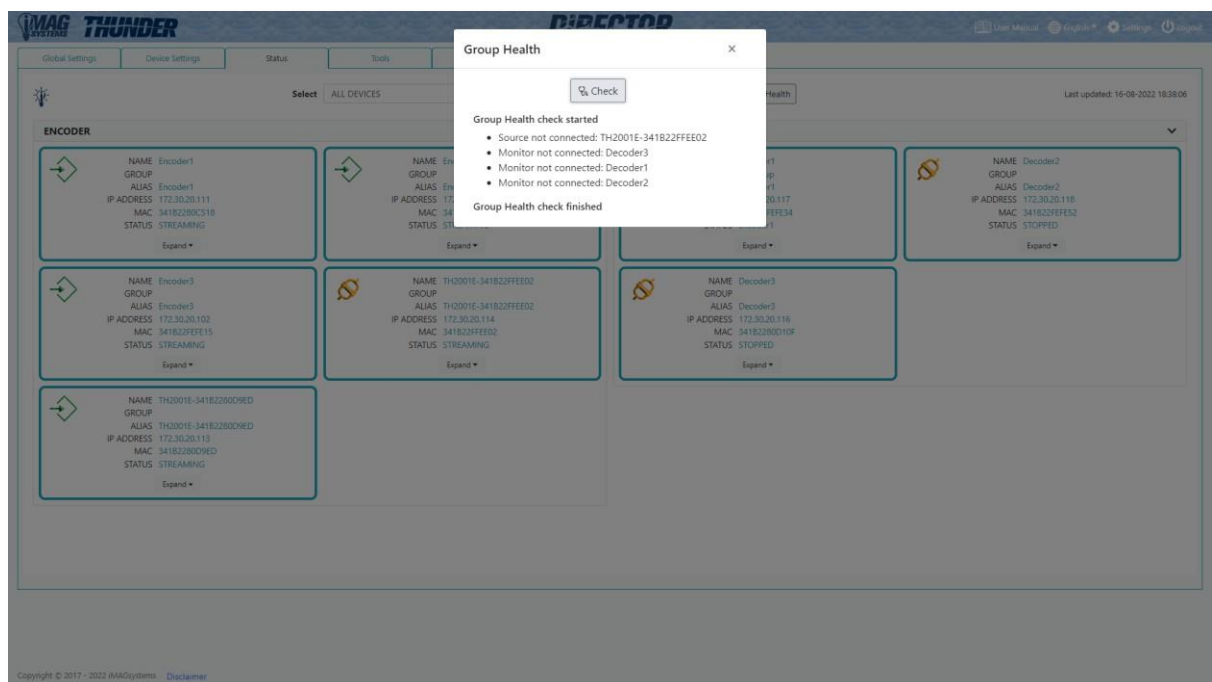
### 4 Export Status Report

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



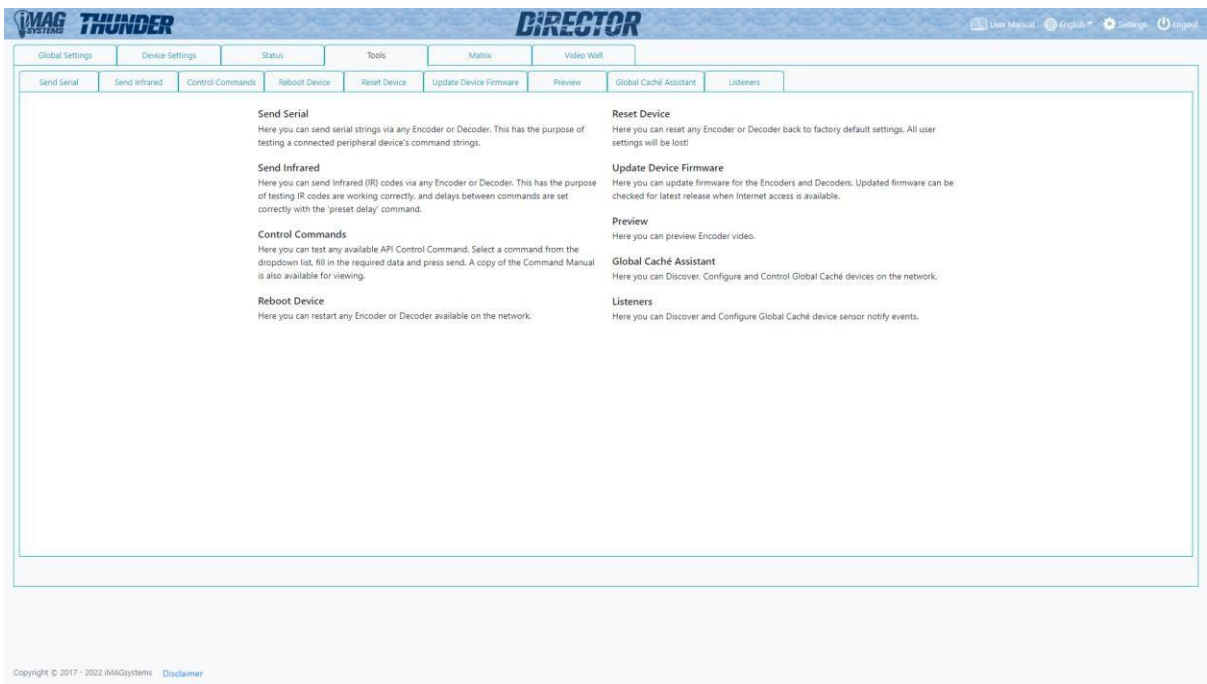
### 9 Group Health

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.



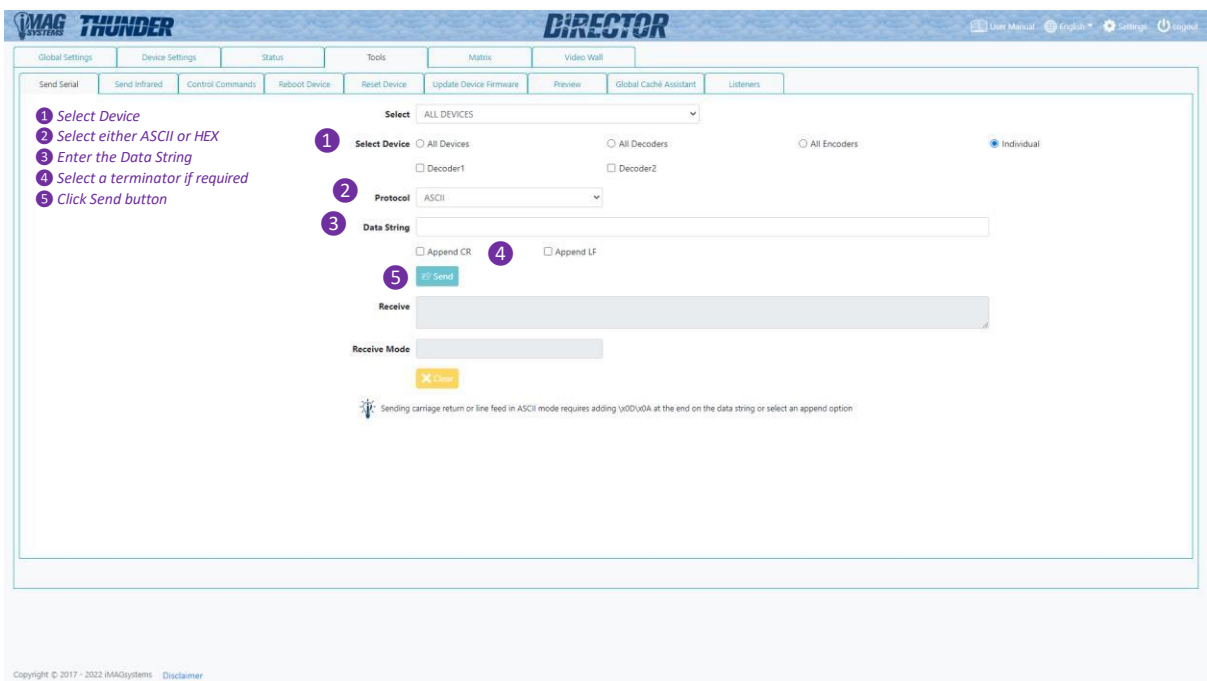
## 4 Tools

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



### 4.1 Send Serial

The Send Serial tab is used to test serial strings being sent from an Encoder or Decoder to a 3<sup>rd</sup> party peripheral device such as a projector or other display device. The Receive mode will indicate the feedback format of the selected device(s) as ASCII or HEX.



### 4.2 Send Infrared

The Send Infrared tab is used to test IR signals being sent from an Encoder or Decoder to 3<sup>rd</sup> party peripheral devices such as a TV, DVD or Blu-ray players.

The screenshot shows the 'Send Infrared' tab in the DIRECTOR THUNDER software. The interface includes a top navigation bar with tabs like Global Settings, Device Settings, Status, Tools, Matrix, and Video Wall. Below this, there's a sub-navigation bar with tabs: Send Serial, Send Infrared (active), Control Commands, Reboot Device, Reset Device, Update Device Firmware, Preview, Global Cache Assistant, and Listeners. The main content area has three numbered instructions: 1. Select Device, 2. Enter the IR Code to send, and 3. Click Send button. Under 'Select Device', there's a dropdown menu set to 'ALL DEVICES' and a 'Select Device' section with radio buttons for 'All Devices', 'All Decoders', 'All Encoders', and 'Individual'. Below these are checkboxes for Decoder1, Decoder2, Decoder3, Encoder1, Encoder2, Encoder3, TH2001E-341822FEE02, and TH2001E-3418228009ED. A large text box for 'IR Code' is provided. A 'Send' button is at the bottom. A note at the bottom states: '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)'. The footer shows 'Copyright © 2017 - 2022 iMAGSystems' and a 'Disclaimer' link.

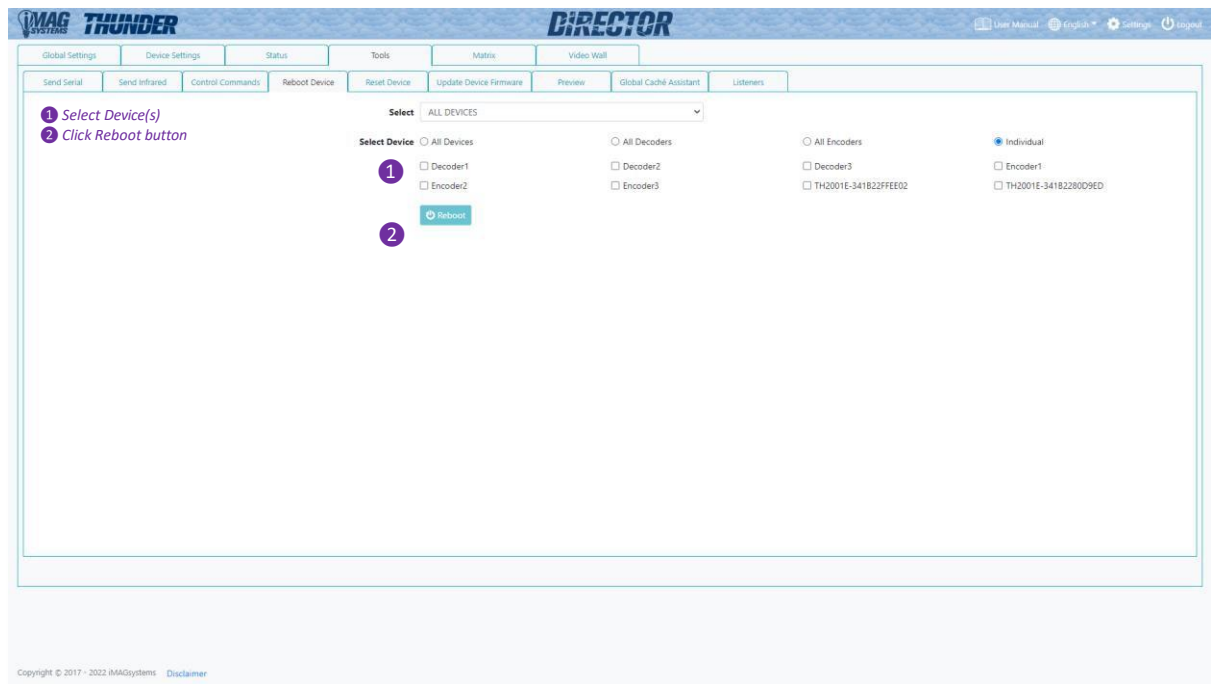
### 4.3 Control Commands

The Control Commands tab is used to send any of the control commands available to the system for testing purposes. Refer [Appendix B – Using Command Assistant](#).

The screenshot shows the 'Control Commands' tab in the DIRECTOR THUNDER software. The interface is similar to the previous one, with the same top and sub-navigation bars. The main content area has three numbered instructions: 1. Select a Command, 2. Use the Assistant or manually change parameters surrounded with "<" and ">", and 3. Click Send button. Under 'Select a Command', there's a dropdown menu set to 'join video' and a 'Select Control Command' section with a radio button for 'Assistant'. Below this is a 'Data String' field containing the command: 'join video [key=<security\_key>] <encoder\_device\_name> <decoder\_device\_name> / <group\_name> / <call> [<exclusive>] [<original>] / <auto> / [size <mode>]'. A 'Send' button is present. Below the 'Data String' field is a 'Receive' section with a large text box. A 'Close' button is at the bottom. A link 'View Command Manual' is at the bottom right. The footer shows 'Copyright © 2017 - 2022 iMAGSystems' and a 'Disclaimer' link.

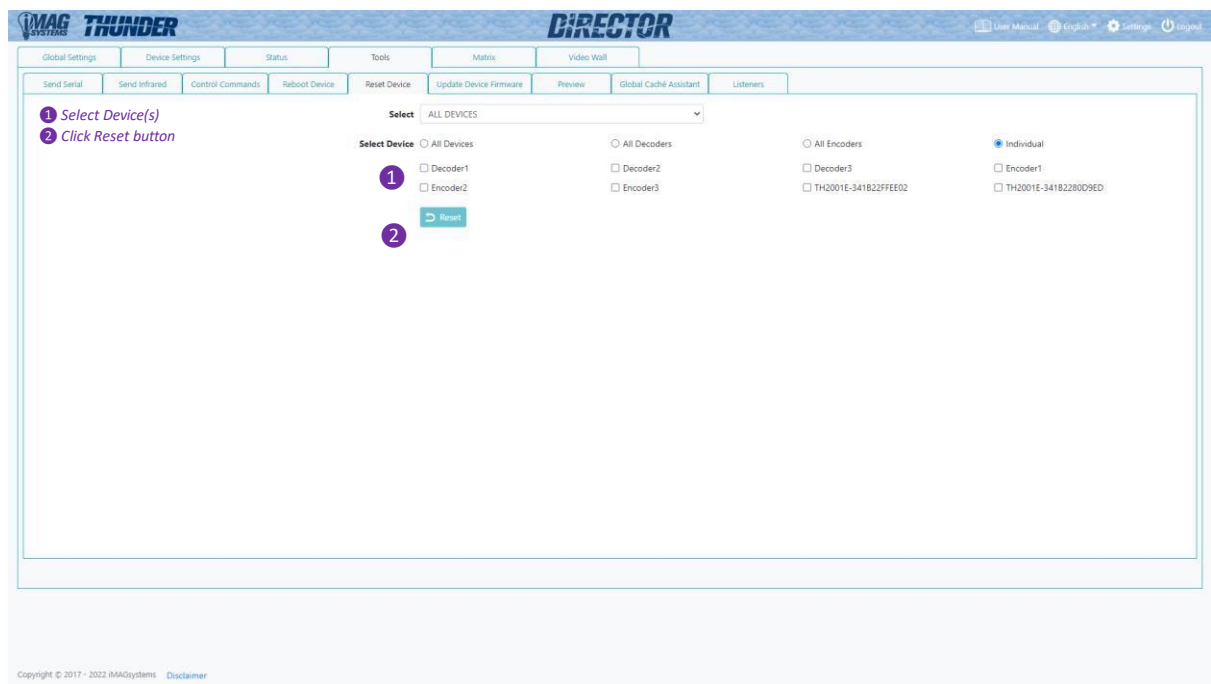
### 4.4 Reboot Device

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



### 4.5 Reset Device

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



## 4.6 Update Device Firmware

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

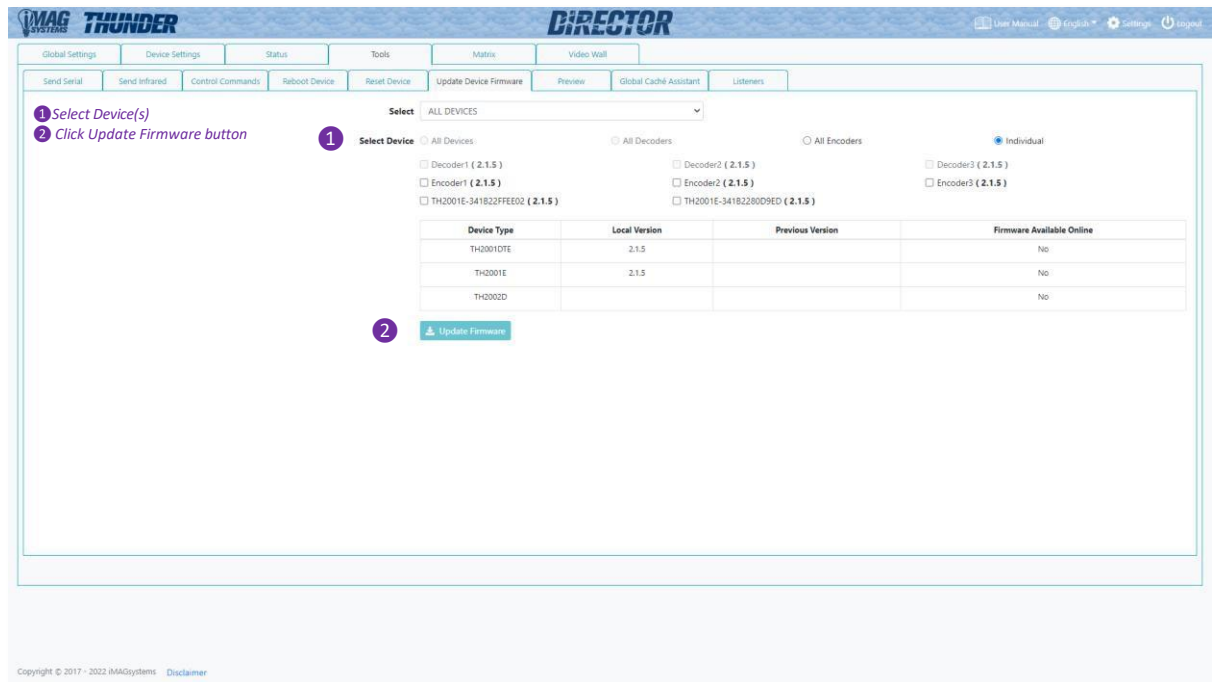
### 4.6.1 Updating Controller Firmware Files

The controller first needs to download the device firmware files from the cloud. Manual file import is also available. When firmware is available a Download button will appear, and a Download All button for multiple files.

The screenshot shows the 'Update Device Firmware' interface in the DIRECTOR THUNDER software. The top navigation bar includes 'Global Settings', 'Device Settings', 'Status', 'Tools', 'Matrix', and 'Video Wall'. The sub-navigation bar has 'Send Serial', 'Send Infrared', 'Control Commands', 'Reboot Device', 'Reset Device', 'Update Device Firmware', 'Preview', 'Global Cache Assistant', and 'Listeners'. The 'Update Device Firmware' tab is selected. It features a 'Select' dropdown menu set to 'ALL DEVICES'. Below this are radio buttons for 'All Devices', 'All Decoders', 'All Encoders', and 'Individual' (which is selected). A list of device models and their versions is displayed, including TH2001E-341B22FEF15 (2.6.2), TH2001E-341B22FEF02 (2.6.2), TH2002D-341B22FEF34 (2.1.5), TH2002D-341B2280D10F (2.1.5), TH2100D-341B228251D-02 (1.7.17), TH2100D-341B2282517 (1.7.17), TH2100E-341B2281ECFA (1.7.17), TH2100E-341B22334455 (1.7.17), TH2501E-341B2281ECDD (1.7.17), and TH2001DTE-341B2280C518 (2.6.2). A table at the bottom shows the 'Device Type', 'Local Version', 'Previous Version', and 'Firmware Available Online' status, with 'Download' buttons for each device type. A 'Download All' button is also present. An 'Update Firmware' button is located at the bottom left of the main content area.

### 4.6.2 Updating Device Firmware

Once the firmware files have been downloaded to the controller, simply select the required devices and click the Update Firmware button.



### 4.7 Preview

The preview tab is used to view the preview stream of all Encoders. The Preview Available checkbox can be selected to only display Encoders with a video source / preview stream available.



### 4.8 Global Caché Assistant

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.

The screenshot shows the 'Global Caché Assistant' tab in the Director Thunder interface. The interface includes a top navigation bar with tabs like 'Global Settings', 'Device Settings', 'Status', 'Tools', 'Matrix', and 'Video Wall'. Below this, there's a sub-navigation bar with buttons for 'Send Serial', 'Send Infrared', 'Control Commands', 'Reboot Device', 'Reset Device', 'Update Device Firmware', 'Preview', 'Global Caché Assistant', and 'Listeners'. The main content area is divided into two sections. On the left, there's a 'Select Device' dropdown menu and a 'Device Discovery' button, both highlighted with a red circle and the number 1. On the right, there's a 'Select Mode' section with 'Wizard' selected and 'Normal' as an option. Below this is a 'Security Key (optional)' field with a pre-filled value. Further down are fields for 'IP Address' (0.0.0.0) and 'Port' (4998). There's a 'Disconnect (optional)' checkbox. Below that is a 'Global Caché Command' field with a 'Finish' button. A 'Data String' field contains the command: 'send gc [key:<security\_key>] <ip> <port> <gc\_api>'. There's a 'Send' button and a 'Receive' area with a 'Clear' button.

The screenshot shows the 'Global Caché Assistant' tab in the Director Thunder interface, displaying the results of a device discovery. The 'Select Device' dropdown menu is now populated with a list of discovered devices, highlighted with a red circle and the number 2. The list includes: '000C1E4FFFF@172.30.20.106 (ITachiP2IR)', '000C1E05CDD4@172.30.20.101 (ITachiP2SL)', '000C1E05CDDC@172.30.20.115 (ITachiP2CC)', and '000C1E050199@172.30.20.104 (ITachiP2IR)'. Below the list is a 'Refresh' button. The right side of the interface remains the same as in the previous screenshot, showing the 'Select Mode' section, 'Security Key', 'IP Address', 'Port', 'Disconnect' checkbox, 'Global Caché Command', 'Data String', 'Send' button, and 'Receive' area.



### 4.8 Global Caché Assistant continued...

**3 Click Wizard button**

Select Device:

*\* 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.*

Select Mode: ☒ Wizard ☐ Normal

Security Key (optional): 3838330636161613230323130346434

Global Caché Command: 000C1E4FFFFF@172.30.20.106 (iTachIP2IR)

Alias Name (optional):

Description (optional):

IP Address: 172.30.20.106

Port: 4998

Disconnect (optional): ☐

Global Caché Command:

Data String: send gc [key:<security\_key>] <ip> <port> <gc\_api>

Send:

Receive:

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**3 Click Wizard button**

Select Device:

*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 Mode: ☒ Wizard ☐ Normal

Security Key (optional): 3838330636161613230323130346434

Global Caché Command: 000C1E4FFFFF@172.30.20.106 (iTachIP2IR)

IP Address: 172.30.20.106

Port: 4998

Disconnect (optional): ☐

Global Caché Command:

Data String: send gc [key:<security\_key>] <ip> <port> <gc\_api>

Send:

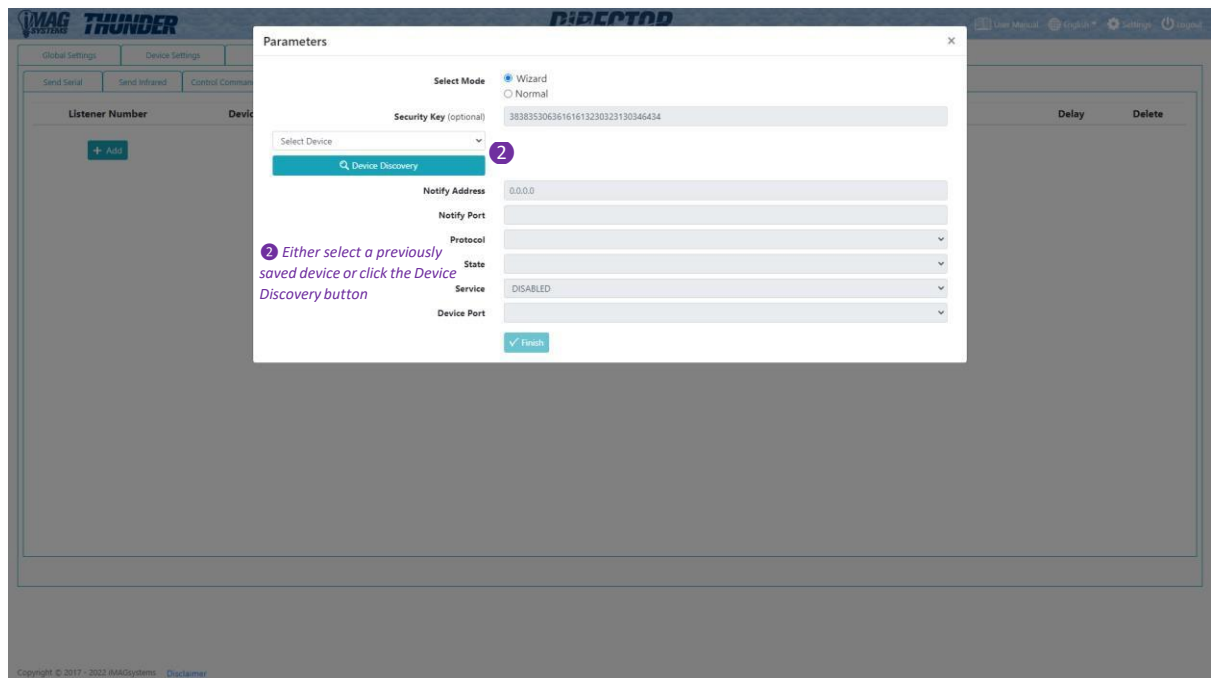
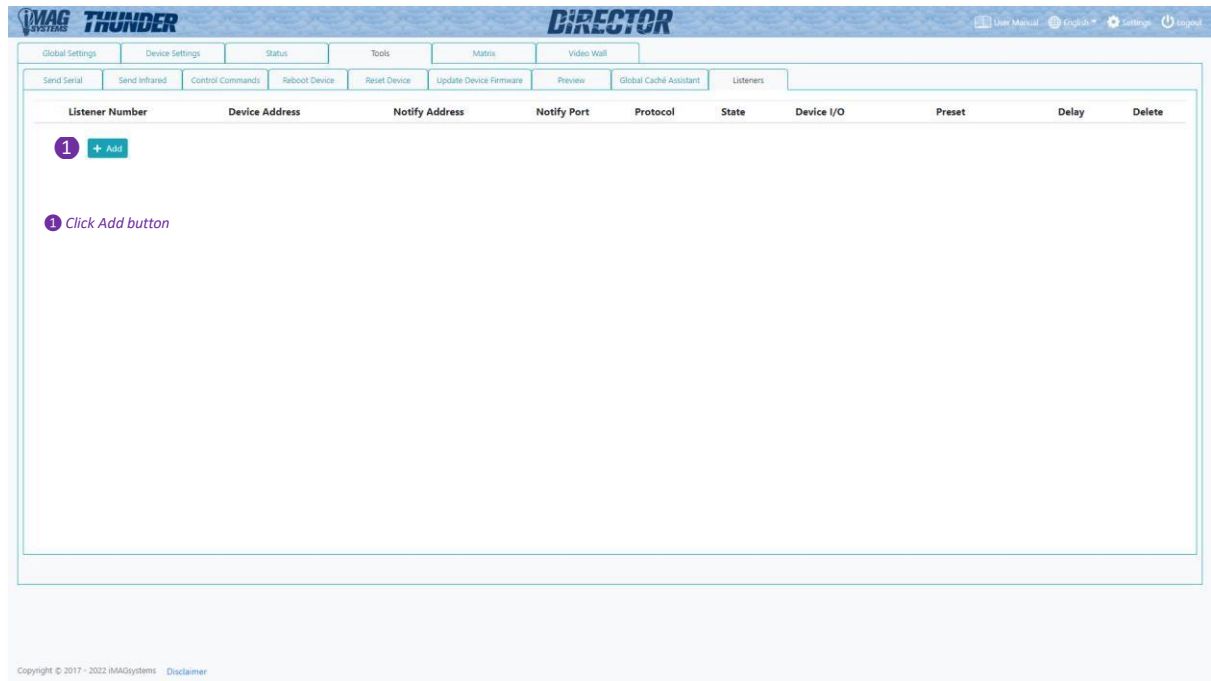
Receive:

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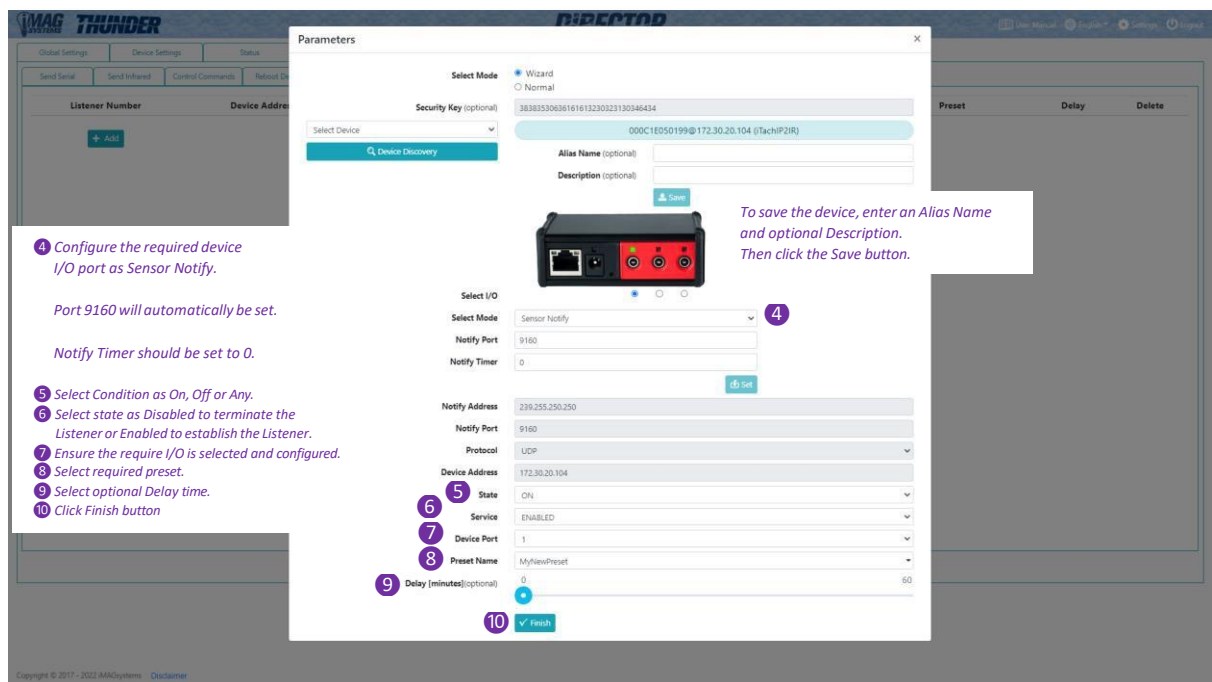
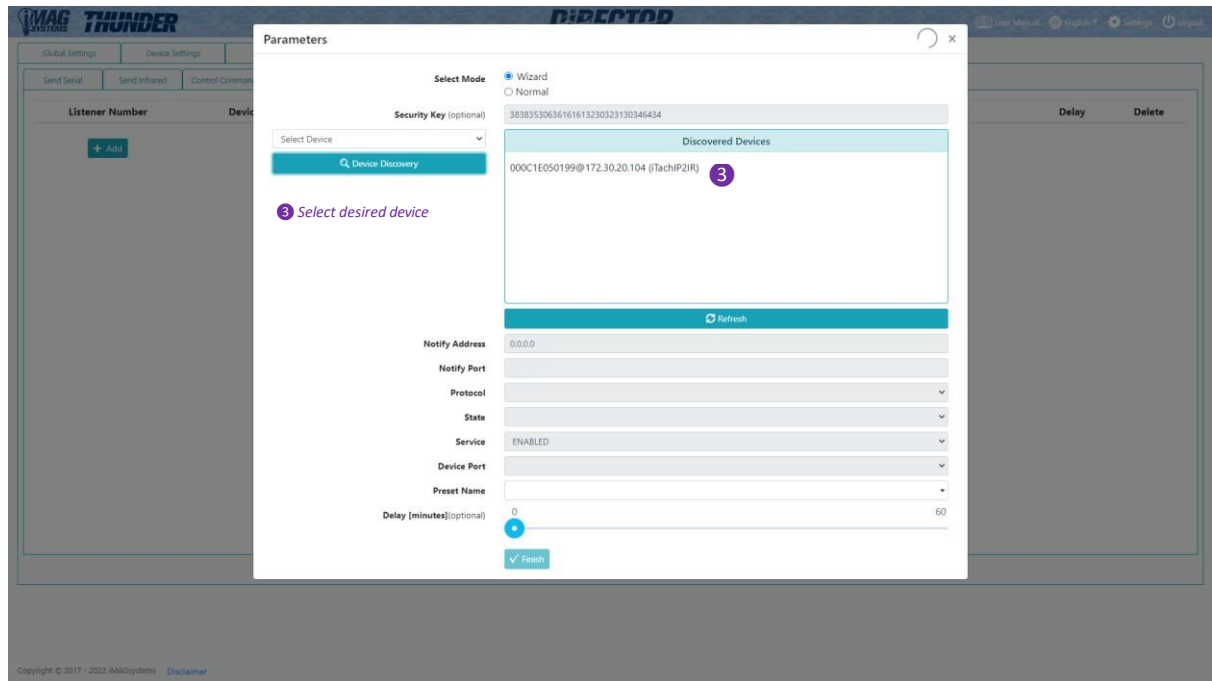
### 4. Direct Thunder Listeners

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.



### 4.9 Listeners continued...



### 4.9 Listeners continued...

Global Settings Device Settings Status Tools Matrix Video Wall

Send Serial Send Infrared Control Commands Reboot Device Reset Device Update Device Firmware Preview Global Cache Assistant Listeners

Listener Number	Device Address	Notify Address	Notify Port	Protocol	State	Device I/O	Preset	Delay	Delete
1	172.30.20.104	239.255.250.250	9160	UDP	ON	1	MyNewPreset	0	

[+ Add](#)

The active Listeners will be listed and can be removed either via the API command 'set listener' or clicking the red Delete cross icon.

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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.

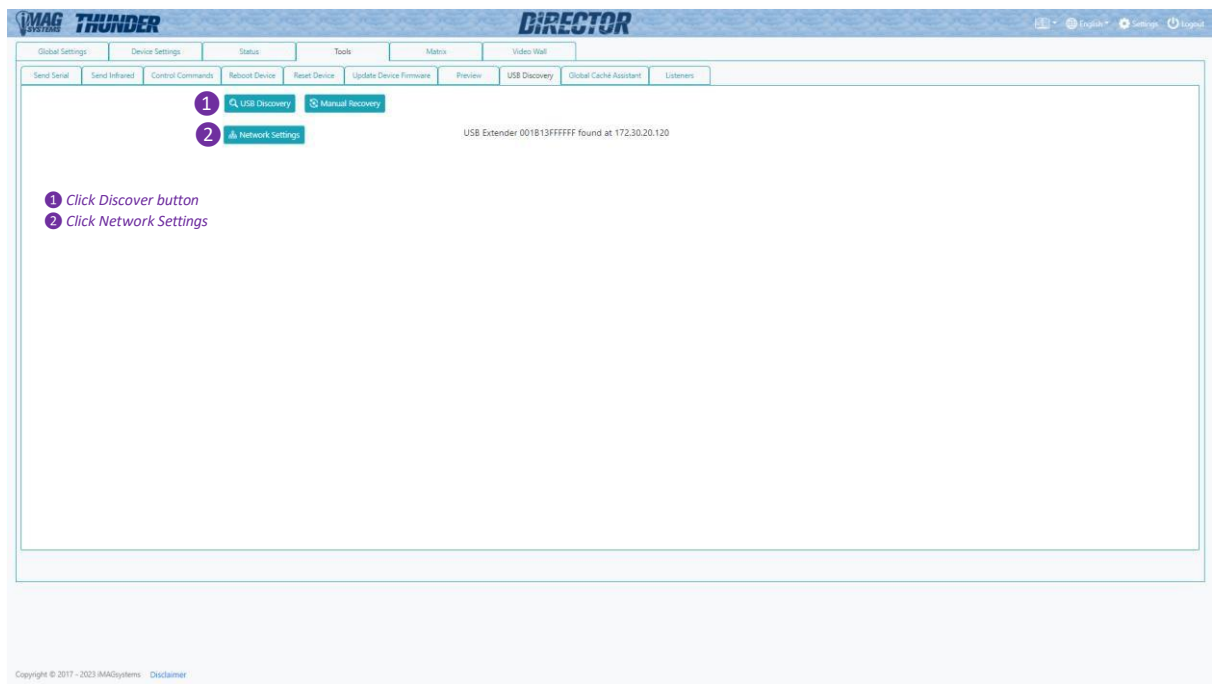
Networks must be configured to pass UDP Multicast traffic from 239.255.250.250.

### 4.1 Manual USB Discovery (USB Extender)

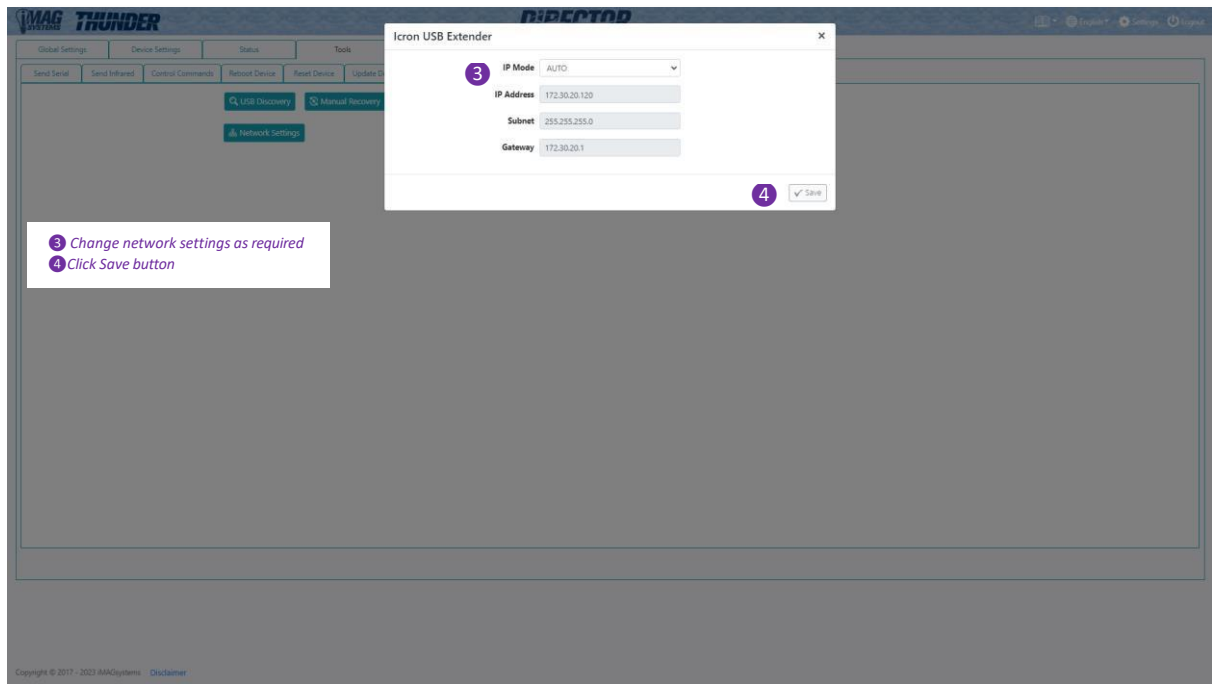
The USB Discovery tab is used to help find undiscovered external Icron USB Extenders that might be out of range from the rest of the system or have an incompatible firmware version.

If the external Icron USB Extender has a static IP applied then it will not respond when on a different subnet to the Director Controller (for example controller IP 169.254.1.1 and external Icron USB Extender IP 192.168.1.222). The Director Controller's IP would need to be set to the same range as the external Icron USB Extender before it could be discovered.

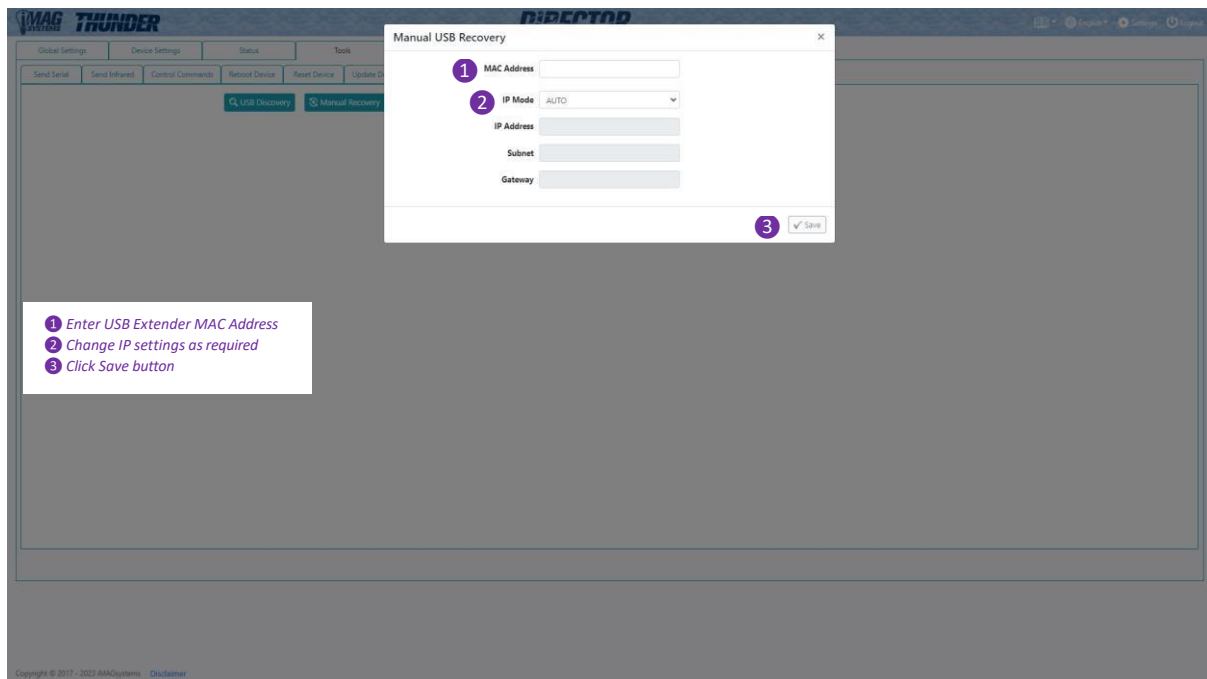
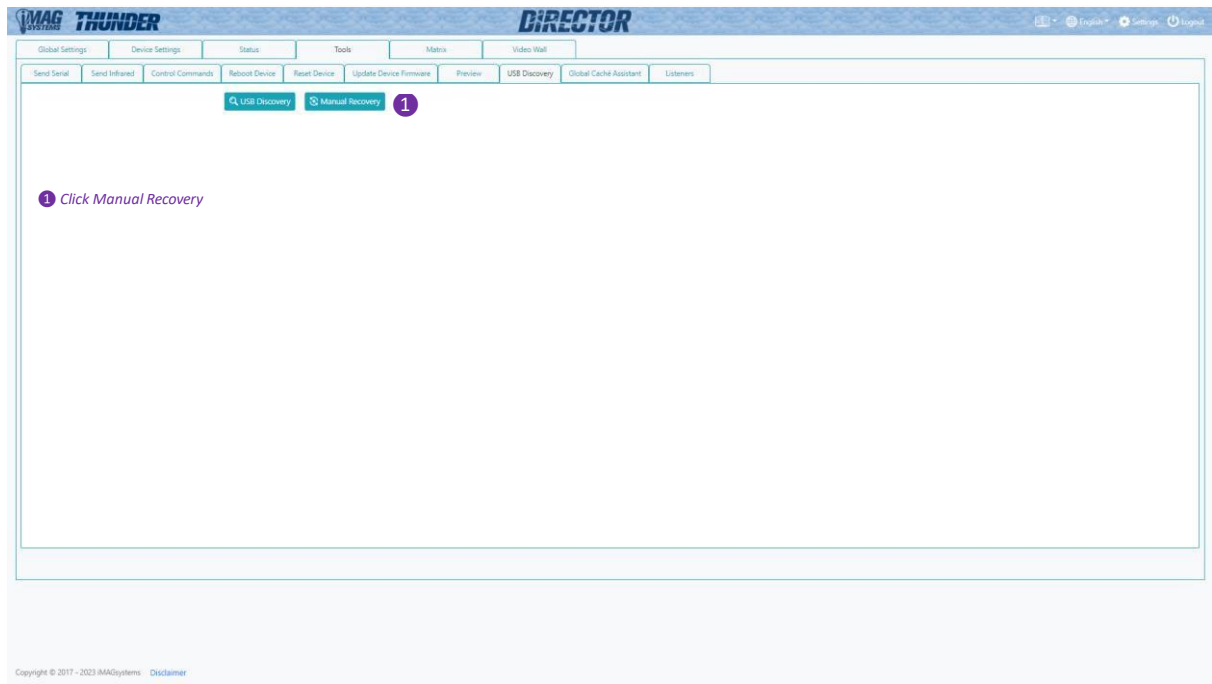
A Manual Recovery option is also available where a MAC Address of the external Icron USB Extender can be entered and set a DHCP or Static IP.



### 4.1 Memory Dump USB Discovery (USB Extender) continued...



### 4.1.1.1. USB Discovery (USB Extender) continued...



## 5 Matrix

The Matrix tab contains up to 5 individual matrix tabs for each of the signal types, Video, Audio, Serial, Infrared and USB. 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.

### 5.1 Video / Audio

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

The screenshot displays the DIRECTOR THUNDER software interface. The top navigation bar includes 'Global Settings', 'Device Settings', 'Status', 'Tools', 'Matrix', and 'Video Wall'. The 'Matrix' tab is selected. Below the navigation bar, there are checkboxes for 'Separate Audio Routing' and 'KVM'. The main area is divided into two sections: 'ENCODERS' and 'DECODERS'. The 'ENCODERS' section has a dropdown menu set to 'ALL DEVICES'. The 'DECODERS' section has a dropdown menu set to 'Video / Audio'. The matrix grid shows a diagonal pattern of blue squares, indicating joins between Encoder1 to Decoder1, Encoder2 to Decoder2, Encoder3 to Decoder3, Encoder4 to Decoder4, and Encoder5 to Decoder5. A legend on the right side of the matrix explains the device icons and join status.

**DECODERS**

	Encoder1	Encoder2	Encoder3	Encoder4	Encoder5	Encoder6
Decoder1	Blue Square					
Decoder2		Blue Square				
Decoder3			Blue Square			
Decoder4				Blue Square		
Decoder5					Blue Square	

**DECODERS**

- ALL
- Decoder1
- Decoder2
- Decoder3
- Decoder4
- Decoder5

**DEVICE ICONS**

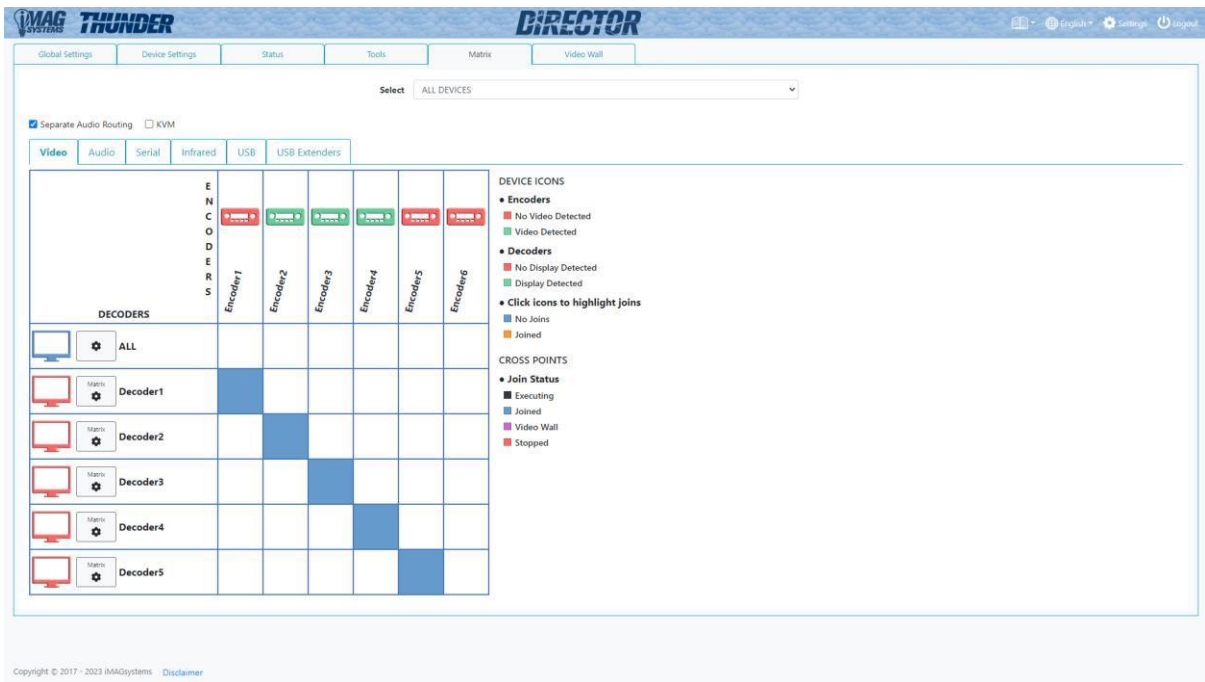
- Encoders**
  - No Video Detected
  - Video Detected
- Decoders**
  - No Display Detected
  - Display Detected
- Click icons to highlight joins**
  - No Joins
  - Joined
- CROSS POINTS**
  - Join Status**
    - Executing
    - Joined
    - Video Wall
    - Stopped

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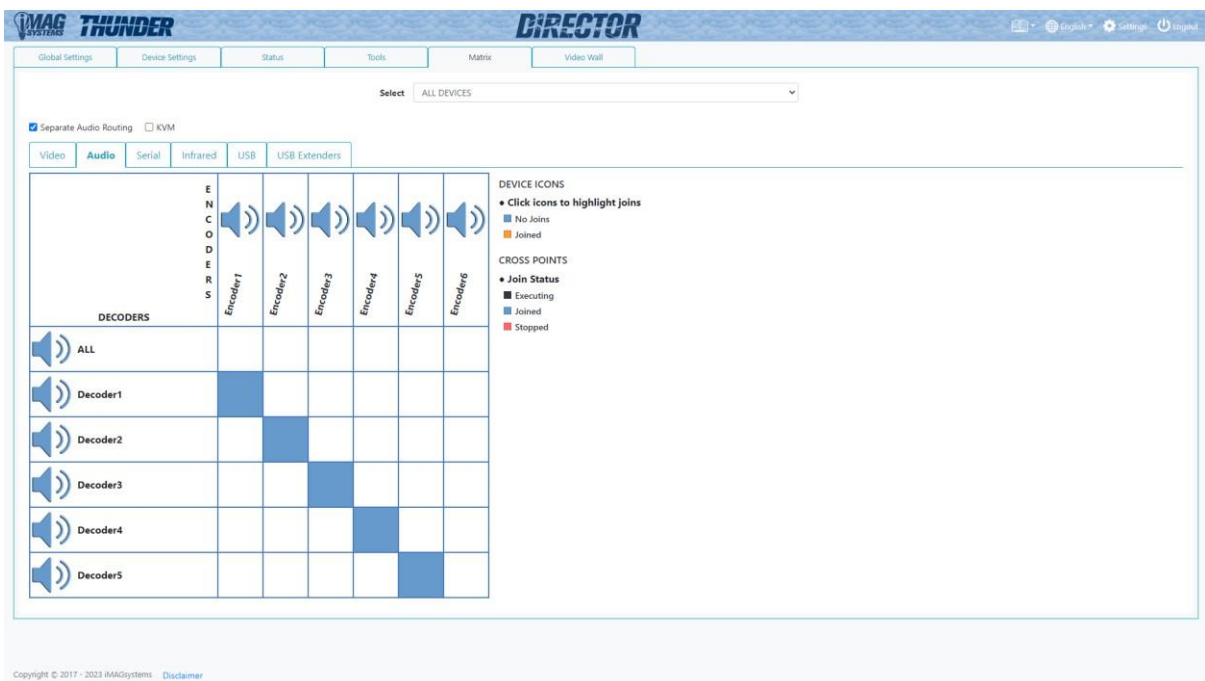
## 5.2 Video

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



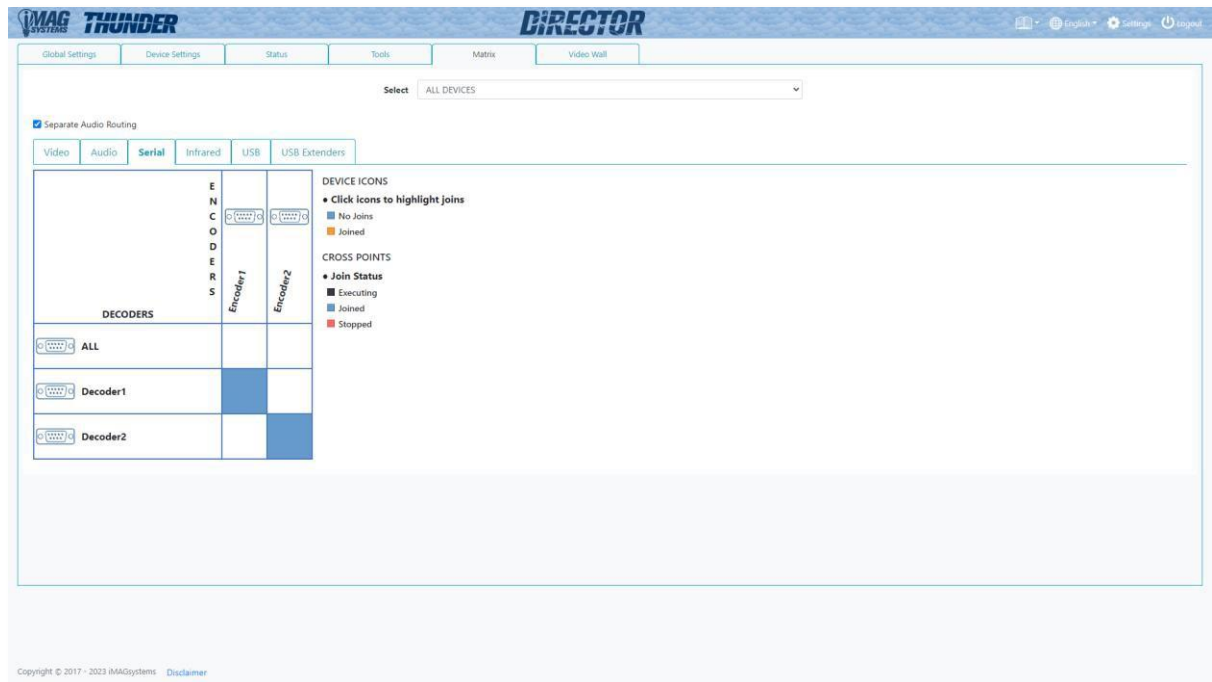
## 5.3 Audio

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



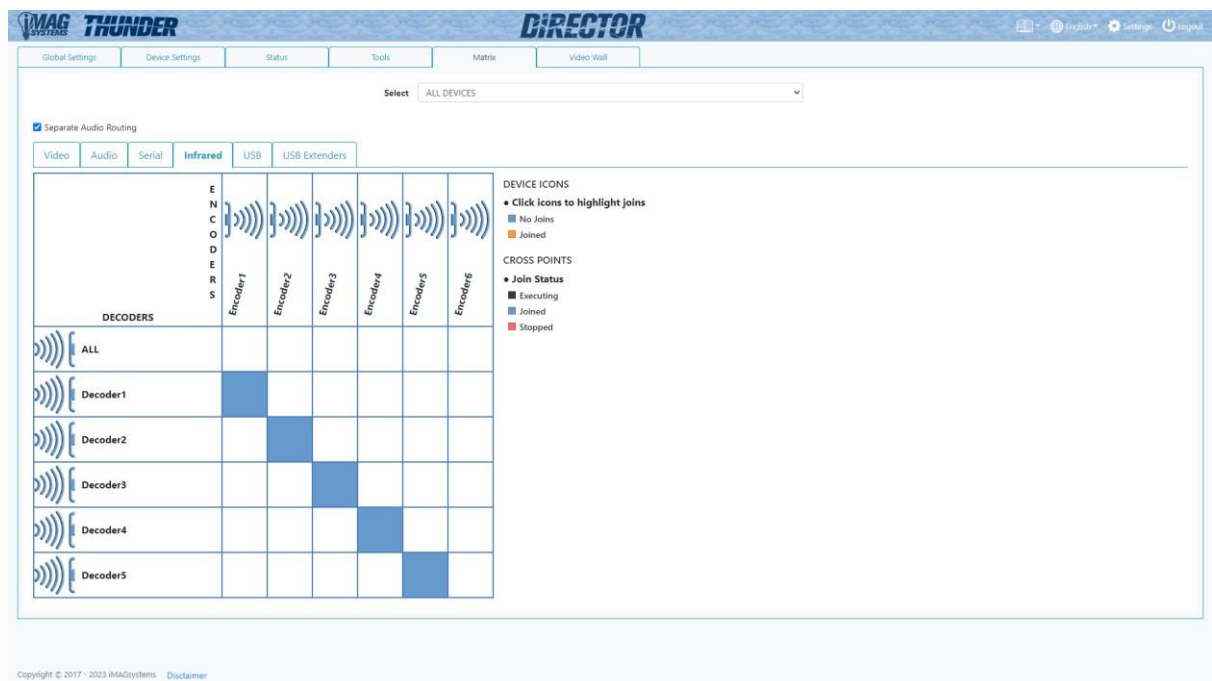
### 5.4 Serial

The matrix Serial tab is intended for making pass-through serial joins between Encoders and Decoders for devices set to serial MATRIX mode. Devices set to CONTROL mode will not be seen in the matrix.



### 5.9 Infrared

The matrix Infrared tab is intended for making pass-through infrared joins between Encoders and Decoders.



### 5.6 USB

The matrix USB tab is intended for making pass-through USB joins between Encoders and Decoders.

**USB CLIENT**

	Encoder1	Encoder2	Encoder3	Encoder4	Encoder5	Encoder6
ALL						
Decoder1	■					
Decoder2		■				
Decoder3			■			
Decoder4				■		
Decoder5					■	

**USB HOST**

**DEVICE ICONS**

- Click icons to highlight joins
- No Joins (Blue square)
- Joined (Orange square)

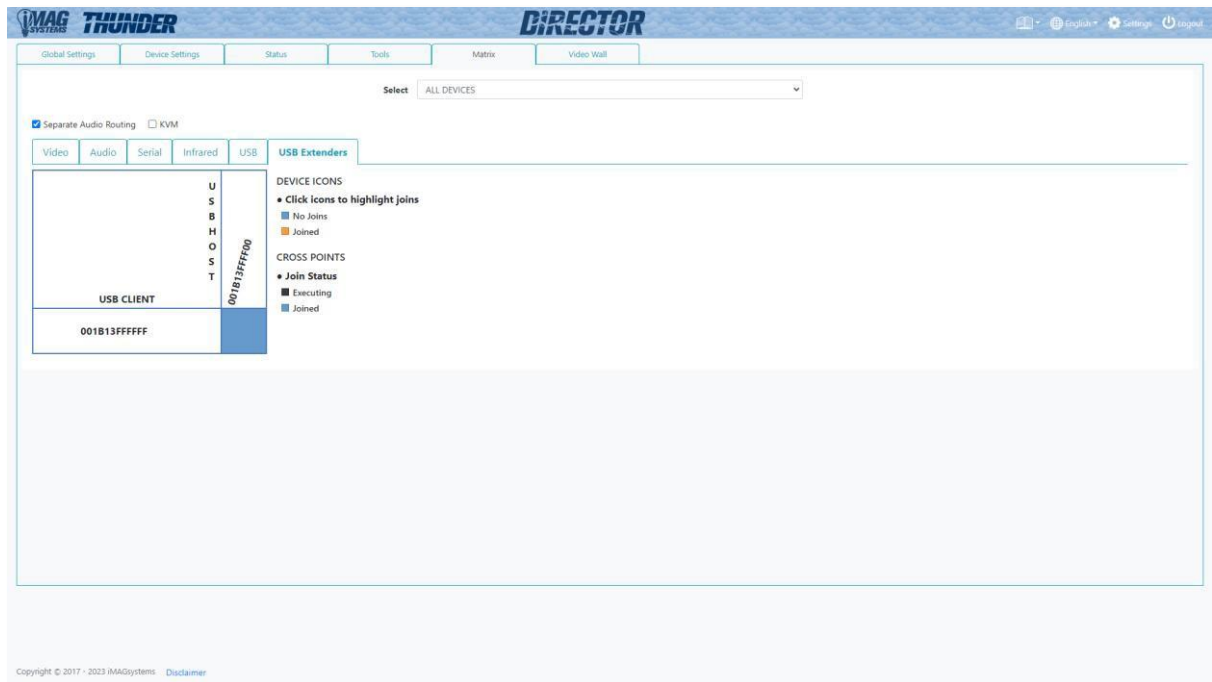
**CROSS POINTS**

- Join Status
- Executing (Black square)
- Joined (Blue square)
- Stopped (Red square)

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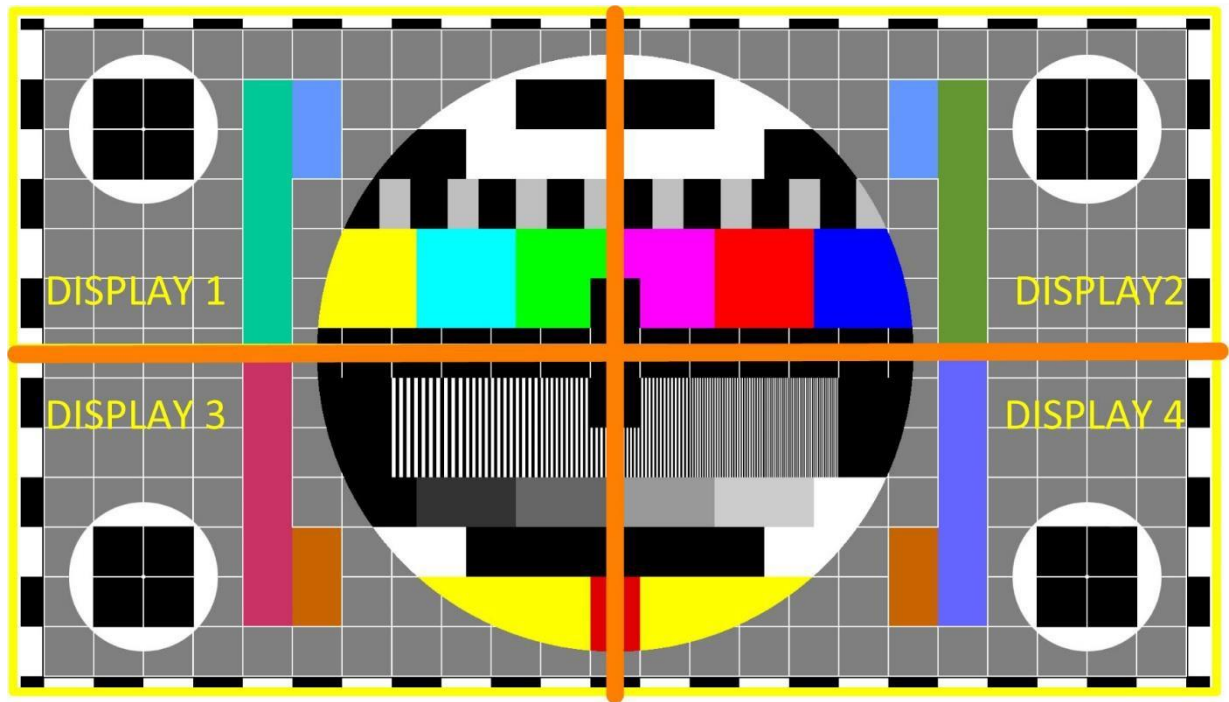
### 5.7 USB Extenders

The matrix USB Extenders tab is intended for making pass-through USB joins between external Icron USB Extenders.

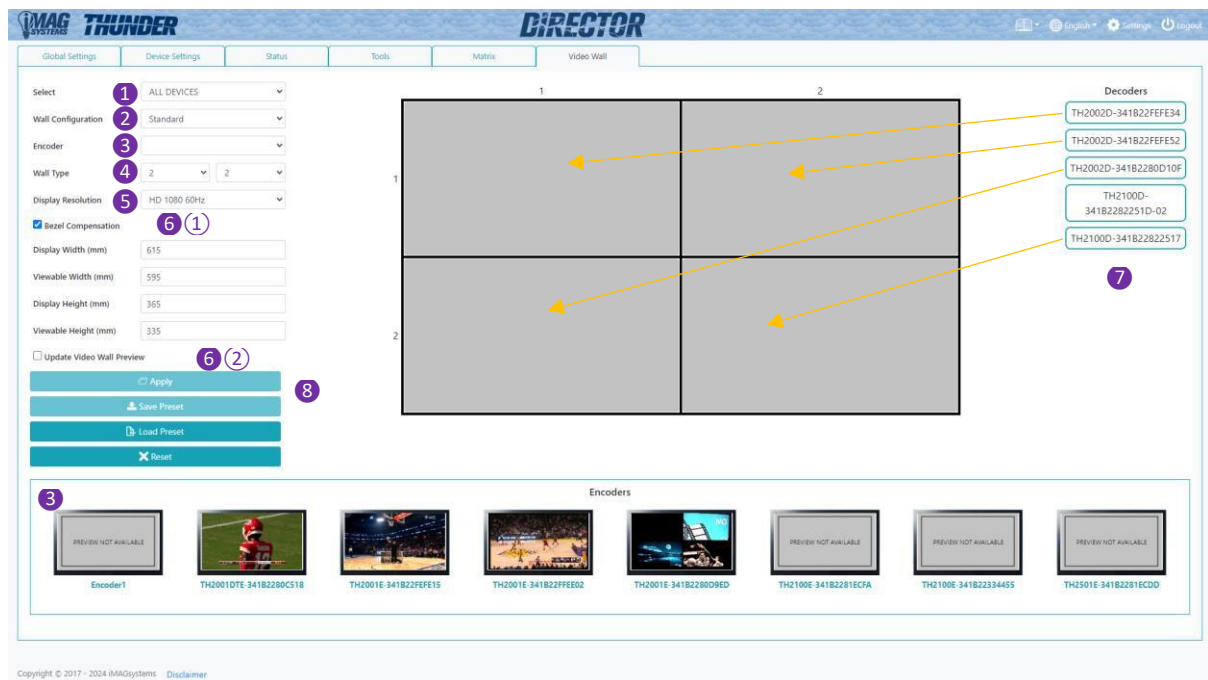


## 6 Video Wall (Licensed feature)

Standard mode allows for standard video wall configurations while Advanced mode will allow mosaic style video walls.



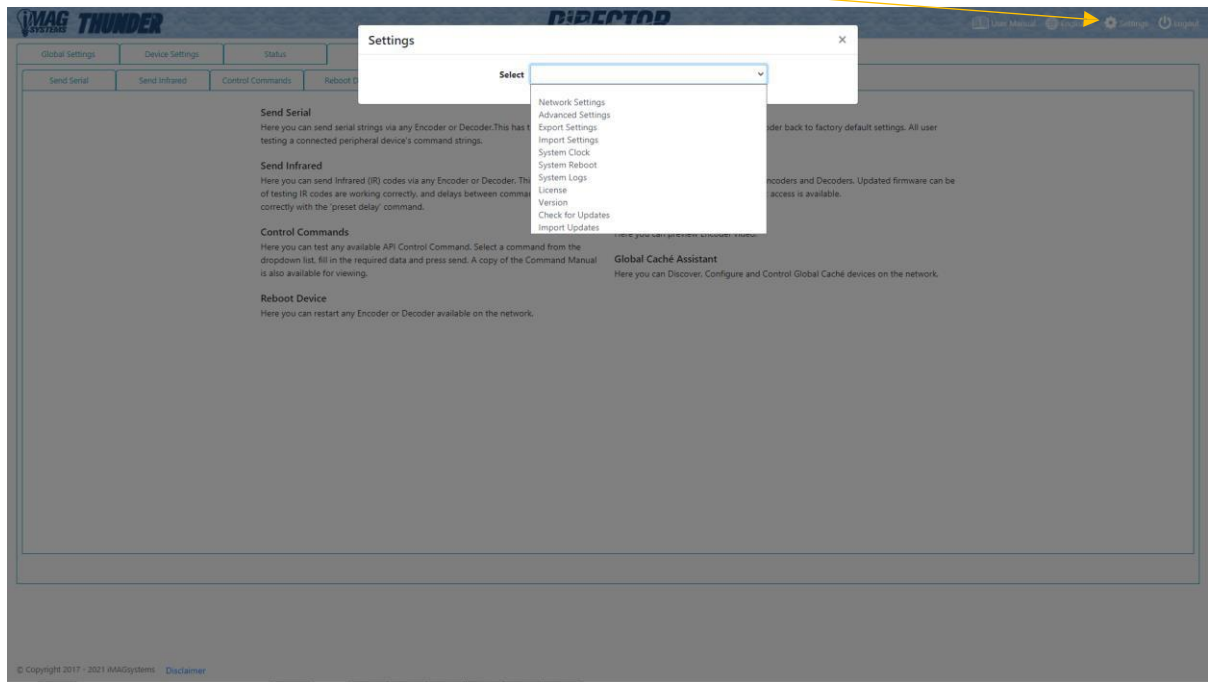
### 6.1 Video Wall Standard



- 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 options for Mosaic style*
- 3 Select the source Encoder for the video to be displayed from the dropdown list or drag from the preview window.
- 4 Select the video wall layout up to 16 x 16.
- 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 1 Select Bezel Compensation to automatically compensate for the bezel widths.
- 6 2 Enter the physical width and height of the display in mm.  
 Enter the physical viewable width and height of the display in mm.
- 7 Drag Decoders to positions.
- 8 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 Video Wall tab.

### 7 System Settings

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



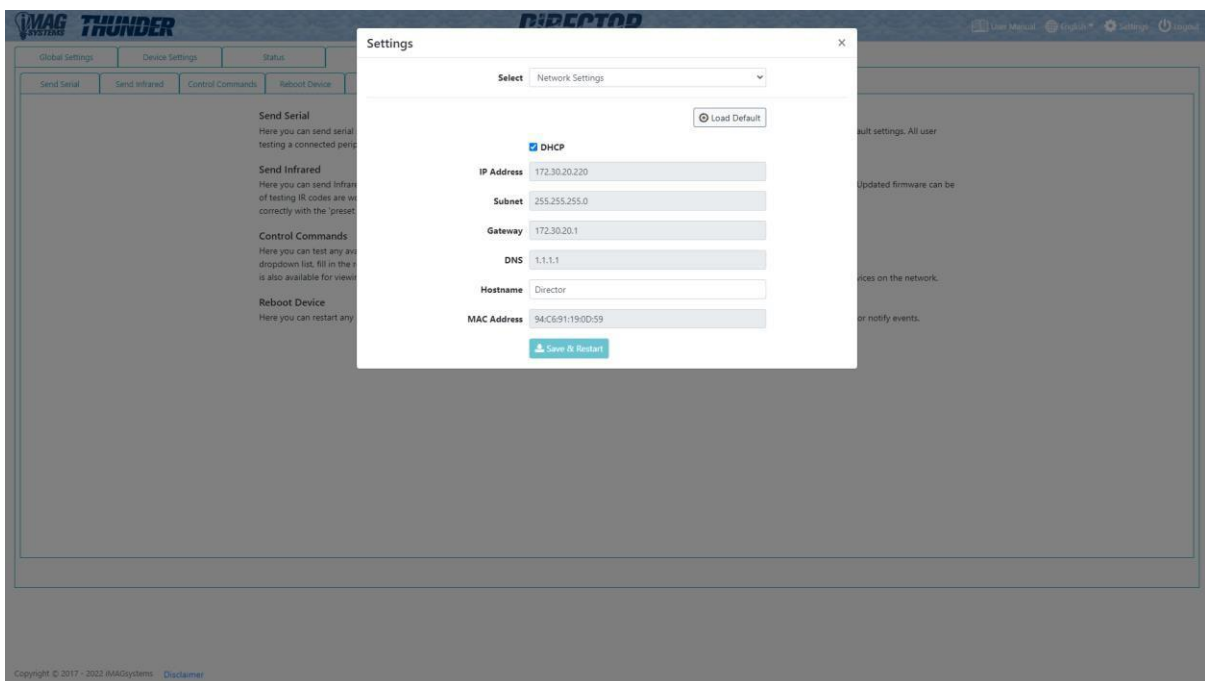
### 7.1 Network Settings

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.





### 7.1 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.

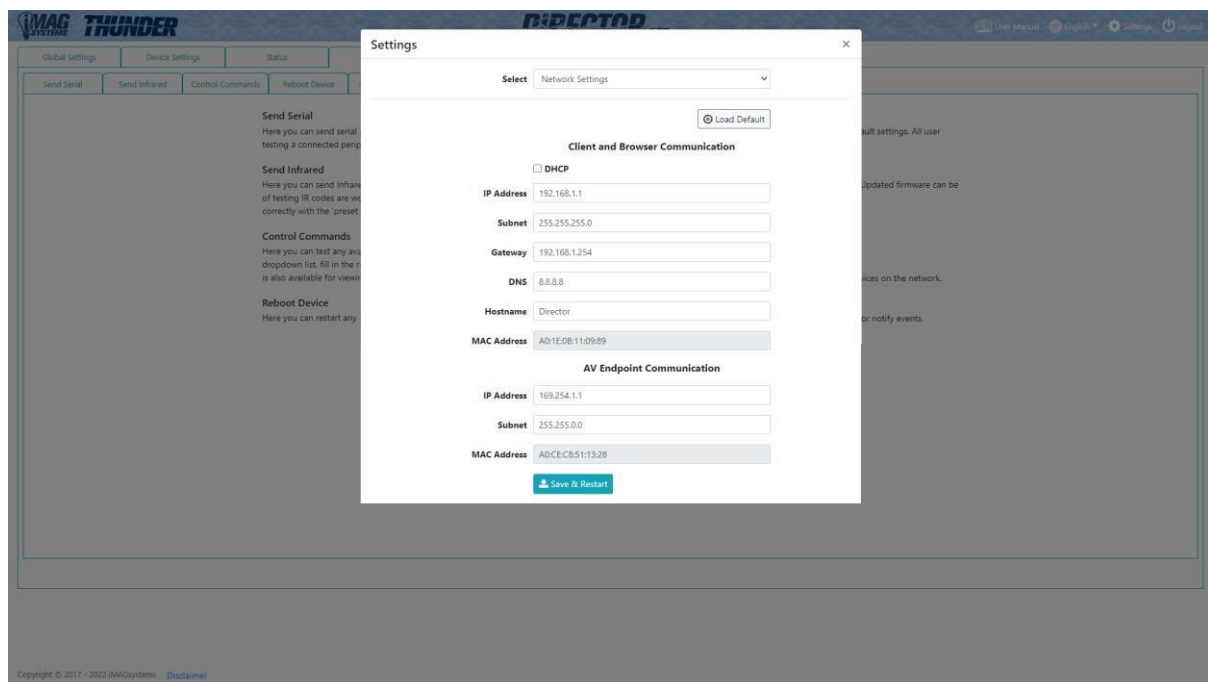
By default the Director Controller will be found on the primary NIC at 192.168.1.1 while maintaining 169.254.1.1 for the second network.

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.

## 7.2 Advanced Settings

The Advanced Settings section contains the timing, Leave Subscriptions and Telnet port restriction settings of the controller.

The screenshot shows a 'Settings' window with a dropdown menu set to 'Advanced Settings'. The settings are as follows:

Setting	Value
Device Data Refresh (30000) [Range 30000 - 120000 milliseconds]	30000
USB Data Refresh (10000) [Range 10000 - 120000]	10000
Leave Subscriptions on System Start (Disabled)	Disabled
Telnet Port 6980 Connection Limit (Unlimited)	Unlimited
Serial Timeout (3000) [Range 1000 - 30000 milliseconds]	3000
TCP Timeout (3000) [Range 1000 - 30000 milliseconds]	3000
Global Cache Timeout (5000) [Range 1000 - 30000 milliseconds]	5000
Static Preview Image Override (Enabled)	Enabled
Static Preview Image Interval (10) [Range 5 - 60 Seconds]	5

A 'Save' button is located at the bottom right of the settings area.

### 7.2.1 Device Data Refresh

Device Data Refresh is the time in milliseconds the 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 30000 – 120000.

### 7.2.2 USB Data Refresh (USB Extender)

USB Data Refresh is the time in milliseconds the Director Controller requests information about the USB Extenders. 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 10000 = 10 seconds with a range of 10000 – 120000.

### 7.2.3 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 Encoder streams when the system starts. The default is disabled.

### 7.2.4 Telnet Port 6980 Connection Limit

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

### 7.2.9 Serial Timeout

Serial Timeout is the maximum time in milliseconds the Director Controller will wait for a response from a RS232 serial controlled device. The default is 3000 = 3 seconds with a range of 1000 – 30000.

### 7.2.6 TCP Timeout

TCP Timeout is the maximum time in milliseconds the Director Controller will wait for a response from a TCP controlled device. The default is 3000 = 3 seconds with a range of 1000 – 30000.

### 7.2.7 Global Caché Timeout

Global Caché Timeout is the maximum time in milliseconds the Director Controller will wait for a response from a Global Caché device. The default is 5000 = 5 seconds with a range of 1000 – 30000. Some very long IR codes take longer before a response is received.

### 7.2.8 Static Preview Image Override

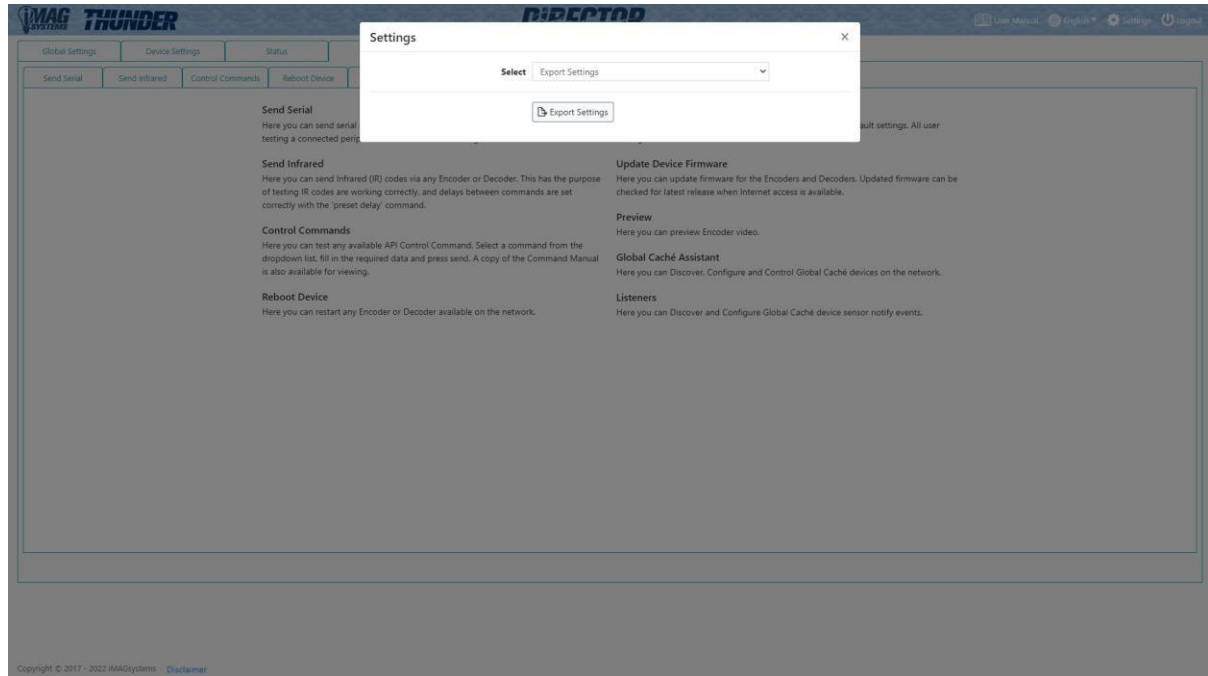
Static Preview Image Override enables the use of static JPG preview images rather than a MJPEG stream provided by the endpoints. A stream requires a direct connection to the endpoint which is not always possible when the client side is working over a remote URL or different subnet. Using static images instead overcomes this issue by caching the images on the server and pushing them out to clients.

### 7.2.9 Static Preview Image Interval

Static Preview Image Interval used with Static Preview Image Override is the interval in seconds the preview images are updated client side. The default is 10, with selectable 5, 10, 20, 30, 60 second intervals.

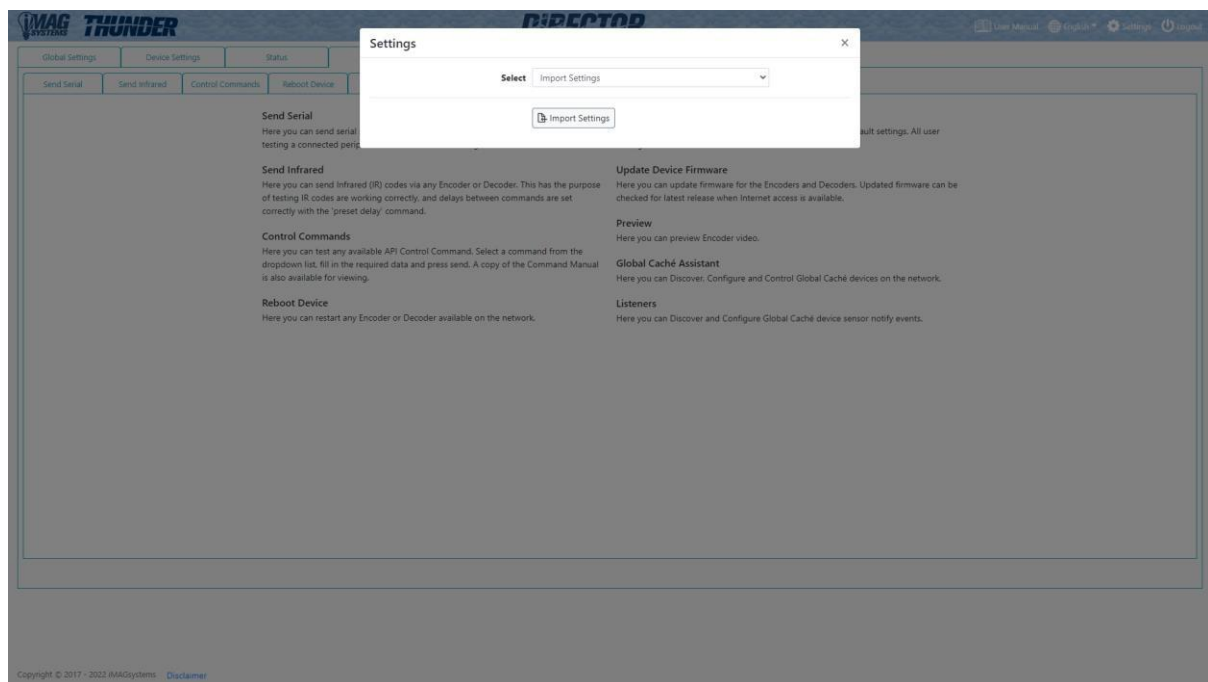
### 7.3 Export Settings

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



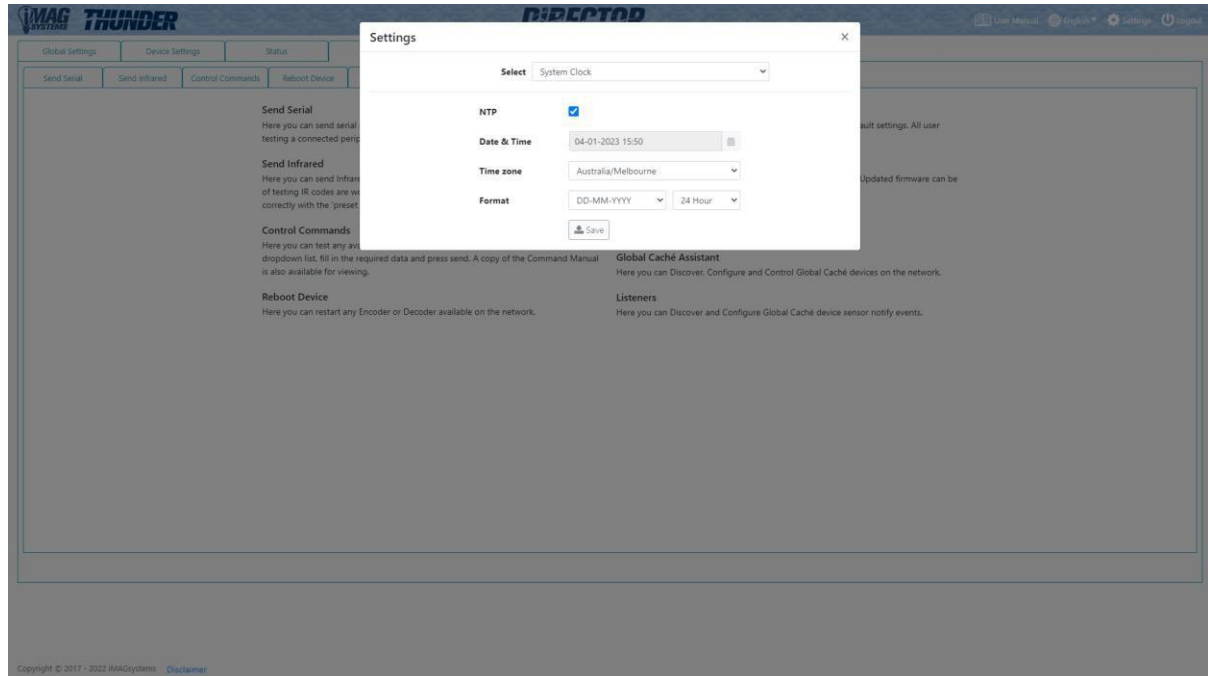
### 7.4 Import Settings

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



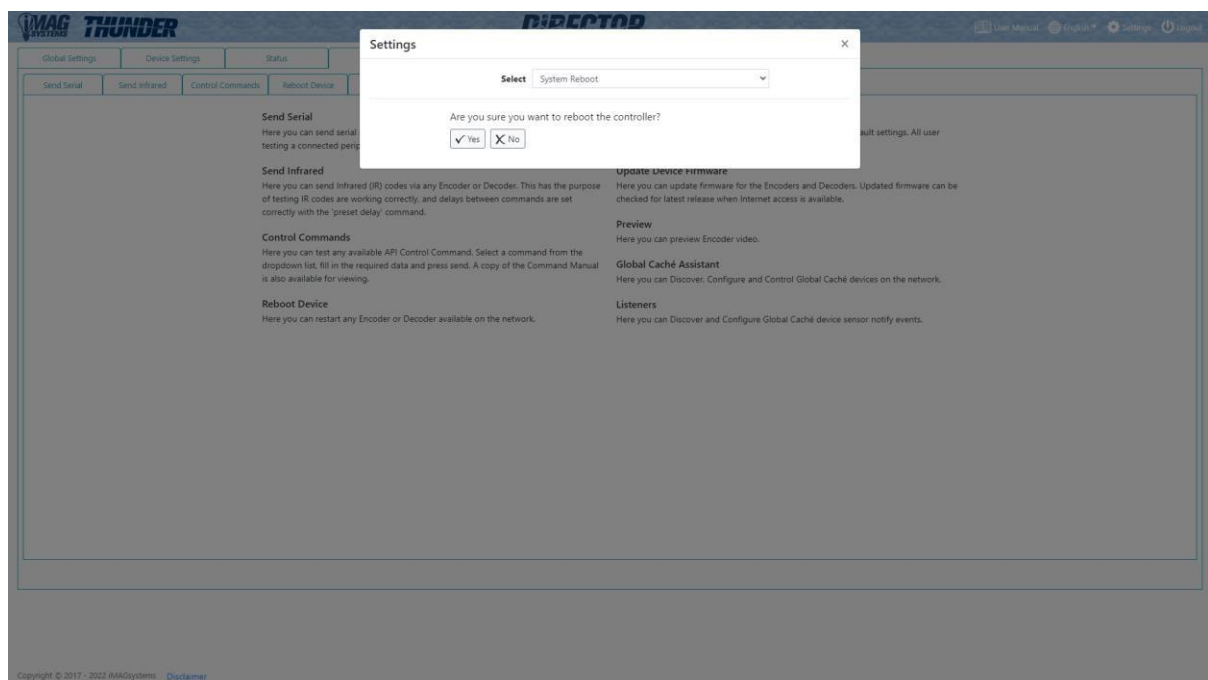
### 7.9 System Clock

The 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.



### 7.6 System Reboot

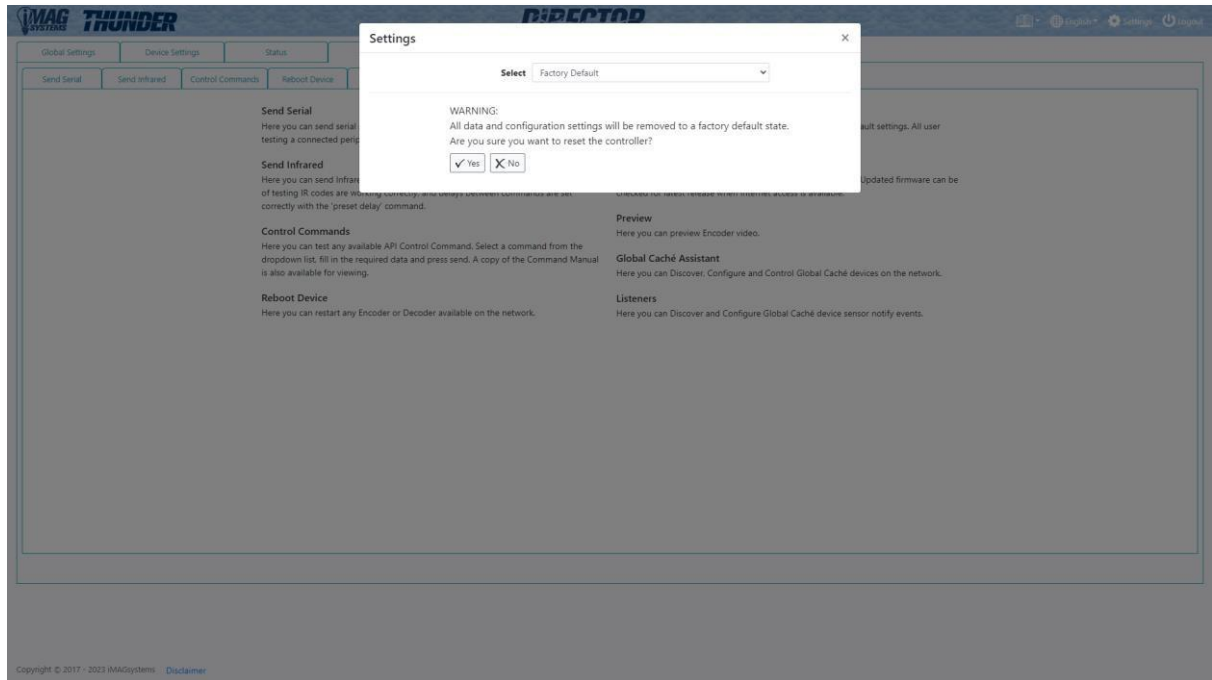
Here you can reboot the Director Controller. It takes 90 seconds for the controller to Reboot.



### 7.7 Factory Default

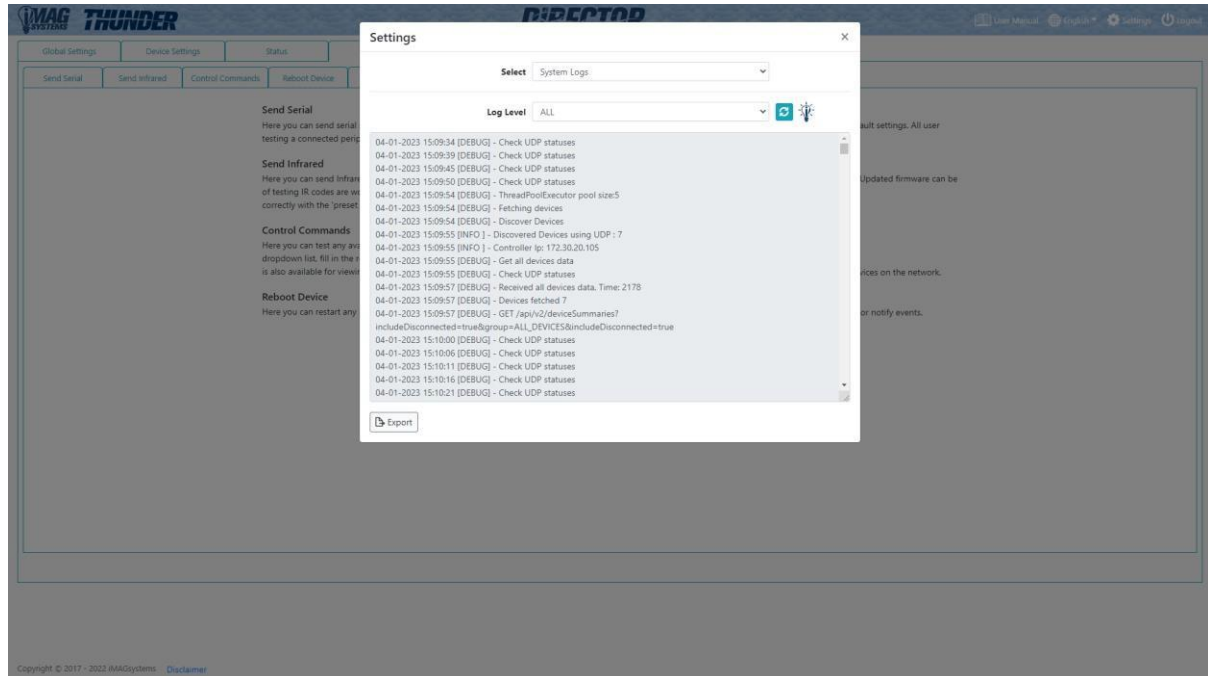
Here you can reset the Director Controller to factory default settings.

**WARNING:** All data and configuration settings will be removed to a factory default state.



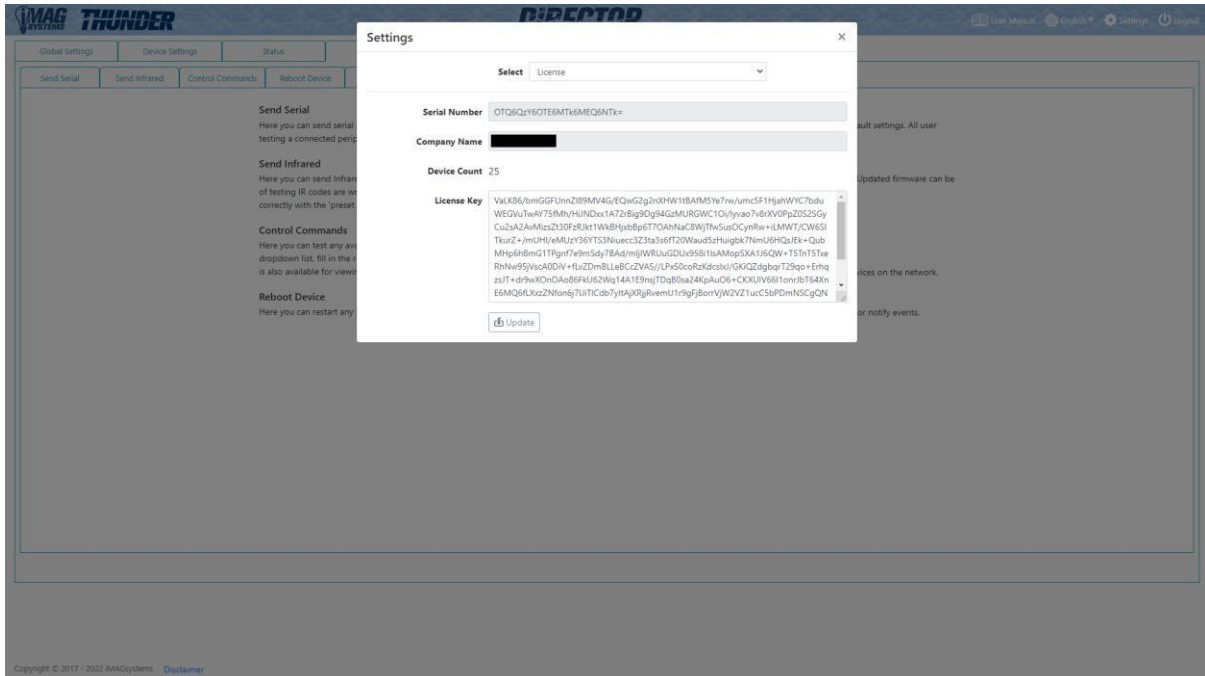
### 7.8 System Logs

The system keeps a log of all system activities. The level of logged information can be set from the Log Level selection. Click the Export button to export the log. A file named softwareLog.exp will be saved to your Downloads folder. This file has zip compression.



### 7.9 License

The Director Controller will not operate without a valid license. When the 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.





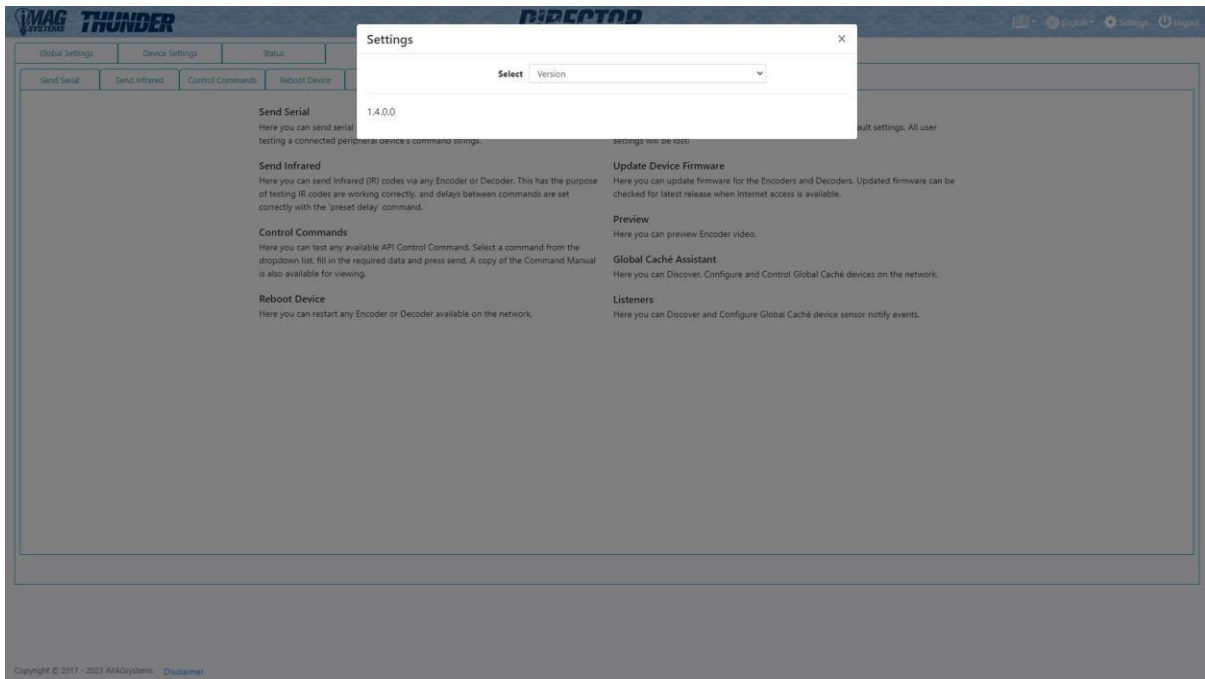
## 7.9 License continued...

The table below indicates standard features in green and optional licensed features in red.  
 A special Monitoring only license is also available which provides system status only.

Global Settings	
	Users
	Presets
	Groups
	Multicast
	HTTP Security Key
	Permissions
	Events
	Notifications
	Analytics
	Scheduler
	Control UI
Device Settings	
Status	
Tools	
	Send Serial
	Send Infrared
	Send Control Command
	Reboot Device
	Reset Device
	Update Device Firmware
	Preview
	Global Caché Assistant
	Listeners
Matrix	
Video Wall	
Translator	
Presenter	

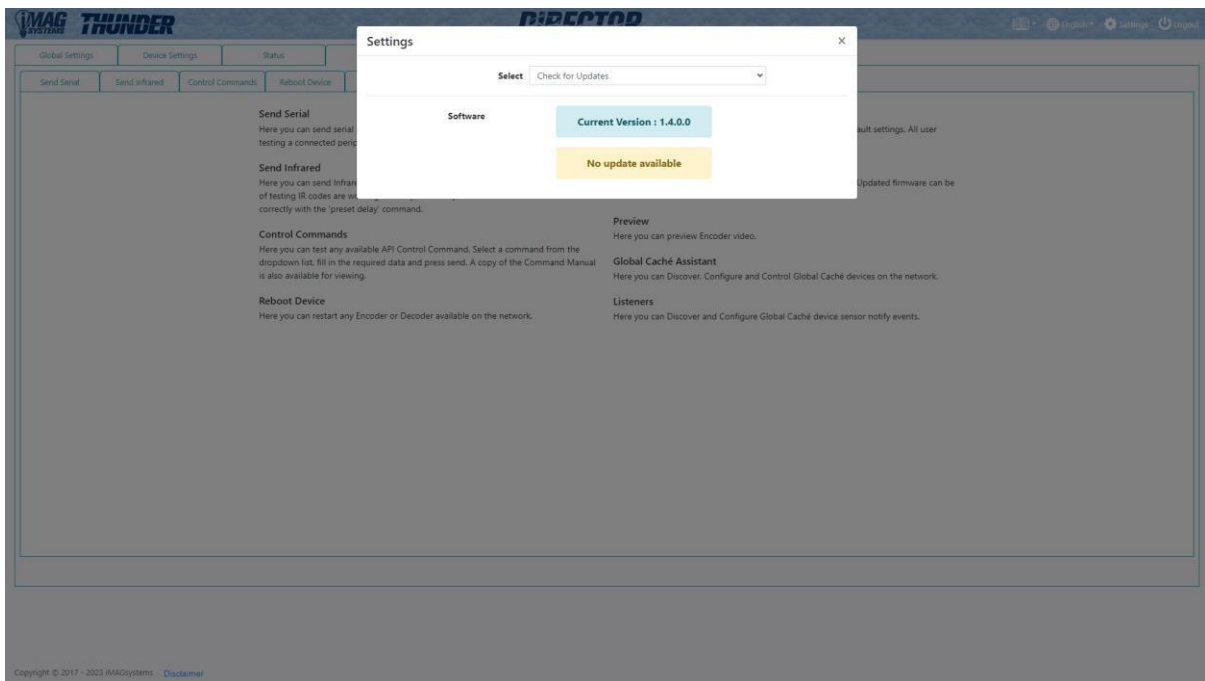
## 7.1 Momentary Buttons

Here you can find the current software version.



### 7. Check for Updates

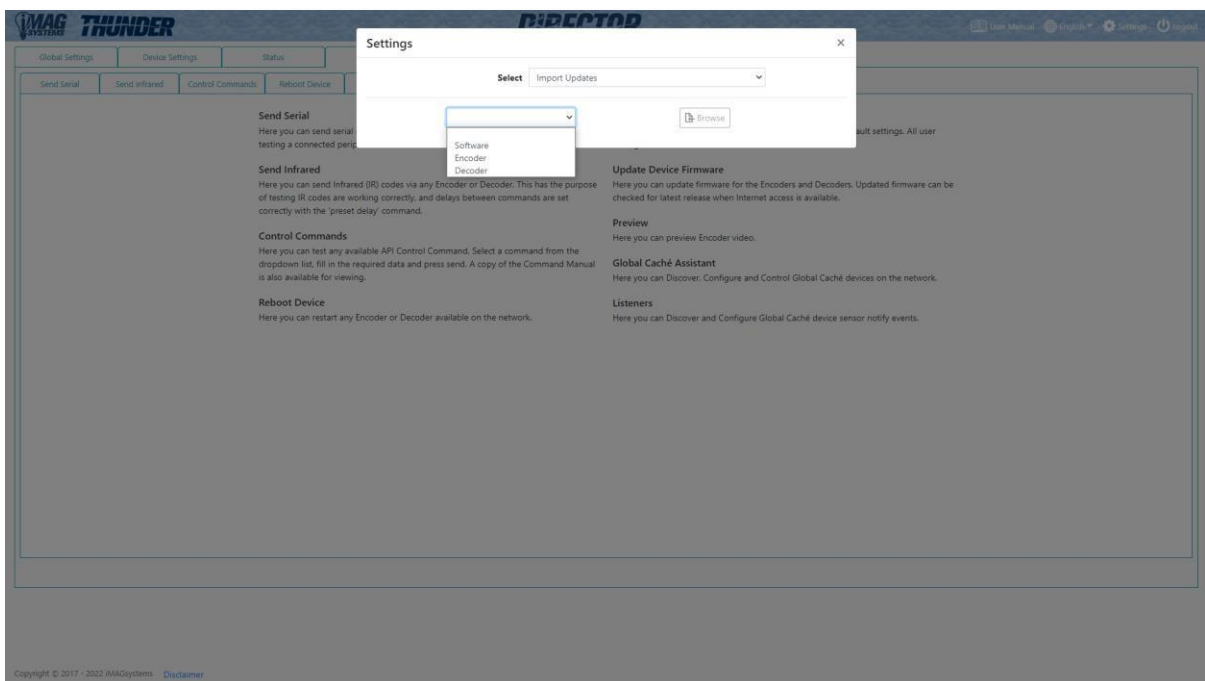
Check for Updates will contact an ftp server over the internet to obtain the latest releases.



### 7. 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 Software, Encoder or Decoder. Then click the browse button to select the required file from the file dialog popup.



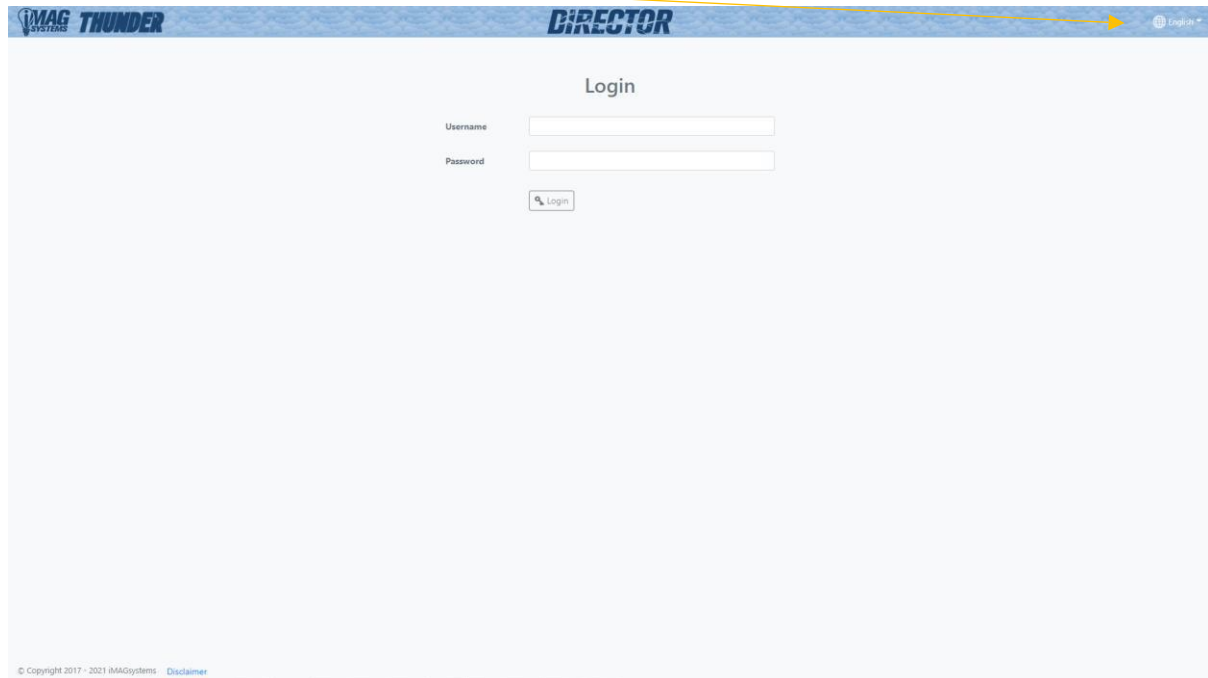
### 8 UI Overview

Director is accessed by using Google Chrome or Safari to browse to the controllers IP address. Initially when the 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 Thunder interface. The page has a blue header with the 'iMAG THUNDER' logo on the left and the word 'DIRECTOR' in the center. On the right of the header is a language selector set to 'English'. The main content area is titled 'License' and contains three input fields: 'Serial Number' with the value 'OTQ6QzY6OTY6MTk6MEQ6NTk=', 'Company Name', and 'License Key'. Below these fields is a 'Register' button with a document icon. At the bottom left of the page, there is a copyright notice: '© Copyright 2017 - 2020 iMAGSystems' and a link to the 'Disclaimer'.

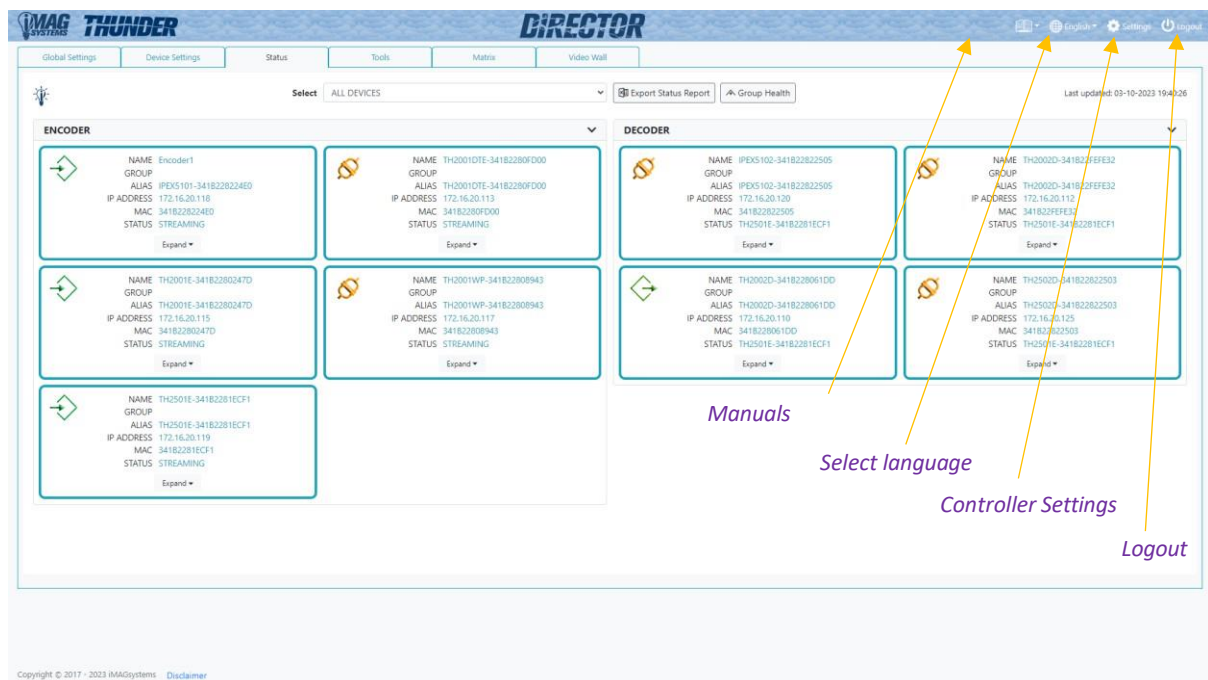
### 8 UI Overview – continued...

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.



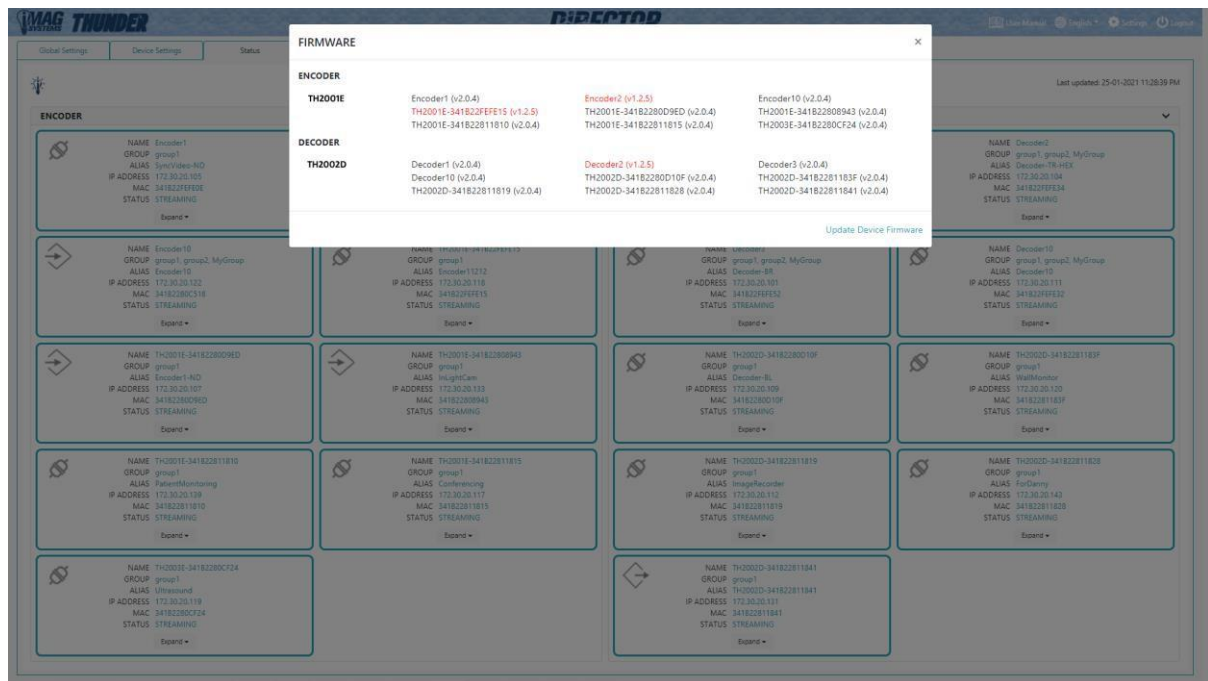
Once logged into the system the Status tab will be displayed by default.

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



### 8 UI Overview – continued...

Devices with older version of firmware will be indicated after login.



### 9 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.



## 9 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 – 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 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.

### 5. 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.

### 6. 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.

### 7. 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 B – 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 join all – Normal Mode

Parameters

① Enter optional Security Key  
 ② Enter Encoder Device Name  
 ③ Enter Decoder or Group name  
 ④ Select Exclusive (optional)  
 ⑤ Select Video Mode (optional)  
 ⑥ Click Finish button

**Select Mode**  
☐ Wizard  
☒ Normal

① **Security Key** (optional)

② **Encoder Device Name**

③ **Decoder / Group**

④ **Exclusive** (optional) ☐

⑤ **Video Mode** No Change

⑥

### Command join all – Wizard Mode

Parameters

① Select Encoder Device Name  
 ② ① Select Device(s)  
 ③ ② Select Decoder or Group name  
 ④ Select Exclusive (optional)  
 ⑤ Select Video Mode (optional)  
 ⑥ 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 **Exclusive** (optional) ☐

④ **Video Mode** No Change

⑤

## Command join av – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Encoder Device Name  
 ③ Enter Decoder or Group name  
 ④ Select Exclusive (optional)  
 ⑤ Select Video Mode (optional)  
 ⑥ Click Finish button

**Select Mode** ☐ Wizard ☒ Normal

① **Security Key** (optional)

② **Encoder Device Name**

③ **Decoder / Group**

④ **Exclusive** (optional) ☐

⑤ **Video Mode**

⑥

## Command join av – Wizard Mode

Parameters ×

① Select Encoder Device Name  
 ② ① Select Device(s)  
 ③ ② Select Decoder or Group name  
 ④ Select Exclusive (optional)  
 ⑤ Select Video Mode (optional)  
 ⑥ 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 **Exclusive** (optional) ☐

④ **Video Mode**

⑤

## Command join video – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Encoder Device Name  
 ③ Enter Decoder or Group name  
 ④ Select Exclusive (optional)  
 ⑤ Select Video Mode (optional)  
 ⑥ Click Finish button

**Select Mode**

☐ Wizard  
☒ Normal

① **Security Key** (optional)

② **Encoder Device Name**

③ **Decoder / Group**

④ **Exclusive** (optional) ☐

⑤ **Video Mode** No Change ▼

⑥

## Command join video – Wizard Mode

Parameters ×

① Select Encoder Device Name  
 ② ① Select Device(s)  
 ③ ② Select Decoder or Group name  
 ④ Select Exclusive (optional)  
 ⑤ Select Video Mode (optional)  
 ⑥ 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 **Exclusive** (optional) ☐

④ **Video Mode** No Change ▼

⑤

## Command join video – 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 **Exclusive** (optional) ☐

⑤

## Command join audio – 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

② ②

③ **Exclusive** (optional) ☐

④

## Command join video – 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 Exclusive (optional) ☐

⑤

## Command join serial – Wizard Mode

Parameters ×

① Select Encoder Device Name  
 ② ① Select Device(s)  
 ③ ② Select Decoder or Group name  
 ④ Select options  
 ⑤ 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 Exclusive (optional) ☐

④

Only devices in serial Matrix mode will be seen in the device lists.

## Command join ir – 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 Exclusive (optional) ☐

⑤

## Command join ir – 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

② ②

③ Exclusive (optional) ☐

④

### Command join usb – 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 Exclusive (optional) ☐

⑤

### Command join usb – 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

② ②

③ Exclusive (optional) ☐

④



## Command join kvm – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Encoder Device Name  
 ③ Enter Decoder or Group name  
 ④ Select Exclusive (optional)  
 ⑤ Select Video Mode (optional)  
 ⑥ Click Finish button

**Select Mode** ☐ Wizard ☒ Normal

① **Security Key** (optional)

② **Encoder Device Name**

③ **Decoder / Group**

④ **Exclusive** (optional) ☐

⑤ **Video Mode**

⑥

## Command join kvm – Wizard Mode

Parameters ×

① Select Encoder Device Name  
 ② ① Select Device(s)  
 ③ ② Select Decoder or Group name  
 ④ Select Exclusive (optional)  
 ⑤ Select Video Mode (optional)  
 ⑥ 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 **Exclusive** (optional) ☐

④ **Video Mode**

⑤

## Command join kvm – Normal Mode

Parameters ×

① Enter optional Security Key

② Enter Encoder Device Name

③ Enter Decoder Device Name

④ Select Wall Type

⑤ Select Display Position

⑥ Optionally change display resolution and framerate

⑥ ① Enter Resolution Width

⑥ ② Enter Resolution Height

⑥ ③ Enter Framerate

⑦ Optionally apply bezel compensation

⑦ ① Enter Display Width

⑦ ② Enter Viewable Height

⑦ ③ Enter Display Height

⑦ ④ Enter Viewable Height

⑧ Click Finish button

**Select Mode**

☐ Wizard

☒ Normal

**Security Key (optional)** ①

**Encoder Device Name** ②

**Decoder Device Name** ③

**Wall Type** ④

**Display Position** ⑤

**Width (optional)** ⑥ ①

**Height (optional)** ⑥ ②

**Frame Rate (optional)** ⑥ ③

**Display Width (mm) (optional)** ⑦ ①

**Viewable Width (mm) (optional)** ⑦ ②

**Display Height (mm) (optional)** ⑦ ③

**Viewable Height (mm) (optional)** ⑦ ④

⑧

## Command join wall – Advanced Mode

Parameters ×

① Select Encoder Device Name

② Select Decoder Device Name

③ Select Wall Type

④ Select Display Position

⑤ Select Video Mode

⑥ Optionally apply bezel compensation

⑥ ① Enter Display Width

⑥ ② Enter Viewable Height

⑥ ③ Enter Display Height

⑥ ④ Enter Viewable Height

⑦ Click Finish button

**Select Mode**

☒ Wizard

☐ Normal

**Security Key (optional)** 31393031336333333431613264333465

**Encoder Device Name** ①

**Decoder Device Name** ②

**Wall Type** ③

**Display Position** ④

**Video Mode (optional)** ⑤

**Display Width (mm) (optional)** ⑥ ①

**Viewable Width (mm) (optional)** ⑥ ②

**Display Height (mm) (optional)** ⑥ ③

**Viewable Height (mm) (optional)** ⑥ ④

⑦

### Command join usb\_ext – Normal Mode

**Parameters** ×

① Enter optional Security Key

② Enter Host Device Name

③ Enter Client Name

④ Select options

⑤ Click Finish button

Select Mode

☐ Wizard

☒ Normal

① Security Key (optional)

② HOST (COMPUTER)

③ CLIENT (PERIPHERAL)

④ Exclusive (optional)

☐

⑤

### Command join usb\_ext – Wizard Mode

**Parameters** ×

① Enter Host Device Name

② Enter Client Name

③ Select options

④ Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

① HOST (COMPUTER)

② CLIENT (PERIPHERAL)

③ Exclusive (optional)

☐

④

### Command leave all – 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

### Command leave all – 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

① ②

②

### 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

### 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)

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

① ②

②

### 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

### Command leave video – Wizard Mode

Parameters ×

① Select Device(s)  
 ② Select Decoder or Group name  
 ③ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

① Select  
☒ Decoder Device Name  
☐ Group Name  
☐ All

②

③

### Command leave audio – 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

### Command leave audio – Wizard Mode

Parameters ×

① Select Device(s)  
 ② Select Decoder or Group name  
 ③ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

① Select  
☒ Decoder Device Name  
☐ Group Name  
☐ All

②

③

### 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

### Command leave serial – Wizard Mode

Parameters ×

① Select Device(s)  
 ② Select Decoder or Group name  
 ③ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

① Select  
☒ Decoder Device Name  
☐ Group Name  
☐ All

②

③

Only devices in serial Matrix mode will be seen in the device lists.

### Command leave ir – 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

### Command leave ir – Wizard Mode

Parameters ×

① Select Device(s)  
 ② Select Decoder or Group name  
 ③ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

① Select  
☒ Decoder Device Name  
☐ Group Name  
☐ All

②

③

## Command leave usb – 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

## Command leave usb – 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

① ②

②

## Command leave kvm – 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

## Command leave kvm – 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

① ②

②

### Command leave usb\_ext – Normal Mode

**Parameters** ×

① Enter optional Security Key

② Enter Client Name

③ Click Finish button

Select Mode

☐ Wizard

☒ Normal

① Security Key (optional)

② CLIENT (PERIPHERAL)

③

✓ Finish

### Command leave usb\_ext – Wizard Mode

**Parameters** ×

① Select Client

② Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

① CLIENT (PERIPHERAL)

②

✓ Finish



### Command stop – Normal 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 stop – Wizard Mode

Parameters ×

① Select Encoder  
 ② Click Finish button

**Select Mode** ☒ Wizard ☐ Normal

Security Key (optional)

① Select ☒ Encoder Device Name ☐ Group Name ☐ All Encoders

②

### Command start – Normal 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 – Wizard Mode

Parameters ×

① Select Encoder  
 ② Click Finish button

**Select Mode** ☒ Wizard ☐ Normal

Security Key (optional)

① Select ☒ Encoder Device Name ☐ Group Name ☐ All Encoders

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

### 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

### Command set audio\_source – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Encoder Device Name  
 ③ Select Audio Source  
 HDMI / ANALOG  
 ④ Click Finish button

Select Mode  
☐ Wizard  
☒ Normal

① Security Key (optional)

② Encoder Device Name

③ Audio Source

④

### Command set audio\_source – Wizard Mode

Parameters ×

① Select Encoder Device Name  
 ② Select Audio Source  
 AUTO / HDMI / ANALOG  
 ③ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

① Encoder Device Name

② Audio Source

③

## Command set edid – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Encoder or Group name  
 ③ Enter EDID string  
 ④ Click Finish button

**Select Mode**

☐ Wizard  
☒ Normal

① Security Key (optional)

② Encoder / Group

③ EDID

④ ✓ Finish

## Command set edid – Wizard Mode

Parameters ×

① Select Encoder or Group name  
 ② Select EDID type  
 ③ ① Select:  
 Default EDID  
 Decoder EDID  
 User Defined  
 ② ② Select External EDID  
 ② ③ Enter User Defined EDID  
 ③ Click Finish button

**Select Mode**

☒ Wizard  
☐ Normal

**Security Key (optional)**

33633730313431623063353037643064

① **Select**

☒ Encoder Device Name  
☐ Group Name  
☐ All Encoders

② ① **EDID**

User Defined

② ② 🔍 External File

② ③ **EDID**

③ ✓ Finish

### Command set frame\_converter – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Encoder Device Name  
 ③ Enter Frame Rate 0..59  
 ④ Click Finish button

Select Mode ☐ Wizard ☒ Normal

① Security Key (optional)

② Encoder Device Name

③ Frame Rate

④

### Command set frame\_converter – Wizard Mode

Parameters ×

① Select Encoder Device Name  
 ② Select Frame Rate AUTO  
 ③ Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

① Encoder Device Name

② Frame Rate

③

Parameters ×

① Select Encoder Device Name  
 ② Select Frame Rate User Defined  
 ③ Select Frame Rate  
 ④ Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

① Encoder Device Name

② Frame Rate

③

④

### Command set listener – Normal Mode

Example turning ON a listener

Parameters ×

① Enter optional Security Key  
 ② Enter UDP Multicast IP  
 ③ Enter Notify IP Port  
 ④ Select Protocol UDP  
 ⑤ Enter device IP Address  
 ⑥ Select State ON, OFF or ANY  
 ⑦ Select listener service ENABLED  
 ⑧ Select the device I/O port  
 ⑨ Select Preset  
 ⑩ Set optional delay time  
 ⑪ Click Finish button

Select Mode  
☐ Wizard  
☒ Normal

① Security Key (optional)

② Notify Address  
 239.255.250.250

③ Notify Port  
 9160

④ Protocol  
 UDP

⑤ Device Address  
 172.30.10.114

⑥ State  
 ON

⑦ Service  
 ENABLED

⑧ Device Port  
 1

⑨ Preset Name  
 MyNewPreset

⑩ Delay (minutes)(optional)  
 0 60

⑪ ✓ Finish

Example turning OFF a listener

Parameters ×

① Enter optional Security Key  
 ② Enter UDP Multicast IP  
 ③ Enter Notify IP Port  
 ④ Select Protocol UDP  
 ⑤ Enter device IP Address  
 ⑥ Select State ON, OFF or ANY  
 ⑦ Select listener service DISABLED  
 ⑧ Select the device I/O port  
 ⑨ Click Finish button

Select Mode  
☐ Wizard  
☒ Normal

① Security Key (optional)

② Notify Address  
 239.255.250.250

③ Notify Port  
 9160

④ Protocol  
 UDP

⑤ Device Address  
 172.30.10.114

⑥ State  
 ON

⑦ Service  
 DISABLED

⑧ Device Port  
 1

⑨ ✓ Finish

## Command set listener – Wizard Mode

Example configuring and turning ON a listener

Parameters

1 Select Device or Click Device Discovery button

Select Mode

☒ Wizard
 ☐ Normal

1

Security Key (optional)

37343230376633323039323134313164

Select Device

Device Discovery

Notify Address

0.0.0.0

Notify Port

Protocol

State

Service

DISABLED

Device Port

Finish

Parameters

2 Select Device

Select Mode

☒ Wizard
 ☐ Normal

Security Key (optional)

37343230376633323039323134313164

Select Device

Device Discovery

2

Discovered Devices

000C1EE08C16@172.30.10.103 (iTachFlexEthernet)

000C1E0364F2@172.30.10.113 (iTachFlexEthernet)

000C1E052A94@172.30.10.130 (GCIR3)

000C1E05019E@172.30.10.107 (iTachIP2IR)

000C1E0370B9@172.30.10.115 (iTachFlexWiFi)

000C1E039F54@172.30.10.103 (iTachWF2IR)

000C1EE0CDA5@172.30.10.111 (iTachFlexEthernetPoE)

Refresh

Notify Address

0.0.0.0

Notify Port

Protocol

State

Service

ENABLED

Device Port

Preset Name

Delay (minutes)(optional)

0

60

Finish

## Command set listener – Wizard Mode continued...

Parameters

Select Mode

☒ Wizard
 ☐ Normal

Security Key (optional)

37343230376633323039323134313164


Select Device

000C1E05019E@172.30.10.107 (iTachiP2IR)

Alias Name (optional)

Description (optional)

Save



Select I/O

☒ 3
 ☐ 4
 ☐ 5

4 Select Mode

Sensor Notify

5 Notify Port

9160

6 Notify Timer

0

7 Set

\* 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.

Notify Address

239.255.250.250

Notify Port

9160

Protocol

UDP

Device Address

172.30.10.107

8 State

ON

9 Service

ENABLED

3 Device Port

1

10 Preset Name

MyNewPreset

11 Delay (minutes)(optional)

0

60

12 Finish

### Command set listener – Wizard Mode continued...

Example turning OFF a listener

Parameters

Select Mode

☒ Wizard
 ☐ Normal

Security Key (optional)

37343230376633323039323134313164

Select Device

000C1E05019E@172.30.10.107 (iTachIP2IR)

Device Discovery

Alias Name (optional)

Description (optional)

Save

Select I/O

☒ 3
 ☐
☐
☐

Select Mode

Sensor Notify

Notify Port

9160

Notify Timer

0

Set

Notify Address

239.255.250.250

Notify Port

9160

Protocol

UDP

Device Address

172.30.10.107

4 State

ON

5 Service

DISABLED

3 Device Port

1

6 Finish



## Command set rotation – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Decoder Device Name  
 ③ Select Rotation  
 ④ Click Finish button

Select Mode ☐ Wizard  
☒ Normal

① Security Key (optional)

② Decoder Device Name

③ Rotation

④

## Command set rotation – Wizard Mode

Parameters ×

① Select Decoder Device Name  
 ② Select Rotation  
 ③ Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

① Decoder Device Name

② Rotation

③

## Command set scaler – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Decoder Device Name  
 ③ Select Mode  
 ④ Click Finish button

Select Mode ☐ Wizard  
☒ Normal

① Security Key (optional)

② Decoder Device Name

③ Mode

④

## Command set scaler – Wizard Mode

Parameters ×

① Select Decoder Device Name  
 ② Select Mode  
 ③ Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

① Decoder Device Name

② Mode

③

### Command set var – Normal Mode

**Parameters** ×

① Enter optional Security Key

② Enter Variable Name

\* MAX 256 characters

③ Enter value

\* MAX 256 characters

④ Click Finish button

Select Mode

☐ Wizard

☒ Normal

① Security Key (optional)

② Variable Name

③ Value

④

## Command set var – Normal Mode

Parameters ×

1 Select / Enter Variable Name  
 \* MAX 256 characters

2 1 Select Delete  
 2 2 1 Or select Value type  
 Data String / Boolean / Integer  
 2 2 2 Enter Value  
 \* MAX 256 characters  
 3 Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional) 38383530636161613230323130346434

1 Variable Name myVAR

2 1 Delete ☐

2 2 1 Value Data String

2 2 2

3

Parameters ×

1 Select / Enter Variable Name  
 \* MAX 256 characters

2 1 Select Delete  
 2 2 1 Or select Value type  
 Data String / Boolean / Integer  
 2 2 2 Select Value  
 False / True  
 3 Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional) 38383530636161613230323130346434

1 Variable Name myVAR

2 1 Delete ☐

2 2 1 Value Boolean

2 2 2 False

3

Parameters ×

1 Select / Enter Variable Name  
 \* MAX 256 characters

2 1 Select Delete  
 2 2 1 Or select Value type  
 Data String / Boolean / Integer  
 2 2 2 1 Enter Value  
 2 2 2 2 Or select Dynamic Level  
 3 Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional) 38383530636161613230323130346434

1 Variable Name myVAR

2 1 Delete ☐

2 2 1 Value Integer

2 2 2 1

2 2 2 2 Dynamic Level Slider Value ☐ \* Used within a slider preset to set a variable with the sliders value

3

### Command set video\_mute – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Decoder Device Name  
 ③ Select Option  
 Enabled / Disabled  
 ④ Click Finish button

Select Mode  
☐ Wizard  
☒ Normal

① Security Key (optional)

② Decoder Device Name

③ Option

④

### Command set video\_mute – Wizard Mode

Parameters ×

① Select Decoder Device Name  
 ② Select Option  
 Enabled / Disabled  
 ③ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

① Decoder Device Name

② Option

③

### Command set video\_quality – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Encoder Device Name  
 ③ Select Option AUTO / 0..5  
 ④ Click Finish button

Select Mode  
☐ Wizard  
☒ Normal

① Security Key (optional)

② Encoder Device Name

③ Option

④

### Command set video\_quality – Wizard Mode

Parameters ×

① Select Encoder Device Name  
 ② Select Option AUTO / 0..5  
 ③ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

① Encoder Device Name

② Option

③

### Command set volume – Normal Mode

**Parameters** ×

① Enter optional Security Key

② Enter Device Name

③ Select Volume level

④ Click Finish button

Select Mode

☐ Wizard

☒ Normal

① Security Key (optional)

② Device Name

③ Analog Audio Output Volume

0

100

④

✓ Finish

### Command set volume – Wizard Mode

① Select Device Name

② Select Volume level

③ Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

① Select

② Analog Audio Output Volume

0

100

③

✓ Finish

### 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

### Command set events – Wizard Mode

① Select Event Name

② Select Value

③ Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

① Events

Function

② Value

③

## Command get audio\_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

## Command get audio\_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

## Command get devices – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Select Device  
 ALL / ALL DECODERS / ALL ENCODERS  
 (ALL HOST DEVICES / ALL CLIENT DEVICES)  
 ③ Click Finish button

Select Mode ☐ Wizard  
☒ Normal

① Security Key (optional)

② Select Device

③

## Command get devices – Wizard Mode

Parameters ×

① Select Device  
 ALL / ALL DECODERS / ALL ENCODERS  
 (ALL HOST DEVICES / ALL CLIENT DEVICES)  
 ② Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

① Select Device

②

## 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

## Command get display\_status – Wizard Mode

Parameters ×

① Select Decoder Device Name  
 ② Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

① Decoder Device Name

②

## 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

## Command get edid – Wizard Mode

Parameters ×

① Select Decoder Device Name  
 ② Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

① Decoder Device Name

②



### Command get frame\_converter – 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

### Command get frame\_converter – Wizard Mode

**Parameters** ×

① Select Encoder Device Name

② Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

① Encoder Device Name

②

## Command get preferred – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Decoder Device Name  
 ③ Select Resolution  
 WIDTH / HEIGHT / FRAME RATE  
 ④ Click Finish button

Select Mode  
☐ Wizard  
☒ Normal

① Security Key (optional)

② Decoder Device Name

③ Resolution

④

## Command get preferred – Wizard Mode

Parameters ×

① Select Decoder Device Name  
 ② Select Resolution  
 WIDTH / HEIGHT / FRAME RATE  
 ③ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

① Decoder Device Name

② Resolution

③

## Command get rotation – 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

## Command get rotation – Wizard Mode

Parameters ×

① Select Decoder Device Name  
 ② Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

① Decoder Device Name

②

## Command get scaler – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Decoder Device Name  
 ③ Select Option  
 ALL / WIDTH / HEIGHT / FRAME RATE  
 ④ Click Finish button

Select Mode  
☐ Wizard  
☒ Normal

① Security Key (optional)

② Decoder Device Name

③ Option

④

## Command get scaler – Wizard Mode

Parameters ×

① Select Decoder Device Name  
 ② Select Option  
 ALL / WIDTH / HEIGHT / FRAME RATE  
 ③ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

① Decoder Device Name

② Option

③

## Command get status – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Device Name  
 ③ Select Streams  
 VIDEO / AUDIO / IR / SERIAL / USB  
 ④ Click Finish button

Select Mode  
☐ Wizard  
☒ Normal

① Security Key (optional)

② Device Name

③ Streams (optional)

④

## Command get status – Wizard Mode

Parameters ×

① Select Device Name  
 ② Select Streams  
 VIDEO / AUDIO / IR / SERIAL / USB  
 ③ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

① Device Name

② Streams (optional)

③

## Command get var – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Variable Name  
 ③ Click Finish button

Select Mode ☐ Wizard  
☒ Normal

① Security Key (optional)

② Variable Name

③

## Command get var – Wizard Mode

Parameters ×

① Enter /Select Variable Name  
 ② Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

① Variable Name

②

## Command get ver – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Select Device  
 ALL / ALL DECODERS / ALL ENCODERS  
 ③ Click Finish button

Select Mode ☐ Wizard  
☒ Normal

① Security Key (optional)

② Device Name

③

## Command get ver – Wizard Mode

Parameters ×

① Select Device  
 ALL / ALL DECODERS / ALL ENCODERS  
 ② Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

① Device Name

②

## Command get video – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Encoder Device Name  
 ③ Select Option  
 ALL / WIDTH / HEIGHT / FRAME RATE / SCAN MODE  
 ④ Click Finish button

Select Mode  
☐ Wizard  
☒ Normal

① Security Key (optional)

② Encoder Device Name

③ Option

④

## Command get video – Wizard Mode

Parameters ×

① Select Encoder Device Name  
 ② Select Option  
 ALL / WIDTH / HEIGHT / FRAME RATE / SCAN MODE  
 ③ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

① Encoder Device Name

② Option

③

## 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

## 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

### Command get video\_quality – 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

### Command get video\_quality – Wizard Mode

Parameters ×

① Select Encoder Device Name  
 ② Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

① Encoder Device Name

②

### 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

### Command get video\_status – Wizard Mode

Parameters ×

① Select Encoder Device Name  
 ② Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

① Encoder Device Name

②

## Command get volume – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Select Device  
 ③ Click Finish button

Select Mode ☐ Wizard  
☒ Normal

① Security Key (optional)

② Device Name

③

## Command get volume – Wizard Mode

Parameters ×

① Select Device  
 ② Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

① Device Name

②

## 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

## 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

## Command get joins – Normal Mode

Parameters ×

① Enter optional Security Key

② Select Subscription type  
 Video / Audio / Serial / Infrared / USB / (USB Extenders)

③ Enter Device Name

④ Click Finish button

**Select Mode**

☐ Wizard

☒ Normal

① Security Key (optional)

② Subscription

③ Device Name

④

## Command get joins – Wizard Mode

Parameters ×

① Select Subscription type  
 Video / Audio / Serial / Infrared / USB / (USB Extenders)

② Select Device

③ Click Finish button

**Select Mode**

☒ Wizard

☐ Normal

Security Key (optional)

① Subscription

② Device Name

③

## Command get matrix – Normal Mode

Parameters ×

① Enter optional Security Key

② Select Stream type  
 Video / Audio / Serial / Infrared / USB / (USB Extenders)

③ Click Finish button

**Select Mode**

☐ Wizard

☒ Normal

① Security Key (optional)

② Streams

③

## Command get matrix – Wizard Mode

Parameters ×

① Select Stream type  
 Video / Audio / Serial / Infrared / USB / (USB Extenders)

② Click Finish button

**Select Mode**

☒ Wizard

☐ Normal

Security Key (optional)

① Streams

②



### Command send cec – Normal Mode

**Parameters** ×

① Enter optional Security Key

② Enter Device

③ Enter CEC code

④ Click Finish button

Select Mode

☐ Wizard

☒ Normal

① Security Key (optional)

② Device / Group

③ CEC Code

④

✓ Finish

### Command send cec – Wizard Mode

**Parameters** ×

① Select Device

② Select / Enter CEC code

③ Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

① Select

☒ Device Name

☐ Group Name

☐ All

☐ All Decoders

☐ All Encoders

② CEC Code

③

✓ Finish

### Command send cec\_off – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Device  
 ③ Click Finish button

Select Mode ☐ Wizard  
☒ Normal

① Security Key (optional)

② Decoder / Group

③

### Command send cec\_off – Wizard Mode

Parameters ×

① Select Device  
 ② Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

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

②

### Command send cec\_on – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter Device  
 ③ Click Finish button

Select Mode ☐ Wizard  
☒ Normal

① Security Key (optional)

② Decoder / Group

③

### Command send cec\_on – Wizard Mode

Parameters ×

① Select Device  
 ② Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

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

②

### Command send gc – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter device IP Address  
 ③ Select device port  
 ④ Enter command string  
 ⑤ Click Finish button

**Select Mode** ☐ Wizard ☒ Normal

① **Security Key (optional)**

② **IP Address**

③ **Port**

④ **Global Caché Command**

⑤

### Command send gc – Wizard Mode

Parameters ↻ ×

① Click Device Discovery button  
 ② Select required device

**Select Mode** ☒ Wizard ☐ Normal

**Security Key (optional)**

Select Device

①

**Discovered Devices**

- 000C1EC01DB1@172.30.10.138 (GC-100-12)
- 000C1E05978B@172.30.10.109 (iTachIP2SL)
- 000C1EE08C16@172.30.10.103 (iTachFlexEthernet)
- 000C1E0364F2@172.30.10.113 (iTachFlexEthernet)
- 000C1E052A93@172.30.10.143 (GC232)
- 000C1E052A92@172.30.10.132 (GCHMX3)
- 000C1E052A95@172.30.10.136 (GCRL3A)

②

**IP Address**

**Port**

**Disconnect (optional)** ☐

**Global Caché Command**

### Command send gc – Wizard Mode continued...

Parameters

Select Mode

☒ Wizard  
☐ Normal

Security Key (optional)

37343230376633323039323134313164

Select Device

▼

Device Discovery

Wizard

Config Page

000C1EC01DB1@172.30.10.138 (GC-100-12)

Alias Name (optional)

Description (optional)

Save

IP Address

172.30.10.138

Port

4998 ▼

Disconnect (optional)

☐

Global Caché 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.*

### Command send gc – Wizard Mode continued...

When using the Wizard an image of the device will be shown and if multiple I/O's are available for the device a selection will be available that will automatically set the TCP Port and create the command line for you.

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

Parameters

Select Mode

☒ Wizard
 ☐ Normal

Security Key (optional)

37343230376633323039323134313164

Select Device

Device Discovery

Wizard

Config Page

000C1EC01DB1@172.30.10.138 (GC-100-12)

Network

Serial

☒
☐
☐
☐
☐
☐
☐
☐
☐
☐

1

Select I/O

Protocol

ASCII

2

String to Send

3

Append CR (optional)

☐

Append LF (optional)

☐

4

Feedback (optional)

NONE

5

Set

IP Address

172.30.10.138

Port

4999

Disconnect (optional)

☐

Global Caché Command

6

Finish

1 Select I/O for RS232 port 1

2 Enter String to Send

3 Select terminator

4 Select Feedback options:  
 NONE / REPLY / EQUALS / CONTAINS

5 Click Set button

6 Click Finished button

### Command send gc – Wizard Mode continued...

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

Parameters

Select Mode

☒ Wizard  
☐ Normal

Security Key (optional)


37343230376633323039323134313164

Select Device

Device Discovery  
Wizard  
Config Page

000C1EC01DB1@172.30.10.138 (GC-100-12)

Network



Select I/O

☒ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Select State

☒ ☐

Set  
Get

IP Address

172.30.10.138

Port

4998

Disconnect (optional)

☐

Global Caché Command

setstate,3;1,1

Finish

1 Select I/O for relay 1  
2 Select relay State  
3 Click Set button  
4 Click Finished button

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 Director Controller must have internet access to access the online Global Caché cloud IR database.

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

Parameters

Select Mode

Select Device

Device Discovery

Wizard

Config Page

1 Select I/O

2 Select I/O mode of operation

3 1 Select Acquire mode available

3 2 Navigate the IR database

4 Click Set button

5 Click Finished button

Security Key (optional)

37343230376633323039323134313164

000C1EC01DB1@172.30.10.138 (GC-100-12)

Network

Select Mode

Infrared

2

Select I/O 1

Acquire Mode

Cloud Database

Global Cache

Manufacturer

Samsung

Device Type

TV

Device

Most Models

Function

POWER ON

4

Set Stop

IP Address

172.30.10.138

Port

4998

Disconnect (optional)

☐

Global Caché Command

sendir,4;3,1,38000,1,1,172,172,22,64,22,64,22,64,22,21,22,21,22,21,22,21,22,64,22,64,22,64,22,21,22,21

5

Finish

### 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

Security Key (optional)

37343230376633323039323134313164

Select Device

Device Discovery

Wizard

Config Page

000C1E0364F2@172.30.10.113 (iTachFlexEthernet)

FLC-SL

FLC-SL-MJ

FLC-SL-485

FLC-RS

FLC-1E

FLC-BL

FLC-T3

FLC-3E

FLC-2E1B

Network

Control

Sensor

IP Address

172.30.10.113

Port

4998

Disconnect (optional)

☐

Global Caché Command

Finish



### Command send ir – Normal Mode

**Parameters** ✕

① Enter optional Security Key

② Select Device

③ Enter IR code

④ Click Finish button

Select Mode

☐ Wizard

☒ Normal

① Security Key (optional)

② Device / Group

③ IR Code

④

### Command send ir – Wizard Mode

**Parameters** ✕

① Select Device

② Enter IR code

③ Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

① Select

☒ Device Name

☐ Group Name

☐ All

☐ All Decoders

☐ All Encoders

② IR Code

③

### Command send serial – Normal Mode

Parameters ×

① Enter optional Security Key

② ① Select a previously saved Device

② ② Enter an Alias for the Device

② ③ Enter a Description

\* This virtual device will save ① Security Key (optional)

all the settings and strings

③ Enter Device

④ Enter Data String

⑤ Leave NONE selected (when no feedback required)

⑥ Click Finish button

Select Mode

☐ Wizard

☒ Normal

② ①

Select Device

② ② Alias Name (optional)

② ③ Description (optional)

Save

③ Device / Group

④ Data String

⑤ Feedback (optional)

NONE

⑥

Finish

Parameters ×

① Enter optional Security Key

② ① Select a previously saved Device

② ② Enter an Alias for the Device

② ③ Enter a Description

\* This virtual device will save ① Security Key (optional)

all the settings and strings

③ Enter Device

④ Enter Data String

⑤ Select Reply (when feedback required)

⑥ Click Finish button

Select Mode

☐ Wizard

☒ Normal

② ①

Select Device

② ② Alias Name (optional)

② ③ Description (optional)

Save

③ Device / Group

④ Data String

⑤ Feedback (optional)

Reply

⑥

Finish

Parameters ×

① Enter optional Security Key

② ① Select a previously saved Device

② ② Enter an Alias for the Device

② ③ Enter a Description

\* This virtual device will save ① Security Key (optional)

all the settings and strings

③ Enter Device

④ Enter Data String

⑤ Select Contains (when part feedback compared)

⑥ Enter Feedback string

⑦ Click Finish button

Select Mode

☐ Wizard

☒ Normal

② ①

Select Device

② ② Alias Name (optional)

② ③ Description (optional)

Save

③ Device / Group

④ Data String

⑤ Feedback (optional)

Contains

⑥ Feedback String

⑦

Finish

Command send serial – Normal Mode continued...

Parameters
×

1 Enter optional Security Key
2 1 Select a previously saved Device
2 2 Enter an Alias for the Device
2 3 Enter a Description

\* This virtual device will save all the settings and strings
3 Enter Device
4 Enter Data String
5 Select Equals (when full feedback compared)
6 Enter Feedback string
7 Click Finish button

Select Mode

☐ Wizard
☒ Normal

1 Security Key (optional)

2 1 Select Device

2 2 Alias Name (optional)

2 3 Description (optional)

Save

3 Device / Group

4 Data String

5 Feedback (optional)

6 Feedback String

7 Finish

### Command send serial – Wizard Mode

Parameters ×

① ① Select a previously saved Device  
 ① ② Enter an Alias for the Device  
 ① ③ Enter a Description  
 \* This virtual device will save all the settings and strings

② Select Device  
 ③ Select string format  
 Device Protocol HEX:  
 HEX or ASCII  
 Device Protocol ASCII:  
 ASCII only  
 ④ Enter Data String  
 ⑤ Leave None selected  
 (when no feedback required)  
 ⑥ Click Finish button

**Select Mode**

☒ Wizard  
☐ Normal

**Security Key** (optional) 38383530636161613230323130346434

① ① Select Device

① ② Alias Name (optional)

① ③ Description (optional)

Save

② Select

☒ Device Name  
☐ Group Name  
☐ All  
☐ All Decoders  
☐ All Encoders

Encoder1

③ Protocol ASCII

④ Data String

Append CR (optional) ☐

Append LF (optional) ☐

⑤ Feedback (optional) NONE

⑥ Finish

Parameters ×

① ① Select a previously saved Device  
 ① ② Enter an Alias for the Device  
 ① ③ Enter a Description  
 \* This virtual device will save all the settings and strings

② Select Device  
 ③ Select string format  
 Device Protocol HEX:  
 HEX or ASCII  
 Device Protocol ASCII:  
 ASCII only  
 ④ Enter Data String  
 ⑤ Select Reply  
 (when feedback required)  
 ⑥ Click Finish button

**Select Mode**

☒ Wizard  
☐ Normal

**Security Key** (optional) 38383530636161613230323130346434

① ① Select Device

① ② Alias Name (optional)

① ③ Description (optional)

Save

② Select

☒ Device Name  
☐ Group Name  
☐ All  
☐ All Decoders  
☐ All Encoders

Encoder1

③ Protocol ASCII

④ Data String

Append CR (optional) ☐

Append LF (optional) ☐

⑤ Feedback (optional) Reply

⑥ Finish

## Command send serial – Wizard Mode continued...

Parameters

1 1 Select a previously saved Device

1 2 Enter an Alias for the Device

1 3 Enter a Description

\* This virtual device will save all the settings and strings

2 Select Device

3 Select string format

Device Protocol HEX:  
HEX or ASCII

Device Protocol ASCII:

4 Enter Data String

5 Select Contains  
(when part feedback compared)

6 Enter Feedback string

7 Click Finish button

Select Mode

☒ Wizard  
☐ Normal

Security Key (optional)

38383530636161613230323130346434

1 1 Select Device

Select Device

1 2 Alias Name (optional)

1 3 Description (optional)

Save

2 Select

☒ Device Name  
☐ Group Name  
☐ All  
☐ All Decoders  
☐ All Encoders

Encoder1

3 Protocol

ASCII

4 Data String

Append CR (optional)

☐

Append LF (optional)

☐

5 Feedback (optional)

Contains

6 Feedback String ASCII

Append CR (optional)

☐

Append LF (optional)

☐

7 Finish

Command send serial – Wizard Mode continued...

Parameters

1
1
Select a previously saved Device

1
2
Enter an Alias for the Device

1
3
Enter a Description

\* This virtual device will save all the settings and strings

2
Select Device

3
Select string format

Device Protocol HEX:

HEX or ASCII

Device Protocol ASCII:

ASCII only

4
Enter Data String

5
Select Equals

(when full feedback compared)

6
Enter Feedback string

7
Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

38383530636161613230323130346434

1
1

Select Device

1
2

Alias Name (optional)

1
3

Description (optional)

Save

2

Select

☒ Device Name

☐ Group Name

☐ All

☐ All Decoders

☐ All Encoders

Encoder1

3

Protocol

ASCII

4

Data String

Append CR (optional)

☐

Append LF (optional)

☐

5

Feedback (optional)

Equals

6

Feedback String ASCII

Append CR (optional)

☐

Append LF (optional)

☐

7

Finish

## Command send tcp – Normal Mode

Parameters ×

① Enter optional Security Key      **Select Mode**    ☐ Wizard  
 ② ① Select a previously saved Device                      ☒ Normal

② ② Enter an Alias for the Device

② ③ Enter a Description      ① **Security Key** (optional)

\* This virtual device will save all the settings and strings

③ Enter device IP Address                      ② ①

④ Enter device Port

⑤ Enter command string      ② ② **Alias Name** (optional)

⑥ Leave NONE selected  
 (when no feedback required)      ② ③ **Description** (optional)

⑦ Click Finish button

Save

③ **IP Address**

④ **Port**

⑤ **Command**

⑥ **Feedback** (optional)      NONE

⑦ **Finish**

Parameters ×

① Enter optional Security Key      **Select Mode**    ☐ Wizard  
 ② ① Select a previously saved Device                      ☒ Normal

② ② Enter an Alias for the Device

② ③ Enter a Description      ① **Security Key** (optional)

\* This virtual device will save all the settings and strings

③ Enter device IP Address                      ② ①

④ Enter device Port

⑤ Enter command string      ② ② **Alias Name** (optional)

⑥ Select Reply  
 (when feedback required)      ② ③ **Description** (optional)

⑦ Click Finish button

Save

③ **IP Address**

④ **Port**

⑤ **Command**

⑥ **Feedback** (optional)      Reply

⑦ **Finish**

## Command send tcp – Normal Mode continued...

### Parameters

① Enter optional Security Key  
 ② ① Select a previously saved Device  
 ② ② Enter an Alias for the Device  
 ② ③ Enter a Description  
 \* This virtual device will save ① Security Key (optional)  
 all the settings and strings  
 ③ Enter device IP Address ② ①  
 ④ Enter device Port  
 ⑤ Enter command string ② ② Alias Name (optional)  
 ⑥ Select Contains  
 ⑦ (when part feedback compared) Enter Feedback string ② ③ Description (optional)  
 ⑧ Click Finish button

Select Mode ☐ Wizard  
☒ Normal

① Security Key (optional)

Select Device

② ② Alias Name (optional)

② ③ Description (optional)

Save

③ IP Address

④ Port

⑤ Command

⑥ Feedback (optional)

⑦ Feedback String (optional)

⑧ Finish

### Parameters

① Enter optional Security Key  
 ② ① Select a previously saved Device  
 ② ② Enter an Alias for the Device  
 ② ③ Enter a Description  
 \* This virtual device will save ① Security Key (optional)  
 all the settings and strings  
 ③ Enter device IP Address ② ①  
 ④ Enter device Port  
 ⑤ Enter command string ② ② Alias Name (optional)  
 ⑥ Select Equals  
 ⑦ (when full feedback compared) Enter Feedback string ② ③ Description (optional)  
 ⑧ Click Finish button

Select Mode ☐ Wizard  
☒ Normal

① Security Key (optional)

Select Device

② ② Alias Name (optional)

② ③ Description (optional)

Save

③ IP Address

④ Port

⑤ Command

⑥ Feedback (optional)

⑦ Feedback String (optional)

⑧ Finish



## Command send tcp – Wizard Mode

Parameters ×

① ① Select a previously saved Device  
 ① ② Enter an Alias for the Device  
 ① ③ Enter a Description  
 \* This virtual device will save all the settings and strings  
 ② Enter device IP Address  
 ③ Enter device Port  
 ④ Select string format  
 ASCII / HEX  
 ⑤ Enter command string  
 ⑥ Leave NONE selected  
 (when no feedback required)  
 ⑦ Click Finish button

**Select Mode**  
☒ Wizard  
☐ Normal

**Security Key (optional)**  
 31393031336333333431613264333465

① ① Select Device

② Alias Name (optional)

① ③ Description (optional)

Save

② IP Address

③ Port

Disconnect (optional)

④ Protocol
 ASCII

⑤ Command

Append CR (optional)

Append LF (optional)

⑥ Feedback (optional)
 NONE

⑦ Finish

Parameters ×

① ① Select a previously saved Device  
 ① ② Enter an Alias for the Device  
 ① ③ Enter a Description  
 \* This virtual device will save all the settings and strings  
 ② Enter device IP Address  
 ③ Enter device Port  
 ④ Select string format  
 ASCII / HEX  
 ⑤ Enter command string  
 ⑥ Select Reply  
 (when feedback required)  
 ⑦ Click Finish button

**Select Mode**  
☒ Wizard  
☐ Normal

**Security Key (optional)**  
 31393031336333333431613264333465

① ① Select Device

② Alias Name (optional)

① ③ Description (optional)

Save

② IP Address

③ Port

Disconnect (optional)

④ Protocol
 ASCII

⑤ Command

Append CR (optional)

Append LF (optional)

⑥ Feedback (optional)
 Reply

⑦ Finish

Command send tcp – Wizard Mode continued...

Parameters

① ① Select a previously saved Device  
 ① ② Enter an Alias for the Device  
 ① ③ Enter a Description  
 \* This virtual device will save all the settings and strings  
 ② Enter device IP Address  
 ③ Enter device Port  
 ④ Select string format  
 ASCII / HEX  
 ⑤ Enter command string  
 ⑥ Select Contains  
 (when port feedback compared)  
 ⑦ Enter Feedback string  
 ⑧ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)  
 31393031336333333431613264333465

① ① Select Device  
 Select Device

① ② Alias Name (optional)

① ③ Description (optional)

Save

② IP Address

③ Port

Disconnect (optional)

④ Protocol  
 ASCII

⑤ Command

Append CR (optional)

Append LF (optional)

⑥ Feedback (optional)  
 Contains

⑦ Feedback String

Append CR (optional)

Append LF (optional)

⑧ Finish

Command send tcp – Wizard Mode continued...

Parameters

1 1 Select a previously saved Device

1 2 Enter an Alias for the Device

1 3 Enter a Description

\* This virtual device will save all the settings and strings

2 Enter device IP Address

3 Enter device Port

4 Select string format

ASCII / HEX

5 Enter command string

6 Select Equals

(when all feedback compared)

7 Enter Feedback string

8 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

31393031336333333431613264333465

1 1

Select Device

1 2 Alias Name (optional)

1 3 Description (optional)

Save

2 IP Address

3 Port

Disconnect (optional)

☐

4 Protocol

ASCII

5 Command

Append CR (optional)

☐

Append LF (optional)

☐

6 Feedback (optional)

Equals

7 Feedback String

Append CR (optional)

☐

Append LF (optional)

☐

8

Finish

### Command preset add

**Parameters** ×

1 Enter Preset Name

2 Enter Preset Command

3 Click Finish button

Security Key (optional)

31393031336333333431613264333465

1 Preset Name

2 Preset Data

3

✓ 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 Preset Name

2 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

31393031336333333431613264333465

1 Preset Name

2

✓ Finish

### Command preset load – Normal Mode

**Parameters** ×

① Enter optional Security Key

② Enter Preset Name

③ Enter optional delay time

④ Click Finish button

Select Mode

☐ Wizard

☒ Normal

① Security Key (optional)

② Preset Name

③ Delay [minutes] (optional)

④

### Command preset load – Wizard Mode

**Parameters** ×

① Select Preset Name

② ① Select optional delay time

② ② or select Cancel

③ Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

① Preset Name

② ② Cancel

☐

② ① Delay [minutes] (optional)

0

60

③

### 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 Session Timeout (optional)

⑤ Client Limit (optional)

⑥ Login (optional)

⑦

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

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

### Command set ui – Normal Mode

Parameters ×

① Select UI Name  
 ② Select Service > Enabled  
 ③ Select optional UI Timeout  
 ④ Enter optional Client Limit (1 – 100)  
 ⑤ Select optional Login None / Random / Fixed  
 ⑥ Optionally select Dynamic UI Name  
 ⑦ Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional) 37343230376633323039323134313164

① UI Name demo\_ui

② Service Enabled

③ Session Timeout (optional)

④ Client Limit (optional) ☒ 1 100

⑤ Login (optional)

⑥ Dynamic UI Name ☐ \*Select Dynamic UI Name to replace the selected UI Name in preset command string

⑦

Parameters ×

① Select UI Name  
 ② Select Service > Disabled  
 ③ Optionally select Dynamic UI Name  
 ④ Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional) 37343230376633323039323134313164

① UI Name demo\_ui

② Service Disabled

③ Dynamic UI Name ☐ \*Select Dynamic UI Name to replace the selected UI Name in preset command string

④

Parameters ×

① Select UI Name  
 ② Select Service > Logout  
 ③ Optionally select Dynamic UI Name  
 ④ Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional) 37343230376633323039323134313164

① UI Name demo\_ui

② Service Logout

③ Dynamic UI Name ☐ \*Select Dynamic UI Name to replace the selected UI Name in preset command string

④

### Command set ui\_button – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter UI Name
- Enter Button Name
- Select Function  
Position / State / Text / Press
- Enter Value
- Click Finish button

**Select Mode**

☐ Wizard

☒ Normal

**Security Key** (optional)

**UI Name**

**Button / Group Name**

**Function**

**Value**

**Finish**

### Command set ui\_button – Wizard Mode

Parameters ×

- Select UI Name
- Select either Button Name or Group
- Select Button or Group Name
- Select Function  
Position / State / Text / Press
- Select Button Position either Up or Down
- Optionally select Dynamic UI Name
- Click Finish button

**Select Mode**

☒ Wizard

☐ Normal

**Security Key** (optional)

**UI Name**

**Select**

**Button Name**

**Function**

**Value**

**Dynamic UI Name**

☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

**Finish**



## Command set ui\_button – Wizard Mode continued...

Parameters ×

1 Select UI Name

2 Select either Button Name or Group

3 Select Button or Group Name

4 Select Function

5 Select Value either Disabled or Enabled

6 Optionally select Dynamic UI Name

7 Click Finish button

**Select Mode**

☒ Wizard

☐ Normal

**Security Key (optional)** 38383530636161613230323130346434

1 UI Name demo\_ui

2 Select Select Button

3 Button Name btnToggle

4 Function State

5 Value Disabled

6 Dynamic UI Name ☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

7

Parameters ×

1 Select UI Name

2 Select either Button Name or Group

3 Select Button or Group Name

4 Select Function

5 Select Button Position

6 Enter Value

7 Optionally select Dynamic UI Name

8 Click Finish button

**Select Mode**

☒ Wizard

☐ Normal

**Security Key (optional)** 38383530636161613230323130346434

1 UI Name demo\_ui

2 Select Select Button

3 Button Name btnToggle

4 Function Text

5 Button Position Up

6 Value

7 Dynamic UI Name ☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

8

### Command set ui\_button – Wizard Mode continued...

**Parameters** ×

1 Select UI Name

2 Select either Button Name or Group

3 Select Button or Group Name

4 Select Function

Position / State / Text / Press

5 Optionally select Preset Bypass

6 Optionally select Dynamic UI Name

7 Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

38383530636161613230323130346434

1 UI Name

demo\_ui

2 Select

Select Button

3 Button Name

btnToggle

4 Function

Press

5 Preset Bypass

☐

6 Dynamic UI Name

☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

7

✓ Finish

## Command set ui\_image – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter UI Name
- Enter Image Name
- Select Function Visibility
- Enter Value
- Click Finish button

**Select Mode**
☐ Wizard
 ☒ Normal

1 Security Key (optional)

2 UI Name

3 Image Name

4 Function

5 Value

6

## Command set ui\_image – Wizard Mode

Parameters ×

- Select UI Name
- Select Image Name
- Select Function Visibility
- Enter Value
- Optionally select Dynamic UI Name
- Click Finish button

**Select Mode**
☒ Wizard
 ☐ Normal

Security Key (optional)

1 UI Name

2 Image Name

3 Function

4 Value

5 Dynamic UI Name ☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

6

## Command set ui\_indicator – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter UI Name
- Enter Indicator Name
- Select Function
- Enter Value
- Click Finish button

**Select Mode**

☐ Wizard

☒ Normal

① Security Key (optional)

② UI Name

③ Indicator Name

④ Function

⑤ Value

⑥ ✓ Finish

## Command set ui\_indicator – Wizard Mode

Parameters ×

- Select UI Name
- Select Indicator Name
- Select Function Value
- ① Enter Value
- ② Or select Dynamic Value
- Optionally select Dynamic UI Name
- Click Finish button

**Select Mode**

☒ Wizard

☐ Normal

Security Key (optional)

38383530636161613230323130346434

① UI Name

demo\_ui

② Indicator Name

Value

③ Function

Value

④ ② Dynamic Value

☐ \* Used within a slider preset, Dynamic Value is used to update the indicator manually with the sliders value

④ ① Value

⑤ Dynamic UI Name

☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

⑥ ✓ 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

## 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 Optionally select Dynamic UI Name  
 ⑥ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

① UI Name

② Label Name

③ Function

④ Value

Dynamic UI Name

A color picker dialog is open, showing a red color selection. The dialog includes a color bar, a hex input field with the value #ff0000, and a 'Recent Colors' section.

Parameters ×

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

UI Name

Label Name

Function

Value

⑤ Dynamic UI Name ☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

⑥

### Command set ui\_label – Normal Mode

Parameters ×

① Select UI Name  
 ② Select Label Name  
 ③ Select Function  
 Color / Visibility / Text  
 ④ Select Value False or True  
 ⑤ Optionally select Dynamic UI Name  
 ⑥ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

38383530636161613230323130346434

① UI Name

demo\_ui

② Label Name

lbl01

③ Function

Visibility

④ Value

False

⑤ Dynamic UI Name

☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

⑥ ✓ Finish

Parameters ×

① Select UI Name  
 ② Select Label Name  
 ③ Select Function  
 Color / Visibility / Text  
 ④ Enter Value  
 ⑤ Optionally select Dynamic UI Name  
 ⑥ Click Finish button

Select Mode  
☒ Wizard  
☐ Normal

Security Key (optional)

38383530636161613230323130346434

① UI Name

demo\_ui

② Label Name

lbl01

③ Function

Text

④ Value

⑤ Dynamic UI Name

☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

⑥ ✓ 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

### Command set ui\_page – Wizard Mode

**Parameters** ×

① Select UI Name

② Select Page Name

③ Optionally select Dynamic UI Name

④ Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

① UI Name

② Page Name

③ Dynamic UI Name

☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

④

## Command set ui\_redirect – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter Current User Interface
- Enter new User Interface
- Enter optional Page Name
- Click Finish button

**Select Mode**
☐ Wizard  
☒ Normal

- Security Key (optional)
- Current User Interface
- Redirect to User Interface
- Page Name (optional)

- ✓ Finish

## Command set ui\_redirect – Wizard Mode

Parameters ×

- Select Current User Interface
- Select new User Interface
- Select optional Page Name
- Click Finish button

**Select Mode**
☒ Wizard  
☐ Normal

**Security Key (optional)**
 38383530636161613230323130346434

- Current User Interface
- Redirect to User Interface
- Page Name (optional)

demo\_ui  
 MyUI

- ✓ Finish



### Command set ui\_revert – Normal Mode

**Parameters** ×

① Enter optional Security Key

② Enter Original User Interface

③ Click Finish button

Select Mode

☐ Wizard

☒ Normal

① Security Key (optional)

② Original User Interface

③

✓ Finish

### Command set ui\_revert – Wizard Mode

**Parameters** ×

① Select Original User Interface

② Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

① Original User Interface

②

✓ Finish

## Command set ui\_slider – Normal Mode

Parameters ×

① Enter optional Security Key  
 ② Enter UI Name  
 ③ Enter Slider Name  
 ④ Select Function  
 Value / State  
 ⑤ Enter Value  
 ⑥ Click Finish button

**Select Mode**

☐ Wizard  
☒ Normal

① Security Key (optional)

② UI Name

③ Slider Name

④ Function

⑤ Value

⑥

## Command set ui\_slider – Wizard Mode

Parameters ×

① Select UI Name  
 ② Select Slider Name  
 ③ Select Function  
 Value / State  
 ④ ① Select Value  
 ④ ① Or select Dynamic Value  
 ⑤ Optionally select Dynamic UI Name  
 ⑥ Click Finish button

**Select Mode**

☒ Wizard  
☐ Normal

Security Key (optional)

① UI Name

② Slider Name

③ Function

④ ② Dynamic Value ☐ \* Used within a slider preset, Dynamic Value is used to update other sliders with the current sliders value

④ ① Value

⑤ Dynamic UI Name ☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

⑥

Parameters ×

① Select UI Name  
 ② Select Slider Name  
 ③ Select Function  
 Value / State  
 ④ Select Value  
 ⑤ Optionally select Dynamic UI Name  
 ⑥ Click Finish button

**Select Mode**

☒ Wizard  
☐ Normal

Security Key (optional)

① UI Name

② Slider Name

③ Function

④ Value

⑤ Dynamic UI Name ☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

⑥

## 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

## Command get ui – Wizard Mode

Parameters ×

① Select UI Name  
 ② Or select Dynamic UI Name  
 ③ Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

① UI Name

② Dynamic UI Name ☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

③

## 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

## Command get ui\_button – Wizard Mode

Parameters ×

① Select UI Name  
 ② Select Button Name  
 ③ Select Function > Down  
 ④ Optionally select Dynamic UI Name  
 ⑤ Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

① UI Name

② Button Name

③ Function

④ Dynamic UI Name ☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

⑤

## Command get ui\_indicator – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter UI Name
- Enter Indicator Name
- Select Function Value
- Click Finish button

Select Mode

☐ Wizard  
☒ Normal

① Security Key (optional)

② UI Name

③ Indicator Name

④ Function

⑤

✓ Finish

## Command get ui\_indicator – Wizard Mode

Parameters ×

- Select UI Name
- Select Indicator Name
- Select Function Value
- Optionally select Dynamic UI Name
- Click Finish button

Select Mode

☒ Wizard  
☐ Normal

Security Key (optional)

① UI Name

② Indicator Name

③ Function

④ Dynamic UI Name

☐ \*Select Dynamic UI Name to replace the selected UI Name in preset command string

⑤

✓ Finish

## Command get ui\_slider – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter UI Name
- Enter Slider Name
- Select Function Value / State
- Click Finish button

**Select Mode**

☐ Wizard

☒ Normal

① Security Key (optional)

② UI Name

③ Slider Name

④ Function

⑤

## Command get ui\_slider – Wizard Mode

Parameters ×

- Select UI Name
- Select Slider Name
- Select Function Value / State
- Optionally select Dynamic UI Name
- Click Finish button

**Select Mode**

☒ Wizard

☐ Normal

**Security Key (optional)**

① UI Name

② Slider Name

③ Function

④ Dynamic UI Name ☐ \* Select Dynamic UI Name to replace the selected UI Name in preset command string

⑤