



## 4KPROIP-CBS 4K AV Over IP Solution Control Box Software

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# 1 Global Settings

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



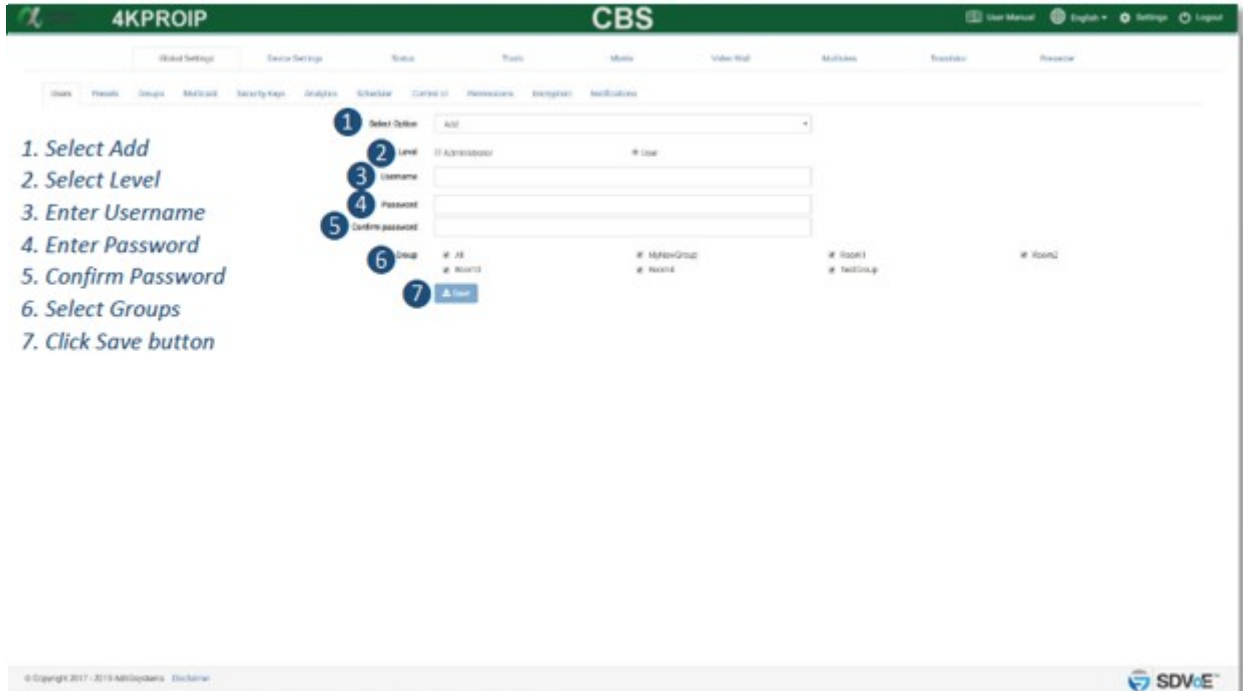
## 1.1 Users

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

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

## 1.1.1 Add User

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



**4KPROIP CBS**

User Manual English Settings Logout

Global Settings Device Settings Status Tools Alerts Video Wall Multiview Timeline Processor

Users Groups Multicast Security Keys Analytics Scheduler Control UI Permissions Integration Notifications

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

Select Option: Add

Level: Administrator User

Username:

Password:

Confirm password:

Group: ☐ All ☐ Admin ☐ AdminGroup ☐ Room1 ☐ Room2 ☐ Room3 ☐ Room4 ☐ Room5 ☐ Room6 ☐ Room7 ☐ Room8 ☐ Room9 ☐ Room10 ☐ Room11 ☐ Room12 ☐ Room13 ☐ Room14 ☐ Room15 ☐ Room16 ☐ Room17 ☐ Room18 ☐ Room19 ☐ Room20 ☐ Room21 ☐ Room22 ☐ Room23 ☐ Room24 ☐ Room25 ☐ Room26 ☐ Room27 ☐ Room28 ☐ Room29 ☐ Room30 ☐ Room31 ☐ Room32 ☐ Room33 ☐ Room34 ☐ Room35 ☐ Room36 ☐ Room37 ☐ Room38 ☐ Room39 ☐ Room40 ☐ Room41 ☐ Room42 ☐ Room43 ☐ Room44 ☐ Room45 ☐ Room46 ☐ Room47 ☐ Room48 ☐ Room49 ☐ Room50 ☐ Room51 ☐ Room52 ☐ Room53 ☐ Room54 ☐ Room55 ☐ Room56 ☐ Room57 ☐ Room58 ☐ Room59 ☐ Room60 ☐ Room61 ☐ Room62 ☐ Room63 ☐ Room64 ☐ Room65 ☐ Room66 ☐ Room67 ☐ Room68 ☐ Room69 ☐ Room70 ☐ Room71 ☐ Room72 ☐ Room73 ☐ Room74 ☐ Room75 ☐ Room76 ☐ Room77 ☐ Room78 ☐ Room79 ☐ Room80 ☐ Room81 ☐ Room82 ☐ Room83 ☐ Room84 ☐ Room85 ☐ Room86 ☐ Room87 ☐ Room88 ☐ Room89 ☐ Room90 ☐ Room91 ☐ Room92 ☐ Room93 ☐ Room94 ☐ Room95 ☐ Room96 ☐ Room97 ☐ Room98 ☐ Room99 ☐ Room100

Save

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## 1.1.2 Edit User

Here you can edit an existing users Username, Password or allocated group.



**4KPROIP CBS**

User Manual English Settings Logout

Global Settings Device Settings Status Tools Alerts Video Wall Multiview Timeline Processor

Users Groups Multicast Security Keys Analytics Scheduler Control UI Permissions Integration Notifications

1. Select Edit
2. Select User
- 3\*. Change Username
4. Enter new Password
5. Select Groups
6. Click Save button

Select Option: Edit

Username:

Password:

Confirm password:

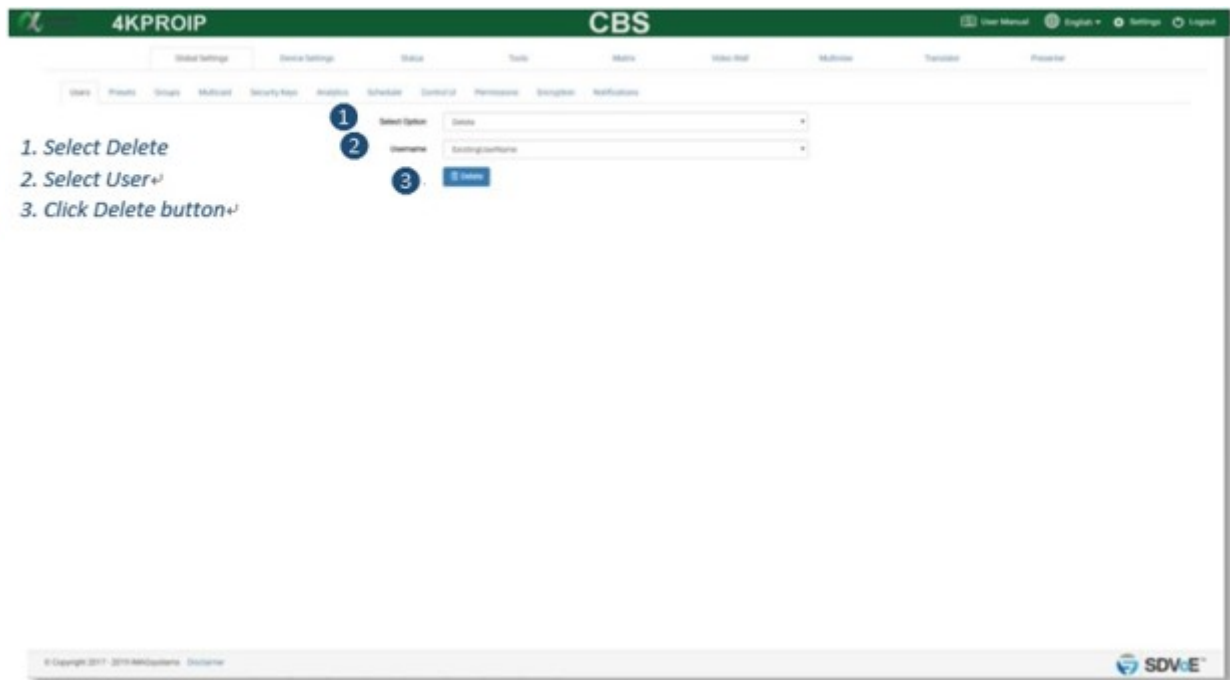
Group: ☐ All ☐ Admin ☐ AdminGroup ☐ Room1 ☐ Room2 ☐ Room3 ☐ Room4 ☐ Room5 ☐ Room6 ☐ Room7 ☐ Room8 ☐ Room9 ☐ Room10 ☐ Room11 ☐ Room12 ☐ Room13 ☐ Room14 ☐ Room15 ☐ Room16 ☐ Room17 ☐ Room18 ☐ Room19 ☐ Room20 ☐ Room21 ☐ Room22 ☐ Room23 ☐ Room24 ☐ Room25 ☐ Room26 ☐ Room27 ☐ Room28 ☐ Room29 ☐ Room30 ☐ Room31 ☐ Room32 ☐ Room33 ☐ Room34 ☐ Room35 ☐ Room36 ☐ Room37 ☐ Room38 ☐ Room39 ☐ Room40 ☐ Room41 ☐ Room42 ☐ Room43 ☐ Room44 ☐ Room45 ☐ Room46 ☐ Room47 ☐ Room48 ☐ Room49 ☐ Room50 ☐ Room51 ☐ Room52 ☐ Room53 ☐ Room54 ☐ Room55 ☐ Room56 ☐ Room57 ☐ Room58 ☐ Room59 ☐ Room60 ☐ Room61 ☐ Room62 ☐ Room63 ☐ Room64 ☐ Room65 ☐ Room66 ☐ Room67 ☐ Room68 ☐ Room69 ☐ Room70 ☐ Room71 ☐ Room72 ☐ Room73 ☐ Room74 ☐ Room75 ☐ Room76 ☐ Room77 ☐ Room78 ☐ Room79 ☐ Room80 ☐ Room81 ☐ Room82 ☐ Room83 ☐ Room84 ☐ Room85 ☐ Room86 ☐ Room87 ☐ Room88 ☐ Room89 ☐ Room90 ☐ Room91 ☐ Room92 ☐ Room93 ☐ Room94 ☐ Room95 ☐ Room96 ☐ Room97 ☐ Room98 ☐ Room99 ☐ Room100

Save

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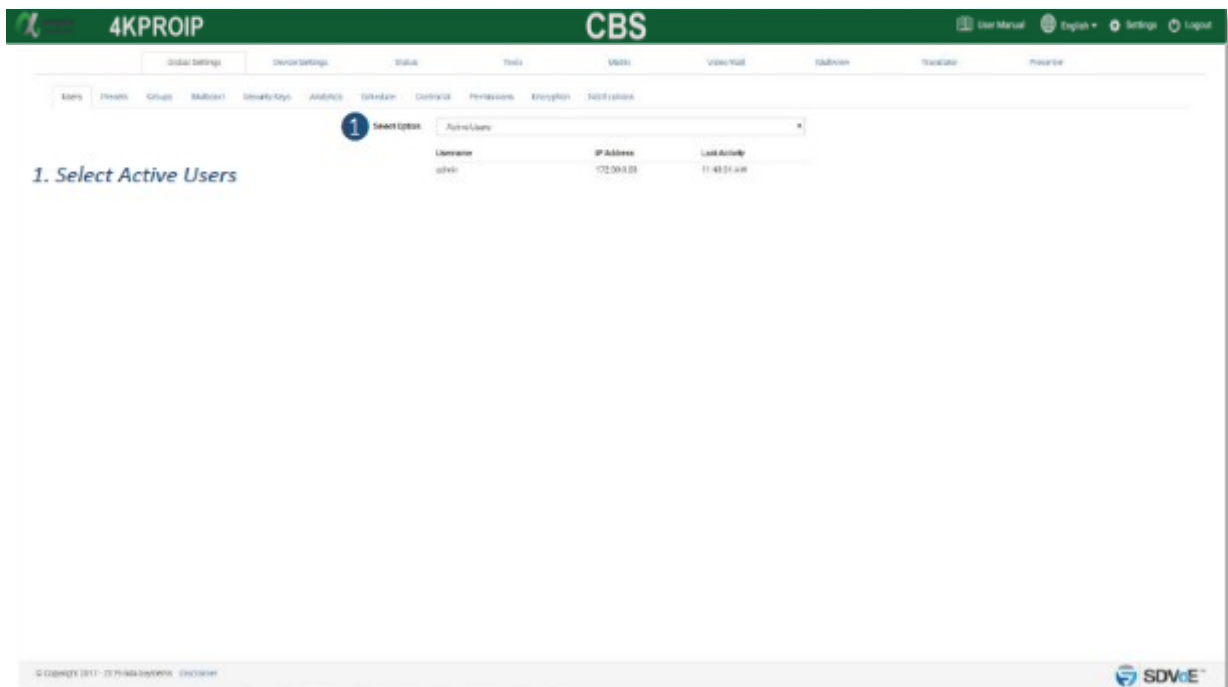
### 1.1.3 Delete User

Here you can delete an existing user from the system.



### 1.1.4 Active User

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



## 1.2 Presets

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

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

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

### 1.2.1 New Preset

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



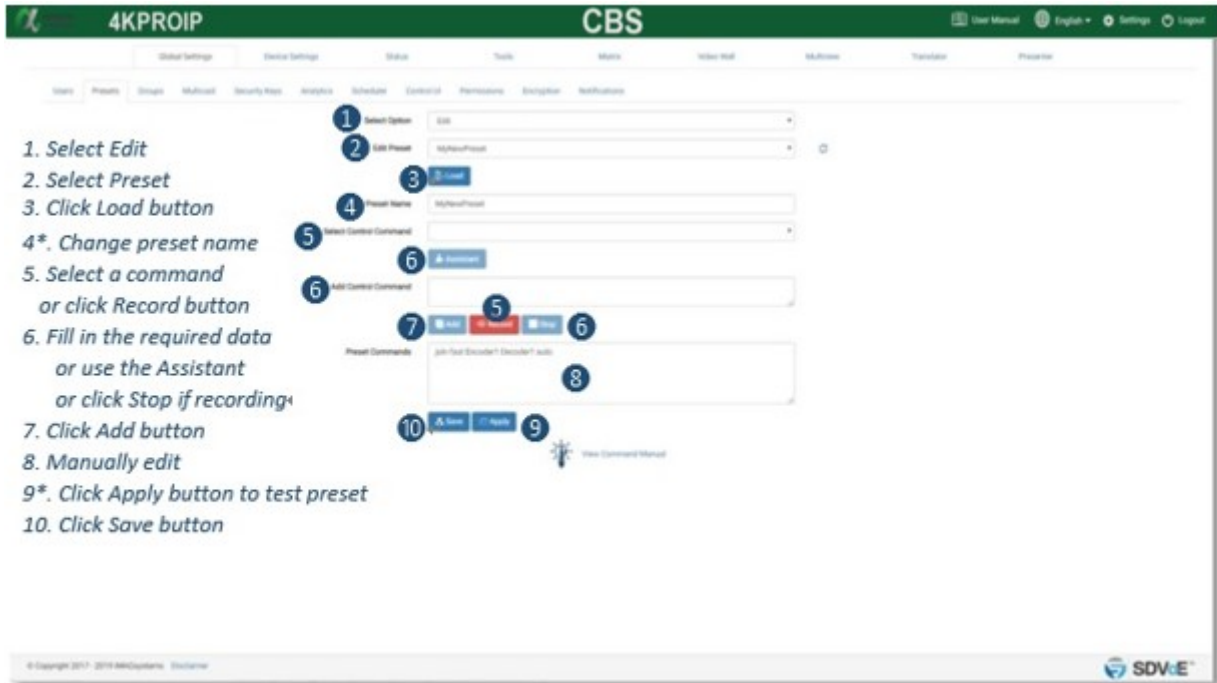
The screenshot displays the '4KPROIP CBS' web interface. The top navigation bar includes 'Global Settings', 'Device Settings', 'Status', 'Tools', 'Matrix', 'Video Wall', 'Multiview', 'Translator', and 'Preset'. The 'Preset' tab is active, showing a list of presets with 'New' selected. The main content area is titled 'New Preset' and contains the following steps:

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

The interface shows a 'Select Control Command' dropdown menu with 'Join Test' selected. Below this is an 'Add Control Command' section with a text input field containing 'join Test Encoder1 Decoder1 auto'. To the right of this field are buttons for 'Assistant', 'Add', 'Record', and 'Stop'. Below the 'Add Control Command' section is a 'Preset Commands' section with a text input field containing 'join Test Encoder1 Decoder1 auto'. At the bottom right of the 'Add Control Command' section is a 'Save' button.

## 1.2.2 Edit Preset

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



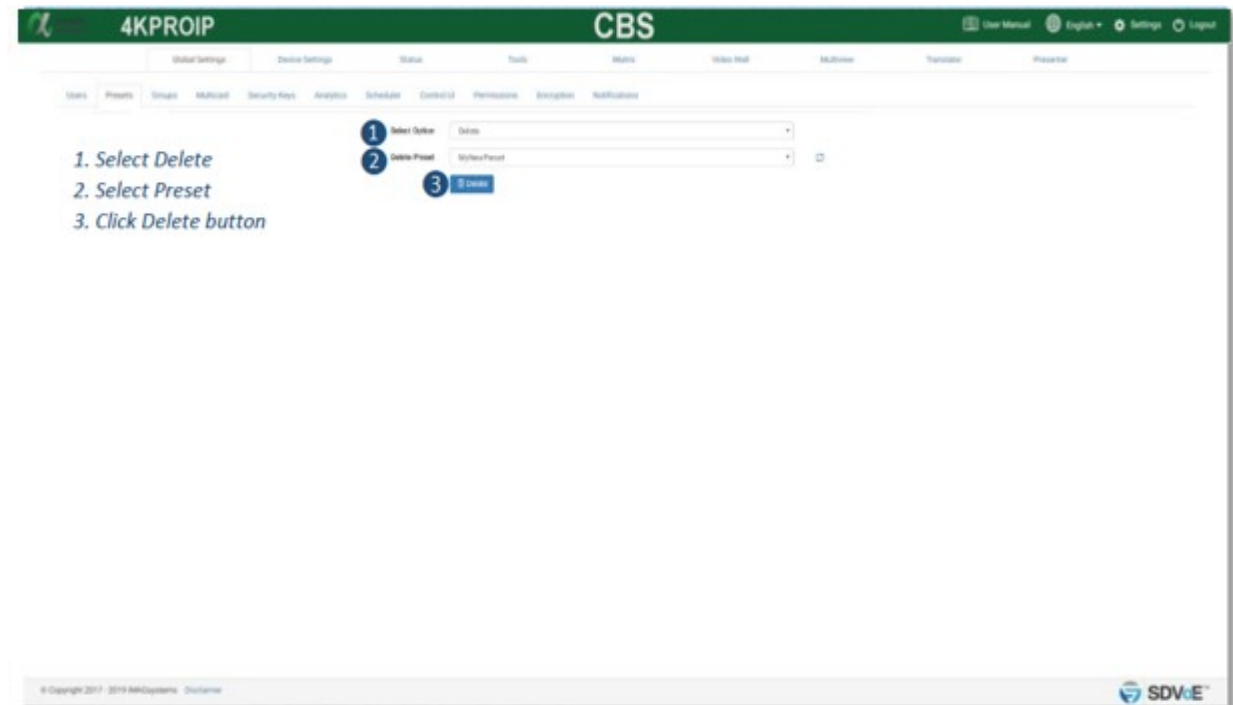
The screenshot shows the 'Edit Preset' workflow in the 4KPROIP CBS interface. The interface includes a top navigation bar with 'Global Settings', 'Device Settings', 'Status', 'Tools', 'Matrix', 'Video Wall', 'Multicast', 'Translation', and 'Preset'. Below this is a sub-navigation bar with 'Users', 'Presets', 'Groups', 'Multicast', 'Security Keys', 'Analytics', 'Schedule', 'Control List', 'Permissions', 'Integration', and 'Notifications'. The main content area displays the 'Edit Preset' form with the following numbered steps:

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

The interface also shows a 'Preset Commands' list with a 'View Command Manual' link. The footer includes '© Copyright 2017 - 2019 AMO Systems, Inc. All Rights Reserved' and the 'SDV-E' logo.

## 1.2.3 Delete Preset

Here you can delete any existing preset from the system.



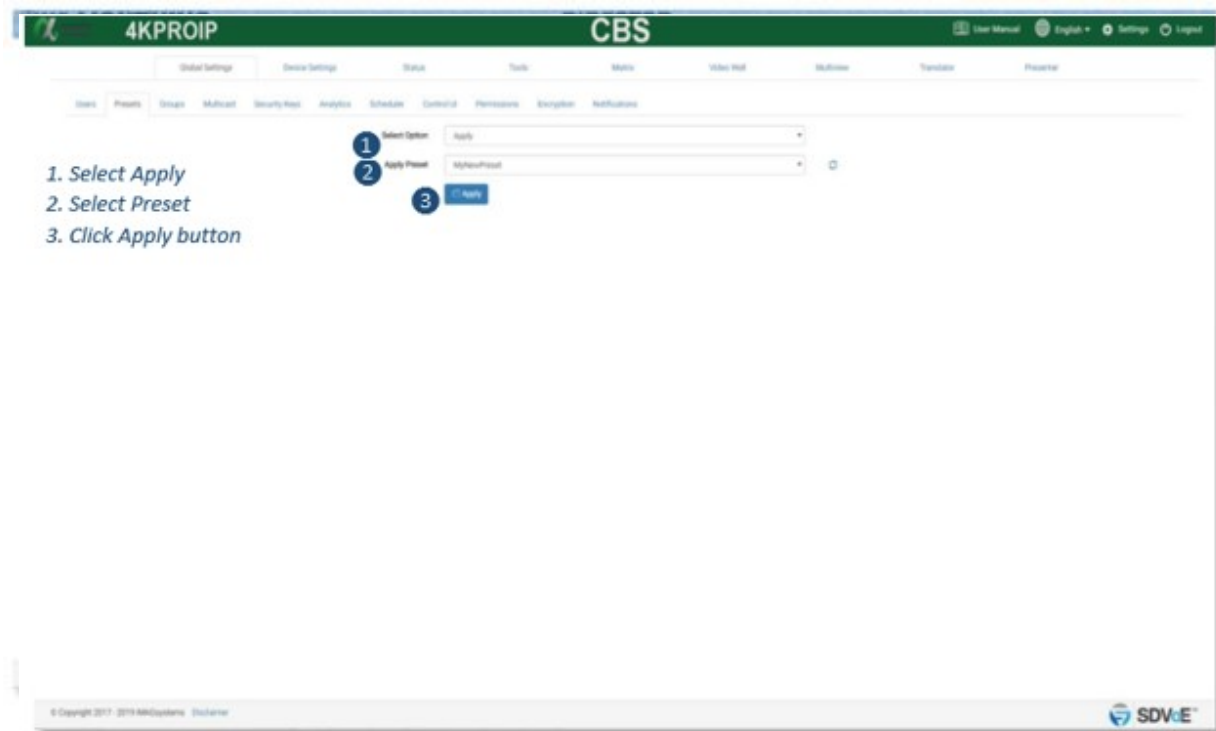
The screenshot shows the 'Delete Preset' workflow in the 4KPROIP CBS interface. The interface includes a top navigation bar with 'Global Settings', 'Device Settings', 'Status', 'Tools', 'Matrix', 'Video Wall', 'Multicast', 'Translation', and 'Preset'. Below this is a sub-navigation bar with 'Users', 'Presets', 'Groups', 'Multicast', 'Security Keys', 'Analytics', 'Schedule', 'Control List', 'Permissions', 'Integration', and 'Notifications'. The main content area displays the 'Delete Preset' form with the following numbered steps:

1. Select Delete
2. Select Preset
3. Click Delete button

The interface also shows a 'Delete Preset' button. The footer includes '© Copyright 2017 - 2019 AMO Systems, Inc. All Rights Reserved' and the 'SDV-E' logo.

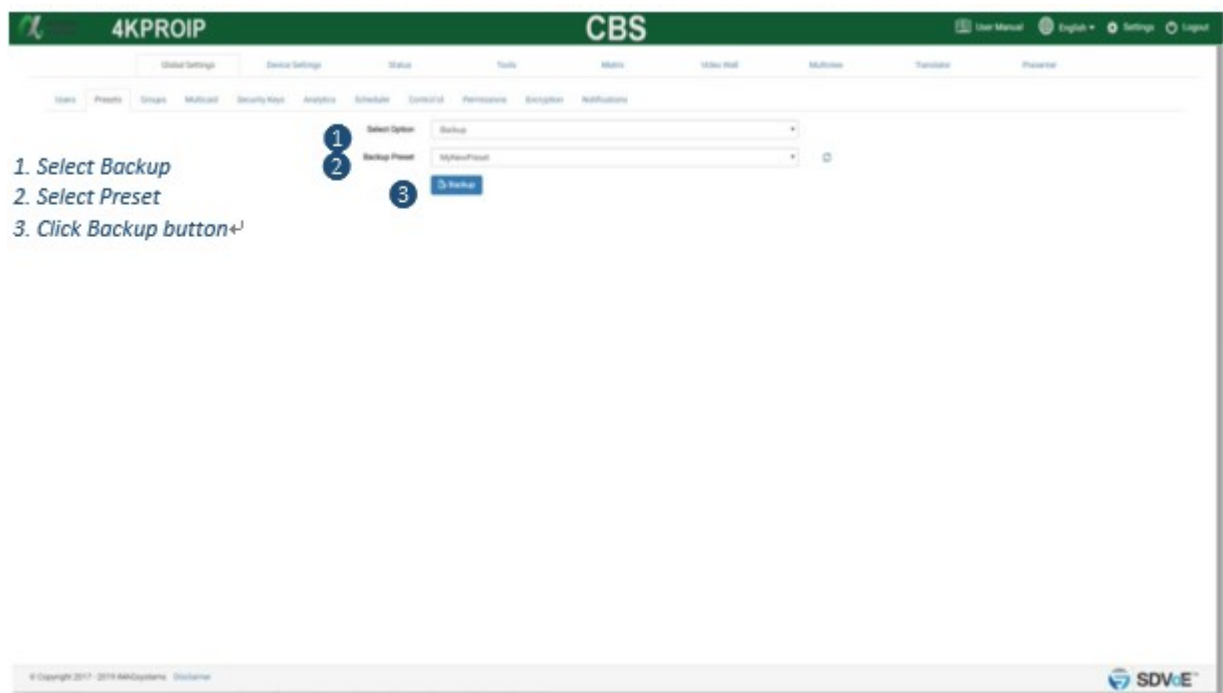
## 1.2.4 Apply Preset

Here you can apply any existing preset on the system.



## 1.2.4 Backup Preset

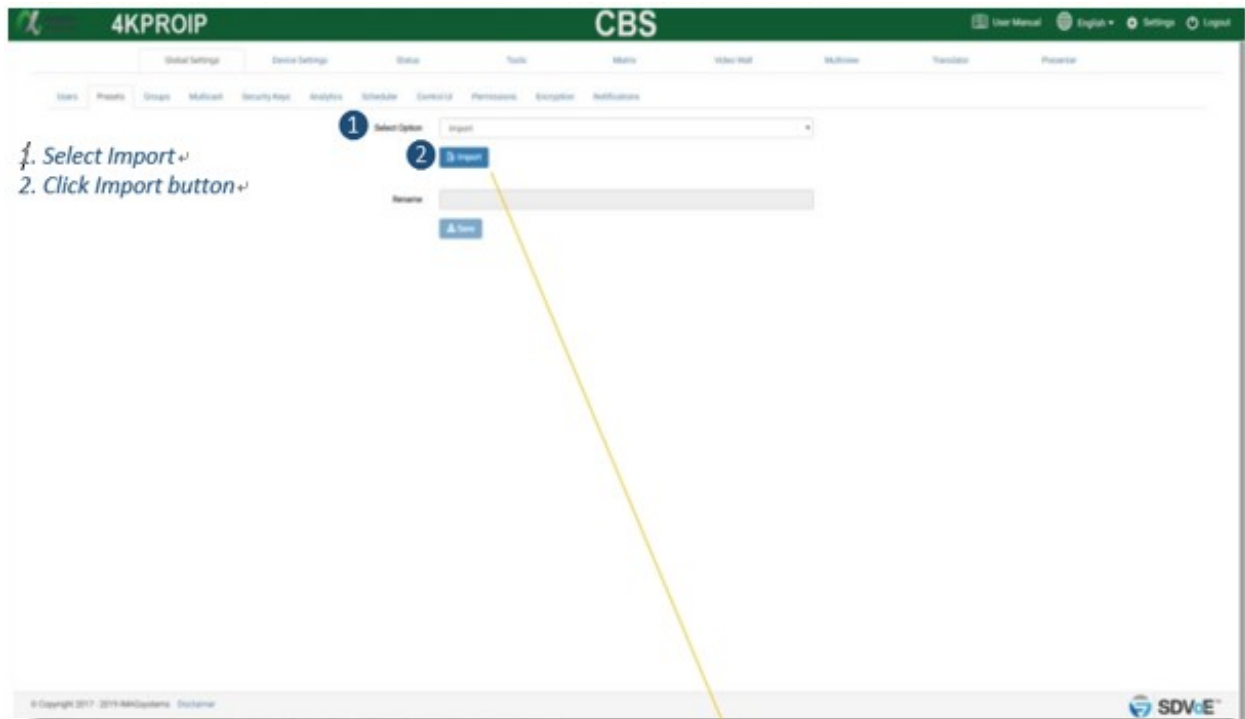
Here you can backup an existing preset on the system which can then be used as a backup or edited. The preset will be saved to your Downloads folder as an ini file like *MyNewPreset.ini*.



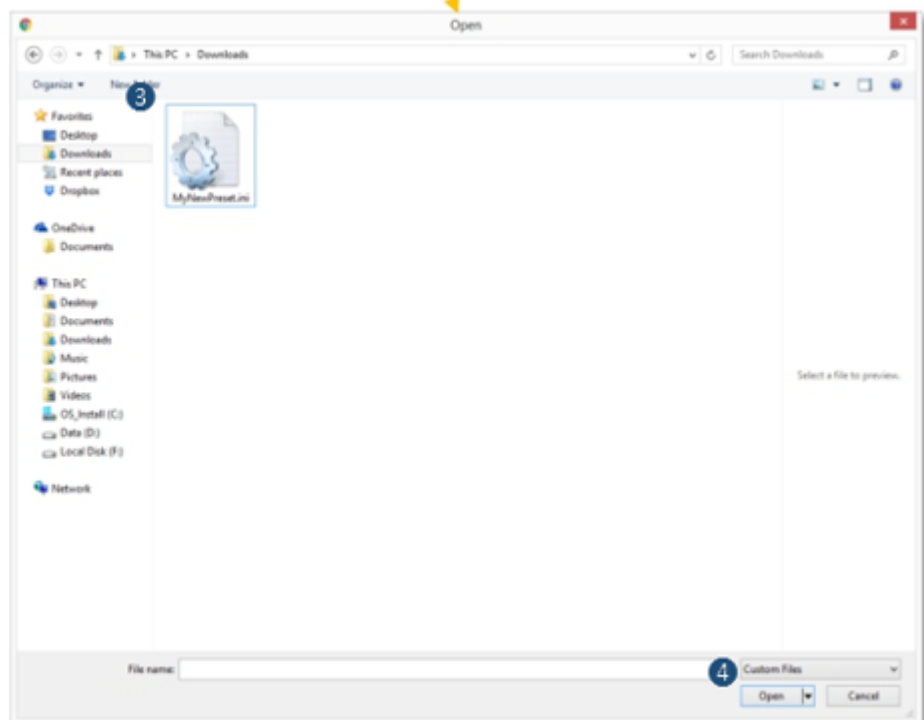
The backup preset can be edited with an application like Notepad++, right click the file and select "Open with..."

## 1.2.5 Import Preset

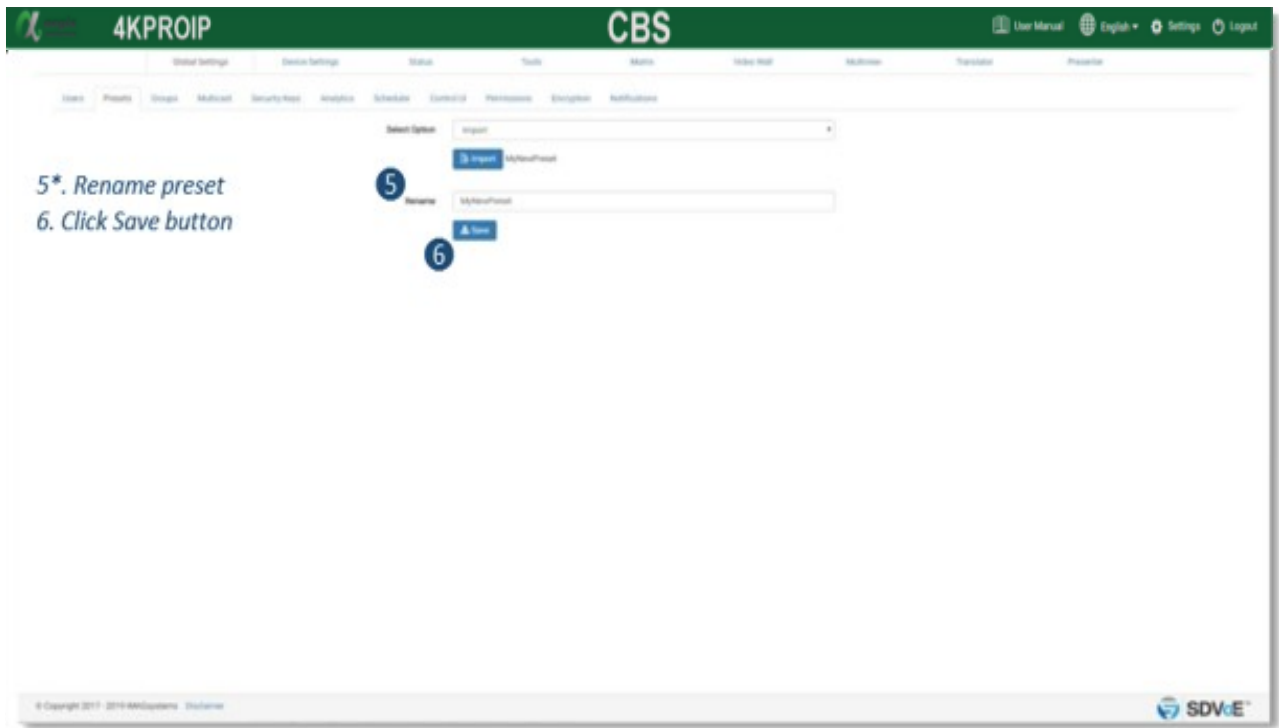
Here you can import a new preset into the system. (If updating an existing preset, the existing preset on the system will need to be deleted prior to importing.)



3. Select preset file
4. Click Open



## 1.2.5 Import Preset Continued....



5\*. Rename preset  
6. Click Save button

Select Option: Import

Import MyNewPreset

Rename: MyNewPreset

Save

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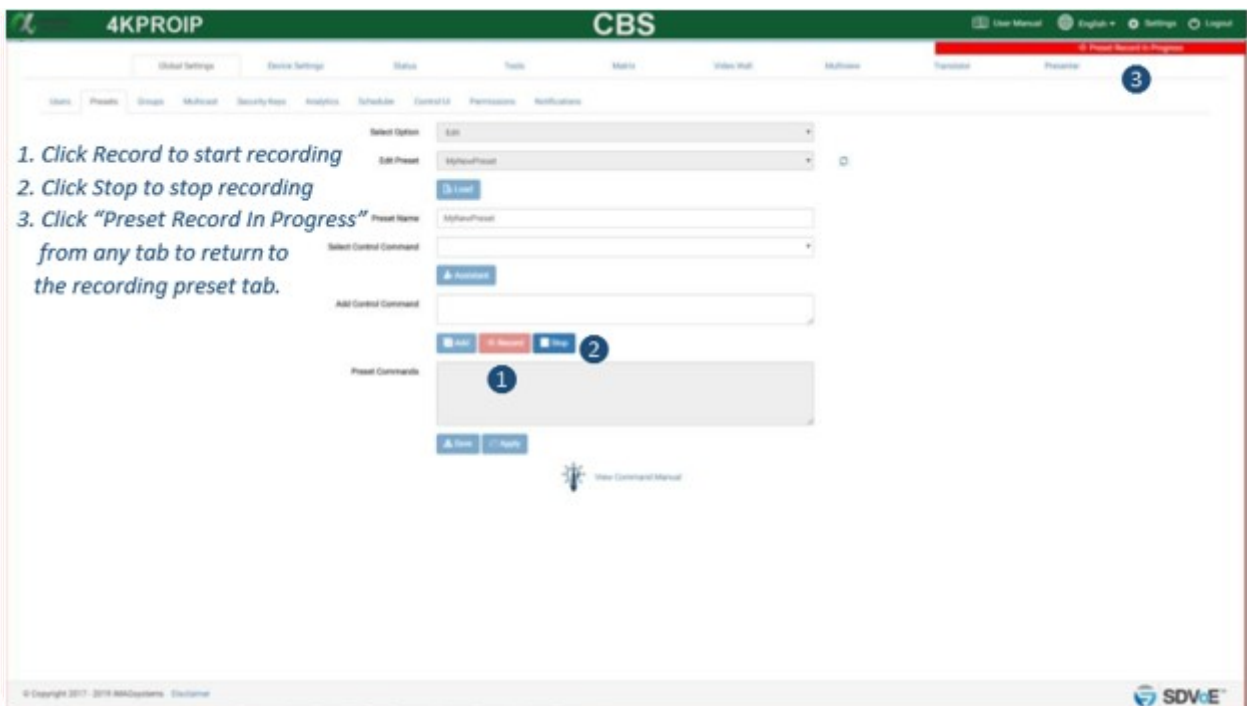


## 1.2.6 Preset Record

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

The following UI tabs will record interactions:

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

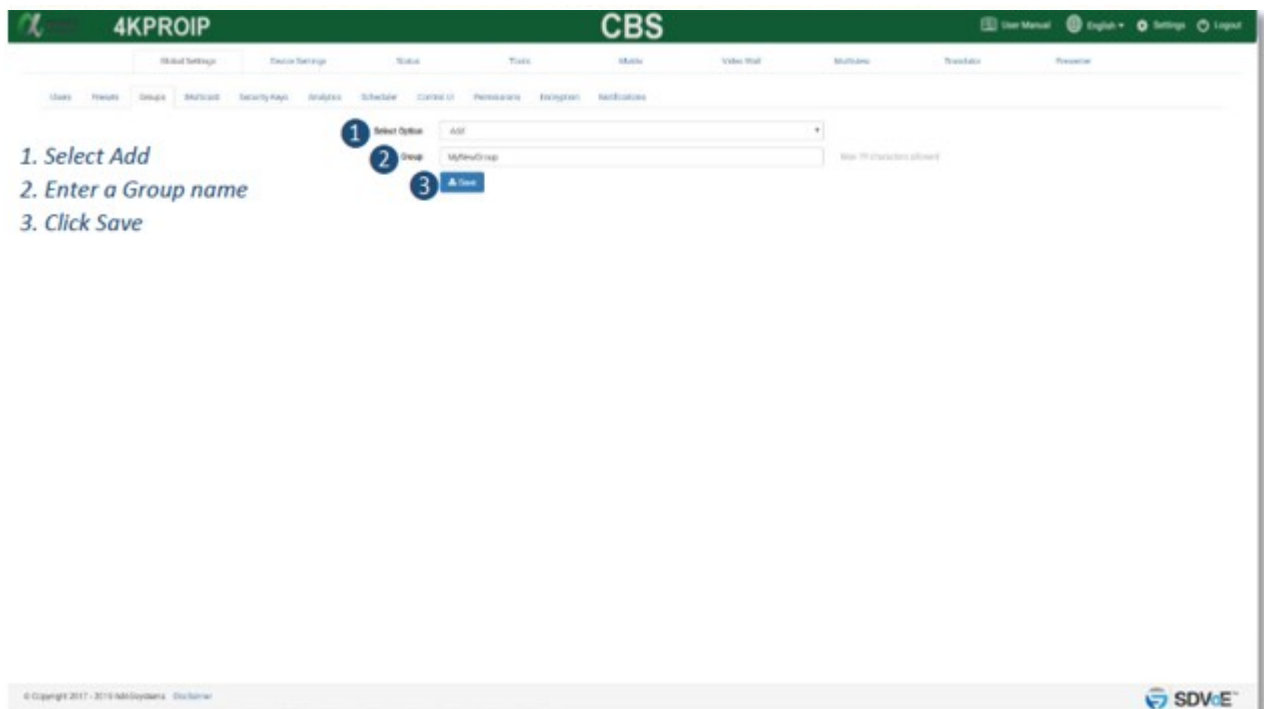


## 13 Groups

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.

### 1.3.1 Add Group

Here you can add a new group to the system to easily manage Encoders and Decoders. A group must be created before any Encoders or Decoders can be assigned to it from Device Settings / Group.



**4KPROIP CBS**

User Manual English Settings Logout

Global Settings Device Settings Status Tools Status Video Wall Multicast Transcode Receiver

Users Groups Multicast Security Keys Analytics Schedule Control UI Permissions Integration Notifications

1. Select Add

2. Enter a Group name

3. Click Save

1 Select Option Add

2 Group MyNewGroup

3 Save

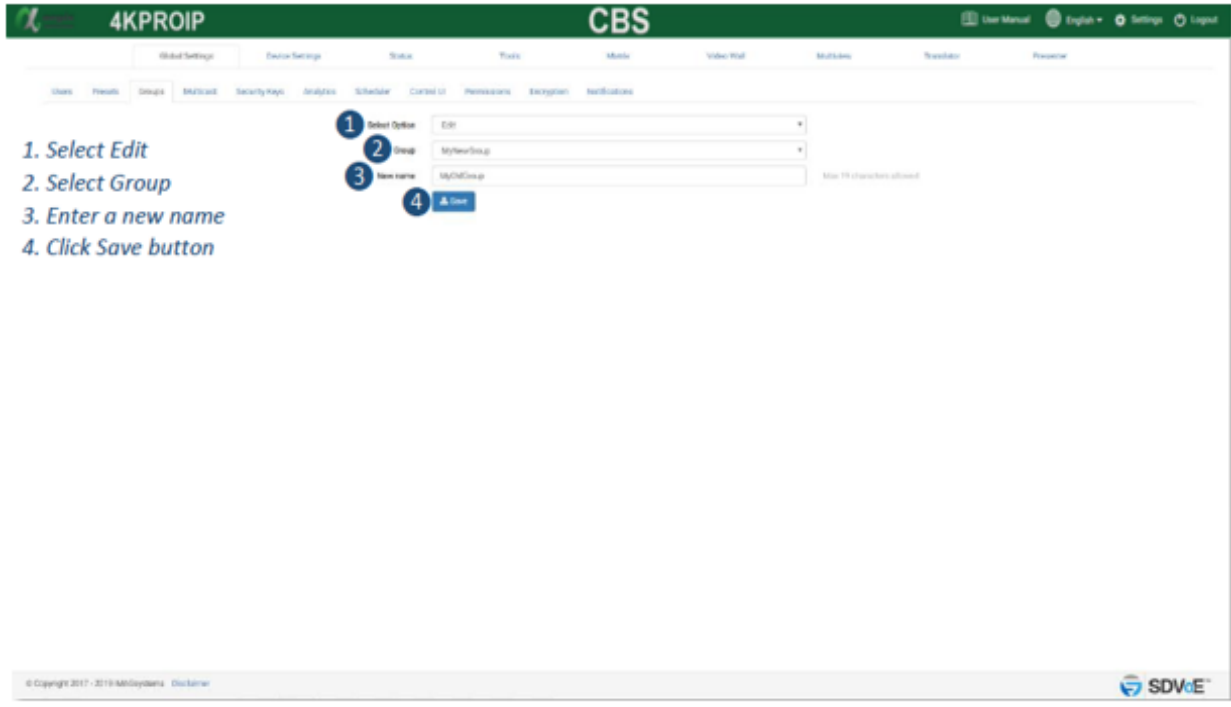
Max 10 characters allowed

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## 1.3.2 Edit Group

Here you can change the name of an existing group.




**1. Select Edit**  
**2. Select Group**  
**3. Enter a new name**  
**4. Click Save button**

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## 1.3.3 Delete Group

Here you can delete an existing group from the system.



**1. Select Delete**  
**2. Select Group**  
**3. Click Delete**

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## 1.4 Multicast

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

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

When in MANUAL mode, all streams will have their own statically assigned Multicast addresses to use.

### 1.4.1 Multicast Auto

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



The screenshot shows the 'Multicast' configuration page in the 4KPROIP interface. The page has a green header with the '4KPROIP' logo and 'CBS' text. Below the header is a navigation bar with tabs: Global Settings, Device Settings, Status, Tools, Music, Video Wall, Multicast, Transcoder, and Receiver. The 'Multicast' tab is selected. The main content area has a sub-header 'All Multicast addresses must be between 224.0.0.0 - 239.255.255.255'. On the left, there are three numbered instructions: 1. Select AUTO, 2. Enter desired addresses or select Default values, and 3. Click Save & Restart to apply the changes. The form fields include: '1. Mode' (set to AUTO), 'Multicast range start' (224.1.1.1), 'Multicast range end' (224.1.3.255), 'R10232 & R1 Multicast all To' (224.1.1.255), and 'R10232 & R1 Multicast all To' (224.1.1.254). At the bottom, there are buttons for 'Default', 'Save & Restart', and a note: 'Manual mode is only to be used with a single controller on the network.' The footer shows '© Copyright 2017 - 2019 Mediasystems Ltd. All Rights Reserved' and the 'SDVoE' logo.

## 1.4.2 Multicast Manual

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

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



**4KPROIP CBS**

User Manual English Settings Logout

Status Settings Device Settings Status Tools Multi Video Host Audio Host Transceiver Preset

Users Presets Groups Multicast Security Audit Analytics Scheduler Control UI Permissions Configuration Settings

All Multicast addresses must be between 224.0.0.0 - 224.255.255.255

1. Select **MANUAL**
2. Enter IP addresses or select Default values
3. Click **Save & Restart** to apply the changes

1 IP Mode: [Manual]

2 Video Multicast Range Start: [224.2.1.1]

Digital Audio Multicast Range Start: [224.3.1.1]

Analog Audio Multicast Range Start: [224.4.1.1]

HDMI 0-16 Multicast all Tx: [224.1.1.200]

HDMI 17-24 Multicast all Tx: [224.1.1.204]

2 [Default] [Save & Restart] 3

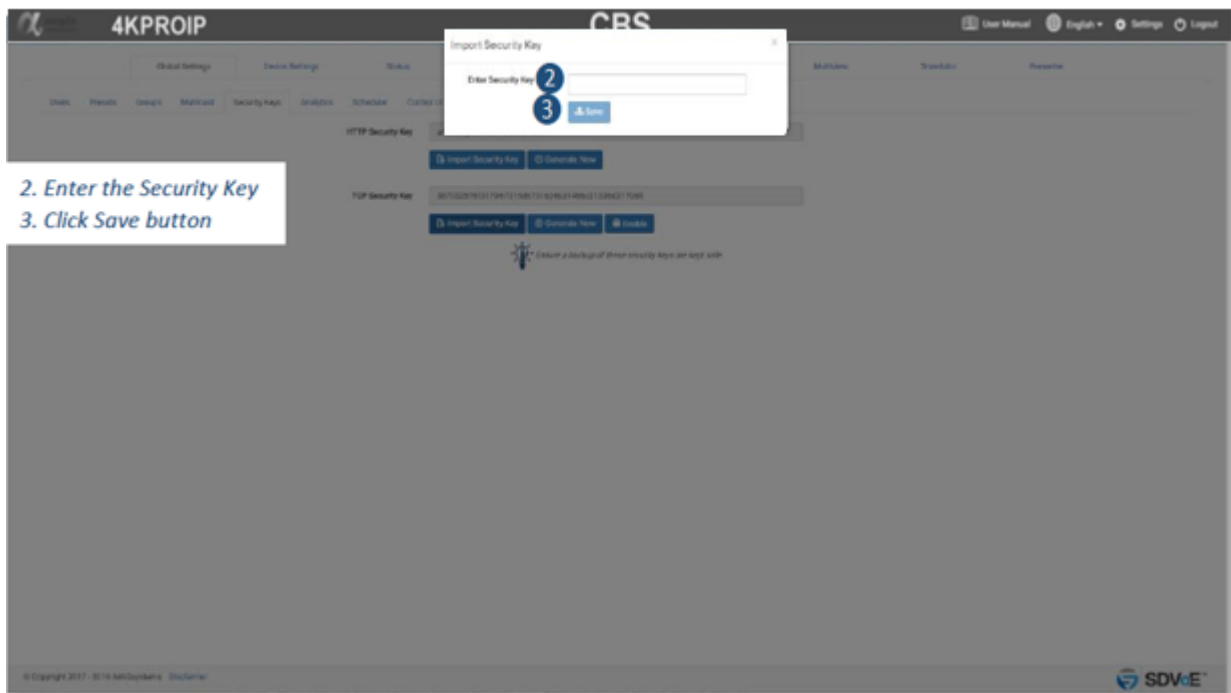
HDMI inputs 0-16 are connected to a single controller on the network.

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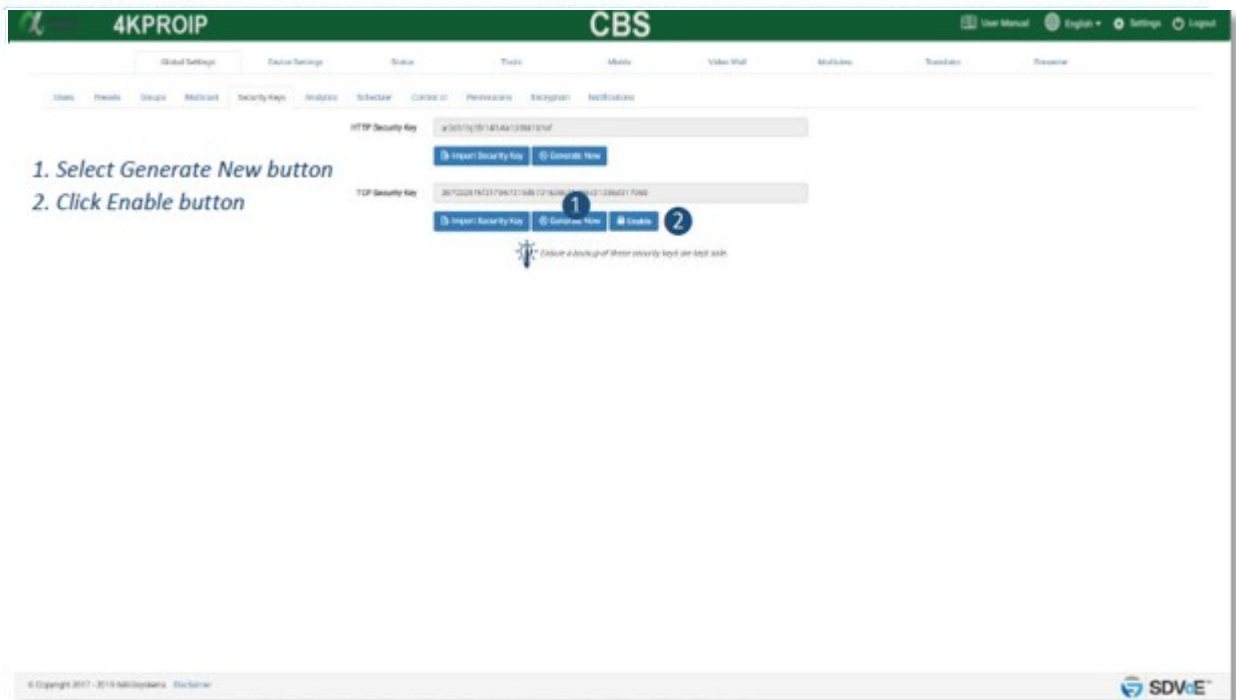


## 1.5.1 HTTP Security Key continued...



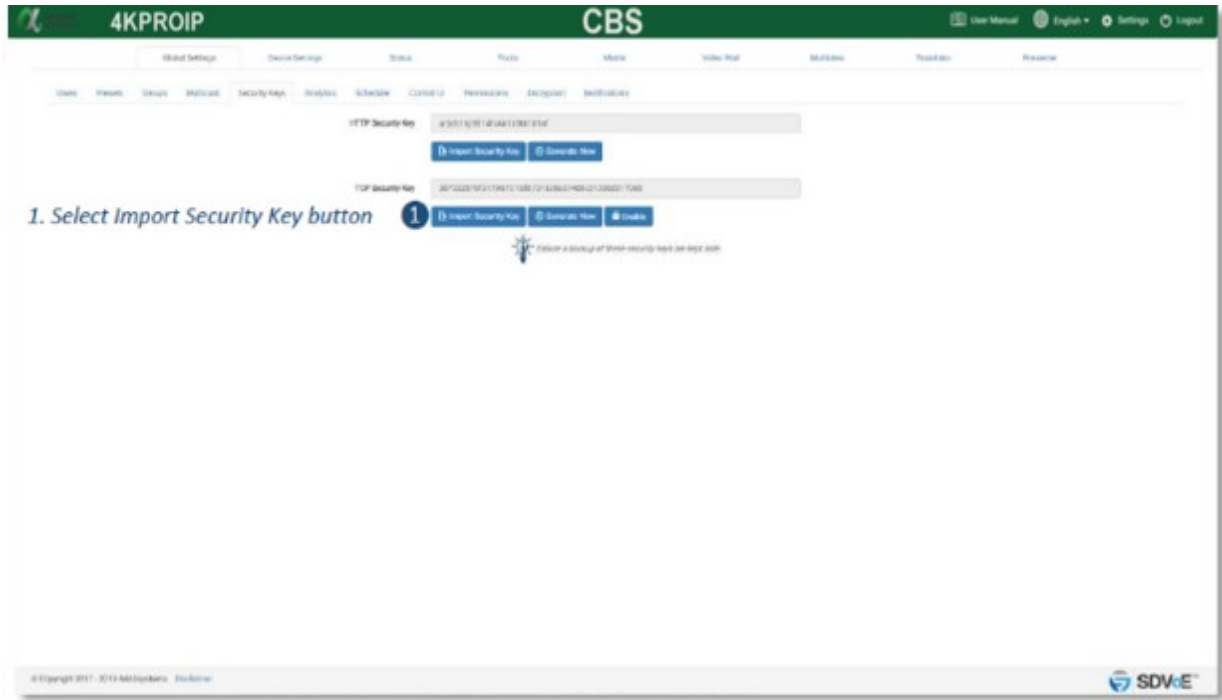
## 1.5.2 TCP Security Key

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




## 1.5.2 TCP Security Key Continued...

Importing a TCP API Security Key





## 1.5.2 TCP Security Key Continued...



The screenshot shows the CBS (Control Blade System) web interface for 4KPROIP. The top navigation bar includes links for Global Settings, Device Settings, Status, Tools, Media, Video Wall, Multiscreen, Broadcast, and Presenter. Below this is a secondary navigation bar with links for Users, Presets, Groups, Multicast, Security Keys, Settings, Schedule, Control UI, Permissions, Encryption, and Audit/Log/Trace.

The main content area displays the "Security Keys" section. On the left, a blue instruction box says "4. Click Enable button". The central part of the page shows two security key entries:

- HTTP Security Key:** The key value is "a3b711370174074a01278a10104f". It has buttons for "Import Security Key" and "Generate New".
- TCP Security Key:** The key value is "3d702a2b7e7d179d7219b127193b0114b021123a02170b0". It has buttons for "Import Security Key", "Generate New", and "Enable". A blue circle with the number "4" is next to the "Enable" button, indicating the current step in the process.

Below the TCP Security Key entry, there is a small icon of a person and a note: "Enable a backup of these security keys per day 2018".

The footer of the interface contains the copyright notice "© Copyright 2017 - 2019 Microware, Inc." on the left and the "SDV:E" logo on the right.

## 1.6 Analytics

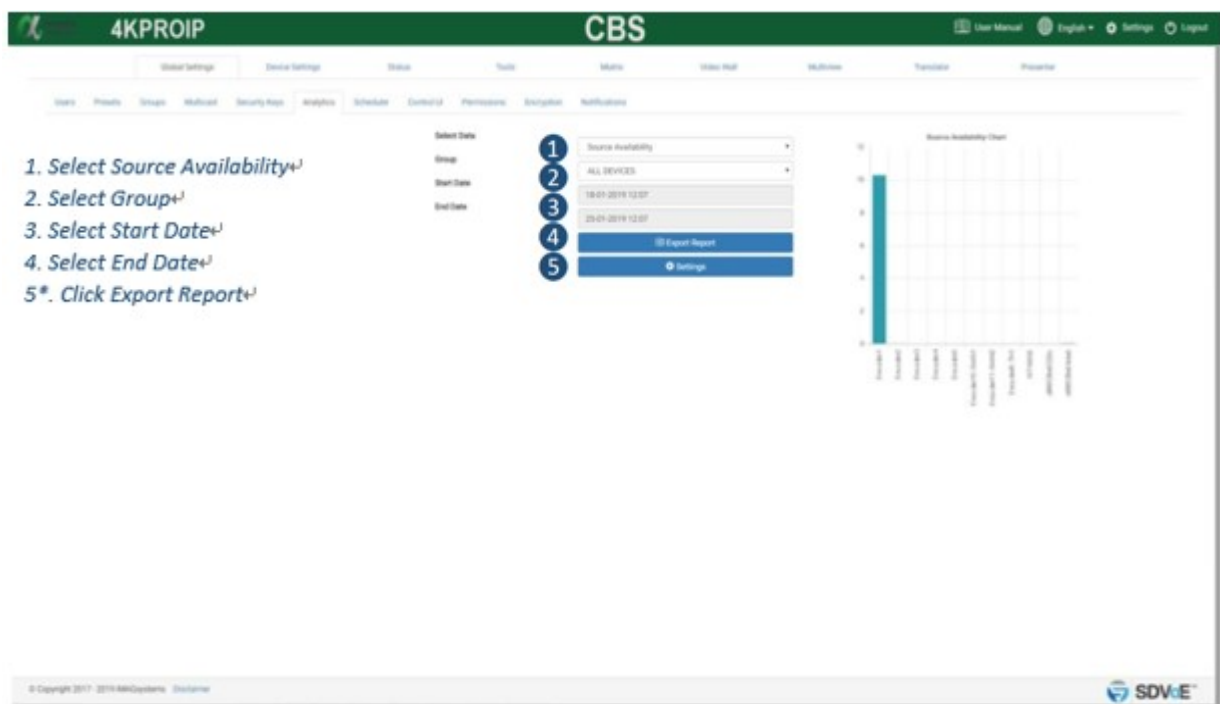
Analytical data is constantly being stored on the system. By default data will be maintained for 1 month, but this can be changed up to 12 months.

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

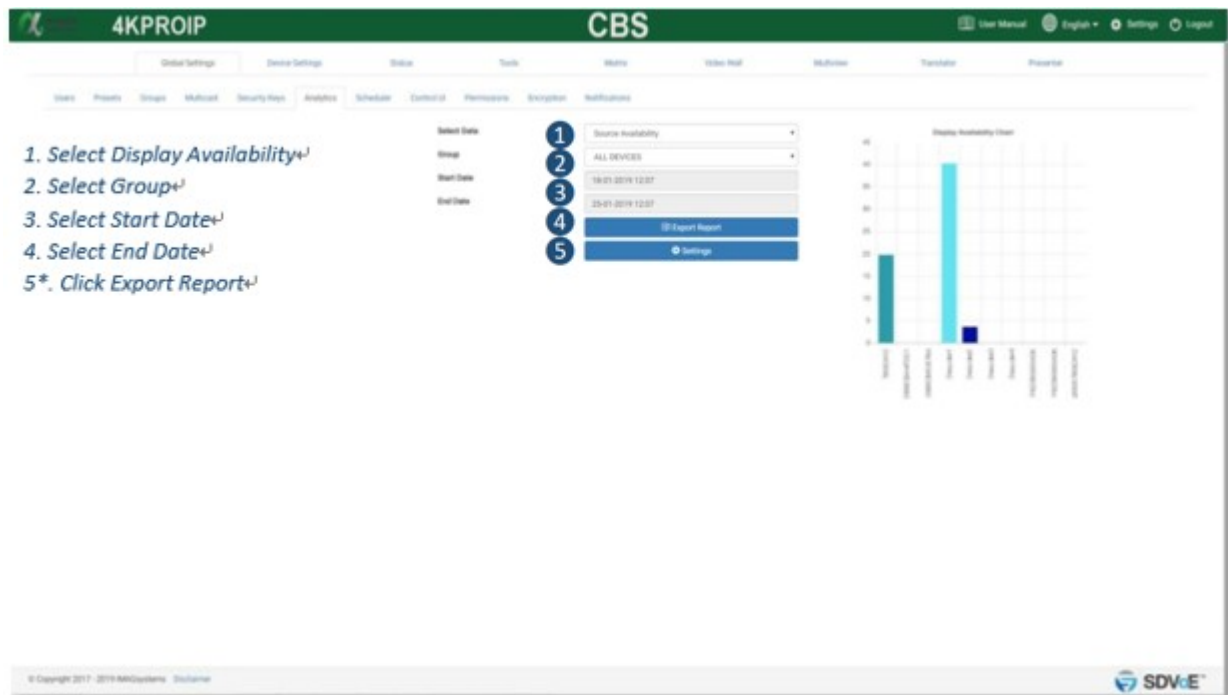
### 1.6.1 Source Availability

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



## 1.6.2 Display Availability

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



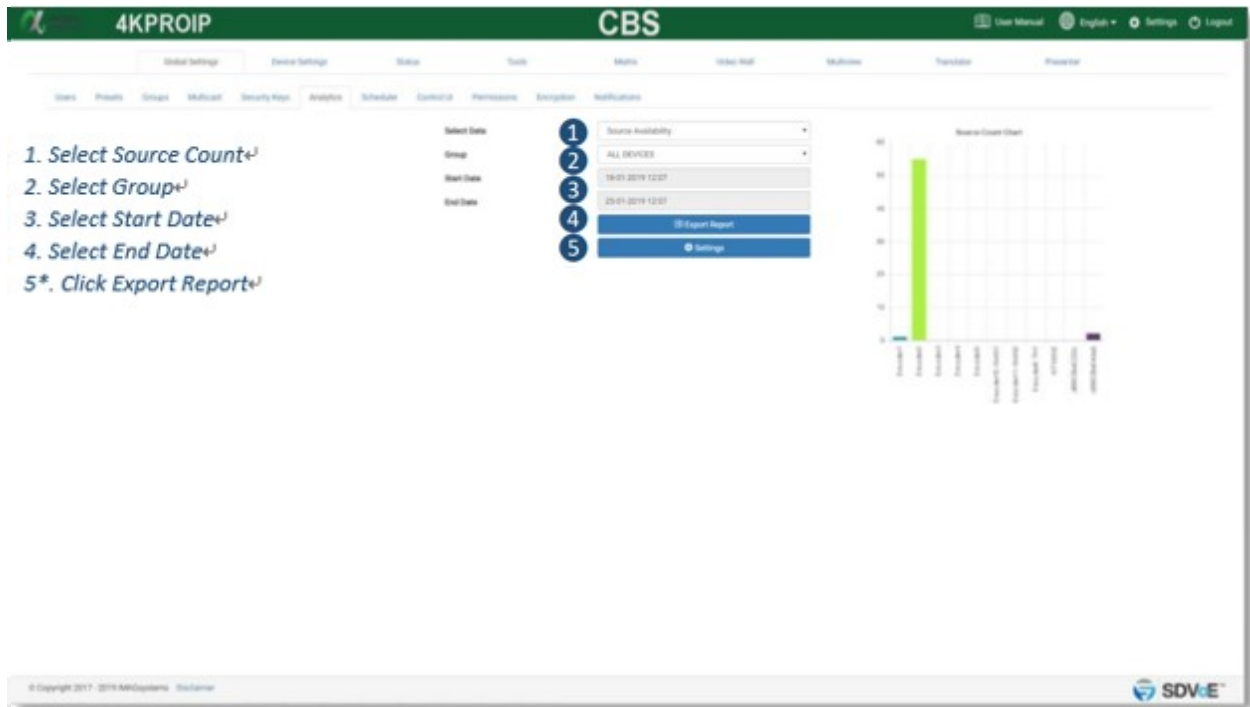
## 1.6.3 Source Resolution

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



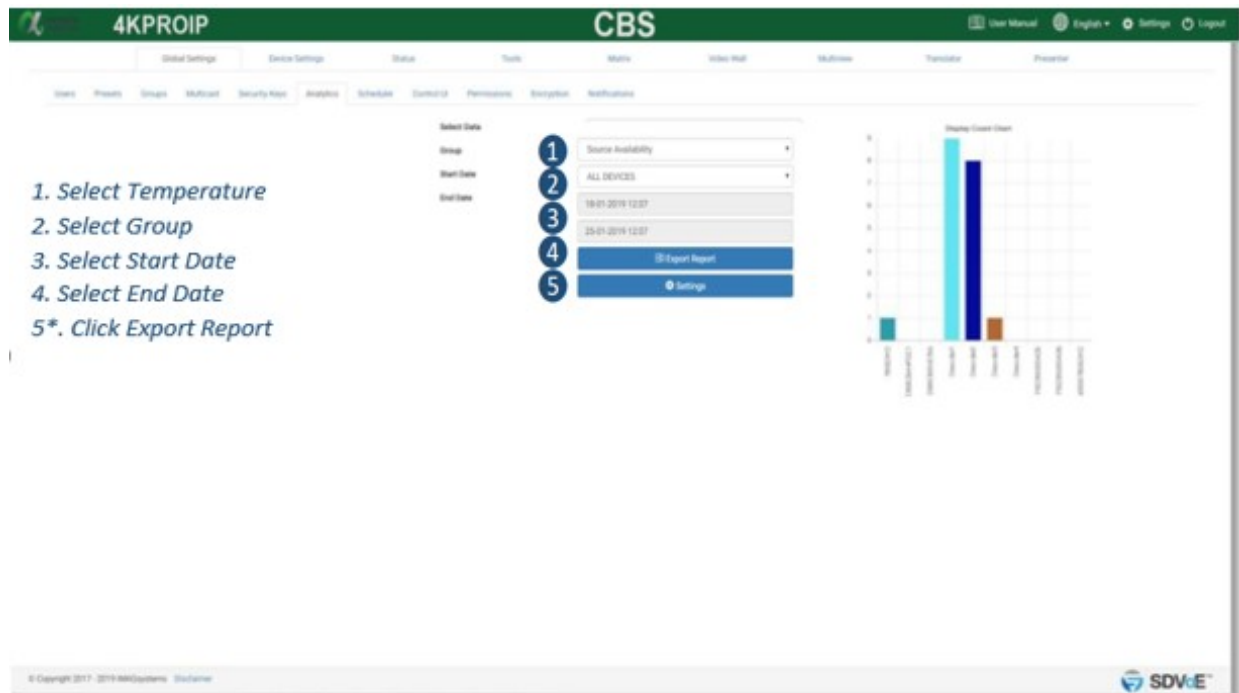
## 1.6.4 Source Count

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



## 1.6.5 Display Count

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



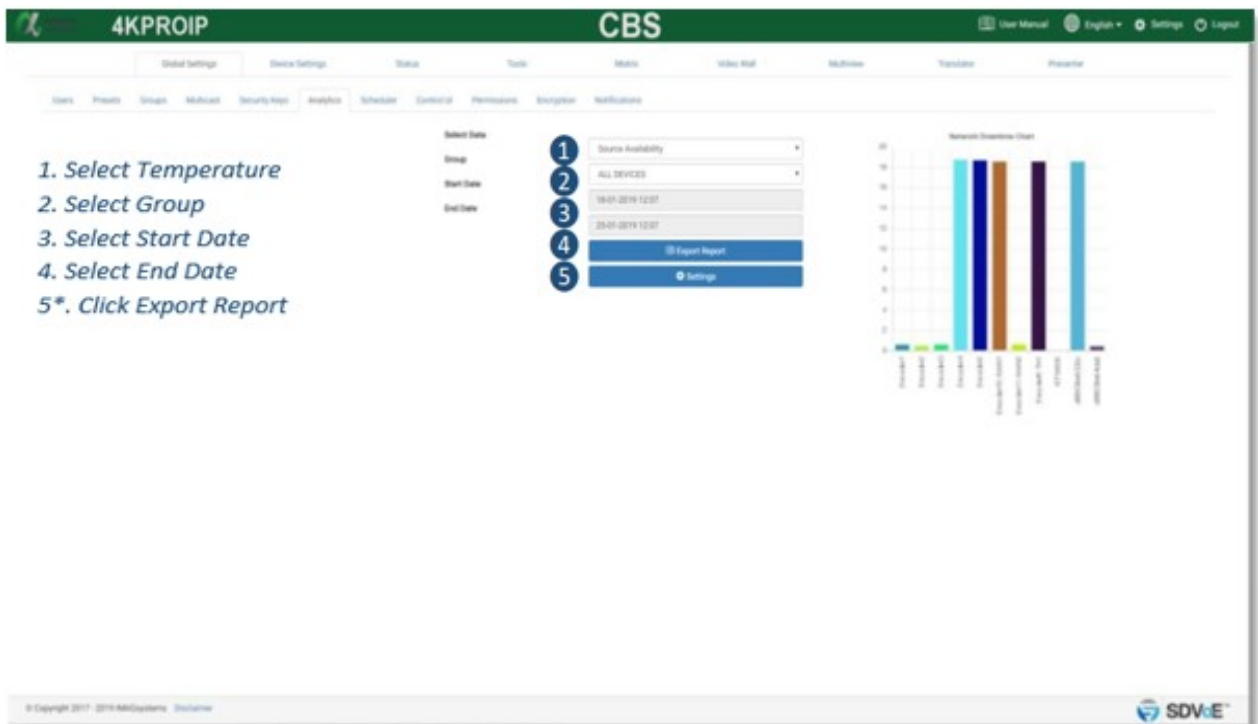
## 1.6.6 Display Source Change

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



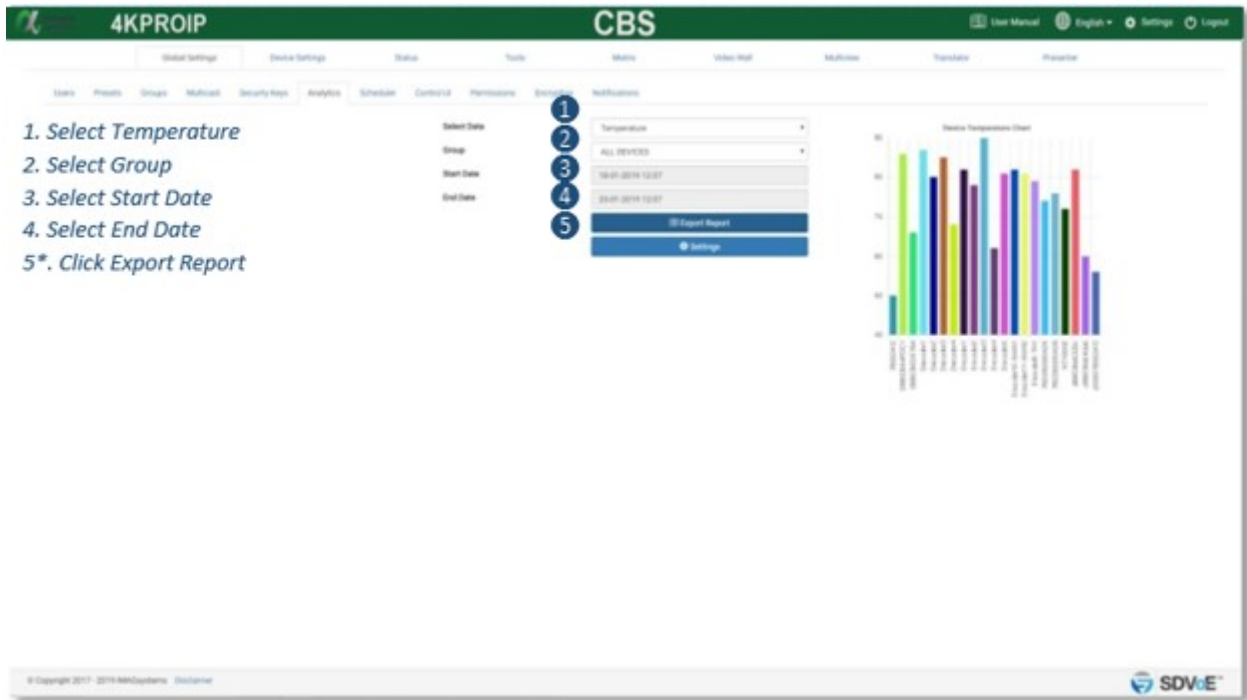
## 1.6.7 Network Downtime

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



## 1.6.8 Temperature

The Temperature represents the operating temperature in either °C or °F of a device.



1. Select Temperature  
2. Select Group  
3. Select Start Date  
4. Select End Date  
5\*. Click Export Report

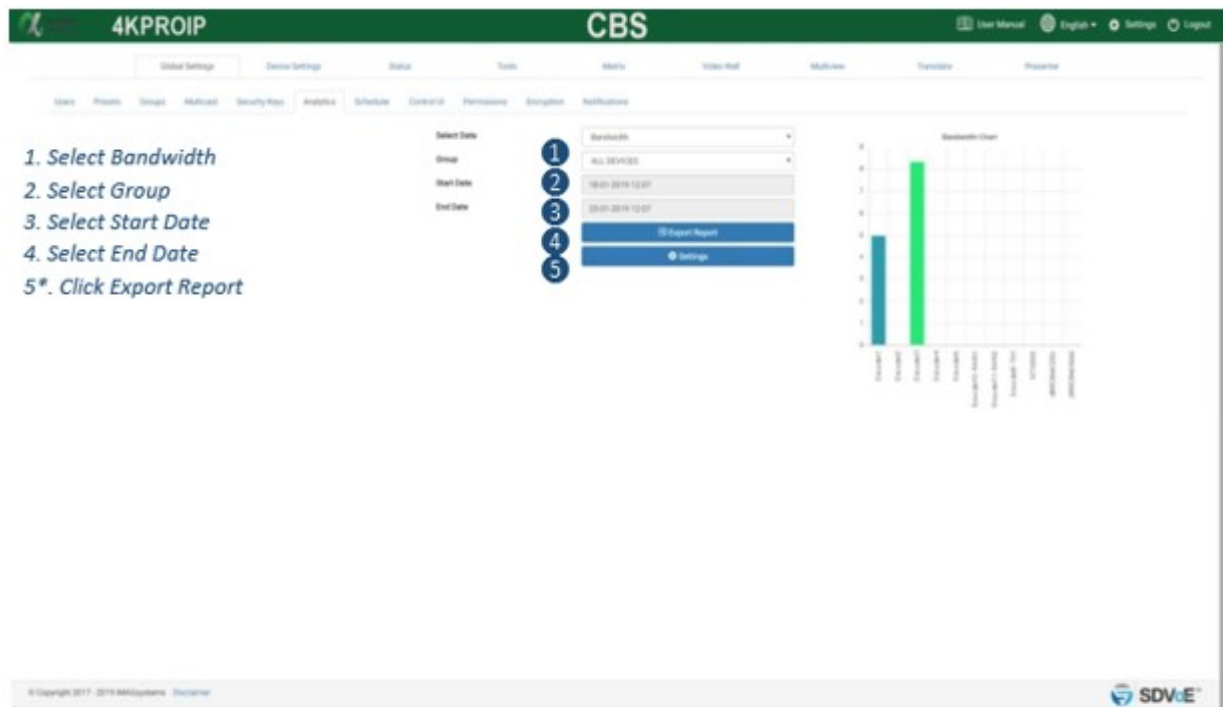
Select Date  
Group: ALL DEVICES  
Start Date: 18-01-2018 12:07  
End Date: 20-01-2018 12:07  
Export Report  
Settings

Device Temperature Chart

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## 1.6.9 Bandwidth

The Bandwidth represents the total Encoder bandwidth in Gbps.



1. Select Bandwidth  
2. Select Group  
3. Select Start Date  
4. Select End Date  
5\*. Click Export Report

Select Date  
Group: ALL DEVICES  
Start Date: 18-01-2018 12:07  
End Date: 20-01-2018 12:07  
Export Report  
Settings

Bandwidth Chart

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## 1.7 Scheduler

The Scheduler is used to apply presets at a particular time of a given day or system start.

The screenshot shows the CBS Scheduler interface. At the top, there's a header with '4KPROIP' and 'CBS'. Below the header is a navigation bar with tabs: Global Settings, Device Settings, Status, Tools, Matrix, Video Wall, Multiview, Translator, and Presence. Under the 'Tools' tab, there's a sub-navigation bar with: Users, Presets, Groups, Multicast, Security Keys, Analytics, Schedule, Control UI, Permissions, Scripting, and Notifications. The 'Schedule' tab is active, showing a table with columns: Event Name, System Start, Event Time, Event Days, and Event Preset. There are two rows of event entries. Callout 1 points to the 'Event Name' input field. Callout 2 points to the 'System Start' checkbox. Callout 3 points to the 'Event Time' field and the 'Event Days' selection grid. Callout 4 points to the 'Event Preset' dropdown menu. Callout 5 points to the 'Save' button. Callout 6 points to the pen icon for editing. Callout 7 points to the cross icon for deleting.

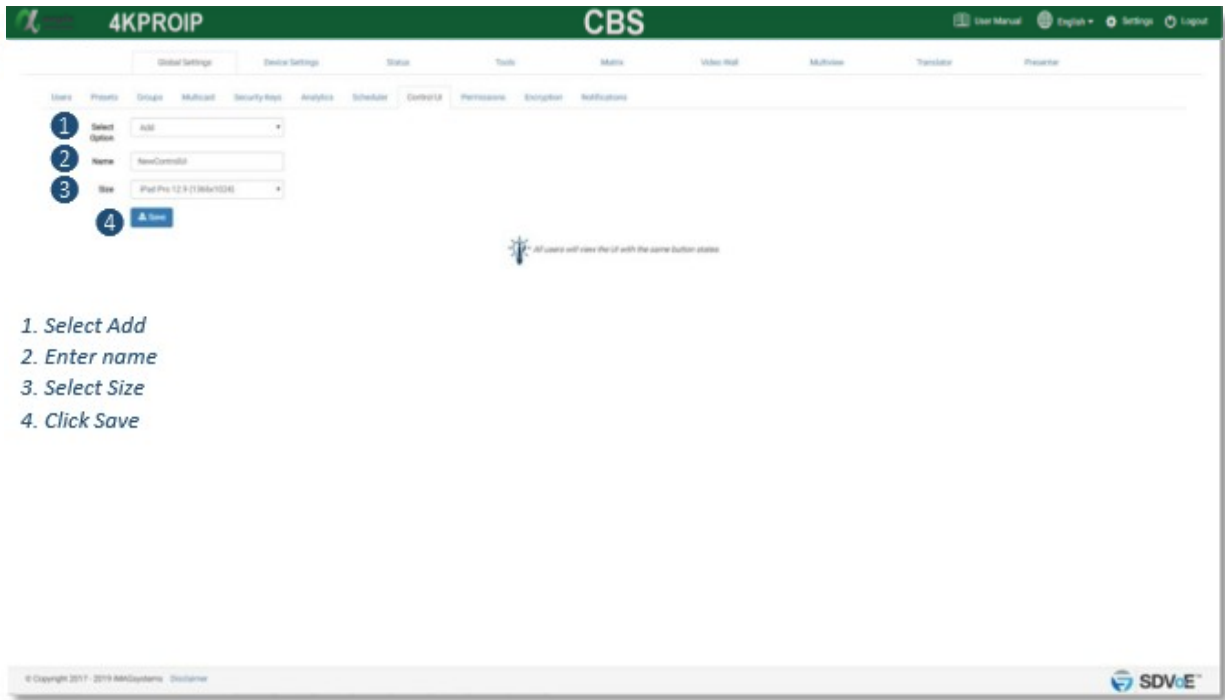
1. Enter a name
2. Select a time
3. Select day(s)
4. Select preset
5. Click Save button
- 6\*. Once saved, the pen icon is used to edit the event
- 7\*. Click the cross icon to delete the event

## 1.8 Control UI

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.

### 1.8.1 Add

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



The screenshot shows the 'Add' form for a new Control UI in the 4KPROIP CBS interface. The form is located under the 'Control UI' tab in the top navigation bar. It contains four numbered steps: 1. Select Option (a dropdown menu with 'Add' selected), 2. Enter name (a text input field with 'NewControlUI' entered), 3. Select Size (a dropdown menu with 'iPad Pro 12.9 (1060x1024)' selected), and 4. Click Save (a blue button with a save icon). Below the form, a note states: 'All users will view the UI with the same button status.' The footer of the page includes the copyright notice '© Copyright 2017 - 2019 Aegis Systems' and the 'SDVdE' logo.

1. Select Add

2. Enter name

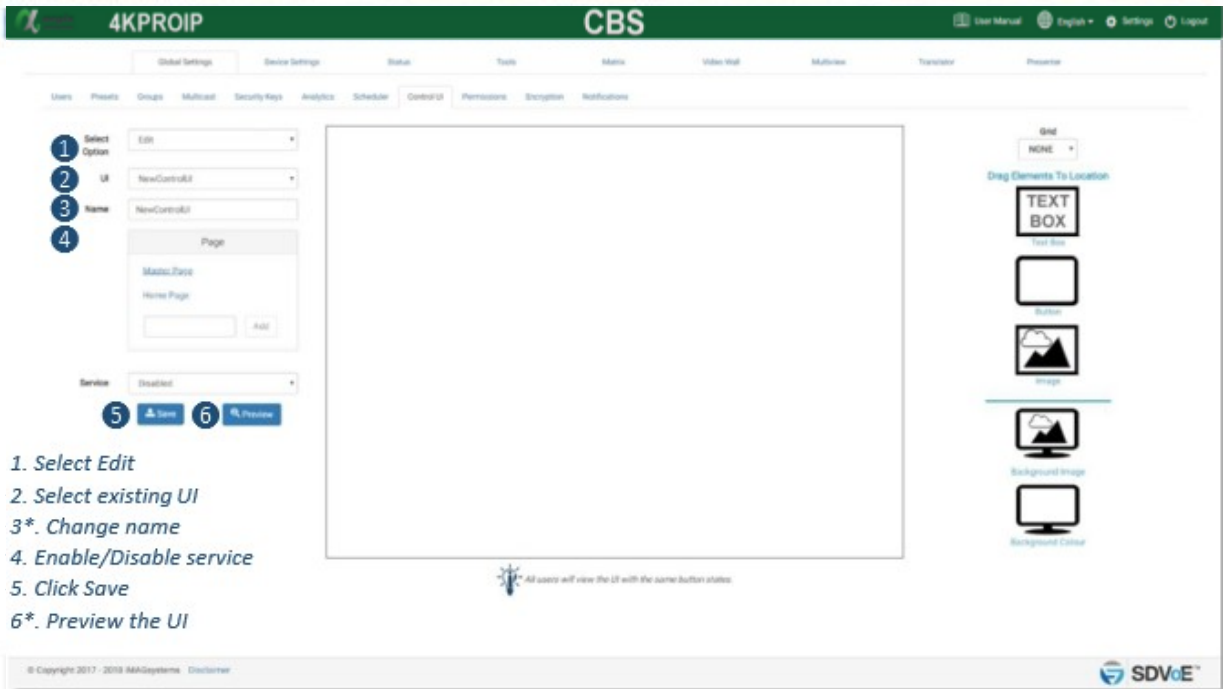
3. Select Size

4. Click Save

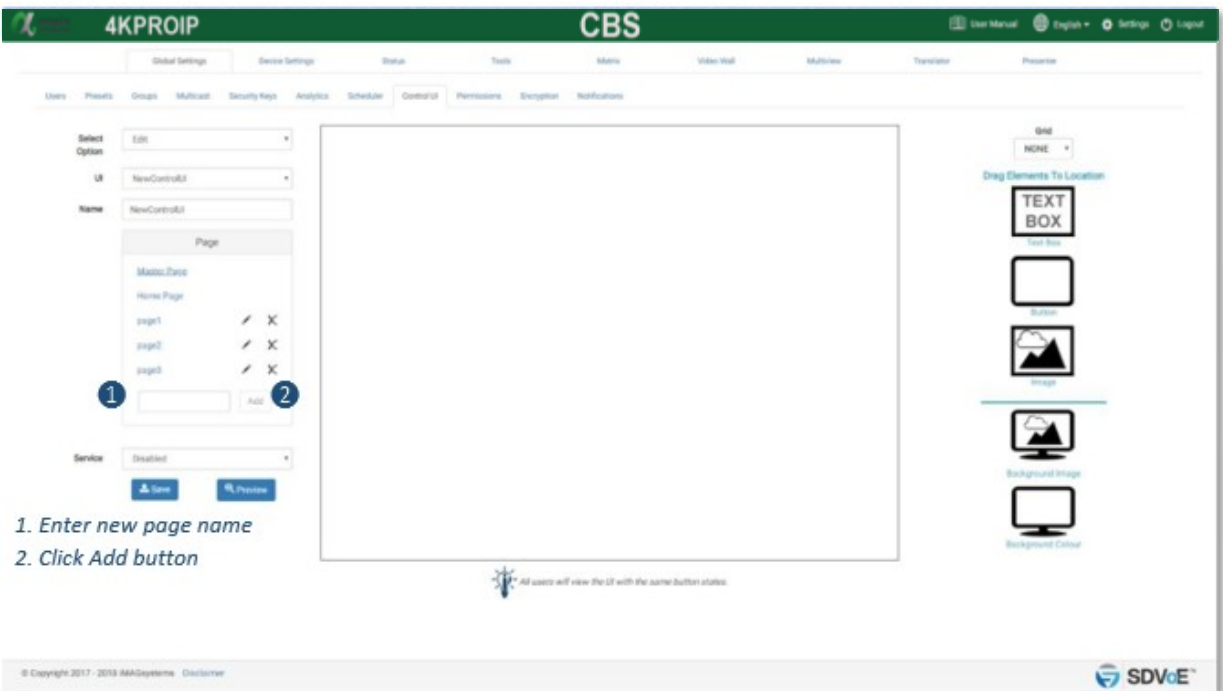


## 1.8.2 Edit

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

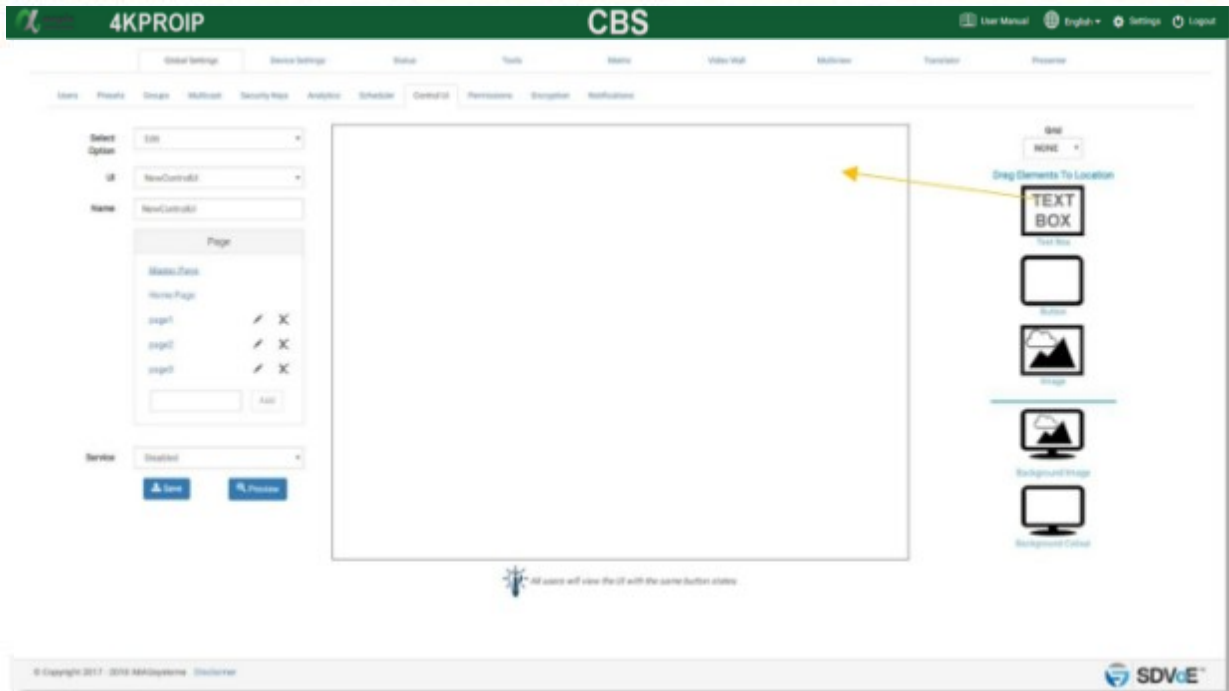


Initially only two pages are available, Master Page and Home Page. The Master Page is used for elements to be displayed on all other pages that do not have a background set. The Home Page is the displayed page when the UI is loaded. From here you can add and remove pages whenever required.

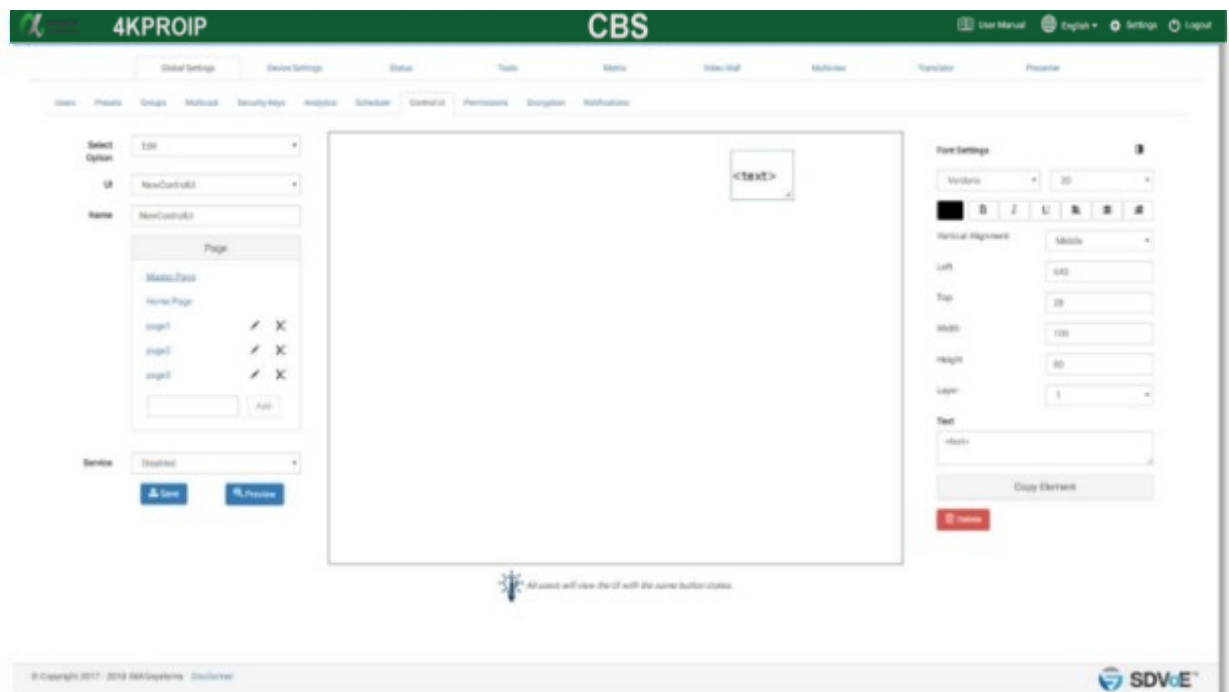


## 1.8.2.1 Text Box

A Text Box can be dragged to any location and used as a heading, text label or where ever text is required on the UI. Here we are adding a title for the UI on the Master Page.

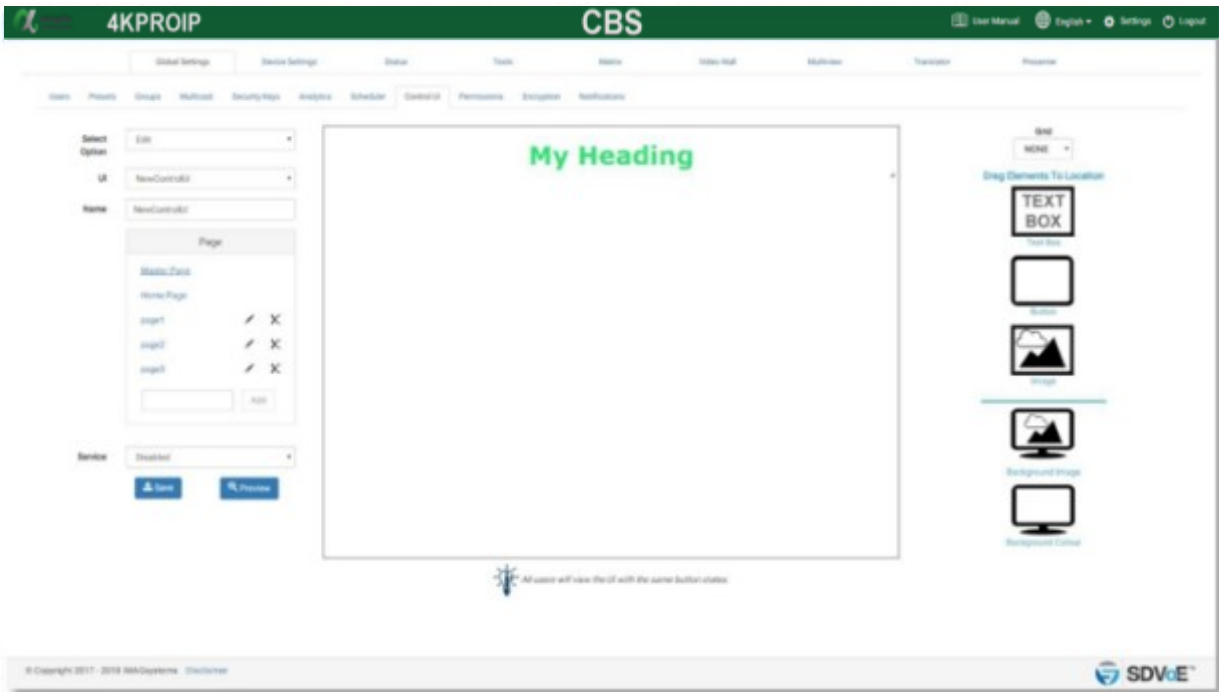


Edit the text font, size, alignment and position, or remove it from the UI.



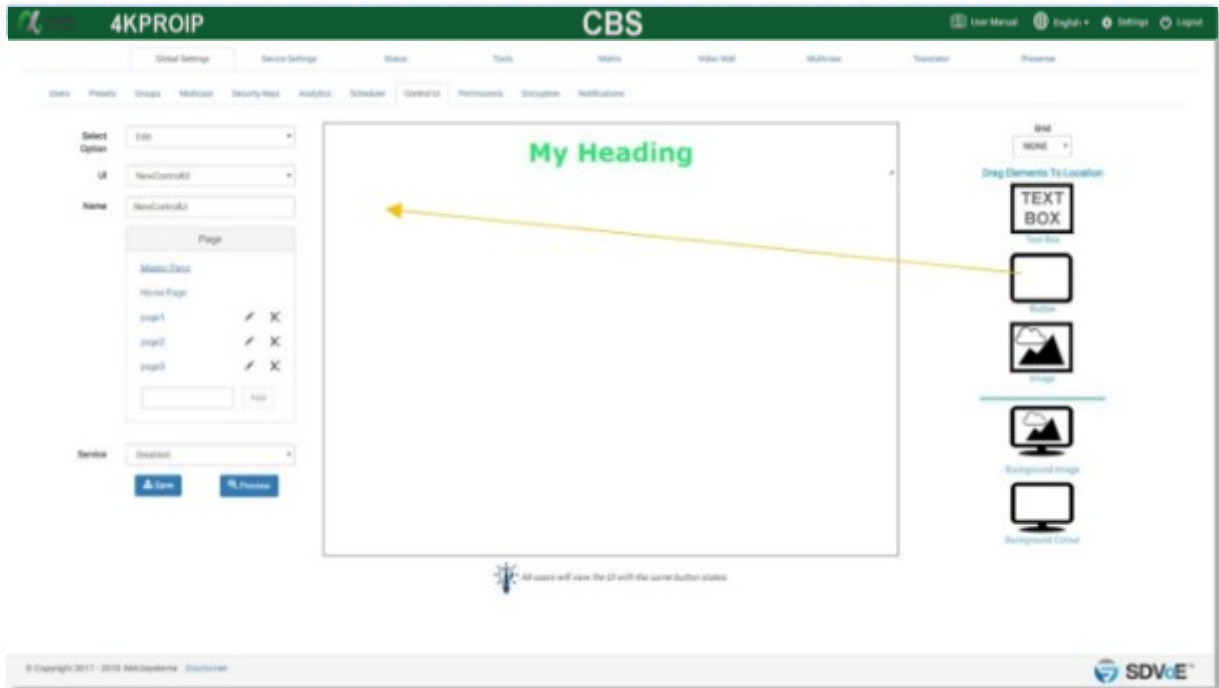
## 1.8.2.1 Text Box continued...

Here the heading Text Box has been defined.



## 1.8.2.2 Button

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



### Momentary button

A button will operate in a momentarily fashion when only a preset is assign to state 1.

### Toggle button

A button will operate in a toggle fashion when a preset is assigned to both state 1 and state2.

### Exclusive button

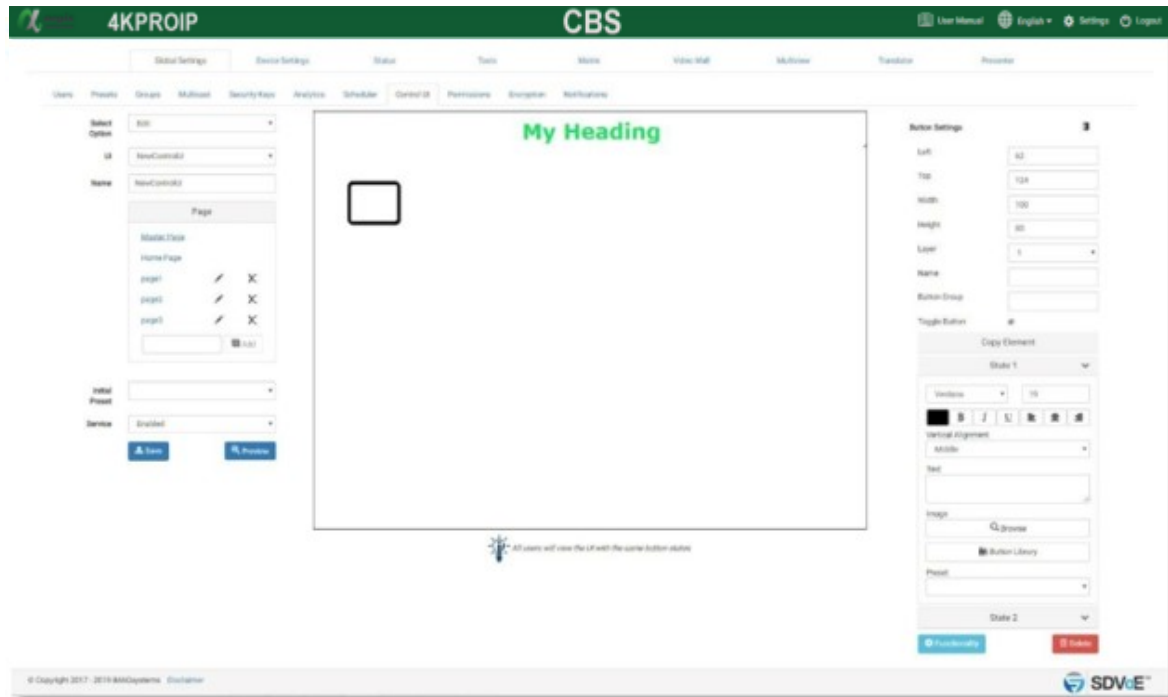
A button will operate in an exclusive toggle fashion when assign to a Button Group. When you want a group of buttons to work together as exclusive buttons, such as source selection, then define a Button Group for each of those buttons. The group can be called anything and all the buttons in the group are to be defined with the same group name.

If you need to interact with a button state, toggle its state, then a unique name for the button must be specified. The state of the button can then be changed with the functionality settings.

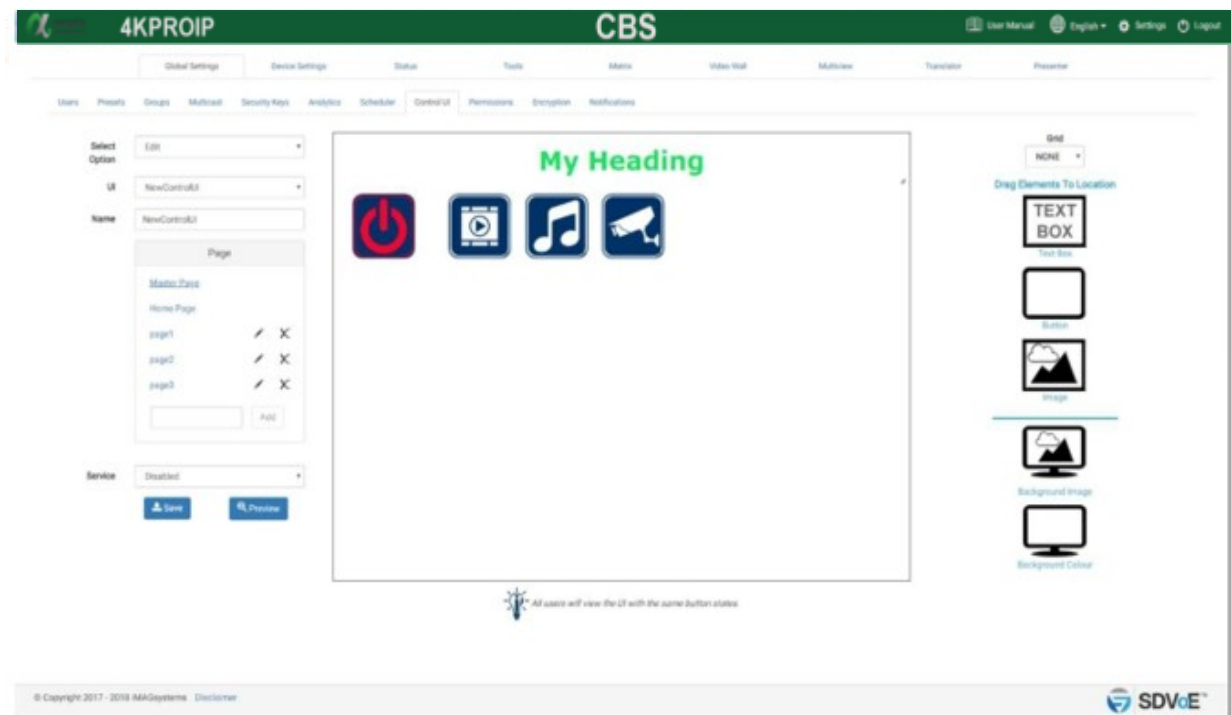
## 1.8.2.2 Button continued...

Edit the button text font, size, style and alignment. Edit the button position and select an icon by either browsing your own images or selecting one from the button library. When selecting an image from the button library, an on state image will automatically be selected for state 2 of the button.

Select a preset to be triggered by the button state.



Here images from the button library have been assigned to the buttons.



### 1.8.2.2 Button continued...

Here a button name and group name has been defined on the 3 source buttons.

These buttons will now work as exclusive toggle buttons (only 1 of the 3 can be in state 2).

The power button has functionality to toggle the states of these buttons to state 1 when turned off.

The source button will open another page to show specific UI buttons.



## 1.8.2.2 Button continued...

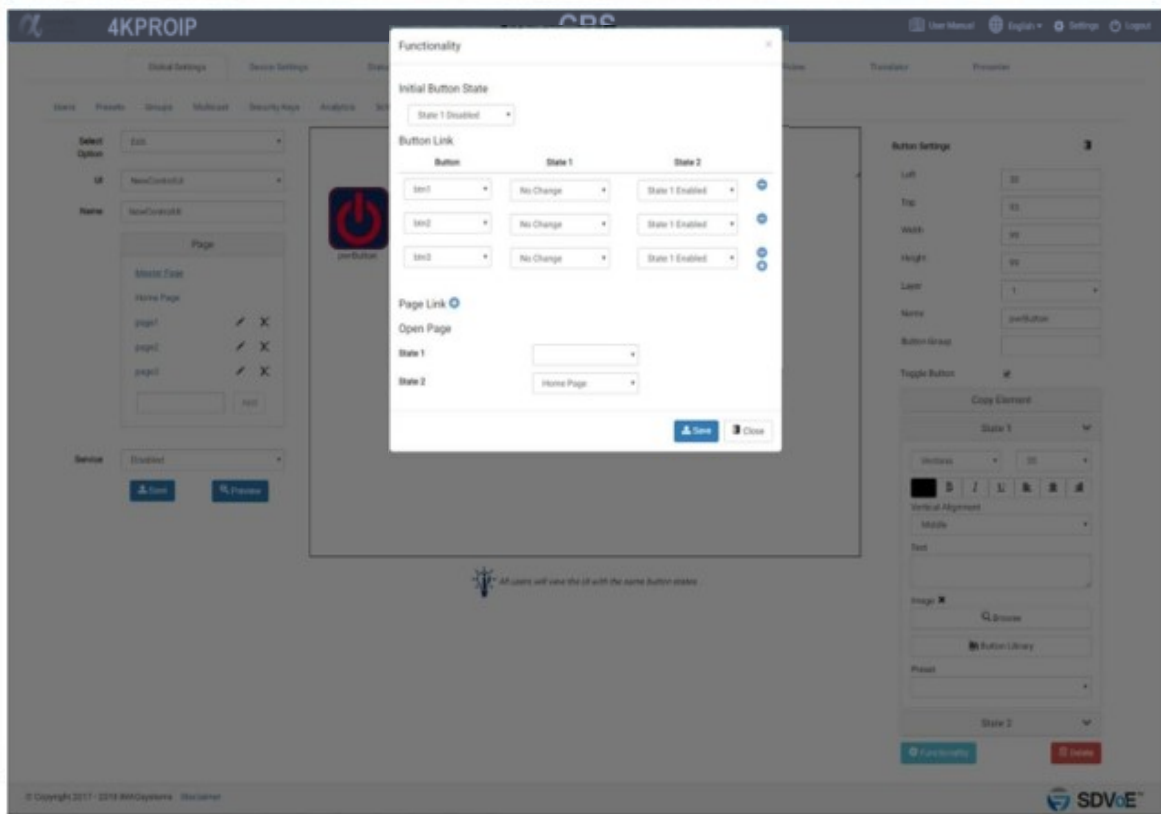
Here you can see the functionality defined on the power button. It will set the 3 source buttons back to state 1 when turned off.

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

**Button Link** – This allows you to change the state of button on the current UI page.

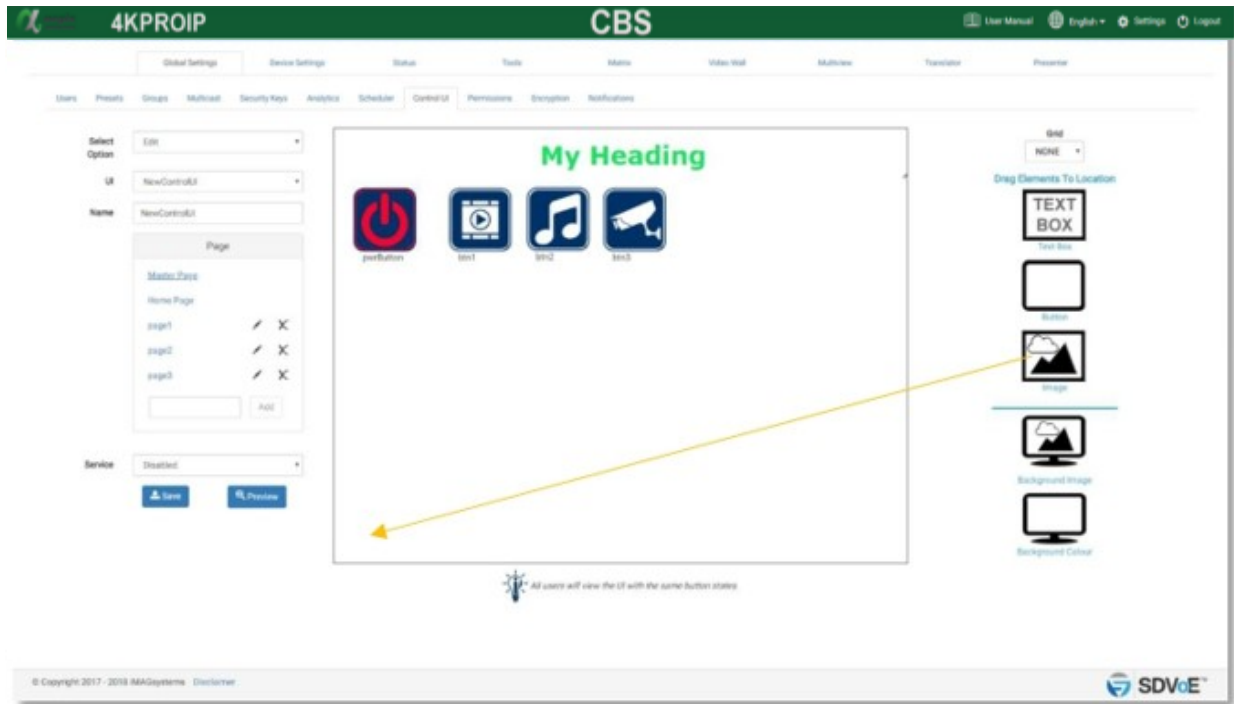
**Page Link** – This allows you to change the state of button on other UI pages.

**Open Page** – This allows you to select what page is to be displayed.

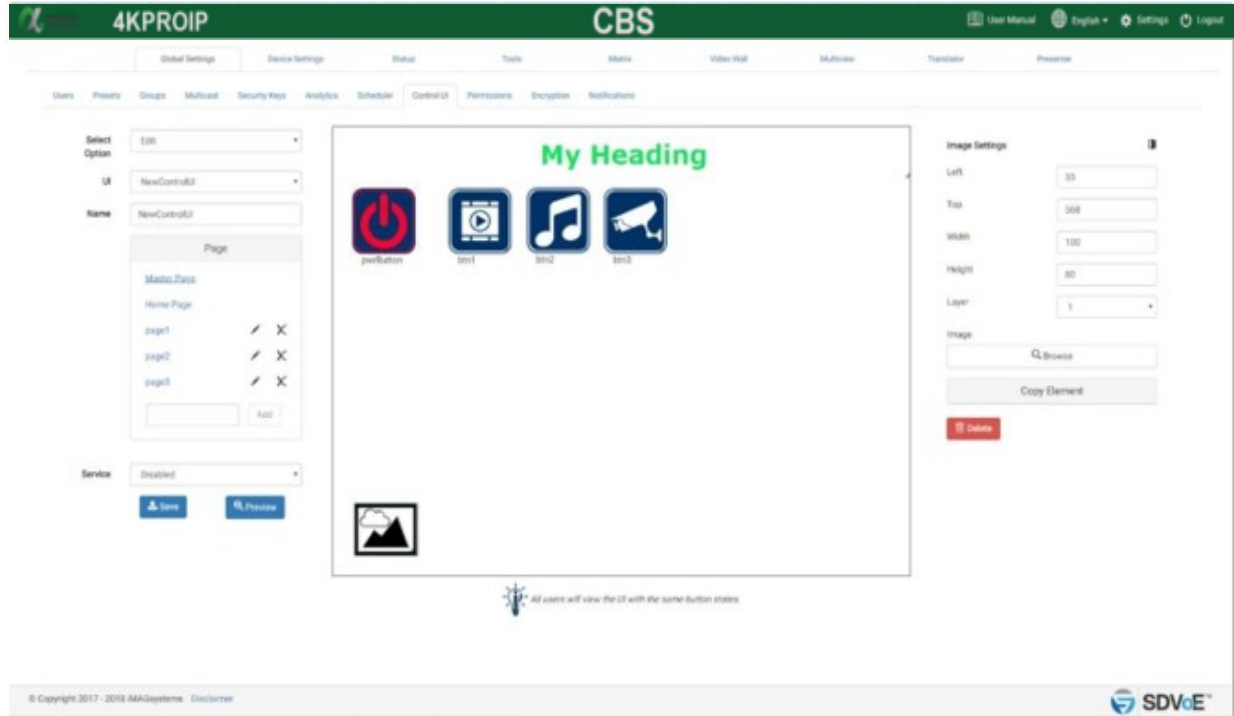


### 1.8.2.3 Image

An Image can be dragged to any location. Here we are going to place a logo on the Master Page.



Use Browse to select an image from your own images.





### 1.8.2.3 Image continued...

Here a logo image has now been assigned.



## 1.8.2.4 Background

Either a solid colour or an image can be selected for the background.

Applying a background to any other page than the Master Page will hide the Master Page.

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

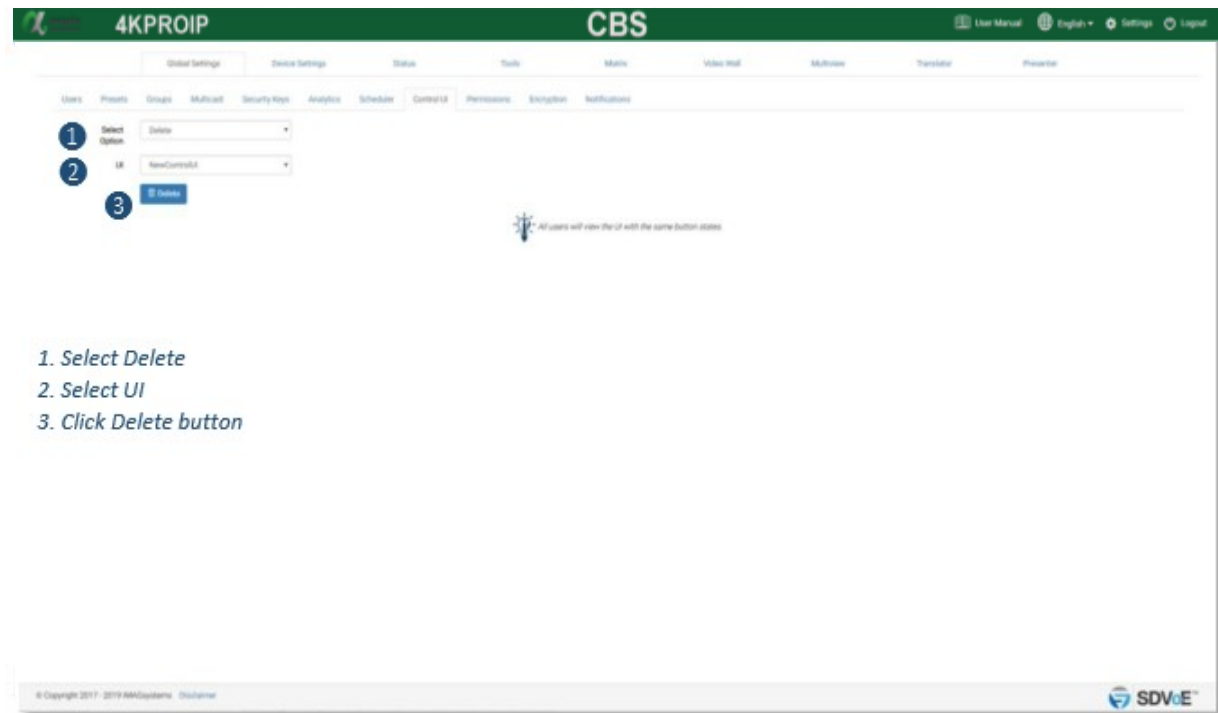


If a solid colour is required then select the Background Colour icon and select a colour from the popup colour picker.



## 1.8.3 Delete

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



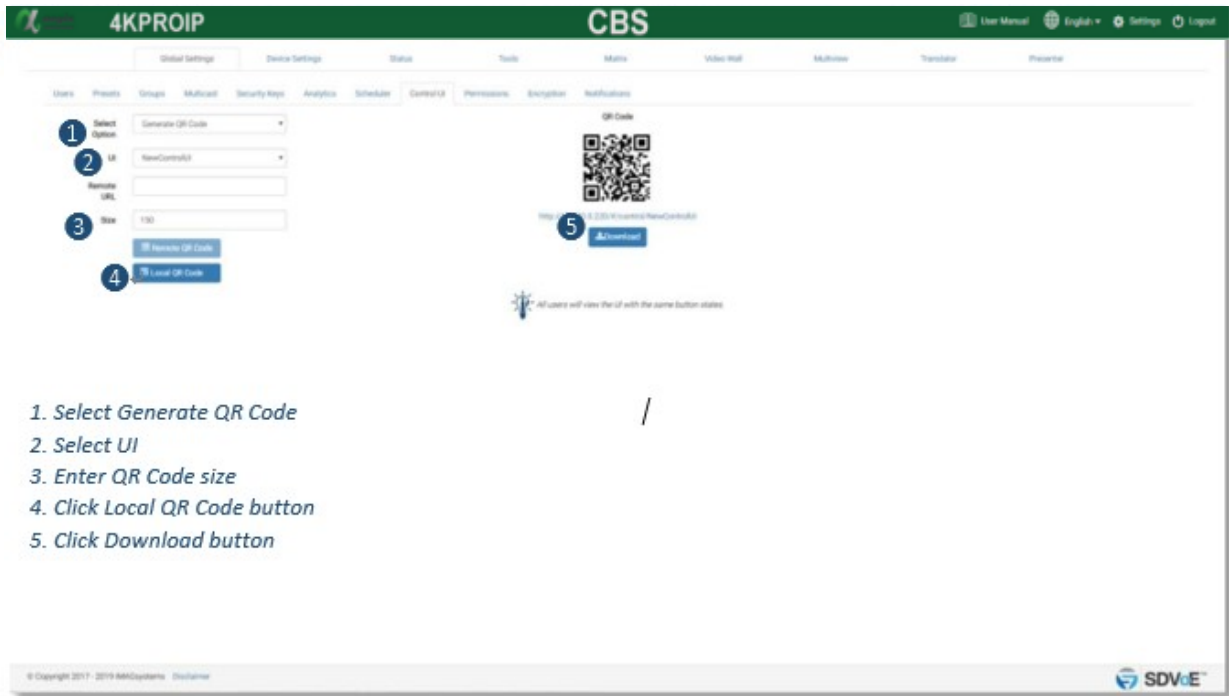
1. Select Delete
2. Select UI
3. Click Delete button

## 1.8.4 Generate QR Code

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

### 1.8.4.1 Generate Local QR Code

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



1. Select Generate QR Code

2. Select UI

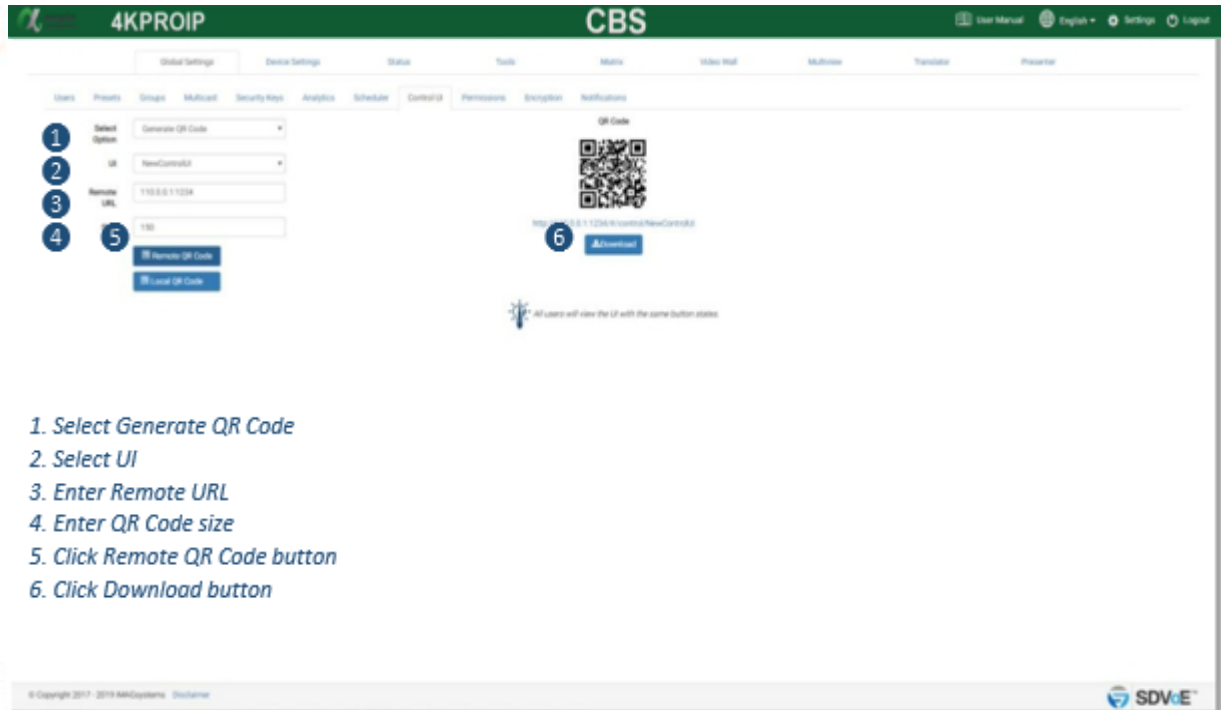
3. Enter QR Code size

4. Click Local QR Code button

5. Click Download button

## 1.8.4.2 Generate Remote QR Code

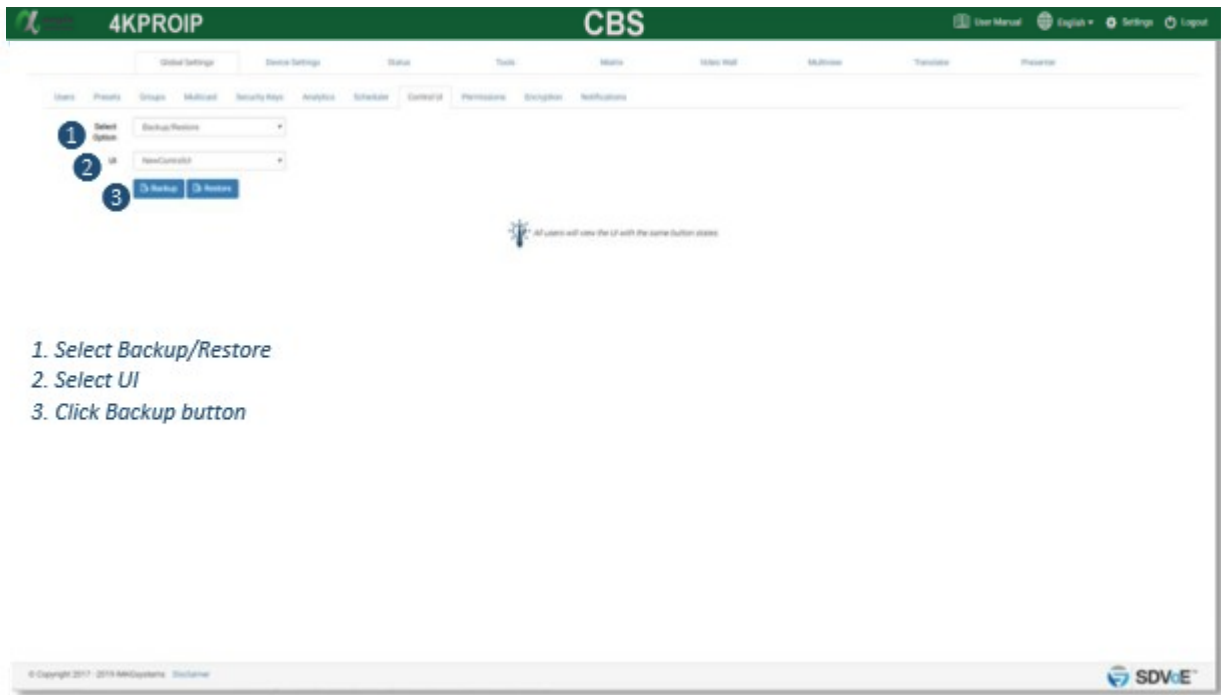
To browse to the UI via an external URL enter the details in the External URL box and select Remote QR Code. The size of the QR Code image can be changed then downloaded to be used in manuals or printed as required.



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

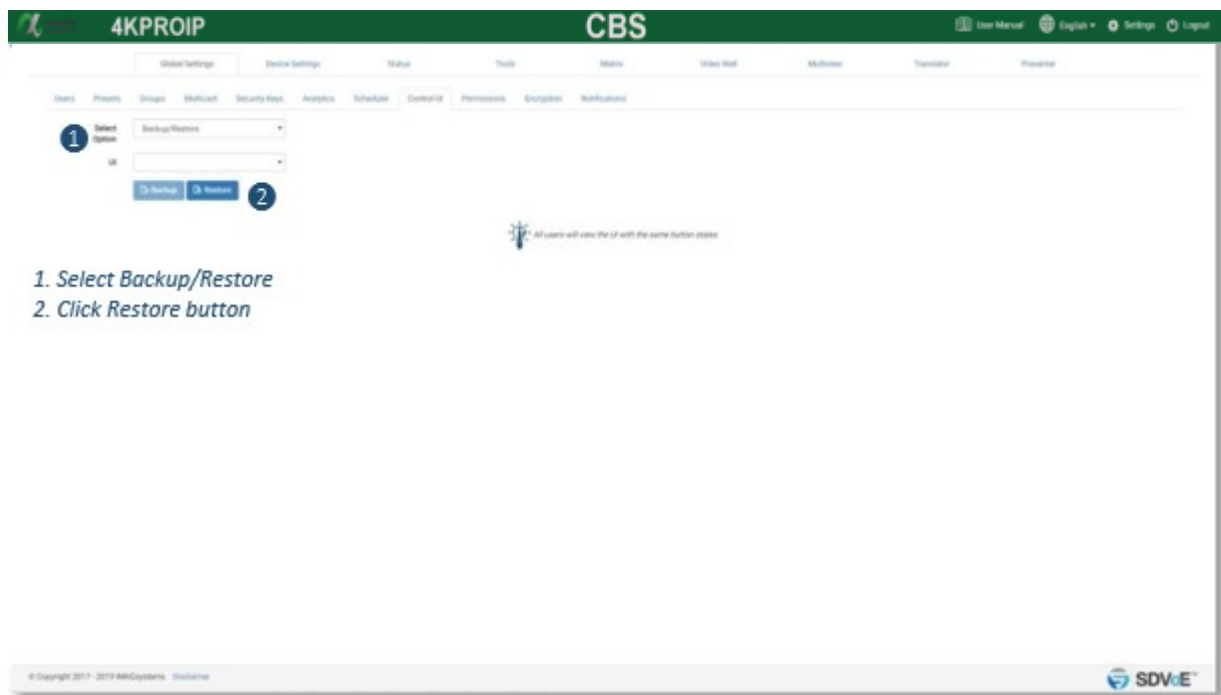
## 1.8.5 Backup / Restore

To keep a backup of your work select Backup / Restore then click the Backup button. A \*.exp file will be saved to your Downloads folder.



1. Select Backup/Restore
2. Select UI
3. Click Backup button

To restore the Control UI click Restore then browse and select the \*.exp backup file to be restored back onto the system.

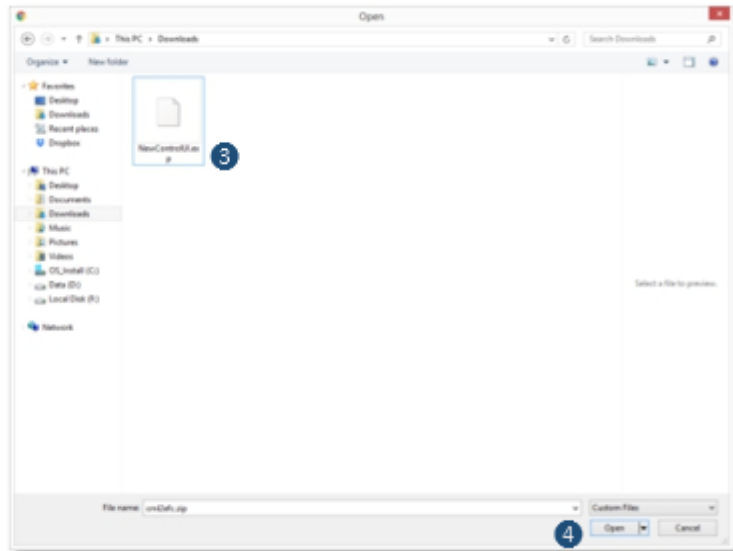


1. Select Backup/Restore
2. Click Restore button

## 1.8.5 Backup / Restore continued...

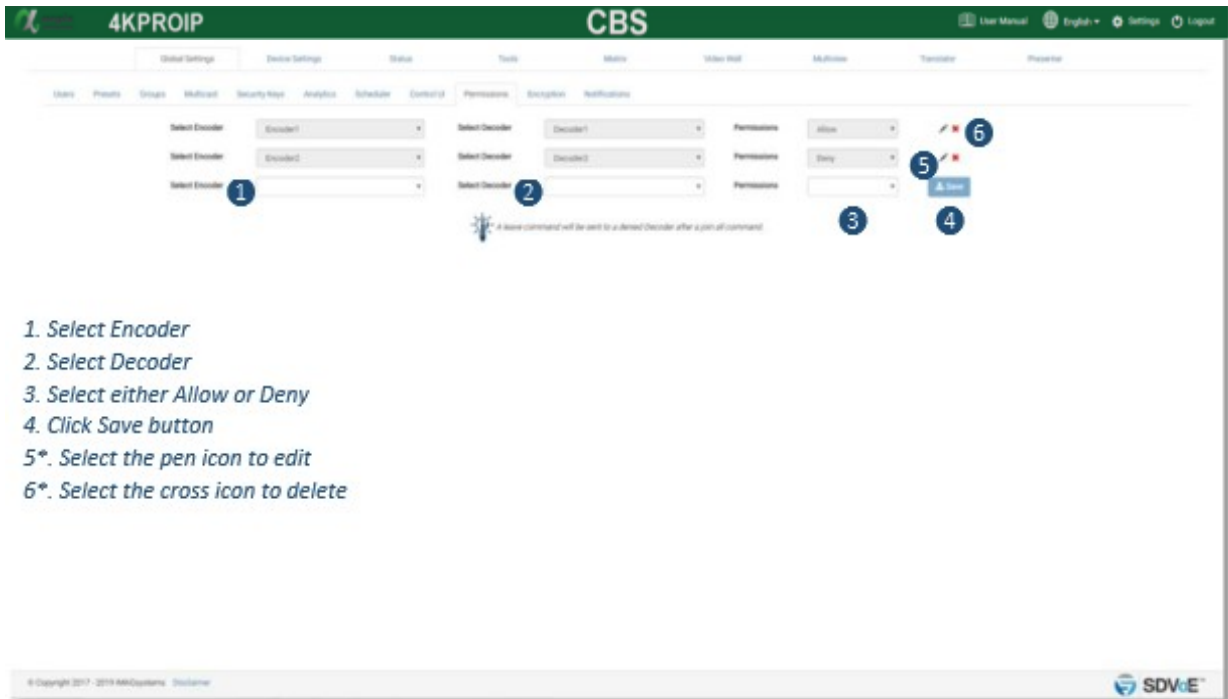
3. Select UI file<sup>↵</sup>

4. Click Open button<sup>↵</sup>



## 1.9 Permissions

Permissions adds the ability to only allow certain Encoders to be joined with certain Decoders. Here 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. 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.



1. Select Encoder

2. Select Decoder

3. Select either Allow or Deny

4. Click Save button

5\*. Select the pen icon to edit

6\*. Select the cross icon to delete



## 1.10 Encryption

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

(Device firmware > 3.5.2.0 and BlueRiver™ firmware > 2.14.0 required)

**4KPROIP CBS**

User Manual English Settings Logout

Global Settings Device Settings Status Tools Matrix Video Wall Multiview Transistor Presentation

Users Profiles Groups Multiview Security Keys Analysis Schedule Control UI Permissions **Encryption** Notifications

**1. Select device(s)**

**2. Enable / Disable encryption**

**3. Enter Encryption Key (when Enabled)**

**4. Click Save button**

Select Device: ☐ All Devices ☐ Group ☐ Individual

☐ Encoder1 (3.6.8.8) ☐ Encoder2 (3.6.8.8) ☐ Encoder3 (3.6.8.8) ☐ Encoder4 (3.6.8.8)

☐ Decoder1 (3.6.8.8) ☐ Decoder2 (3.6.8.8) ☐ Decoder3 (3.6.8.8) ☐ Decoder4 (3.6.8.8)

Encryption:

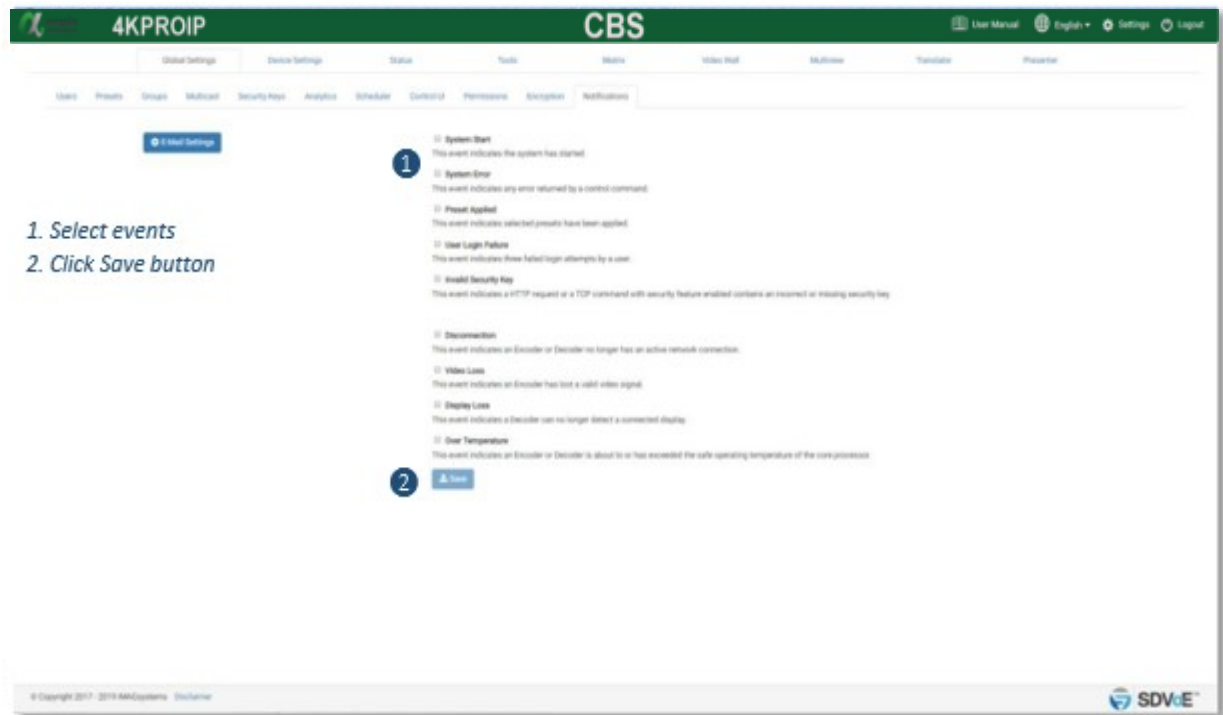
Encryption Key:

\* The Encryption Key must be eight characters.

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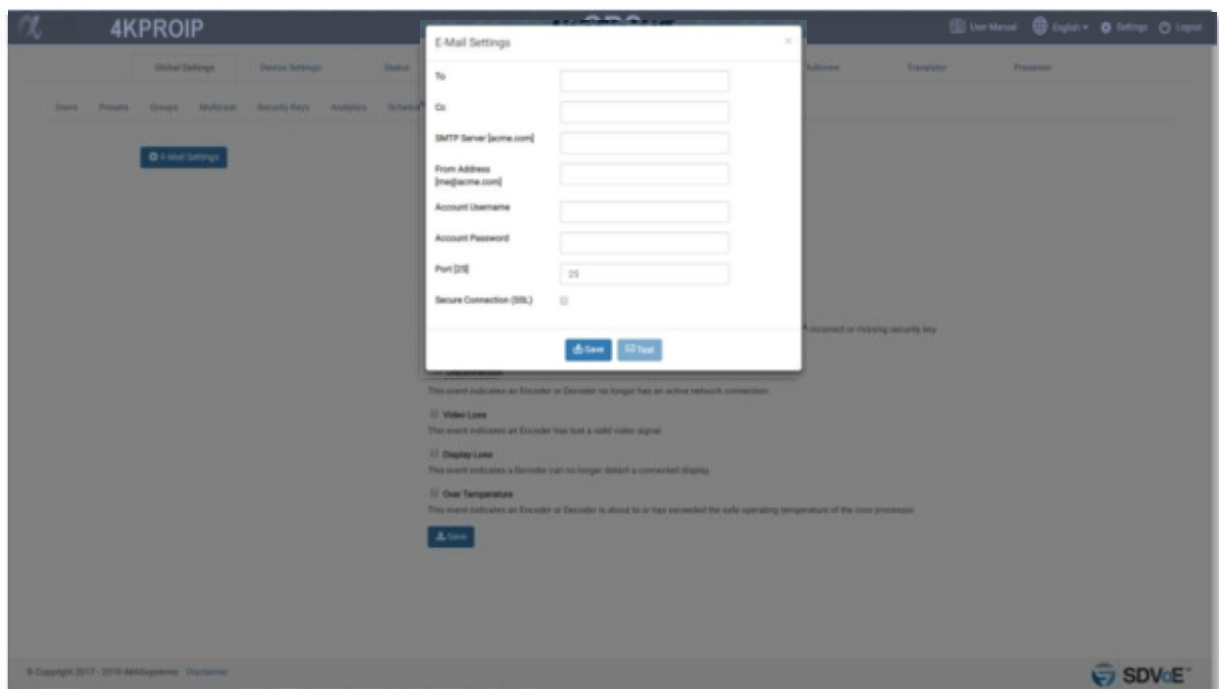
## 1.11 Notifications

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



### 1.11.1 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.

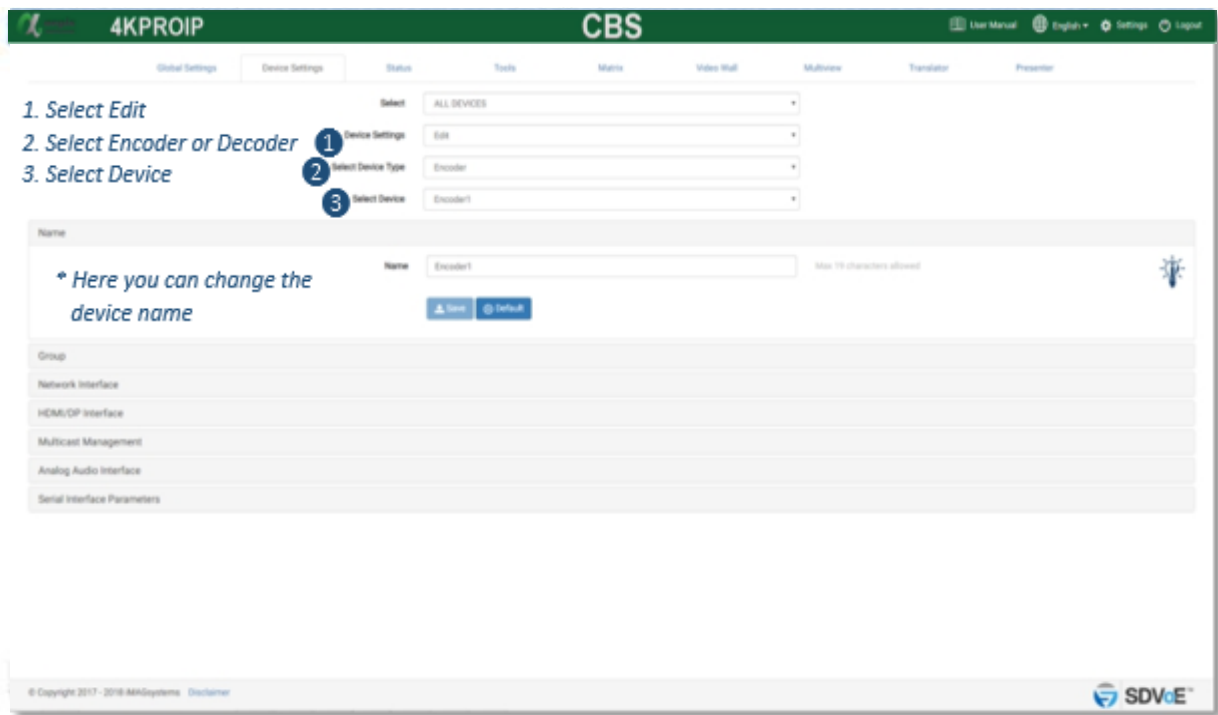


## 2 Device Settings

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

### 2.1 Edit Settings

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



4KPROIP CBS

User Manual English Settings Logout

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

1. Select Edit  
2. Select Encoder or Decoder  
3. Select Device

Select ALL DEVICES

1 Device Settings Edit  
2 Select Device Type Encoder  
3 Select Device Encoder1

Name

\* Here you can change the device name

Name Encoder1 Max 19 characters allowed

Save Default

Group

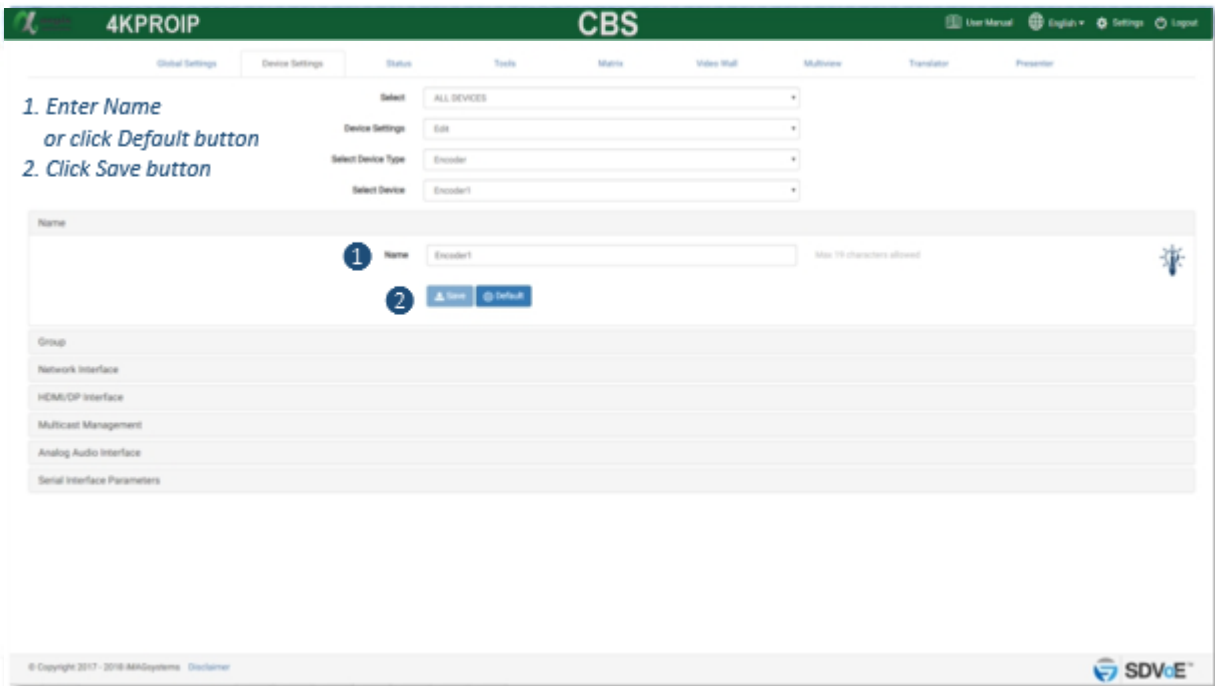
Network Interface  
HDMI/DP Interface  
Multicast Management  
Analog Audio Interface  
Serial Interface Parameters

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## 2.1.1 Name

The name of the device is used for control. This is the device name used in API commands. Device names have a maximum of 19 characters and no spaces are allowed.



**4KPROIP CBS**

User Manual English Settings Logout

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

**1. Enter Name**  
*or click Default button*  
**2. Click Save button**

Select: ALL DEVICES

Device Settings: Edit

Select Device Type: Encoder

Select Device: Encoder1

Name: Encoder1 (Max 19 characters allowed)

1 Name

2 Save Default

Group

Network Interface

HDMI/DP Interface

Multicast Management

Analog Audio Interface

Serial Interface Parameters

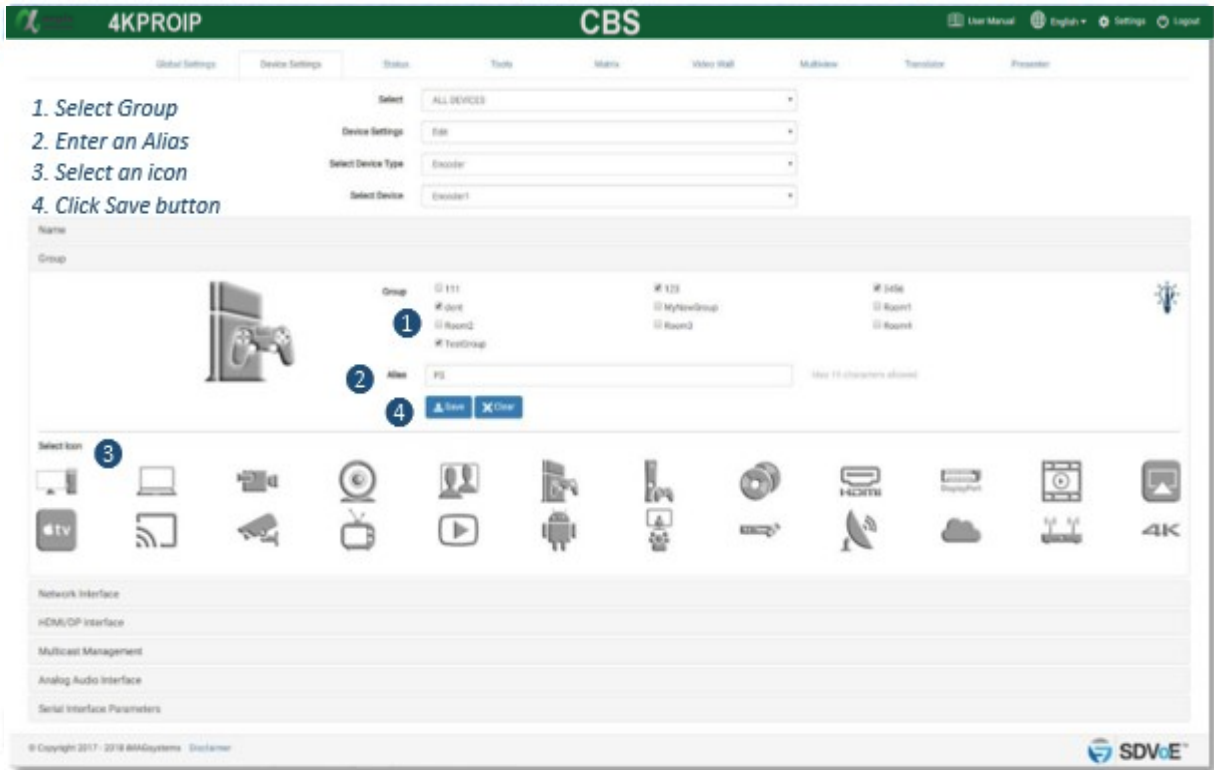
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## 2.1.2 Group

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

Group names have a maximum of 19 characters and no spaces are allowed.



## 2.1.3 Network Interface

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

**4KPROIP CBS**

User Manual English Settings Logout

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

Select: ALL DEVICES

Device Settings: Edit

Select Device Type: Encoder

Select Device: Encoder1

Name:

Group:

**Network Interface**

1. Select Icron USB IP Mode AUTO

2. Click Save button

3. Select IP Mode AUTO

4. Click Save button

3 IP Mode: AUTO

IP Address: 172.30.0.232

Subnet: 255.255.255.0

Gateway: 172.30.0.10

4 Save

1 USB IP Mode: AUTO

IP Address: 172.30.0.232

Subnet: 255.255.255.0

Gateway: 172.30.0.10

2 Save

Signal Port Mode: Enabled

Save

HEMA/EP Interface

Analog Audio Interface

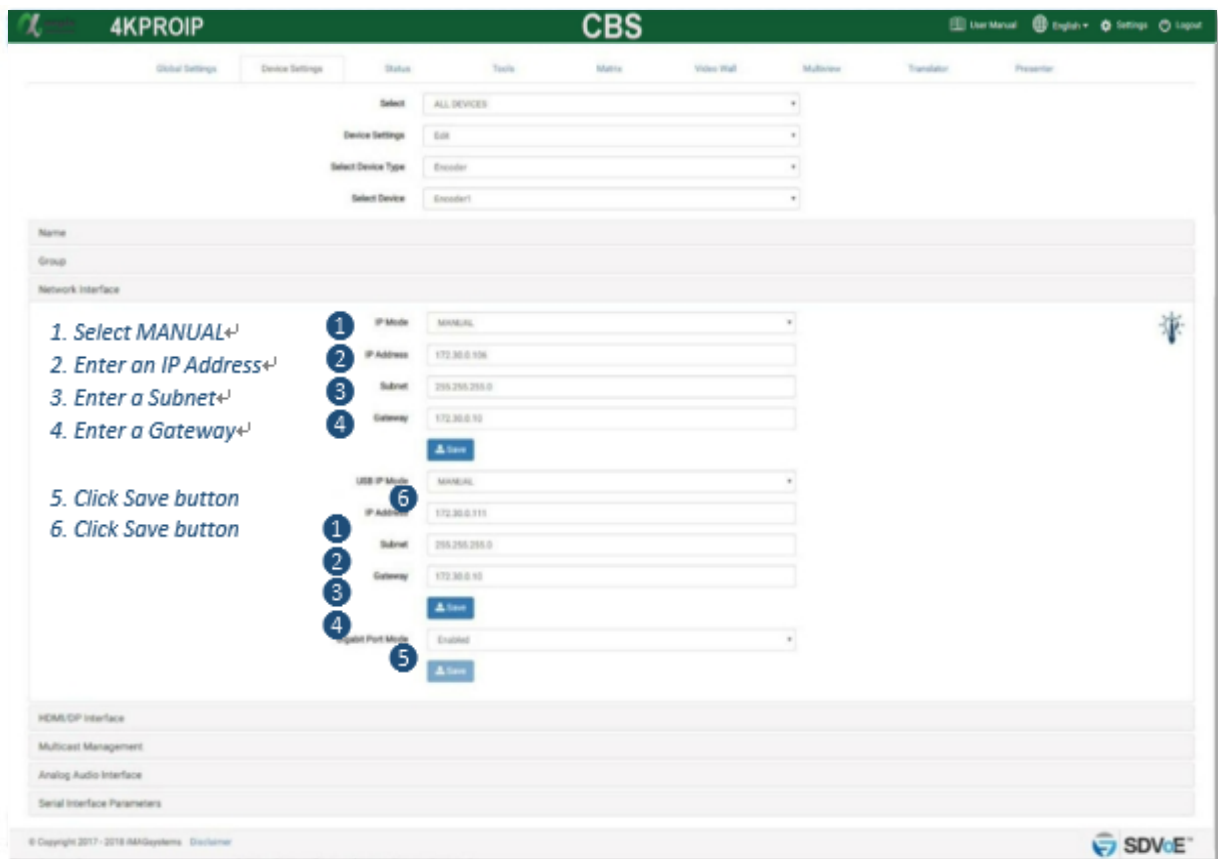
Serial Interface Parameters

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## 2.1.3 Network Interface continued...

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



**4KPROIP CBS**

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

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

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

**Network Interface**

1. Select MANUAL<sup>⬅</sup>
2. Enter an IP Address<sup>⬅</sup>
3. Enter a Subnet<sup>⬅</sup>
4. Enter a Gateway<sup>⬅</sup>
5. Click Save button
6. Click Save button

IP Mode: MANUAL  
IP Address: 172.30.0.106  
Subnet: 255.255.255.0  
Gateway: 172.30.0.10  
Save

USB IP Mode: MANUAL  
IP Address: 172.30.0.111  
Subnet: 255.255.255.0  
Gateway: 172.30.0.10  
Save

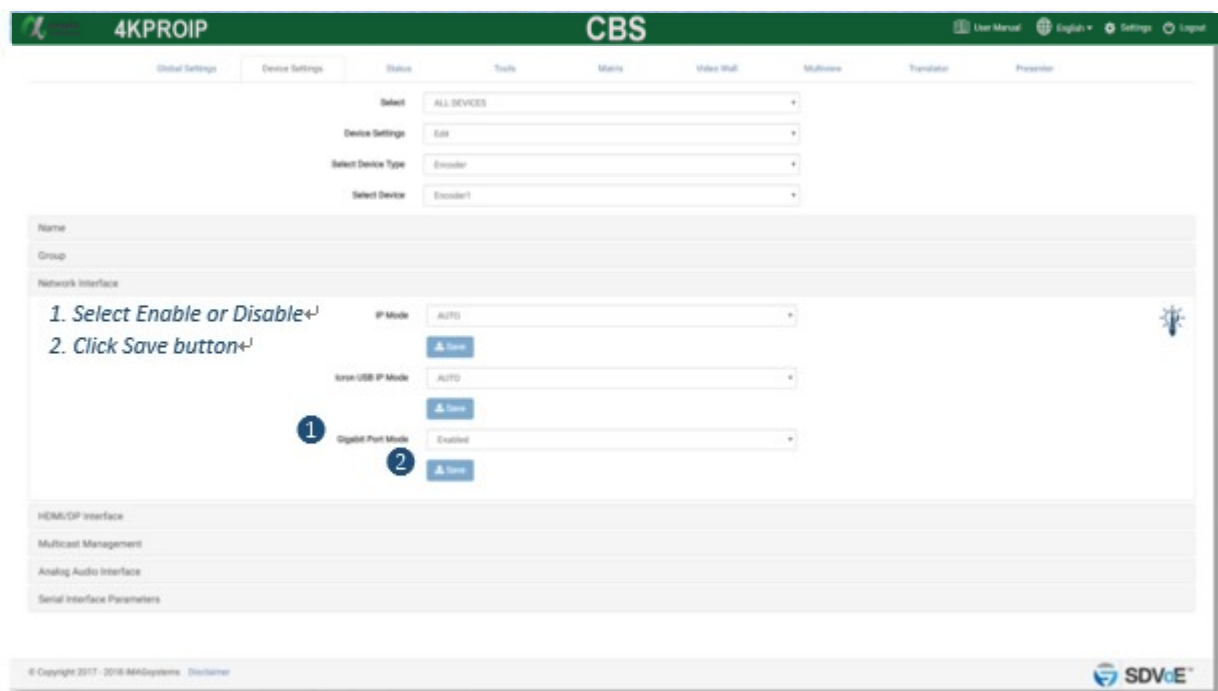
Digital Port Mode: Enabled  
Save

HDMI/DP Interface  
Multicast Management  
Analog Audio Interface  
Serial Interface Parameters

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



**4KPROIP CBS**

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

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

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

**Network Interface**

1. Select Enable or Disable<sup>⬅</sup>
2. Click Save button<sup>⬅</sup>

IP Mode: AUTO  
Save

USB IP Mode: AUTO  
Save

Digital Port Mode: Enabled  
Save

HDMI/DP Interface  
Multicast Management  
Analog Audio Interface  
Serial Interface Parameters

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## 2.1.4 HDMI/DP Interface

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

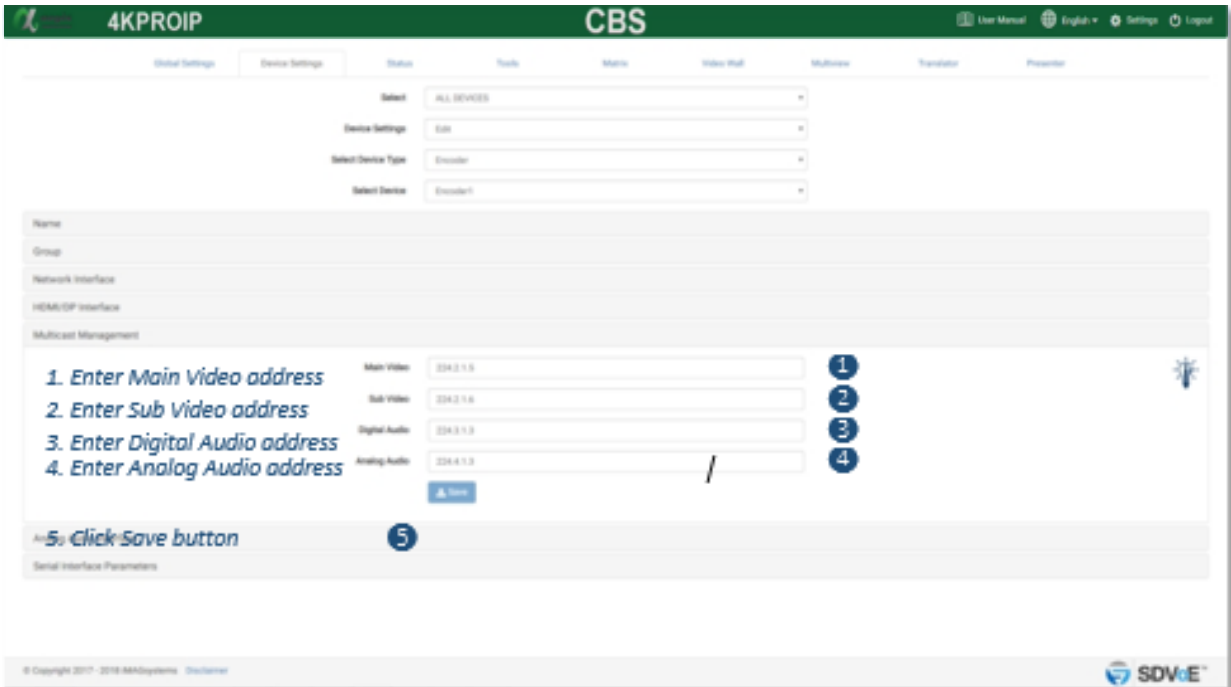
[illegible]





## 2.1.6 Multicast Management

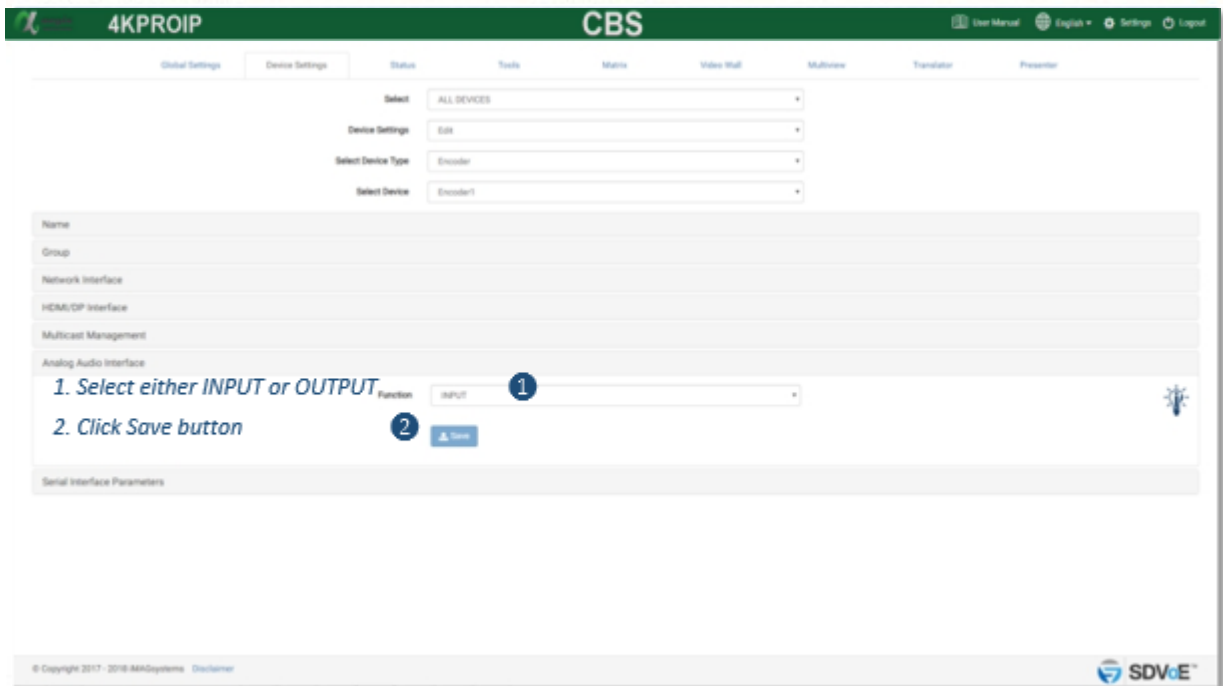
When Multicast has been set to MANUAL from the Global Settings \ Multicast tab, an Encoder will show the Multicast Management tab. Multicast Addresses will be automatically assigned and these can be manually changed as required. Make sure Multicast addresses are assigned in the same range as specified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



The screenshot shows the CBS Multicast Management interface. At the top, there are tabs for Global Settings, Device Settings, Status, Tools, Matrix, Video Wall, Multicast, Translator, and Presenter. The Multicast tab is selected. Below the tabs, there are dropdown menus for Select (ALL DEVICES), Device Settings (Edit), Select Device Type (Encoder), and Select Device (Encoder1). The main section is titled 'Multicast Management' and contains four input fields: Main Video (224.2.1.5), Sub Video (224.2.1.6), Digital Audio (224.3.1.3), and Analog Audio (224.4.1.3). A 'Save' button is located below the input fields. To the right of the input fields, there are numbered callouts 1 through 4. Below the input fields, there is a 'Serial Interface Parameters' section. At the bottom of the page, there is a copyright notice: © Copyright 2017 - 2018 M4Systems. A logo for SDVoE is also present.

## 2.1.7 Analog Audio Interface

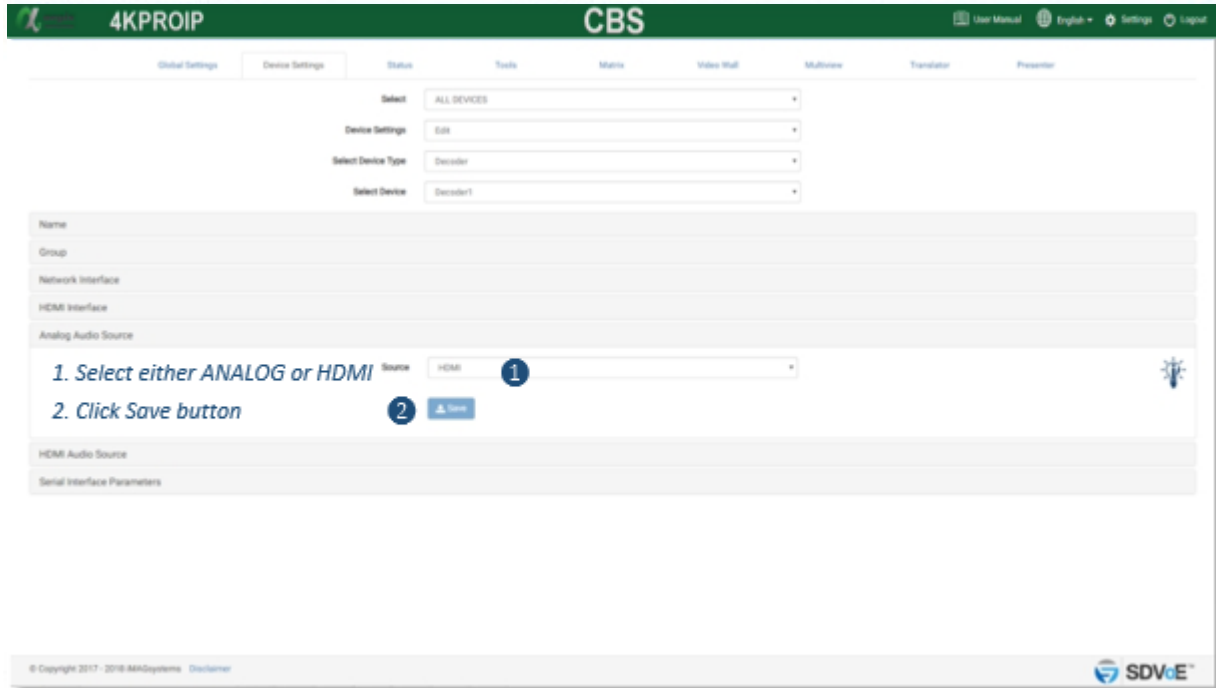
The 3.5mm analog audio jack of an Encoder can work as either an input or an output.



The screenshot shows the CBS Analog Audio Interface interface. At the top, there are tabs for Global Settings, Device Settings, Status, Tools, Matrix, Video Wall, Multicast, Translator, and Presenter. The Multicast tab is selected. Below the tabs, there are dropdown menus for Select (ALL DEVICES), Device Settings (Edit), Select Device Type (Encoder), and Select Device (Encoder1). The main section is titled 'Analog Audio Interface' and contains a 'Function' dropdown menu set to 'INPUT'. A 'Save' button is located below the dropdown menu. To the right of the dropdown menu, there is a numbered callout 1. Below the dropdown menu, there is a 'Serial Interface Parameters' section. At the bottom of the page, there is a copyright notice: © Copyright 2017 - 2018 M4Systems. A logo for SDVoE is also present.

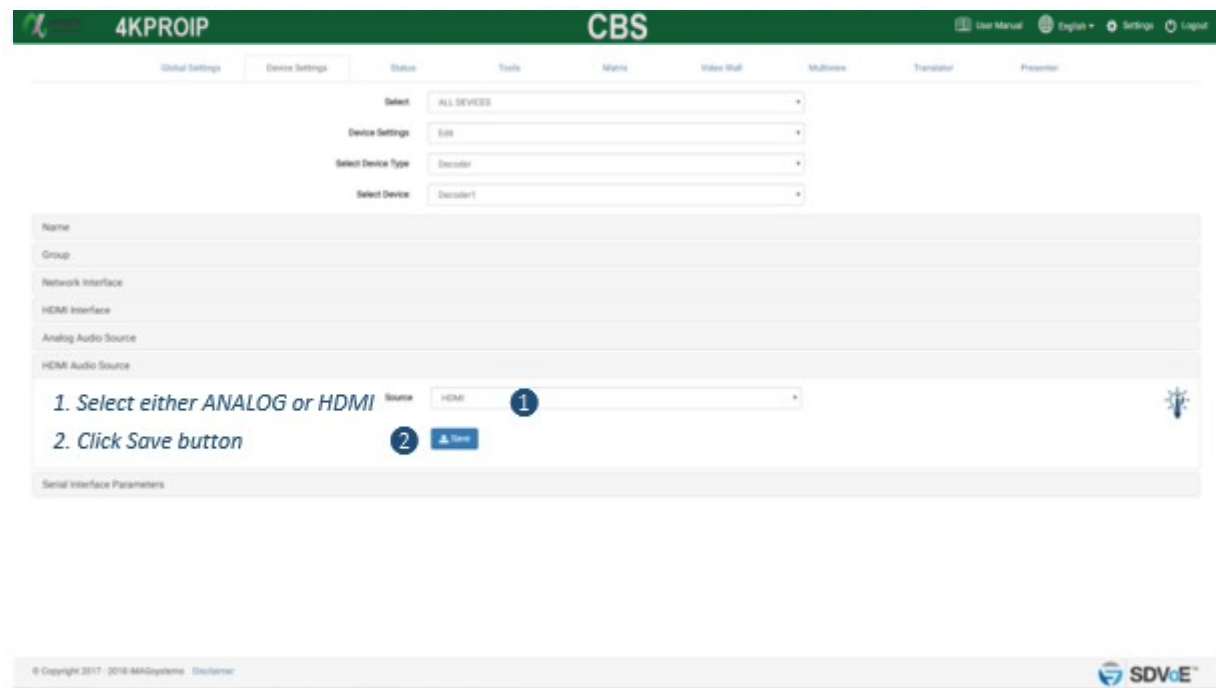
## 2.1.8 Analog Audio Source

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



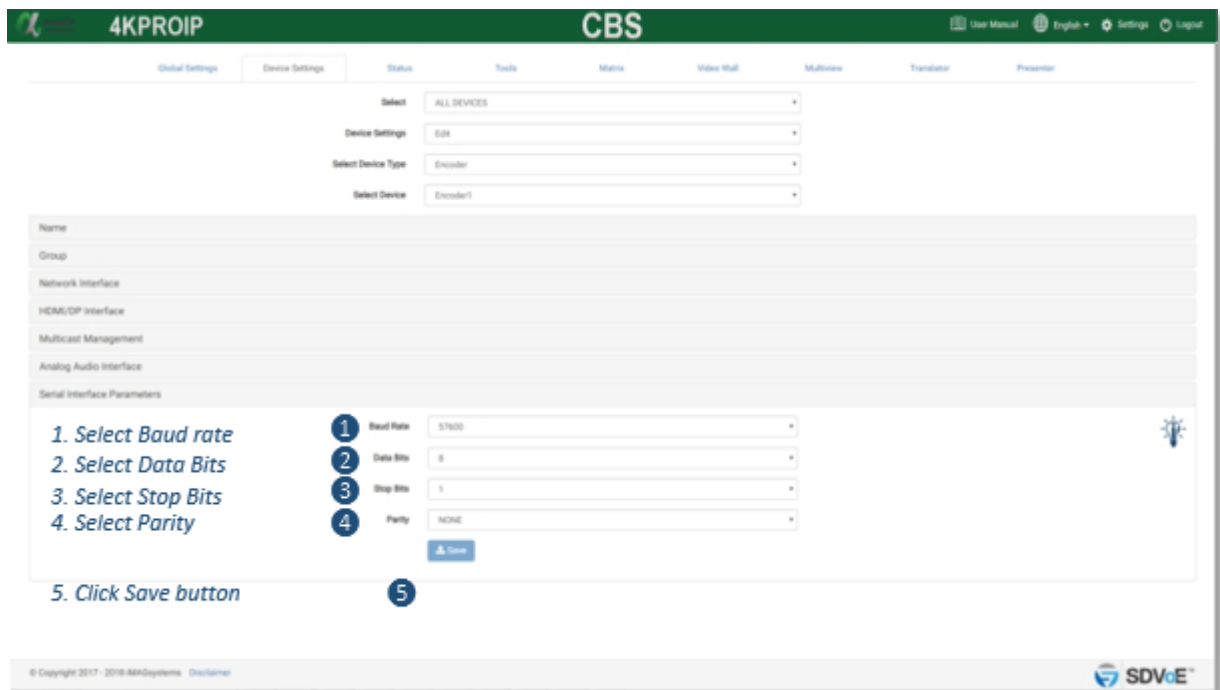
## 2.1.9 HDMI Audio Source

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



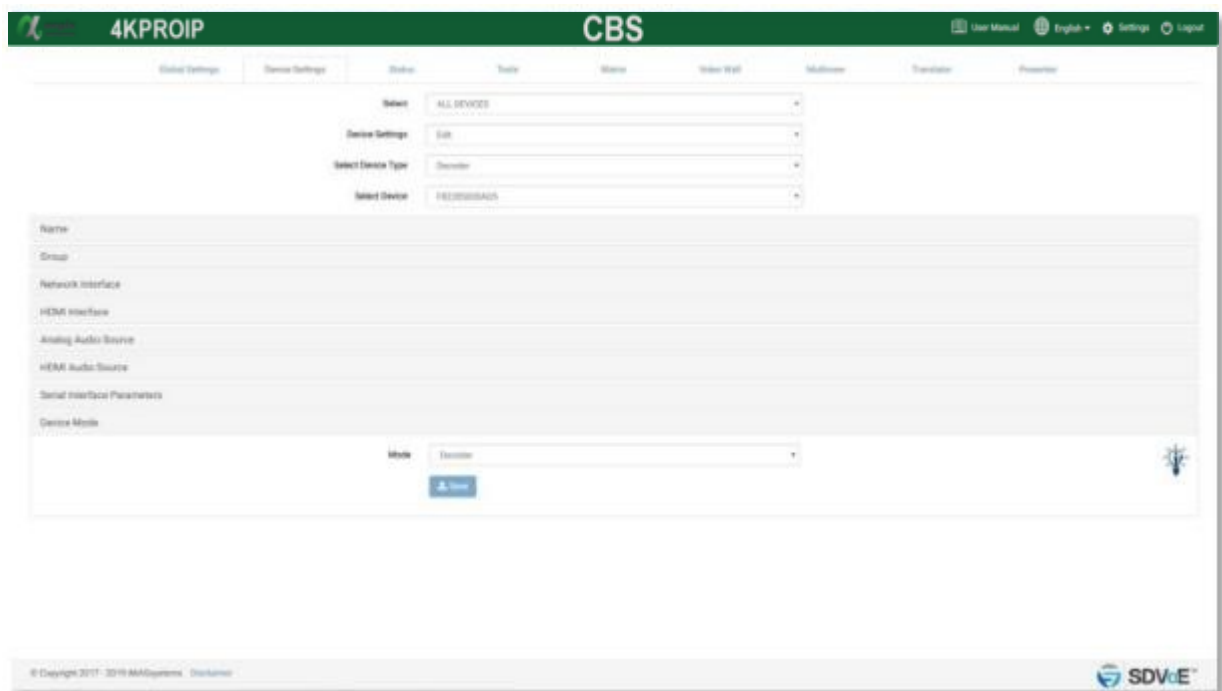
## 2.1.10 RS232 Serial Interface Parameters

Here you configure the parameters for the serial RS232 port.



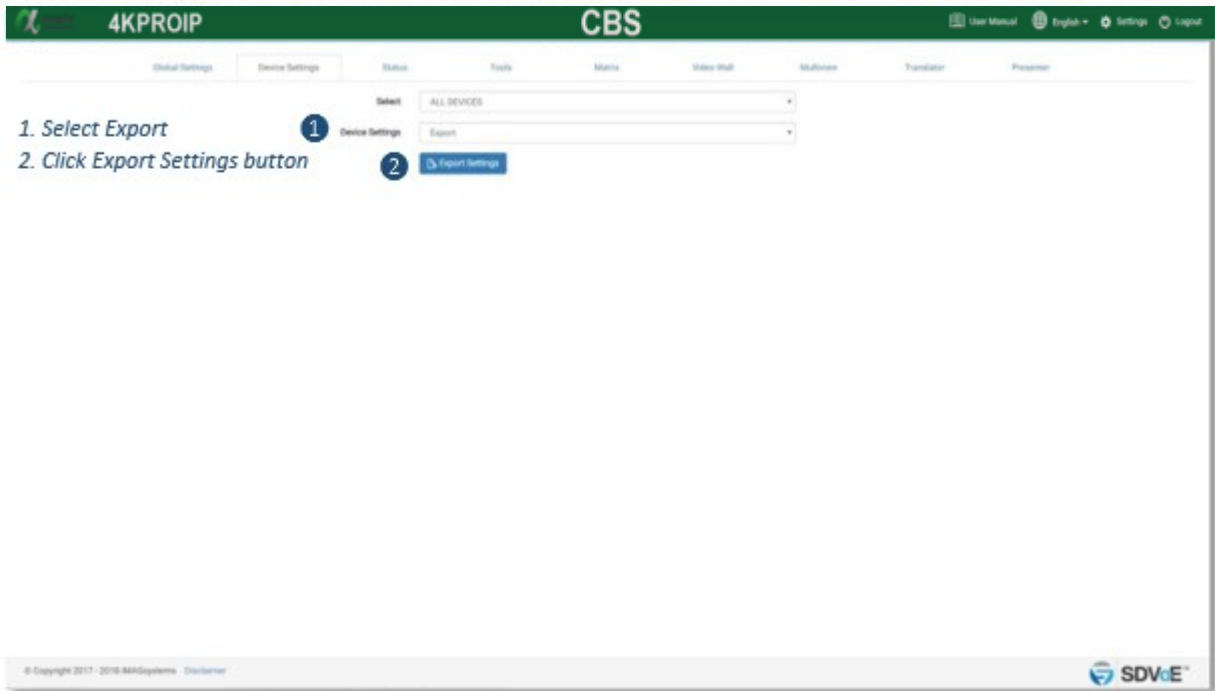
## 2.1.11 Device Mode

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



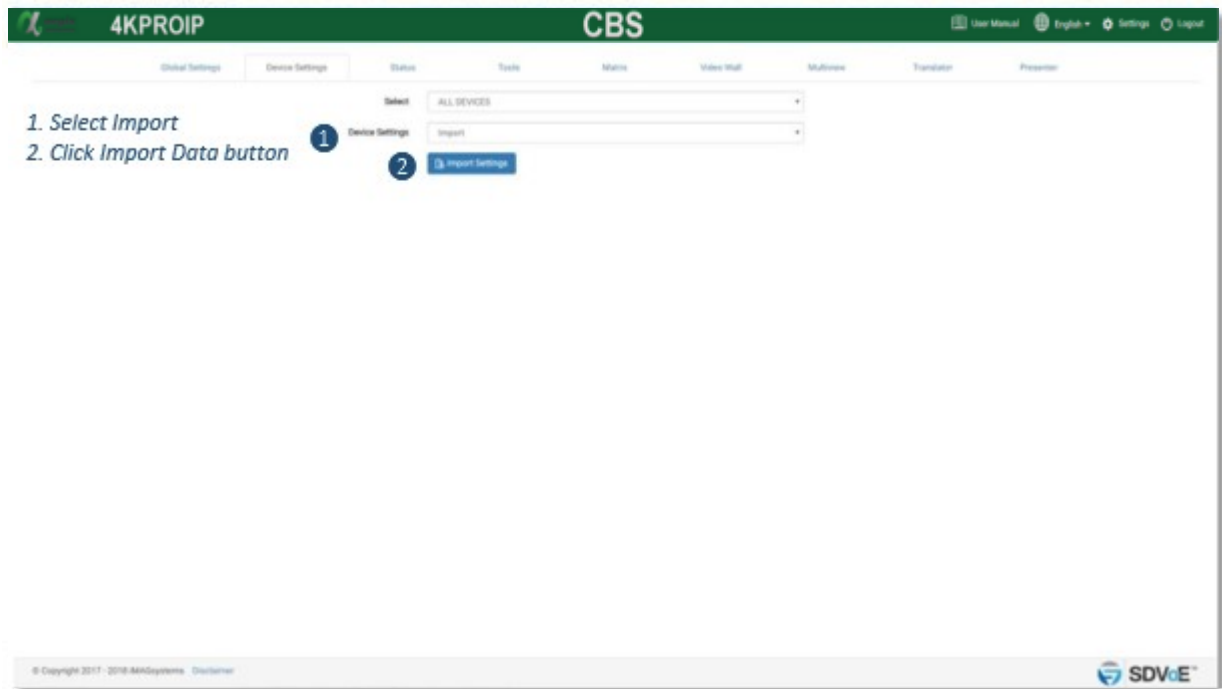
## 2.2 Export Settings

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

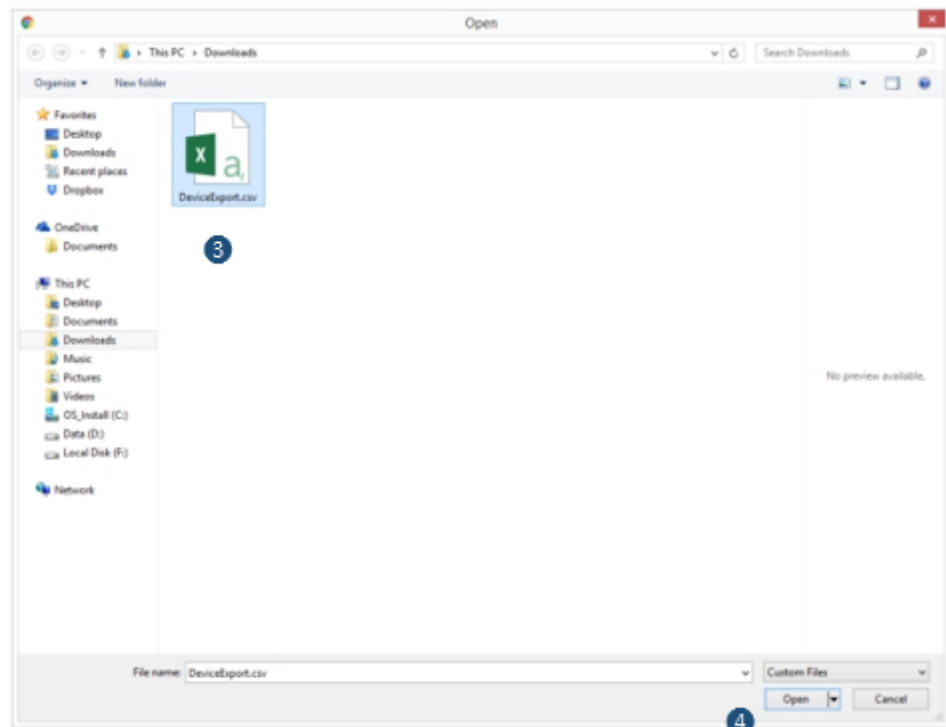


## 2.3 Import Settings

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



3. Select file
4. Click Open button








### 3 Status

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

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

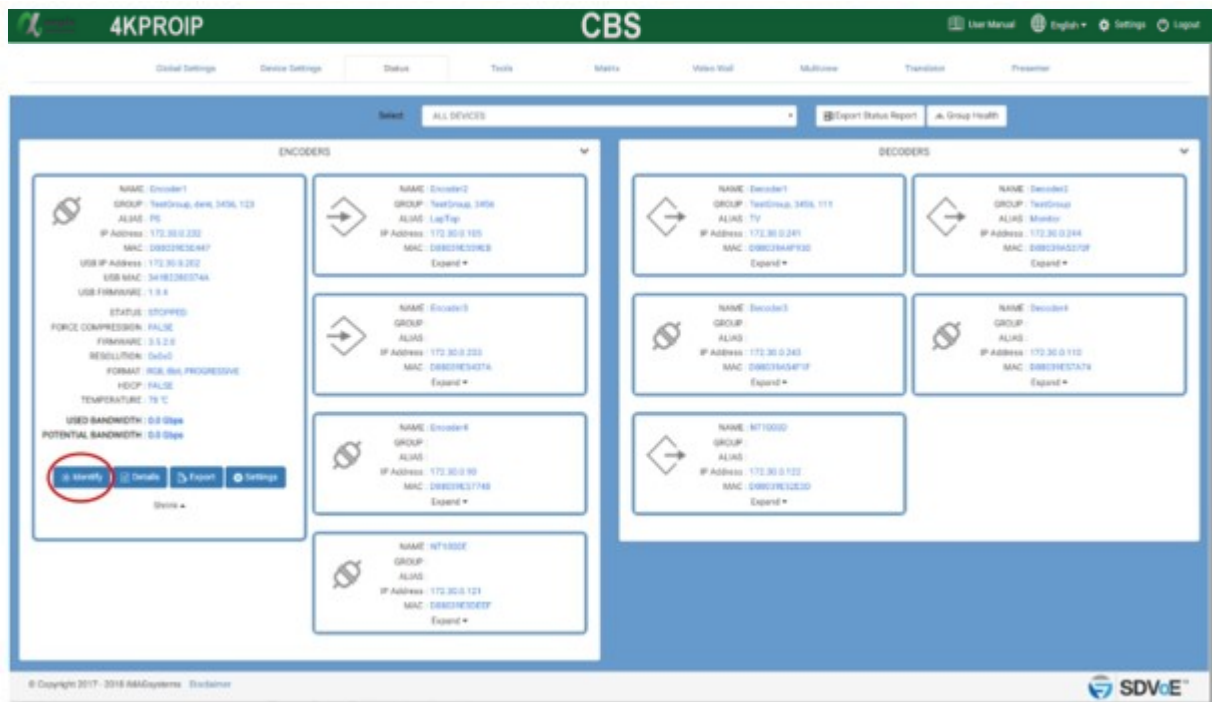
The status of all Encoders and Decoders can be exported to a csv formatted file using the “Export Status Report” button located at the top of the page. A StatusExport.csv file will be saved to your Downloads folder.

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

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

#### 3.1 Identify

To help physically find a connected Encoder or Decoder in a rack type installation the LED’s on the front panel will flash for 30 seconds after the Identify button has been clicked.



## 3.2 Details

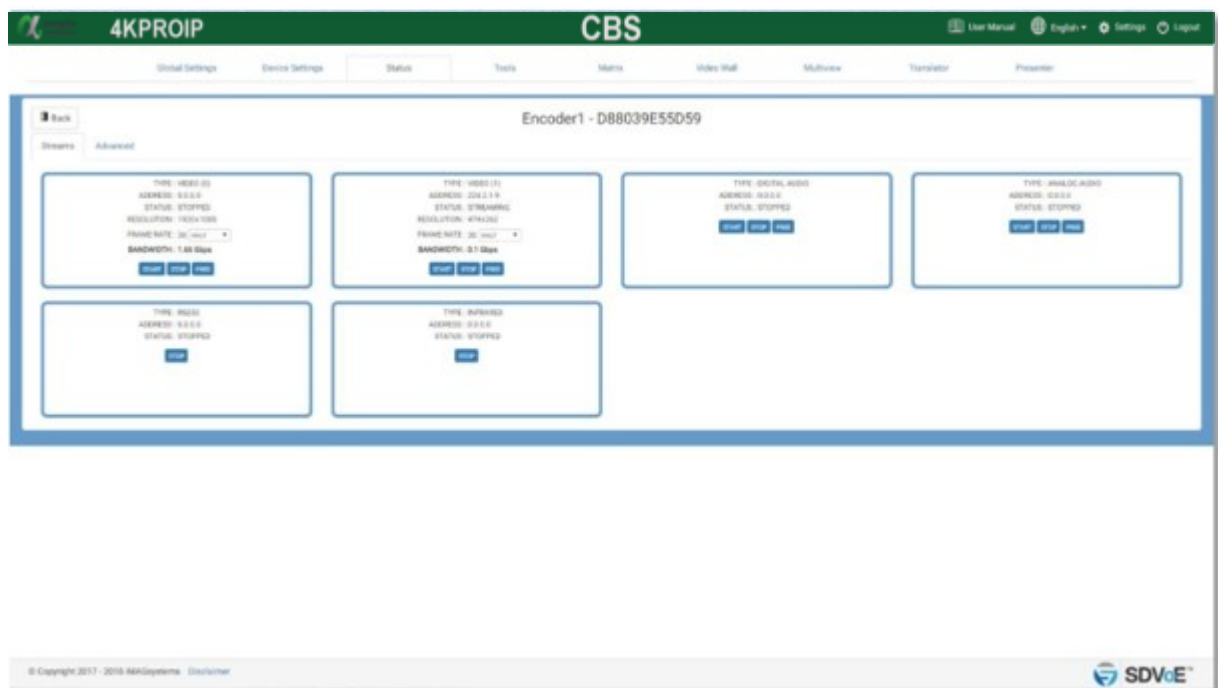
Details contains information regarding the streams and subscriptions to those streams.

### 3.2.1 Streams (Encoder)

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

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

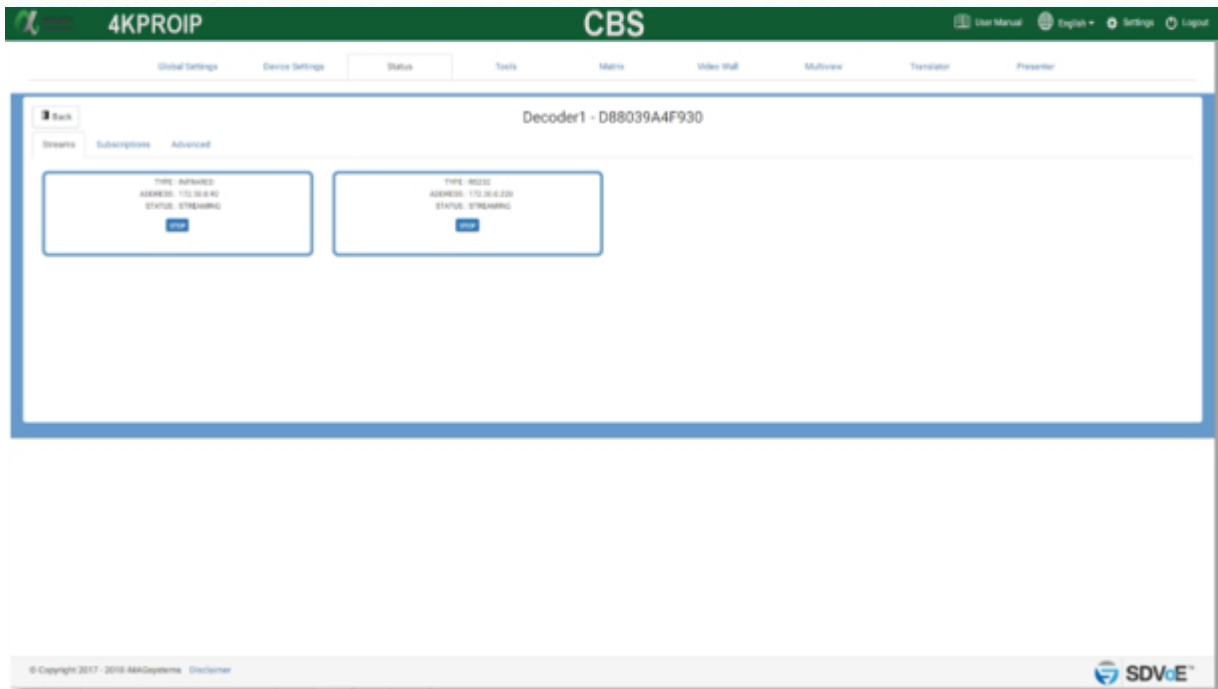
When you **free** an Encoder stream, it will release its multicast address if working in multicast AUTO mode, and all connected Decoder subscriptions will be cleared.





### 3.2.2 Streams (Decoder)

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



### 3.2.3 Subscriptions (Decoder)

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



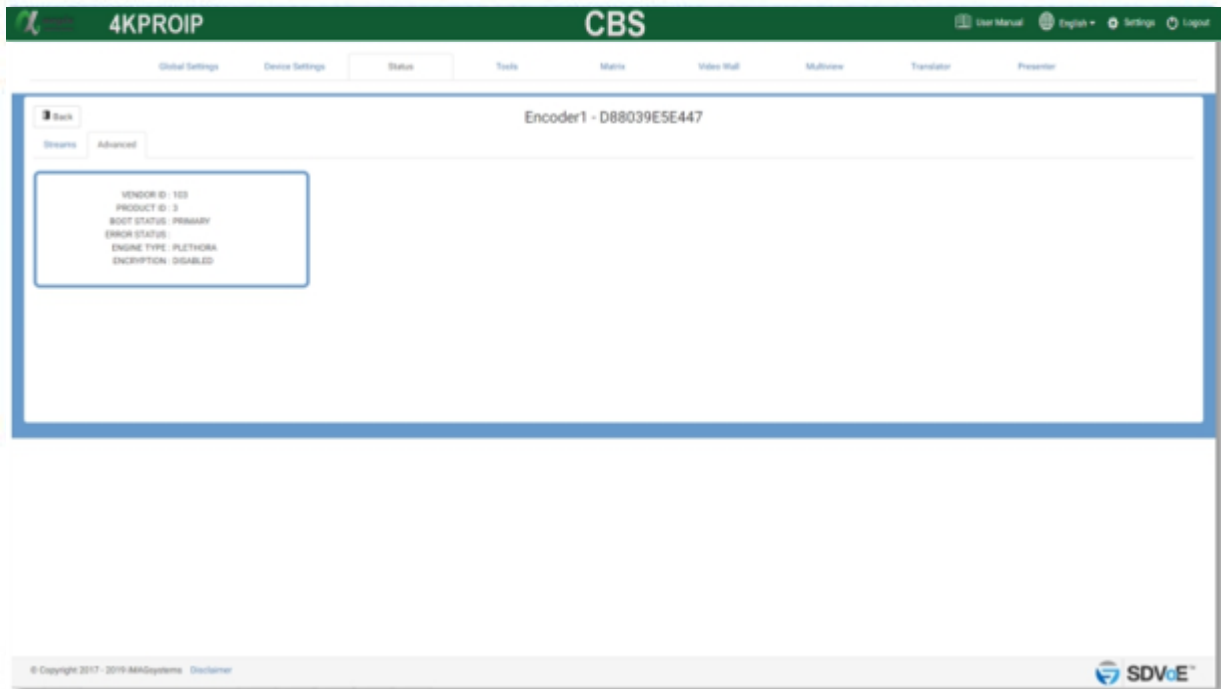
The screenshot displays the 'Subscriptions' tab for a decoder named 'Decoder1 - D88039A4F930'. The interface is organized into a grid of subscription cards. Each card contains the following information:

- NAME:** 4KPROIP-0001
- ADDRESS:** 0.0.0.0
- STATUS:** STOPPED
- STREAM:** NONE
- BANDWIDTH:** 0.00Mbps
- Action:** A blue 'Leave' button.

The grid consists of 20 cards arranged in 5 rows and 4 columns. The top navigation bar includes links for 'Global Settings', 'Device Settings', 'Status', 'Tools', 'Matrix', 'Video Wall', 'Multiview', 'Translator', and 'Presenter'. The bottom of the interface shows a copyright notice '© Copyright 2017 - 2019 SDV-E Systems' and the 'SDV-E' logo.

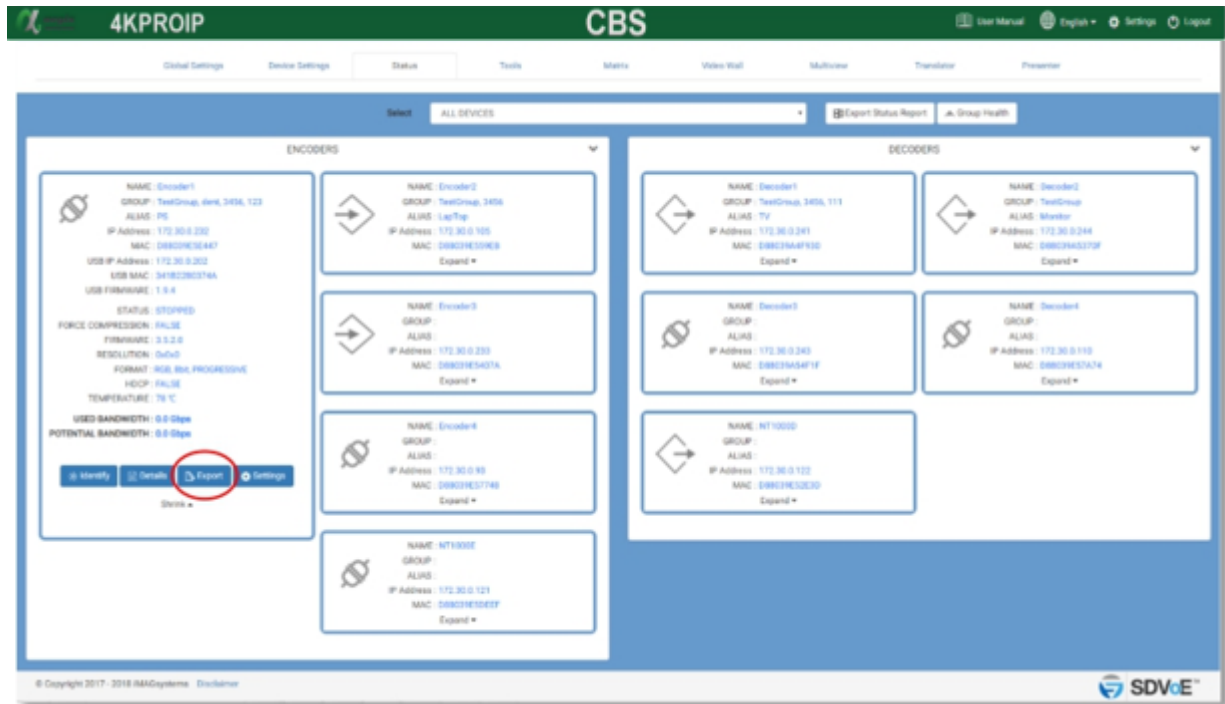
### 3.2.4 Advanced

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



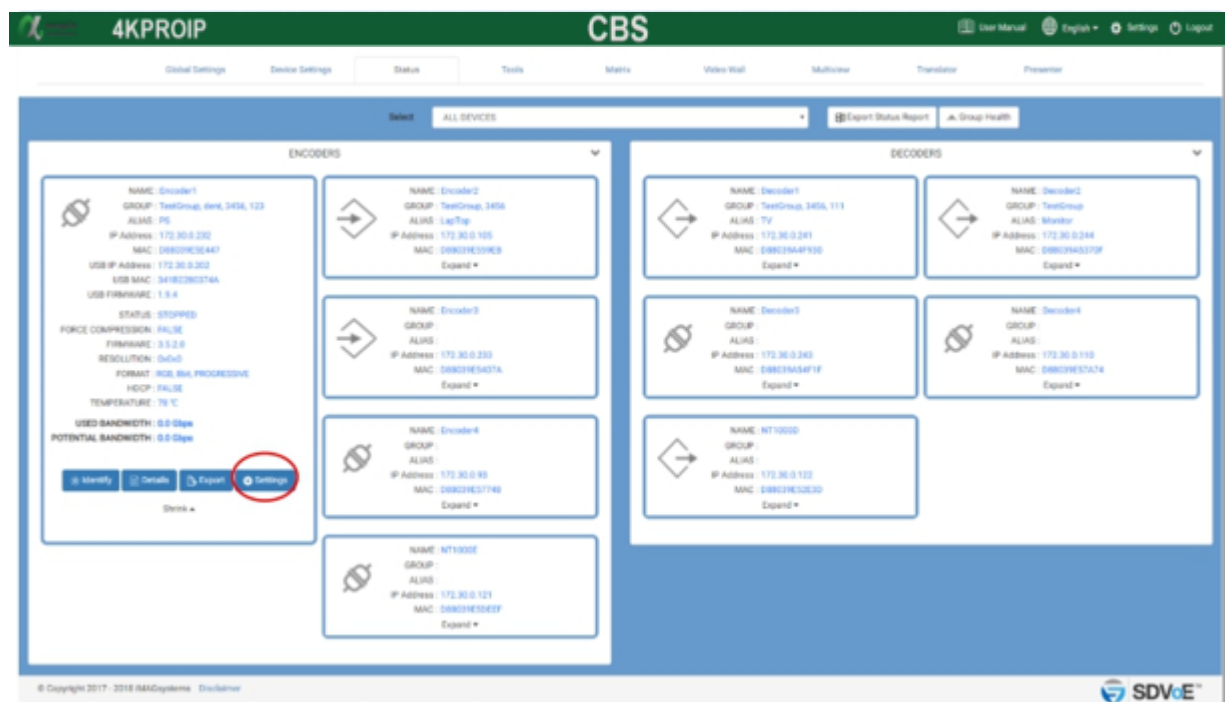
### 3.3 Export

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



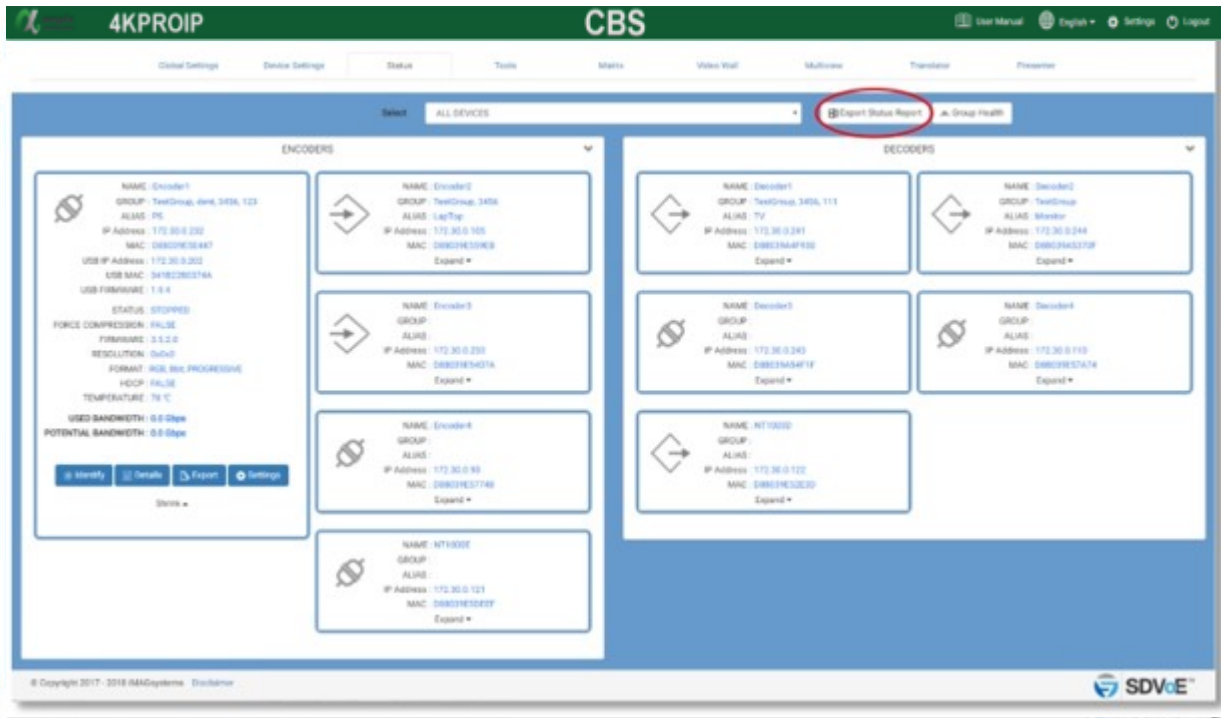
### 3.4 Settings

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



### 3.4 Export Status Report

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



The screenshot shows the CBS interface with the 'Export Status Report' button circled in red. The interface displays a list of encoders and decoders with their respective status and configuration details.

**ENCODERS**

- Encoder1**: GROUP: TestGroup, dev4, 3456, 123; ALIAS: PG; IP Address: 172.30.0.232; MAC: D86C3E5E4A7; USB IP Address: 172.30.0.202; USB MAC: 34182280316A; USB FIRMWARE: 1.3.4; STATUS: STOPPED; FORCE COMPRESSION: FALSE; FIRMWARE: 3.3.2.0; RESOLUTION: Out4; FORMAT: RGB, Not PROGRESSIVE; HDCP: FALSE; TEMPERATURE: 74 °C; USED BANDWIDTH: 0.0 Gbps; POTENTIAL BANDWIDTH: 0.0 Gbps. Buttons: Identify, Details, Export, Settings.
- Encoder2**: GROUP: TestGroup, 3456; ALIAS: LapTop; IP Address: 172.30.0.105; MAC: D86C3E5E4A7; Expand.
- Encoder3**: GROUP: ; ALIAS: ; IP Address: 172.30.0.233; MAC: D86C3E5E4A7; Expand.
- Encoder4**: GROUP: ; ALIAS: ; IP Address: 172.30.0.99; MAC: D86C3E5E4A7; Expand.
- Encoder5**: GROUP: ; ALIAS: ; IP Address: 172.30.0.121; MAC: D86C3E5E4A7; Expand.

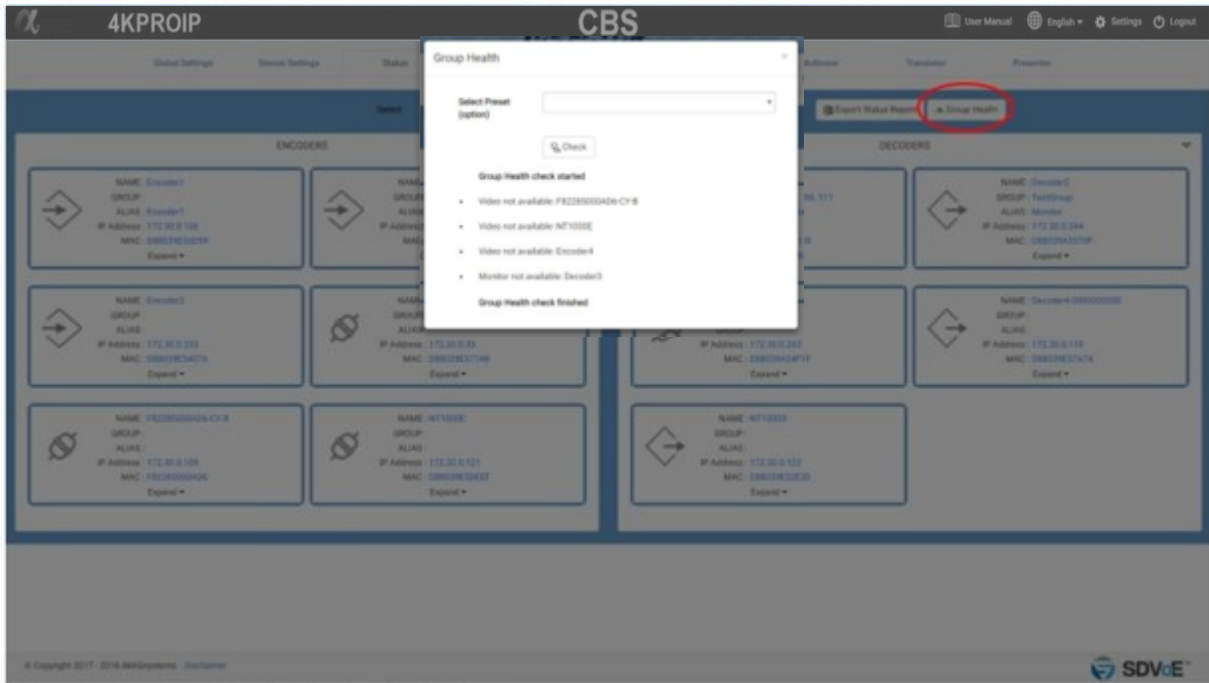
**DECODERS**

- Decoder1**: GROUP: TestGroup, 3456, 111; ALIAS: TV; IP Address: 172.30.0.331; MAC: D86C3E5E4A7; Expand.
- Decoder2**: GROUP: TestGroup; ALIAS: Monitor; IP Address: 172.30.0.244; MAC: D86C3E5E4A7; Expand.
- Decoder3**: GROUP: ; ALIAS: ; IP Address: 172.30.0.243; MAC: D86C3E5E4A7; Expand.
- Decoder4**: GROUP: ; ALIAS: ; IP Address: 172.30.0.113; MAC: D86C3E5E4A7; Expand.
- Decoder5**: NAME: NT1000; GROUP: ; ALIAS: ; IP Address: 172.30.0.122; MAC: D86C3E5E4A7; Expand.

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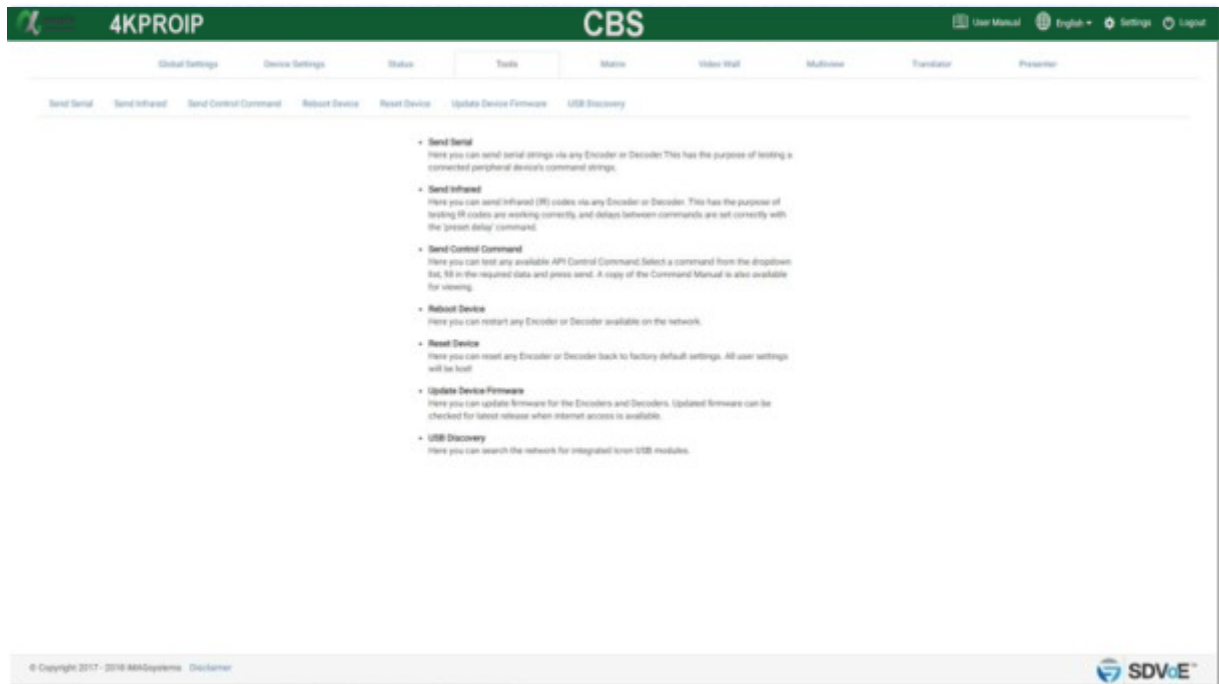
### 3.5 Group Health

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



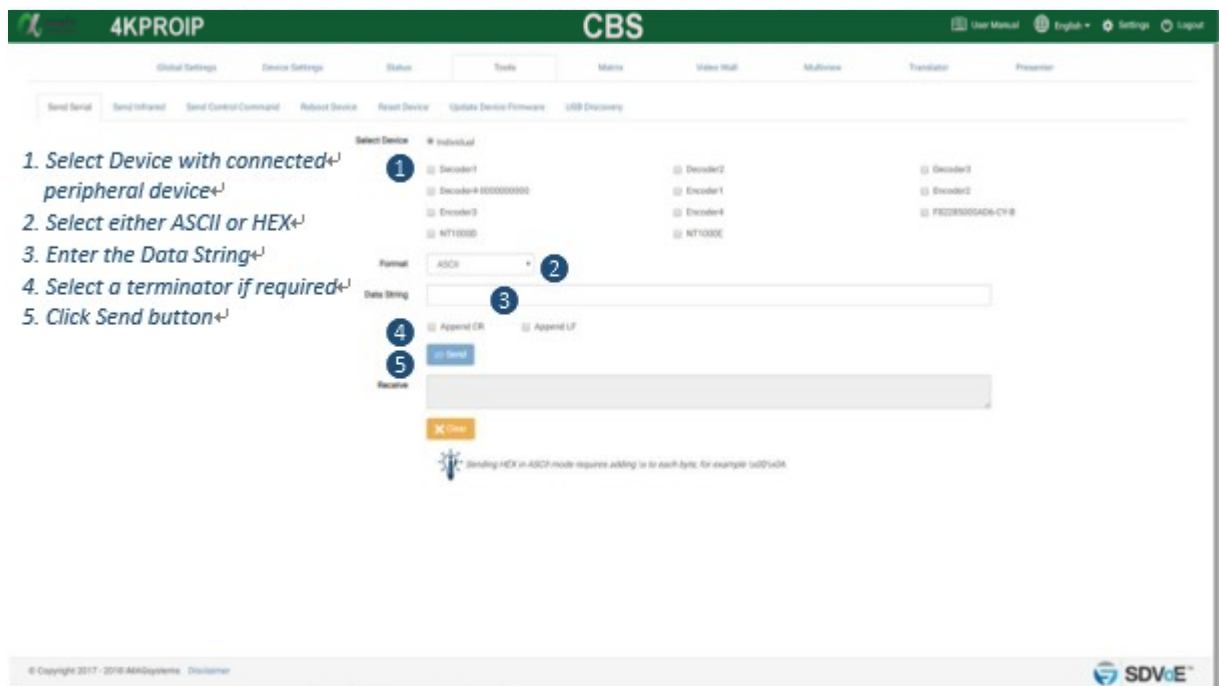
## 4 Tools

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



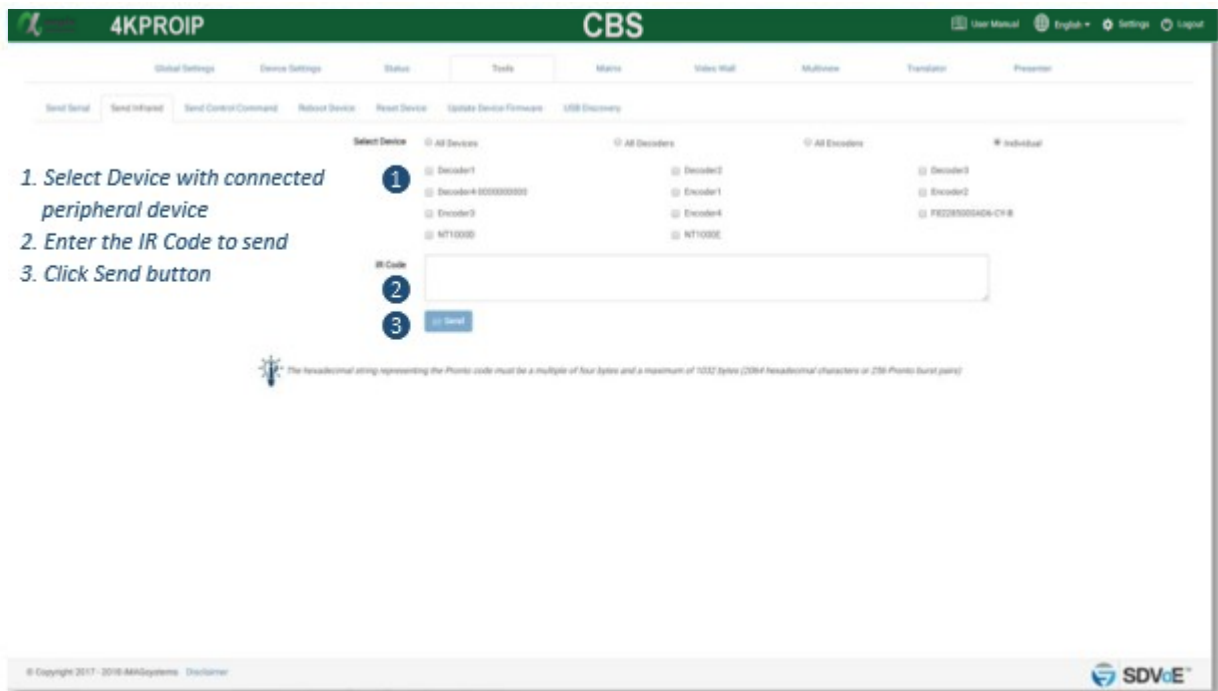
### 4.1 Send Serial

The Send Serial tab is used to test serial strings being sent from an Encoder or Decoder to 3<sup>rd</sup> party peripheral devices such as projectors.



## 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 TV's and DVD players.



**4KPROIP CBS**

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

Send Serial Send Infrared Send Control Command Refresh Device Reset Device Update Device Firmware USB Discovery

Select Device: All Devices All Decoders All Encoders Individual

1. Select Device with connected peripheral device

2. Enter the IR Code to send

3. Click Send button

IR Code

Send

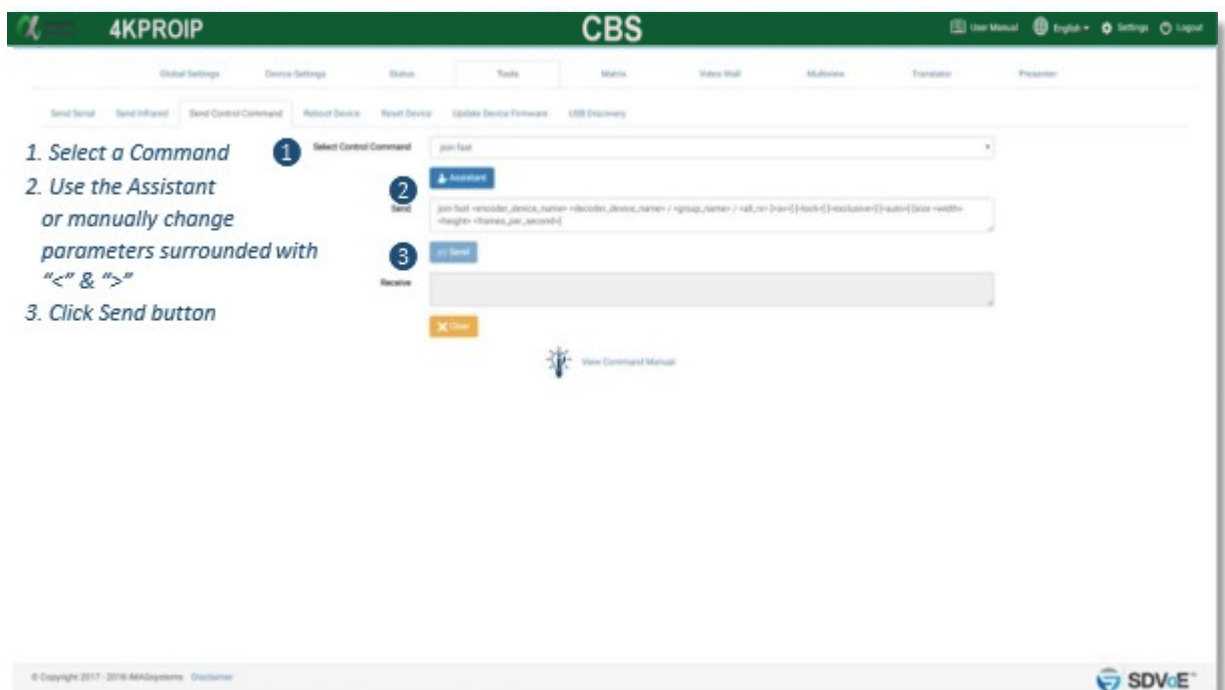
The hexadecimal string representing the Pronto code must be a multiple of four bytes and a maximum of 1032 bytes (256 hexadecimal characters or 256 Pronto burst pairs)

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## 4.3 Send Control Command

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



**4KPROIP CBS**

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

Send Serial Send Infrared Send Control Command Refresh Device Reset Device Update Device Firmware USB Discovery

1. Select a Command

2. Use the Assistant or manually change parameters surrounded with "<" & ">"

3. Click Send button

Select Control Command

Assistant

Send

Receive

View Command Manual

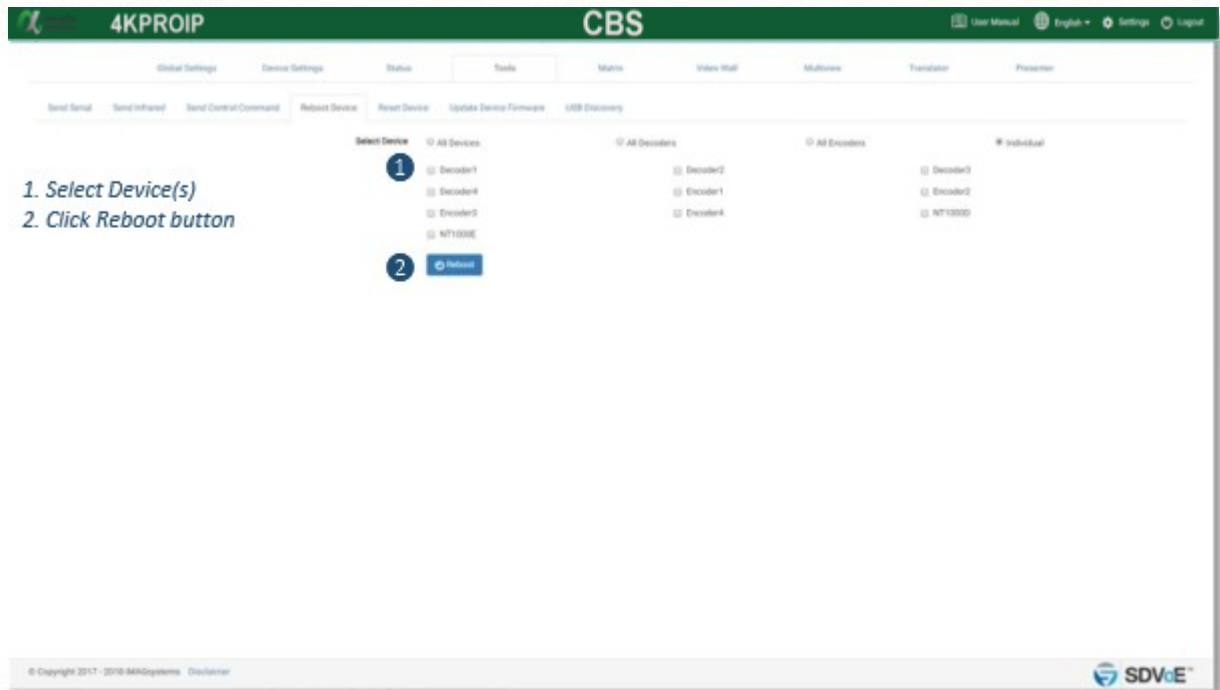
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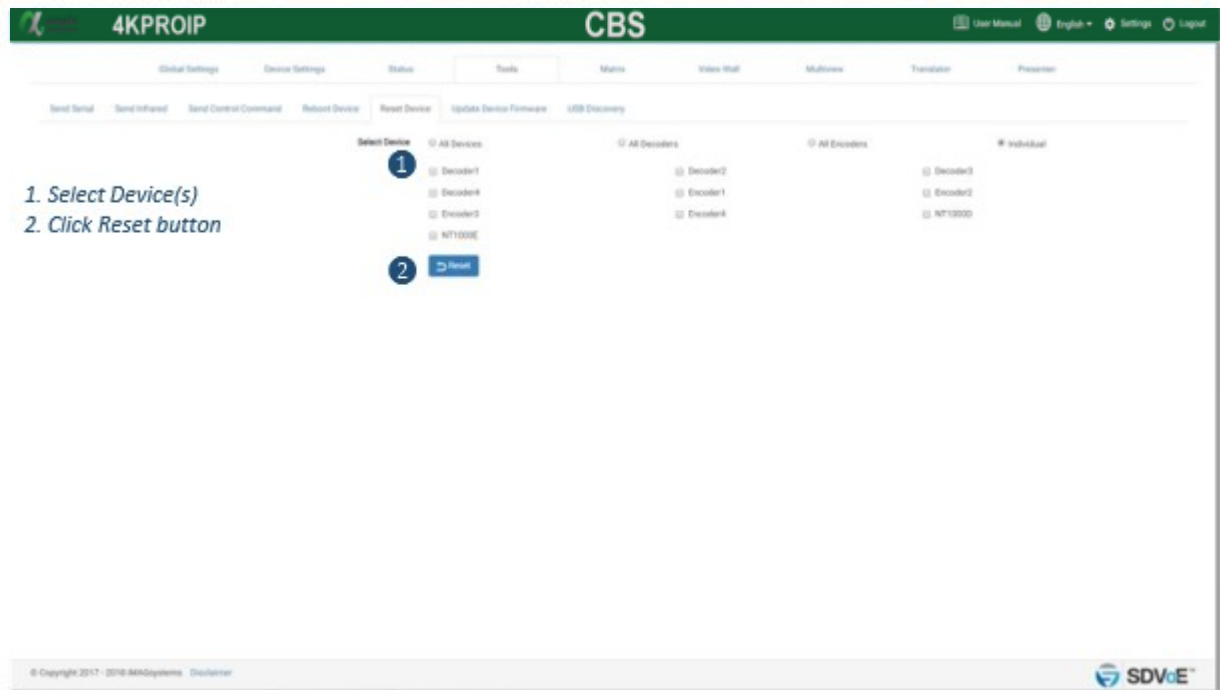
## 4.4 Reboot Device

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 defaults.

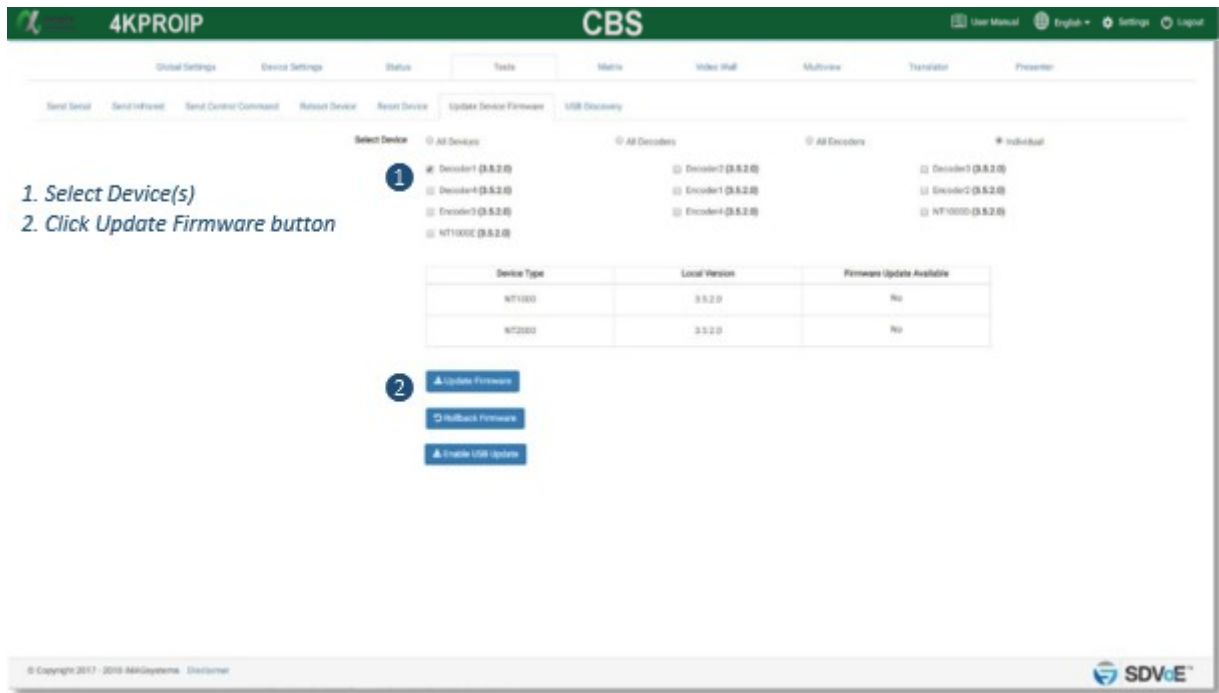


## 4.6 Update Device Firmware

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

### 4.6.1 Update BlueRiver™ Firmware

BlueRiver™ firmware is the device firmware for Encoders and Decoders.



### 4.6.1 Update Icron USB Firmware

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

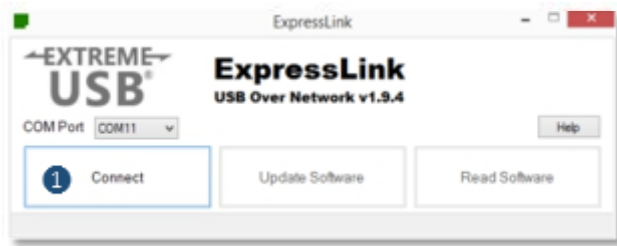
Connect a serial cable from a PC to the Encoder's or Decoder's serial port.



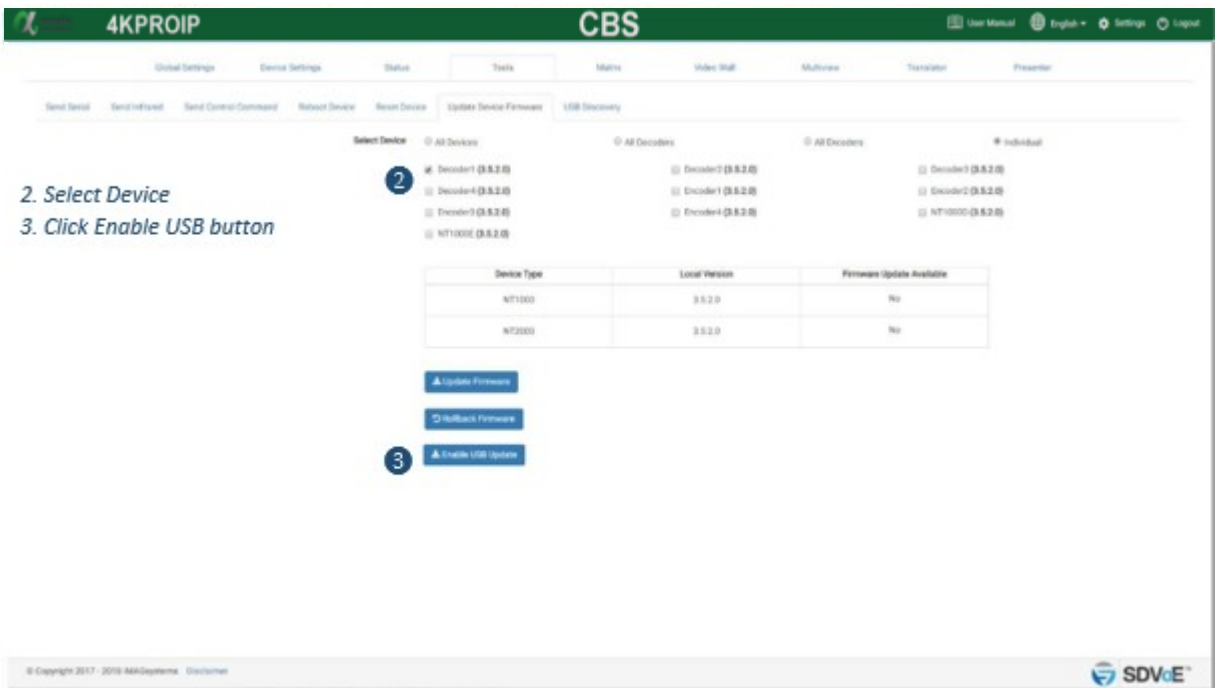
DB9 pin 2 – TX  
DB9 pin 3 – RX  
DB9 pin 5 – GND

#### 4.6.1 Update Icron USB Firmware continued...

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

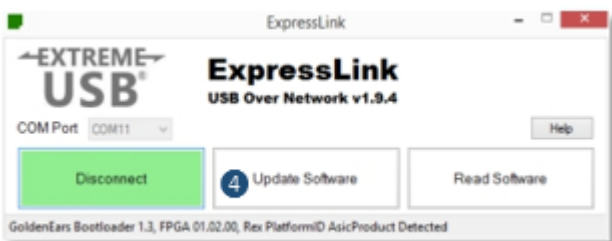


Next, enable USB update.



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

Next, click the Update Software button.



#### 4.6.1 Update Icron USB Firmware continued...

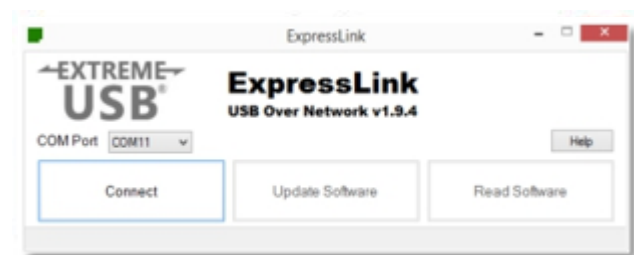
The firmware will be uploaded to the device.



When complete click the Disconnect button.

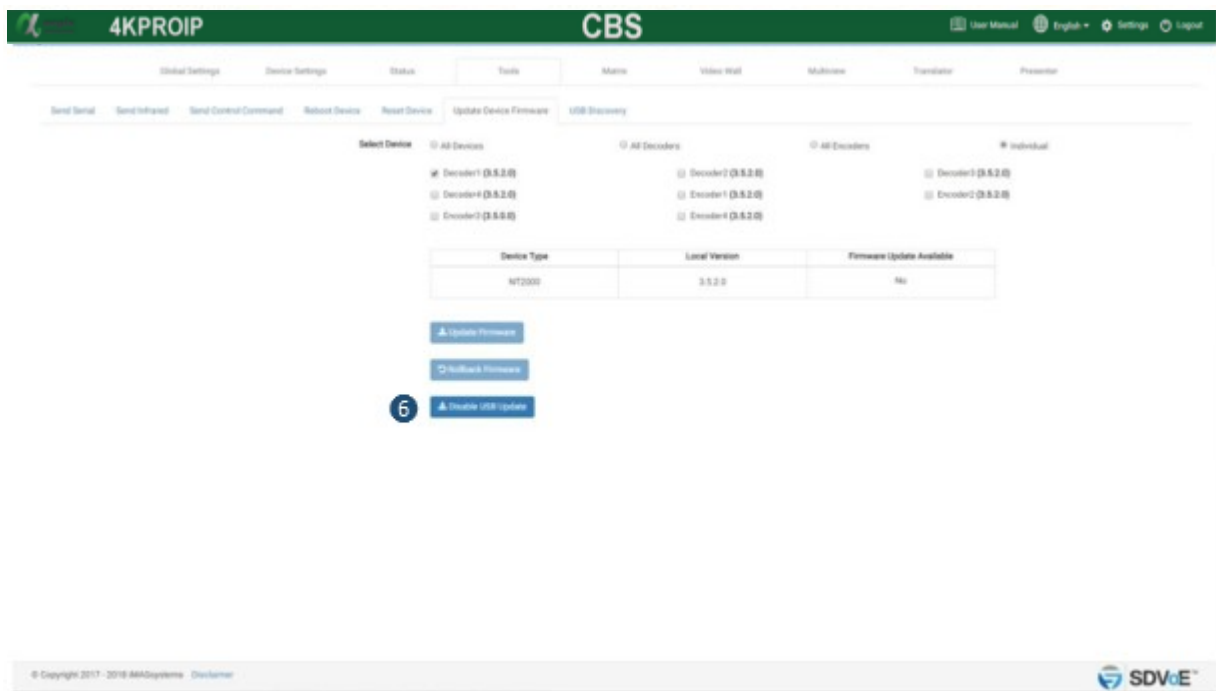


The Icron USB firmware update application will return to its initial state.

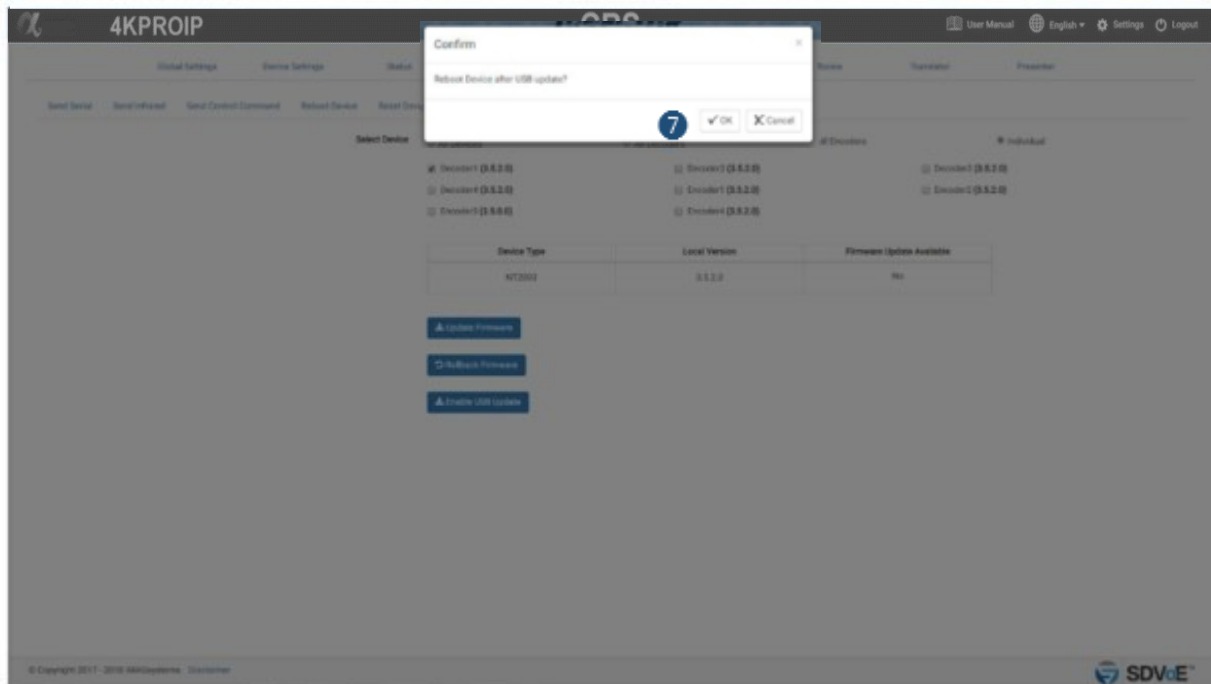


## 4.6.1 Update Icron USB Firmware continued...

Next, click the Disable USB Update button.



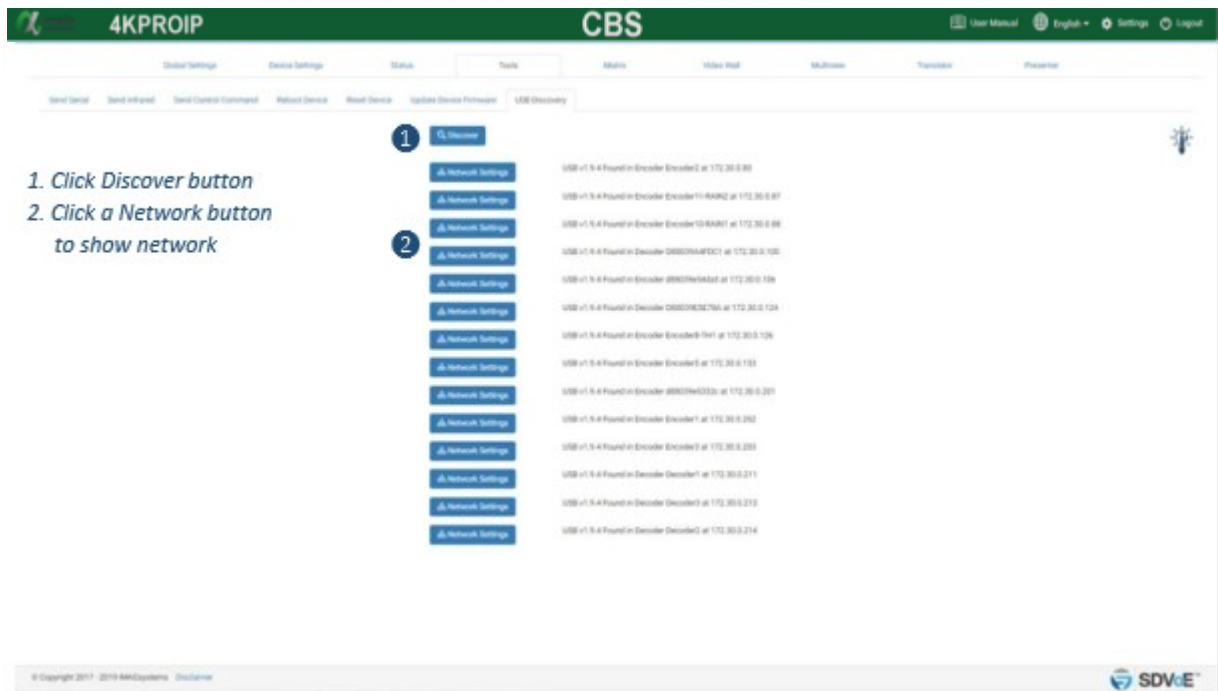
Finally, click the OK button to reboot the device.



## 4.7 USB Discovery

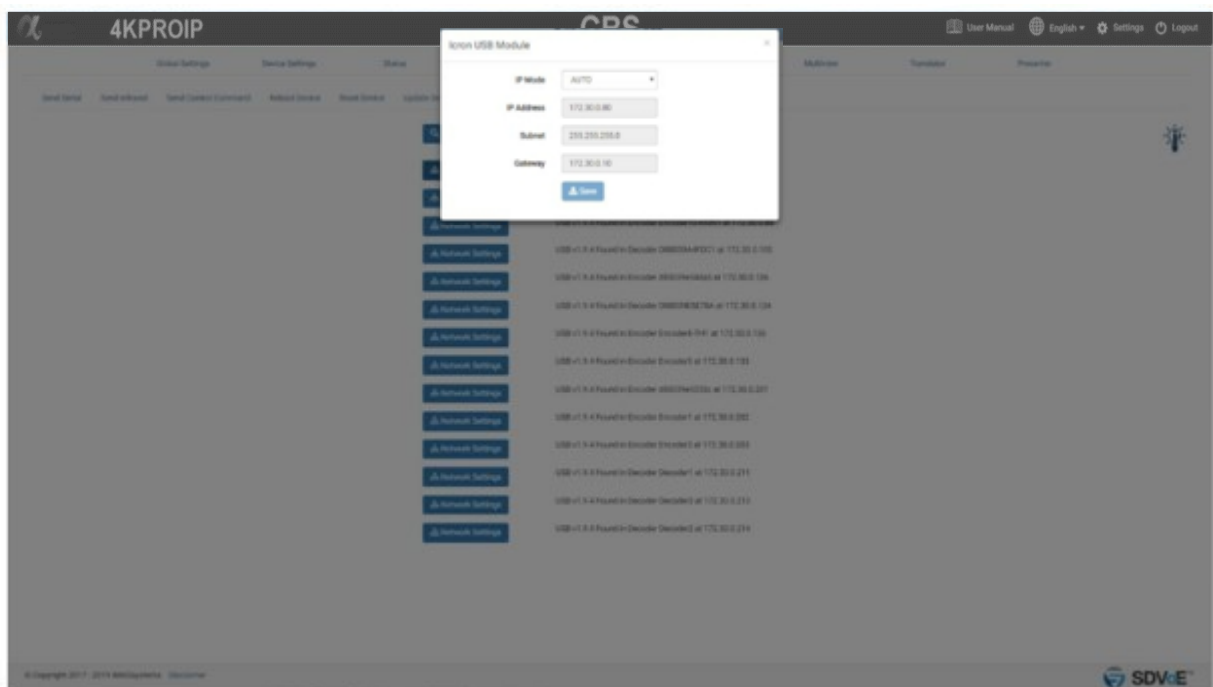
The USB Discovery tab is used to help find undiscovered USB modules that might be out of range from the rest of the system or have incompatible firmware version. If the USB module has had a static IP applied then it will not respond when on a different subnet to the SDVoE Director Controller (for example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

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



1. Click Discover button

2. Click a Network button to show network



## 5 Matrix

The Matrix tab contains up to 6 individual matrix tabs for each of the signal types, Video, Digital Audio, Analog Audio, Serial, Infrared and USB. Here you can create or stop joins between Encoders and Decoders. The video modes of NT2000 Decoders can also be changed by clicking the individual Decoder ⚙️ settings buttons.

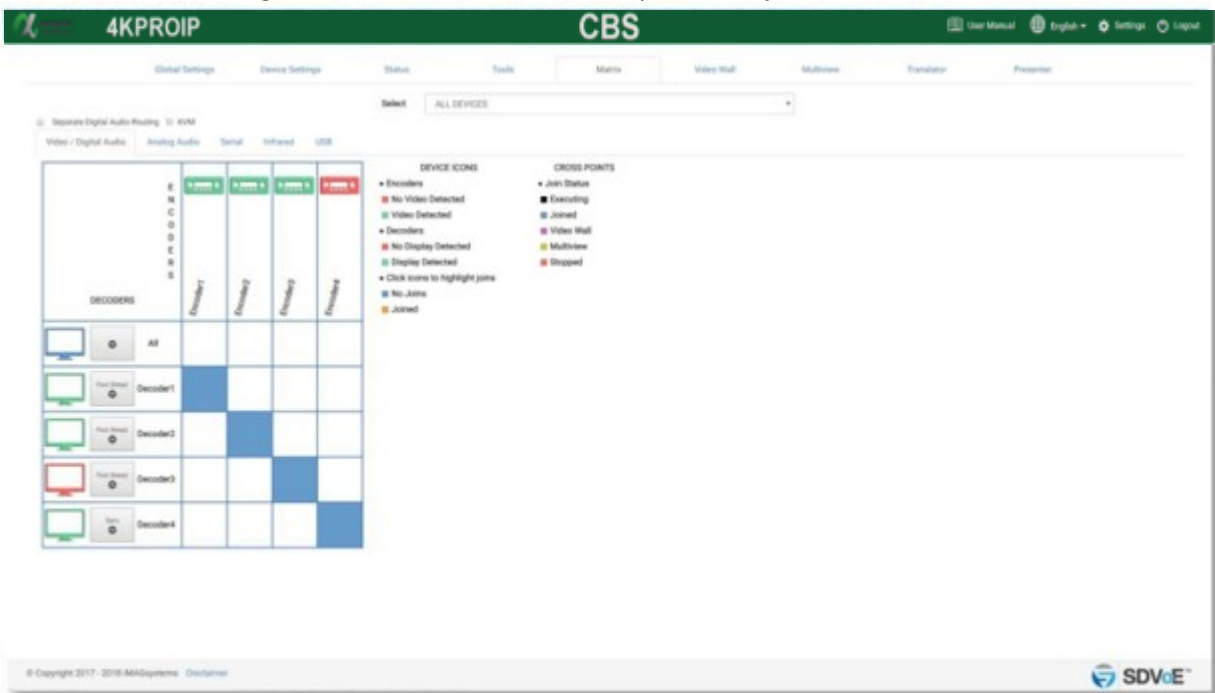
The matrix has a KVM (Keyboard Video Mouse) checkbox that will control USB along with Video routing. When Separate Digital Audio Routing is not selected, Digital Audio will also follow the Video routing.

Click a white square to make a join.

Click a blue square to remove a join.

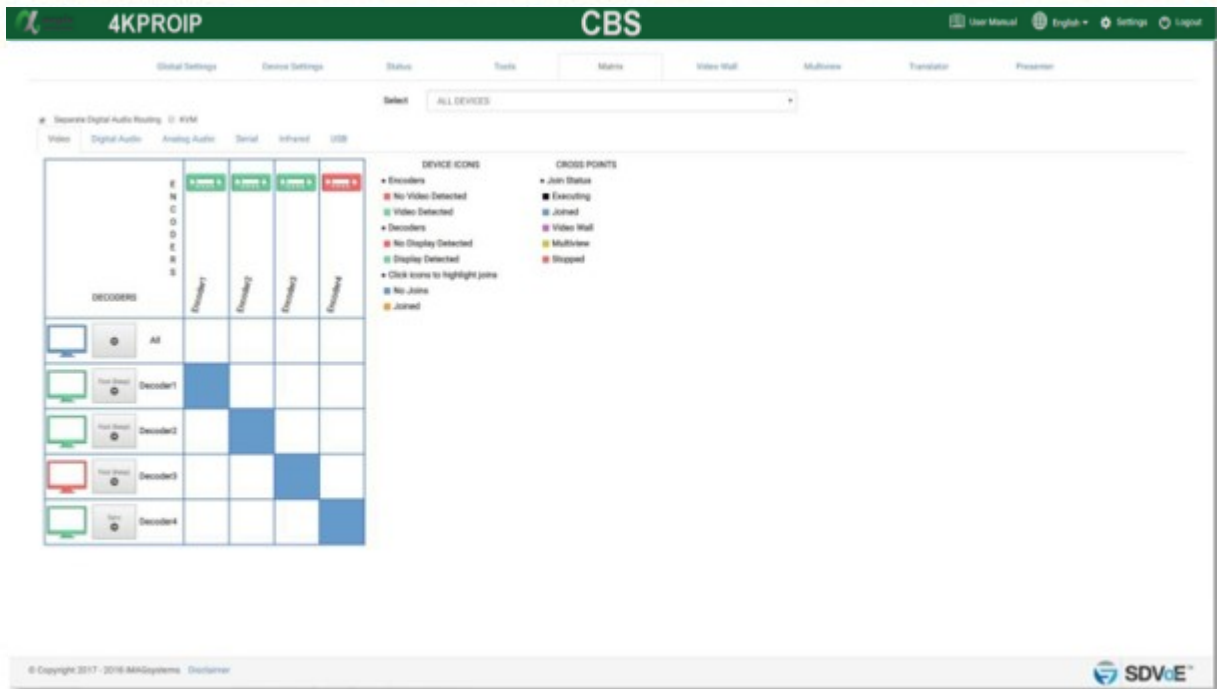
### 5.1 Video / Digital Audio

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



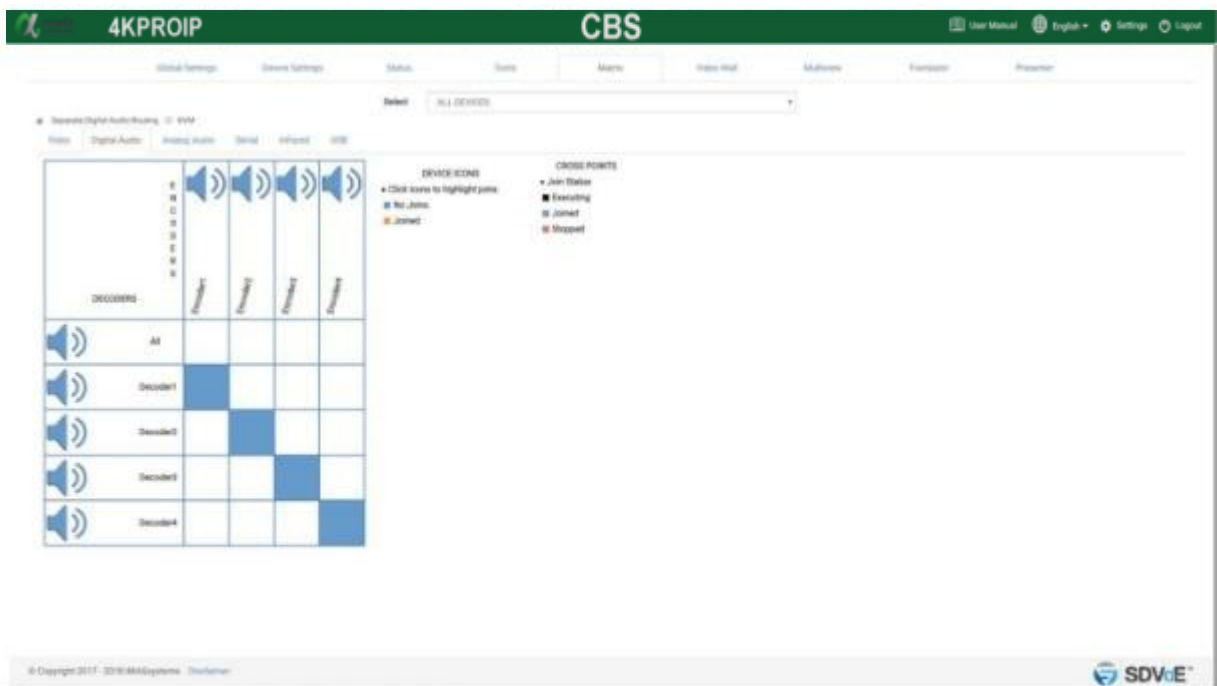
## 5.2 Video

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



## 5.3 Digital Audio

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





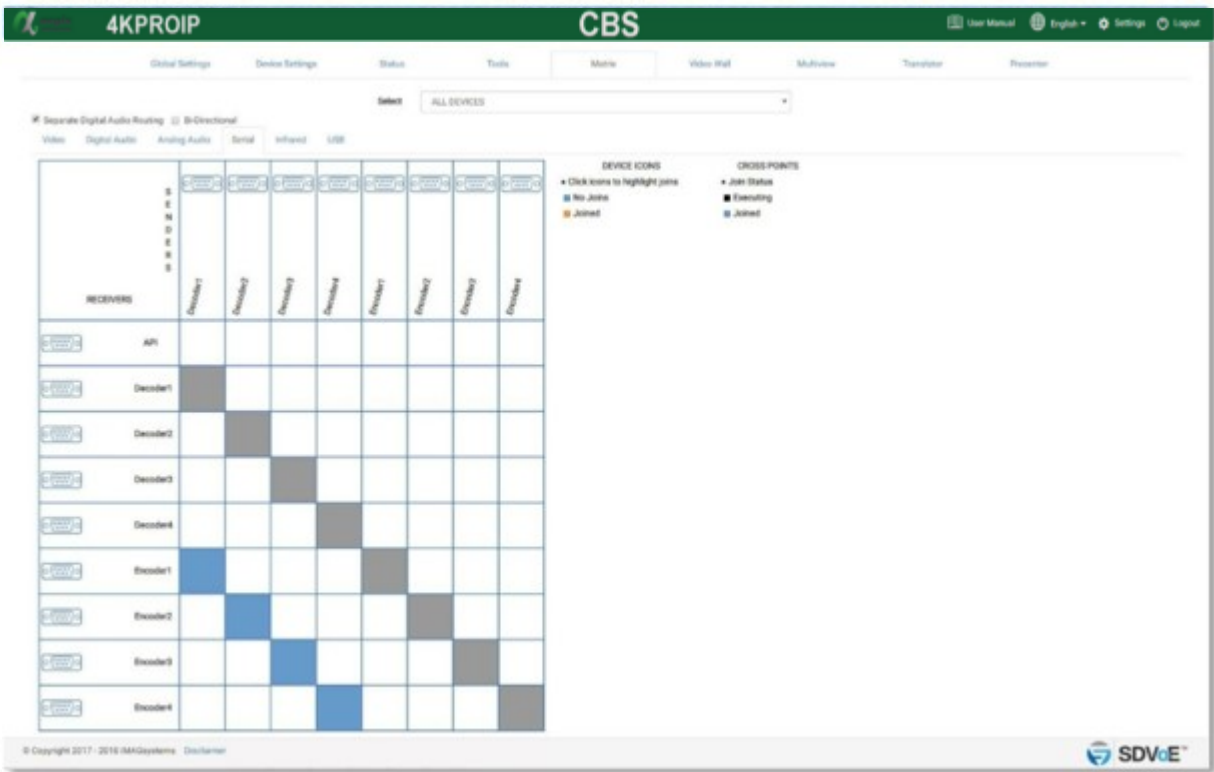
## 5.4 Analog Audio

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



## 5.5 Serial

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



The screenshot shows the CBS 4KPROIP interface with the 'Serial' tab selected. The interface includes a top navigation bar with 'Global Settings', 'Device Settings', 'Status', 'Tools', 'Matrix', 'Video Wall', 'Multiview', 'Transition', and 'Presenter'. Below the navigation bar, there are tabs for 'Video', 'Digital Audio', 'Analog Audio', 'Serial', 'Infrared', and 'USB'. The 'Serial' tab is active, displaying a matrix of connections between Receivers and Encoders.

**RECEIVERS**

Receiver	Encoder1	Encoder2	Encoder3	Encoder4	Encoder5	Encoder6	Encoder7	Encoder8
API								
Decoder1								
Decoder2								
Decoder3								
Decoder4								
Encoder1								
Encoder2								
Encoder3								
Encoder4								

**DECODED**

- Click icons to highlight joins
- No Joins
- Joined

**CROSS POINTS**

- Join Status
- Extending
- Joined

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## 5.6 Infrared

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



## 5.7 USB

The matrix USB tab will only show Encoders and Decoders with USB installed and correctly configured.

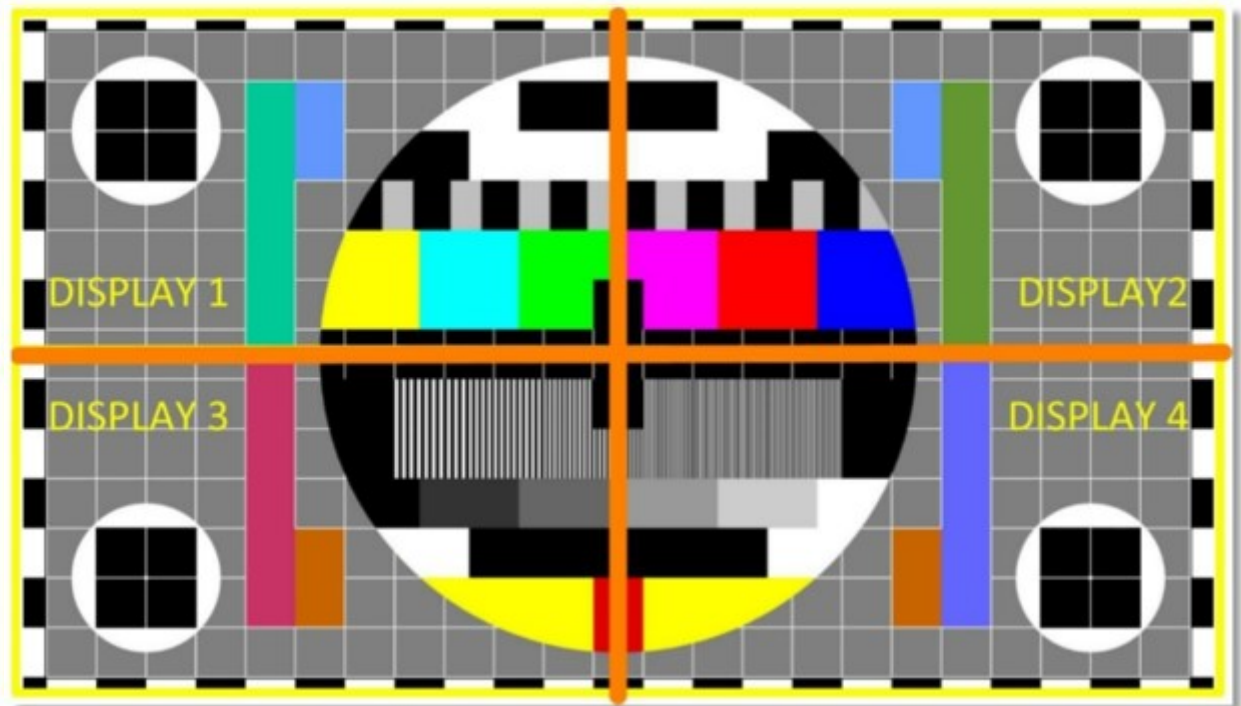


## 6 Video Wall

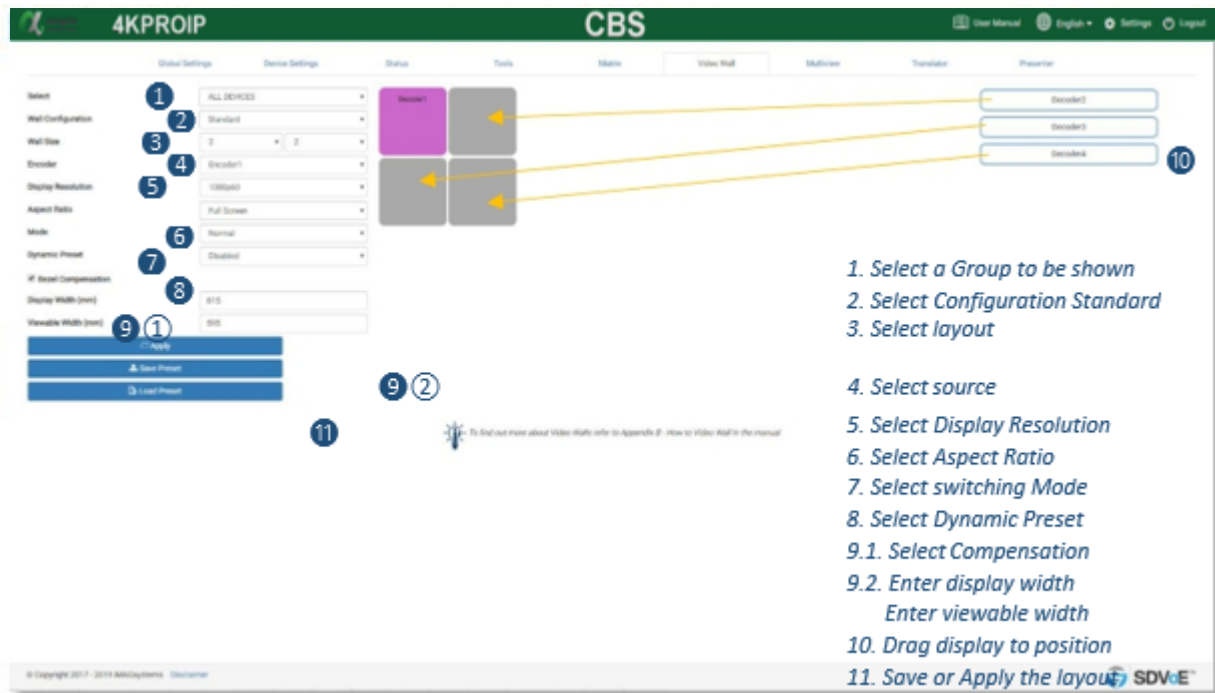
Video Wall configuration has two modes of operation, standard and advanced.

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

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



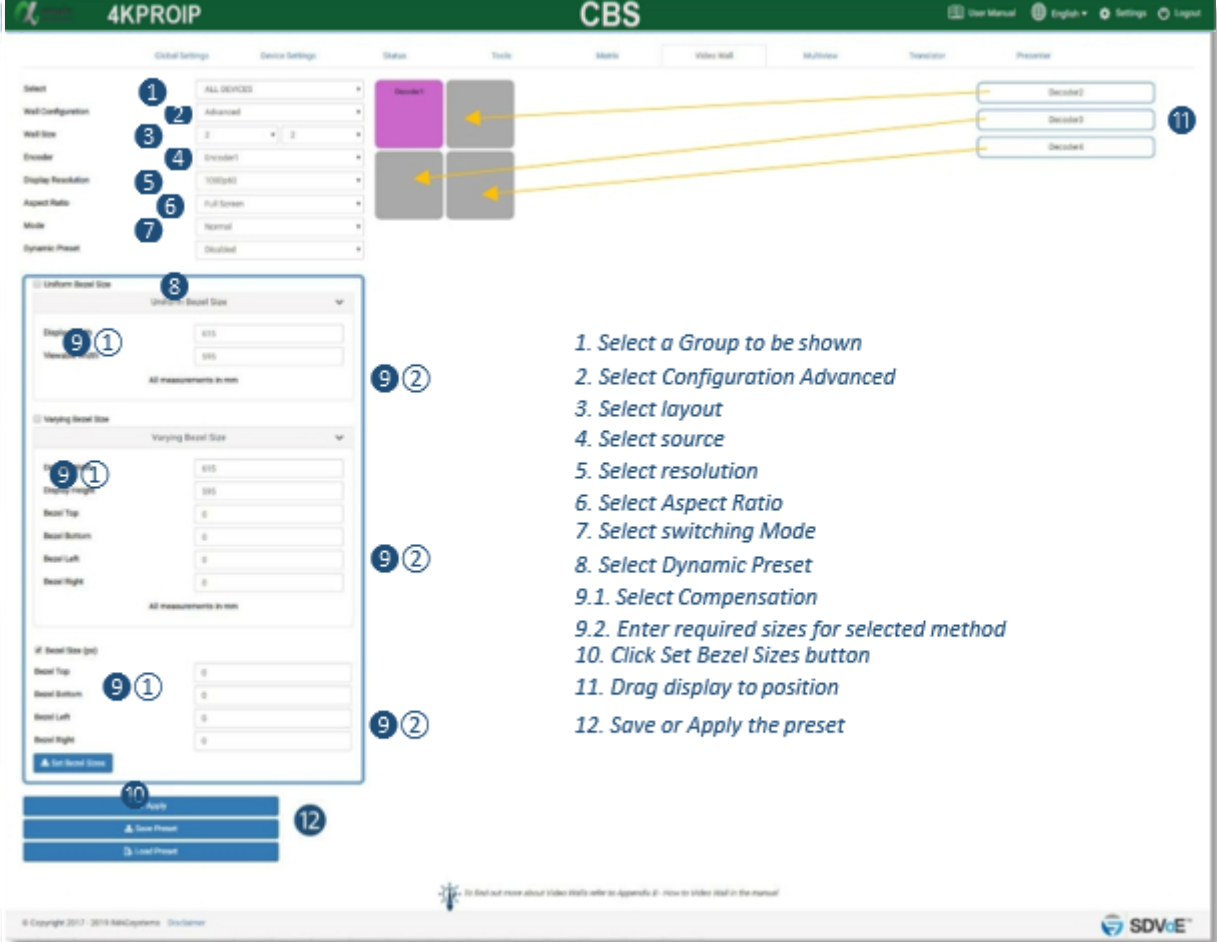
## 6.1 Video Wall Standard



1. Select a Group to be shown  
2. Select Configuration Standard  
3. Select layout  
4. Select source  
5. Select Display Resolution  
6. Select Aspect Ratio  
7. Select switching Mode  
8. Select Dynamic Preset  
9.1. Select Compensation  
9.2. Enter display width  
Enter viewable width  
10. Drag display to position  
11. Save or Apply the layout

1. Select the group of Encoders and Decoders to be available
2. Select either Standard or Advanced mode, in this case Standard  
*Advanced mode provides more options for Bezel Compensation*
3. Select the video wall layout up to 8 x 5
4. Select the source Encoder for the video to be displayed  
*Only Encoders with an active source will be shown*
5. Select the resolution of the displays  
*The cropped video area from the original source content will be scaled to a display resolution. So if the cropped area is only 960x540, in this case it will be scaled to 1920x1080 for the display.*
6. Select Aspect Ratio. Either select Full Screen or Maintain Aspect Ratio.  
*Full Screen may stretch the video image to fill the display area while Maintain Aspect Ratio will add black to the sides and top and bottom of the displayed image to maintain the original video aspect ratio.*
7. Select switching Mode Normal (Sync) or Fast. (Device firmware > 3.5.2.0 and BlueRiver™ firmware > 2.14.0 required)
8. Enable or Disable Dynamic Preset. When Enabled the preset will be applied on a change of source resolution to reapply the correct crop settings for the new resolution.
- 9.1. Select Bezel Compensation to automatically compensate for the bezel widths  
(Standard mode assumes a constant display bezel size)
- 9.2. Enter the physical width of the display in mm  
Enter the physical viewable width of the display in mm
10. Drag Decoders / Displays to the correct wall position
11. Save or apply the layout. The layout can be saved as a preset to be recalled via the “preset load” command or loaded back into the UI.

## 6.2 Video Wall Advanced



**4KPROIP CBS**

Global Settings | Device Settings | Status | Tools | Status | Video Wall | Multiview | Transition | Preset

Select: ALL DEVICES (1)

Wall Configuration: Advanced (2)

Wall Size: 2 x 2 (3)

Encoder: Encoder1 (4)

Display Resolution: 1080x60 (5)

Aspect Ratio: Full Screen (6)

Mode: Normal (7)

Dynamic Preset: Disabled (8)

Dynamic Preset Dialog:

- Uniform Bezel Size: 9 (9.1), 1 (9.2)
- Varying Bezel Size: 9 (9.1), 1 (9.2)
- Set Bezel Sizes (10)
- Apply (12)
- Save Preset (12)
- Load Preset (12)

11. Drag display to position

12. Save or Apply the preset

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

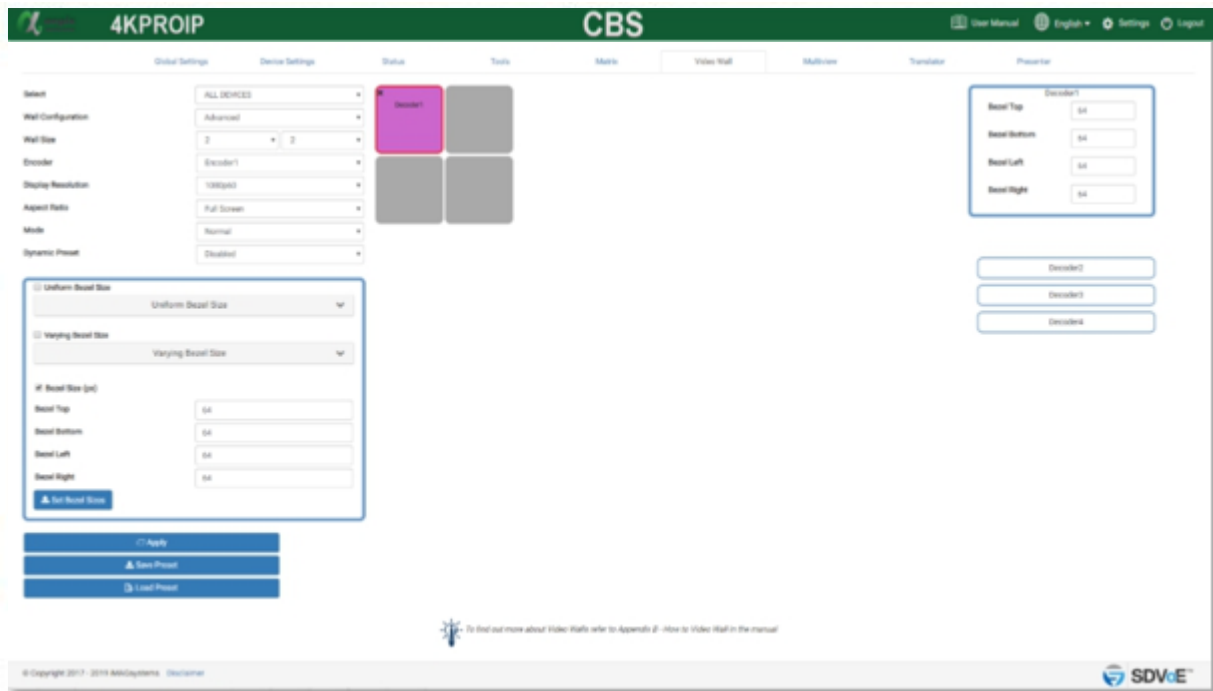
## 6.2 Video Wall Advanced – continued...

7. Select switching Mode Normal (Sync) or Fast.
8. Enable or Disable Dynamic Preset. When Enabled the preset will be applied on a change of source resolution to reapply the correct crop settings for the new resolution.
- 9.1. Select Bezel Compensation method to automatically compensate for the bezel widths.
  - Uniform Bezel Size** is used when the display has a constant bezel size
  - Varying Bezel Size** is used when the display has different bezel sizes
  - Bezel Size (px)** is used when you manually want to specify the pixel compensation, otherwise this area will show the resulting pixel compensation calculated from the physical dimension of the display from either Uniform Bezel Size or Varying Bezel Size calculations.
- Uniform Bezel Size**
    - 9.2. Enter the physical width of the display in mm  
Enter the physical viewable width of the display in mm
  - Varying Bezel Size**
    - 9.2. Enter the physical width of the display in mm  
Enter the physical height of the display in mm  
Enter the top physical bezel width of the display in mm  
Enter the bottom physical bezel width of the display in mm  
Enter the left physical bezel width of the display in mm  
Enter the bottom physical bezel width of the display in mm
  - Bezel Size (px)**
    - 9.2. Enter the top bezel compensation in pixels  
Enter the bottom bezel compensation in pixels  
Enter the left bezel compensation in pixels  
Enter the right bezel compensation in pixels
10. Load the Bezel Compensation values to the displays.

*If no displays are selected at this stage, then all will be populated with the values.*  
*Individual displays can be selected to load the values which is useful when different display types are used in the layout, or when varying bezel sized monitors are rotated within the layout.*
11. Drag Decoders / Displays to the correct wall position
12. Save or apply the layout. The layout can be saved as a preset to be recalled via the “preset load” command or loaded back into the UI.



## 6.2 Video Wall Advanced – continued...

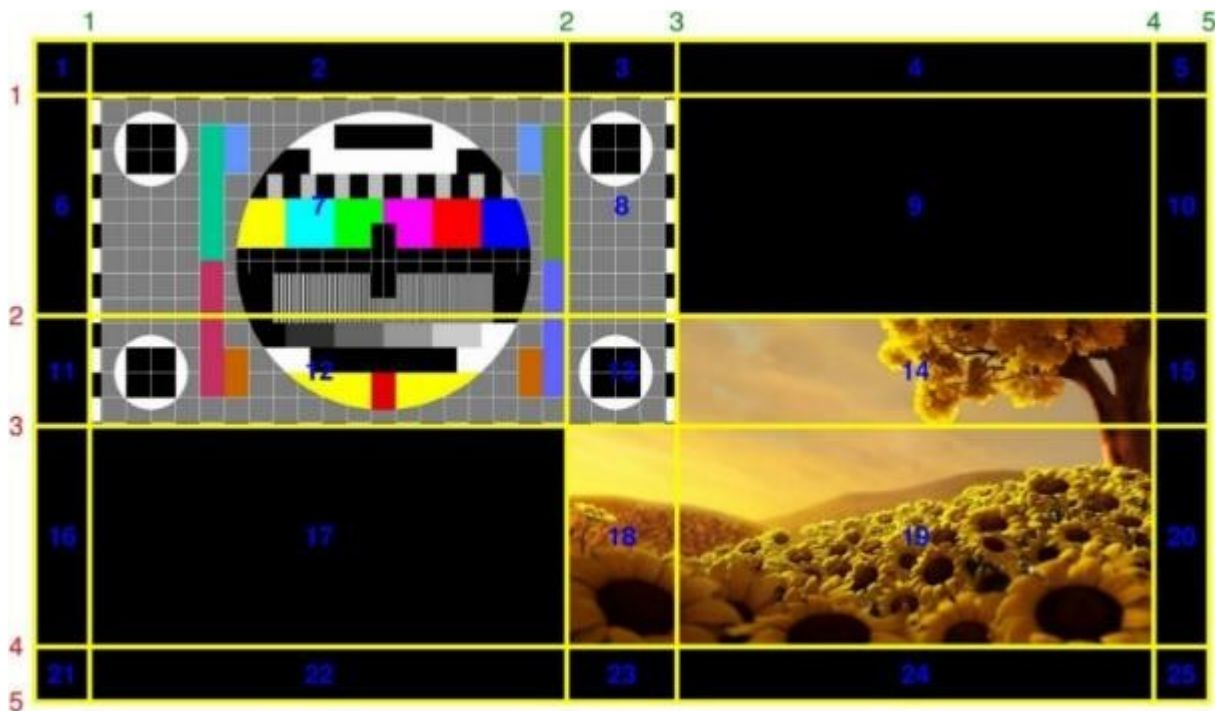


In advanced mode each individual display of the video wall can have separate bezel compensation applied when using a mix of display types. Click the display position and the displays bezel compensation window will popup. Here you can change the bezel sizes as required.

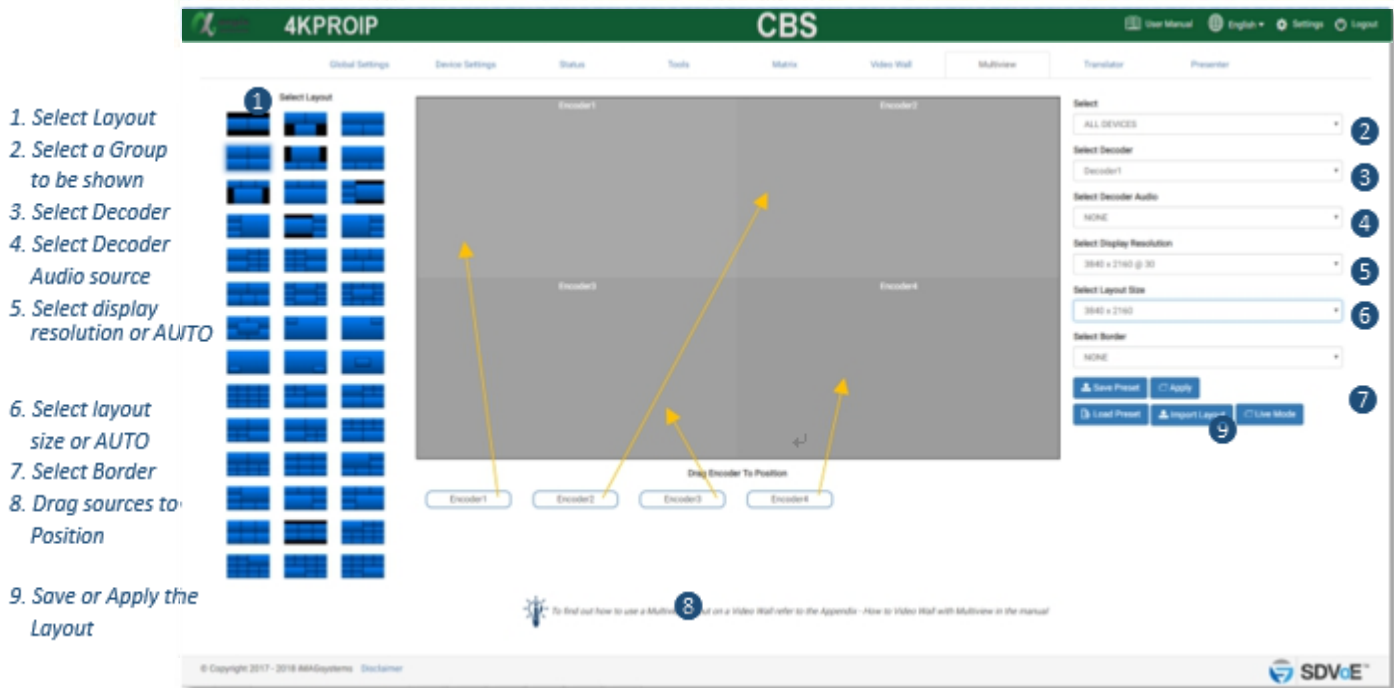
## 7 Multiview

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

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



## 7.1 Multiview Layout



1. Select Layout
2. Select a Group to be shown
3. Select Decoder
4. Select Decoder Audio source
5. Select display resolution or AUTO
6. Select layout size or AUTO
7. Select Border
8. Drag sources to Position
9. Save or Apply the Layout

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

*AUTO will use the displays preferred resolution from the EDID.*

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

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

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

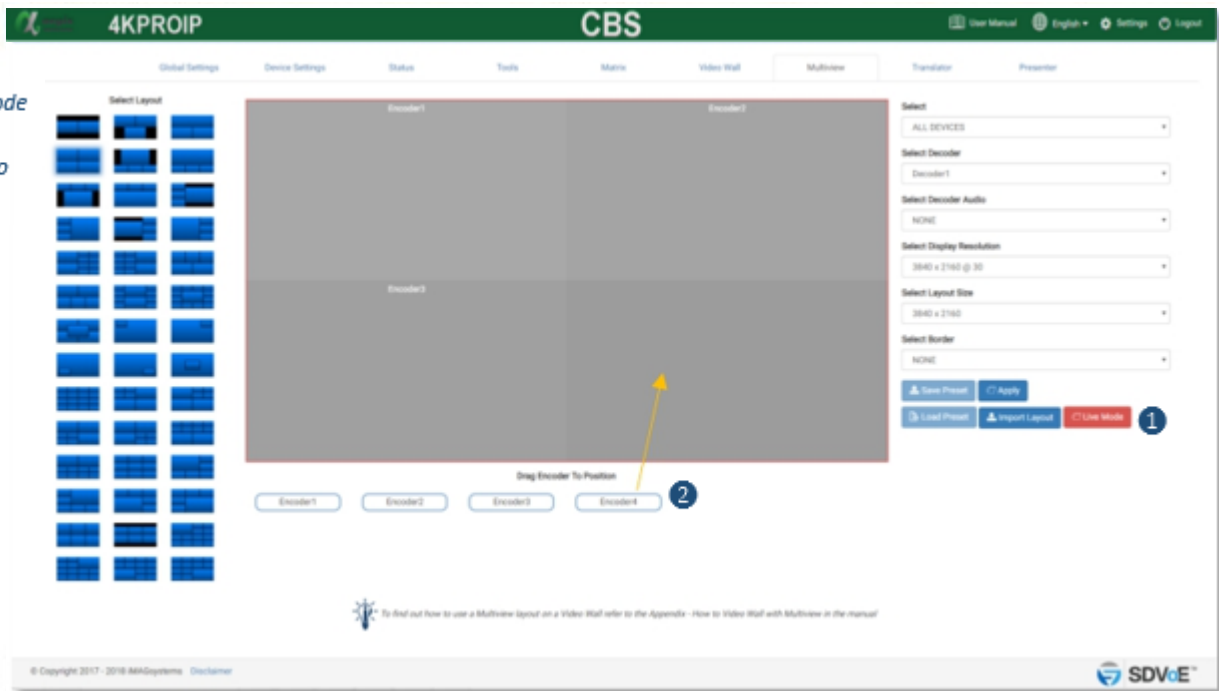
*If the layout size was 3840x2160 then each window is sized 1920x1080. So the resolution of the Encoder streams will be scaled to 1920x1080.*

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

7. Select default border or none.
8. Drag the required Encoder / Source to desired window location. Only same sized windows can use the same duplicated Encoder / Source.
9. Save or apply the layout. The layout can be saved as a preset to be recalled via the "preset load" command or loaded back into the UI.

## 7.2 Multiview Live

1. Toggle Live Mode on/off
2. Drag sources to Position



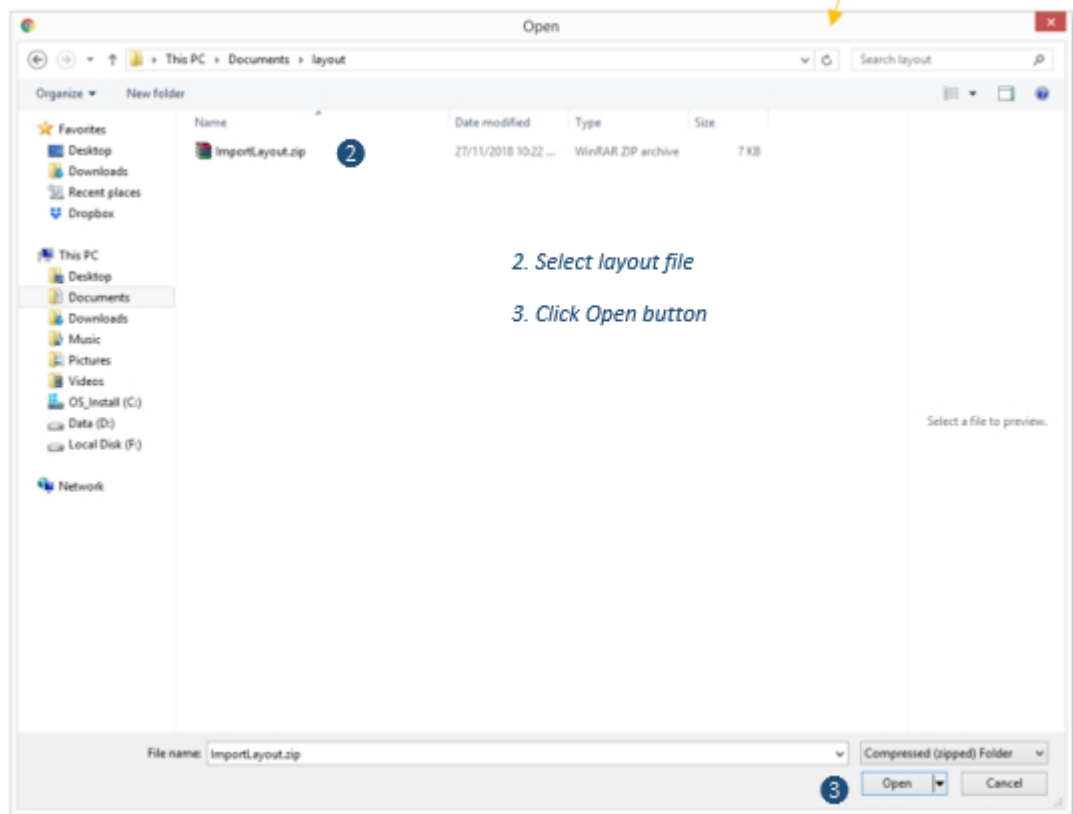
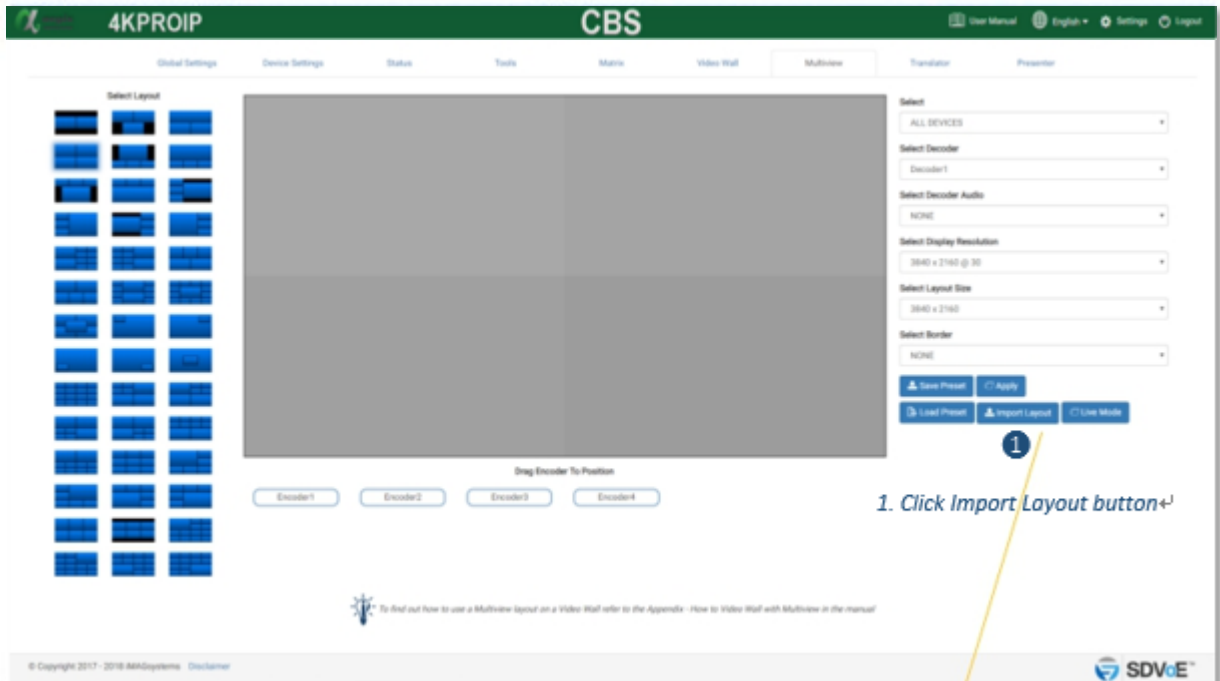
1. Use the “Live Mode” button to toggle the function on/off
2. Drag sources to window locations or remove sources from windows

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

## 7.3 Multiview Layout Import

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

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



## 7.4 Multiview Presets

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

Here is an example of the code generated from the 1<sup>st</sup> UI multiview layout:

- Define a new layout

```
layout new MV_e1 3840 2160
```

- Define layout windows

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

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

```
leave all Decoder2
```

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

```
set video_mute Decoder2 true 000000
```

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

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

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

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

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

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

## 7.4 Multiview Presets Continued...

- To reduce bandwidth from Encoder1 workout if we can use the main hdmi:0 stream instead of the sub stream hdmi:1 (**optional**, otherwise keep "join multi Encoder1 Decoder1 0 scaled MV\_e1")

```
if(get video Encoder1 width == get window MV_e1 0 width){
  if(get video Encoder1 height == get window MV_e1 0 height){
    if(get video Encoder1 sm == PROGRESSIVE){
      if(get video Encoder1 bpp == 8){
        if(get video Encoder1 cs == YCBCR_420){
          join multi Encoder1 Decoder1 0 scaled MV_e1
        }else{
          join multi Encoder1 Decoder1 0
          stop sub Encoder1
        }
      }else{
        join multi Encoder1 Decoder1 0 scaled MV_e1
      }
    }else{
      join multi Encoder1 Decoder1 0 scaled MV_e1
    }
  }else{
    join multi Encoder1 Decoder1 0 scaled MV_e1
  }
}
}
```

- To reduce bandwidth from Encoder1 workout if we can use the main hdmi:0 stream instead of the sub stream hdmi:1 (**optional**, otherwise keep "join multi Encoder2 Decoder1 1 scaled MV\_e1")

```
if(get video Encoder2 width == get window MV_e1 1 width){
  if(get video Encoder2 height == get window MV_e1 1 height){
    if(get video Encoder2 sm == PROGRESSIVE){
      if(get video Encoder2 bpp == 8){
        if(get video Encoder2 cs == YCBCR_420){
          join multi Encoder2 Decoder1 1 scaled MV_e1
        }else{
          join multi Encoder2 Decoder1 1
          stop sub Encoder2
        }
      }else{
        join multi Encoder2 Decoder1 1 scaled MV_e1
      }
    }else{
      join multi Encoder2 Decoder1 1 scaled MV_e1
    }
  }else{
    join multi Encoder2 Decoder1 1 scaled MV_e1
  }
}
}
```

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

```
if(get status Encoder1 video 1 == STREAMING){
  if(get bandwidth Encoder1 > 9){
    stop video Encoder1
  }
}
```

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

```
if(get status Encoder2 video 1 == STREAMING){
  if(get bandwidth Encoder2 > 9){
    stop video Encoder2
  }
}
```

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

```
set video_mute Decoder2 false
```

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

```
leave audio_d Decoder2
```

## 7.4 Multiview Presets Continued...

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

- Define a new layout

```
layout new MV_e1 3840 2160
```

- Define layout windows

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

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

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

- Join Encoder1 to multiview window 0

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

- Join Encoder2 to multiview window 1

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

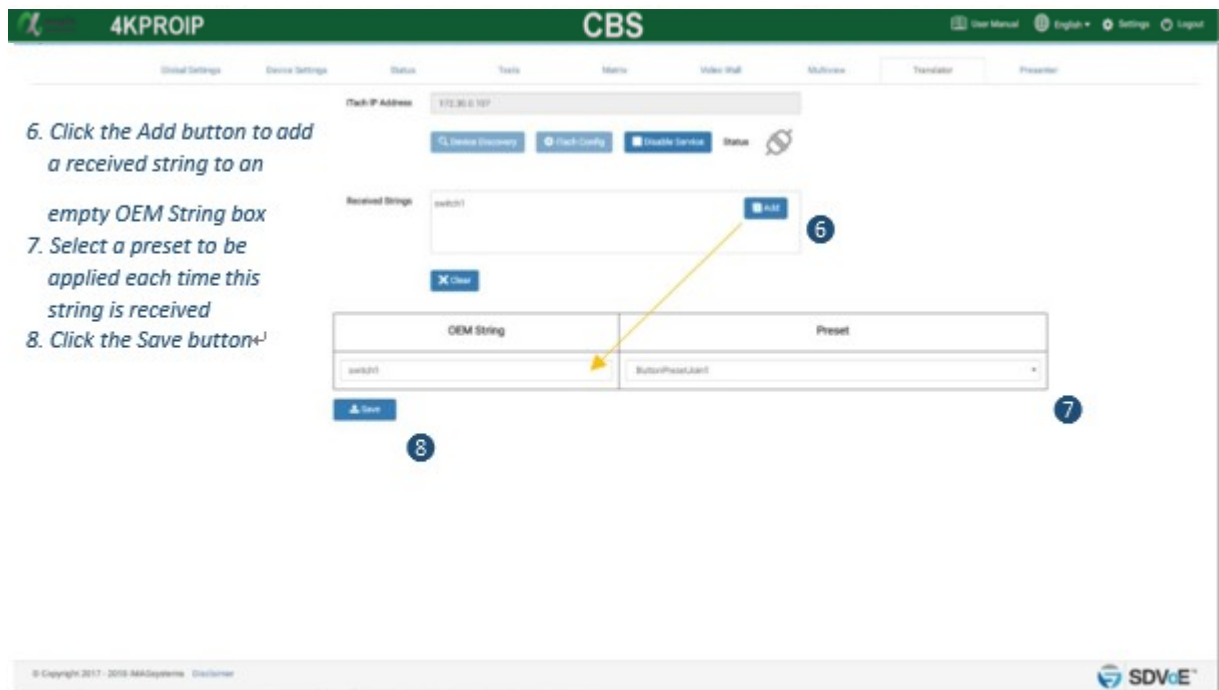


## 8 Translator

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



1. Click Device Discovery  
Only IP2SL or WF2SL
2. Drag discovered device to iTouch IP Address
3. Click iTouch Config to set the serial parameters
4. Click Enable / Disable Service button to turn the function on or off



6. Click the Add button to add a received string to an empty OEM String box
7. Select a preset to be applied each time this string is received
8. Click the Save button



From 3rd party  
serial controller

## 9 Presenter

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

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

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

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

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

**Instant mode** works as follows:

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

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

**Cueing mode** works as follows:

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

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

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

## 9 Presenter continued...

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

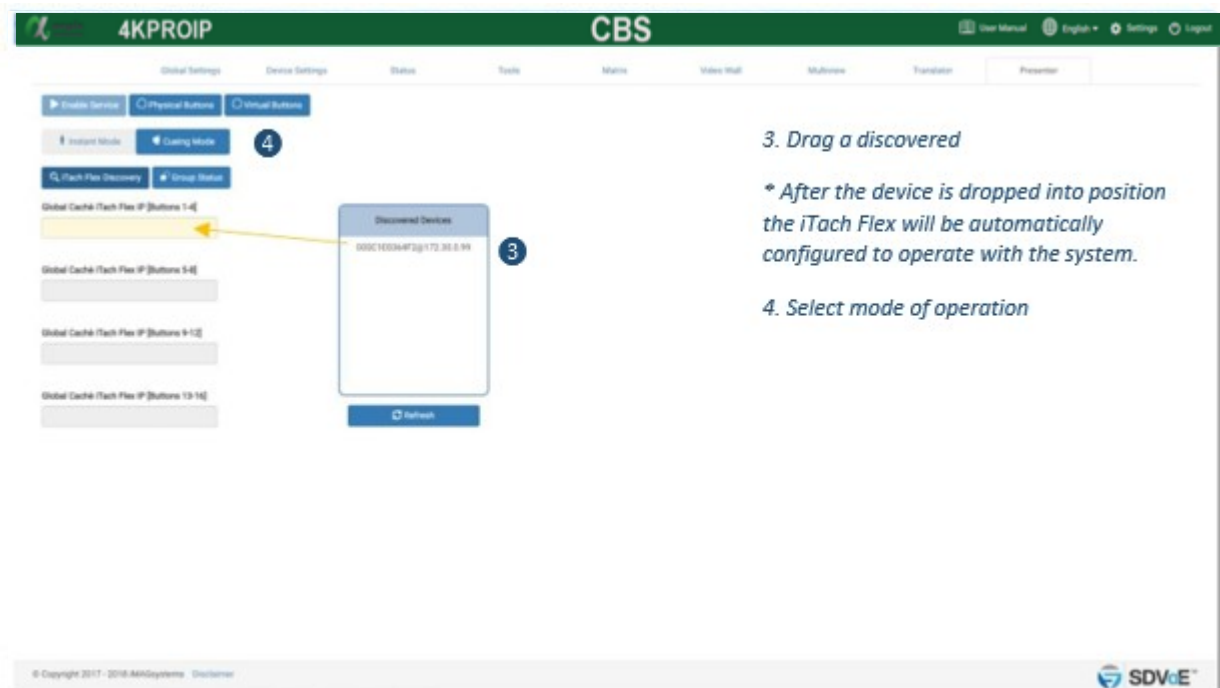


1. Click the Physical Buttons button

2. Click iTach Discovery button

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SDVcE™



3. Drag a discovered

\* After the device is dropped into position the iTach Flex will be automatically configured to operate with the system.

4. Select mode of operation

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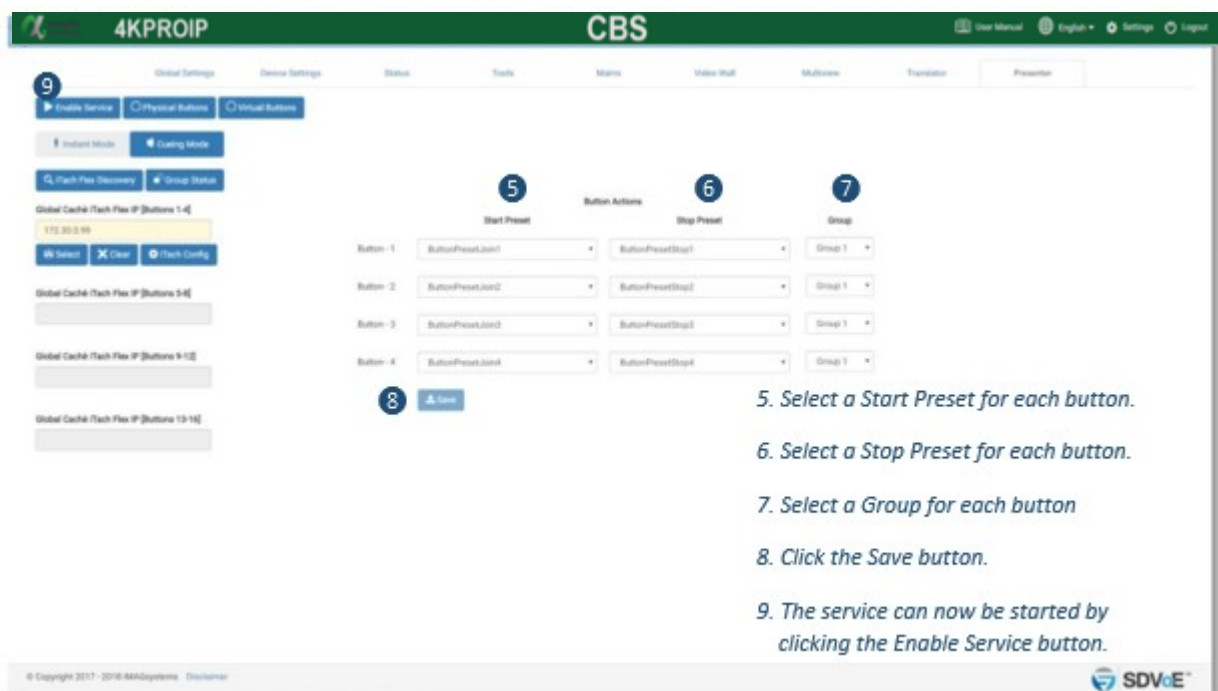
SDVcE™

## 9 Presenter continued...

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



The screenshot shows the CBS 4KPROIP Presenter interface. The top navigation bar includes 'Global Settings', 'Device Settings', 'Status', 'Tools', 'Matrix', 'Video Wall', 'Multiview', 'Translator', and 'Presenter'. The 'Presenter' tab is active. On the left sidebar, there are buttons for 'Enable Service', 'Physical Buttons', and 'Virtual Buttons'. Below these are 'Instant Mode' and 'Custom Mode' buttons. Further down are 'Clear Preset Memory' and 'Group Status' buttons. The main area displays a table for configuring buttons 1 through 4. The table has columns for 'Start Preset', 'Stop Preset', and 'Group'. The 'Save' button is located at the bottom of the table.

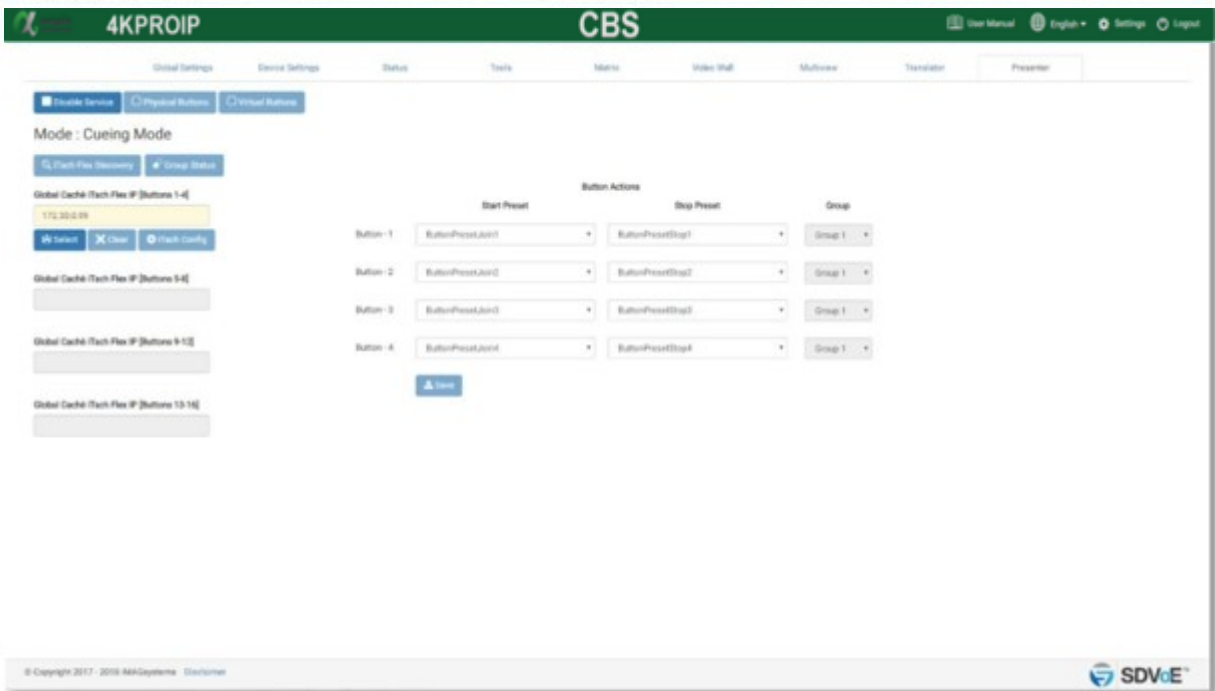


The screenshot shows the CBS 4KPROIP Presenter interface with numbered annotations 5 through 9. The annotations indicate the steps for selecting a Start Preset, Stop Preset, and Group for each button, and clicking the Save button.

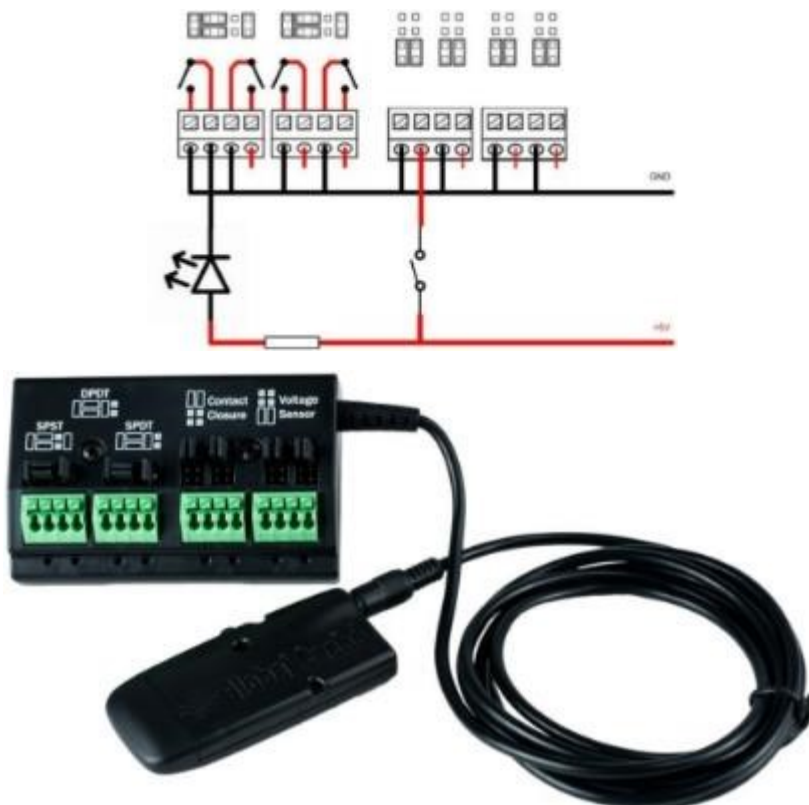
5. Select a Start Preset for each button.
6. Select a Stop Preset for each button.
7. Select a Group for each button
8. Click the Save button.
9. The service can now be started by clicking the Enable Service button.

## 9 Presenter continued...

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

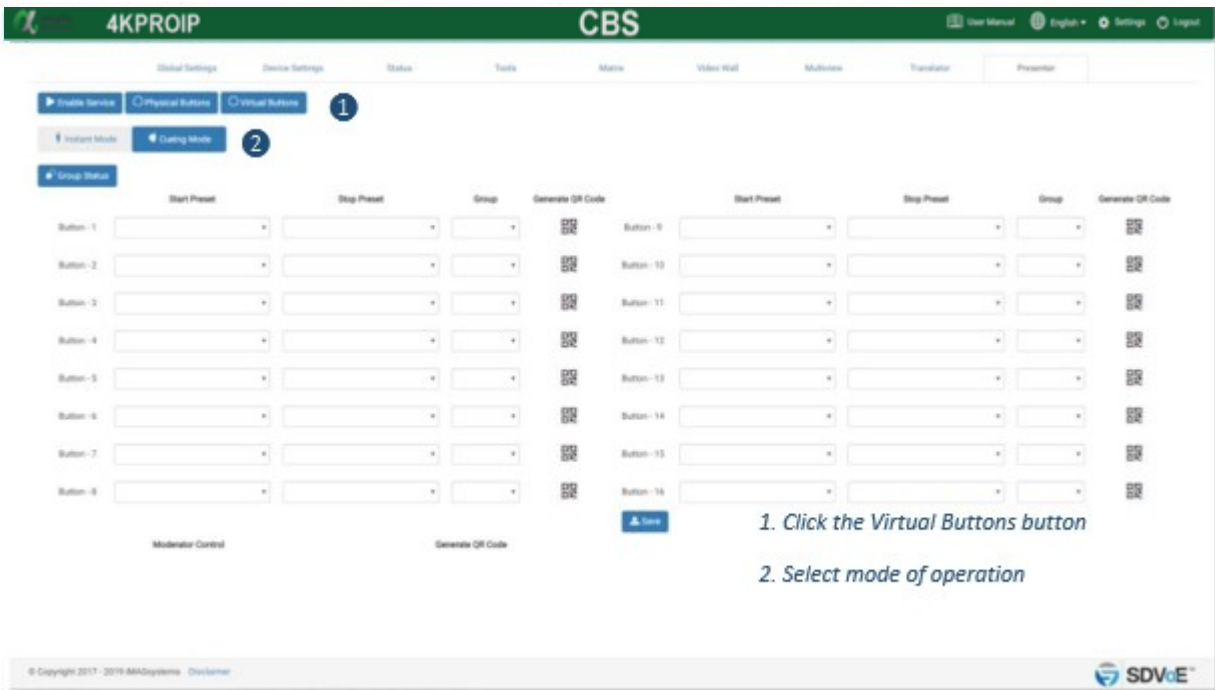


Below is an example for wiring an illuminated button to the FLC-RS cable.



## 9 Presenter continued...

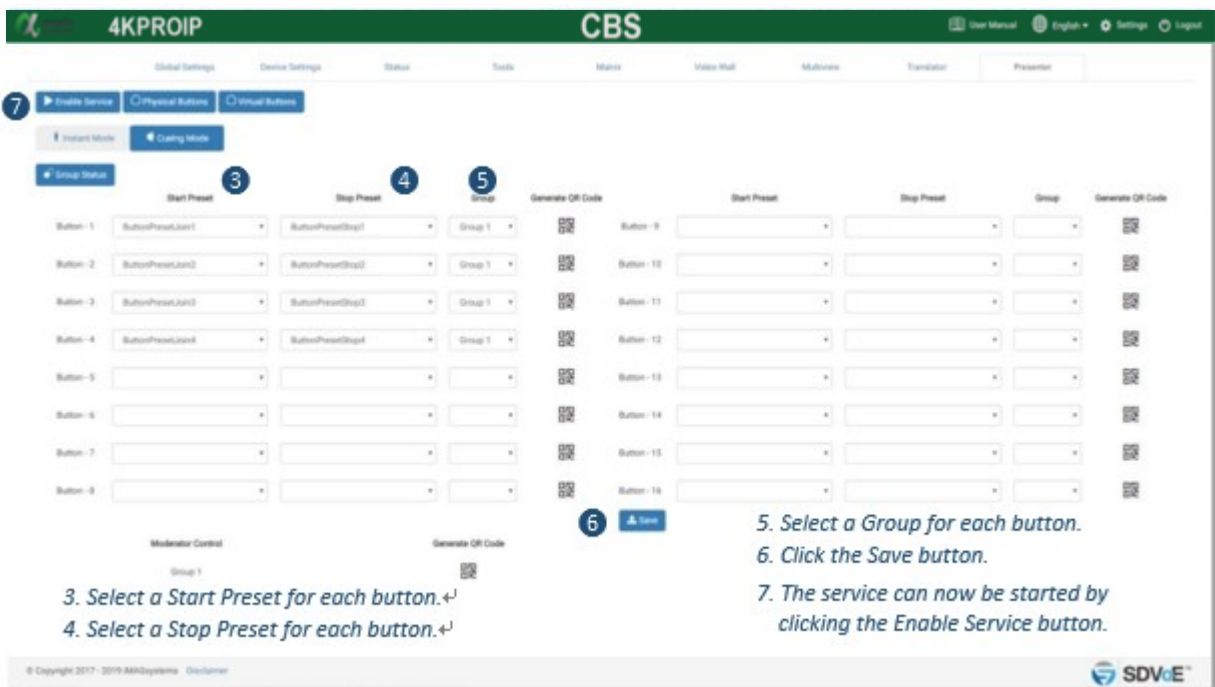
The following shows the configuration of virtual buttons by clicking the Virtual Buttons button:



The screenshot shows the 'Virtual Buttons' configuration page. At the top, there are tabs for 'Global Settings', 'Device Settings', 'Status', 'Tools', 'Matrix', 'Video Wall', 'Multiview', 'Translator', and 'Presenter'. Below these, there are three main sections: 'Enable Service', 'Physical Buttons', and 'Virtual Buttons'. The 'Virtual Buttons' section is active, indicated by a blue circle with the number 1. Below this, there are two modes: 'Instant Mode' and 'Clustering Mode', with 'Clustering Mode' selected, indicated by a blue circle with the number 2. The main area contains a table for configuring buttons. The table has columns for 'Start Preset', 'Stop Preset', 'Group', and 'Generate QR Code'. There are two identical sets of these columns, one for buttons 1-8 and one for buttons 9-16. The 'Generate QR Code' column contains QR codes for each button. At the bottom, there are buttons for 'Moderator Control' and 'Generate QR Code', and a 'Save' button. The footer includes copyright information and the SDVcE logo.

1. Click the Virtual Buttons button

2. Select mode of operation



This screenshot shows the same 'Virtual Buttons' configuration page, but with configurations applied. A blue circle with the number 7 is next to the 'Virtual Buttons' tab. A blue circle with the number 3 is next to the 'Start Preset' dropdown for Button-1, which is set to 'ButtonPresetStart1'. A blue circle with the number 4 is next to the 'Stop Preset' dropdown for Button-1, which is set to 'ButtonPresetStop1'. A blue circle with the number 5 is next to the 'Group' dropdown for Button-1, which is set to 'Group 1'. A blue circle with the number 6 is next to the 'Save' button. The 'Generate QR Code' column now shows QR codes for the configured buttons. The footer includes copyright information and the SDVcE logo.

3. Select a Start Preset for each button.↵

4. Select a Stop Preset for each button.↵

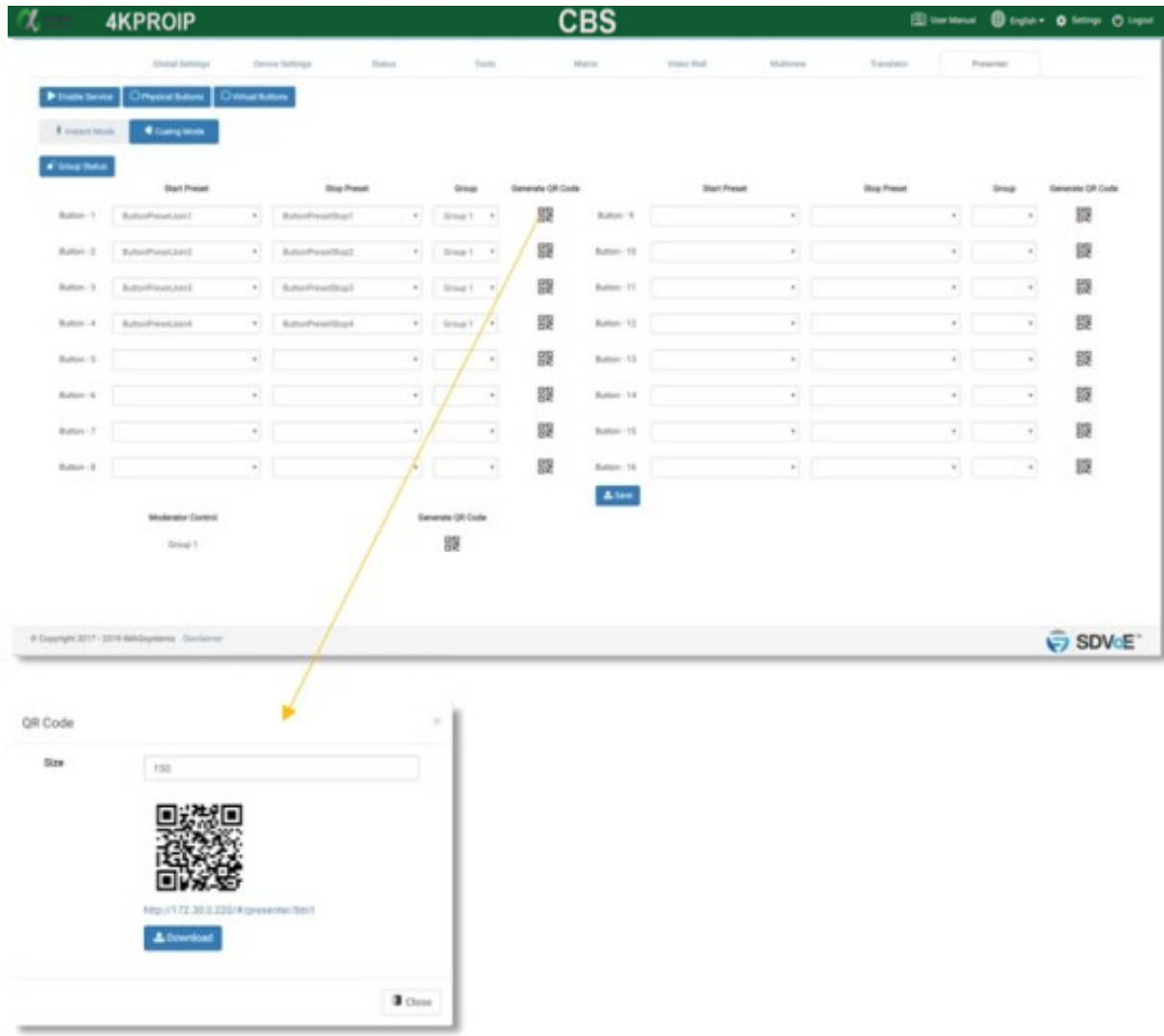
5. Select a Group for each button.

6. Click the Save button.

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

## 9 Presenter continued...

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



The virtual button will appear in a browser as below:



## 9 Presenter continued...

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

The screenshot shows the 'Presenter' tab in the 4KPROIP CBS interface. It features a table with 16 rows, each representing a button (Button-1 to Button-16). Each row has columns for 'Start Preset', 'Stop Preset', 'Group', and 'Generate QR Code'. A yellow arrow points from the 'Generate QR Code' button in the 'Group 1' row to a pop-up window titled 'QR Code'.

The 'QR Code' pop-up window shows a QR code and the URL <http://172.30.0.220/#/presenter/mod1>. It includes a 'Download' button and a 'Close' button.

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

The 'Group Status' pop-up window displays a table with 10 groups. Each group has a 'Status' dropdown menu. The status for all groups is currently 'Disabled'. There are 'Save' and 'Close' buttons at the bottom.

Group	Status	Group	Status
1	Disabled	6	Disabled
2	Disabled	7	Disabled
3	Disabled	8	Disabled
4	Disabled	9	Disabled
5	Disabled	10	Disabled

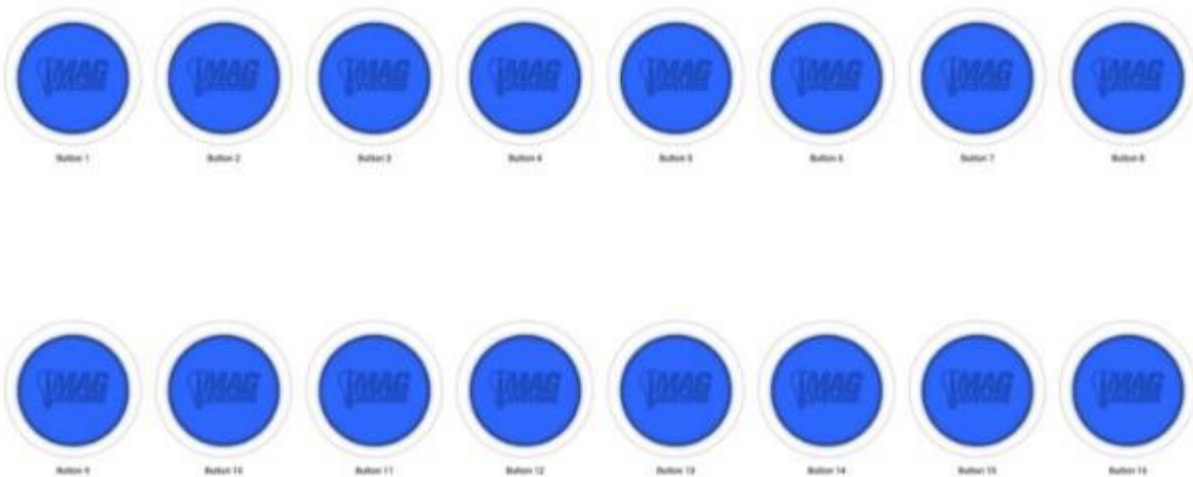


## 9 Presenter continued...

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




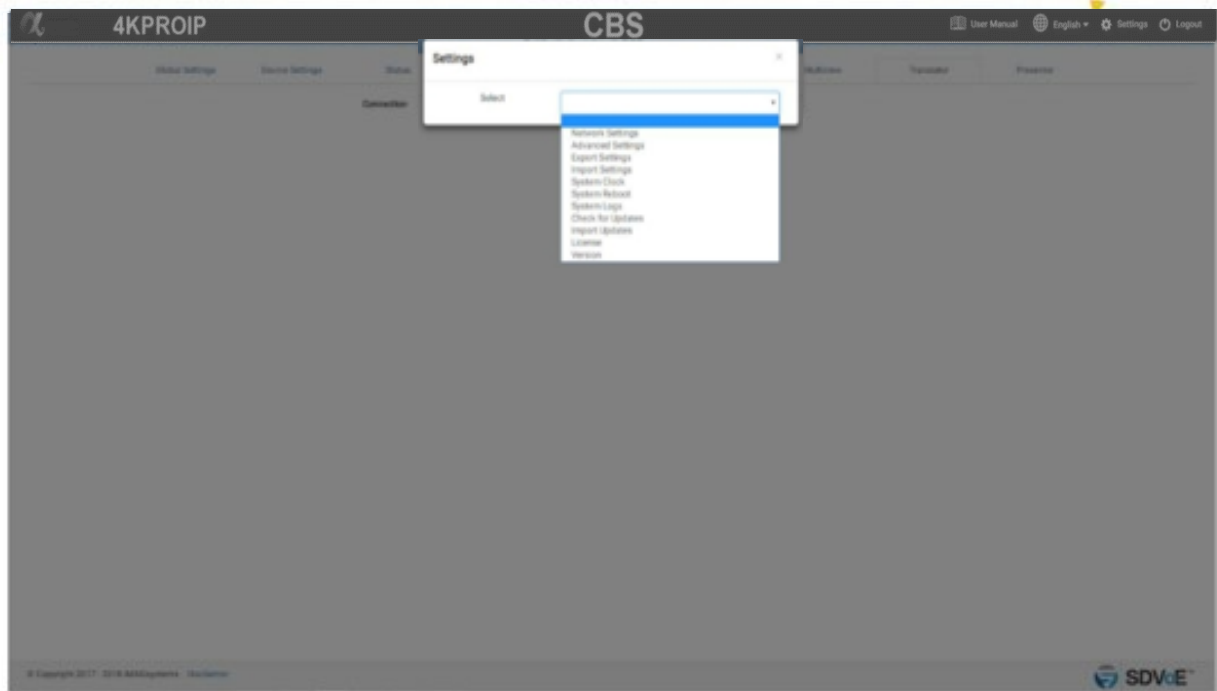
Group of 4 buttons



Group of all 16 buttons

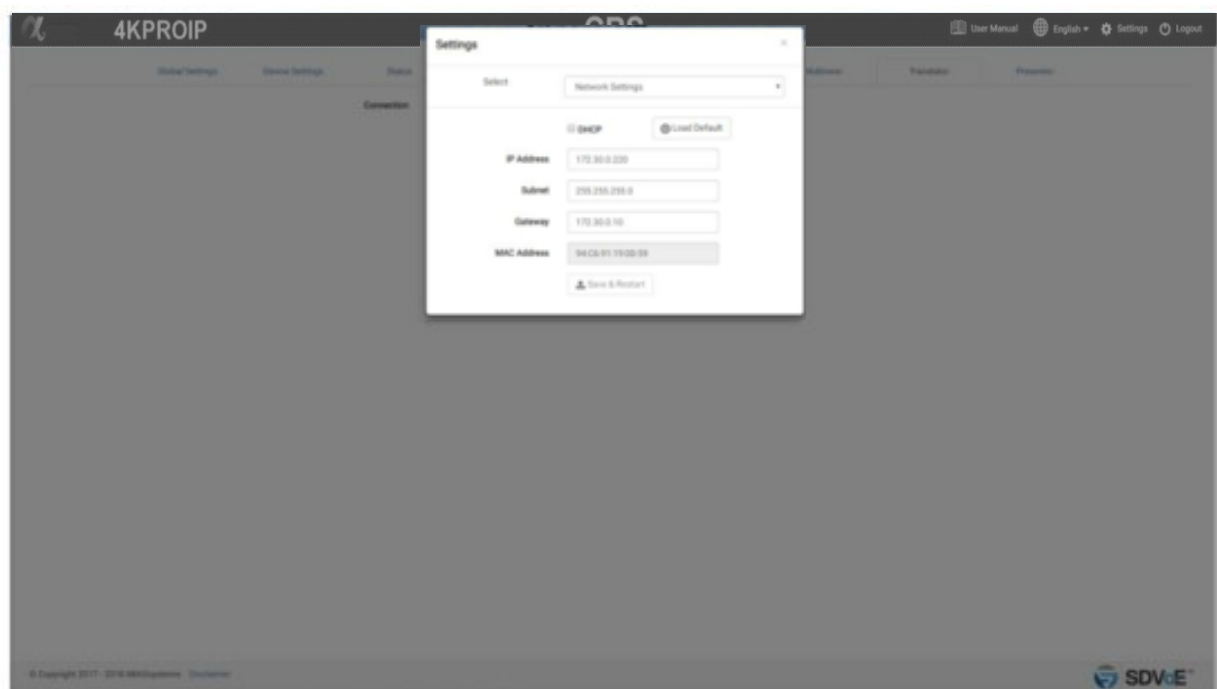
## 10 System Settings

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



### 10.1 Network Settings

Here you can change the IP configuration of the SDVoE Director Controller. This address must be set in the same range as the Encoders and Decoders. By default the SDVoE Director Controller will be found at 169.254.1.1. Use the [iMAGfinder](#) if unable to locate the controller on the network.



## 10.2 Advanced Settings

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



### 10.2.1 Device Data Refresh

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

### 10.2.2 USB Data Refresh

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

### 10.2.3 Global Cache Timeout

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

### 10.2.4 Leave Subscriptions on Stop

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

### 10.2.5 Leave Subscriptions on system start

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

## 10.2.6 Temperature

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

## 10.2.7 Connections Limit

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

## 10.3 Export Settings

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



## 10.4 Import Settings

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



## 10.5 Systems Clock

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



## 10.6 System Reboot

Here you can reboot the SDVoE Director Controller. It takes 60 seconds for the controller to Reboot.



## 10.7 System Logs

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

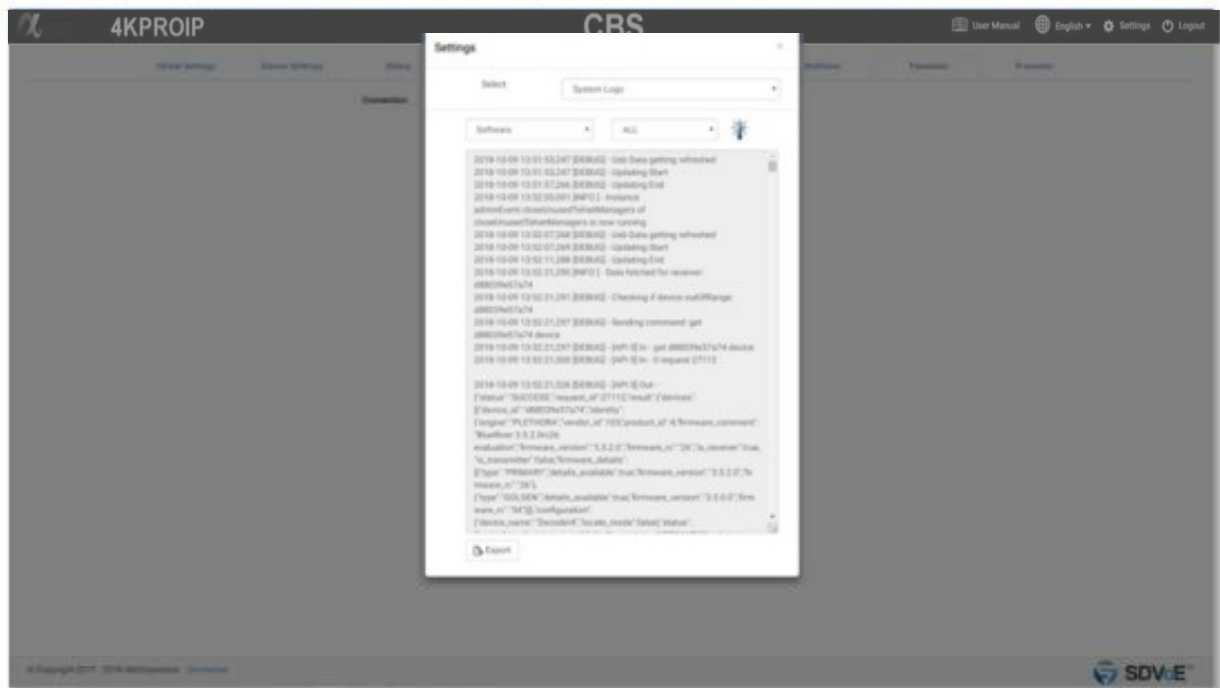
### 10.7.1 BlueRiver™ Log

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



## 10.7.2 Software Log

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



## 10.7.3 USB Log

An USB Log contains USB discovery and control logged information.





## 10.8 Check for Updates

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

**Software** is User Interface and Control Layer (API) updates

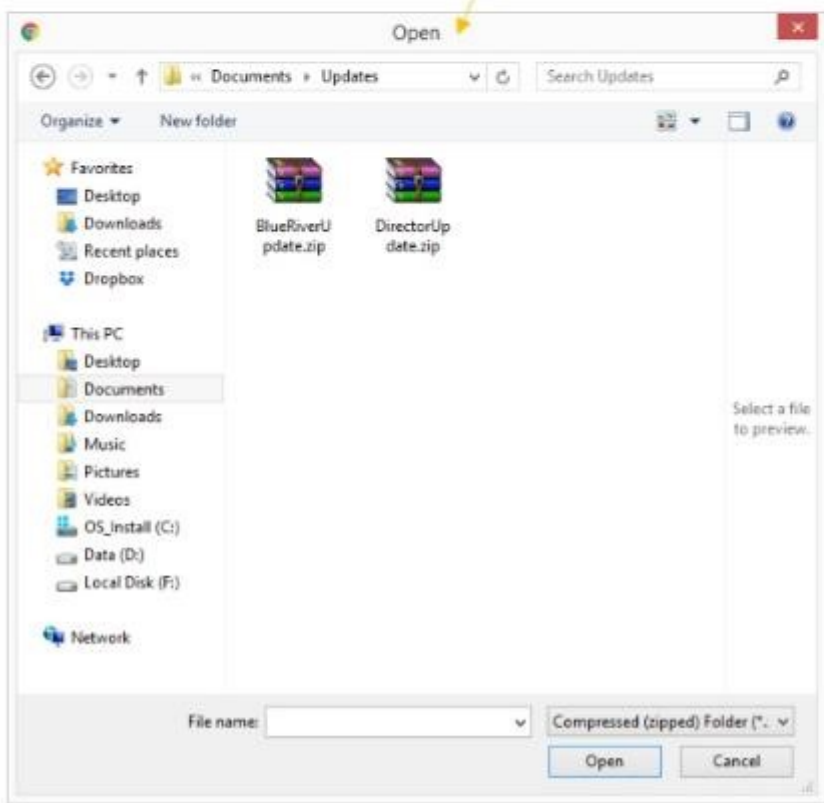
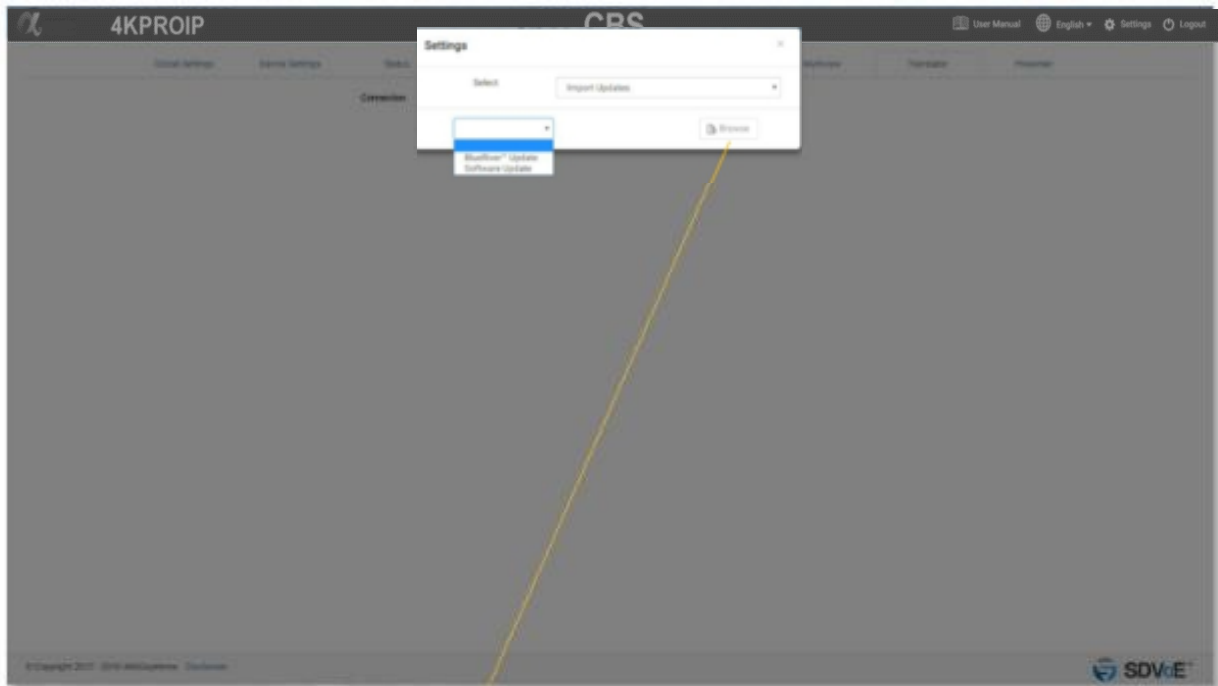
**BlueRiver™** is BlueRiver™ control layer updates



## 10.9 Import Updates

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

Select the type of update being performed by either selecting Software Update or BlueRiver™ Update. Then click the browse button to select the required file from the file dialog popup.



## 10.10 License

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

## 10.10 License continued...

The table below indicates standard features in green and optional licensed features in red.  
(Features indicated with \* are not available for OEM users.)

A special Monitoring only licence is also available which provides system status only.

Global Settings	
	Users
	Presets
	Groups
	Multicast
	HTTP Security Key
	Permissions
	Encryption
	Notifications
	Analytics *
	Scheduler *
	Control UI *
Device Settings	
Status	
Tools	
	Send Serial
	Send Infrared
	Send Control Command
	Reboot Device
	Reset Device
	Update Device Firmware
	USB Discovery
Matrix	
Video Wall	
Multiview	
Translator *	
Presenter *	

## 10.11 Version

Here you can find the current software version.



## 11 UI Overview

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



The screenshot shows the 'License' registration page of the SDVoE Director Controller. The page has a green header with the '4KPROIP' logo on the left, 'CBS' in the center, and links for 'User Manual', 'English', 'Settings', and 'Logout' on the right. The main content area is titled 'License' and contains three input fields: 'Serial Number' (pre-filled with '01150277000000000000000000000000'), 'Company Name', and 'License Key'. A 'Register' button is located at the bottom of the form. The footer includes copyright information '© Copyright 2017-2019 SDVoE Systems, Inc.' and the 'SDVoE' logo.

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



The screenshot shows the 'Login' page of the SDVoE Director Controller. The page has a green header with the '4KPROIP' logo on the left, 'CBS' in the center, and links for 'User Manual', 'English', 'Settings', and 'Logout' on the right. The main content area is titled 'Login' and contains two input fields: 'Username' and 'Password'. A 'Login' button is located at the bottom of the form. The footer includes copyright information '© Copyright 2017-2019 SDVoE Systems, Inc.' and the 'SDVoE' logo.

## 11 UI Overview – Continued...

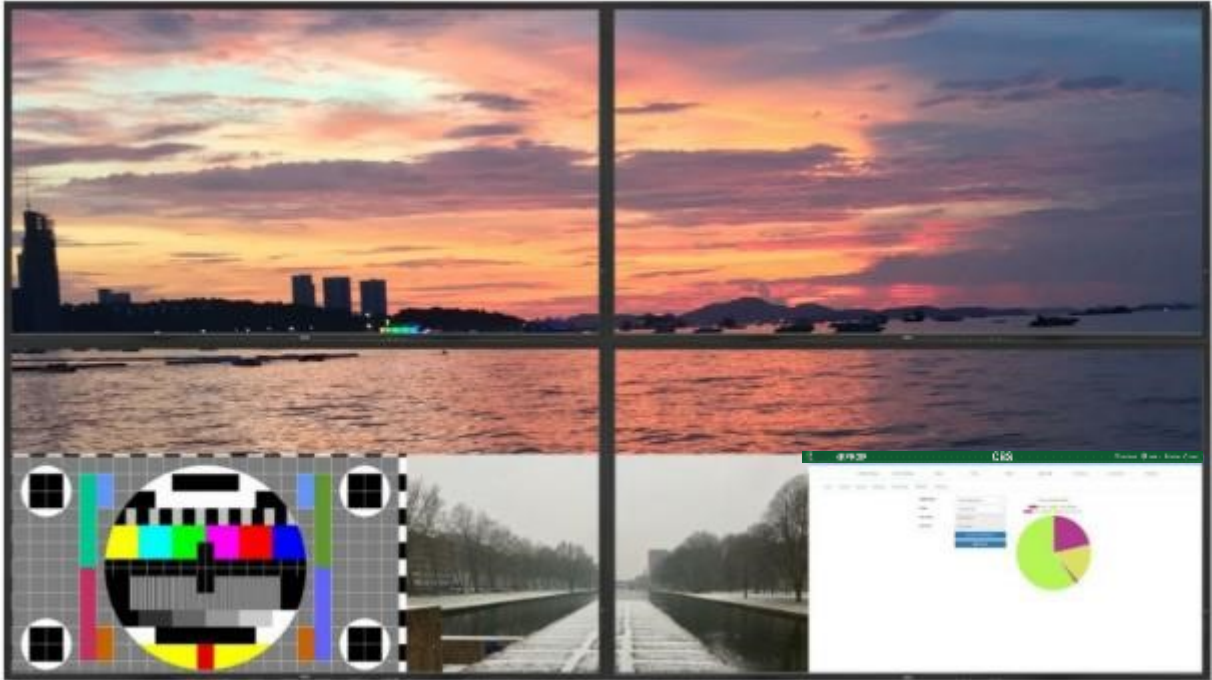
Once logged into the system the Device Settings tab will be displayed by default.

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



## Appendix A – How to Video Wall with Multiview

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





## Appendix A – How to Video Wall with Multiview continued...

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

Decoder "*MVsourceOUT*"



Encoder "*MVsourceIN*"

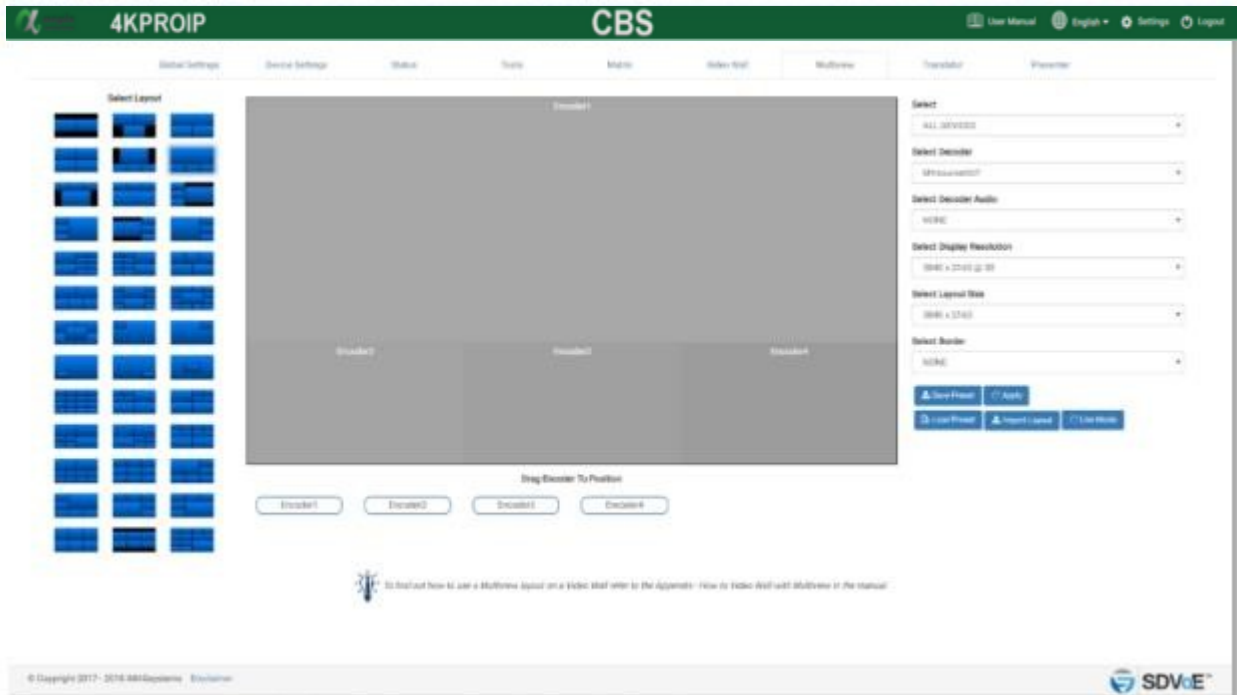


2. Now create a Video Wall preset using the required display layout. For this example a 2x2 Video Wall is used and the preset is saved as "*sample\_VideoWall\_2x2*".



## Appendix A – How to Video Wall with Multiview continued...

- Now create a Multiview layout as required using the Decoder “*MVsourceOUT*”. For this example layout #6 is used and the preset is saved as “*sample\_Multiview\_6*”.
- Now these two presets just need to be executed. Whenever a change of the layout is required, only a different Multiview layout preset is required to be executed as the Video Wall configuration will remain the same.



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

## Appendix B – Security Features

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

### 1. Required security key with all HTTP requests

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

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

### 2. Optional security key with all TCP commands

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

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

### 3. Leave Subscriptions on new Decoder detection

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

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

### 4. Leave Subscriptions on Stop

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

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

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

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

### 5. Leave Subscriptions on System Start

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

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

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

### 6. Permissions

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

## Appendix B – Security Features continued...

### **7. Encryption**

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

### **8. User Login Failure**

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

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

### **9. Limiting simultaneous TCP connections to control port 6980**

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

## Appendix C – Multicast Management

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

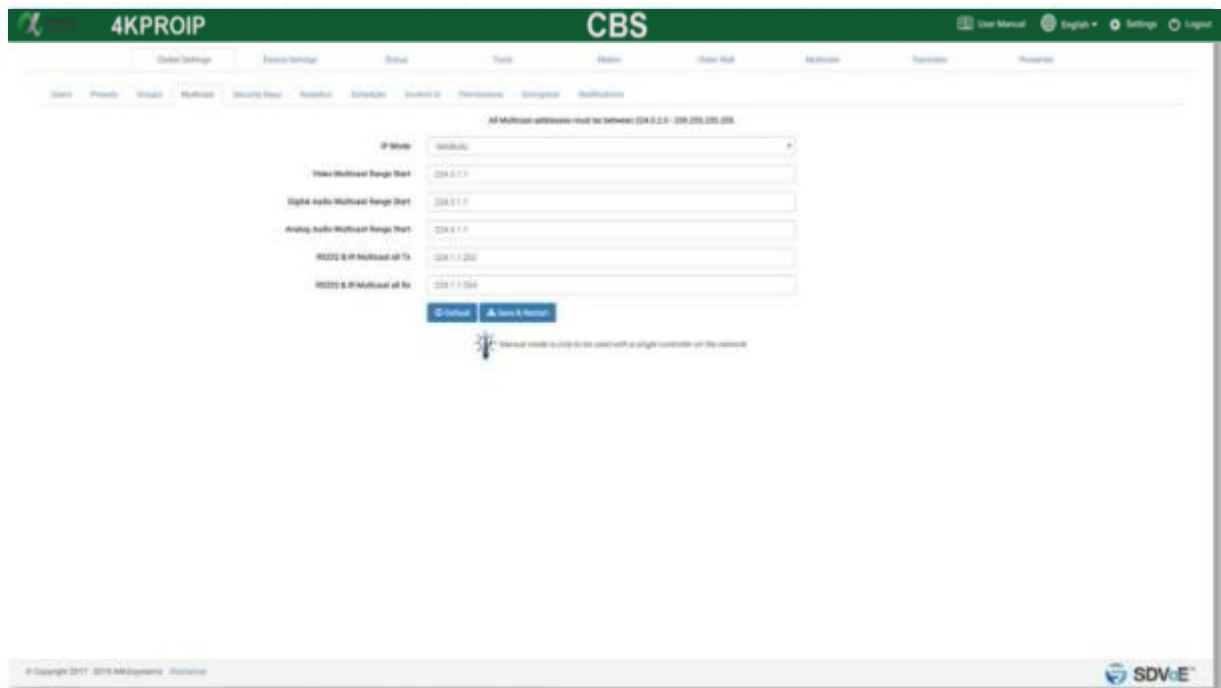
All SDVoE systems work with IGMP multicast. An Encoder sends a stream on a given multicast address. HDMI video, HDMI audio and analog audio all have separate streams with a unique multicast address assigned to each of them. Then any given Decoder on the network subscribes to these multicast addresses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

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

*Why?*

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

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



## Appendix D – Using Google Assistant

The SDVoE Director Controller can be controlled with voice commands via Google Assistant. In this example we will run through the requirements to do so. An [IFTTT](#) account will also be required.

To find out how to link your Google account with IFTTT visit this Google [help](#) page.

First step is to set up the SDVoE Director Controller so it is accessible from the internet. Port 80 of the SDVoE Director Controller will need to be port-forwarded to an external IP port. For this example we are going to use an external IP address of 123.456.789.100 and a controller IP address of 169.254.1.1. From your router, port forward from internal 169.254.1.1 port 80 to external, say port 9999 (you can use any unused port number here).

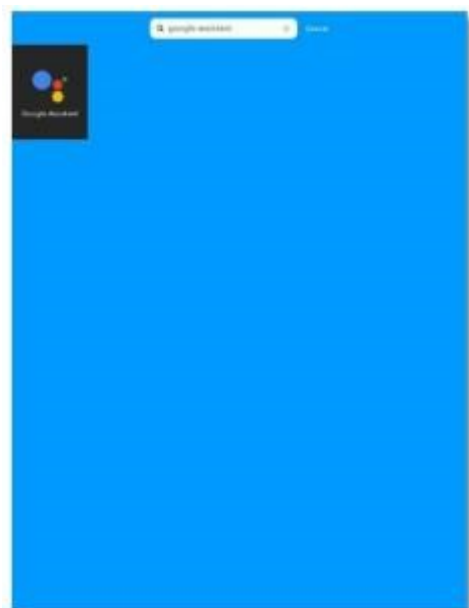
*Every router is configured differently, so consult your routers manual if required.*

Now externally you should be able to access the SDVoE Director Controllers webpage by entering '123.456.789.100:9999' into a browser.

Now we can set up IFTTT to activate any command on the SDVoE Director Controller but we strongly recommended that presets only are specified.



- Create a New Applet, then click [this](#)



- Search for 'google assistant' and click it

## Appendix D – Using Google Assistant continued...



- Choose 'Say a simple phrase'



- Enter what you will say
- Enter Google's response
- Click 'Create trigger'



- Now click **that**



- Search for 'webhooks' and click it

## Appendix D – Using Google Assistant continued...



- Select 'Make a web request'



- Now enter the URL, for this example 123.456.789.100:9999
- Select Method 'POST'
- Select Content Type 'application/json'
- Enter Body with command as below
- Click 'Create action'

```
{"cmd":"<command>","key":"<security_key>"}
```

=

```
{"cmd":"preset load <preset>","key":"<security_key>"}
```

where:

<preset> = Name given to the preset to be applied

<security\_key> = HTTP Security key

Example:

```
{"cmd":"preset load ButtonPresetJoin1","key":"ts2Xe1sn1Nk1rm1>11$plTk18q14e"}
```



## Appendix D – Using Google Assistant continued...



- Click 'Finish'

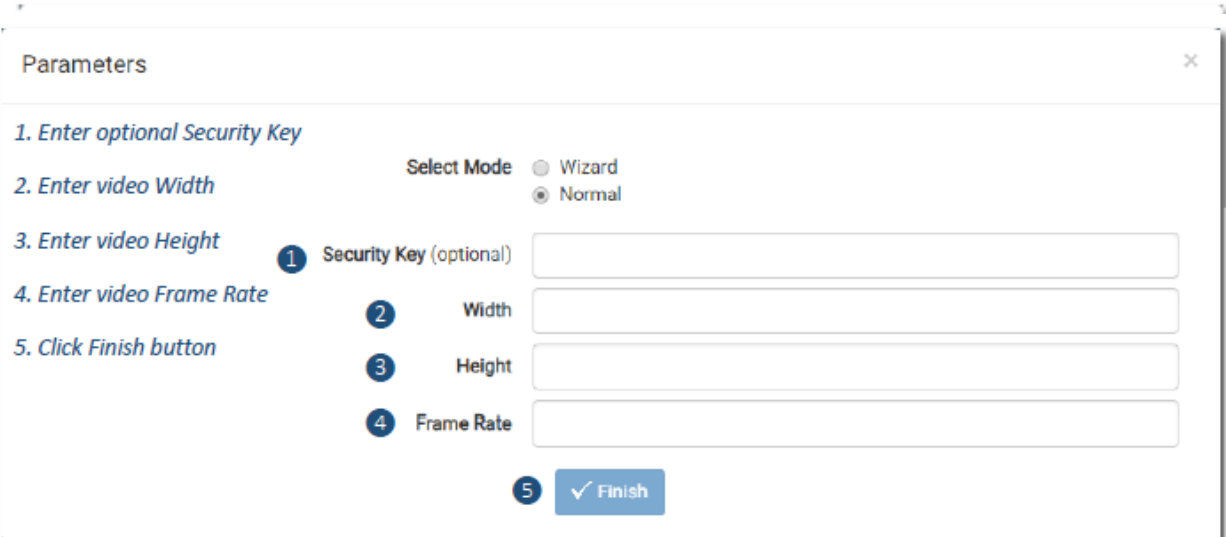
Now the new applet is ready for testing.

## Appendix E – Using Command Assistant

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

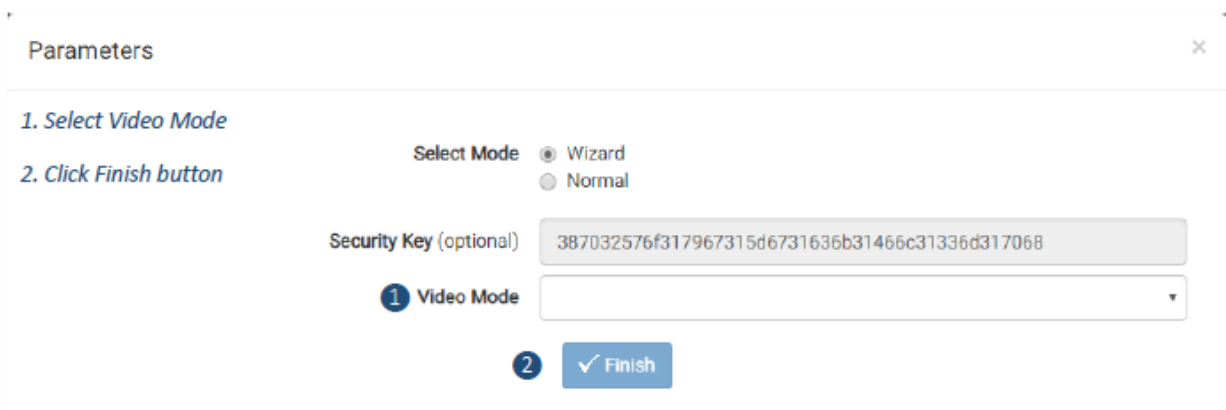
Most commands have a Normal and Wizard mode of creation. In Normal mode most parameters are set by entering the details into the various text boxes, while in Wizard mode parameters are mostly set with dropdown selections.

### Command default – Normal Mode



The screenshot shows the 'Parameters' dialog box in Normal Mode. It features a list of five numbered steps on the left: 1. Enter optional Security Key, 2. Enter video Width, 3. Enter video Height, 4. Enter video Frame Rate, and 5. Click Finish button. On the right, there is a 'Select Mode' section with radio buttons for 'Wizard' and 'Normal', where 'Normal' is selected. Below this are four text input fields: 'Security Key (optional)' (labeled 1), 'Width' (labeled 2), 'Height' (labeled 3), and 'Frame Rate' (labeled 4). At the bottom right, there is a blue button labeled 'Finish' with a checkmark icon (labeled 5).

### Command default – Wizard Mode



The screenshot shows the 'Parameters' dialog box in Wizard Mode. It features a list of two numbered steps on the left: 1. Select Video Mode and 2. Click Finish button. On the right, there is a 'Select Mode' section with radio buttons for 'Wizard' and 'Normal', where 'Wizard' is selected. Below this is a text input field for 'Security Key (optional)' containing the value '387032576f317967315d6731636b31466c31336d317068'. Below the security key field is a dropdown menu labeled 'Video Mode' (labeled 1). At the bottom right, there is a blue button labeled 'Finish' with a checkmark icon (labeled 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 io in fast – Normal Mode

Parameters ×

1. Enter optional Security Key
2. Enter Encoder Device Name
 

Select Mode ☐ Wizard ☒ Normal
3. Enter Decoder or Group name
4. Select options
 

1 Security Key (optional)

2 Encoder Device Name

3 Decoder / Group

4 1 Combine AV (optional) ☐

4 2 Lock (optional) ☐

4 3 Exclusive (optional) ☐

4 4 AUTO (optional) ☐

5 1 Width (optional)

5 2 Height (optional)

5 3 Frame Rate (optional)

6 Aspect (optional) KEEP ▼
7. Click Finish button

7

## Command join fast – Wizard Mode

Parameters ×

1. Select Encoder Device Name

2.1 Select Device(s)

2.2 Select Decoder or Group name

3. Select options

4. Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional) 387032576f317967315d6731536b31466c31336d317068

1 Encoder Device Name

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

2 2

3 1 Combine AV (optional) ☐

3 2 Lock (optional) ☐

3 3 Exclusive (optional) ☐

3 4 AUTO (optional) ☐

3 5 Video Mode (optional)

3 6 Aspect (optional) KEEP

4

## Command join sync – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder Device Name

3. Enter Decoder or Group name

4. Select options

5. Click Finish button

Select Mode

☐ Wizard  
☒ Normal

1

Security Key (optional)

2

Encoder Device Name

3

Decoder / Group

4

1

Combine AV (optional)

☐

4

2

Exclusive (optional)

☐

5

✓ Finish

## Command join sync – Wizard Mode

Parameters

1. Select Encoder Device Name

2.1 Select Device(s)

2.2 Select Decoder or Group name

3. Select options

4. Click Finish button

Select Mode

☒ Wizard  
☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1

Encoder Device Name

2

1

Select

☒ Decoder Device Name  
☐ Group Name  
☐ All Decoders

2

2

3

1

Combine AV (optional)

☐

3

2

Exclusive (optional)

☐

4

✓ Finish

## Command join sync\_scale – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder Device Name

3. Enter Decoder or Group name

4. Select options

5. Click Finish button

Select Mode

☐ Wizard  
☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Decoder / Group

4 1 Combine AV (optional)

☐

4 2 Lock (optional)

☐

4 3 Exclusive (optional)

☐

4 4 AUTO (optional)

☐

4 5 1 Width (optional)

4 5 2 Height (optional)

5 ✓ Finish

## Command join sync\_scale – Wizard Mode

Parameters

1. Select Encoder Device Name

2.1 Select Device(s)

2.2 Select Decoder or Group name

3. Select options

4. Click Finish button

Select Mode

☒ Wizard  
☐ Normal

Security Key (optional)

1 Encoder Device Name

2 1 Select

☒ Decoder Device Name  
☐ Group Name  
☐ All Decoders

2 2

3 1 Combine AV (optional)

☐

3 2 Lock (optional)

☐

3 3 Exclusive (optional)

☐

3 4 AUTO (optional)

☐

3 5 Video Mode (optional)

4 ✓ Finish

## Command join adv – Noral Mode

Parameters ×

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

Select Mode ☐ Wizard ☒ Normal

① Security Key (optional)

② Encoder Device Name

③ Decoder / Group

④ Display Mode

⑤ ① Combine AV (optional) ☐

⑤ ② Exclusive (optional) ☐

⑤ ③ AUTO (optional) ☐

⑥

## Command join adv – Wizard Mode

Parameters ×

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

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

① Encoder Device Name

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

② ②

③ Display Mode

④ ① Combine AV (optional) ☐

④ ② Exclusive (optional) ☐

④ ③ AUTO (optional) ☐

⑤



## Command join audio\_a – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter Encoder Device Name
- Enter Decoder or Group name
- Select optional Exclusive
- 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\_a – Wizard Mode

Parameters ×

- Select Encoder Device Name
- Select Device(s)
  - Select Decoder or Group name
- Select optional Exclusive
- Click Finish button

**Select Mode**
☒ Wizard
 ☐ Normal

Security Key (optional)

1 Encoder Device Name

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

2 2

3 Exclusive (optional) ☐

4

## Command join audio\_d – Normal Mode

Parameters ×

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

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Decoder / Group

4 Exclusive (optional) ☐

5

## Command join audio\_d – Wizard Mode

Parameters ×

1. Select Encoder Device Name
- 2.1 Select Device(s)
- 2.2 Select Decoder or Group name
3. Select optional Exclusive
4. Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

1 Encoder Device Name

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

2 2

3 Exclusive (optional) ☐

4

## Command join ir – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Source name

3. Enter Destination name

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Source

3 Destination

4

✓ Finish

## Command join ir – Wizard Mode

Parameters

1. Select Source name

2. Select Destination name

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Source

2 Destination

3

✓ Finish

## Command join serial – Normal Mode

Parameters ✕

- Enter optional Security Key
- Enter Source name
- Enter Destination name
- Select options
- Click Finish button

Select Mode

☐ Wizard  
☒ Normal

1 Security Key (optional)

2 Source

3 Destination

4 1 Bi-Directional (optional)

☐

4 2 Exclusive (optional)

☐

5

✓ Finish

## Command join serial – Wizard Mode

Parameters ✕

- Select Source name
- Select Destination name
- Select options
- Click Finish button

Select Mode

☒ Wizard  
☐ Normal

Security Key (optional)

1 Source

2 Destination

3 1 Bi-Directional (optional)

☐

3 2 Exclusive (optional)

☐

4

✓ Finish

## Command join usb – Normal Mode

Parameters ×

1. Enter optional Security Key
2. Enter Encoder Device Name
 

Select Mode
 ☐ Wizard
 ☒ Normal
3. Enter Decoder Device Name

1 Security Key (optional)

2 Encoder Device Name

3 Decoder Device Name

4

## Command join usb – Wizard Mode

Parameters ×

1. Select Encoder Device Name
2. Select Decoder Device Name
 

Select Mode
 ☒ Wizard
 ☐ Normal
3. Click Finish button

Security Key (optional)

1 Encoder Device Name

2 Decoder Device Name

3

## Command join multi – Normal Mode

Parameters ×

1. Enter optional Security Key
2. Enter Encoder Device Name
3. Enter Decoder Device Name
4. Select Subscription
- 5.1. Select optional Scaled
- 5.2. Enter Layout Name
6. Click Finish button

Select Mode
☐ Wizard
☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Decoder Device Name

4 Subscription 0 31

5 1 Scaled (optional) ☒

5 2 Layout Name (optional)

6

## Command join multi – Wizard Mode

Parameters ×

1. Select Encoder Device Name
2. Select Decoder Device Name
3. Select Subscription
- 4.1. Select optional Scaled
- 4.2. Select Layout
5. Click Finish button

Select Mode
☒ Wizard
☐ Normal

Security Key (optional) 387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 Decoder Device Name

3 Subscription 0 31

4 1 Scaled (optional) ☒

4 2 Layout Name (optional)

5

## Command join wall – Normal Mode

Parameters ✕

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

Select Mode
☐ Wizard
☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Decoder Device Name

4 Wall Size

5 Display Position

6 Wall Mode (optional)

7 1 Width (optional)

7 2 Height (optional)

7 3 Frame Rate (optional)

8 1 Display Width (mm) (optional)

8 2 Viewable Width (mm) (optional)

9 Keep Aspect (optional)
☐

10

## Command join wall – Wizard Mode

Parameters ×

- Select Encoder Device Name
- Select Decoder Device Name
- Select Wall Size
 

Select Mode ☒ Wizard ☐ Normal
 Security Key (optional)
- Select Display Position
 

① Encoder Device Name
- Select optional Wall Mode
 

② Decoder Device Name
- Enter optional Video Mode
 

③ Wall Size
- Enter optional Display width
 

Enter optional Viewable Width ④ Display Position
- Select optional Keep Aspect
 

⑤ Wall Mode (optional)
- Click Finish button
 

⑥ Video Mode (optional)
- ⑦ ① Display Width (mm) (optional)

⑦ ② Viewable Width (mm) (optional)

⑧ Keep Aspect (optional) ☐
- ⑨



## Command join walladv – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter Encoder Device Name
 

Select Mode ☐ Wizard ☒ Normal
- Enter Decoder Device Name
- Select optional Wall Mode
 

1 Security Key (optional)

2 Encoder Device Name

3 Decoder Device Name

4 Wall Mode (optional)

5 1 Width

5 2 Height

6 1 Horizontal Offset

6 2 Vertical Offset

7 1 Keep Width

7 2 Keep Height

8 1 Viewport Horizontal

8 2 Viewport Vertical

8 3 Viewport Width

8 4 Viewport Height

9 Frame Rate
- Enter Width  
Enter Height
- Enter Horizontal Offset  
Enter Vertical Offset
- Enter Keep Width  
Enter Keep Height
- Enter Viewport Horizontal  
Enter Viewport Vertical  
Enter Viewport Width  
Enter Viewport Height
- Enter Frame Rate
- Click Finish button

10

## Command join walladv – Wizard Mode

Parameters ×

- Select Encoder Device Name
- Select Decoder Device Name
- Select optional Wall Mode
 

Select Mode ☒ Wizard ☐ Normal
 Security Key (optional)
- Select Video Mode
 

1 Encoder Device Name
- Enter Horizontal Offset  
Enter Vertical Offset
 

2 Decoder Device Name
- Enter Keep Width  
Enter Keep Height
 

3 Wall Mode (optional)
- Enter Viewport Horizontal  
Enter Viewport Vertical  
Enter Viewport Width  
Enter Viewport Height
 

4 Video Mode
- Click Finish button
 

5 1 Horizontal Offset

5 2 Vertical Offset

6 1 Keep Width

6 2 Keep Height

7 1 Viewport Horizontal

7 2 Viewport Vertical

7 3 Viewport Width

7 4 Viewport Height

8

## Command leave video – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Decoder or Group name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder / Group

3

## Command leave video – Wizard Mode

Parameters

1.1 Select Device(s)

1.2 Select Decoder or Group name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

1 2

2

## Command leave sub – Normal Mode

Parameters ✕

1. Enter optional Security Key

2. Enter Decoder Device Name

3. Select Subscription

4. Click Finish button

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 Subscription (optional)  31

4

## Command leave sub – Wizard Mode

Parameters ✕

1. Select Decoder Device Name

2. Select Subscription

3. Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

1 Decoder Device Name

2 Subscription (optional)  31

3

## 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 Decoders

1 2

2

## Command leave audio\_a – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Decoder or Group name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder / Group

3 ✓ Finish

## Command leave audio\_a – Wizard Mode

Parameters

1.1 Select Device(s)

1.2 Select Decoder or Group name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

1 2

2 ✓ Finish

## Command leave audio\_d – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Decoder or Group name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder / Group

3

✓ Finish

## Command leave audio\_d – Wizard Mode

Parameters

1.1 Select Device(s)

1.2 Select Decoder or Group name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 1 Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

1 2

2

✓ Finish

## Command leave all – Normal Mode

Parameters ×

1. Enter optional Security Key

2. Enter Decoder Device Name

3. Click Finish button

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3

## Command leave all – Wizard Mode

Parameters ×

1.1. Select Decoder Device Name or All Decoders

1.2 Select Decoder

2. Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

1 1 Select ☒ Decoder Device Name ☐ All Decoders

1 2

2



## Command stop video – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder / Group name

3. Select optional Free **1** Security Key (optional)

FREE MULTICAST AND SUBSCRIPTIONS / FREE MULTICAST

2 Encoder / Group

4. Click Finish button

3 Free (optional)

4

Select Mode

☐ Wizard

☒ Normal

## Command stop video – Wizard Mode

Parameters

1.1 Select Device(s)

1.2 Select Encoder or Group name

2. Select optional Free

FREE MULTICAST AND SUBSCRIPTIONS / FREE MULTICAST

3. Click Finish button

1 **1** Select

2 Free (optional)

3

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

☒ Encoder Device Name

☐ Group Name

## Command stop sub – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder / Group name

3. Select optional Free

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Free (optional)

4 ✓ Finish

## Command stop sub – Wizard Mode

Parameters

1.1 Select Device(s)

1.2 Select Encoder or Group name

2. Select optional Free

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

2 Free (optional)

Encoder Device Name

Group Name

1 2

3 ✓ Finish

## Command stop av – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder Device Name

3. Select optional Free  
FREE MULTICAST AND SUBSCRIPTIONS /  
FREE MULTICAST

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Free (optional)

4 ✓ Finish

## Command stop av – Wizard Mode

Parameters

1. Select Encoder Device Name

2. Select optional Free  
FREE MULTICAST AND SUBSCRIPTIONS /  
FREE MULTICAST

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Encoder Device Name

2 Free (optional)

3 ✓ Finish

## Command stop audio\_a – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder / Group name

3. Select optional Free  
FREE MULTICAST AND SUBSCRIPTIONS /  
FREE MULTICAST

4. Click Finish button

Select Mode

☐ Wizard  
☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Free (optional)

4 ✓ Finish

## Command stop audio\_a – Wizard Mode

Parameters

1.1 Select Device(s)

1.2 Select Encoder or Group name

2. Select optional Free  
FREE MULTICAST AND SUBSCRIPTIONS /  
FREE MULTICAST

3. Click Finish button

Select Mode

☒ Wizard  
☐ Normal

Security Key (optional)

1 1 Select

2 Free (optional)

387032576f317967315d6731636b31466c31336d317068

☒ Encoder Device Name  
☐ Group Name

1 2

3 ✓ Finish

## Command stop audio\_d – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder / Group name

3. Select optional Free

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Free (optional)

4 ✓ Finish

## Command stop audio\_d – Wizard Mode

Parameters

1.1 Select Device(s)

1.2 Select Encoder or Group name

2. Select optional Free

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name

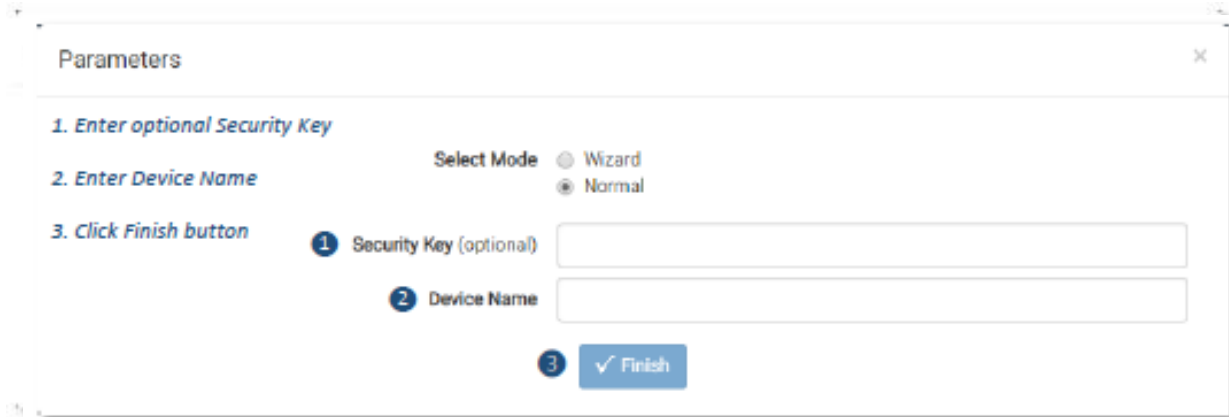
☐ Group Name

1 2

2 Free (optional)

3 ✓ Finish

## Command stop ir – Normal Mode



Parameters

1. Enter optional Security Key

2. Enter Device Name

3. Click Finish button

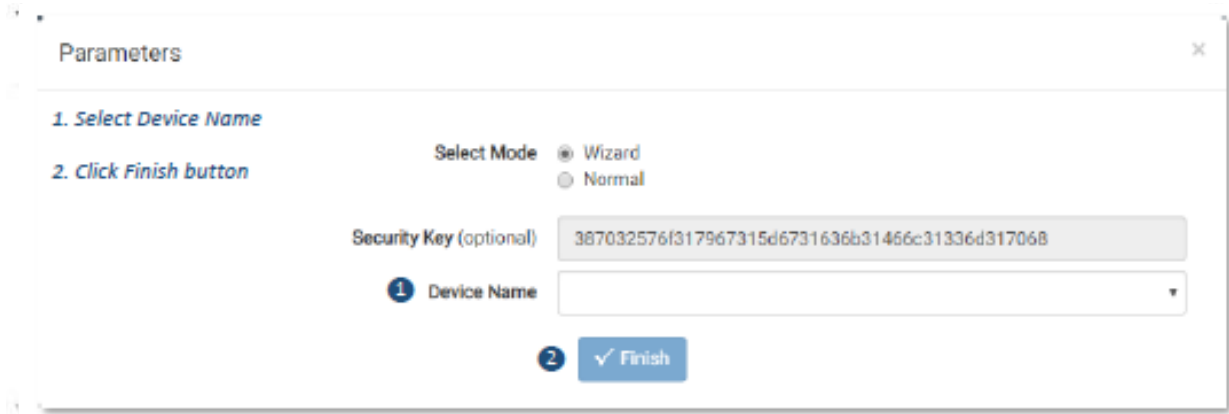
Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Device Name

3

## Command stop ir– Wizard Mode



Parameters

1. Select Device Name

2. Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

1 Device Name

2

## Command stop serial – Normal Mode

Parameters ✕

1. Enter optional Security Key
2. Enter Device Name
3. Select optional Bi-Directional
4. Click Finish button

Select Mode
☐ Wizard
☒ Normal

1 Security Key (optional)

2 Device Name

3 Bi-Directional (optional)
☐

4

## Command stop serial– Wizard Mode

Parameters ✕

1. Select Device Name
2. Select optional Bi-Directional
3. Click Finish button

Select Mode
☒ Wizard
☐ Normal

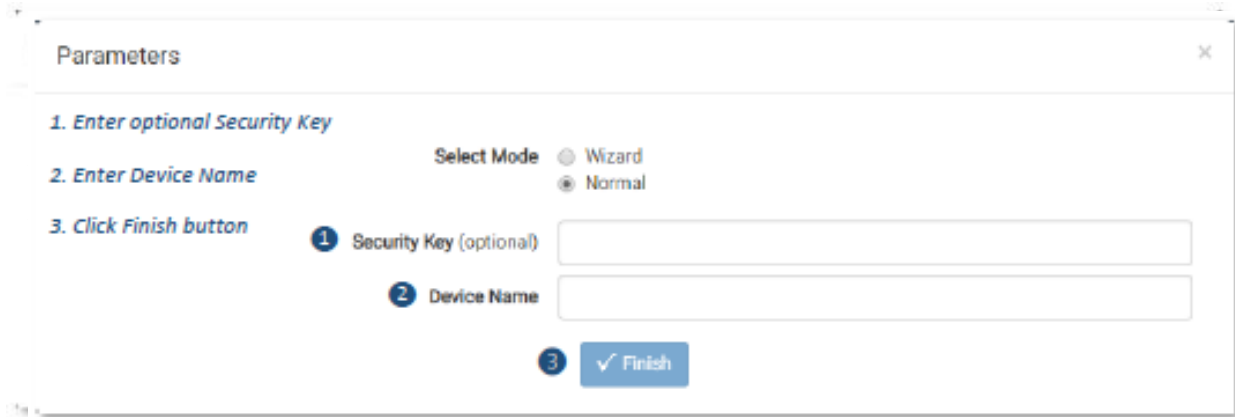
Security Key (optional)

1 Device Name

2 Bi-Directional (optional)
☐

3

## Command stop usb – Normal Mode



Parameters

1. Enter optional Security Key

2. Enter Device Name

3. Click Finish button

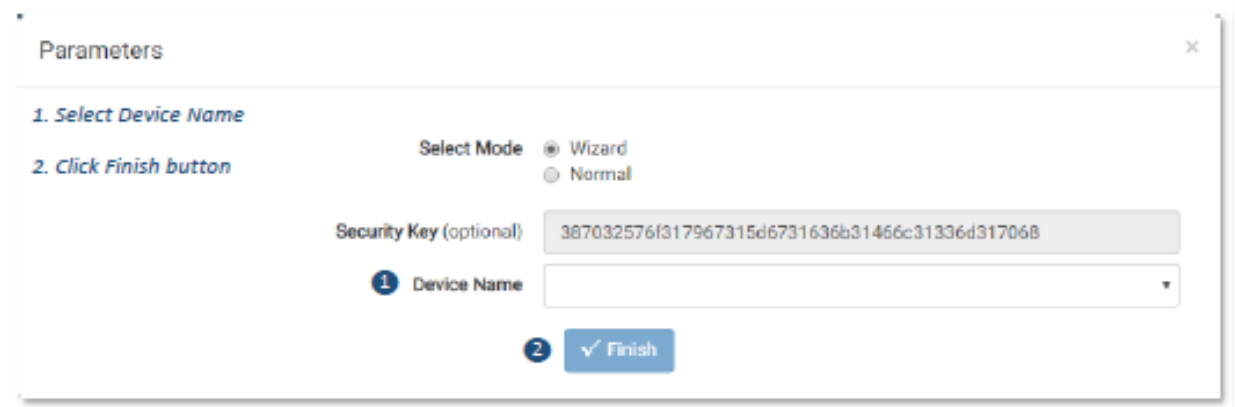
Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Device Name

3

## Command stop usb– Wizard Mode



Parameters

1. Select Device Name

2. Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

1 Device Name

2



## Command start video – Normal Mode – Multicast Manual mode

Parameters

1. Enter optional Security Key

2. Enter Encoder or Group name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 ✓ Finish

## Command start video– Normal Mode – Multicast Auto mode

Parameters

1. Enter optional Security Key

2. Enter Encoder or Group name

3. Enter optional Multicast Address

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Multicast Address (optional)

4 ✓ Finish

## Command start video – Wizard Mode – Multicast Manual mode

Parameters ✕

1.1 Select Device(s)

1.2 Select Encoder or Group name

2. Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional) 387032576f317967315d6731636b31466c31336d317068

1 1 Select ☒ Encoder Device Name  
☐ Group Name

1 2

2

## Command start video – Wizard Mode – Multicast Auto mode

Parameters ✕

1.1 Select Device(s)

1.2 Select Encoder or Group name

2. Enter optional Multicast Address

3. Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional) 387032576f317967315d6731636b31466c31336d317068

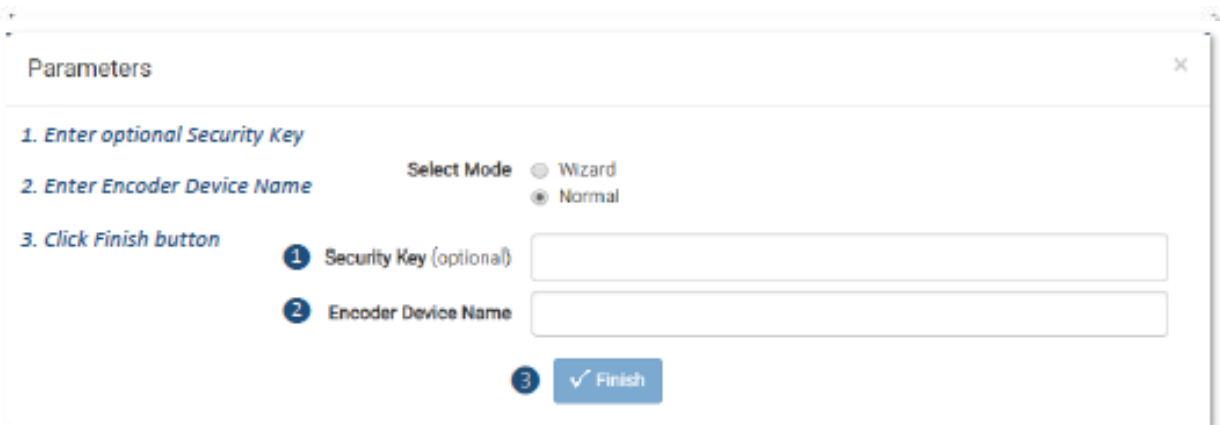
1 1 Select ☒ Encoder Device Name  
☐ Group Name

1 2

2 Multicast Address (optional) 0.0.0.0

3

## Command start sub – Normal Mode – Multicast Manual mode



Parameters

1. Enter optional Security Key

2. Enter Encoder Device Name

Select Mode ☐ Wizard ☒ Normal

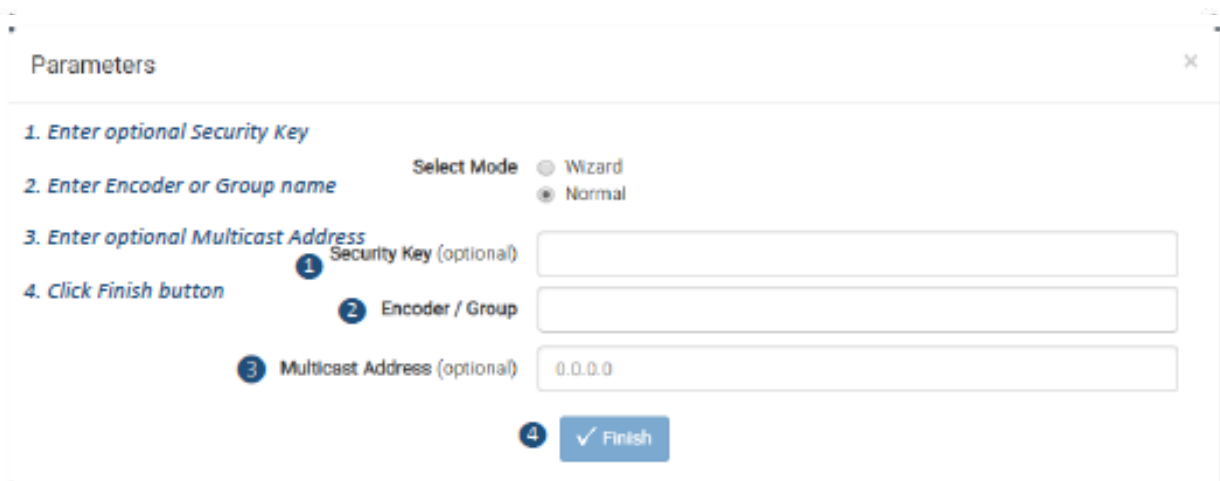
3. Click Finish button

1 Security Key (optional)

2 Encoder Device Name

3 ✓ Finish

## Command start sub – Normal Mode – Multicast Auto mode



Parameters

1. Enter optional Security Key

2. Enter Encoder or Group name

3. Enter optional Multicast Address

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Multicast Address (optional) 0.0.0.0

4 ✓ Finish

## Command start sub – Wizard Mode – Multicast Manual mode

Parameters ×

1. Select Encoder Device Name

2. Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

1 Encoder Device Name

2

## Command start sub – Wizard Mode – Multicast Auto mode

Parameters ×

1.1 Select Device(s)

1.2 Select Encoder or Group name

2. Enter optional Multicast Address

3. Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

1 1 Select ☒ Encoder Device Name  
☐ Group Name

1 2

2 Multicast Address (optional)

3

## Command start av – Normal Mode – Multicast Manual mode

Parameters

1. Enter optional Security Key

2. Enter Encoder or Group name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 ✓ Finish

## Command start av – Normal Mode – Multicast Auto mode

Parameters

1. Enter optional Security Key

2. Enter Encoder or Group name

3. Enter optional Audio Multicast Address

4. Enter optional Video Multicast Address

5. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Audio Multicast Address (optional)

4 Video Multicast Address (optional)

5 ✓ Finish

## Command start av – Wizard Mode – Multicast Manual mode

Parameters

1.1 Select Device(s)

1.2 Select Encoder or Group name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2

✓ Finish

## Command start av – Wizard Mode – Multicast Auto mode

Parameters

1.1 Select Device(s)

1.2 Select Encoder or Group name

2. Enter optional Audio Multicast Address

3. Enter optional Video Multicast Address

4. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name

☐ Group Name

1 2

2 Audio Multicast Address (optional)

0.0.0.0

3 Video Multicast Address (optional)

0.0.0.0

4

✓ Finish

## Command start audio\_a – Normal Mode – Multicast Manual mode

Parameters

1. Enter optional Security Key

2. Enter Encoder or Group name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3

## Command start audio\_a – Normal Mode – Multicast Auto mode

Parameters

1. Enter optional Security Key

2. Enter Encoder or Group name

3. Enter optional Multicast Address

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Multicast Address (optional)

4

## Command start audio\_a – Wizard Mode – Multicast Manual mode

Parameters

1.1 Select Device(s)

1.2 Select Encoder or Group name

2. Click Finish button

Select Mode

☒ Wizard  
☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name  
☐ Group Name

1 2

2

✓ Finish

## Command start audio\_a – Wizard Mode – Multicast Auto mode

Parameters

1.1 Select Device(s)

1.2 Select Encoder or Group name

2. Enter optional Multicast Address

3. Click Finish button

Select Mode

☒ Wizard  
☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name  
☐ Group Name

1 2

2 Multicast Address (optional)

0.0.0.0

3

✓ Finish



## Command start audio\_d – Normal Mode – Multicast Manual mode

Parameters

1. Enter optional Security Key

2. Enter Encoder or Group name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 ✓ Finish

## Command start audio\_d – Normal Mode – Multicast Auto mode

Parameters

1. Enter optional Security Key

2. Enter Encoder or Group name

3. Enter optional Multicast Address

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder / Group

3 Multicast Address (optional)

4 ✓ Finish

## Command start audio\_d – Wizard Mode – Multicast Manual mode

Parameters

1.1 Select Device(s)

1.2 Select Encoder or Group name

2. Click Finish button

Select Mode

☒ Wizard  
☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name  
☐ Group Name

1 2

2

✓ Finish

## Command start audio\_d – Wizard Mode – Multicast Auto mode

Parameters

1.1 Select Device(s)

1.2 Select Encoder or Group name

2. Enter optional Multicast Address

3. Click Finish button

Select Mode

☒ Wizard  
☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Encoder Device Name  
☐ Group Name

1 2

2 Multicast Address (optional)

0.0.0.0

3

✓ Finish

## Command set audio\_io – Normal Mode

Parameters ✕

1. Enter optional Security Key

2. Enter Encoder Device Name

3. Select Audio Port Function  
INPUT / OUTPUT

4. Click Finish button

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Select Audio Port Function

4

## Command set audio\_io – Wizard mode

Parameters ✕

1. Select Encoder Device Name

2. Select Audio Port Function  
INPUT / OUTPUT

3. Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

1 Encoder Device Name

2 Select Audio Port Function

3

## Command set audio\_out – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Decoder Device Name

3. Select Audio Source  
HDMI / ANALOG

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 Select Audio Source

4

## Command set audio\_out – Wizard Mode

Parameters

1. Select Decoder Device Name

2. Select Audio Source  
HDMI / ANALOG

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Decoder Device Name

2 Select Audio Source

387032576f317967315d6731636b31466c31336d317068

3

## Command set audio\_source – Normal Mode

Parameters ✕

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

Select Mode

☐ Wizard  
☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 Select Audio Source

4

✓ Finish

## Command set audio\_source – Wizard Mode

Parameters ✕

1. Select Decoder Device Name
2. Select Audio Source  
HDMI / ANALOG
3. Click Finish button

Select Mode

☒ Wizard  
☐ Normal

Security Key (optional)

1 Decoder Device Name

2 Select Audio Source

3

✓ Finish

## Command set audio\_edid – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder or Group name

3.1 Enter EDID or

3.2 Select a Decoder's EDID or

3.3 Select an EDID file or

3.4 Select a default EDID

4. Click Finish button

Select Mode
☐ Wizard
☒ Normal

1 Security Key (optional)

2 Encoder / Group

EDID

3 1

3 2

Decoder EDID

3 3

Browse

3 4

Default 4K30

3 4

Default 4K60

4

✓ Finish

## Command set audio\_edid – Wizard Mode

Parameters

1.1 Select Device(s)  
1.2 Select Encoder or Group name

Select Mode
☒ Wizard  
☐ Normal

2.1 Enter EDID or  
2.2 Select a Decoder's EDID or  
2.3 Select an EDID file or  
2.4 Select a default EDID

Security Key (optional)

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

1 2

EDID

2 1

2 2

2 4

## Command set frame\_converter – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder Device Name

3. Select Stream

4. Select Frame Rate

5. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Streams

4 Frame Rate

5

## Command set frame\_converter – Wizard Mode

Parameters

1. Select Encoder Device Name

2. Select Stream

3. Select Frame Rate

4. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 Streams

3 Frame Rate

4



## Command set listener – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Global Cache IP Address

3. Enter Notify Port

4. Select Protocol

5. Select Condition

6. Select State

7. Select Device I/O Port

8. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 IP Address

3 Notify Port

4 Protocol

5 Condition

6 State

7 Device Port

8

✓ Finish

## Command set listener – Wizard Mode

Parameters

1. Click Device Discovery button  
2. Select device from list

Select Mode
☒ Wizard  
☐ Normal

1
Device Discovery

2

Discovered Devices
000C1E0364F2@172.30.0.99 (iTachFlexEthernet)  
000C1E03855F@172.30.0.138 (iTachIP2IR)

Refresh

Security Key (optional)
387032576f317967315d6731636b31466c31336d317068

IP Address
0.0.0.0

Notify Port

Protocol
▼

Condition
▼

State
▼

Device Port
▼

✓ Finish

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


Parameters ✕

Select Mode

☒ Wizard
 ☐ Normal

🔍 Device Discovery

000C1E03855F@172.30.0.138 (iTachIP2IR)



3

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

3. Select Device I/O port

IP Address

239.255.250.250

4. Enter Notify Port

4

Notify Port

\* If device I/O is already configured then the port will be automatically populated.

Protocol

UDP

5. Select Condition

5

Condition

6. Select State

6

State

7. Click Finish button

Device Port

1

7

✓ Finish

## Command set presenter – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Group name

3. Select State  
Enabled / Disabled

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Group

3 State

4

## Command set presenter – Wizard Mode

Parameters

1. Select Group

2. Select State  
Enabled / Disabled

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Group

2 State

3

## Command set scaler – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter Encoder Device Name
- Enter resolution Width
- Enter resolution Height
- Click Finish button

Select Mode
☐ Wizard
☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Width

4 Height

5

## Command set scaler – Wizard Mode

Parameters ×

- Select Encoder Device Name
- Select Size
- Click Finish button

Select Mode
☒ Wizard
☐ Normal

Security Key (optional)

1 Encoder Device Name

2 Size

3

## Command set security – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Device / Group name

3. Enter Encryption Key

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device / Group

3 Encryption Key

4

✓ Finish

## Command set security – Wizard Mode

Parameters

1. Select Group or Device

2. Select NONE or Enter Encryption Key

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

656b32566a313c6d31486931676831597431476d316a6d

1 Select

☐ Device Name

☐ Group Name

NONE (optional)

☐

2 Encryption Key

3

✓ Finish

## Command set video\_compress – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder Device Name

3. Select State

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 State

4 ✓ Finish

## Command set video\_compress – Wizard Mode

Parameters

1. Select Encoder Device Name

2. Select State

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 State

3 ✓ Finish

## Command set video\_mode – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter Decoder / Group Name
- Select Display Mode [SYNC]
- Click Finish button

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Decoder / Group

3 Display Mode

4

Parameters ×

- Enter optional Security Key
- Enter Decoder / Group Name
- Select Display Mode [SYNC (SCALE)]
1. Enter Width  
2. Enter Height
- Click Finish button

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Decoder / Group

3 Display Mode

4 1 Width (optional)

4 2 Height (optional)

5

Parameters ×

- Enter optional Security Key
- Enter Decoder / Group Name
- Select Display Mode [FAST]
- Select Aspect Ratio
1. Enter Width  
2. Enter Height  
3. Enter Frame Rate
- Click Finish button

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Decoder / Group

3 Display Mode

4 Aspect (optional)

5 1 Width (optional)

5 2 Height (optional)

5 3 Frame Rate (optional)

6



## Command set video\_mode – Wizard Mode

Parameters ×

1.1 Select Device(s)

1.2 Select Encoder or Group Name

2. Select Display Mode  
[SYNC]

3. Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional) 387032576f317967315d6731636b31466c31336d317068

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

1 2

2 Display Mode SYNC

3

Parameters ×

1.1 Select Device(s)

1.2 Select Encoder or Group Name

2. Select Display Mode  
[SYNC (SCALE)]

3. Select FORMAT

4. Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional) 387032576f317967315d6731636b31466c31336d317068

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

1 2

2 Display Mode SYNC (SCALE)

3 FORMAT (optional)

4

## Command set video\_mode – Wizard Mode continued...

Parameters

1.1 Select Device(s)

1.2 Select Encoder or Group Name

2. Select Display Mode

3. Select Aspect Ratio

4. Select FORMAT

5. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1

1

Select

☒ Decoder Device Name

☐ Group Name

☐ All Decoders

1

2

2

Display Mode

FAST

3

Aspect (optional)

KEEP

4

FORMAT (optional)

5

✓ Finish

## Command set video\_mute – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Decoder Device Name

3.1 Select State

3.2 Enter HEX Colour code

4. Click Finish button

Select Mode

☐ Wizard
 ☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 1 State

ENABLED

3 2 Colour (optional)

4

✓ Finish

## Command set video\_mute – Wizard Mode

Parameters

1. Select Decoder Device Name

2.1 Select State

2.2 Select Colour

3. Click Finish button

Select Mode

☒ Wizard
 ☐ Normal

Security Key (optional)

1 Decoder Device Name

2 1 State

ENABLED

2 2 Colour (optional)

3

✓ Finish

## Command set video\_source – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder Device Name

3. Select Video Input  
HDMI / DISPLAYPORT / AUTO

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Select Video Input

4 ✓ Finish

## Command set video\_source – Wizard Mode

Parameters

1. Select Encoder Device Name

2. Select Video Input  
HDMI / DISPLAYPORT / AUTO

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 Select Video Input

3 ✓ Finish

## Command get api

Parameters

1. Click Finish button

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1

✓ Finish

## Command get audio\_io – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder Device Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3

✓ Finish

## Command get audio\_io – Wizard Mode

Parameters

1. Select Encoder Device Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Encoder Device Name

2

✓ Finish

## Command get audio\_out – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Decoder Device Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3

✓ Finish

## Command get audio\_out – Wizard Mode

Parameters

1. Select Decoder Device Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Decoder Device Name

2

✓ Finish

## Command get audio\_source– Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Decoder Device Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3

✓ Finish

## Command get audio\_source – Wizard Mode

Parameters

1. Select Decoder Device Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Decoder Device Name

2

✓ Finish



## Command get bandwidth – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Device Name

3. Select optional Index

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

Index (optional)

☒

3

0

31

4

✓ Finish

## Command get bandwidth – Wizard Mode

Parameters

1. Select Device Name

2. Select optional Index

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Device Name

Index (optional)

☒

2

0

31

3

✓ Finish

## Command get devices

Parameters

1. *Select Devices*

2. *Click Finish button*

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Select Devices

2 ✓ Finish

## Command get display\_status – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Decoder Device Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3

✓ Finish

## Command get display\_status – Wizard Mode

Parameters

1. Select Decoder Device Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Decoder Device Name

2

✓ Finish

## Command get edid – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Decoder Device Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3

✓ Finish

## Command get edid – Wizard Mode

Parameters

1. Select Decoder Device Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Decoder Device Name

2

✓ Finish

## Command get encoder – Normal Mode

Parameters ×

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

Select Mode

☐ Wizard
 ☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 Subscription

4

✓ Finish

## Command get encoder – Wizard Mode

Parameters ×

- Select Decoder Device Name
- Select Subscription
- Click Finish button

Select Mode

☒ Wizard
 ☐ Normal

Security Key (optional)

1 Decoder Device Name

2 Subscription

3

✓ Finish

## Command get frame\_converter – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder Device Name

3. Select stream

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Streams

4

✓ Finish

## Command get frame\_converter – Wizard Mode

Parameters

1. Select Encoder Device Name

2. Select stream

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 Streams

3

✓ Finish

## Command get preferred – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Decoder Device Name

3. Select Resolution

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 Resolution

4

✓ Finish

## Command get preferred – Wizard Mode

Parameters

1. Select Decoder Device Name

2. Select Resolution

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Decoder Device Name

2 Resolution

3

✓ Finish

## Command get presenter – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Group name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Group

3

✓ Finish

## Command get presenter – Wizard Mode

Parameters

1. Select Group

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Group

2

✓ Finish



## Command get scaler – Normal Mode

Parameters ×

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

Select Mode
☐ Wizard
☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Option

4

## Command get scaler – Wizard Mode

Parameters ×

1. Select Encoder Device Name
2. Select Option
3. Click Finish button

Select Mode
☒ Wizard
☐ Normal

Security Key (optional)

1 Encoder Device Name

2 Option

3

## Command get security – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Device Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3

✓ Finish

## Command get security – Wizard Mode

Parameters

1. Select Device Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Device Name

2

✓ Finish

## Command get status – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Device Name

3.1 Select optional stream

3.2 Select video index

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3 1 Streams (optional)

VIDEO

3 2 Index

4 ✓ Finish

## Command get status – Wizard Mode

Parameters

1. Select Device Name

2.1 Select optional stream

2.2 Select video index

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Device Name

3 1 Streams (optional)

VIDEO

3 2 Index

3 ✓ Finish

## Command get temp – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Device Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3

✓ Finish

## Command get temp – Wizard Mode

Parameters

1. Select Device Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Device Name

2

✓ Finish

## Command get ver – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Device Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3

✓ Finish

## Command get ver – Wizard Mode

Parameters

1. Select Device Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Device Name

2

✓ Finish

## Command get video – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder Device Name

3. Select Option

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 Option

4

✓ Finish

## Command get video – Wizard Mode

Parameters

1. Select Encoder Device Name

2. Select Option

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 Option

3

✓ Finish

## Command get video\_compress – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder Device Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3 ✓ Finish

## Command get video\_compress – Wizard Mode

Parameters

1. Select Encoder Device Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2 ✓ Finish

## Command get video\_mode – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Decoder Device Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 ✓ Finish

## Command get video\_mode – Wizard Mode

Parameters

1. Select Decoder Device Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Decoder Device Name

2 ✓ Finish



## Command get video\_mute – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Decoder Device Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3

## Command get video\_mute – Wizard Mode

Parameters

1. Select Decoder Device Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Decoder Device Name

2

## Command get video\_source – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder Device Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3

✓ Finish

## Command get video\_source – Wizard Mode

Parameters

1. Select Encoder Device Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 Encoder Device Name

2

✓ Finish

## Command get video\_status – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Encoder Device Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Encoder Device Name

3

## Command get video\_status – Wizard Mode

Parameters

1. Select Encoder Device Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Encoder Device Name

2

## Command get window – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Layout Name

3. Select Option

4. Select Index

5. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Layout Name

3 Option

4 Index

031

5

✓ Finish

## Command get window – Wizard Mode

Parameters

1. Select existing Layout Name

2. Select Option

3. Select Index

4. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Layout Name

2 Option

3 Index

031

4

✓ Finish

## Command send ir – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Device Name

3. Enter IR HEX code

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3 IR Code

4 ✓ Finish

## Command send ir – Wizard Mode

Parameters

1.1 Select Device(s)

1.2 Select Device or Group name

2. Enter IR HEX code

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 1 Select

☒ Device Name

☐ All

☐ All Decoders

☐ All Encoders

1 2

2 IR Code

3 ✓ Finish

## Command send serial – Normal Mode

Parameters ×

- Enter optional Security Key
- Enter Device Name
 

Select Mode
 ☐ Wizard
 ☒ Normal
- Enter ASCII formatted string
 

1 Security Key (optional)
- 4.1 Select optional Reply
 4.2 Select optional Timeout

2 Device Name

3 Data String
- Click Finish button
 

4 1 Reply (optional) ☒

4 2 Timeout (optional)

5

## Command send serial – Wizard Mode

Parameters ×

- 1.1 Select Device Name
 1.2 Select Device

Select Mode
 ☒ Wizard
 ☐ Normal
- Select Format
- Enter Data String
 

Security Key (optional)
- Select optional termination
 

1 1 Select
 ☒ Device Name
 ☐ All
 ☐ All Decoders
 ☐ All Encoders
- 5.1 Select optional Reply
 5.2 Select optional Timeout

1 2

2 Format

3 Data String
- Click Finish button
 

4 1 Append CR (optional) ☐

4 2 Append LF (optional) ☐

5 1 Reply (optional) ☒

5 2 Timeout (optional)

6

## Command send cec – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Device Name

3. Enter CEC Code

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Device Name

3 CEC Code

4 ✓ Finish

## Command send cec – Wizard Mode

Parameters

1.1 Select Device(s)

1.2 Select Device or Group name

2. Select CEC Code

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

1 1 Select

☒ Device Name

☐ All

☐ All Decoders

☐ All Encoders

1 2

2 CEC Code

3 ✓ Finish

## Command send gc – Normal Mode

Parameters ✕

1. Enter optional Security Key

2. Enter device IP Address

3. Select device Port

4. Enter ASCII formatted string

5. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Address

3 Port

4 Global Cache Command

5

## Command send gc – Wizard Mode

Parameters ✕

1. Click Device Discovery button

2. Select required device

Select Mode

☒ Wizard

☐ Normal

1

2

Discovered Devices

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

Security Key (optional)

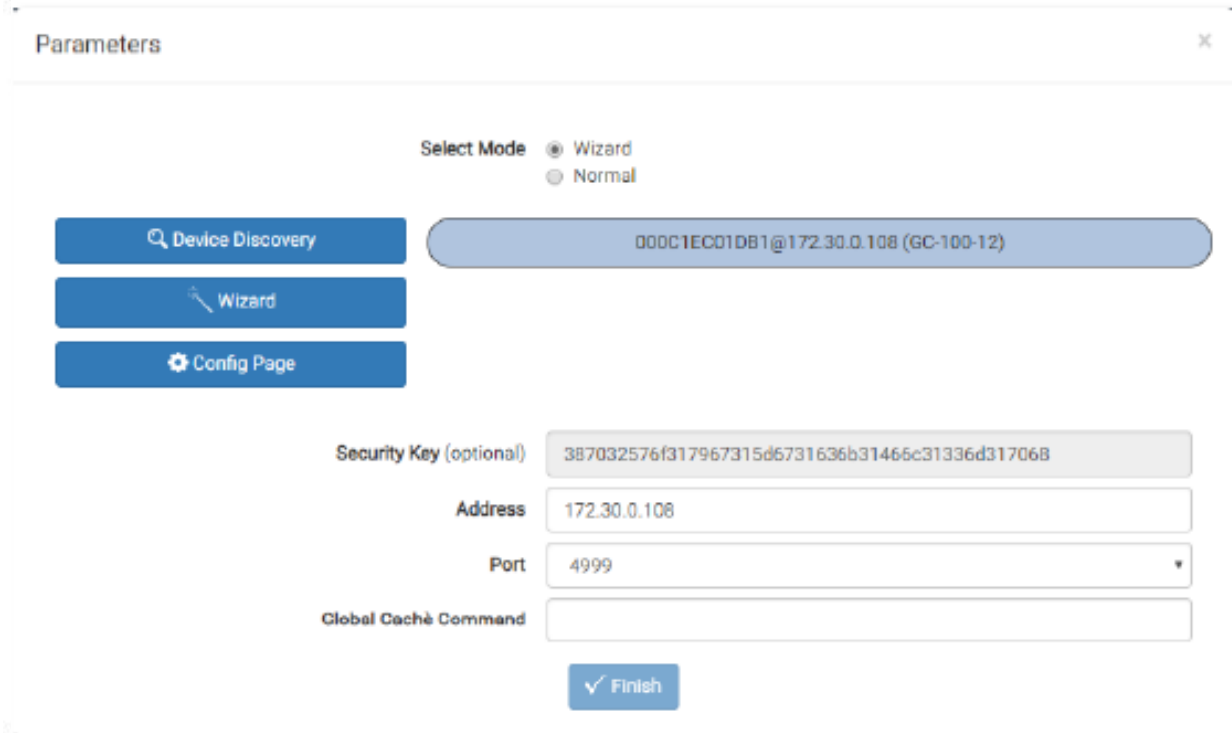
Address

Port

Global Cache Command



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



The image shows a 'Parameters' dialog box with a close button (X) in the top right corner. It contains the following elements:

- Select Mode:** Two radio buttons, 'Wizard' (selected) and 'Normal'.
- Left Column:** Three blue buttons: 'Device Discovery' (with a magnifying glass icon), 'Wizard' (with a wizard hat icon), and 'Config Page' (with a gear icon).
- Right Column:** A light blue rounded rectangle containing the text '000C1EC01DB1@172.30.0.108 (GC-100-12)'.
- Fields:**
  - Security Key (optional):** A text field containing '387032576f317967315d6731636b31466c31336d317068'.
  - Address:** A text field containing '172.30.0.108'.
  - Port:** A dropdown menu showing '4999'.
  - Global Cache Command:** An empty text field.
- Finish Button:** A blue button with a checkmark icon and the text '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

Device Discovery

Wizard

Config Page

000C1EC01DB1@172.30.0.108 (GC-100-12)



Network

Serial

my serial string

Select I/O

String to Send

Set

1. Select I/O for RS232 port 1

2. Enter String to Send

3. Click Set button

4. Click Finished button

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

Address

172.30.0.108

Port

4999

Global Cache Command

my serial string

Finish

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

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

Parameters

Select Mode


☒ Wizard
 ☐ Normal

Device Discovery

Wizard

Config Page

000C1EC01DB1@172.30.0.108 (GC-100-12)



Network

Select I/O

1

Select State

2

3

Set

Get

1. Select I/O for relay 1

2. Select relay State

3. Click Set button

4. Click Finished button

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

Address

172.30.0.108

Port

4998

Global Cache Command

setstate,3:1,1

4

Finish

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

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

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

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

Parameters

Select Mode

☒ Wizard
 ☐ Normal

Device Discovery

Wizard

Config Page

000C1EC01DB1@172.30.0.108 (GC-100-12)



Network

Select I/O 1

HEX Code

Infrared

Select Mode 2



3 2

Manufacturer

Device Type

Device

Function

Samsung

TV

Most Models

POWER ON

4

Set

Stop

1. Select I/O

2. Select I/O mode of operation

3.1 Enter IR HEX Code or

3.2 Navigate the IR database

4. Click Set button

5. Click Finished button

Security Key (optional)

Address

Port

Global Cache Command

387032576f317967315d6731636b31466c31336d317068

172.30.0.108

4998

sendir,5:1,1,38000,1,1,172,172,22,64,22,64,22,64,22,21,22,21,22,21,22,21,;

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 select all the available controllable options will become available. The iTach Flex will automatically be configured for the select cable.

Parameters

Select Mode


☒ Wizard
 ☐ Normal

Device Discovery


Wizard

Config Page


000C1E0364F2@172.30.0.99 (iTachFlexEthernet)




Network




FLC-SL



FLC-SL-MJ




FLC-SL-485




FLC-RS


Config




FLC-1E




FLC-BL



FLC-T3



FLC-3E



FLC-2E1B

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

Address

172.30.0.99

Port

4998

Global Cache Command

Finish

- 217 -

## Command send tcp – Normal Mode

Parameters ×

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

Select Mode ☐ Wizard  
☒ Normal

1 Security Key (optional)

2 Address

3 Port

4 Command

5

## Command send tcp – Wizard Mode

Parameters ×

- Enter device IP Address
- Enter device Port
- Select string Format
- Enter Command
- Select optional termination
- Click Finish button

Select Mode ☒ Wizard  
☐ Normal

Security Key (optional)

1 Address

2 Port

3 Format

4 Command

5 1 Append CR (optional) ☐

5 2 Append LF (optional) ☐

6

## Command multview – Normal Mode

Parameters

- Enter optional Security Key
- Enter Decoder Device Name
- Enter Layout Name
- Enter Resolution Width
- Enter Resolution Height
- Enter Frame Rate
- Click Finish button

Select Mode
☐ Wizard
☒ Normal

1 Security Key (optional)

2 Decoder Device Name

3 Layout Name

4 Resolution Width

5 Resolution Height

6 Frame Rate

7

## Command multview – Wizard Mode

Parameters

- Select Decoder Device Name
- Select existing Layout Name
- Select Video Mode
- Click Finish button

Select Mode
☒ Wizard
☐ Normal

Security Key (optional)

1 Decoder Device Name

2 Layout Name

3 Video Mode

4

## Command layout new – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter new Layout Name

3. Enter layout Width

4. Enter layout Height

5. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Layout Name

3 Width

4 Height

5

✓ Finish

## Command layout new – Wizard Mode

Parameters

1. Enter new Layout Name

2. Select layout Size

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Layout Name

2 Size

3

✓ Finish



## Command layout window – Normal Mode

Parameters

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

Select Mode

☐ Wizard
 ☒ Normal

1 Security Key (optional)

2 Layout Name

3 Index

0

31

4 Horizontal Position

5 Vertical Position

6 Width

7 Height

8 Subscription

0

31

9 ✓ Finish

## Command layout window – Wizard Mode

Parameters

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

Select Mode

☒ Wizard
 ☐ Normal

Security Key (optional)

1 Layout Name

2 Index

0

31

3 Horizontal Position

4 Vertical Position

5 Width

6 Height

7 Subscription

0

31

8 ✓ Finish

## Command layout black – Normal Mode

Parameters ×

1. Enter optional Security Key
2. Enter Layout Name
3. Select window Index
4. Click Finish button

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Layout Name

3 Index

0 31

4

✓ Finish

## Command layout black – Wizard Mode

Parameters ×

1. Select existing Layout Name
2. Select window Index
3. Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466e31336d317068

1 Layout Name

2 Index

0 31

3

✓ Finish

## Command layout delete – Normal Mode

Parameters ✕

1. Enter optional Security Key

2. Enter Layout Name

3. Click Finish button

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Layout Name

3

## Command layout delete – Wizard Mode

Parameters ✕

1. Select existing Layout Name

2. Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional)

1 Layout Name

2

## Command preset add

Parameters ×

1. Enter new Preset Name

2. Enter Preset Data

3. Click Finish button

Security Key (optional) 387032576f317967315d6731636b31466c31336d317068

1 Preset Name

2 Preset Data

3

## Command preset load – Normal Mode

Parameters ×

1. Enter optional Security Key

2. Enter Preset Name

3. Click Finish button

Select Mode ☐ Wizard ☒ Normal

1 Security Key (optional)

2 Preset Name

3

## Command preset load – Wizard Mode

Parameters ×

1. Select existing Preset Name

2. Click Finish button

Select Mode ☒ Wizard ☐ Normal

Security Key (optional) 387032576f317967315d6731636b31466c31336d317068

1 Preset Name

2

## Command preset delete – Normal Mode

Parameters

1. Enter optional security key

2. Enter Preset Name

3. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Preset Name

3 ✓ Finish

## Command preset delete – Wizard Mode

Parameters

1. Select existing Preset Name

2. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Preset Name

2 ✓ Finish

## Command preset dynamic – Normal Mode

Parameters

1. Enter optional Security Key

2. Enter Preset Name

3. Select State  
Enabled / Disabled

4. Click Finish button

Select Mode

☐ Wizard

☒ Normal

1 Security Key (optional)

2 Preset Name

3 State

4 ✓ Finish

## Command preset dynamic – Wizard Mode

Parameters

1. Select existing Preset Name

2. Select State  
Enabled / Disabled

3. Click Finish button

Select Mode

☒ Wizard

☐ Normal

Security Key (optional)

387032576f317967315d6731636b31466c31336d317068

1 Preset Name

2 State

3 ✓ Finish

## Appendix F – Using Custom Resolutions

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

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

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

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

*join fast Encoder1 Decoder1 size 1280 720 50*

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

*join fast Encoder1 Decoder1 size 480 756 50*

## FAQ

### #1

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



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

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

### #2

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



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

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



**A:** Incorrect layout window size.

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



## FAQ continued...

### #3

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

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

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

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

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

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

### #4

**Q:** Why are video walls limited to 8x5?

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

display pixel width = resolution width / number of horizontal displays

display pixel height = resolution height / number of vertical displays

## FAQ continued...

### #5

**Q:** What are the resolution limits of the scaler?

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

### #6

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

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

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

### #7

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

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

### #8

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

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

### #9

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

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

### #10

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

**A:** The default IP of the SDVoE Director Controller will be 169.254.1.1. If still unable to locate the SDVoE Director Controller it may need to be reset back to factory default. Refer FAQ #11.

## FAQ continued...

### #11

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

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



### #12

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

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

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

## FAQ continued...

**#13**

**Q:** Why do I just see noise as the image?



**A:** This is the result of a Decoder in fast mode with an invalid encryption key.

**#14**

**Q:** Why does an Encoder not detect a video signal higher than 4K30?

**A:** The Encoder EDID is most likely missing the SCDC\_present bit so it is not compliant with HDMI 2.0 for resolutions greater than 4K 30Hz. Load the default 4K60 EDID into the Encoder.

**#15**

**Q:** What can cause a displays image to flicker?



**A:** Video signals at 30Hz in sync modes with the frame rate set to half will cause the image to flicker. Make sure all 30Hz signals do not have the frame rate set to half.

**#16**

**Q:** Can there be a redundant SDVoE Director Controller on the system?

**A:** As long as Multicast IP Mode is kept in "AUTO" mode more than one SDVoE Director Controller can be safely connected to the network on different IP addresses. If "MANUAL" multicast is required then both controllers must have the same multicast addresses applied for all streams.

## FAQ continued...



### #17

**Q:** What causes the image to break up?

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

### #18

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

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