



**USER MANUAL FOR
SR-1000 STANDALONE INTEGRATED MEDIA BLOCK™**

SMS Version 17.0

January 07th, 2022



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Thank you for purchasing a GDC SR-1000 Standalone Integrated Media Block™ from GDC Technology Limited.

To ensure proper operation and to maximize value of the SR-1000, please review this User Manual. It will guide you through all the features and benefits of the new SR-1000 Standalone Integrated Media Block™.

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This manual is made with version 17.0 and there might be slight differences depending on the software version the Server is running. The contents, features and specifications stated in this manual are subject to change without notice due to continuous product development and improvements. In no other event shall GDC Technology Limited be liable for any loss of profit or any other commercial damages, including but not limited to special, consequential, or other damages.

FCC COMPLIANCE STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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1 INTRODUCTION

1.1 About This Manual

This manual provides instructions on how to use and manage the GDC SR-1000 Standalone Integrated Media Block™. The SR-1000 has a web-based user interface (Web UI).

The Web UI functionality can be broken down into five main sections: **Dashboard**, **Playback**, **Automation**, **Content** and **Configuration**. This manual will describe each of these in different sections.

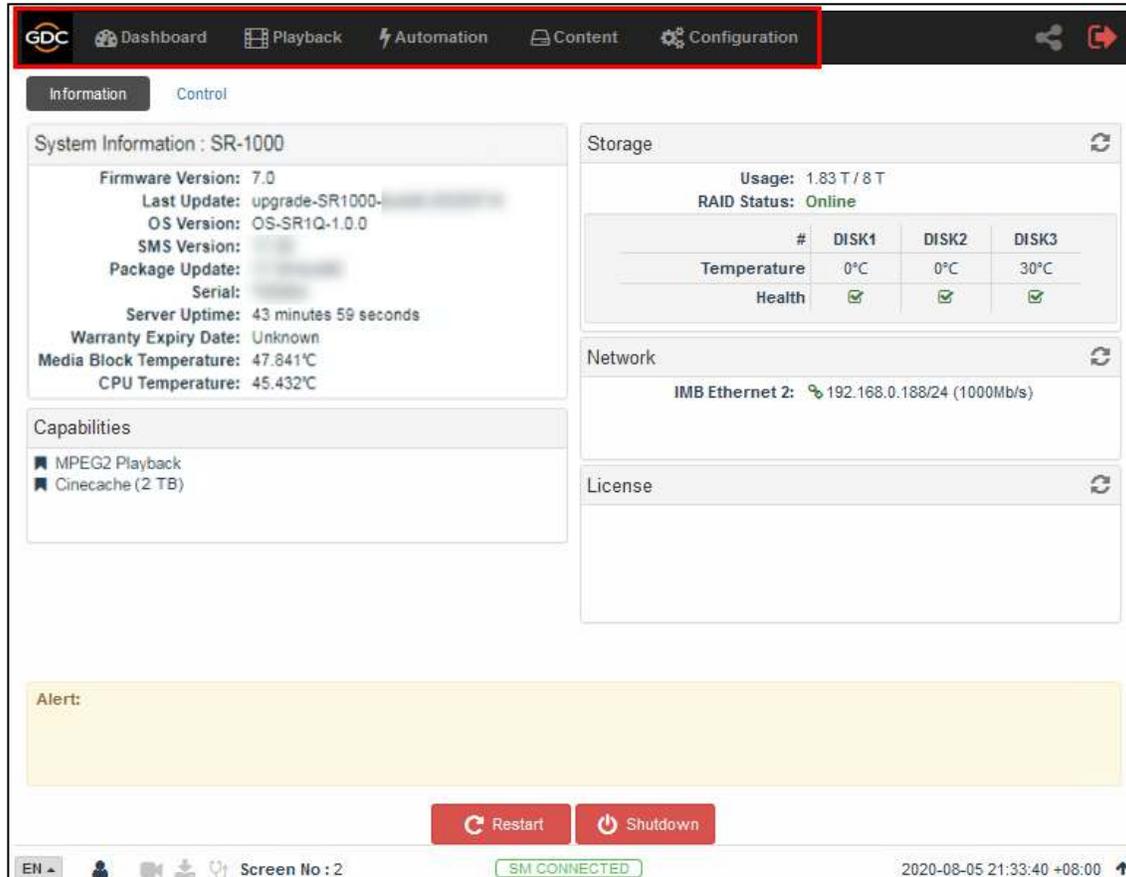


Figure 1: Introduction to Web UI

1.2 Safety Instructions

1.2.1 General Safety Instructions

- The SR-1000 is intended for installation in a DCI-compliant Digital Cinema Projector.
- The operational temperature required should be within 0°C - 40°C (32°F - 104°F). 250 LFM airflow must always be present over the IMB from right to left (looking from the front of the IMB) when powered ON.
- The operating humidity should be within 20% to 90%, non-condensing.
- Before operating the SR-1000, please read this manual thoroughly, and retain it for future reference.
- Installation and preliminary adjustments should be performed by qualified GDC Technology personnel.
- All warnings on the SR-1000 mentioned in this documentation manual should be adhered to.
- All instructions for operating and maintaining the SR-1000 must be followed closely.

1.2.2 Electrical Safety

Safety Warning

- Do not expose the SR-1000 to rain or moisture, to prevent fire or electrical shock hazard.
- Consult GDC Technical Support for servicing or maintaining the SR-1000.
- You are cautioned that any change or modification not expressly approved in this manual or approved in writing by an authorized representative of GDC Technology could void your warranty and/or authority to operate the SR-1000.

1.2.3 Testing and Certification

- The SR-1000 has passed multiple Quality Assurance and Quality Control certifications, issued by **SGS Labs** - the world's leading inspection, verification, testing and certification company.
- Refer to **Section 11** for detailed test reports.

2 THE SR-1000 WEB USER INTERFACE (Web UI)

The SR-1000 has a web-based user interface or Web UI. The following steps show how to access the SR-1000:

- 1) Assuming the SR-1000 is using its default IP Address i: e 192.168.1.12, connect a laptop/PC to the **IMB Ethernet 2** network port of the SR-1000 and configure the laptop/PC to have the same network as the SR-1000.
- 2) Open a web browser (Google Chrome™ or Mozilla Firefox™ are recommended).
- 3) Enter the default IP address of the SR-1000 in the web browser to access the login page on the Web UI.
- 4) There are three access-levels available for users: **User/Technician/Maintenance**. Select the required access-level (see **Section 2.1** for more details) and enter the corresponding password to login to the Web UI.
- 5) Select the preferred UI language by clicking on the corresponding flag icon, as shown in **Figure 2**.



Figure 2: Web UI Login screen

2.1 Access Levels

On the login interface, select the user level and enter the corresponding correct Password to access the SR-1000).

Different users will have different access levels on the Web UI Configuration tab.

Access- Level	Available Access
User	Dashboard, Playback, Automation, Content and Configuration* tabs. <i>(*Only System sub-tab under Configuration menu is accessible.)</i>
Technician	Dashboard, Playback, Automation, Content and Configuration* tabs. <i>(*Only System and Maintenance sub-tabs under Configuration menu are accessible.)</i>
Maintenance	Dashboard, Playback, Automation, Content and Configuration tabs.



Figure 3: User Accounts

2.2 General Notes on the SR-1000 Web UI

2.2.1 Recommended web browsers

The SR-1000 Web UI has been tested with **Google Chrome™** and **Mozilla Firefox™** web browsers*. These web browsers are recommended for use with the SR-1000 Web UI.

2.2.2 Single User Access

The SR-1000 Web UI allows single user access only. When a second user logs in using the same or a higher access level, the second user is allowed to choose whether to take over the first user's session. Clicking on **Continue** will terminate the first user's session and allow the second user to log in.

However, if the '**Multi-user mode**' option is enabled (refer to **Section 7.1**); multiple users with the same access level will be allowed to concurrently login to the Web UI.



Figure 4: Single User Access

* It is recommended that the latest versions of Mozilla Firefox™ and Google Chrome™ are used, to access the SR-1000 Web UI.

3 DASHBOARD

SR-1000 Web UI Dashboard menu displays basic information related to the SR-1000, such as *System Information, Network Information, Storage Information, Licenses installed, Capabilities and System Alerts*.

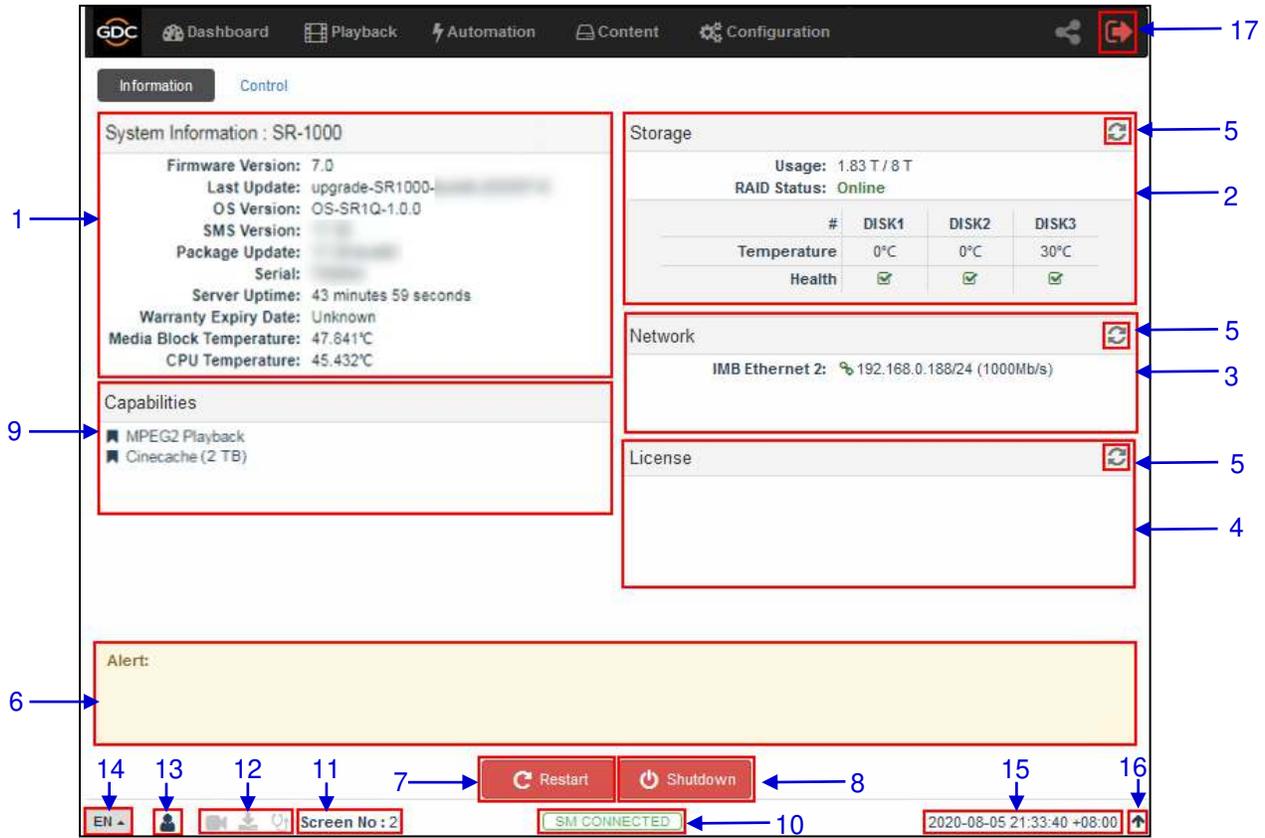


Figure 5: Dashboard layout

1	[System Information]	Displays SR-1000 system information.
2	[Storage Information]	Displays storage status on the SR-1000.
3	[Network Information]	Displays current network settings and network status.
4	[License]	Displays the licenses installed on the SR-1000.
5	[Refresh]	Refreshes the information on the respective sections.
6	[Alert]	System alerts are displayed here.

7	[Restart]	<p>To restart the server, press Restart. A pop-up window will be displayed. Click OK to confirm restart.</p> 
8	[Shutdown]	<p>To shutdown the server, press Shutdown. A pop-up window will be displayed. Click OK to confirm shutdown.</p> 
9	[Capabilities]	Displays the supported features or capabilities of the SR-1000.
10	[SM Connection Status]	<p>Displays the connection status of the SM or Security Manager.</p> <p>The SM should always be connected and the 'SM CONNECTED' status should be highlighted in green color.</p> <p>In case the SM is disconnected or the status appears in Red color, please contact GDC Technical Support</p>
11	[Screen No:]	Displays the auditorium number which has been set for the SR-1000.
12	[Playback, Ingest, and Verify status]	These icons will start blinking individually in case content playback, content ingest or content verification is in-progress. Otherwise, they will remain greyed-out.
13	[User]	Indicates the access-level with which the current user is logged-in to the SR-1000 Web UI. Place the mouse pointer over this icon to view the access-level of the current user.
14	[Language Select]	Indicates the current language in which the SR-1000 Web UI is displayed. To change the language, click on this icon and select the desired language from the list.
15	[Date and Time]	Indicates the system date and time as per the timezone set on the SR-1000.
16		<p>Moves the Status bar to the top of the Web UI screen.</p> <p>To bring the Status bar back to its original position, click on the  icon.</p>
17	[Logout]	Logs out the current user from the SR-1000 Web UI.

4 PLAYBACK

4.1 Playback

The **Playback** sub-tab displays playback progress and allow the operator to control playback.

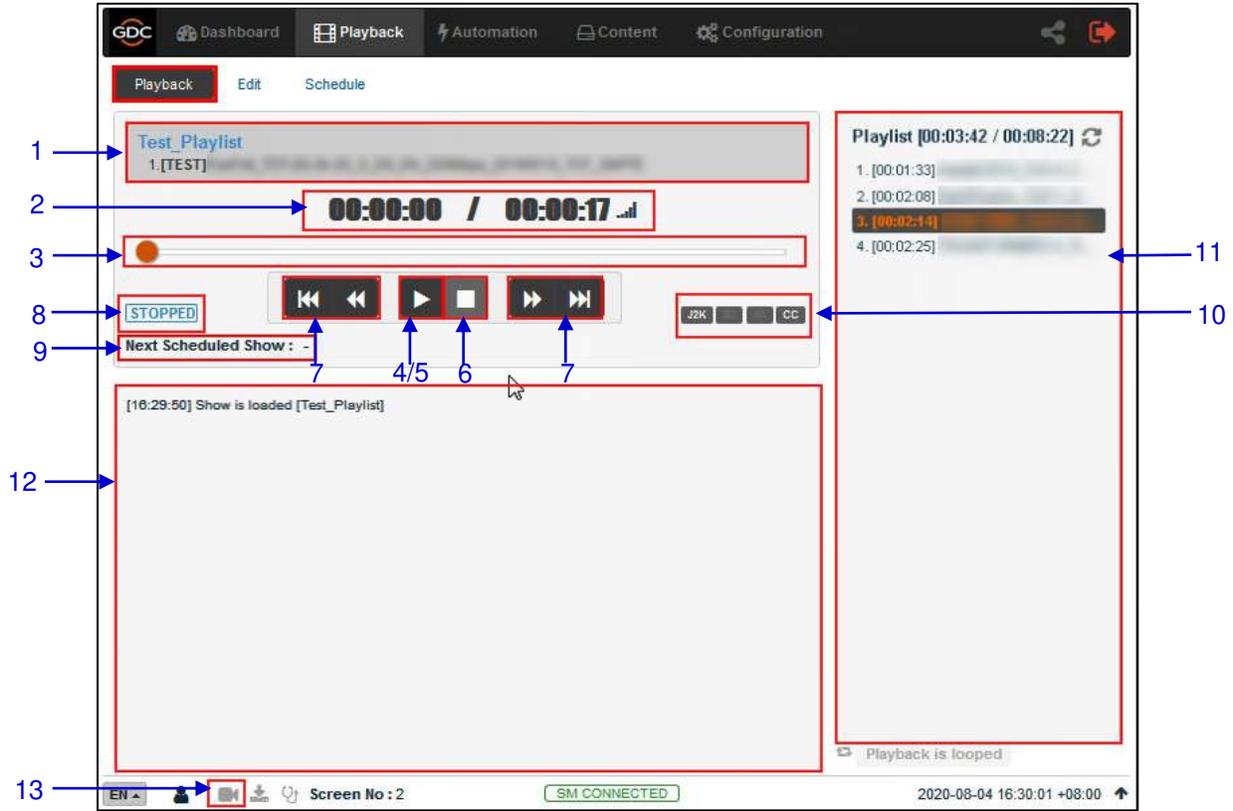


Figure 6: Playback

1	[Clip Name Display]	Displays the name of the current loaded show and currently playing clip.
2	[Clip Playback Time]	<p>Displays the duration of the current clip played and total duration of the clip. Click on the  icon to toggle between current playback time and remaining playback time for the clip.</p> <p>When playback is paused, the playback position within the clip can be changed by clicking on the current playback timecode.</p> 

		Enter the preferred time code or frame number within the clip, for playback to resume when unpaused and click on the  button. Click the  button to exit the timecode editor.
3	[Playback Progress Bar]	This bar will start advancing to show playback progress. Press  to start a playback. When  is pressed, the Playback Progress Bar will stop and return to its starting point. When playback is paused, the slider on the Playback Progress Bar can be dragged to the left/right to seek within the clip. Alternately, the slider position can be changed by clicking on Playback Progress Bar to seek to a new playback position within the clip.
4		Play button. The  button starts playback when pressed.
5		Pause button. The  button pauses or resumes playback when paused.
6		Stop button. The  button stops playback when pressed.
7	   	Move to the previous clip. Rewind (move back) by 20 frames Forward (move forward) by 20 frames Move to the end of the clip. Note: These buttons will remain disabled when playback is in progress and will be enabled when playback is paused or stopped.
8	[Playback Status Display]	Displays the current playback status: <i>Playing, Paused, Stopped</i> or <i>Prepare</i> .
9	[Next Scheduled Show]	Displays the name of the next scheduled show and the time remaining for next scheduled show.
10	[Clip Format]	Displays information on the clip format.
11	[Playlist]	Displays the name and duration of all the clips within the current show playlist. Additionally, the elapsed time for the playlist and the total duration of the playlist are displayed as well.
12	[Status Display]	Displays the playback status of the system. The display shows the name of the active playlist, and the name of the clip currently being played.

		Information and errors encountered during playback will also be displayed here.
13		<p>If this icon is <u>continuously flashing</u>, it indicates that playback on the system is either in progress OR has been paused.</p> <p>If this icon is <u>greyed out</u>, it indicates that playback on the system has been stopped.</p> <p>Clicking on this icon will redirect the user to the Playback sub-tab.</p>

4.2 Edit

The **Edit** sub-tab is used to create and edit playlists.

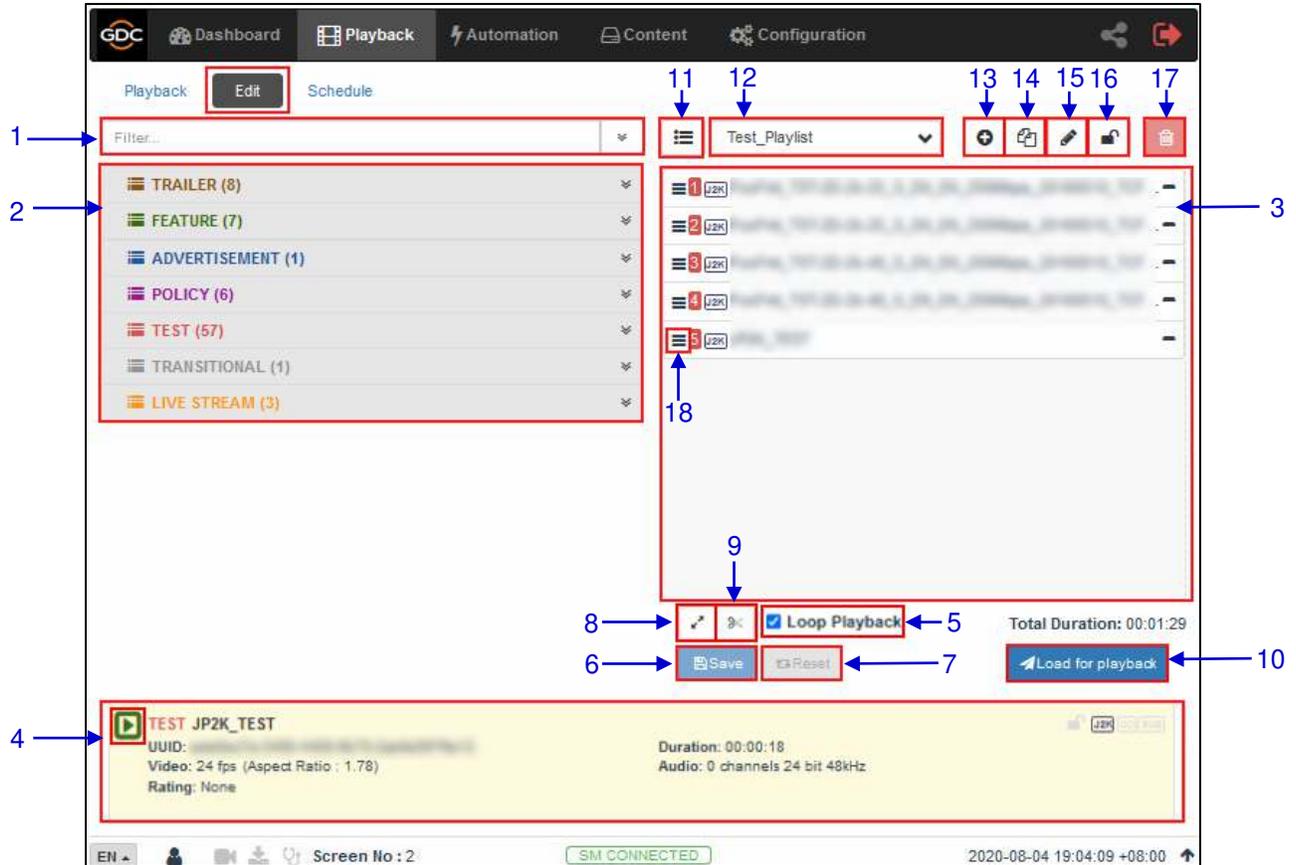
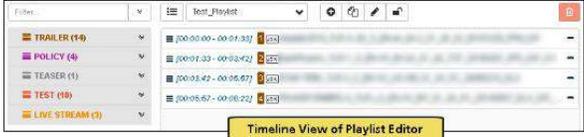
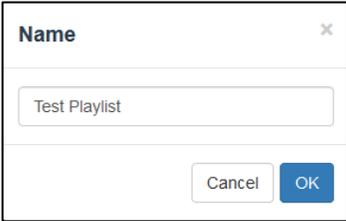


Figure 7: Edit Playlist

1	[Filter]	Filter the content list based on content name.
2	[Content List]	<p>Available content on the SR-1000 is listed here.</p> <p>Use the <input type="checkbox"/> arrow to expand and list all the clips under the selected category.</p> <p>Content can be dragged and dropped between [Content List] and [Playlist Editor].</p>
3	[Playlist Editor]	<p>The contents of the playlist being currently edited are displayed.</p> <p>Click the '-' button to remove a clip from the playlist.</p> <p>Clips can be dragged and dropped within the playlist to change playback order.</p>

4	[Clip Information Display]	<p>Displays the information related to the selected clip.</p> <p>It also includes the 'Quick Play' feature which can be used to test playback for a particular clip without adding it to the current playlist.</p> <p>To use this feature, select a clip from the [Content List] and click on the  button next to the clip name (displayed under the [Clip Information Display] section) to play the selected clip.</p>
5	[Loop Playback]	Enable Loop Playback of the current playlist.
6	[Save]	Save the playlist currently being edited.
7	[Reset]	Reset any changes to the playlist currently being edited.
8	[Standard/Timeline View]	<p>Use the  button to toggle between 'Standard' and 'Timeline' view of the [Playlist Editor].</p> 
9	[Add Intermission]	<p>Use this feature to add intermissions. Select a clip from the playlist and click on the  button.</p> <p>Refer to Section 4.2.3 for details on adding an intermission.</p>
10	[Load for playback]	Load the selected playlist into the player for playback.
11	[Manage Playlist]	Clicking on  button will display a pop-up window and show all the playlists with options to Delete, Rename, Copy or Filter the playlists.
12	[Show List]	<p>List of playlists available on the SR-1000. The selected playlist content will be shown in the [Playlist Editor].</p> <p>Note: A playlist that is currently playing cannot be edited.</p>
13	[+ Add New playlist]	<p>Create a new playlist. A name must be specified for the playlist.</p>  <p>Refer to Section 4.2.1 for details on creating a new playlist.</p>
14	[Copy Playlist]	<p>Duplicate the currently selected playlist.</p> <p>Enter the name of the new playlist in the pop-up window and click OK.</p>

15	[Rename Playlist]	Rename the selected playlist. Note: A playlist that is currently playing cannot be renamed.
16	[Lock Playlist]	Lock the selected playlist. When a playlist is locked, actions like drag/drop, editing CPL properties and deleting CPLs will be disabled for it. To unlock the selected playlist, click again on the Lock Playlist button. The mouse cursor in the Playlist Editor will change when the selected playlist is unlocked.
17	[Delete Playlist]	Delete the selected playlist. Note: A playlist that is currently playing cannot be deleted.
18	[Edit Props]	Clicking on  button against a particular clip in the playlist opens a pop-up window to edit properties of the selected clip. Refer to Section 4.2.2 for details.

4.2.1 Creating/Editing a Show Playlist

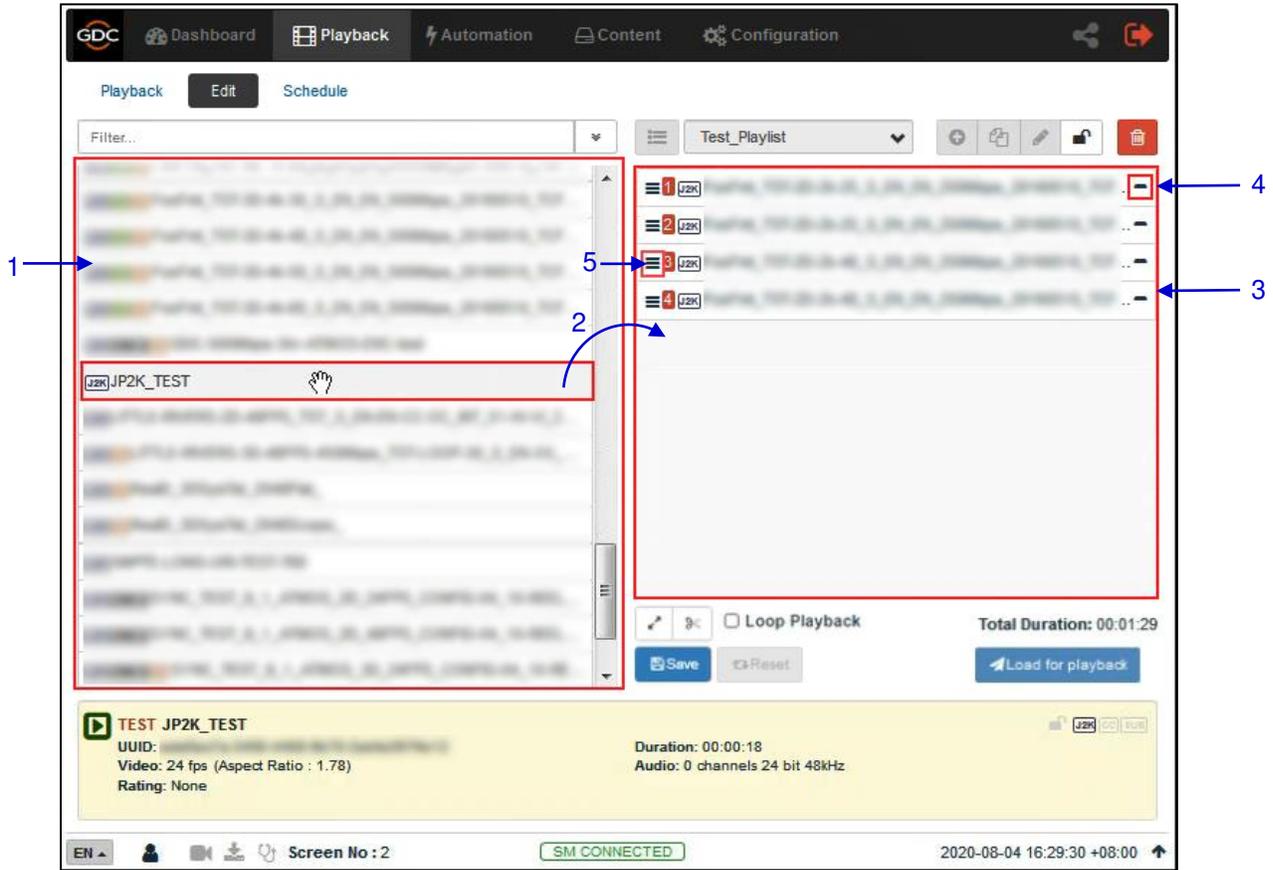


Figure 8: Creating a new Playlist

1	All compositions stored are listed in the Content List on the left. The content is shown in alphabetical order grouped by type [<i>Trailer, Feature, Advertisement, etc.</i>].
2	Drag and drop the composition that needs to be added from the Content List to the Playlist Editor . Repeat the same step to add other compositions (e.g. trailers or advertisements) to the playlist
3	The order of the compositions in the playlist may also be changed by dragging and dropping them to the desired position.
4	You can remove compositions from the Playlist Editor column by pressing the  button on the right end of that particular entry.
5	Clicking on the  button against a particular clip in the playlist opens a pop-up window to edit CPL properties of the selected clip. Refer to Section 4.2.2 for more details.

4.2.2 Edit CPL Properties

Additional functions can be applied to each composition by editing the CPL properties. The "Edit CPL Properties" popup will open up by clicking ≡ button (**Edit Props**) button on a particular clip in the Playlist Editor.

Note: The **Edit Props** button will be hidden if the selected playlist is locked.

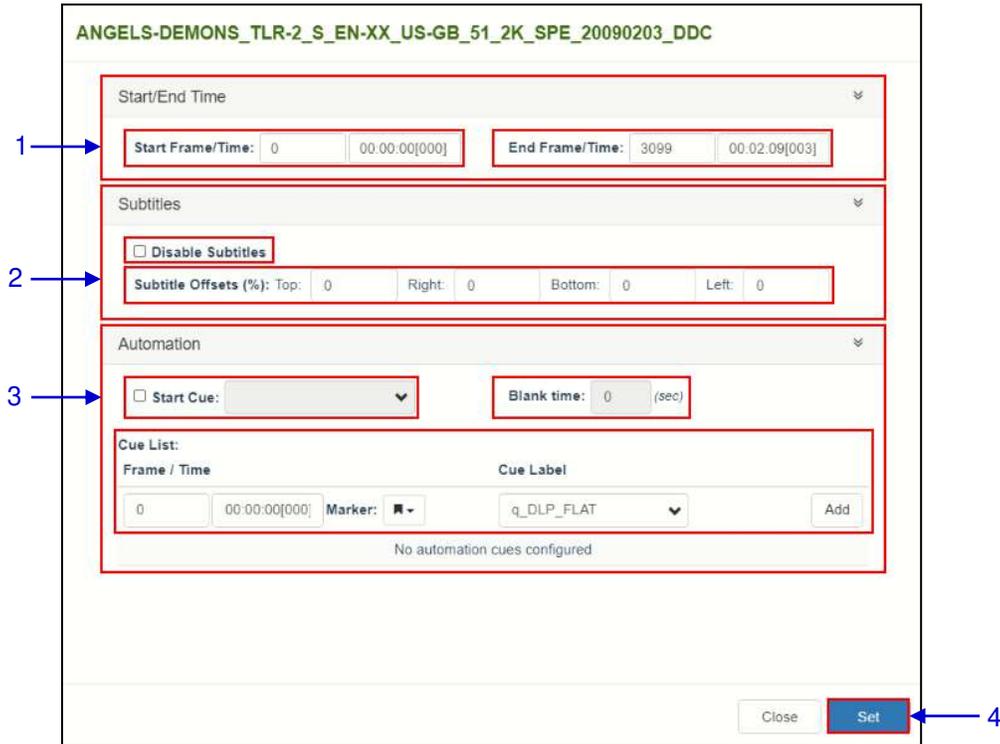


Figure 9: Edit CPL Properties

1	[Start/End Time]	
	Start Frame/Time	Set the time code/frame number where playback of the clip starts.
	End Frame/Time	Set the time code/frame number where playback of the clip ends.
2	[Subtitles]	
	Disable Subtitles	You can disable subtitles for the clip by selecting the Disable Subtitles checkbox.
	Subtitle Offsets (%)	Set the Top , Right , Bottom and Left values to adjust the position of the subtitles projected.

3	[Automation]	
	Start Cue Blank time Cue List	<p>When the Start Cue checkbox is selected, the automation cue to be executed at the start of the clip can be set.</p> <p>This is enabled when the Start Cue option is selected. The time interval between the end of the start cue and the start of the clip playback can be set.</p> <p>Sets automation cues to execute during playback. Select the Cue label from the dropdown list, enter the Frame/Time and click the + button to add the selected cue to the list.</p> <p>The Cue List will display the all the automation cues that have been added to the clip. To remove a cue from the list, click the - button against that particular cue.</p>
4	Set	Save the changes to the CPL.

4.2.3 Adding an Intermission

An Intermission can be added to a feature CPL on the SR-1000, by using the **Add Intermission** feature.

Figure 10: Add Intermission

1	[Intermission Offset]	
	Set Intermission at:	Set the preferred time code or frame number where the intermission cut position should be set for the selected CPL.
2	[Rewind]	
	Rewind by:	Set the amount of time or number of frames to rewind the selected CPL before the intermission cut position, once the intermission playlist ends.
3	[Intermission CPLs]	Choose the Insert CPLs from playlist option and select the desired Intermission playlist from the drop-down. Note: The Intermission playlist needs to be created and saved prior to adding the intermission to the feature CPL.

4.2.4 Saving the Playlist

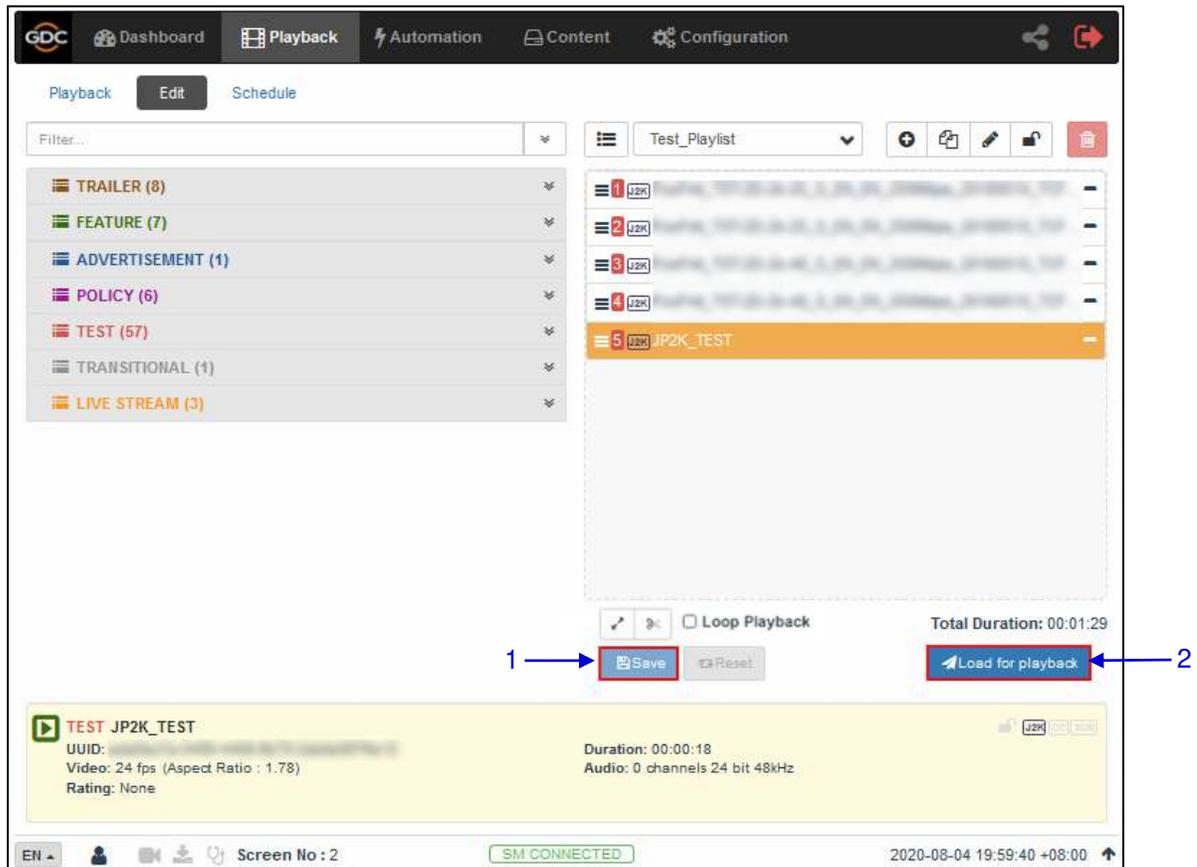


Figure 11: Saving the Playlist

1	Click on the Save button to save the playlist. This ensures any changes to playlist will not be lost.
2	Click on the Load for Playback button to load the newly created playlist to the Playback interface. Note: This button will remain disabled until the playlist is saved by clicking on the Save button.

4.3 Schedule

The **Schedule** sub-tab is used to schedule playback.

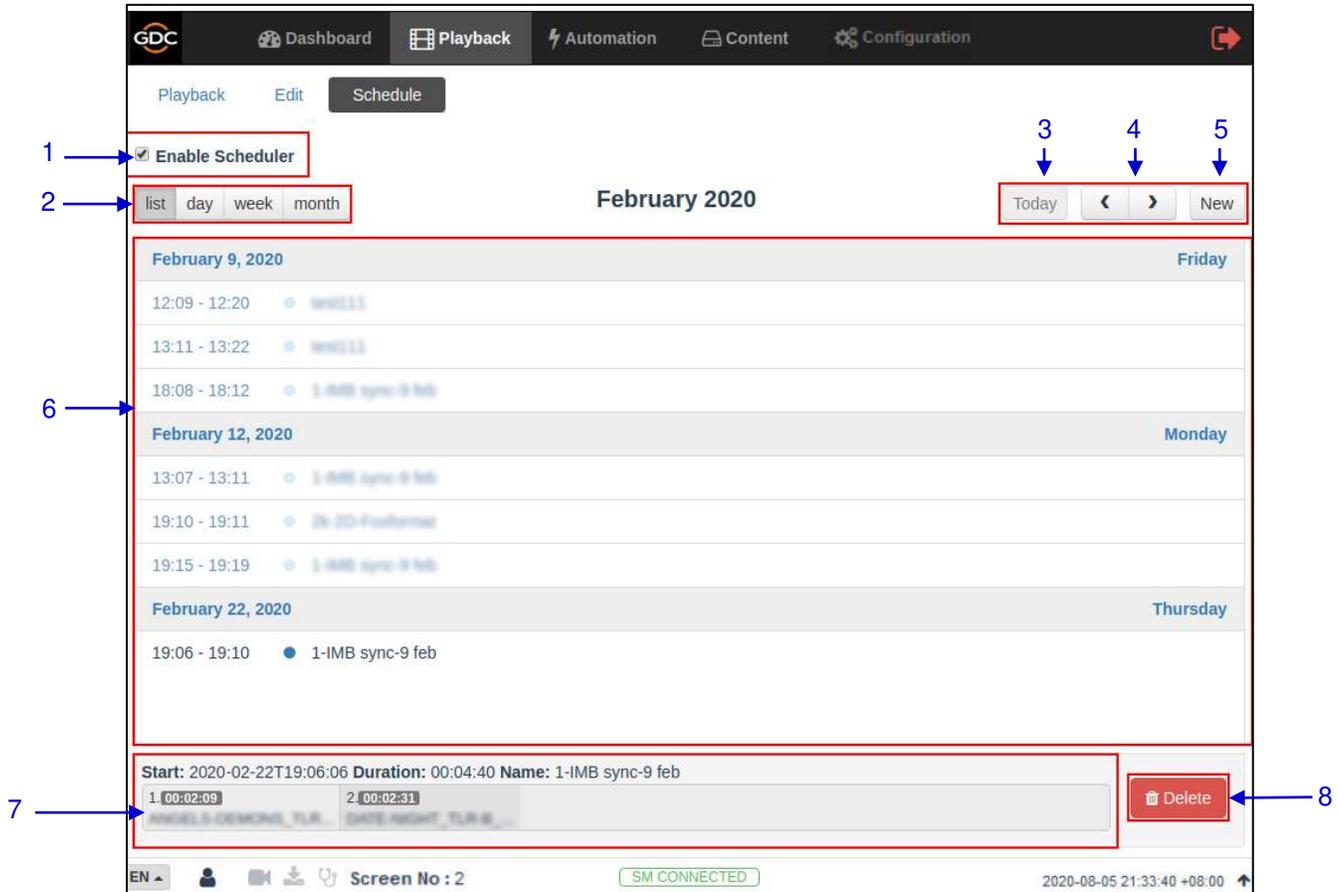
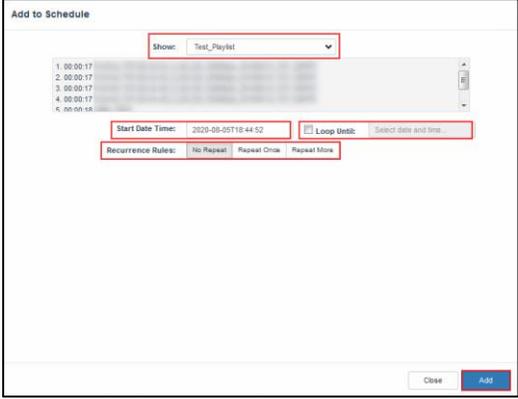


Figure 12: Scheduler

1	[Enable Scheduler]	Enable or disable the scheduler function. It is recommended to keep the scheduler enabled.
2	[List, Day, Week, Month]	Select to display the schedules on the SR-1000 in a list; per day, per week or per month.
3	[Today]	Switch back to current day in month or week view.
4	[< Previous / > Next]	Displays the schedules of the previous or next day, week or month.

5	[New]	<p>Add a new schedule.</p> <p>Select the Show and Start Date Time.</p> <p>You can also Loop the selected playlist until the selected date and time.</p> <p>Recurrence Rules by default is selected as <i>No Repeat</i>.</p> <p>User can select <i>Repeat Once</i> or <i>Repeat More</i> and further enter details.</p> <p>Click the Add button to add the schedule</p> 
6	[Schedules]	Schedules are displayed here. Display will change according to schedule in [2].
7	[Schedule Details]	<p>Displays the details of the selected show.</p> <p>Note: Only the selected schedule details will be displayed here.</p>
8	[Delete]	Delete the selected schedule.

5 AUTOMATION

This tab is used to set up automation and input triggers. Scheduling and manual triggering of automation cues can be done here.

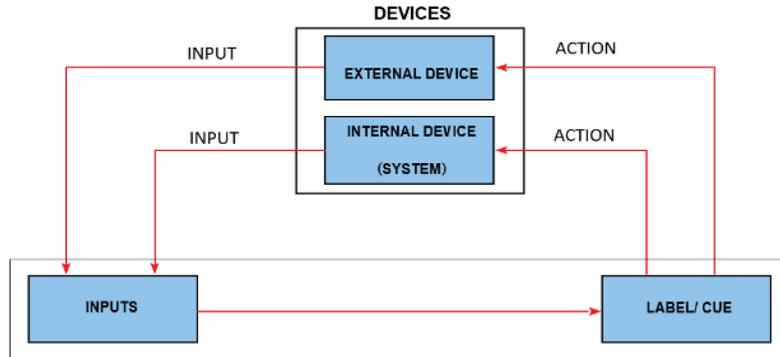


Figure 13: GDC Automation Workflow

5.1 Trigger

The **Trigger** sub-tab is used manually trigger automation cues and commands for configured devices.

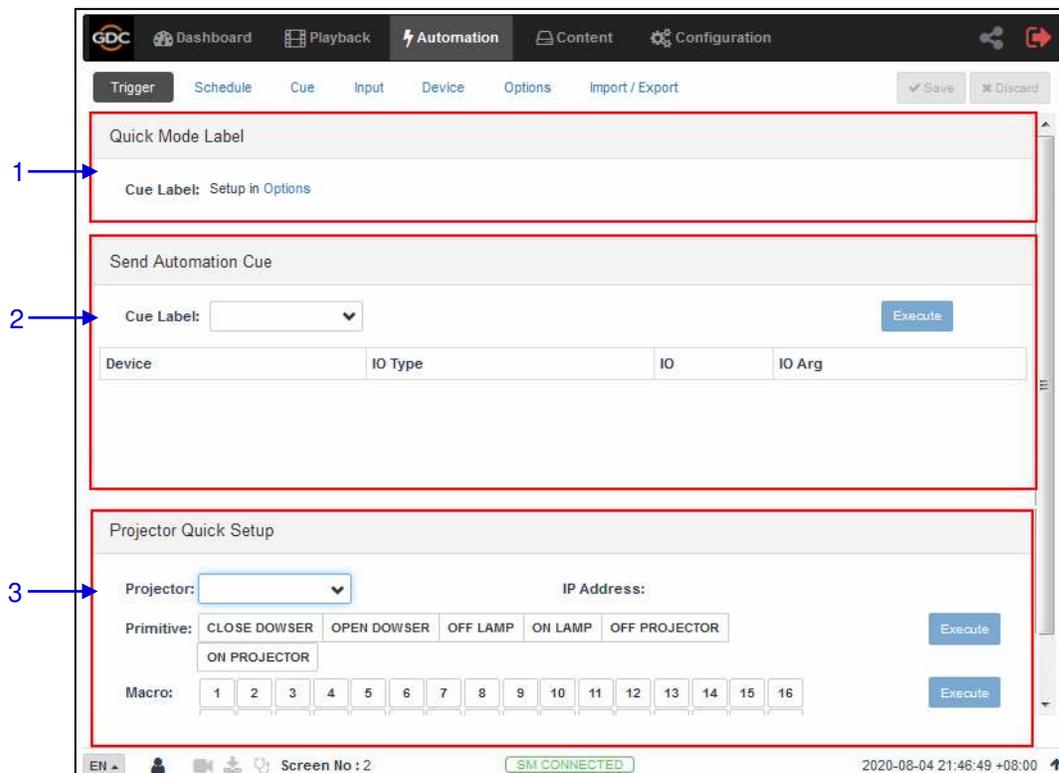


Figure 14: Cue Trigger Setup

1	[Quick Mode Label]	<p>An automation label can be configured to be easily triggered here.</p> <p>This label can be set in Automation → Option tab. (Refer to Section 5.6)</p> <p>Click the Execute button to execute the automation cue.</p>
2	[Send Automation Cue]	<p>This section is used to manually execute a configured automation label.</p> <p>Select a label and click the Execute button to execute the automation label manually.</p>
3	[Projector Quick Setup]	<p>This section is used to execute automation commands and select macros for a configured projector.</p> <p>Select the projector primitive or macro to be executed and click the Execute button to send a command to the selected projector.</p>

5.2 Schedule

The **Schedule** sub-tab is used to schedule automation cues to execute at the specified date and time.

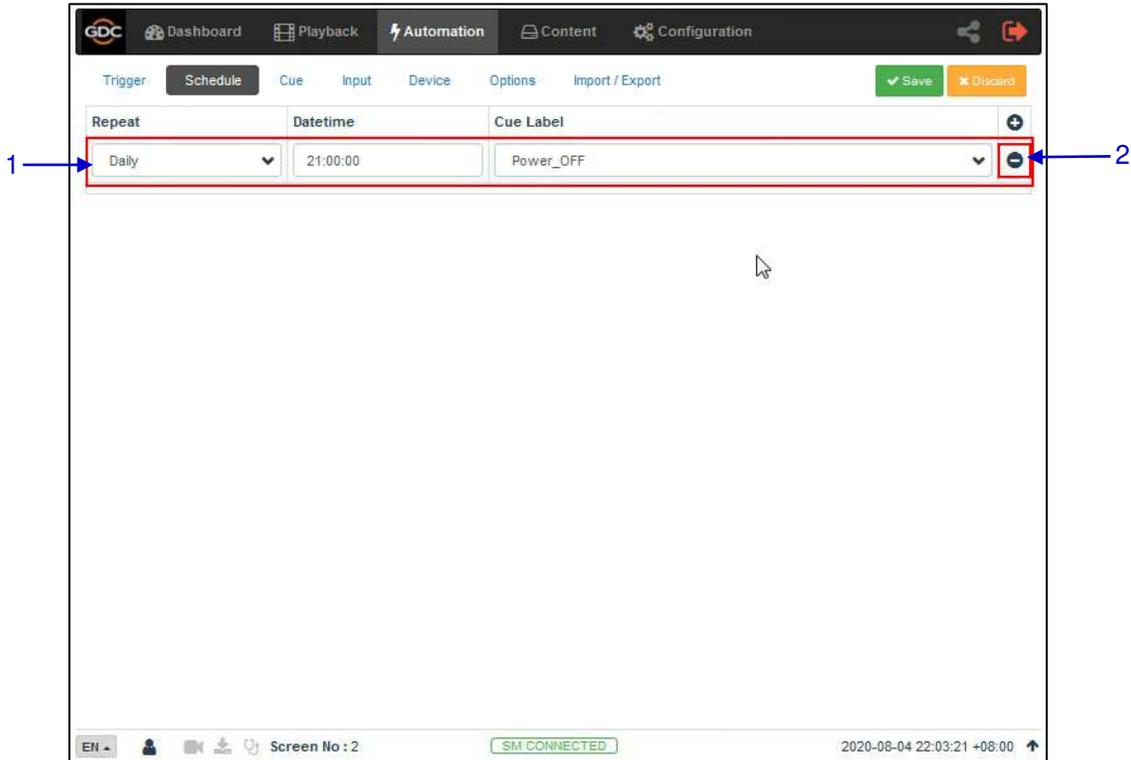


Figure 15: Scheduling Cues

1	[+ New Schedule]	<p>Click + to add a new schedule.</p> <ul style="list-style-type: none"> ▪ <i>Repeat</i>: Choose between None or Daily ▪ <i>Datetime</i>: Select specific datetime for the automation cue to be executed. ▪ <i>Cue Label</i>: The first cue in cue list is added by default. Select from drop down list to change to other cue. <p>Click Save to save the added schedule or click Discard to remove.</p>
2	[- Remove Schedule]	<p>Click – to remove the selected scheduled automation cue.</p>

5.3 Cue

The **Cue** sub-tab shows the automation cues configured on the SR-1000. New automation cues can be added and configured on this tab.

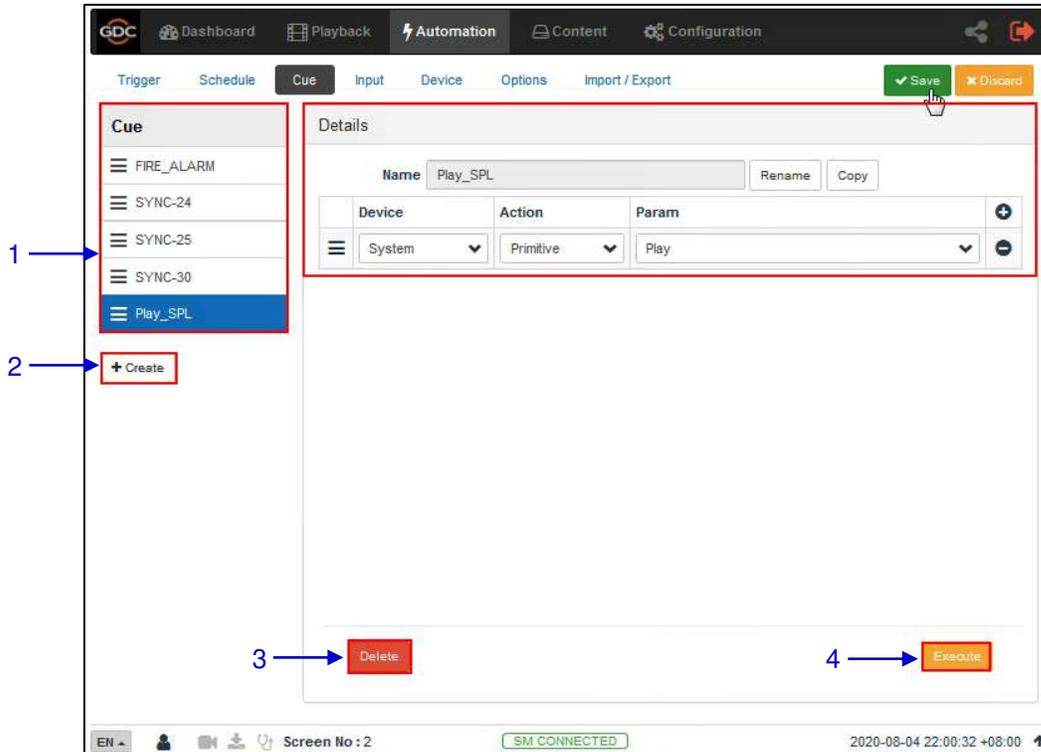


Figure 16: Create and Edit Cues

1	[Cue]	<p>A complete list of configured cues is displayed here. Cues can be rearranged by dragging and dropping.</p> <p>When a cue is selected from the list, the cue details are displayed.</p> <p>Click + to add actions or click – to remove actions.</p> <p>Click Execute to manually execute this automation cue.</p>
2	[+Create]	<p>Click +Create to create a new cue. A pop-up window will be shown. Enter the name of the cue and click OK.</p> <div data-bbox="794 1583 1127 1780" style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="margin: 0;">Name ×</p> <input style="width: 100%; height: 20px; margin: 5px 0;" type="text"/> <div style="text-align: right; margin-top: 5px;"> Cancel OK </div> </div> <p>Refer to Section 5.3.1 for more details regarding adding a new automation cue.</p>

3	[Delete]	Deletes the selected cue.
4	[Execute]	Executes the selected cue. This can be used to test the cue.

5.3.1 Adding a new Cue



Figure 17: Adding a new cue

1	Type in the name that needs to be assigned to the new cue being added and click on OK .
---	------------------------------------------------------------------------------------------------

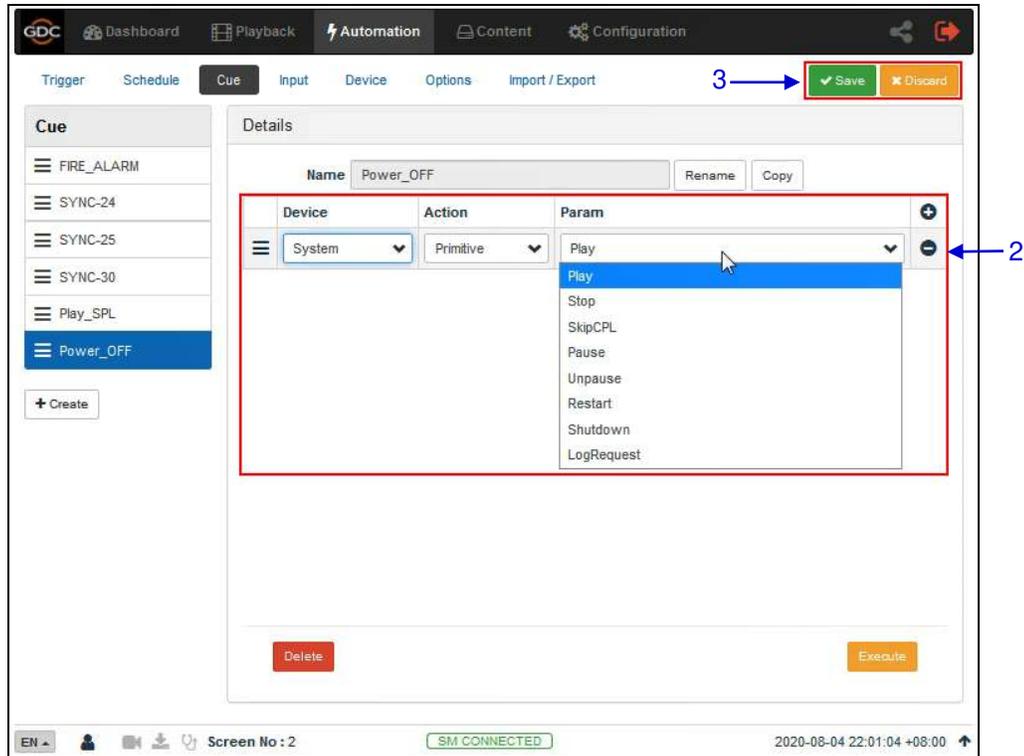


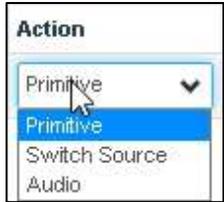
Figure 18: Cue Details

2 Click + to add actions or click – to remove actions.

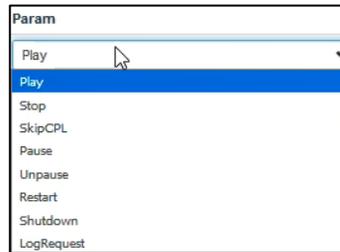
Select a device from the dropdown list as seen below. New devices can be added to the list from the **Device** tab (Refer to **Section 5.5** for more details)



a) If the selected **Device** is **System**, the **Action** type will be **Primitive**, **Switch Source** or **Audio**.



- i) If **Primitive** is selected as the **Action** type, select the desired **Param** value from the drop-down as shown below:



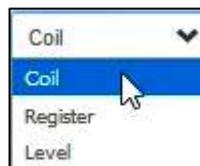
- ii) If **Switch Source** is selected as the **Action** type, select the desired **Param** value from the drop-down as shown below:



- iii) If **Audio** is selected as the **Action** type, select the desired **Param** value from the drop-down as shown below. Refer to **Section 8.6** for more details regarding automation of Audio Presets:



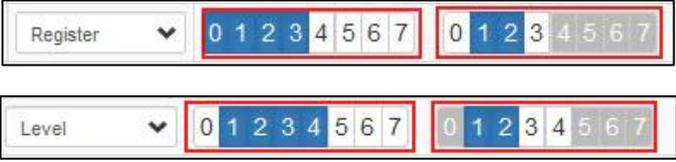
- b) If the selected **Device** is **IMBGPIO**, the **Action** type can be **Coil**, **Register** or **Level**.



- i) If **Coil** is selected as the **Action** type, only one pin can be selected at a time from the **Param** option:



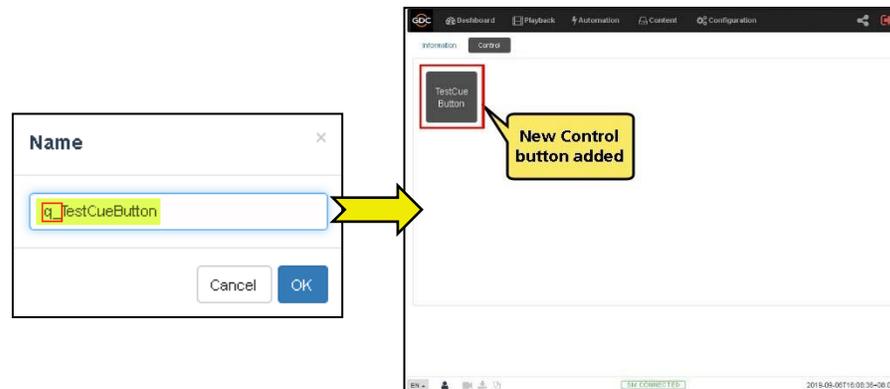
ii) If **Register** or **Level** is selected as the **Action** type, multiple pins can be selected from the **Param** option. The number of pins selected (left section) will be the number of pins shown as enabled (right section). The user may select multiple pins (right section) based on the number of pins selected (left section).



3 Click on the **Save** button to add the new cue or click **Discard** to remove.

Note: In order to create a quick access button for a particular automation cue which can be accessed from the **Control** sub-tab under **Dashboard**; insert the prefix “**q_**” before the actual cue name while creating a new automation cue (For cues which already exist on the Server, select the cue name and use the **Rename** option).

Save the changes by clicking on the **Save** button. A new quick access button should be created under the **Control** sub-tab, as shown below:



5.4 Input

The **Input** sub-tab is used to configure input automation triggers on the SR-1000. When input is detected on supported devices, the configured automation cues will be triggered on the SR-1000.

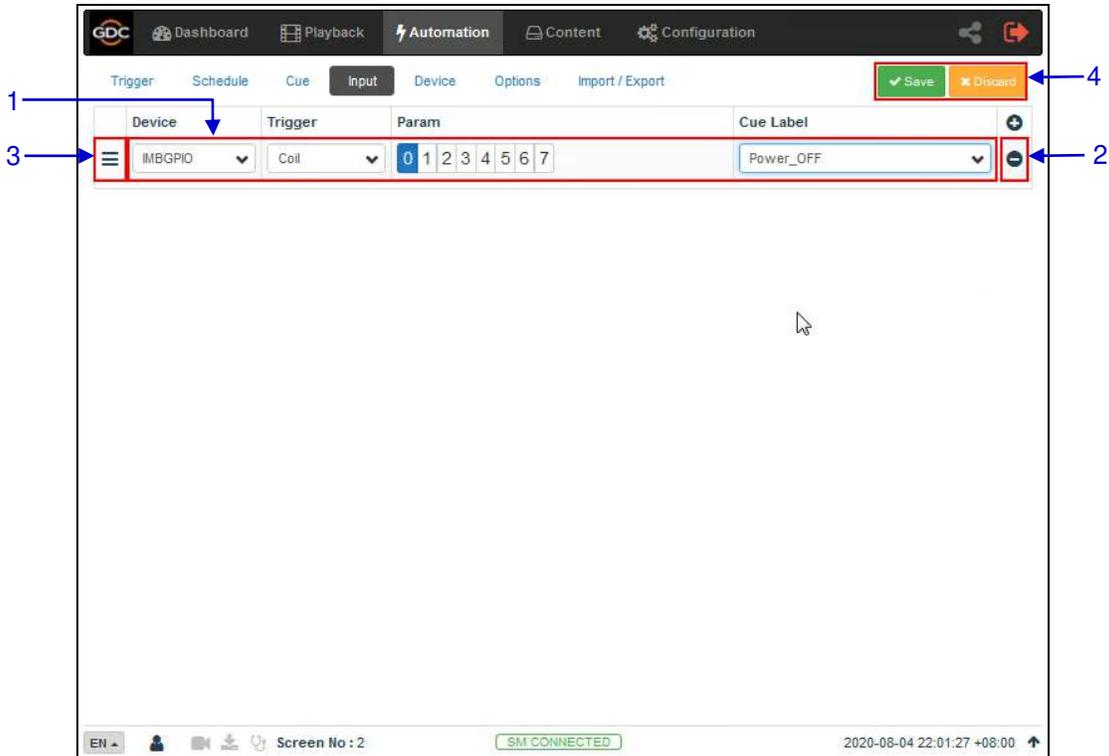


Figure 19: Input Triggers

1	<p>[+ Add Trigger]</p>	<p>Click + to add an input trigger.</p> <p>Note: Only devices capable of sending a signal to the Server can be added under Input.</p> <ol style="list-style-type: none"> Select a Device from the list for the input trigger needs to be set. Select a Trigger type as Coil, High to Low or Low to High for the chosen device: <div data-bbox="917 1537 1079 1726" style="text-align: center;"> </div> Select the Param value from 0-7. Only one pin can be selected at a time.
---	------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

		<div data-bbox="873 247 1125 342" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Param</p> <p>0 1 2 3 4 5 6 7</p> </div> <p>d) Select a automation Cue Label which should be triggered for the selected device based on the selected trigger value:</p> <div data-bbox="862 499 1136 804" style="border: 1px solid black; padding: 5px;"> <p>Cue Label</p> <p>TestCue2 ▼</p> <p>FIRE_ALARM</p> <p>SYNC-24</p> <p>SYNC-25</p> <p>SYNC-30</p> <p>Sound 7.5</p> <p>PAUSE</p> <p>PLAY</p> <p>TestCue1</p> <p>TestCue2</p> </div>
2	[– Delete Trigger]	Click – to remove the selected input trigger.
3	[≡]	Click ≡ to reorder the input triggers using drag-and-drop.
4	[Save]/[Discard]	Click on the Save button to add the new input trigger or click Discard to remove.

5.5 Device

The **Device** sub-tab is used to configure the SR-1000 to communicate with external automation devices.

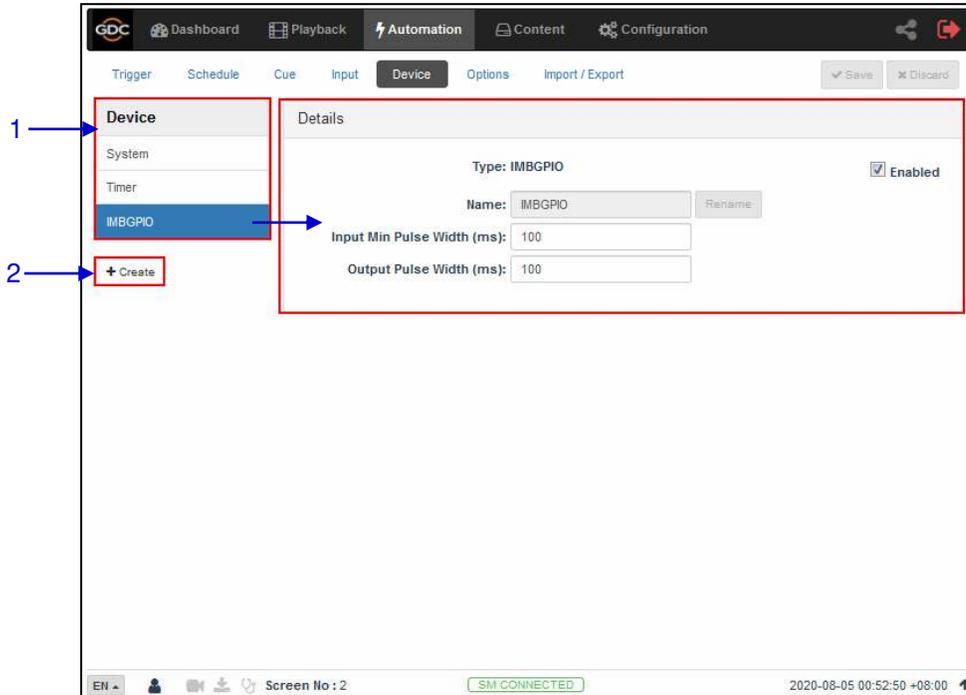


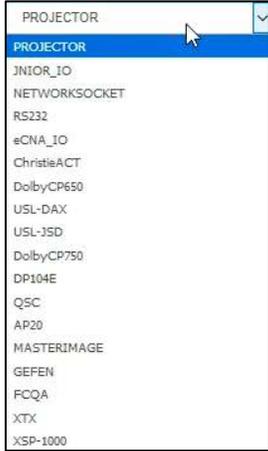
Figure 20: List of configured Automation devices

1	[Device]	<p>This is a list of configured automation devices on the SR-1000.</p> <p>When a device is selected from the list, device details are displayed under the Details section.</p>
2	[+Create]	<p>Click +Create to create a new device.</p> <p>Enter Device Name and select the device Type. Click OK to confirm or click Cancel to cancel adding devices.</p> <div data-bbox="852 1470 1144 1774" style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>New Device ×</p> <p>Name: <input type="text"/></p> <p>Type: <input type="text" value="PROJECTOR"/></p> <p style="text-align: right;"><input type="button" value="Cancel"/> <input type="button" value="OK"/></p> </div> <p>Refer to Section 5.5.1 for more details on creating a new automation device.</p>

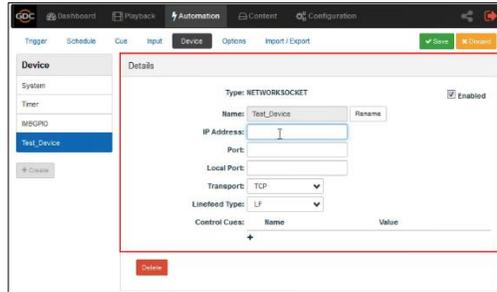
5.5.1 Creating a new Automation Device

The image shows a 'New Device' dialog box with two main input fields. The first field, labeled 'Name:', contains the text 'Test_Device'. A blue arrow labeled '1' points to this field. The second field, labeled 'Type:', is a dropdown menu currently showing 'NETWORKSOCKET'. A blue arrow labeled '2' points to this dropdown. At the bottom of the dialog are two buttons: 'Cancel' and 'OK'.

Figure 21: Adding a new device

1	[Name]	Type in the name that needs to be assigned to the new device being added.
2	[Type]	<p>After adding the device name, assign the type of device you want to use. Select from a dropdown list as seen below:</p>  <p>After clicking the OK button, the device is registered and added to device list. But it may not be properly configured yet.</p>

Select the device from the device list, fill in all required parameters in device detail to complete device configuration.



5.5.1.1 When Device Type is 'PROJECTOR'

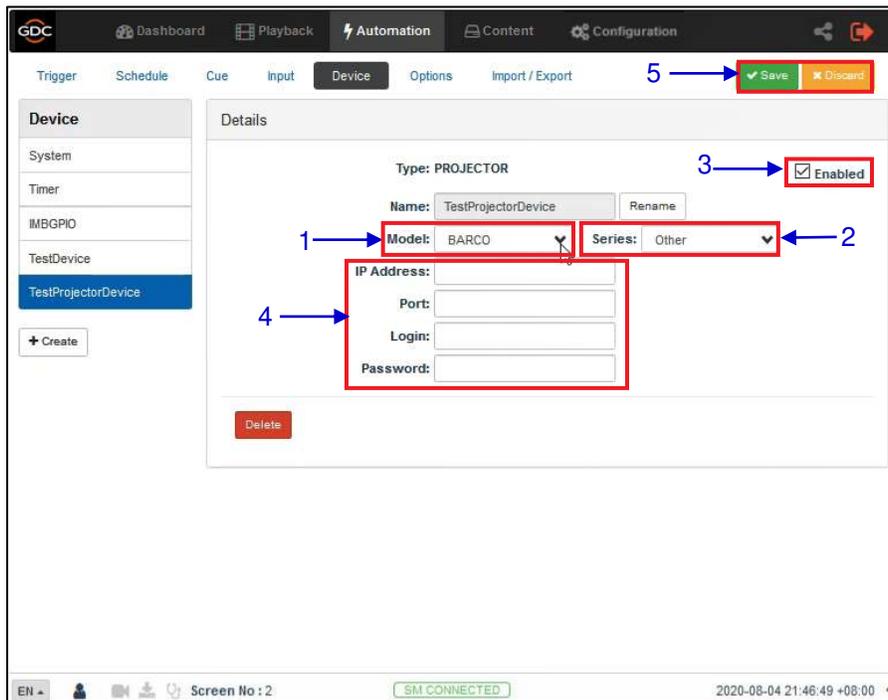


Figure 22: Adding a Projector Device

- 1 Select the projector Model from the dropdown list:



2	Select the projector Series from the dropdown list: 
3	The status of the device can be enabled or disabled by using this checkbox.
4	Set the parameters such as IP address , Port , Login and Password with respect to the projector device being added.
5	Click on the Save button to add the new device or click Discard to remove.

5.6 Option

The **Option** sub-tab is used to configure automation cues that will be triggered on SR-1000 boot-up and when playback errors occur.

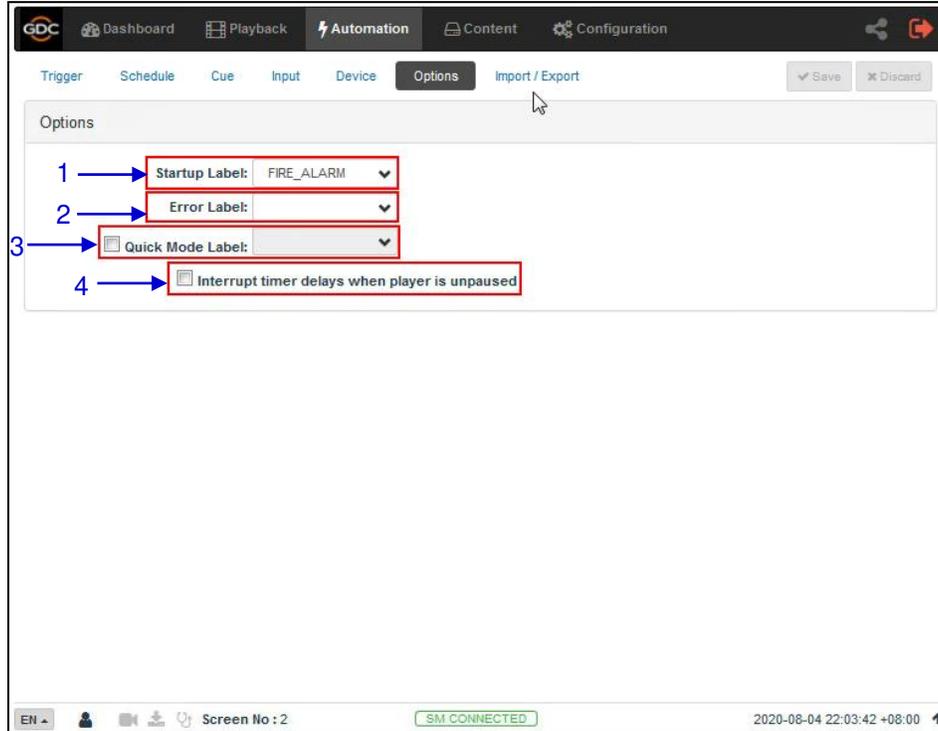


Figure 23: Option

1	[Startup Label]	Select a specific automation cue which will be executed when the Server fully boots up
2	[Error Label]	Select a specific automation cue which will be executed whenever a playback error occurs.
3	[Quick Mode Label]	Enables selection of a specific automation cue which can be triggered quickly using the Execute button under Quick Mode Label section under the Trigger sub-tab.
4	[Interrupt timer delays when player is unpaused]	When this option is selected and the user clicks the Unpause button under the Playback sub-tab, the next action in the automation cue will be executed immediately without waiting for the Timer delay to complete.

5.7 Import/ Export

This **Import/Export** sub-tab allows the import and export of automations cues which have been setup on the SR-1000.

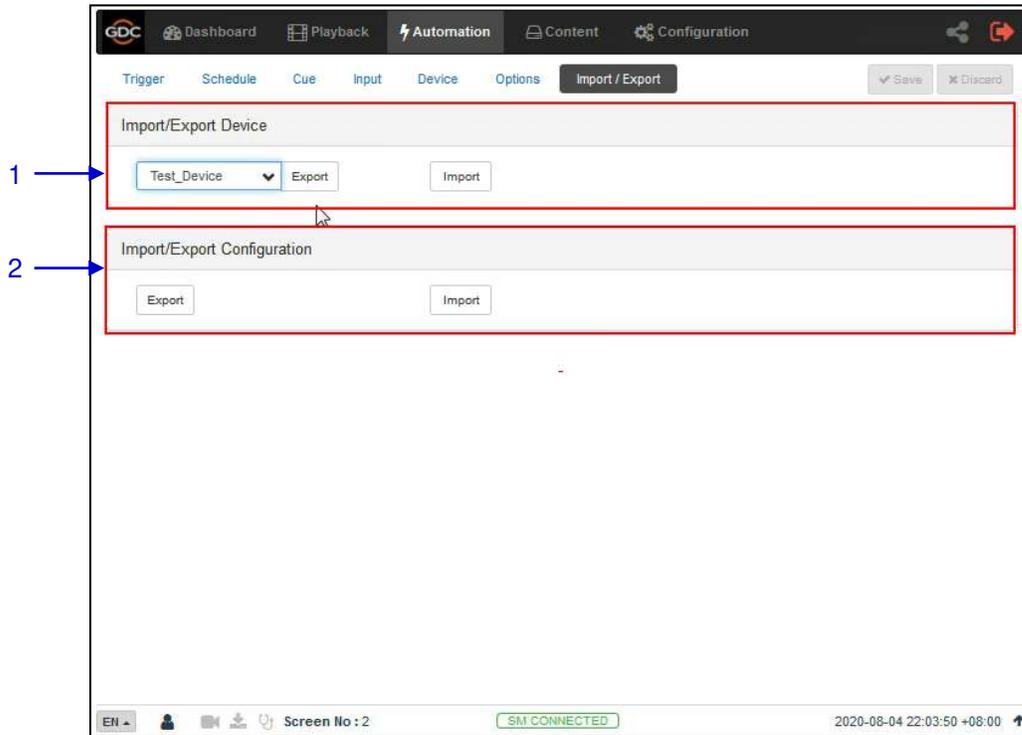


Figure 24: Import/Export

1	[Import/Export Device]	<p>Import opens a pop-up window which allows the user to select a configuration file for the selected automation device.</p> <p>Export automatically saves the configuration file for the selected automation device to your web browser's default download location.</p>
2	[Import/Export Configuration]	<p>Import allows user to select configuration file containing all automation cues from an alternate Server</p> <p>Export automatically saves the configuration file containing all automation cues to your web browser's default download location.</p>

6 CONTENT

The **Content** tab is used to manage the content, keys and licenses on the SR-1000. It allows the user to perform the actions listed below:

1. Ingest content from disk or network source.
2. Ingest Key Delivery Messages (KDMs) required for playing encrypted content.
3. Ingest License Delivery Messages (LDMs).
4. Delete content from Server storage.
5. Verify content on Server storage.

6.1 Summary

The **Summary** sub-tab shows a summary of the content and the storage space.

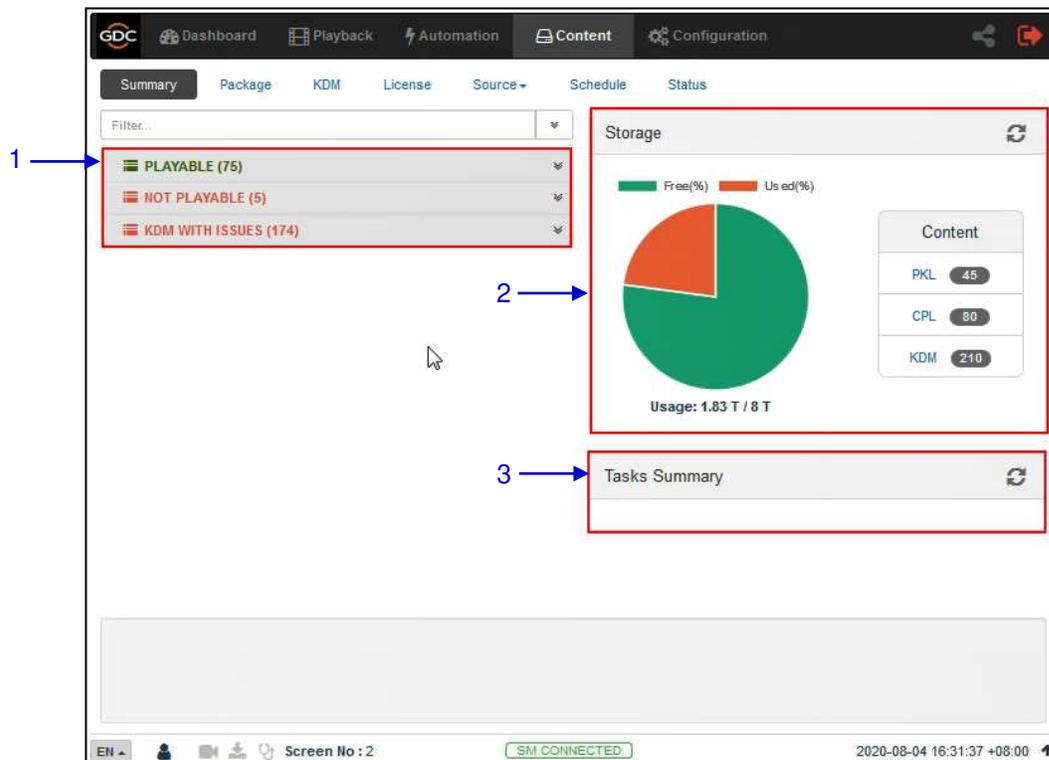


Figure 25: Content and Storage summary

1	[Playable/Not Playable/KDM with Issues List]	Displays a list of playable and non-playable content which are currently present on the SR-1000, along with the list of KDMs with issues.
2	[Storage]	Shows a graphical overview of the number of PKL, CPL, KDM present on the SR-1000. It also displays Storage Usage and Capacity. Click the  Refresh button to update the displayed information.
3	[Tasks Summary]	Displays the tasks available on the SR-1000.

6.2 Package

The **Package** sub-tab displays the content which has been ingested into the SR-1000.

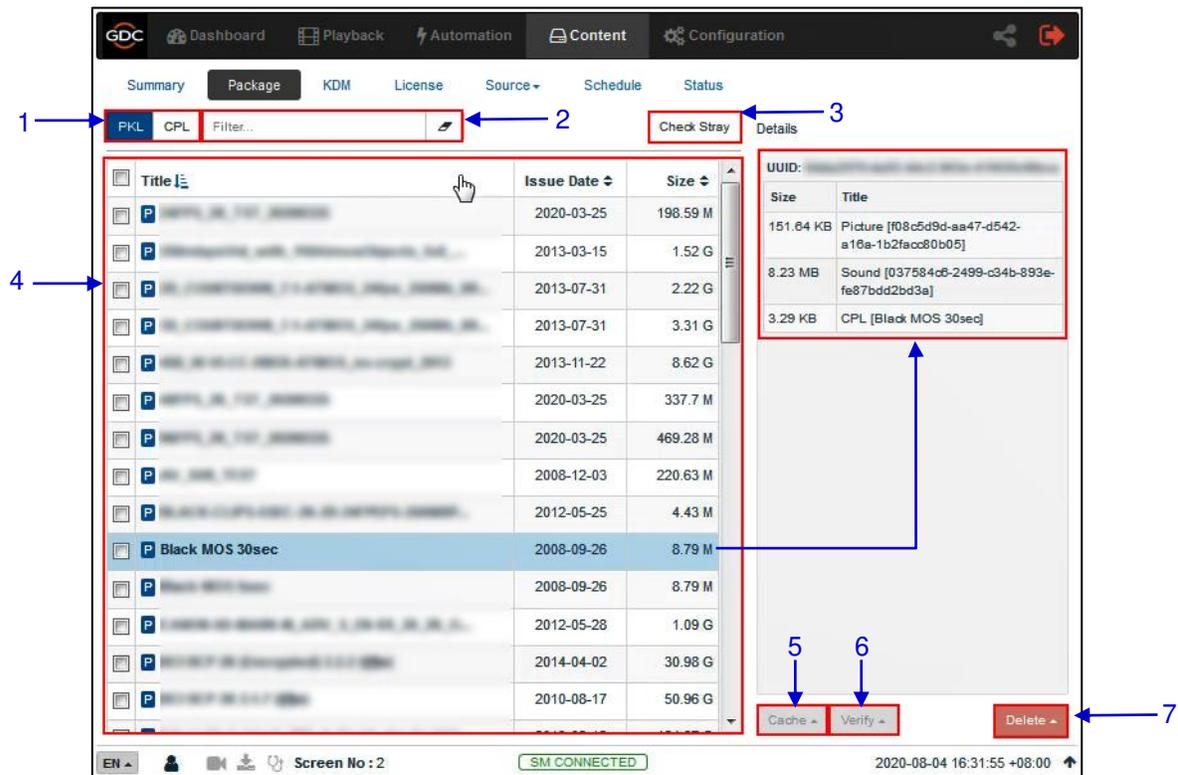


Figure 26: List of CPL's or PKL's

1	[PKL/CPL]	Displays list by CPLs or PKLs.
2	[Filter]	PKL/CPL list will be filtered by the text entered here. Click the  Clear Filter button to clear the search text.
3	[Check Stray]	Click Check Stray to detect and delete any of the stray files from deleted PKLs and CPLs.
4	[Content List]	Displays the list of content available on the server. When an item is selected, details are displayed on the right panel. <ol style="list-style-type: none"> 1) Content name displayed in Green indicates the content is available in both the Primary as well as the Secondary storage. 2) Content name displayed in Black indicates it is available only in the Primary storage.

5	[Cache]	<p>Copies the selected content from Primary Storage to Secondary storage of the SR-1000.</p> <p>There are two options available: Immediately Cache and Schedule Cache. This option will be enabled only when Secondary storage is enabled on the SR-1000.</p>
6	[Verify]	<p>Verify the integrity of the selected content.</p> <p>There are three options available: Quick Verify, Immediately Verify and Schedule Verify.</p> <p>Refer to Section 6.2.1 for more details</p>
7	[Delete]	<p>Delete the selected content from the SR-1000 storage.</p> <p>There are two content delete options are available: Immediately Delete and Schedule Delete.</p> <p>Refer to Section 6.2.2 for more details</p>

6.2.1 Checking Content Integrity

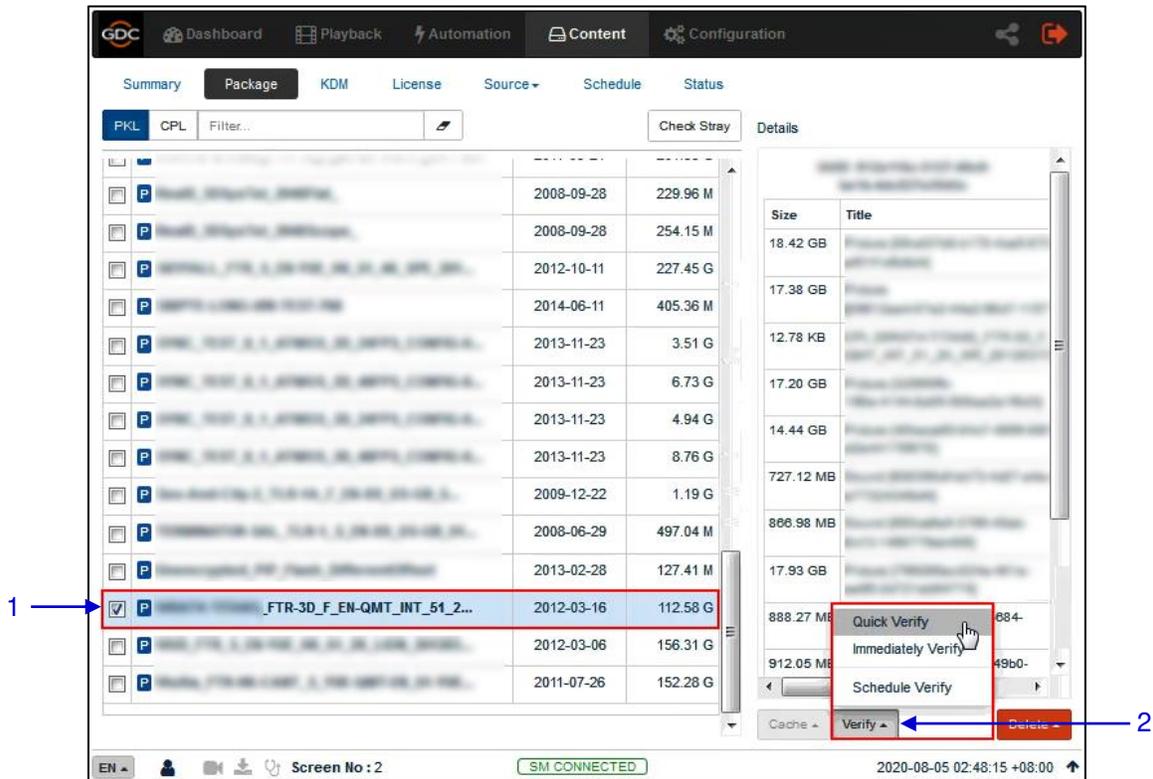
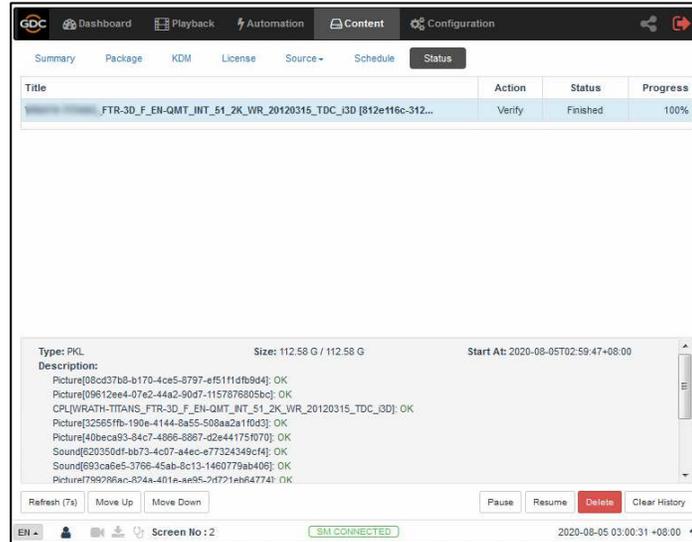


Figure 27: Package Verify

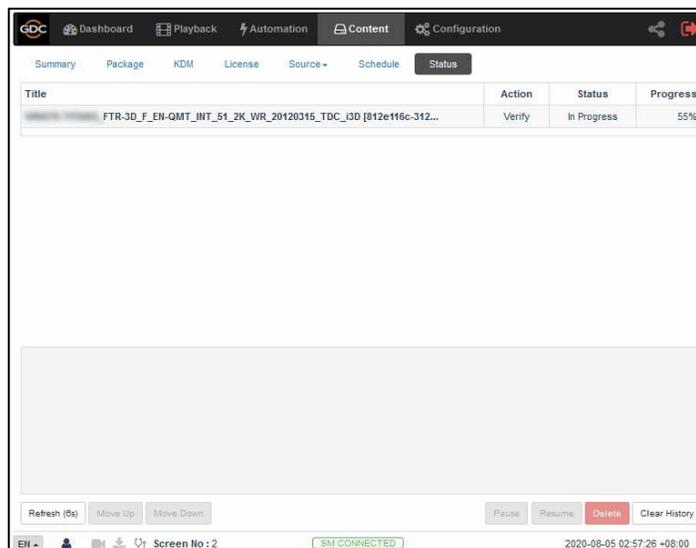
- To verify the integrity of a package or CPL, go to the **Package** tab and select the checkbox against the package or CPL that needs to be verified. The PKL/CPL details will be displayed under the **Details** section on the right.

2 Click on the **Verify** button. There are 3 ways in which content can be verified:

- a) **Quick Verify:** The selected content gets quickly verified. The Verification status will be displayed under the **Status** tab. The Green OK indicates no error is found. Otherwise, the description of the error will be shown.



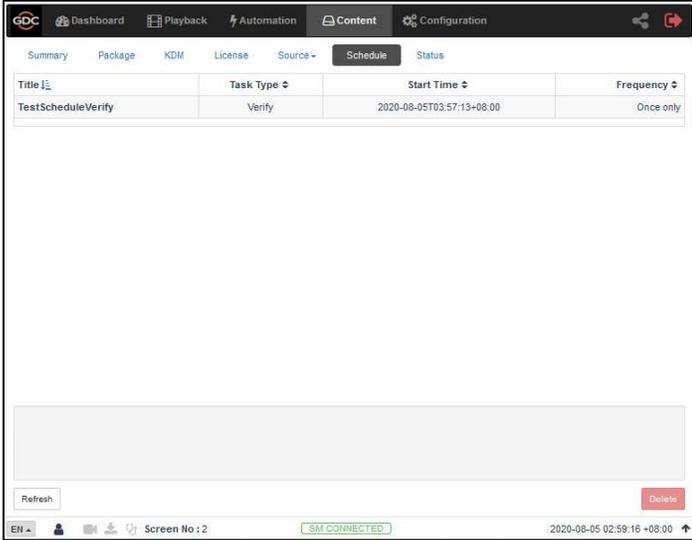
- b) **Immediately Verify:** Immediate full verification of the selected CPL/PKL. The Verification status will be displayed under the **Status** tab.



- c) **Schedule Verify:** Set a date and time for full verification of the selected CPL/ PKL. A pop-up window will be shown to provide details for the schedule. Provide a **Name** for the schedule being created.

Select the **frequency** and **date and time** for the schedule

Click on the **Create** button to schedule the verification. The scheduled verification will be displayed under the **Schedule** tab, as shown below. To delete this schedule, click on the **Delete** button.



The screenshot displays the GDC Content Management System interface. The top navigation bar includes 'Dashboard', 'Playback', 'Automation', 'Content', and 'Configuration'. Below this, there are sub-tabs for 'Summary', 'Package', 'KDM', 'License', 'Source', 'Schedule', and 'Status'. The 'Schedule' sub-tab is active, showing a table with the following data:

Title	Task Type	Start Time	Frequency
TestScheduleVerify	Verify	2020-08-05T03:57:13+08:00	Once only

At the bottom of the table area, there is a 'Refresh' button and a 'Delete' button. The bottom status bar shows 'Screen No : 2', 'SM CONNECTED', and the timestamp '2020-08-05 02:59:16 +08:00'.

Note: If there is an error in the selected package, it will indicate 'Failed' under the **Status** sub-tab.

6.2.2 Deleting Content

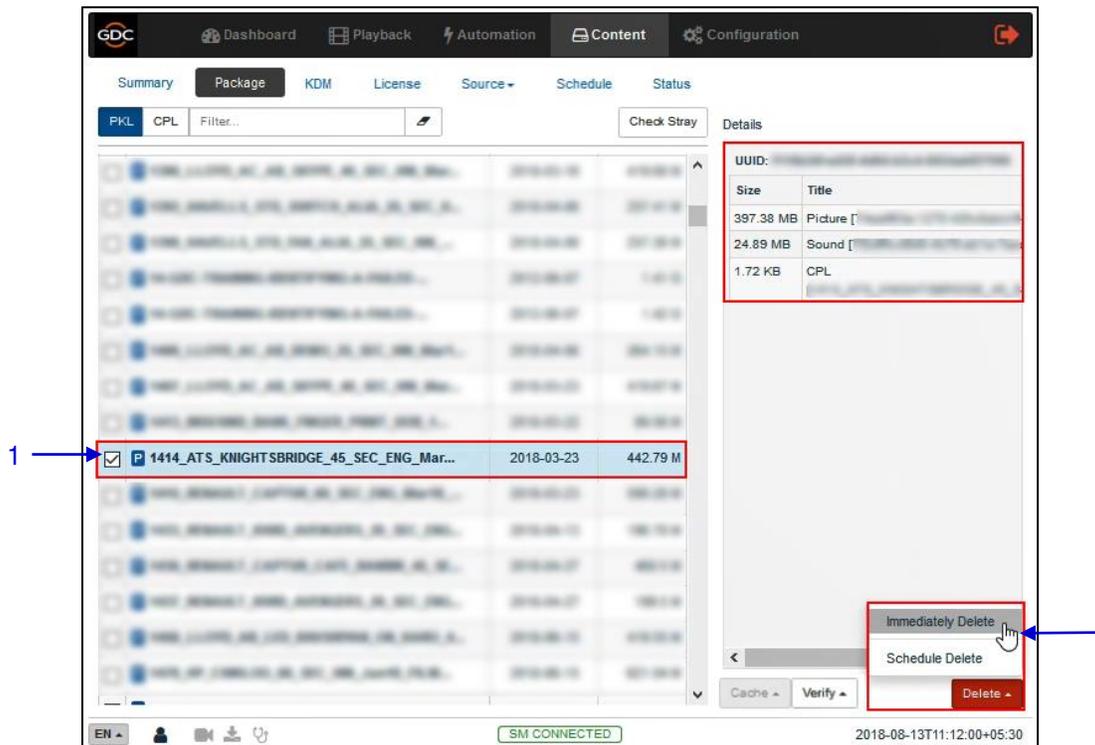
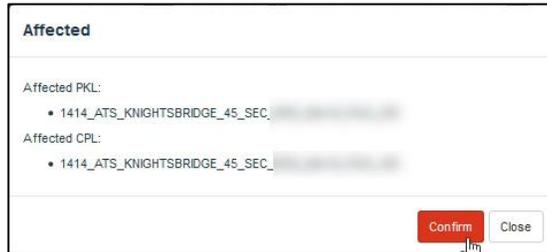


Figure 28: Deleting Content

- 1 To delete a package or CPL, go to the **Package** tab and select the checkbox against the package or CPL that needs to be deleted. The PKL/CPL details will be displayed under the **Details** section on the right.

- 2 Click on the **Delete** button to delete the selected package or CPL. You can either choose **Immediately Delete** or **Schedule Delete**.

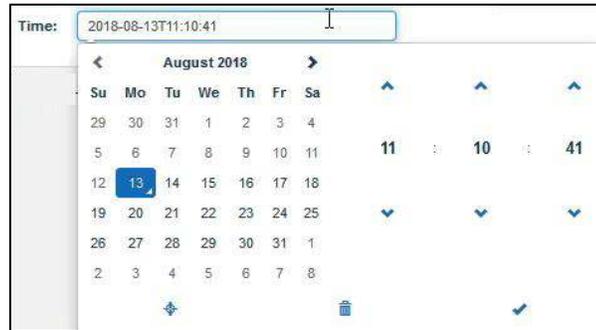
- a) **Immediately Delete:** This option can be used to immediately delete the selected PKL/CPL. A pop-up window is shown to confirm the deletion of the package. Click on **Confirm** to delete content or click **Close** to cancel.



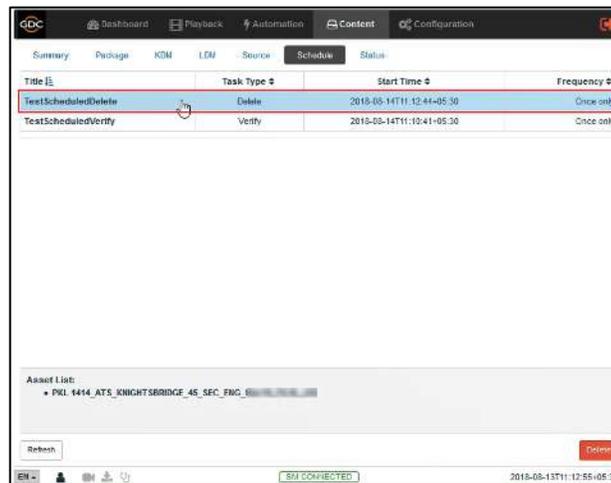
- b) **Schedule Delete:** Set a date and time to delete the selected PKL/CPL. A pop-up window will be shown to provide details for the schedule. Provide a **Name** for the schedule being created.

Select the **frequency** and **date and time** for the schedule





Click on the **Create** button to schedule the deletion. The scheduled deletion will be displayed under the *Schedule* tab, as shown below. To delete this schedule, click on the **Delete** button.



6.3 KDM

The **KDM** sub-tab displays all the KDMs present on the SR-1000

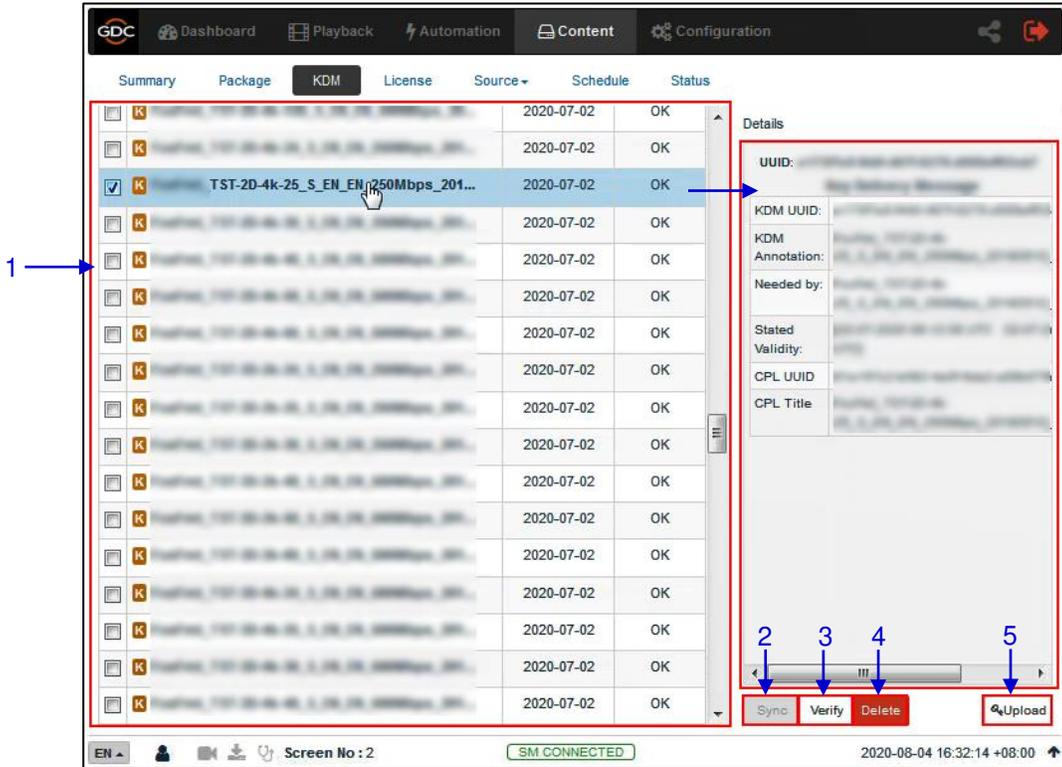


Figure 29: List of KDMs

1	[KDM List]	<p>Displays a list of the KDMs on the SR-1000.</p> <p>When a KDM is selected from the list, KDM details are displayed on the right panel.</p>
2	[Sync]	<p>When the status displays 'Not in SM', click the Sync button to synchronize the KDM to the SM.</p>
3	[Verify]	<p>Verify the selected KDM. Any errors found will be displayed. The verification status will be displayed under the Status tab.</p> <div data-bbox="732 1476 1133 1791" data-label="Image"> </div>
4	[Delete]	<p>Delete the selected KDM from the SR-1000.</p>

5	[Upload]	<p>Upload KDM files (.kdm) directly using the Web UI. A pop-up window is shown. Click on the Choose file button to select the KDM file(s) from the folder where it has been downloaded and click on Open.</p> 
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6.4 License

The **License** sub-tab displays the list of licenses on the SR-1000.

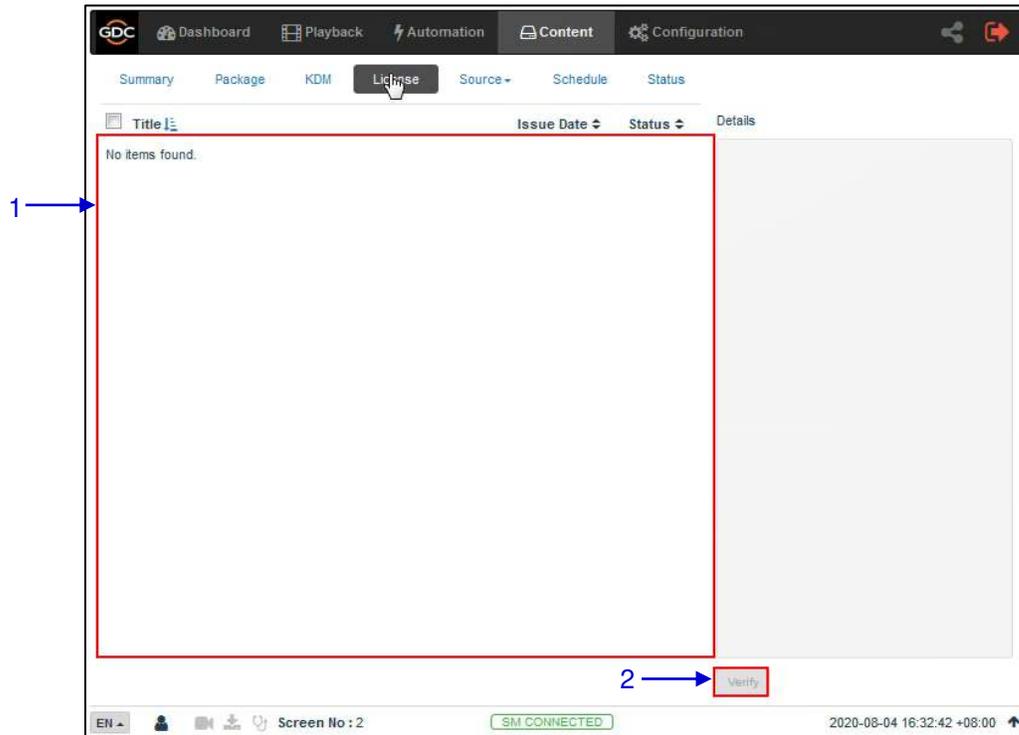


Figure 30: List of LDMs

1	[License List]	Displays a list of licenses installed on the SR-1000. When a License is selected from the list, corresponding details are displayed on the right panel.
2	[Verify]	Verify that the selected License is valid. Any errors found will be displayed. The verification status will be displayed under the Status sub-tab.

6.5 Source

The **Source** sub-tab is used to configure and manage the content ingest sources on the SR-1000. There are two options available under this sub-tab: **Ingest** and **Manage**.

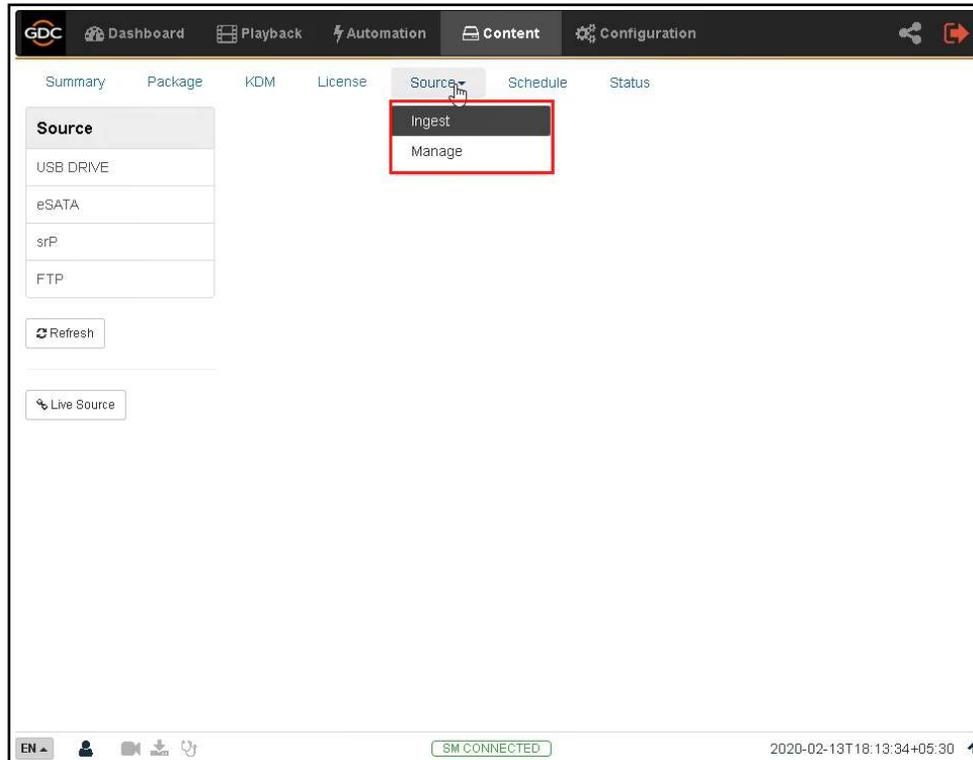


Figure 31: Options under Source tab

6.5.1 Ingest Source

The **Ingest** screen displays the list of sources from which the user can choose to ingest content. The options listed under this screen should be used to perform ingest operations on a daily basis.

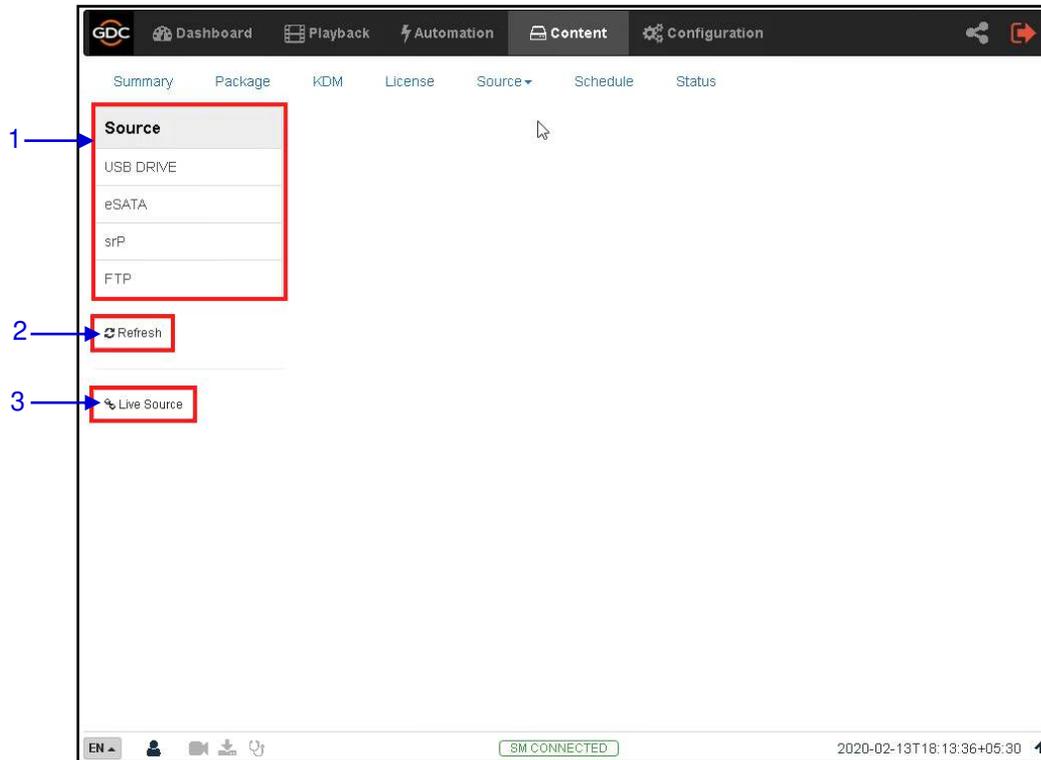


Figure 32: Ingest Source options

1	[Source]	Displays a list of configured content ingest sources on the SR-1000.
2	[Refresh]	Click Refresh to refresh the list of content ingest sources
3	[Live Source]	Displays the list of content for Live Play (Refer to Section 6.5.1.3 for details.)

6.5.1.1 Ingesting Content from a USB Drive

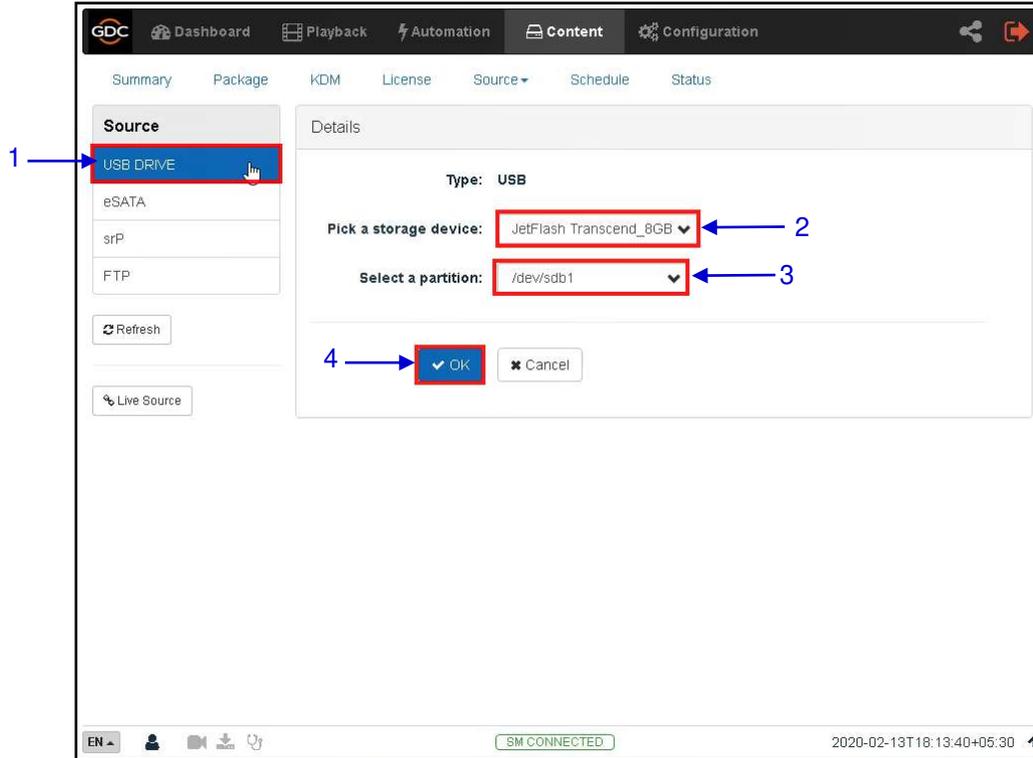


Figure 33: Ingesting Content from USB Disk (1)

1	Select USB DRIVE from Source list.
2	Under the Details section; select the drive name assigned to the USB Disk, from the Pick a storage device: drop-down
3	Select the drive partition assigned to the USB Disk by the SR-1000 from the Select a partition: drop-down
4	Click OK to mount the content ingest source and select the content to be ingested.

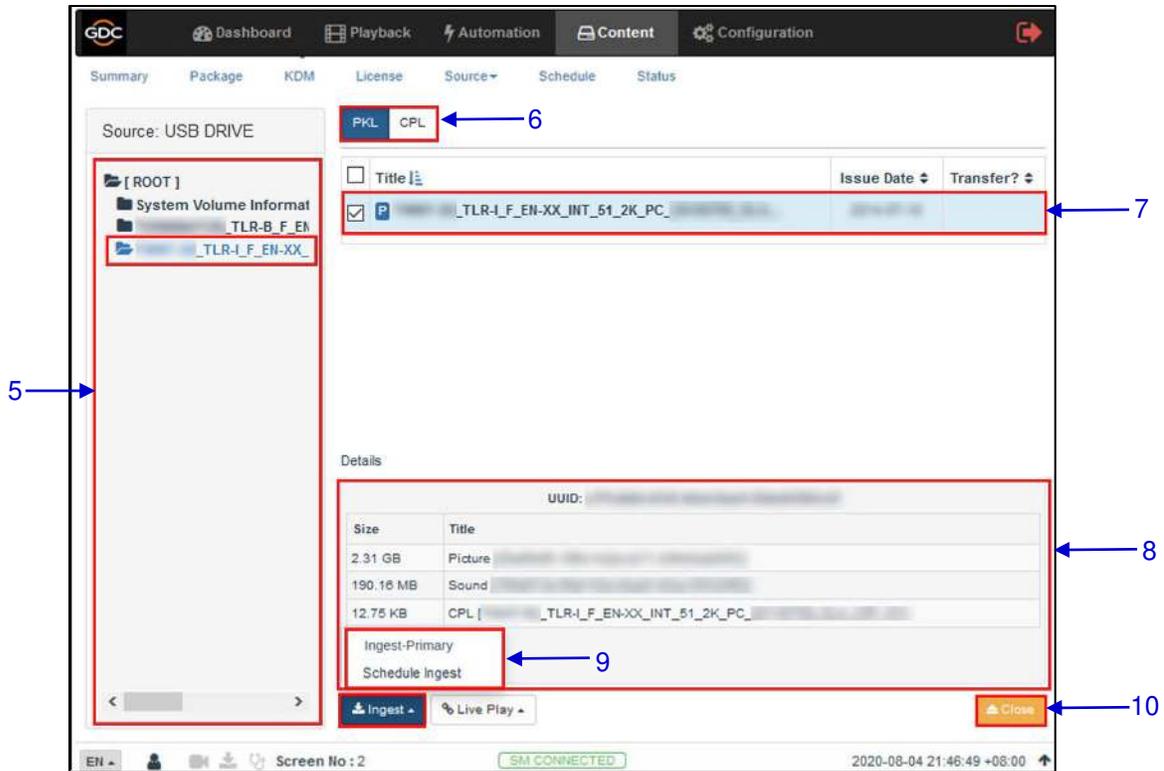


Figure 34: Ingesting content from USB Disk (2)

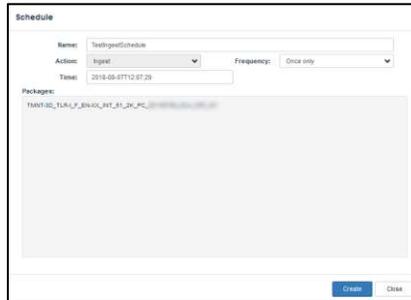
5	Browse the selected source and select the directory where the package is located. The list of packages in the directory will be displayed on the top right section of the screen.
6	This button can be used to toggle between the <u>PKL/CPL</u> list displayed in the top right section of the screen.
7	Select the package or CPL you wish to ingest using the checkbox on the left of that particular entry in the PKL/CPL list. You can select multiple PKL's or CPL's.
8	Information about the selected package or CPL including the <i>file size</i> , is shown in the section below the PKL/CPL list.

- 9** Click on the **Ingest** button and select the **Ingest-Primary** option to queue downloading of the PKL/CPL. (To bypass ingestion for direct playback you can click on **Live Play** instead. Refer to **Section 6.5.1.3** for details).

Note: For SR-1000 with CineCache™, if the Secondary Storage has been enabled under **Configuration** → **Storage**, you will be given an option to either ingest to the Primary storage or to both the Primary as well as the Secondary storage at the same time, as shown below:



You may also ingest the selected content by creating a schedule using the **Schedule Ingest** option, as shown below:



To check on the download status of the ingested content, go to the **Status** tab. Refer to **Section 6.7** for more details.

- 10** When done selecting the package(s), click on the **Close** button.
- IMPORTANT:** Always press **Close** after you are done starting the download of content. You can monitor the progress of ingest from the **Status** sub-tab. Refer to **Section 6.7** from more details about the **Status** sub-tab.

6.5.1.2 Ingesting KDMs

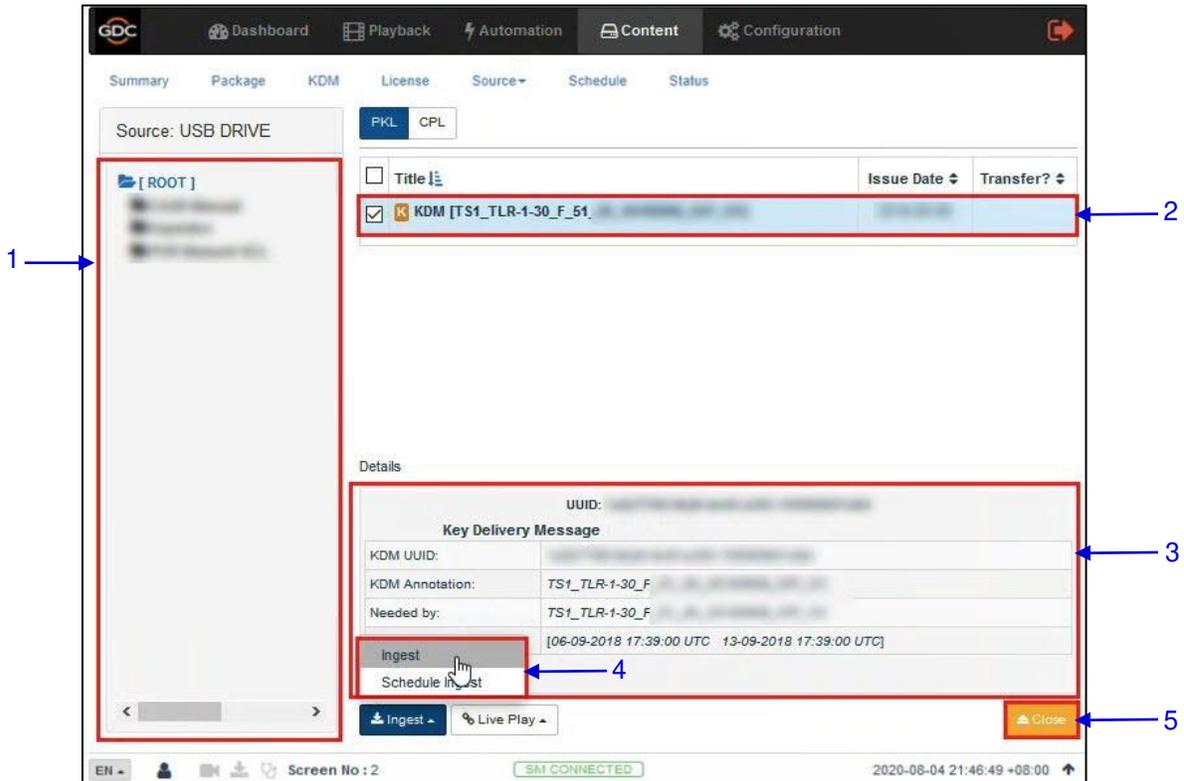
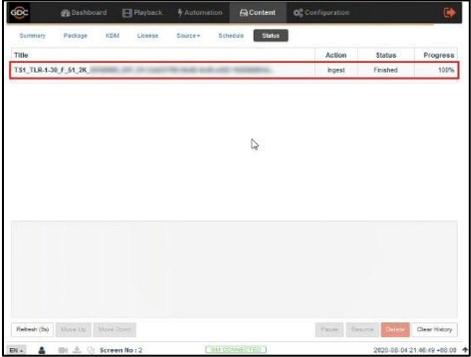


Figure 35: Ingesting KDMs

1	Browse the selected source and select the directory where the KDM is located. The list of KDMs in the directory will be displayed in the top right section of the screen.
2	Select the KDM you wish to ingest, using the checkbox on the left of that particular entry from the displayed list. You can also select multiple KDMs.
3	Information about the selected KDM, including <i>Needed by CPL</i> and <i>Stated Validity</i> are shown in this section.

4	<p>Click on the Ingest button and select the Ingest option to queue downloading of the KDM.</p> <p>To check on the download status of the ingested KDM, go to the Status tab.</p> 
5	<p>When done selecting the KDM(s), click on the Close button.</p>

Note: As mentioned in **Section 6.3**, KDM files (*.kdm*) can also be directly from the Web UI using the **Upload** option under the **KDM** tab.

6.5.1.3 Live Play

The **Live Play** option allows playback from content ingest source without ingesting.

- **Live Play** is supported for USB/ eSATA sources only.
- Content should always be ingested before playback whenever possible.

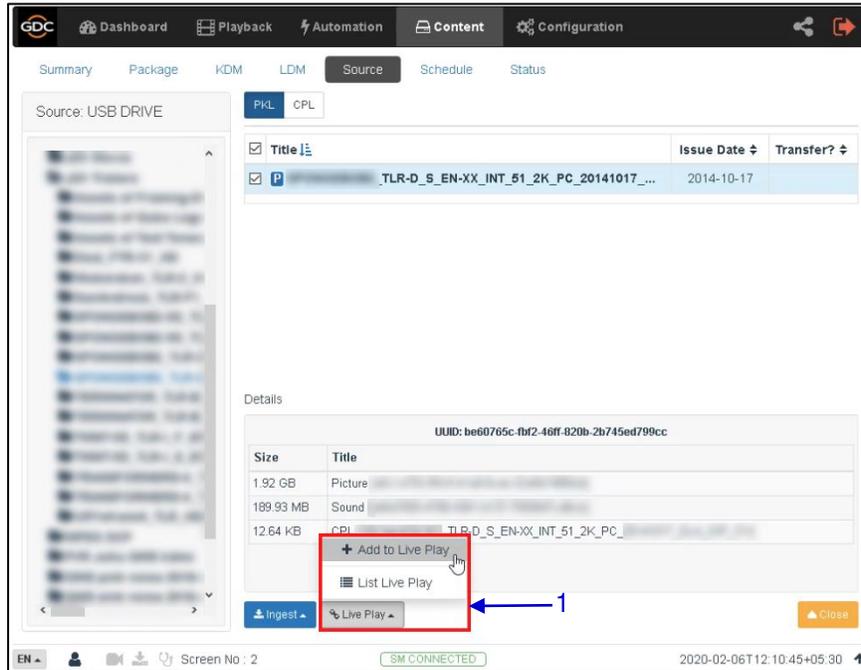


Figure 36: Live Play

1	[Live Play]	<p>Two options are available when the Live Play button is clicked:</p> <ul style="list-style-type: none"> • Add to Live Play: Add the selected content as a Live Play Source • List Live Play: A pop-up window will be shown to display the list of Live Play Sources. You can also list the Live Play sources by clicking on the Live Source button under the Ingest or Manage screen. <div data-bbox="865 1509 1258 1818" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Live Source</p> <p>file:///mnt/liveplay/3c3b531-bace-430b-bab1-90298671514e/02K Trailers/..._TLR-D_S_EN-XX_INT_51_2K_PC_...</p> <p style="text-align: right;">Close</p> </div> <p>You can unmount a Live Play source by clicking on the  button shown alongside the listed source.</p>
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6.5.2 Manage Source

The **Manage** screen provides advanced options to create as well as edit the sources from which the user can choose to ingest content.

Note: This screen should **ONLY** be used either to create an ingest source during setup or to edit an existing ingest source.

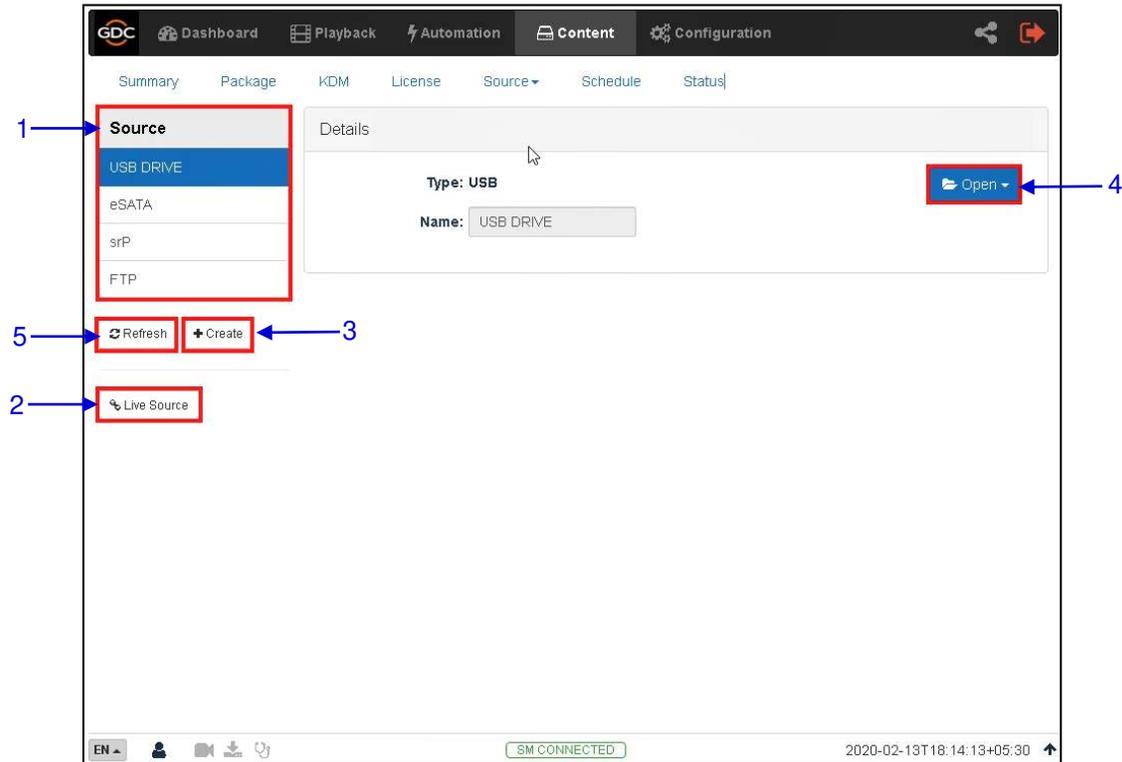
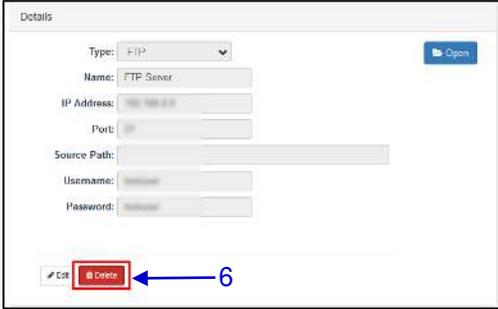


Figure 37: List of ingest sources

1	[Source]	Displays a list of configured content ingest sources on the SR-1000.
2	[Live Source]	Displays the list of content for Live Play (Refer to Section 6.5.1.3 for details.)
3	[+Create]	Click +Create to add a new content ingest source. Fill in the details for the content ingest source and click Save to save the changes.
4	[Open]	Click Open to mount the content ingest source and select the content to be ingested.
5	[Refresh]	Click Refresh to refresh the list of content ingest sources

6	[Delete]	<p>Click Delete to delete the selected content ingest source.</p>  <p>Note: Delete and Edit buttons only available on Created Sources</p>
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6.5.2.1 Adding an FTP Ingest Source

An FTP ingest source for screen-to-screen transfer can be added from the **Manage** screen, by following the steps depicted in **Figure 38**.

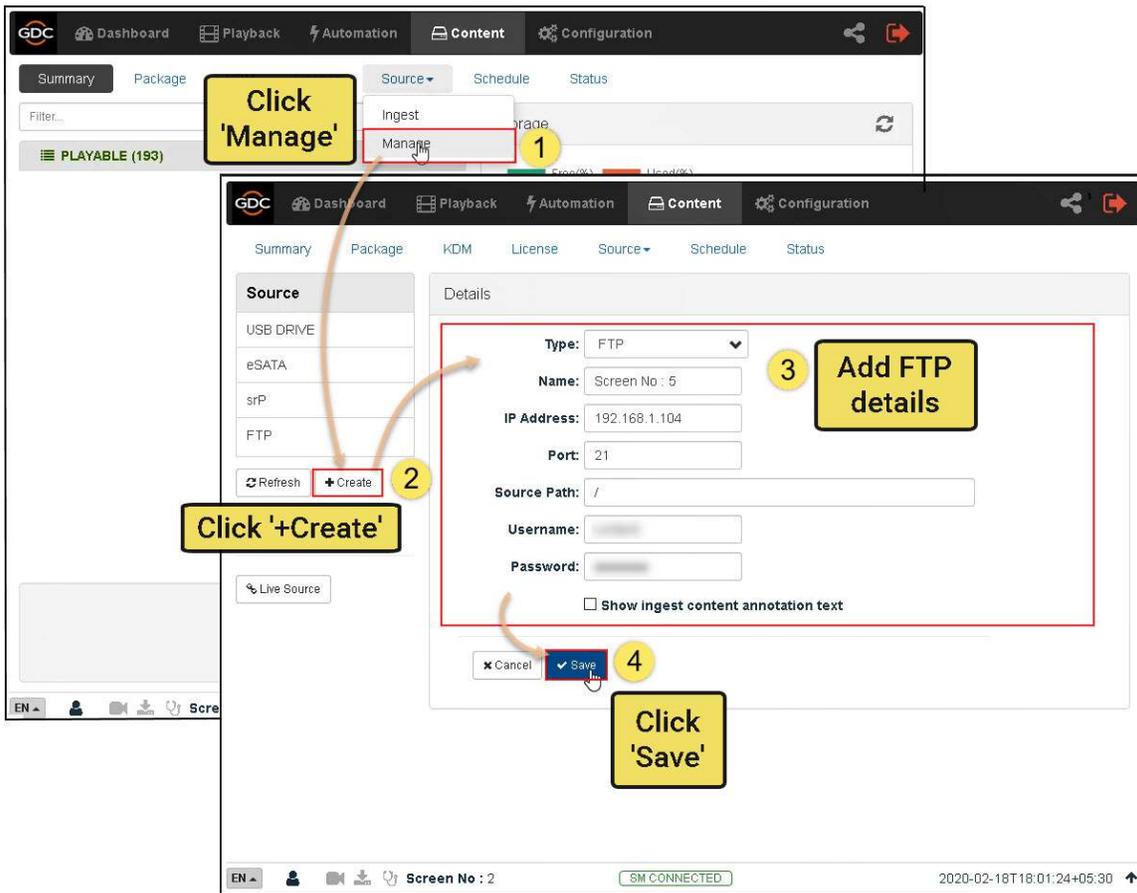


Figure 38: Adding an FTP Ingest Source

6.6 Schedule

The **Schedule** sub-tab shows the scheduled content ingest and verification tasks.

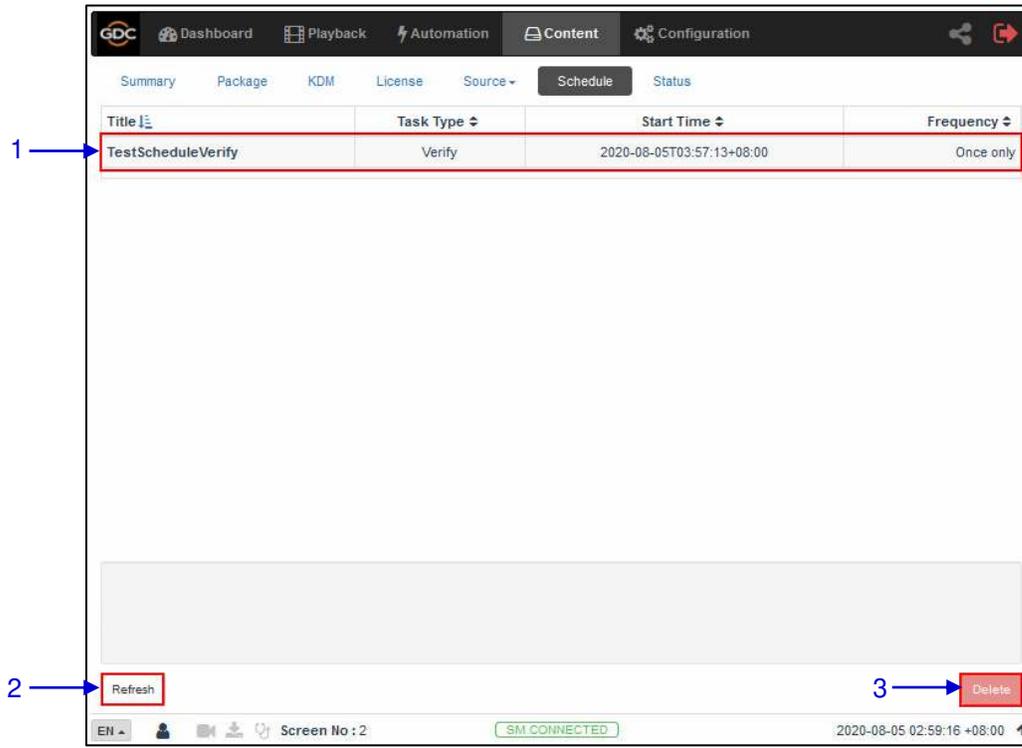


Figure 39: List of Scheduled Ingest tasks

1	[Schedule]	Displays a list of scheduled content ingest tasks.
2	[Refresh]	Click Refresh to refresh the list of schedules.
3	[Delete]	Click Delete to delete a selected schedule.

6.7 Status

The **Status** sub-tab shows content ingest and verification status.



Figure 40: Content Ingest and Verification Status

1	[Status]	Displays the list of content ingest, delete and verify tasks.
2	[Pause/Resume]	Press Pause to temporarily stop the download of selected package(s) or CPL(s). When the Pause button is clicked, the Resume button will be enabled and can be used to resume the download of selected package(s) or CPL(s)
3	[Refresh]	Click Refresh to refresh the list of package(s) or CPL(s).
4	[Clear History]	Click Clear History to clear all the finished tasks from the displayed list.
5	[Delete]	Click Delete to cancel the download of the selected package(s) or CPL(s).

7 CONFIGURATION

The **Configuration** tab is used to change SR-1000 settings and configure aspects of SR-1000 operation. SR-1000 configuration consists of five categories: *General, Playback, Storage, System and Maintenance*.

7.1 General

The **General** sub-tab is used to configure general options for the SR-1000.

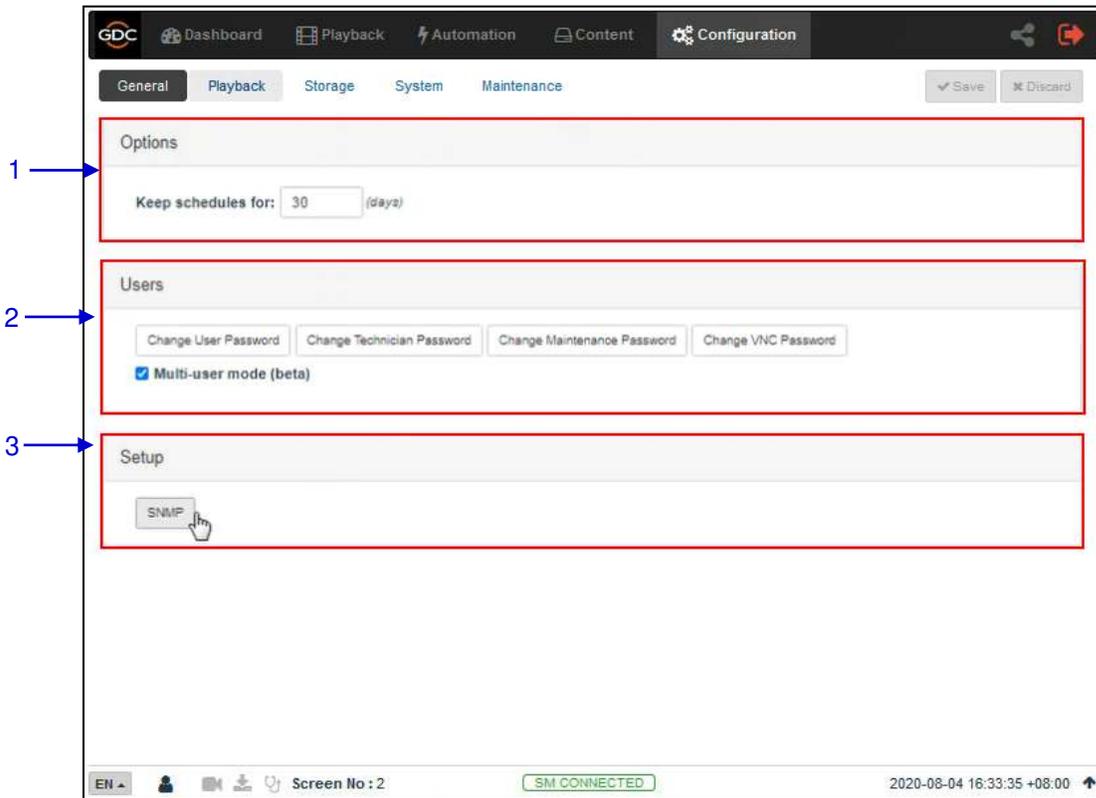


Figure 41: General Configuration options

1	[Options]	
	Keep schedules for	Set the number of days that expired schedules are kept for.

2	[Users]	
	Change User Password	Change the password for User level.
	Change Technician Password	Change the password for Technician level.
	Change Maintenance Password	Change the password for Maintenance level.
	Change VNC Password	Change the password for remote VNC login
	Multi-user mode	<p>Enabling this option allows multiple users with the same access level to concurrently login to the Web UI.</p> <p>Note: Multi-user mode may not cater for all conditions. Users are advised to use this feature with care.</p>
3	[Setup]	
	SNMP	<p>Set up SNMP monitoring and reporting. (Refer to Section 7.1.1 for details.)</p> <p>Click Save to save the settings or Close to cancel the changes.</p>

7.1.1 SNMP Configuration

The SNMP feature is an option on the SR-1000 that enables the use of SNMP to monitor the Server. The SNMP interface contains many useful SNMP traps and is easy to configure.

A SNMP configuration pop-up window is shown with the following sections: **General**, **System Information**, **System Setting**, **Encrypt**, **Storage**, **Sensors**, and **Ethernet**. Clicking on each section will expand it.

7.1.1.1 SNMP Configuration → General

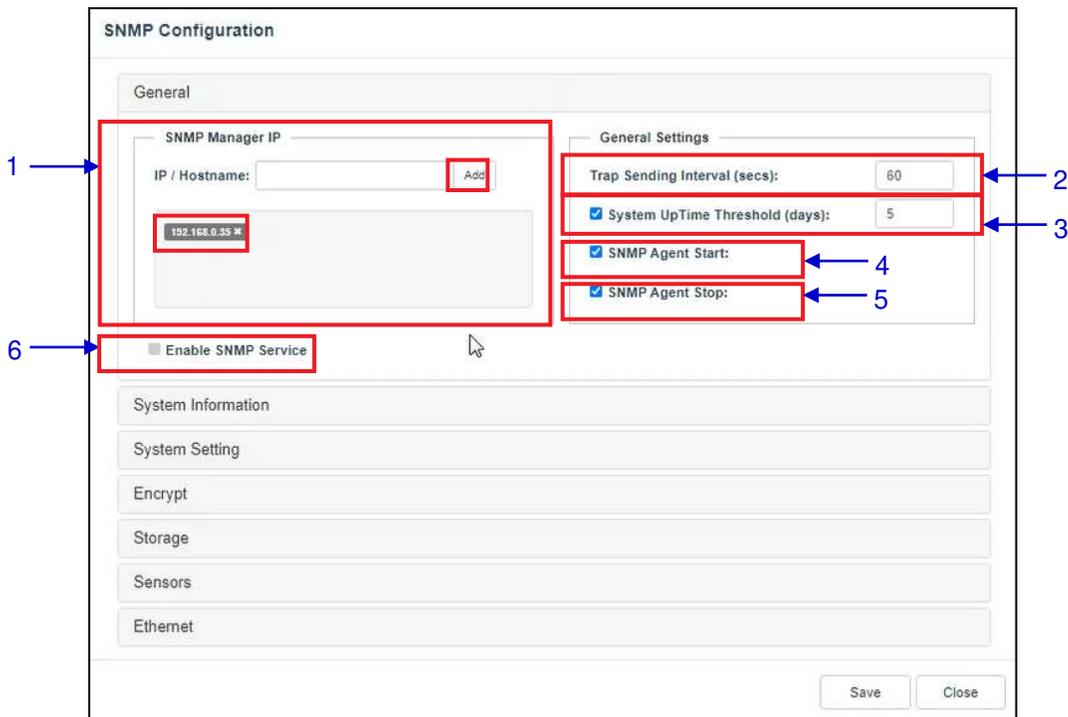


Figure 42: SNMP Configuration - General

1	[SNMP Manager IP]	Indicate the IP address of the SNMP Manager where traps are to be sent. To add an SNMP Manager, Enter the IP Address of the SNMP Manager and click Add . Click the X next to the IP address to remove it.
2	[Trap Sending Interval]	Indicate the time interval in seconds after which a trap should be resent to the SNMP Manager. The trap will continue to be resent only as long as the error condition exists.
3	[System UpTime Threshold]	Indicate the threshold time in days. Note: When Trap is On, a trap will be sent if the System UpTime exceeds the threshold value.

4	[SNMP Agent Start]	Check SNMP Agent Start to activate the Trap. Un-check the SNMP Agent Start to deactivate the Trap. Note: When Trap is On, a trap is sent when the SNMP Agent is started.
5	[SNMP Agent Stop]	Check SNMP Agent Stop to activate the Trap. Un-check the SNMP Agent Stop to deactivate the Trap. Note: When Trap is On, a trap is sent when the SNMP Agent is stopped.
6	[Enable SNMP Service]	Enable or disable SNMP monitoring and reporting. Click Save to save the settings or Close to cancel the changes.

7.1.1.2 SNMP Configuration → System Information

SNMP Configuration

General

System Information

Auditorium Number: Screen 2

System Location: GDC technology Limited

Contact Details: DC

Automatically set System Name to Server Model

System Name: SR-1000

System Description: test

System Setting

Encrypt

Storage

Sensors

Ethernet

Save Close

Figure 43: SNMP Configuration - System Information

1	[Auditorium Number]	The auditorium name and number where the SR-1000 is installed. This value will be displayed when SNMP information is queried. The auditorium name and number is also displayed in the Status bar of the SR-1000 Web UI.
2	[System Name]	The name of the Server. This value will be displayed when SNMP information is queried. This will be automatically set to the server model if the Automatically set System Name to Server model option is enabled.

3	[System Location]	The location where the SR-1000 is installed. This value will be displayed when SNMP information is queried.
4	[System Description]	A brief description of the server. This value will be displayed when SNMP information is queried.

7.1.1.3 SNMP Configuration → System Setting

Figure 44: SNMP Configuration – System Setting

1	[Ingestion Start]	When this option is checked, an SNMP trap will be generated when a DCP ingest starts.
	[Ingestion Complete]	When this option is checked, an SNMP trap will be generated when a DCP ingest is completed.
	[Ingestion Fail]	When this option is checked, an SNMP trap will be generated when a DCP ingest fails.
	[Dropped Frame]	When this option is checked, an SNMP trap will be generated when the playback has dropped frames
	[KDM Invalid]	When this option is checked, an SNMP trap will be generated when we try to play a playlist containing CPL without a valid KDM
2	[Dropped Frame Threshold]	Set a threshold limit based on the number of frames dropped in the specified time period (in seconds)

7.1.1.4 SNMP Configuration → Encrypt

The screenshot shows the 'SNMP Configuration' window with the 'Encrypt' tab selected. A red rectangular box highlights the 'Enable Authentication' checkbox and the associated 'Username' and 'Password' fields. A blue arrow labeled '1' points to the checkbox. The 'Password' field includes a 'Change' button and a note '(Minimum 8 characters)'. Other tabs like 'General', 'System Information', 'System Setting', 'Storage', 'Sensors', and 'Ethernet' are visible but not active. 'Save' and 'Close' buttons are located at the bottom right of the window.

Figure 45: SNMP Configuration - Encrypt

1	[Enable Authentication]	<p>Allows user to enable SNMP Authentication by providing Username. The default Password can be changed using the Change button.</p> <p>Note: The new password should be atleast eight characters long.</p>
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7.1.1.5 SNMP Configuration → Storage

Figure 46: SNMP Configuration - Storage

1	[HDD Missing and SMART Error]	<p>Check the corresponding storage devices to activate the Trap.</p> <p>Note: When Trap is On, a trap will be sent to the SNMP Manager if the system cannot detect the specified device.</p>
2	[HDD Temperature Threshold]	<p>Set the desired threshold temperature for respective storage device by using the [▲] and [▼] buttons.</p> <p>Check the corresponding storage devices to activate the Trap.</p> <p>Note: When Trap is On, a trap will be sent to the SNMP Manager when the threshold temperature is reached.</p>
3	[RAID Device missing and degraded status]	<p>Check RAID Device missing and degraded status to activate the Trap.</p> <p>Note: When Trap is On, a trap will be sent if the RAID Device is missing or degraded.</p>
4	[Mount Data Storage]	<p>Check Mount Data Storage to activate the Trap.</p> <p>Note: When Trap is On, a trap will be sent if the data storage is not mounted on the system.</p>

5	[Mount Capacity Threshold (for data in %)]	Set the mount capacity threshold value for data (in percentage) Note: When Trap is On, a trap will be sent if the mount capacity threshold value is reached.
[6	[Send detailed S.M.A.R.T. traps]	Enables the sending of SNMP traps when specific hard disk S.M.A.R.T. attributes change

7.1.1.6 SNMP Configuration → Sensor

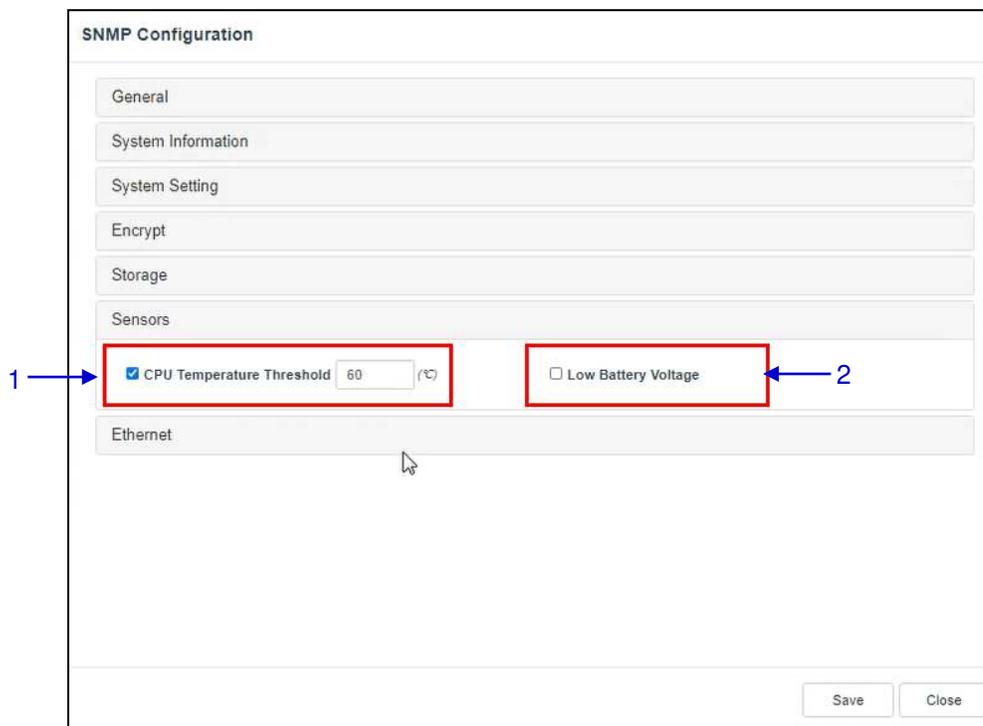


Figure 47:SNMP Configuration - Sensor

1	[CPU Temperature Threshold]	Set the threshold temperature required for the CPU sensors by typing in the field or using an on-screen keyboard. Check CPU Temperature Threshold to activate the Trap. Note: When Trap is On, a trap is sent if the CPU temperature exceeds the maximum threshold temperature.
2	[Low Battery Voltage]	Check Low Battery Voltage to activate this trap. Note: When Trap is On, a trap is sent if the IMB battery voltage falls below the minimum voltage limit.

7.1.1.7 SNMP Configuration → Ethernet

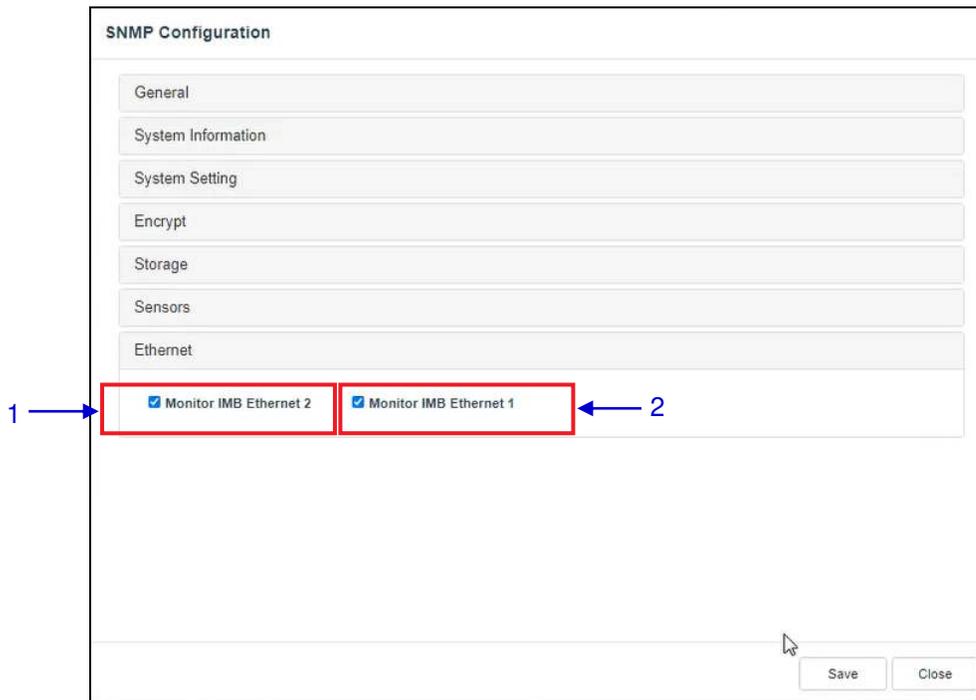


Figure 48: SNMP Configuration - Ethernet

1	[Monitor IMB Ethernet 2]	Enables sending an SNMP trap if the system detects that the selected network interface is down.
2	[Monitor IMB Ethernet 1]	Enables sending an SNMP trap if the system detects that the selected network interface is down.

7.2 Playback

The **Playback** sub-tab is used to configure video, audio, subtitle and other playback settings on the SR-1000.

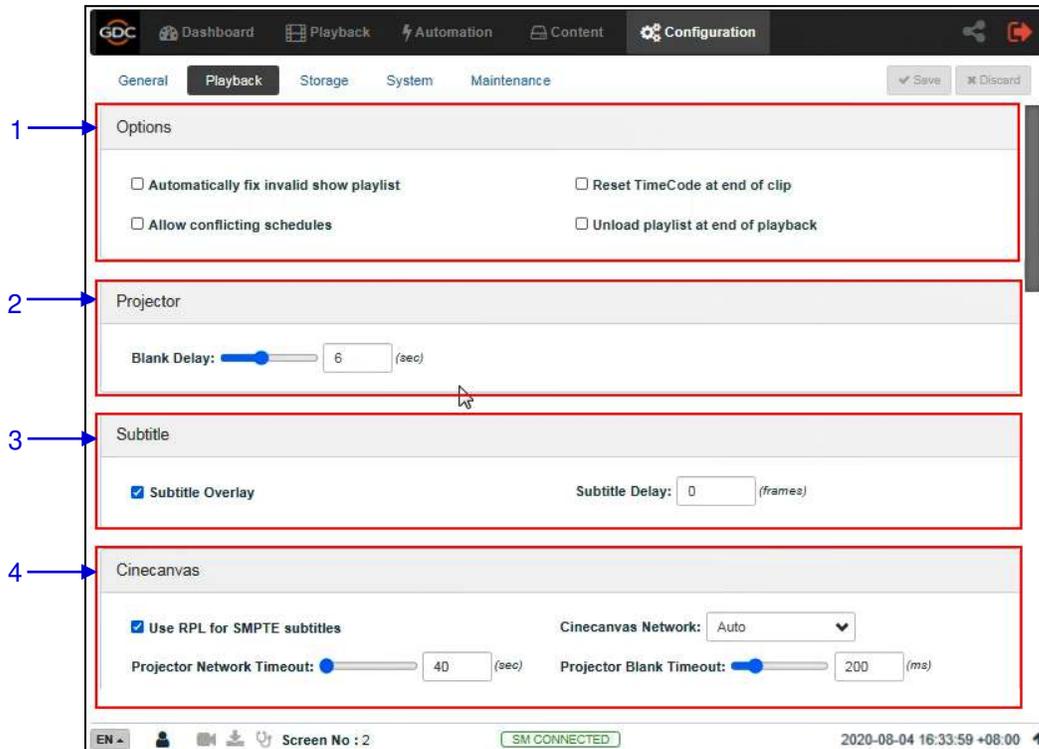


Figure 49: Playback Configuration (1)

1	[Options]	
	Automatically fix invalid show playlist	If this option is enabled, non-playable CPLs in a show playlist will be skipped during playback.
	Allow conflicting schedules	Enabling this option allows addition of schedules with overlapping start or end times.
	Reset TimeCode at end of clip	Enabling this option resets the timecode (LTC) to 0 at end of each CPL.
	Unload playlist at end of playback	Enabling this option will automatically unload the SPL at the end of playback.

2	[Projector]	
	Blank Delay:	This feature delays both video and audio output by the amount of time (in sec.) set to allow the projector/display to sync with the video output of the Server.
3	[Subtitle]	
	Subtitle Overlay	When this option is enabled, subtitles are displayed using server rendering. When this option is disabled, CineCanvas is used for subtitle display.
	Subtitle Delay:	Enter a Subtitle Delay in number of frames, entering a negative number will advance the subtitles by that number of frames.
4	[Cinecanvas]	
	Use RPL for SMPTE subtitles	Send a SMPTE-compatible Resource Presentation List (RPL) instead of an Interop-compatible Subtitle Presentation List to the projector for CineCanvas subtitles. This is only enabled when SMPTE subtitles are available for the CPL.
	Cinecanvas Network	This drop-down allows selection of the network interface which should be used for providing CineCanvas subtitles to the Projector. The following network interfaces are available: <ul style="list-style-type: none"> • Auto • Internal • IMB Ethernet 2 By default; the Auto option is selected, which should work in most cases.
	Projector Network Timeout	Timeout (in sec.) for communication with the projector.
	Projector Blank Timeout	Select the blank time (in sec.) of the projector during change of PCF or format. This is to prevent noise when the PCF or format is changed.

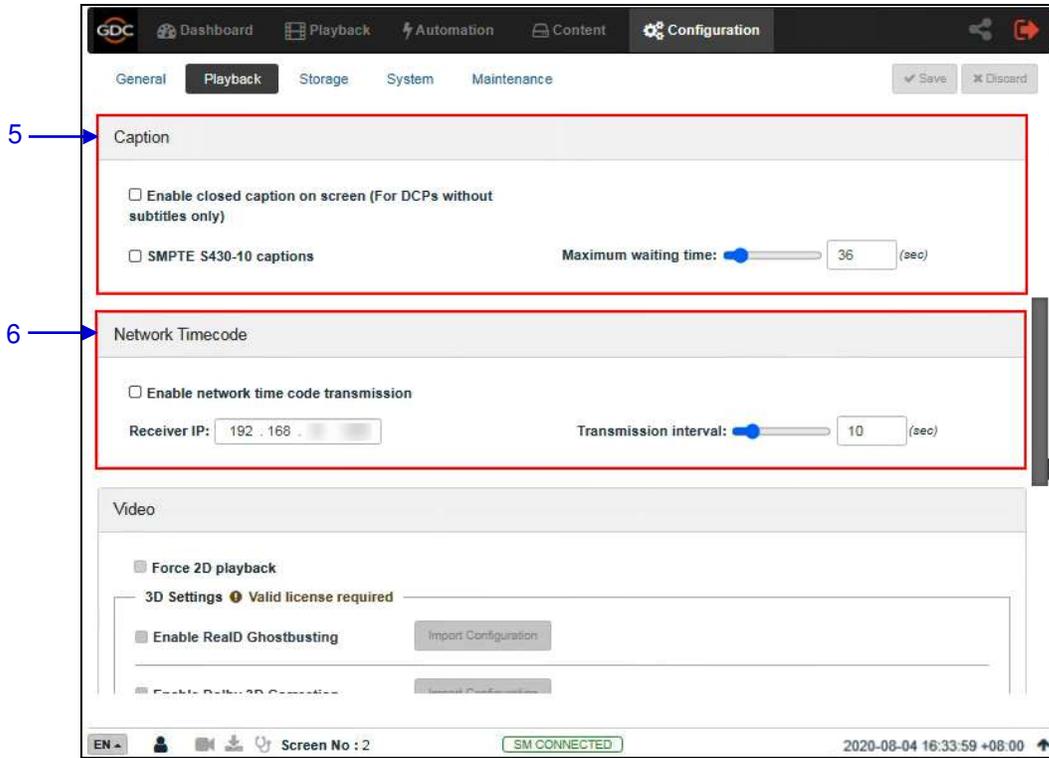


Figure 50: Playback Configuration (2)

5	[Caption]	
	Enable closed caption on screen (For DCPs without subtitles only)	Enabling this option will allow closed captions to be displayed on-screen, if the CPL doesn't have any subtitles.
	SMPTE S430-10 captions	Enable communication with a closed caption device that supports SMPTE 430-10 (USL CCE-100, etc.). Note: The closed caption device must be configured to connect to the SR-1000.
	Maximum waiting time	Specifies the maximum time (in sec.) to wait for the closed caption device to report it is ready, before starting playback.
6	[Network Timecode]	
	Enable network time code transmission	Activate transmission of playback time-code over UDP.
	Receiver IP	Enter the IP of the receiver of time-code transmission of UDP.
	Transmission interval	Indicates the time interval (in sec.) between transmissions.

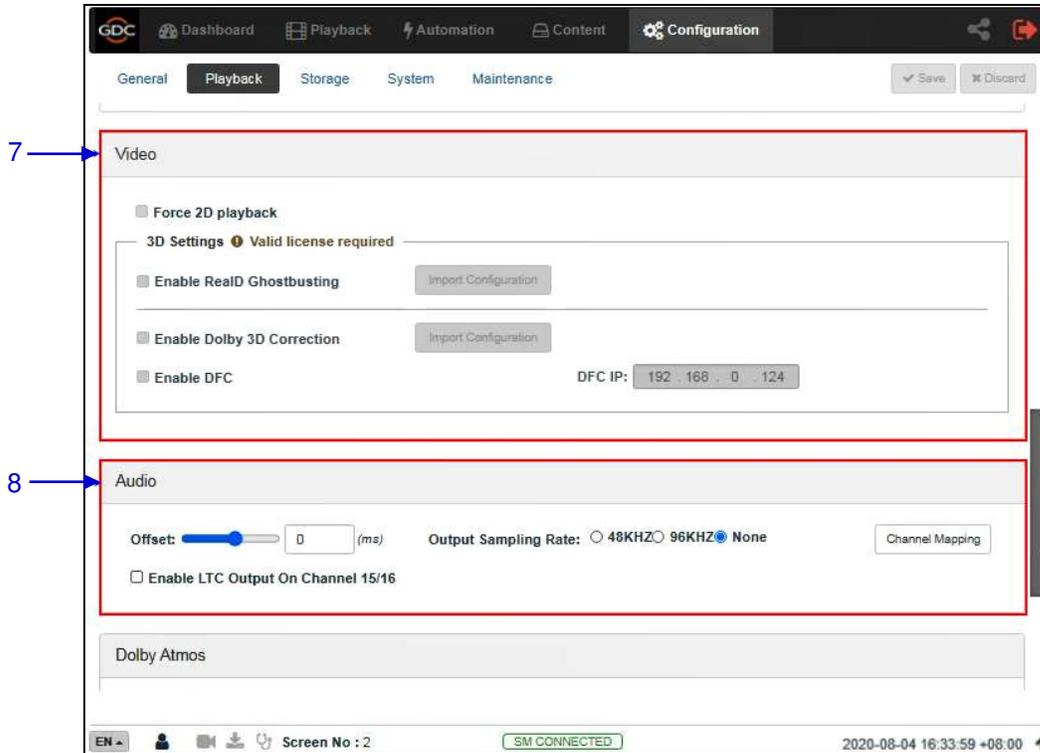


Figure 51: Playback Configuration (3)

7	[Video]	
	<p>Force 2D playback</p> <p>Enable RealD Ghostbusting/ Enable Dolby 3D Correction/ Enable DFC</p>	<p>Force 2D playback for 3D content. A valid license is required to enable this option.</p> <p>RealD Ghostbusting, Dolby 3D Color Correction and DFC are calibration functions for corresponding 3D technologies.</p> <p>Valid license(s) are required to enable these options.</p>
8	[Audio]	
	<p>Offset</p> <p>Output Sampling Rate</p>	<p>Specify an audio delay during playback. A negative audio delay will cause audio to be played ahead of video. A positive audio delay will cause audio to be played behind video.</p> <p>Change audio output sampling rate. Output audio sampling rate can be fixed at 48kHz or 96kHz for all content, or it can match the content's audio sampling rate (option 'None'). If the output sampling rate is set to a fixed value (48kHz or 96kHz), content audio is re-sampled if it does not match the output sampling rate.</p> <p>Note: When the Audio Processing License is installed, only 48kHz output sampling is supported. Refer to Section 8 for more details.</p>

<p>Channel Mapping</p>	<p>Use the audio channel mapping interface to map content audio channels to different audio output channels.</p> <p>Refer to Section 7.2.1 for details related to Audio Channel Mapping.</p>
<p>Enable LTC Output on Channel 15/16</p>	<p>Enables LTC output on Channel 15/16 would be needed for supporting 4D devices.</p>

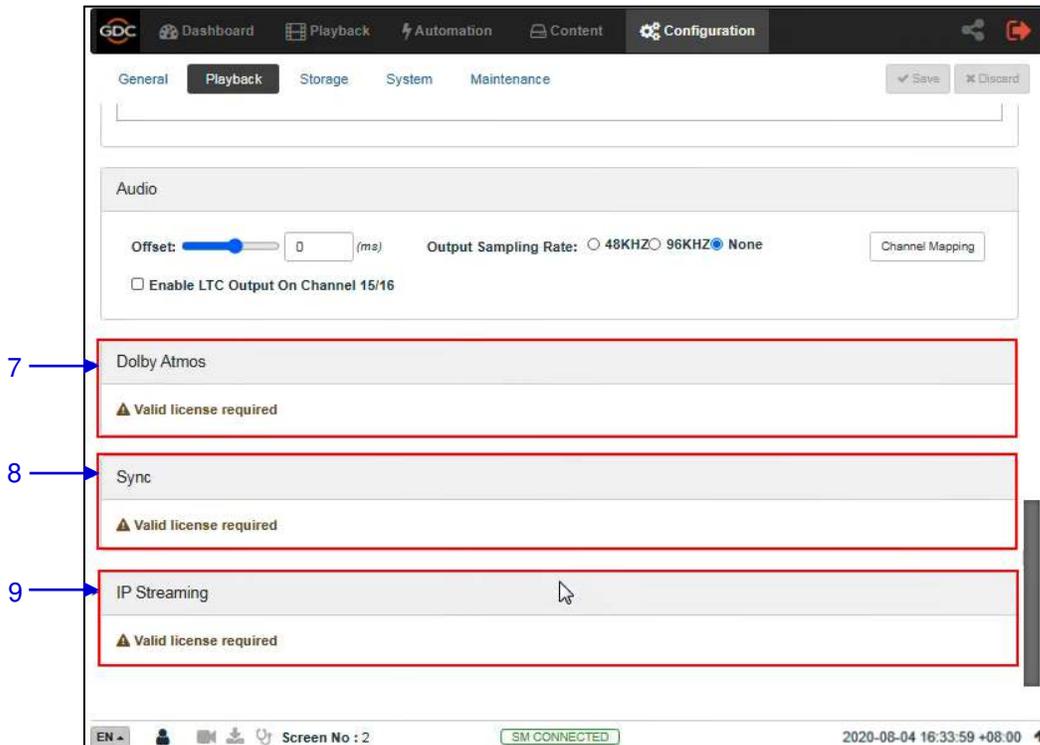


Figure 52: Playback Configuration (4)

<p>7</p>	<p>[Dolby Atmos]</p>	<p>Configure the SR-1000 to work with a Dolby CP850 sound processor with Dolby Atmos.</p> <p>A valid license is required to enable Dolby Atmos support on the SR-1000:</p> <p>Check Enable to enable Dolby Atmos support.</p> <p>Set the Atmos Data IP and Atmos TLS IP according to network requirements.</p>
<p>8</p>	<p>[Sync]</p>	<p>A valid license is required for Sync settings. (Refer to Section 10.1 for details.)</p>
<p>9</p>	<p>[IP Streaming]</p>	<p>A valid license is required to enable IP Streaming on the SR-1000.</p>

7.2.1 Audio Channel Mapping

Using **Audio Channel Mapping**, audio output from the SR-1000 can be re-mapped to appear on different audio channels.

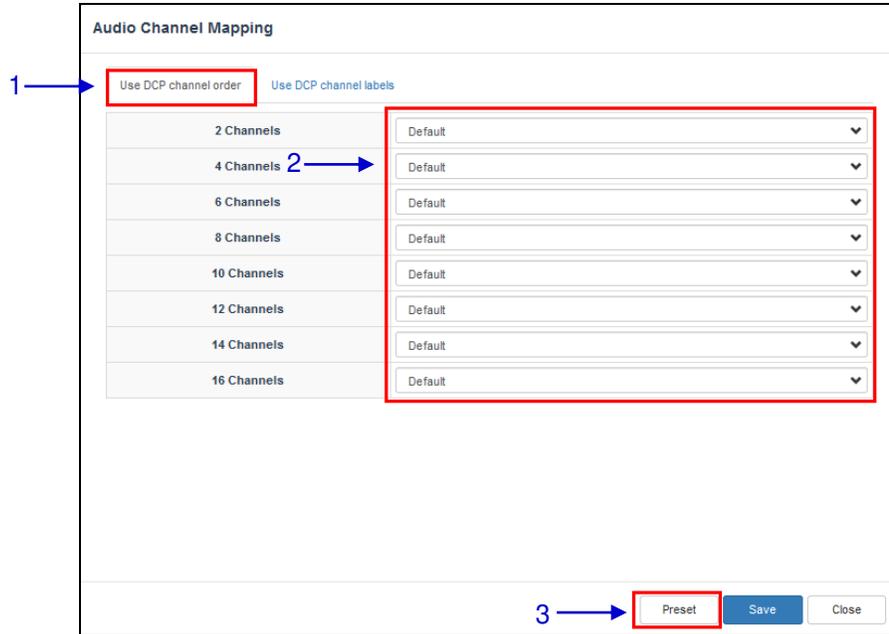


Figure 53: Using DCP Channel order

1	Audio output based on the number of audio channels in the audio track of the DCP can be configured in this tab.
2	The preset for the number of audio channels in the audio track can be changed here.
3	Use the Preset button to configure audio presets. Refer to Section 7.2.1.1 for details

Audio Channel Mapping

Use DCP channel order Use DCP channel labels

L	Output01	HI	Output12	CH10	Output10
R	Output02	VI-N	Output13	CH11	Output11
C	Output03	CH01	Output01	CH12	Output12
LFE	Output04	CH02	Output02	CH13	Output13
Ls	Output05	CH03	Output03	CH14	Output14
Rs	Output06	CH04	Output04	CH15	Output15
Rls	Output07	CH05	Output05	CH16	Output16
Rrs	Output08	CH06	Output06	DBox1	Output14
Lc	Output09	CH07	Output07	DBox2	Output15
Rc	Output10	CH08	Output08	Lss	Output01
Cs	Output11	CH09	Output09	Rss	Output01

Use SMPTE audio labels

Preset Save Close

Figure 54: Using DCP Channel labels

1	Audio output based on SMPTE audio channel configuration labels can be configured in this tab,
2	Audio output for individual SMPTE audio channel labels can be changed here.
3	Check the Use SMPTE audio labels checkbox to route audio output based on SMPTE audio channel configuration labels.

7.2.1.1 Preset

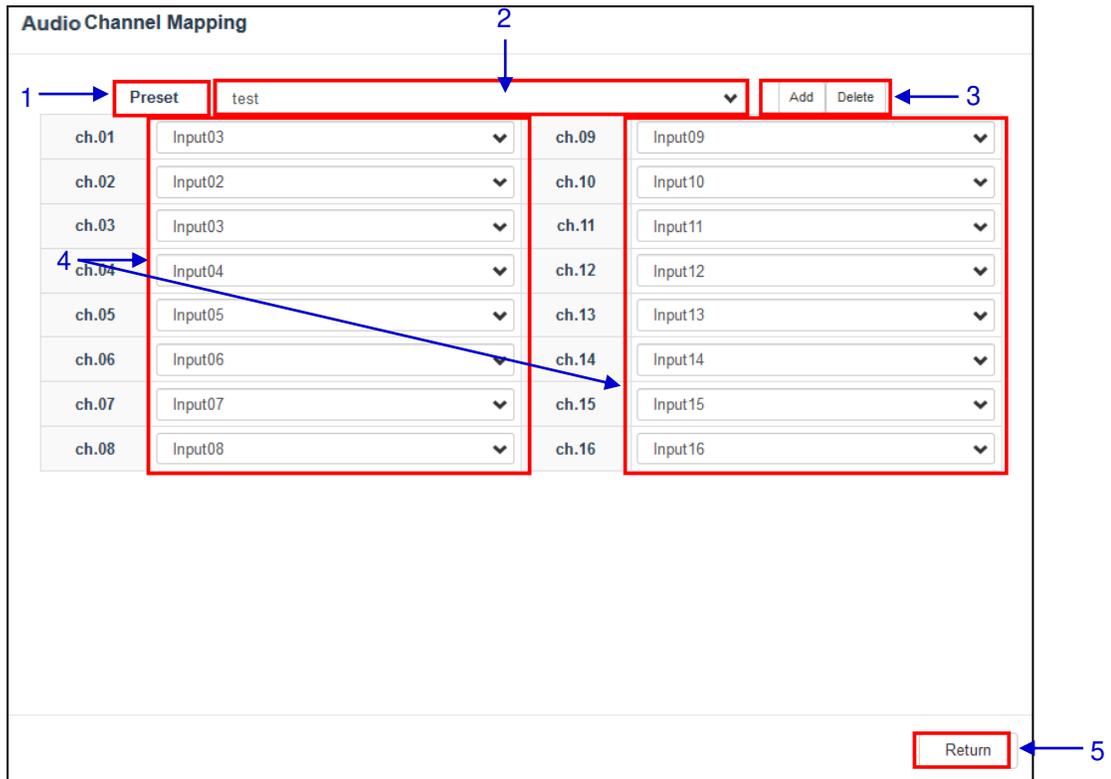


Figure 55: Preset

1	Audio channel output presets can be configured in this tab.
2	Select a preset to view or change preset settings
3	Add a new preset or delete the current preset.
4	Audio configuration for an audio preset can be changed here.
5	Click Return to return to Audio Channel Mapping configuration.

7.3 Storage

The **Storage** sub-tab is used to configure the storage settings on the SR-1000.

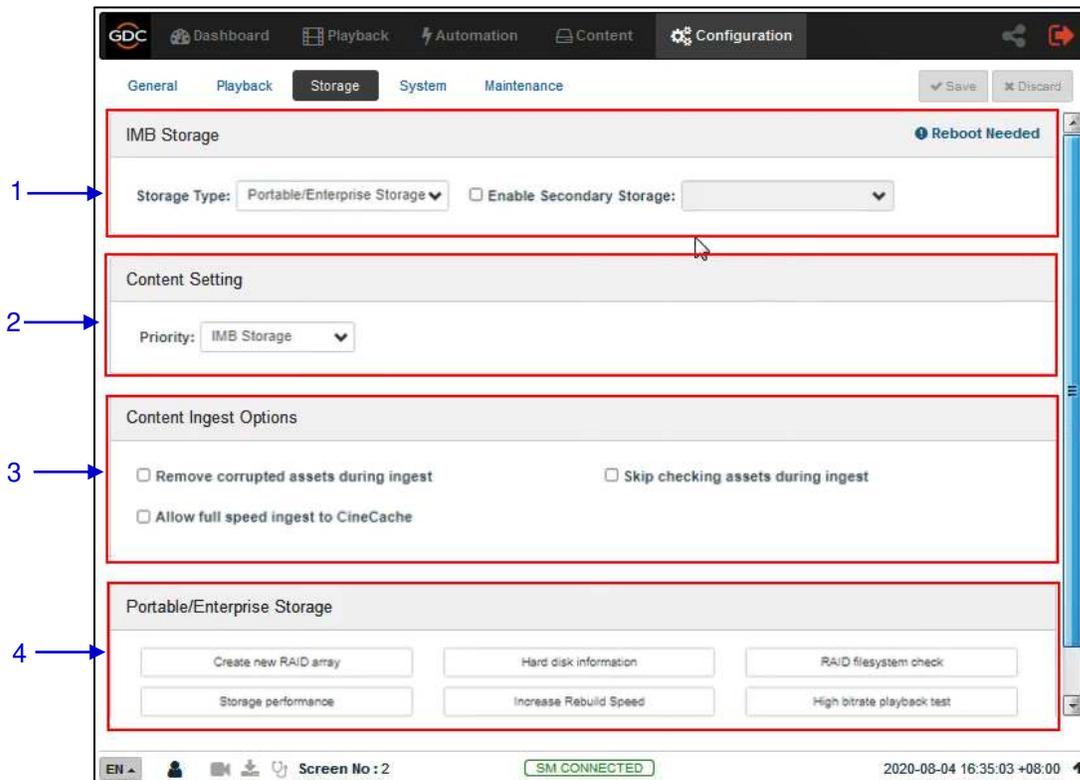


Figure 56: Storage Configuration

1	[IMB Storage]	
Storage Type	<p>Configure the primary storage for the SR-1000.</p> <ul style="list-style-type: none"> • NAS: Configure a Network-Attached Storage(NAS) as data storage. • CineCache™: Select this option to use the built-in CineCache™ as storage. Note: This is only available on SR-1000 with Cinecache™ installed. • Portable/Enterprise Storage: Select this option to configure the SR-1000 to use Portable Storage or Enterprise Storage. <p>Note: Reboot is needed after the storage type is changed.</p>	
Enable Secondary Storage	<p>For any SR-1000 with CineCache™, you can setup a fallback mechanism for the primary Storage Type by checking the Enable Secondary Storage option and selecting the storage type from the drop-down</p>	

		 <p>As shown above, the 'Portable/Enterprise Storage' is set as the Primary storage while the 'CineCache' is set as the Secondary storage.</p> <p>Fallback to Secondary storage will occur under the following conditions:</p> <ol style="list-style-type: none"> 1. Primary storage becomes unavailable (e.g. Hardware error). 2. Dropped frames are detected during playback from Primary storage. <p>If Secondary storage is enabled, you are given an option during content ingest to either ingest content to the Primary or to both the Primary and Secondary storage at the same time, as mentioned earlier in Section 6.5.1.1.</p>
2	<p>[Content Setting]</p> <p>Priority</p>	<p>Set the storage priority used for playback</p> <ul style="list-style-type: none"> • Attached Storage: Playback will use attached storage (live play) for playback. If there are issues with live play, playback will fall back to local storage. <p>This setting should be selected for centralized playback with the SCL Servers'.</p> <ul style="list-style-type: none"> • IMB Storage: Playback will use local storage for playback. <p>Note: 'CineCache' should be selected as Primary Storage in Storage Type only when used with Priority as 'Attached Storage'.</p> <p>If Priority is set as 'IMB Storage', then 'Portable/Enterprise Storage' should be selected as Primary Storage in Storage Type with the option of selecting 'CineCache' as Secondary Storage.</p>
3	<p>[Content Ingest Options]</p> <p>Remove corrupted assets during ingest</p> <p>Skip checking assets during ingest</p> <p>Allow full speed ingest to CineCache</p>	<p>With this option enabled, any corrupted assets encountered during ingestion are removed.</p> <p>With this option enabled, the Digital Cinema Package assets will not be checked for integrity during download.</p> <p>This option will reduce ingestion time but decrease the reliability of the ingestion.</p> <p>With this option enabled, content ingest to the <u>CineCache</u> will take place at full speed.</p>

		<p>Note: This option should ONLY be used when '<i>CineCache</i>' is chosen as the primary storage in Storage Type and the Priority is set to '<i>Attached Storage</i>' (for centralized playback with SCL Servers).</p> <p>In case, the Storage Type chosen is '<i>Portable/Enterprise Storage</i>', content ingest will take place at normal speed.</p>
4	[Portable/Enterprise Storage]	
		<p>The following actions can be performed:</p> <ul style="list-style-type: none"> • Create new RAID array • Hard disk information • RAID filesystem check • Storage performance • Increase Rebuild Speed • High bitrate playback test <p>(Refer to Section 7.3.1 for more details on the above-listed actions)</p>

* SCL or Streaming Content Library Servers, which are used in the GDC Cinema Automation 2.0 environment.

7.3.1 Actions of Portable/Enterprise Storage

7.3.1.1 Create new RAID array

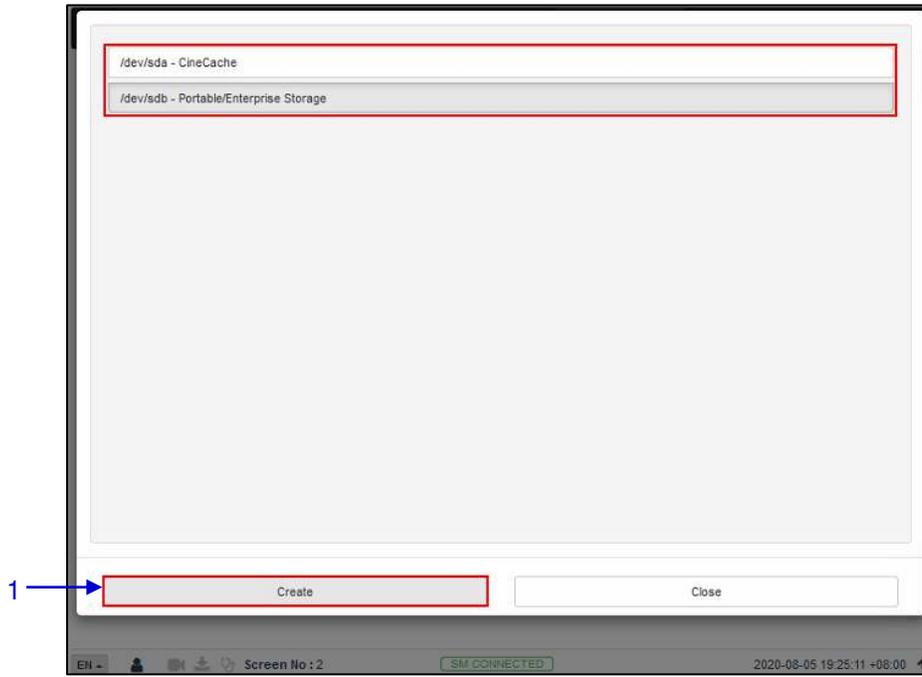


Figure 57: Create new RAID Array

1	[Create new RAID array]	<p>Clicking on the Create new RAID array option opens a pop-up window. Select the drive name and click on Create.</p> <p>The RAID creation process will be initiated and the progress will be shown.</p> <p>Once complete, click on Close to return to the Storage menu.</p>
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7.3.1.2 Hard disk information

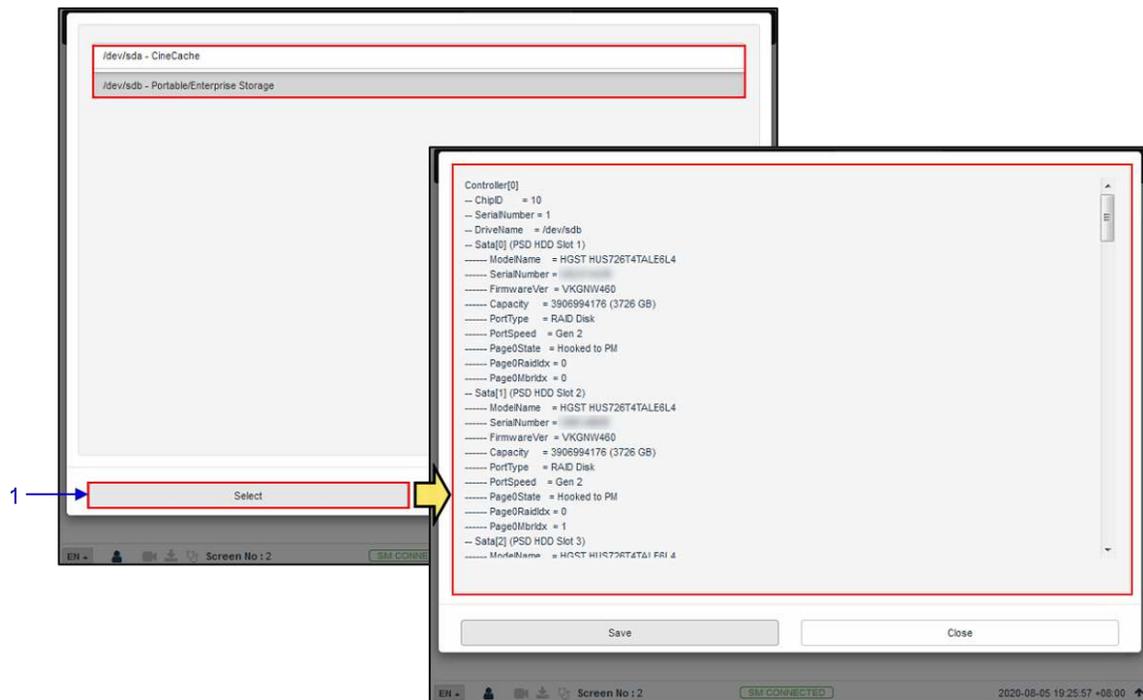


Figure 58: Hard Disk Information

1	[Hard disk information]	<p>Clicking on the Hard Disk information option opens a pop-up window. Select the disk and click on Select.</p> <p>Information about the selected disk will be displayed on-screen.</p> <p>Click on Save to save the results to the local computer/ laptop (in the form of a .txt file).</p> <p>Click on Close to return to the Storage menu.</p>
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7.3.1.3 RAID filesystem check

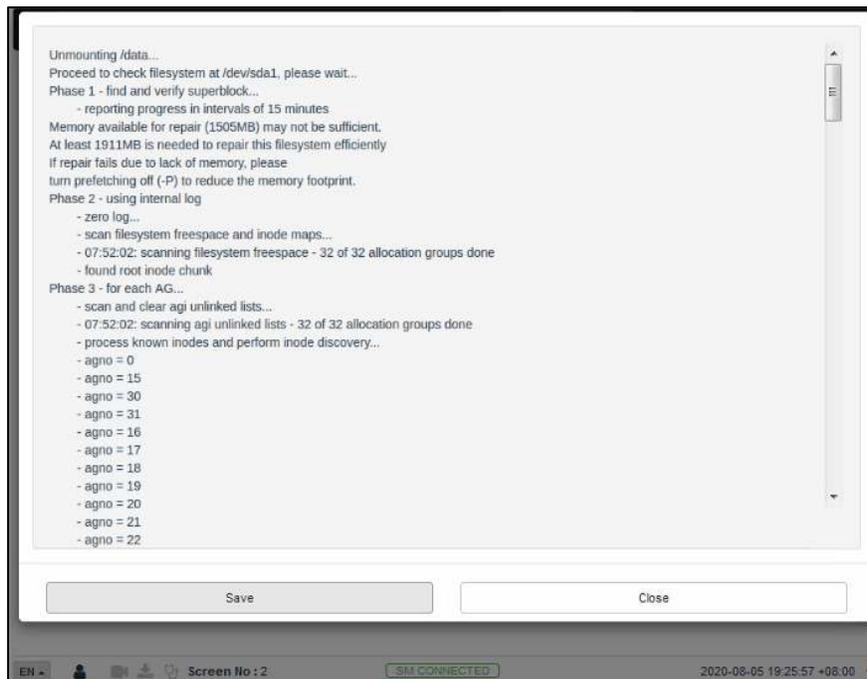


Figure 59: RAID Filesystem check

1	[RAID Filesystem check]	<p>Clicking on the RAID Filesystem check option opens a pop-up window and the file system check process will be initiated.</p> <p>Information about the filesystem check progress will be displayed on screen.</p> <p>Click on Save to save the results to the local computer/ laptop (in the form of a .txt file).</p> <p>Click on Close to return to the Storage menu.</p>
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7.3.1.4 Storage Performance

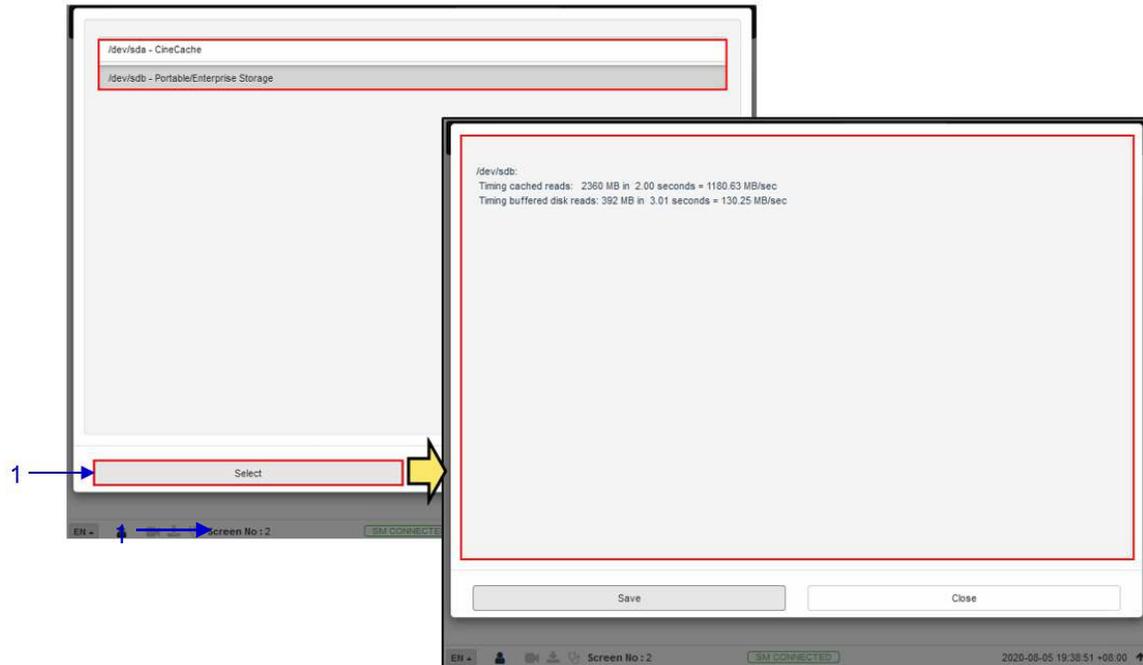


Figure 60: Storage Performance

1	[Storage performance]	<p>Clicking on the Storage Performance option opens a pop-up window.</p> <p>Select the disk and click on Select. Information about the hard disk performance will be displayed on screen.</p> <p>Click on Save to save the results to the local computer/ laptop (in the form of a .txt file).</p> <p>Click on Close to return to the Storage menu.</p>
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7.3.1.5 Increase Rebuild Speed

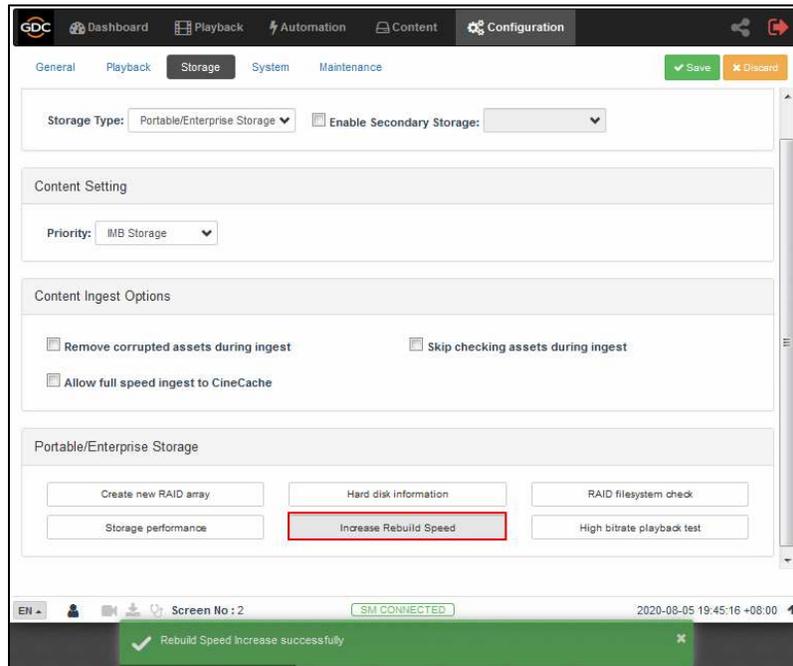


Figure 61: Increase Rebuild Speed

1	[Increase Rebuild Speed]	<p>If the RAID array is being rebuilt during playback, the rebuild speed will slow down significantly.</p> <p>To resume highest rebuild speed after playback is finished, click on Increase Rebuild Speed.</p> <p>This will immediately set RAID array to rebuild at highest speed.</p>
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7.3.1.6 High bitrate playback test

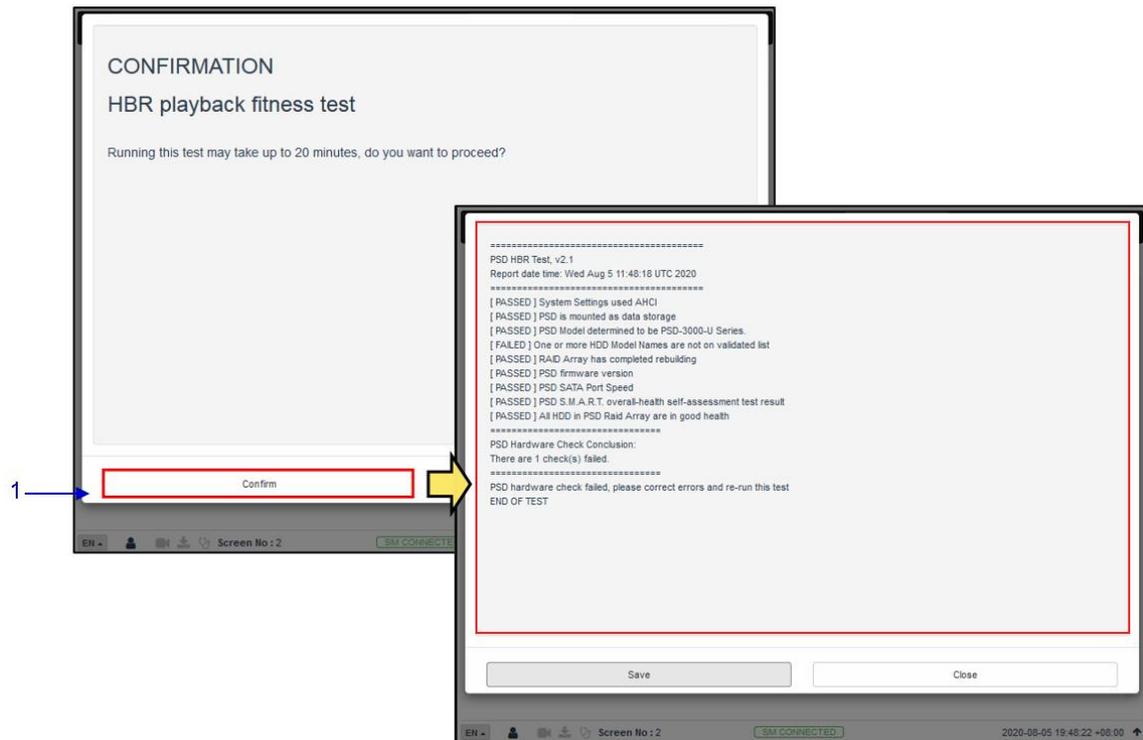


Figure 62: High Bitrate Playback Test

1	[High bitrate playback test]	<p>Clicking on the High bitrate playback test option opens a pop-up window.</p> <p>Click on Confirm to initiate the test. The progress will be displayed on-screen.</p> <p>Once complete, click on Save to save the results to the local computer/ laptop (in the form of a .txt file).</p> <p>Click on Close to return to the Storage menu.</p>
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7.4 System

The **System** sub-tab is used to configure the system settings on the SR-1000.

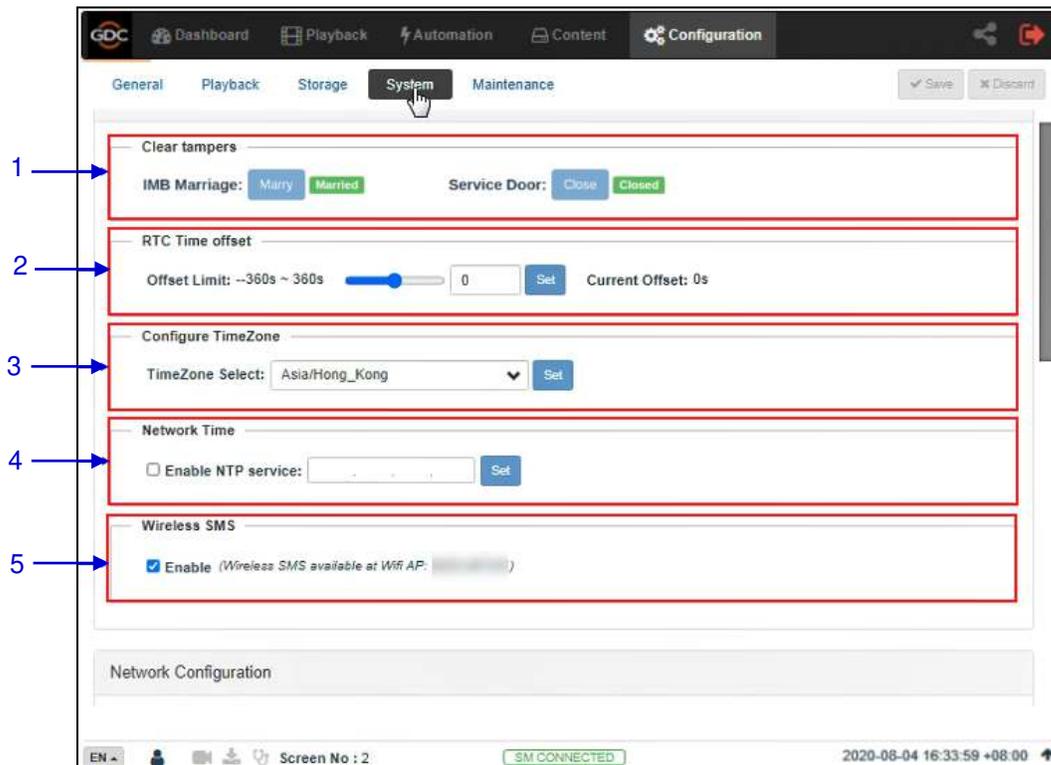
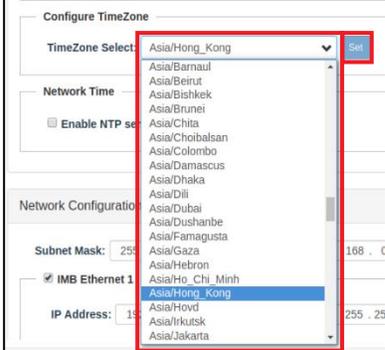


Figure 63: System Configuration (1)

1	[Clear tampers]	
	<p>IMB Marriage</p> <p>Service Door</p>	<p>Displays the marriage and service door tamper status of the IMB.</p> <p>Click the Marry button to clear the Marriage Tamper.</p> <p>Click the Close button to clear the Service Door tamper.</p> <p>Note: The SR-1000 will not allow playback if these tampers are not cleared.</p> <p>For more details regarding clearing the tamper errors, refer to the SR-1000 Installation Manual.</p>
2	[RTC Time offset]	
	Offset Limit	<p>Make adjustments to the time on the Server.</p> <p>In accordance with DCI specifications, the SR-1000 allows a time offset from <u>-360s to +360s</u> i.e., <u>plus or minus 6 minutes per calendar year</u>.</p>

3	<p>[Configure TimeZone]</p> <p>TimeZone Select</p>	<p>Select specific area/country from the dropdown list and click Set to configure the timezone.</p> 
4	<p>[Network Time]</p> <p>Enable NTP service</p>	<p>Sync the Server time with an external NTP server.</p> <p>Select Enable NTP service. Enter the specified time server's IP address and click Set to start using the NTP server.</p>  <p>Note: Time adjustments will be limited in accordance with DCI specifications (+/-360 seconds).</p>
5	<p>[Wireless SMS]</p>	<p>Enable/disable the wireless Access Point of the SR-1000.</p> <p>The Access Point of the SR-1000 can be used to wirelessly access the Web UI, using a Wi-Fi enabled device.</p> <p>Note: The name of the wireless Access Point will appear in the format "SMS-XXXXXX" where XXXXXX represents the Serial Number of the SR-1000.</p>

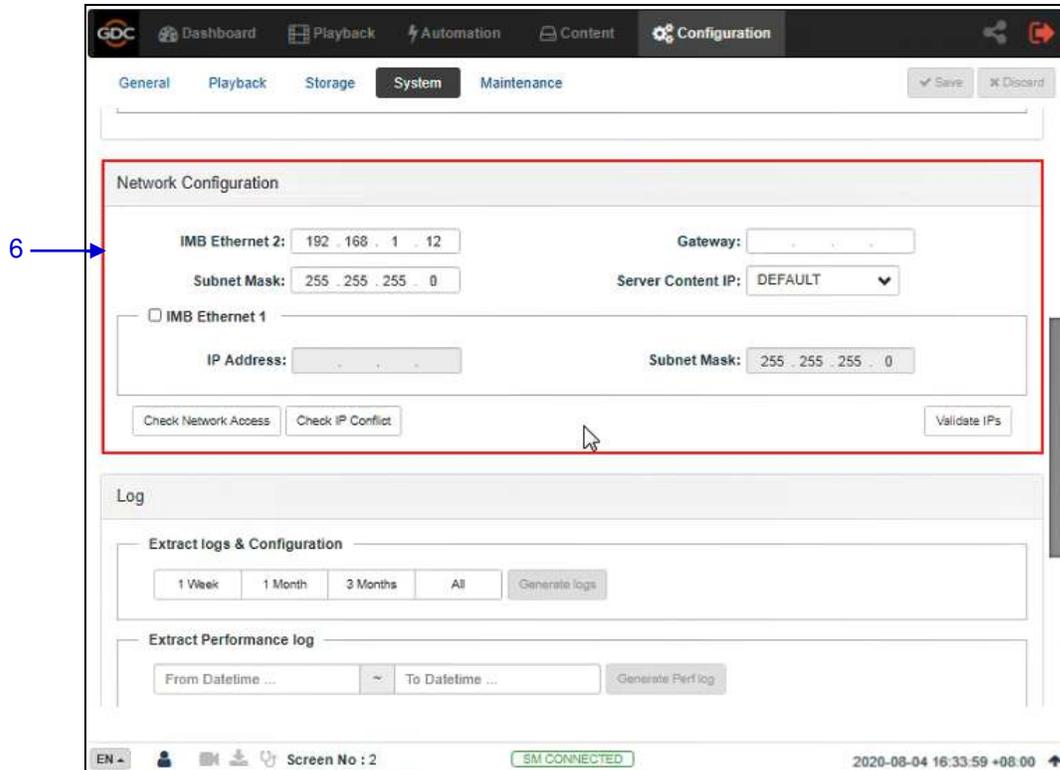
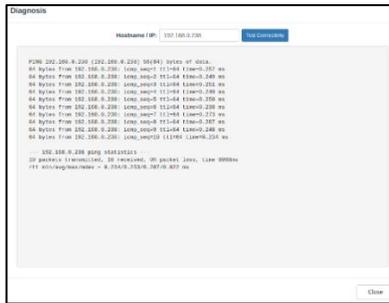


Figure 64: System Configuration (2)

6	[Network Configuration]	
	<p>Subnet Mask</p> <p>Gateway</p> <p>IMB Ethernet 2</p> <p>IMB Ethernet 1</p> <p>Validate IP's</p>	<p>Specify the subnet mask.</p> <p>Specify the network gateway for the SR-1000.</p> <p>This is the main IP address of the SR-1000. The Web UI can be accessed using this IP address.</p> <p>Enable this to set up a secondary network on the SR-1000. This is usually connected to a Content network. When it is checked, IP address and Subnet Mask can be set.</p> <p>After setting the above network configurations, click Validate IPs to check the correctness of the IPs entered. A pop-up opens displaying the result.</p> <div data-bbox="743 1602 1247 1835" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Validate IPs PASS</p> <p>Current IMB Ethernet 2 IP: 192.168.0.188</p> <p>Current gateway:</p> <p>Target IMB Ethernet 2 IP: 192.168.0.188</p> <p>Target gateway:</p> <p style="text-align: right;">OK</p> </div>

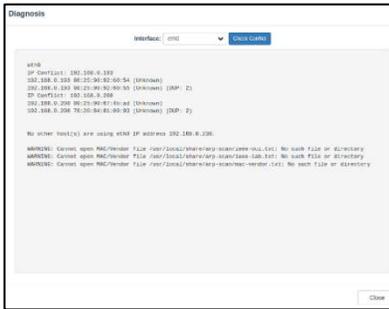
Check Network Access

Click to open the pop-up window. Enter the **Hostname / IP:** 192.168.0.XX and click **Test Connectivity**.



Check IP Conflict

Click to open the pop-up window. Select **Interface** from dropdown "eth0" or "eth1" and click **Check Conflict**.



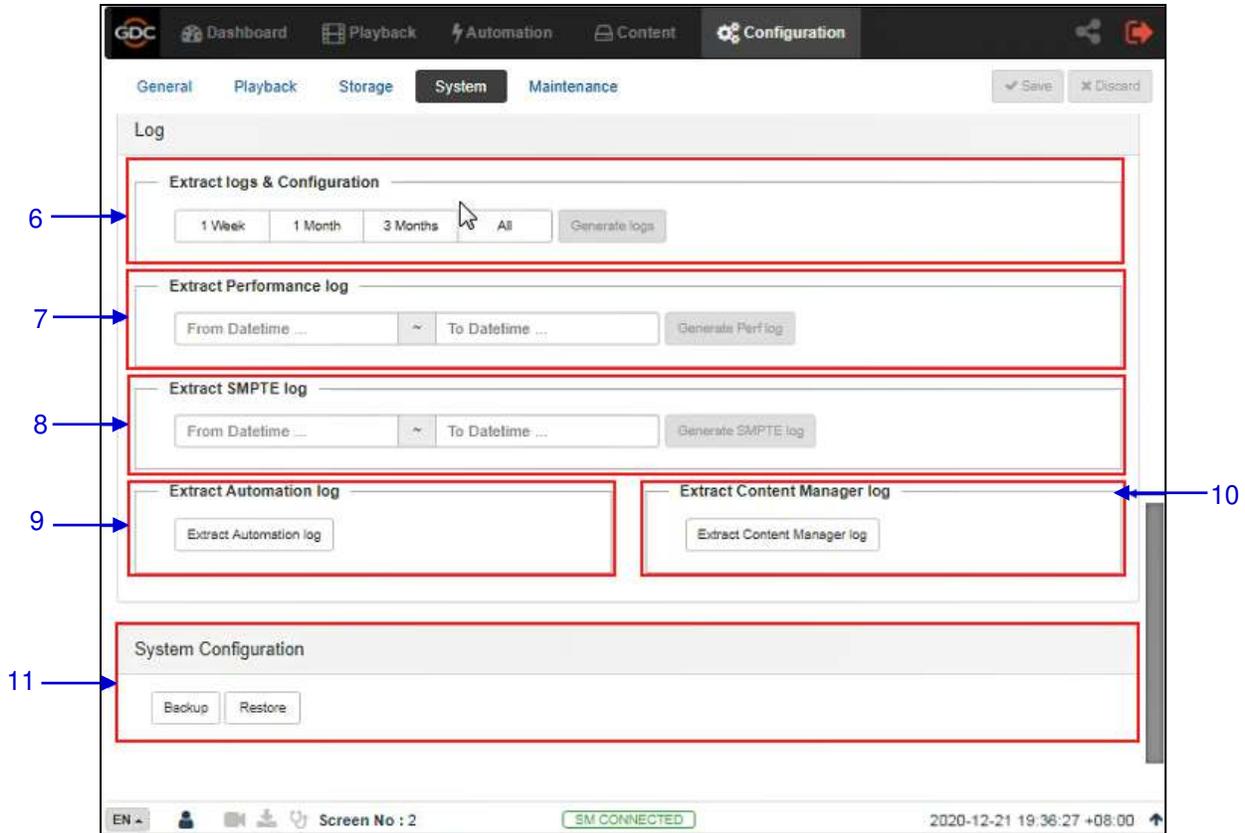


Figure 65: System Configuration (3)

6	[Extract logs and configuration]	<p>This allows the operator to extract debug logs from the SR-1000 for analysis by GDC personnel.</p> <p>Time duration includes 1 Week, 1 Month, 3 Months and All.</p> <p>After selecting the time duration, Generate logs button will be enabled. A pop-up window will be shown to display the log extraction progress.</p> <p>After log generation, a pop-up window will be shown to save or open the extracted file.</p>
7	[Extract Performance Log]	<p>This allows the operator to extract performance logs from the SR-1000.</p> <p>After selecting the Date/Time, Generate Perf Log button will be enabled. A pop-up window will be shown to display the log extraction progress.</p> <p>After log generation, a pop-up window will be shown to save or open the extracted file.</p>
8	[Extract SMPTE Log]	<p>This allows the operator to extract SMPTE audit logs from the SR-1000.</p> <p>After selecting the Date/Time, Generate SMPTE Log button will be enabled. A pop-up window will be shown to display the log extraction progress.</p> <p>After log generation, a pop-up window will be shown to save or open the extracted file.</p>

9	[Extract Automation Log]	<p>Extract automation logs from the SR-1000.</p> <p>After clicking Extract Automation Log button, a pop-up window will be shown to save the file.</p>
10	[Extract Content Manager Log]	<p>Extract Content Management logs from the SR-1000.</p> <p>After clicking Extract Content Manager Log button, a pop-up window will be shown to save the file.</p>
11	[System Configuration]	
	<p>Backup</p> <p>Restore</p>	<p>Backup and Restore options are available.</p> <p>The Backup option saves the SR-1000 configuration to a backup file. A pop-up window will be shown to save the configuration file.</p> <p>The Restore option will restore the SR-1000 configuration from a backup file. Users can upload the configuration files</p>

7.5 Maintenance

The **Maintenance** sub-tab is used to install software upgrades on the system. Warranty information is also displayed under this sub-tab.

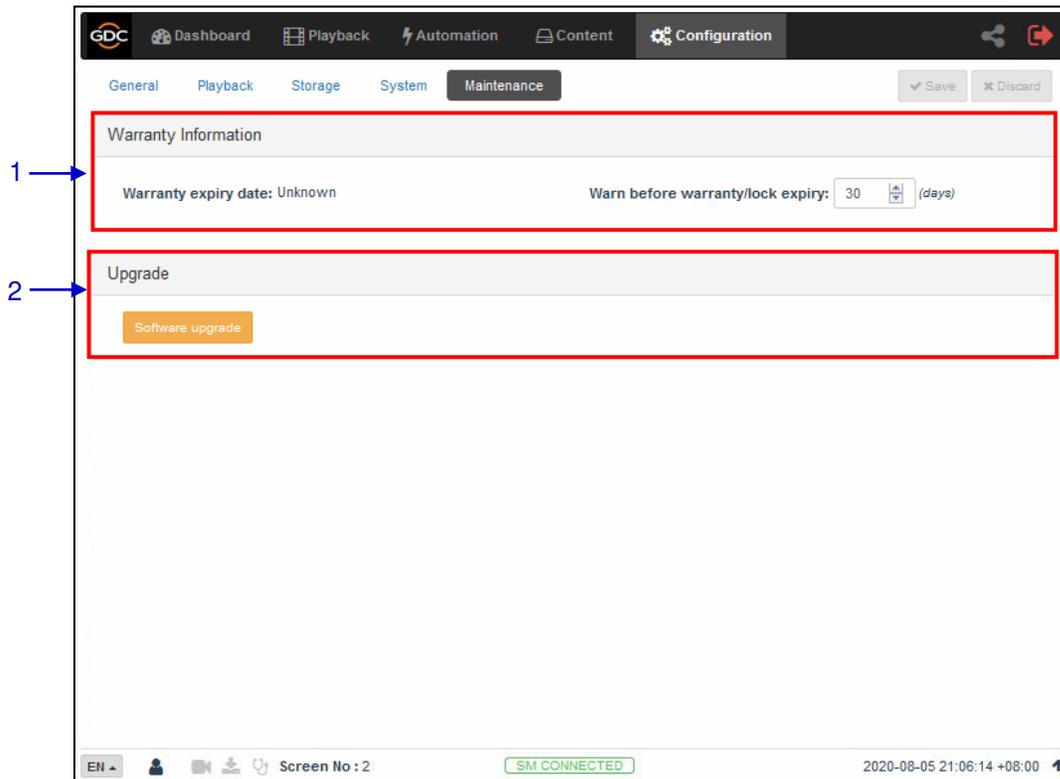


Figure 66: Maintenance Configuration

1	[Warranty Information]	
	Warranty expiry date	Warranty expiry date is shown.
	Warn before warranty/lock expiry	The number of days in advance to issue a warning before warranty/lock expiry can be set.
2	[Upgrade]	
	Software Upgrade	When this button is clicked, a pop-up window will be shown with an option to choose and upload any GDC issued upgrade files. Refer to Section 7.5.1 for more details.

7.5.1 Software Upgrade

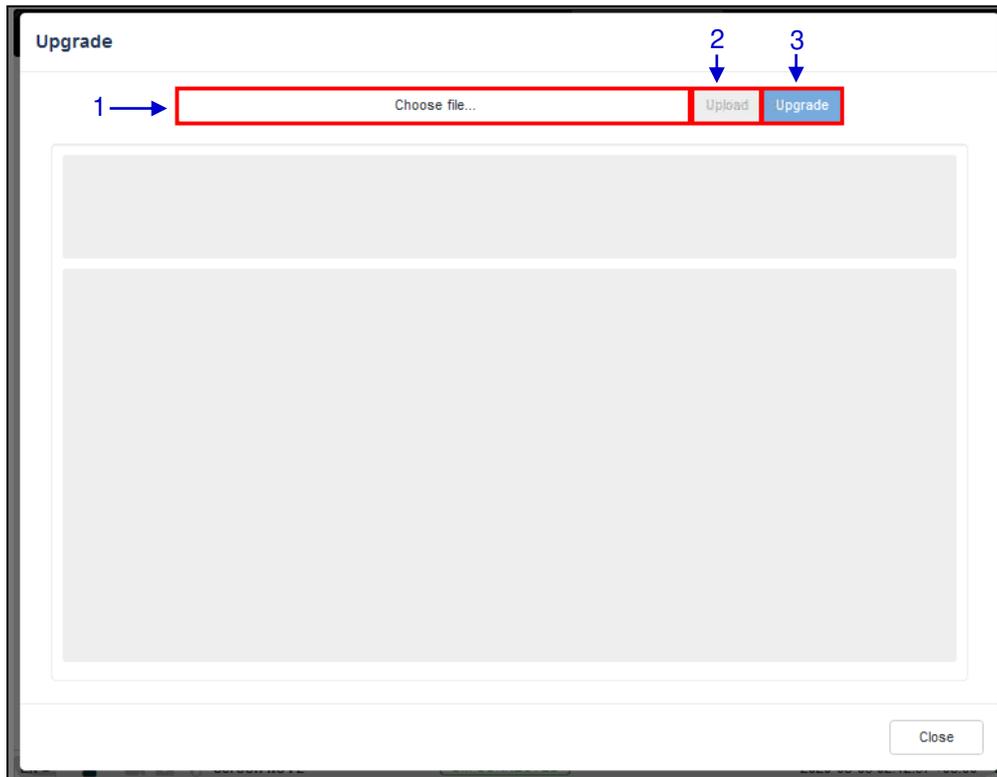
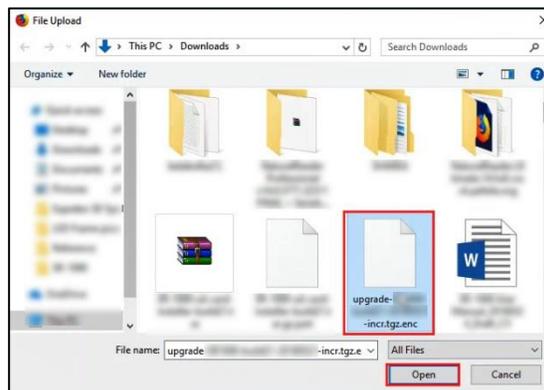


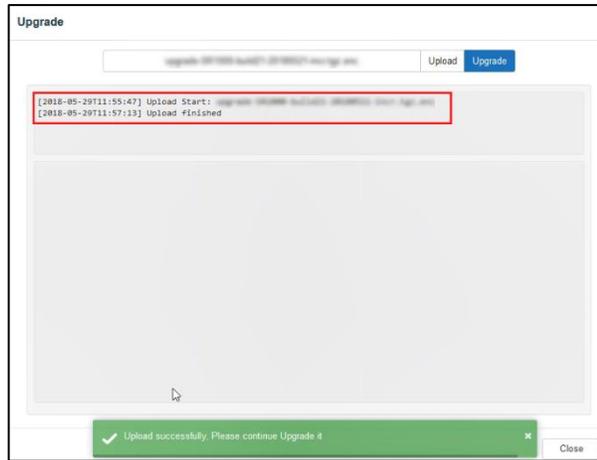
Figure 67: Software Upgrade

- 1** In order to initiate the software upgrade process, the relevant upgrade file needs to be downloaded to the laptop or PC which is being used to access the Web UI interface.

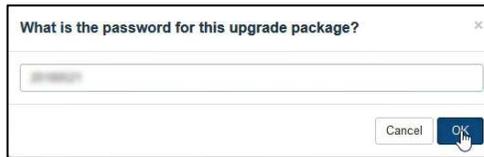
Upon clicking on the **Software Upgrade** button, the **Upgrade** screen will be displayed. Click on **Choose file** to select the upgrade file from the folder where it has been downloaded and click on **Open**.



- 2 Once the upgrade file has been selected, the Upload button will be enabled. Click on the **Upload** button to upload the file to the SR-1000. The console window will display the status of the file upload, as shown. An 'Upload Successful' message will be shown after the file upload is complete.

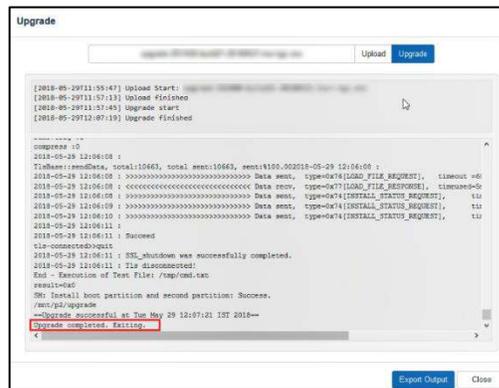


- 3 After the upload is complete, click on the **Upgrade** button to begin the upgrade process. A pop-up window will be shown asking for the password for the upgrade package.



Please contact GDC, in case you do not know the password for the upgrade file. Click on **OK** button, after entering the correct password.

- 4 The Upgrade process will be initiated. The console window will display the progress of the upgrade process. Once the upgrade is complete, the console window will display *Upgrade completed* message. The **Export Output** option can be used to export and download the console logs in the form of a .txt file.



5

In order to complete the upgrade process, the SR-1000 needs to be rebooted. A pop-up message will be displayed which allows the user to reboot the system, by clicking on the **Reboot Now** button.



8 AUDIO PROCESSING

The SR-1000 offers various built-in audio options of 5.1/7.1/15.1 cinema audio processor and 16-/24-channel DTS:X™ decoder. This section provides instructions on how to configure the settings related to audio processing, present under the **Audio** tab of the SR-1000 Web UI.

With the built-in digital cinema audio processor option; the SR-1000 offers the capability to provide superior sound designed for 5.1 and 7.1 PCM uncompressed surround sound functionality. Also, a built-in 15.1 cinema audio processor is available, which eliminates the need for an external cinema processor for a 16-channel DTS:X™ or IAB immersive audio installation.

Additionally, the 16- or 24-channel DTS:X™ decoding capability of the SR-1000 can be enabled, to feature DTS:X™ Immersive Audio Solutions. The SR-1000's DTS:X™ solution supports SMPTE's Immersive Audio Bitstream or IAB standard, delivering a single inter-operable audio format for theatrical distribution.

The following table lists the SR-1000 configurations available, depending on the audio features desired for cinema application:

SR-1000 Configuration	SR-1000	SR-1000 Extreme	SR-1000 Extreme -24
AES3 Audio Outputs	16	16	24
Audio Processing	8-channels	8-channels or 16-channels	8-channels or 16-channels
DTS:X™/ IAB Support	No	Yes	Yes

Table 1

Please contact GDC for more information on enabling these optional audio features on the SR-1000.

GDC also offers an optional Audio IO (Input-Output) Box **AIB-2000** for the SR-1000, with a built-in 8-channel premium quality digital-to-analog (D/A) converter to interface with external audio equipment such as analog amplifiers, booth monitor, microphone, and media players.

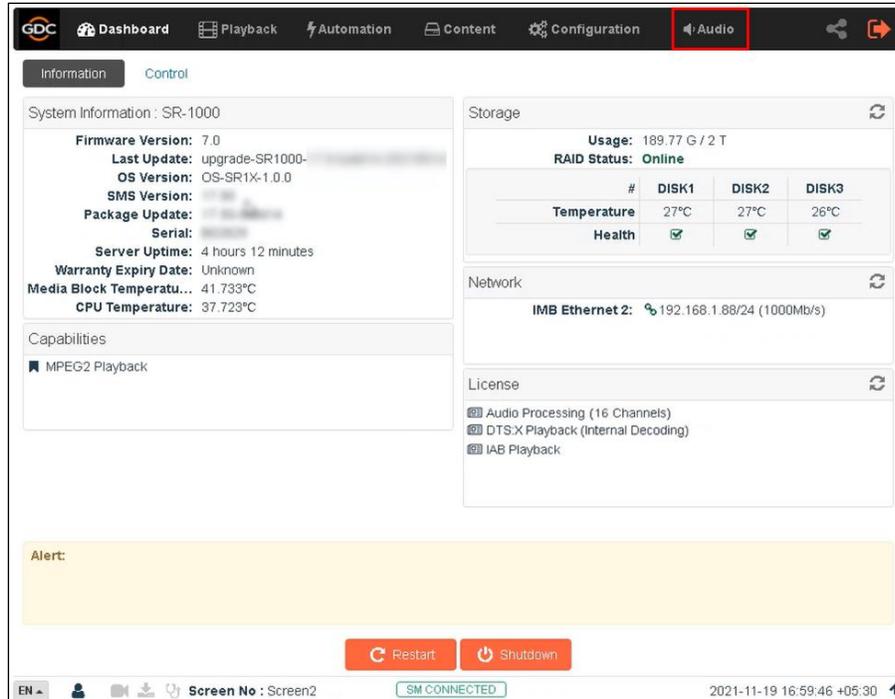


Figure 68: Audio Tab

Note: Enabling the Audio Processing capability might change some Audio-related settings of the SR-1000 without the Audio Processing License (with regards to the [\[Audio\]](#) section under **Configuration** → **Playback** sub-tab) as these would be merged into the newly created **Audio** tab.

The **Audio** tab is divided into four sub-tabs i.e., **DCP Channels**, **Processing**, **Output Routing** and **Configuration**.

8.1 Processing

The **Processing** sub-tab is used to access the **Graphic EQ** for the non-LFE channels and **Parametric EQ** for LFE, **Crossover** settings (for *Left*, *Right* and *Center* channels) **Channel Delay** and **Channel Gain** settings as well as manage **Presets**.

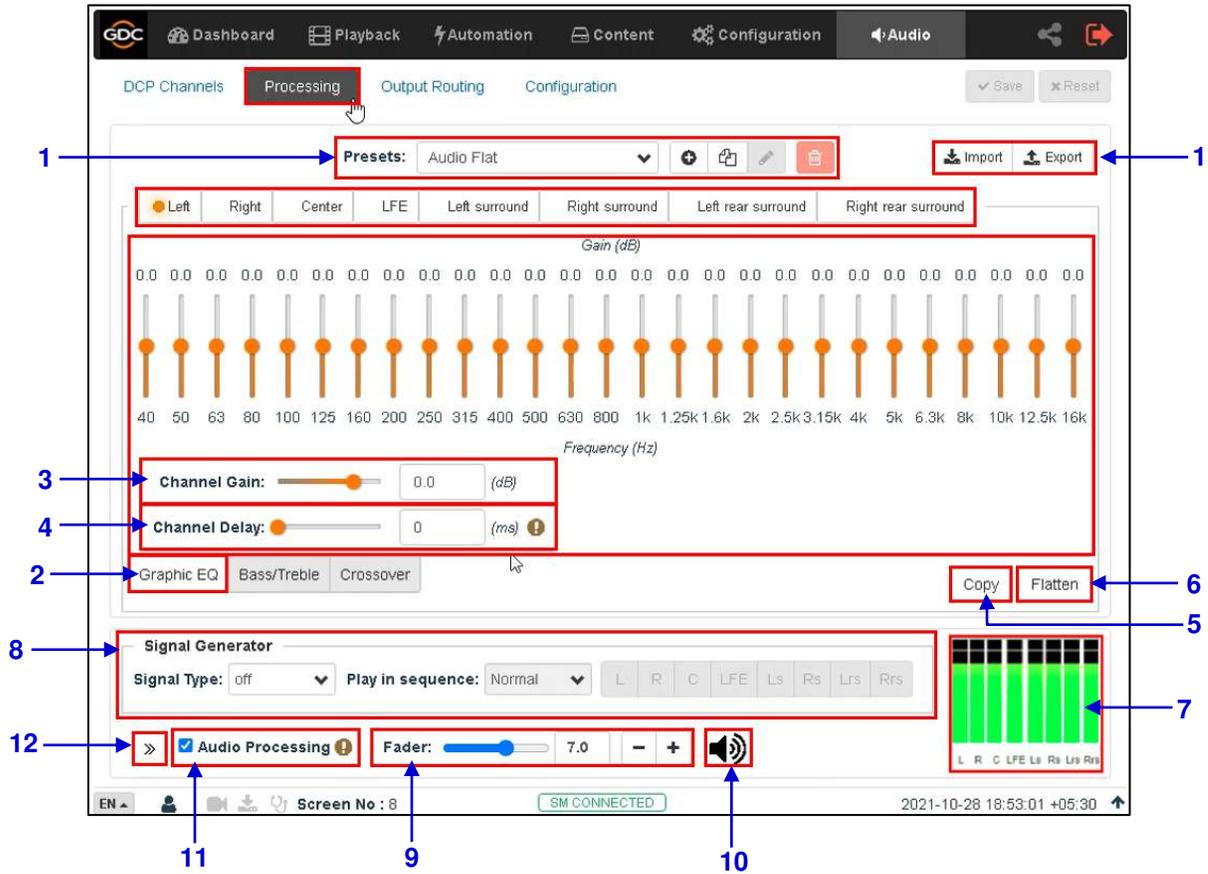
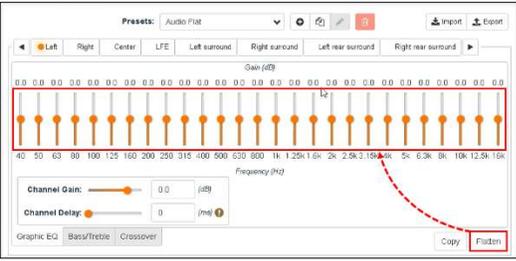
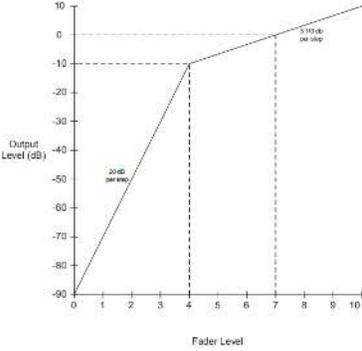
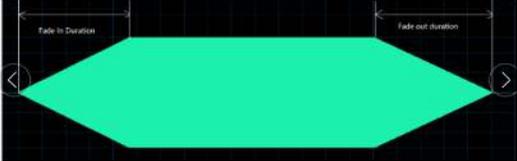


Figure 69: Processing Options

<p>1</p>	<p>[Presets:]</p>	<p>Allows you to create presets. Presets include values for [EQ Gain], [Crossover], [Channel Gain], [Channel Delay] and [Global Delay]. Every Preset that is created, can be copied, renamed, saved and deleted using the corresponding options.</p> <p>The Import and Export options allow you to import and export presets respectively.</p>
<p>2</p>	<p>[Graphic EQ]</p>	<p>Each channel supports <u>27 bands</u> of 1/3-band Graphic Equalization for gain control (apart from 'LFE').</p> <p>The gain range is <u>-6dB to +6dB</u>.</p>

3	[Channel Gain]	Allows you to set the individual gain of each channel, in the range of <u>-22dB to 8dB</u> .
4	[Channel Delay]	Allows you to set the individual delay of each channel, in the range of <u>0 to 500 milliseconds</u> .
5	[Copy]	<p>Copies the selected channel settings to a specified channel, to reduce repetitive work. Copy to another channel will include copying the crossover settings as well (refer to Section 8.1.2).</p> <p>Example: Copying the 'Left' channel settings to the 'Right' channel, by selecting 'Right' from the Copy To drop-down.</p> 
6	[Flatten]	<p>Resets the EQ and Gain values of the selected channel:</p> <ol style="list-style-type: none"> I. When the Graphic EQ of any channel (except 'LFE') is selected; pressing Flatten will reset the EQ and Channel Gain values of that channel to <u>0dB</u>.  <ol style="list-style-type: none"> II. When the Bass/Treble of any channel is selected; pressing Flatten will reset the Bass and Treble values of that channel to <u>0dB</u> and reset the Treble Corner Frequency to <u>1kHz</u>. III. When the 'LFE' channel is selected; pressing Flatten will reset parametric EQ controls to their default values as well as the Channel Gain to <u>0dB</u>.
7	[Input Level indicator]	Displays the level of the input for all the channels.
8	[Signal Generator]	<p>The Signal Generator function can be used to output an audio test signal, to one or more output channels.</p> <p>Refer to Section 8.1.4 for more details.</p>

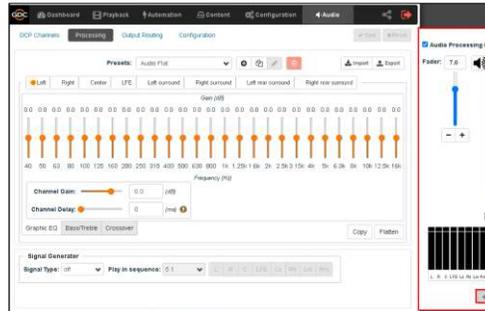
9	[Fader]	<p>Controls the adjustment of the [Main Fader] for all channels. The default Fader value is set at <u>7</u>, representing gain output at <u>0dB</u>.</p>  <p>When the Fader level is set within the range of <u>0 to 4</u>; the corresponding gain setting changes from <u>-90dB to -10dB</u> with a variation in amplitude of <u>20dB per step</u>.</p> <p>When the Fader level is set in the range of <u>4 to 10</u>, the corresponding gain setting changes from <u>-10dB to 10dB</u> with a variation in amplitude of <u>3.33dB per step</u>.</p> <p>In this way, the Main volume can have a large dynamic range and can be fine-tuned when it is near <u>0dB</u>.</p>
10	[Mute]	<p>Press the [Mute Button]  to “fade out” all channel outputs until they are muted. At this time, the Fader volume setting will not be changed.</p> <p>Press the [Unmute Button]  again to “fade in” all channel outputs until their original set volumes are restored.</p> <p>“Fade out” and “fade in” speeds can be set respectively under the Configuration sub-tab (refer to Section 8.4), ranging from <u>0.2 seconds to 5 seconds</u>.</p> 
11	[Enable Processing]	<p>When the Enable Processing checkbox is unchecked, the audio processing is bypassed.</p> <p>Note: When this option is enabled/disabled; the corresponding changes to the audio output, will reflect from the next playback on the Server.</p>

12



Press this button to shift the position of the Fader controls and Input level indicator, to a separate vertical panel alongside the SR-1000 Web UI. This feature can be used to view as well as adjust the Master Fader level; while browsing through any Web UI screen.

To restore the position of these controls, clicking the  button.



8.1.1 Bass/Treble

When it is necessary to increase or decrease the low frequencies or high frequencies as a whole, the **Bass/Treble** option can be used for the overall adjustment. All channels except LFE can be adjusted individually.

It is recommended to adjust the **Bass/Treble** before adjusting the gain of each band one-by-one.

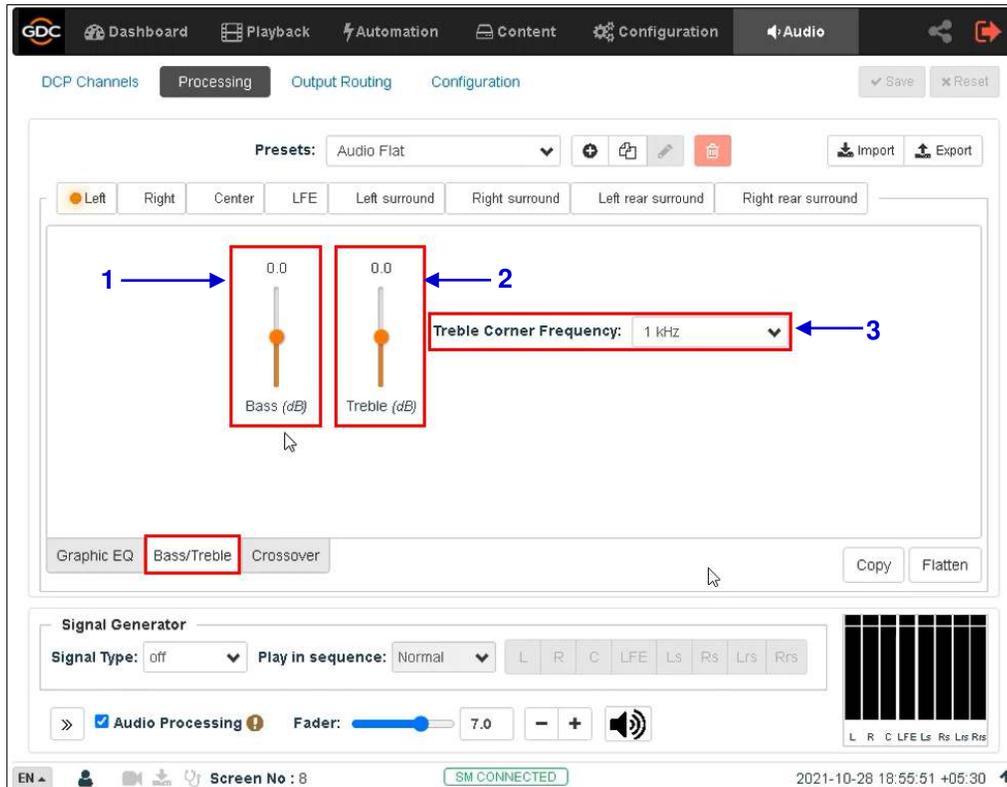


Figure 70: Bass/Treble

1	[Bass (dB)]	The adjustment range for Bass is from <u>-6dB to +6dB</u> .
2	[Treble (dB)]	The adjustment range for Treble is from <u>-12dB to +12dB</u> .
3	[Treble Corner Frequency]	The Treble Corner Frequency can be set to <u>1kHz, 2kHz, 3kHz or 4kHz</u> .

8.1.2 Crossover

The Crossover functionality can be enabled for the 'Left', 'Center' and 'Right' channels in a **two-way bi-amplified** mode. Once enabled, the **Low-band** and **High-band** filter settings can be configured individually.

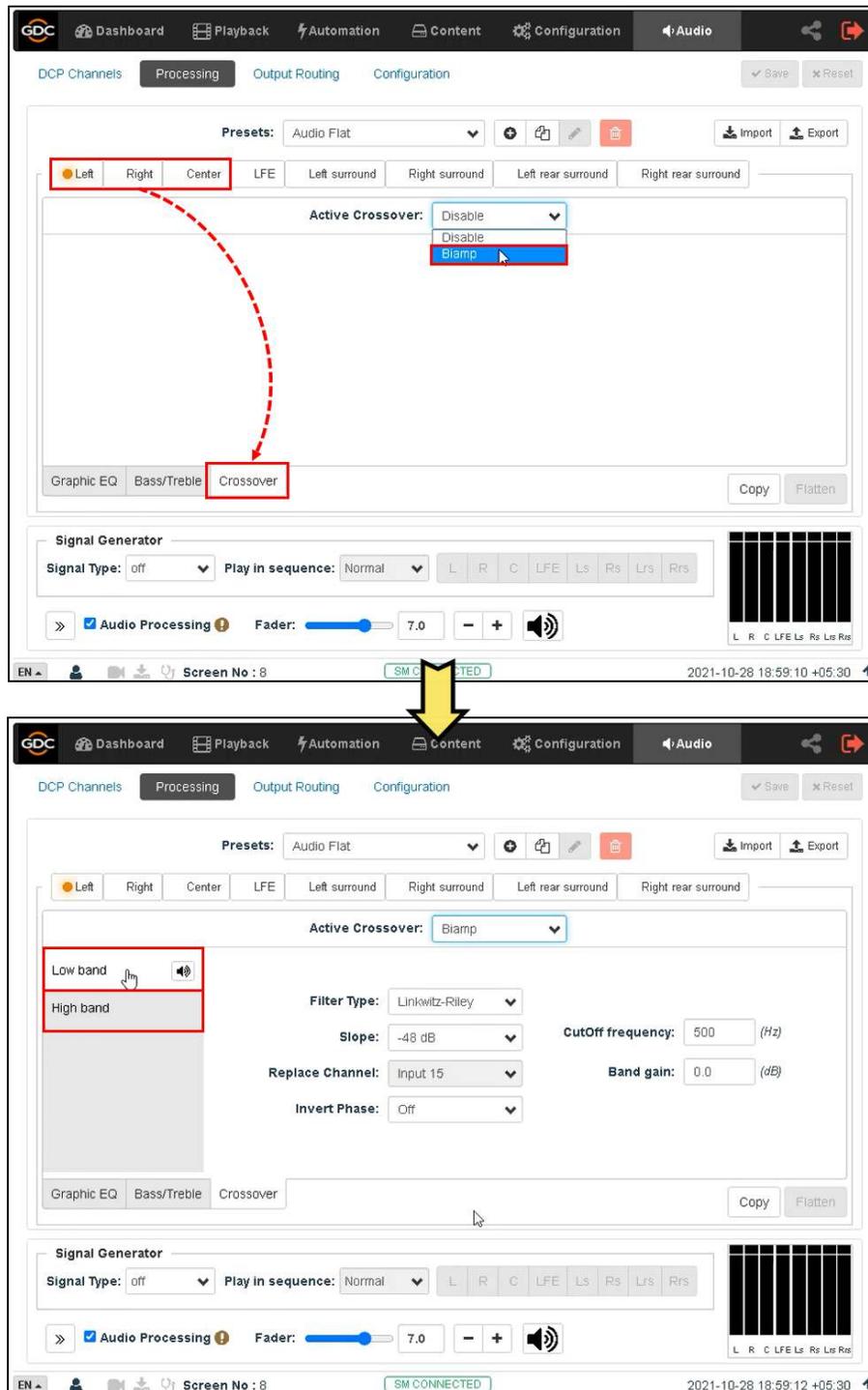


Figure 71: Enable Crossover

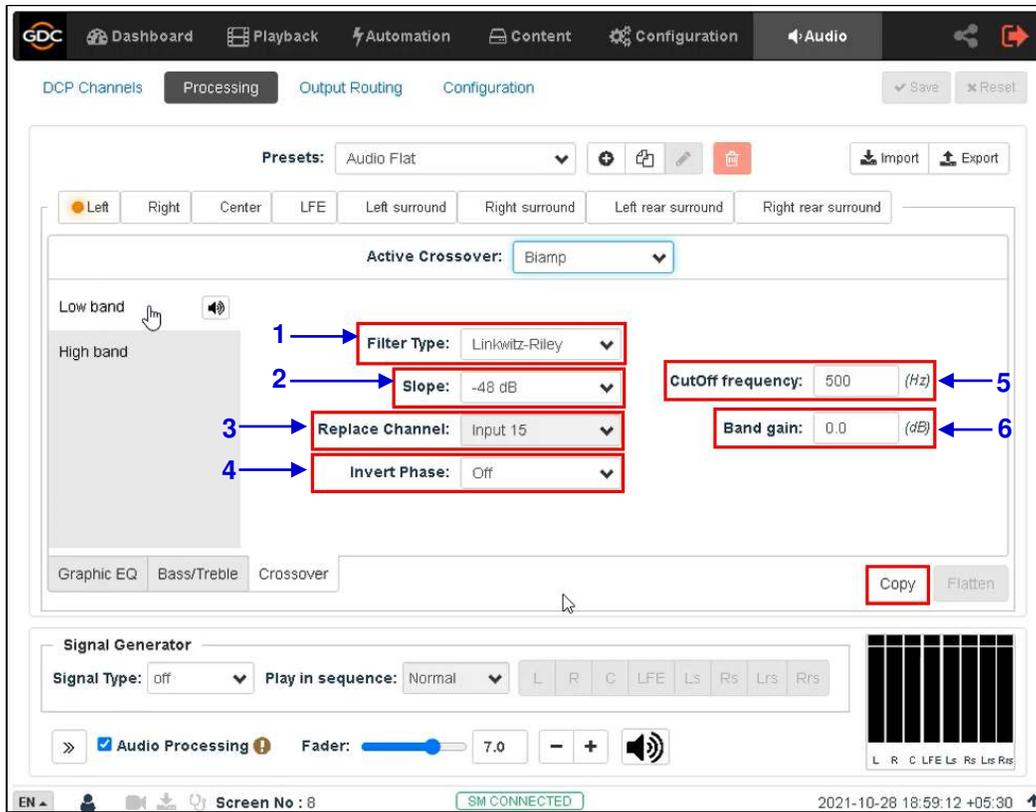
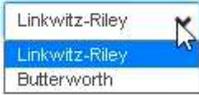
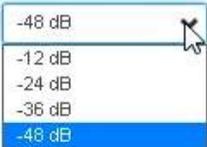
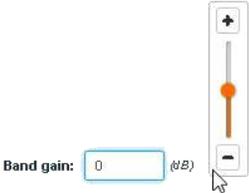


Figure 72: Low/High Band Filter settings

<p>1</p>	<p>[Filter Type:]</p>	<p>Select the filter type for the selected band. The following filter types are available:</p> 
<p>2</p>	<p>[Slope:]</p>	<p>Select the slope for the selected filter type. The filter slope is defined in <i>dB/octave</i> and the following options are available:</p> 
<p>3</p>	<p>[Replace Channel:]</p>	<p>The channel which the selected band will replace, will be set by default and cannot be changed.</p>

4	[Invert Phase:]	<p>Switch the Invert Phase to 'On' or 'Off'. This option inverts the phase of the selected band.</p> 
5	[CutOff frequency:]	<p>Set the CutOff frequency for each band. The cut-off frequency of the High band is the High Pass Filter (HPF) cut-off frequency and the cut-off frequency of the Low band is the Low Pass Filter (LPF) cut-off frequency.</p> <p>Range for CutOff frequency value: <u>20 ~ 20000Hz</u> and it is set to <u>500Hz</u>, by default.</p> 
6	[Band gain:]	<p>Set the current band gain.</p> <p>Range for Band gain value: <u>-6 ~ 6dB (0.1 dB per step)</u> and it is set to <u>0dB</u>, by default.</p> 

8.1.3 LFE Parametric EQ

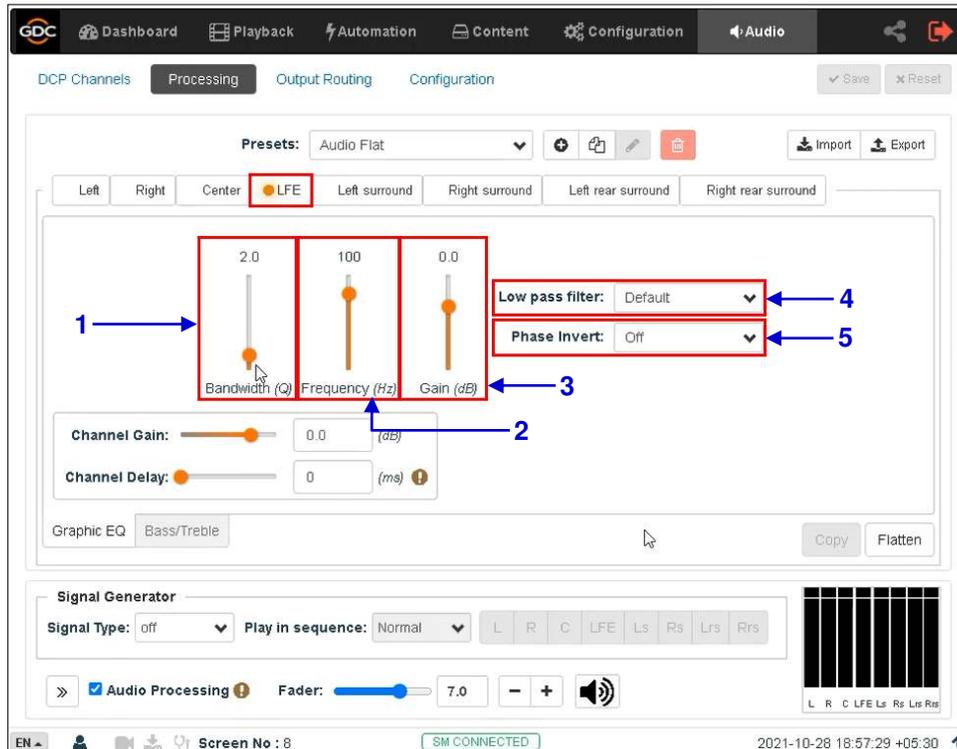


Figure 73: LFE Parametric EQ

1	[Bandwidth (Q)]	Range for Bandwidth value: <u>0.5 ~ 10Q</u> .
2	[Frequency (Hz)]	Range for Frequency value: <u>20 ~ 120Hz</u> .
3	[Gain (dB)]	Range for Gain value: <u>-12 ~ +6dB</u> .
4	[Low pass filter]	You can choose the optimized 'Default' low-pass filter or 'SMPTE' defined low-pass filter. 
5	[Phase Invert]	You can switch Phase Invert 'On' or 'Off'. This option inverts the phase of the LFE channel which is used to check if the subwoofer is in phase with the Center channel or not. 

8.1.4 Signal Generator

The in-built **Signal Generator** can be used to output a test signal to one or more output channels, which may be required for calibrating the auditorium sound system.

The **Signal Generator** can produce five kinds of test signals, as listed below. :

- *Pink noise,*
- *100Hz sine,*
- *1 kHz sine,*
- *10kHz sine*
- *Sweep.*

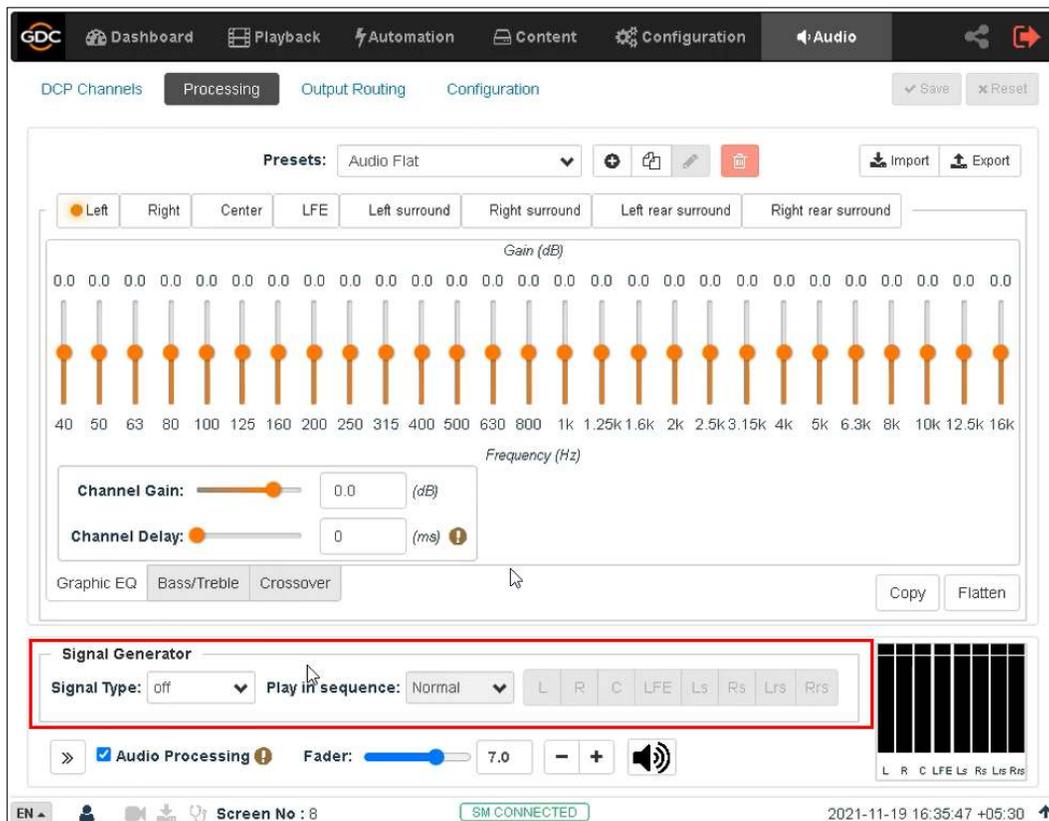


Figure 74: Signal Generator

Select any one type of test signal from the **Signal Type** drop-down (as shown in **Figure 75**) and initiate playback for the corresponding signal.

Note: The Signal Generator operation and DCP playback cannot be done at the same time.

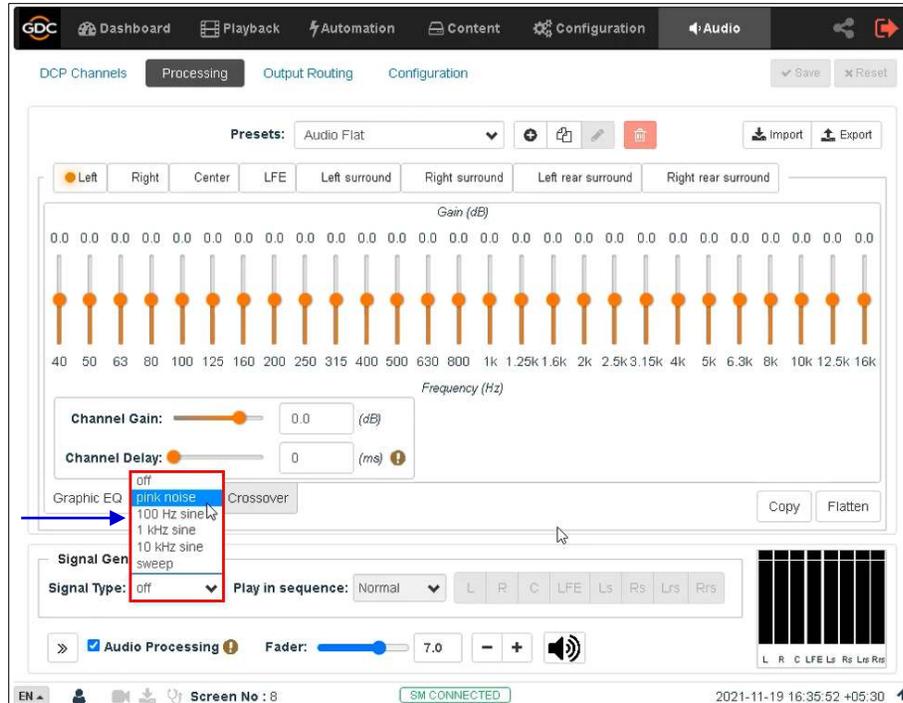


Figure 75: Select Test Signal type

After selecting type of test signal, select the 'Normal' option from the **Play in sequence** drop-down in order to choose one or more channels through which the test signal should be played (refer to **Figure 76**).

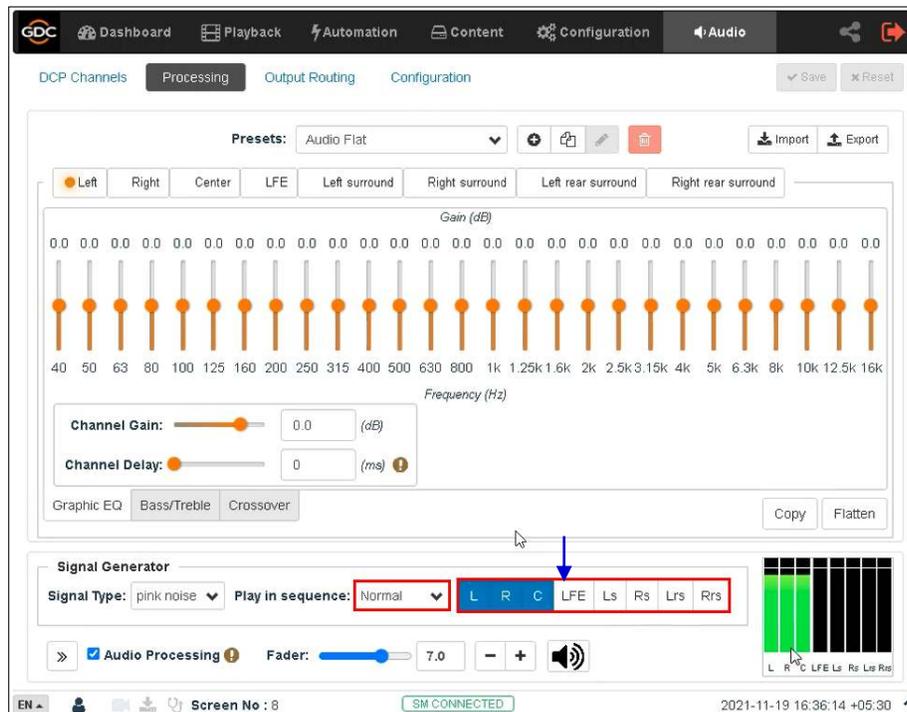


Figure 76: Play Signal through selected Channels

Alternatively, select the '5.1' or '7.1' option from the **Play in sequence** drop-down in order to play the test signal sequentially through all the corresponding channels, one channel at a time (refer to **Figure 77**).

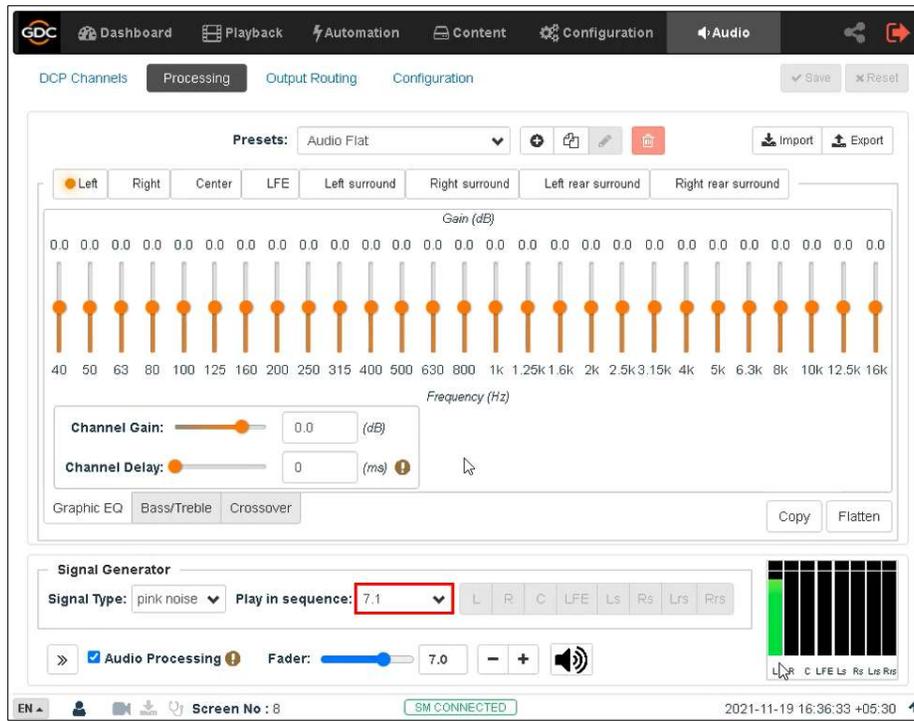


Figure 77: Play Signal in sequence

Select the 'off' option from the **Signal Type** drop-down, in order to stop playback of the test signal.

8.2 DCP Channels

To ensure that the DCP audio channels are routed to the correct speakers in the auditorium, it is necessary to select the appropriate settings in the **DCP Channels** and **Output Routing** sub-tabs.

The **DCP Channels** sub-tab allows the user to select the channel assignment standard that the DCP adheres to, for example: “SMPTE RDD 52 Table 3”. Under the **Channel Assignment** section, you can choose a standard for each type of DCP based on the channel count (as shown in **Figure 78**).

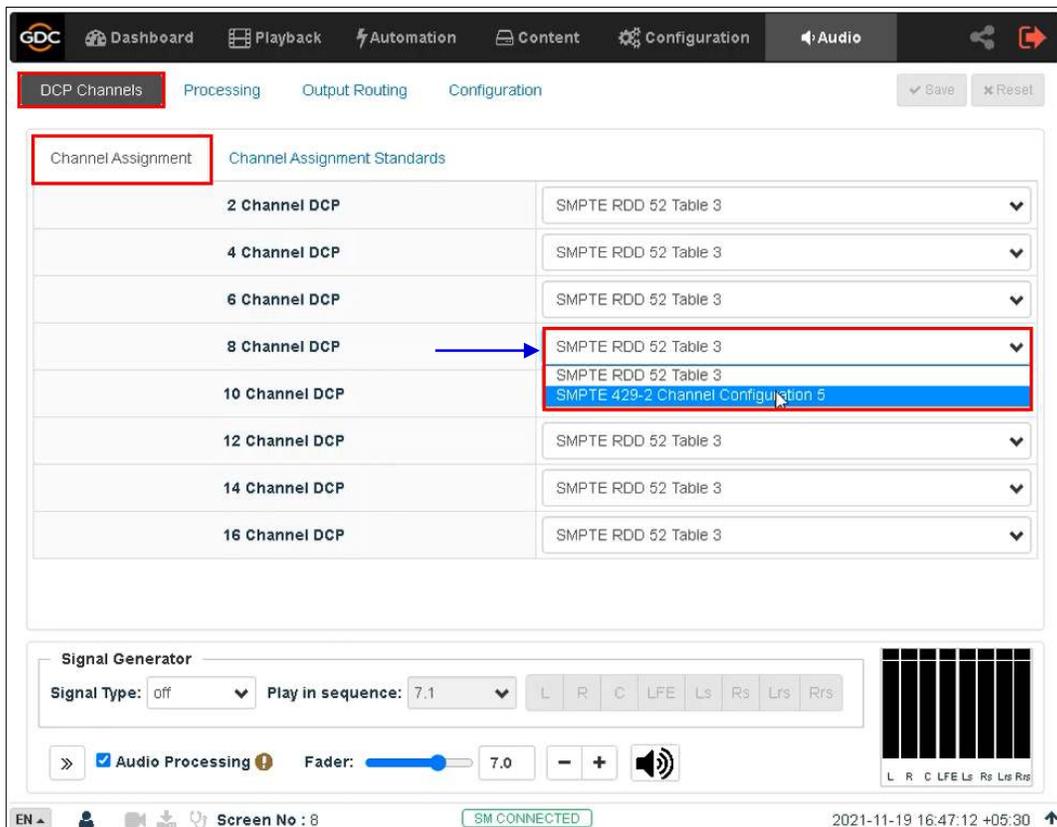


Figure 78: Channel Assignment

The **Channel Assignment Standards** section allows you to view the channel assignment for each of the listed standards (as shown in **Figure 79**).

The screenshot displays the 'Audio' configuration page in a software interface. At the top, there is a navigation bar with icons for Dashboard, Playback, Automation, Content, Configuration, and Audio. Below this, a sub-menu includes 'DCP Channels', 'Processing', 'Output Routing', and 'Configuration'. The 'Channel Assignment Standards' section is highlighted with a red box. It features a 'Select Standard:' dropdown menu, also highlighted with a red box, which is currently set to 'SMPTE RDD 52 Table 3'. A blue arrow points to this dropdown. Below the dropdown is a table with 16 channels, each with a specific assignment. At the bottom of the interface, there is a 'Signal Generator' section with a 'Signal Type' dropdown set to 'off', a 'Play in sequence' dropdown set to '7.1', and a 'Fader' control set to '7.0'. A speaker icon and a 'Signal Generator' status indicator are also visible. The bottom status bar shows 'EN', 'Screen No : 8', 'SM CONNECTED', and the timestamp '2021-11-19 16:47:25 +05:30'.

Channel	Assignment
Ch. 01	Left
Ch. 02	Right
Ch. 03	Center
Ch. 04	LFE
Ch. 05	Left Surround
Ch. 06	Right Surround
Ch. 07	Hi
Ch. 08	VI-N
Ch. 10	---
Ch. 11	Left Rear Surround
Ch. 12	Right Rear Surround
Ch. 13	Motion Data
Ch. 14	Sync Signal
Ch. 15	Sign Language Video
Ch. 16	---

Figure 79: Channel Assignment Standards

8.3 Output Routing

Using the **Output Routing** sub-tab, audio output from the SR-1000 can be re-mapped to appear on different audio channels.

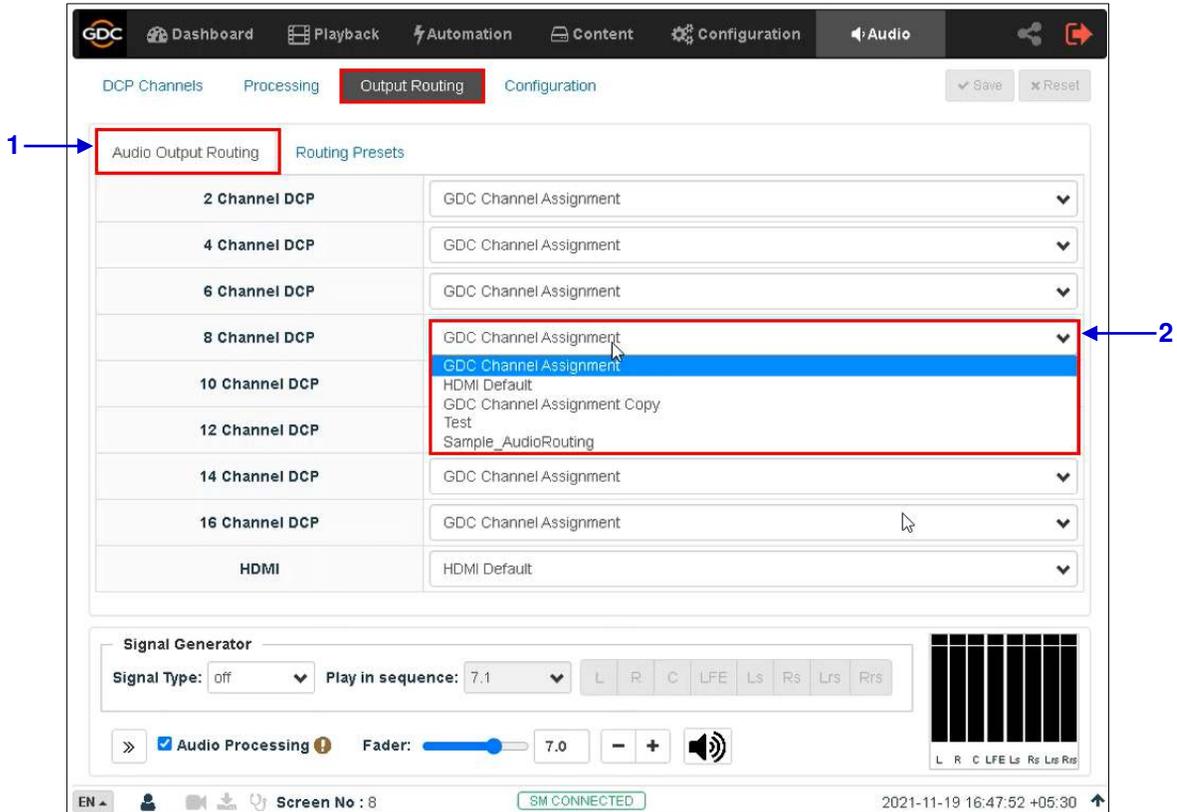


Figure 80: Use DCP Channel Order

1	Audio output based on the number of audio channels in the audio track of the source can be configured in this tab.
2	The preset for the number of audio channels in the audio track can be changed here. Note: The default preset is ' <i>GDC Channel Assignment</i> '. It is recommended to use this preset to ensure correct system operation with Audio I/O configuration mentioned under Section Error! Reference source not found..

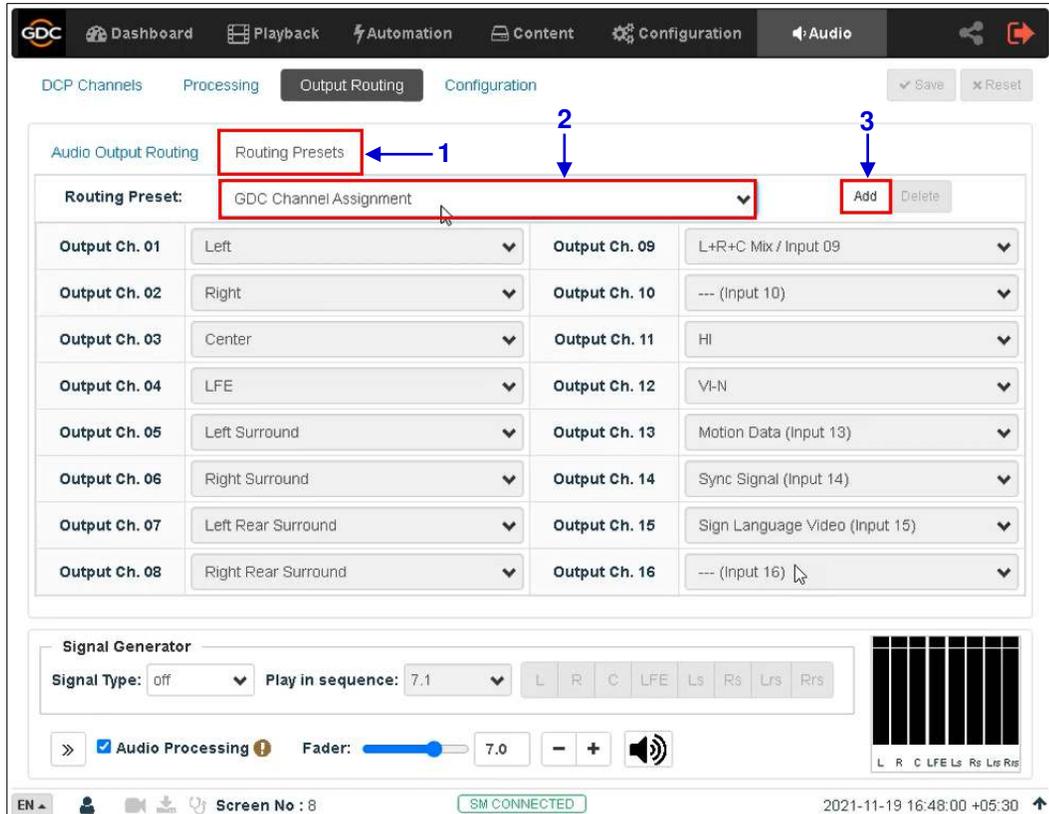
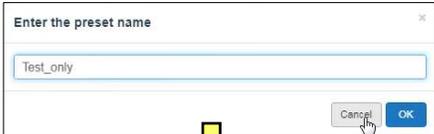
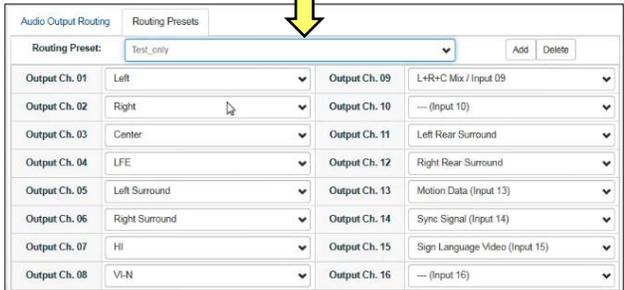


Figure 81: Routing Presets

1	Audio channel output presets can be selected and configured under this tab.
2	Using the Routing Preset: drop-down, you can select a preset to view or change preset settings.
3	<p>Add a new preset or delete the current preset using the Add/Delete buttons. To add a new preset, enter the preset name and click OK. You can then choose the destination channel for each input channel, under the Edit screen.</p> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div>

8.3.1 GDC Channel Assignment Preset Output Routing

Channel order AES3 out from SR-1000 (Audio)	Configuration						Note
	Mono	Stereo	5.1	5.1 Biamp	7.1 DS	7.1 Biamp	
1	-	L	L	L_High	L	L_High	Left
2	-	R	R	R_High	R	R_High	Right
3	C	-	C	C_High	C	C_High	Center
4	-	-	LFE	LFE	LFE	LFE	Screen Low Frequency Effects
5	-	-	Ls	Ls	Lss	Lss	Left (Side) surround
6	-	-	Rs	Rs	Rss	Rss	Right (Side) surround
7	-	-	-	-	Lrs	Lrs	Left Rear Surround
8	-	-	-	-	Rrs	Rrs	Right Rear Surround
9	Monitor (LRC)						L+R+C Mix or Middle Frequency of Center
10	-			C_Low	-	C_Low	Reserved or Low Frequency of Center
11	HI	HI	HI	HI	HI	HI	Hearing Impaired
12	VIN	VIN	VIN	VIN	VIN	VIN	Visually Impaired-Narrative
13	Motion Data						Synchronous signal (e.g.D-Box)
14	Sync Signal						Used for external sync (e.g.FSK Sync)
15	Sign LanguageVideo/LTC output (when enabled)			L_Low	Sign LanguageVideo /LTC output (when enabled)	L_Low	Sign LanguageVideo /Linear Time Code (when enabled) or Low Frequency of Left
16	LTC output (when enabled)			R_Low	LTC output (when enabled)	R_Low	Silence / Linear Time Code (when enabled) or or Low Frequency of Right

Figure 82: GDC Channel Assignment Preset Output Routing

Note: DCPs are assumed to follow 16-channels ISDCF recommended channel order.

In the above table, “_Low” indicates the low frequency output of the respective channel whereas “_High” indicates the high frequency output of the respective channel.

8.4 Configuration

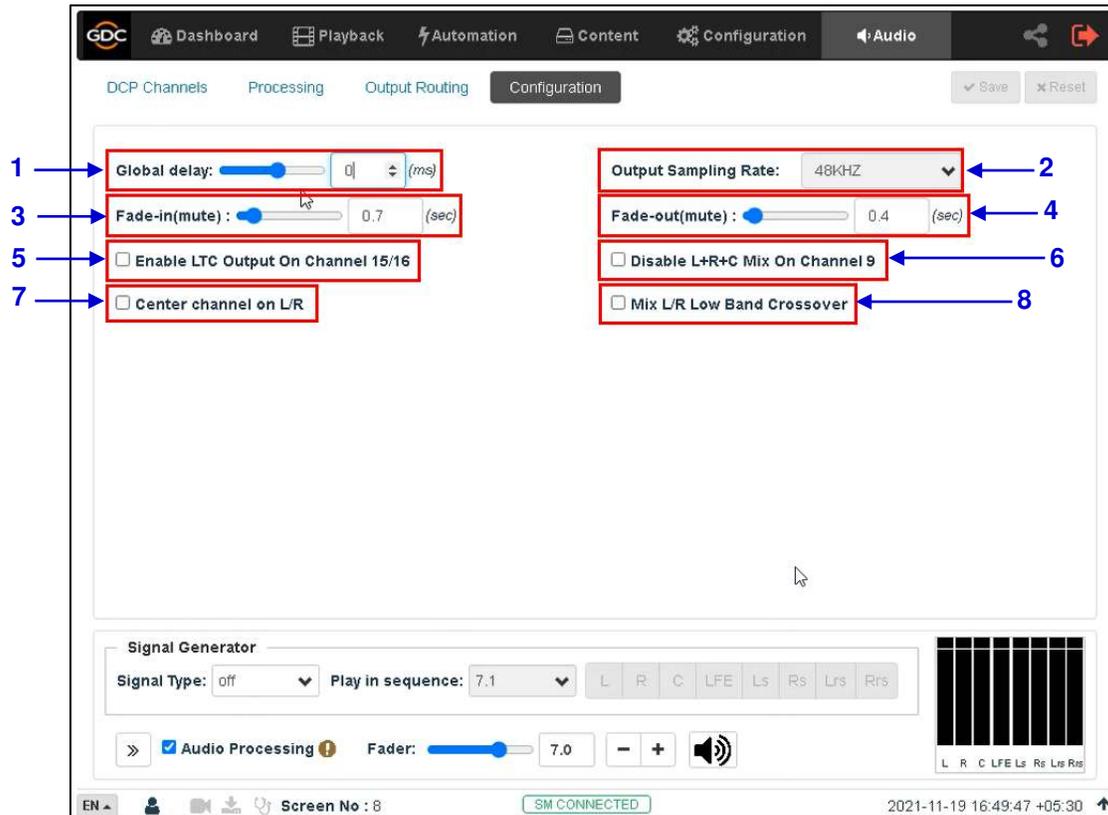


Figure 83: Audio Configuration Options

1	[Global Delay]	Global Delay can be set in the range from <u>-250ms</u> to <u>200ms</u> to achieve audio-video synchronization.
2	[Output Sampling Rate]	Changes the audio output sampling rate. Note: <u>96kHz</u> is not supported in the current version*.
3	[Fade-in]	Allows you to set the fade-in duration when there is an Unmute operation.
4	[Fade-out]	Allows you to set the fade-out duration when there is a Mute operation.
5	[Enable LTC Output on Channel 15/16]	Enables LTC output on <u>Channel 15/16</u> to sync with external systems such as 4D systems
6	[Disable L+R+C Mix on Channel 9]	If this option is not enabled (by default); <u>Channel 9</u> carries a mix of L+C+R which can be used as a monitor output. If this option is enabled; <u>Channel 9</u> does not carry a mix of L+C+R.

7	[Center channel on L/R]	<p>If this option is enabled, the Center channel output will be mixed with Left and Right Channels. This can be useful in case of any issues with the center channel speaker/amplifier.</p> <p>Note: This option should only be used as a temporary work-around for emergency use. It is essential to troubleshoot the issue with the speaker/amplifier at fault at the earliest and to avoid use of this option as a permanent setting.</p>
8	[Mix L/R Low Band Crossover]	<p>When the Crossover functionality is used; enabling this option will mix the low bands of the Left and Right channels, to a single channel i.e. “L_Low” output. With this option enabled, the low frequency inputs of the Left and Right amplifiers must be connected in parallel to the “L_Low” output of the SR-1000 via a DAC.</p>

* The SR-1000 software version being used at the time of writing this manual is [17.3-build23](#)

8.5 Additional options under Audio tab for 16-channel Audio Processing

With the SR-1000 Extreme and SR-1000 Extreme -24 configurations; the 16-channel Audio Processing feature can be enabled. This allows 16-channel DTS-X™ or IAB immersive audio installations, without the need for an external Audio Processor.

When the 16-channel Audio Processing feature is enabled on the SR-1000, a few additional options will be available under the **Audio** tab. These options will primarily be available under the **Processing** and **Configuration** sub-tabs.

8.5.1 Additional options under Processing sub-tab

Under the **Processing** sub-tab; the Graphic EQ, Bass Treble settings, and individual Channel Gain and Channel Delay for the Channels 9 to 16 can be managed.

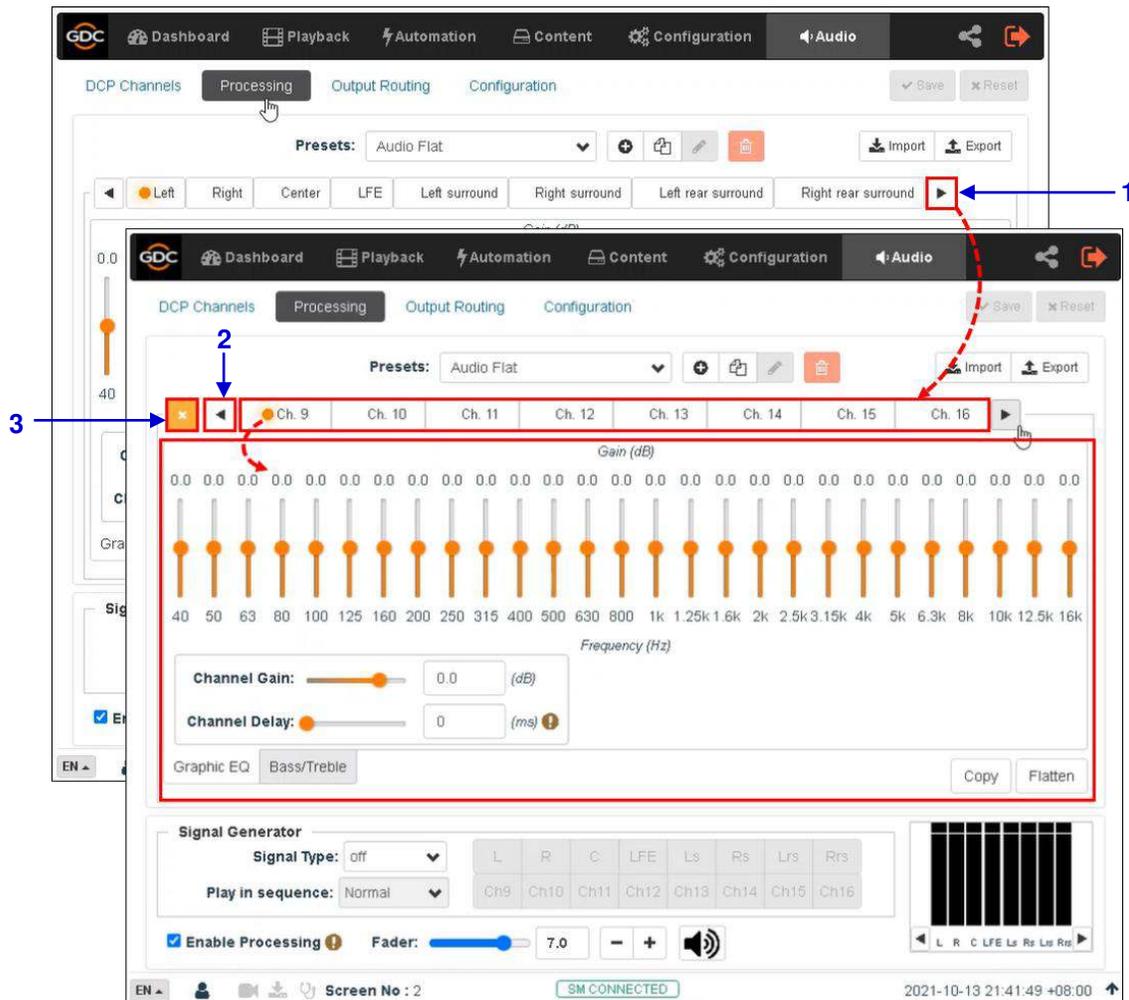
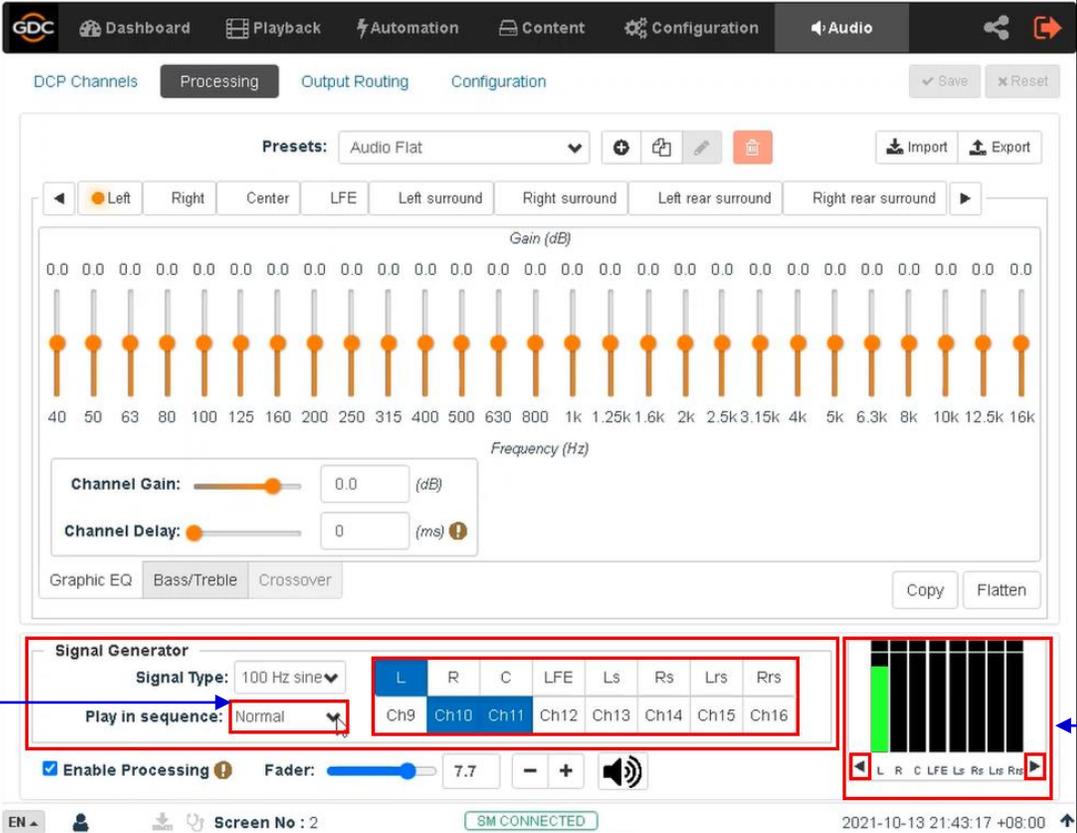


Figure 84: EQ Settings for Channels 9 to 16

1	<p>Click the  button to access the equalization settings for Channels 9 to 16.</p> <p>Select the desired channel and then choose either Graphic EQ or Bass/Treble, in order to adjust the corresponding settings.</p>
2	<p>To go back to the equalization settings for Channels 1 to 8, click the  button.</p>
3	<p>To disable audio processing for the Channels 9 to 16, click the  toggle button.</p> <p>Once disabled; click the  button in order to re-enable audio processing for the Channels 9 to 16.</p>

Additionally, Channels 9 to 16 can be calibrated by playing a test audio signal through them, using the **Signal Generator** function. Select the required test signal from the **Signal Type** drop-down and initiate playback for the same.



The screenshot displays the GDC Audio Processing interface. At the top, there's a navigation bar with 'Audio' selected. Below it, tabs for 'Processing', 'Output Routing', and 'Configuration' are visible. The main area shows a frequency response graph with 16 channels, each with a gain slider. Below the graph are controls for 'Channel Gain' and 'Channel Delay'. The 'Signal Generator' section is highlighted with a red box and contains a 'Signal Type' dropdown set to '100 Hz sine', a 'Play in sequence' dropdown set to 'Normal', and a grid of channel selection buttons (L, R, C, LFE, Ls, Rs, Lrs, Rrs) with Ch9 through Ch16 selected. A 'Fader' control is also visible. Blue arrows labeled '4' and '5' point to the 'Play in sequence' dropdown and the channel selection grid respectively.

Figure 85: Signal Generator for Channels 9 to 16

4	<p>When the 'Normal' option is selected from the Play in Sequence drop-down; toggle buttons for all 16-channels will be enabled. Select one or more channels through which the test signal should be played, including Channels 9 to 16.</p> <p>Alternatively, you can select the '5.1', '7.1' or '16 channels' options from the Play in Sequence drop-down. When the '16 channels' option is selected, the test signal is sequentially played through all 16-channels, one channel at a time.</p>
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5 The ◀ and ▶ arrow buttons on either side of the **Input Level Indicator**, can be used to switch between the audio level meters for Channels 1 to 8 and Channels 9 to 16 respectively.

8.5.2 Additional options under Configuration sub-tab

Under the **Configuration** sub-tab; the audio output channels for Hi/Vi-N and D-Box signals can be changed.

The screenshot shows the GDC Configuration sub-tab. The 'Configuration' sub-tab is selected. Two dropdown menus are highlighted with red boxes and numbered: '1' points to 'Hi/VI-N on: Default' and '2' points to 'D-Box on: Default'. Other settings include Global delay (0 ms), Fade-in (0.3 sec), Output Sampling Rate (48KHZ), Fade-out (0.2 sec), and checkboxes for 'Enable LTC Output On Channel 15/16', 'Center channel on L/R', 'Disable L+R+C Mix On Channel 9', and 'Mix L/R Low Band Crossover'. A 'Signal Generator' section at the bottom includes 'Signal Type: off', 'Play in sequence: Normal', and a 'Fader' set to 7.0. A small level indicator is also visible in the bottom right corner.

Figure 86: Hi/VI-N and D-Box Routing

1	<p>The Hi/Vi-N on: drop-down can be used to the audio output channel for Hi/Vi-N Devices.</p> 
2	<p>The D-Box on: drop-down can be used to the audio output channel for D-Box Systems.</p> 

8.6 Automation for Audio Presets

Audio Presets that have been created under the **Audio** tab, can be also configured as an automation cue as mentioned below:

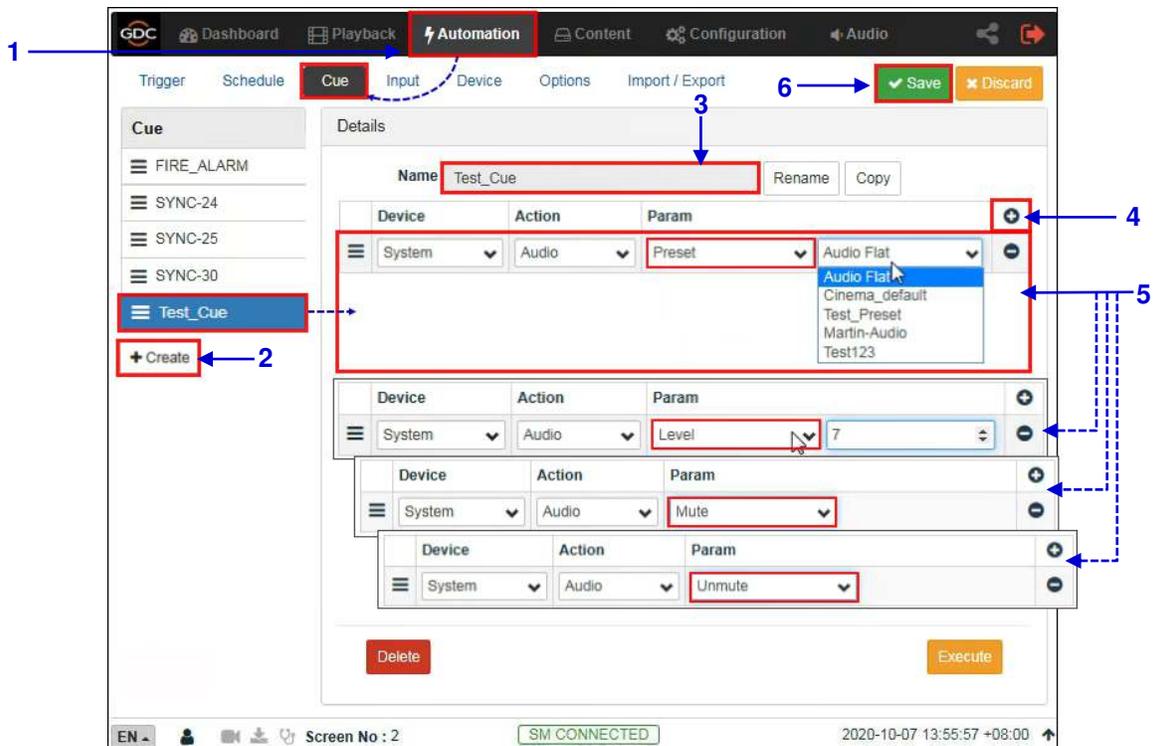


Figure 87: Creating an Automation Cue for Audio Preset

- 1) Go to the **Automation** tab and click on the **Cue** sub-tab.
- 2) Click on the **Create** button, to add a new automation cue.
- 3) Type in the name that needs to be assigned to the new cue being added and click on **OK** button.
- 4) Under the **Details** section, click **+** to add an action.
- 5) Under the **Device** drop-down, select 'System'. From the **Action** dropdown, select 'Audio'. From the **Param** section, select the type of action for the Audio device from the first drop-down.
 - (a) When the 'Preset' action type is chosen, you can select a particular audio preset (that has been created under the **Audio** tab) from the second drop-down.
 - (b) When the 'Level' action type is chosen, you can select or enter the desired **Fader** value (in the range of 0 to 10).
 - (c) When the 'Mute' or 'Unmute' action type is selected, you can mute or unmute the Audio device respectively.
- 6) Click on the **Save** button to add the new cue.

8.7 Cinema Audio Calibration Process

Note: This section serves as a guide to calibrating the auditorium sound system for 5.1/7.1 formats. For DTS-X™ and IAB format, please contact GDC for the audio calibration process.

8.7.1 Recommended Equipment

- 1) **Test Microphones;** 1 to 5 nos. depending on the calibration technique being used.
- 2) **Sound Card** (such as **Roland™ OCTA-CAPTURE** shown in **Figure 88**) which would be used to input the signals from the Microphones to the acoustic analysis software running on a computer.



Figure 88: Sound Card

8.7.2 Steps for Calibration

8.7.2.1 Microphone and Acoustic Analysis Software Calibration

First, calibrate the test microphone and acoustic analysis software (such as **SMAART**) with a microphone calibrator. Make sure the room is completely quiet before starting the calibration.

8.7.2.2 Initial Channel level Adjustment

- 1) Generate 'Pink Noise' output from the Center channel by using the **Signal Generator** on the SR-1000 Web UI **Audio** tab (refer to **Section 8.1.4**)
- 2) Adjust the gain of the Center channel until the level value displayed on RTA (sound pressure meter or SMAART) reaches 85dB.
- 3) Repeat steps 2) and 3) to adjust the **Channel Gain** of the Left/Right/Center channels respectively until the level value displayed on RTA (sound pressure meter or SMAART) reaches 85dB and **Channel Gain** of Ls/Rs/Bsl/Bsr channels respectively until the level value displayed on RTA (sound pressure meter or SMAART) reaches 82dB.
- 4) Repeat steps 2) and 3) to adjust the **Channel Gain** of the LFE channel until the level value displayed on RTA (sound pressure meter or SMAART) reaches ~91dB.

8.7.2.3 Adjusting the Graphic EQ

Adjust the graphic EQ until the frequency response curve is close to the X curve:

- 1) Generate 'Pink Noise' output from the Center channel by using the **Signal Generator** on the SR-1000 Web UI **Audio** tab (refer to **Section 8.1.4**)
- 2) Adjust the Gain value of each frequency band on the SR-1000 Web UI **Audio** tab until the difference between the actual frequency response curve and the X curve is within ±3dB. When it is necessary to increase or decrease the low frequencies or high frequencies as a whole, use the **Bass/Treble** function.
- 3) You can use the copy function to copy the tuned parameters to a similar channel. For example, the parameters of the Left channel are copied to the Right channel, and the Ls channel is copied to the Rs channel. And then you can fine-tune each channel individually.
- 4) Go back to Step 2) to equalize the next channel.

8.7.2.4 Adjusting LFE Parametric EQ

Begin with zero Gain and observe the worst peak in the spectrum. Adjust the **Frequency** slider until the frequency matches the peak and then adjust the **Gain** to flatten that region.

Adjust the **Bandwidth**(Q) and **Gain**(dB) until the smoothest response is achieved. The LFE equalizer is a Parametric EQ filter with adjustable Center **Frequency** (20 to 120Hz), **Bandwidth** (0.5 to 10Q) and **Gain** (-12 to 6dB).

After all the full-range channels have been equalized, follow these steps:

- 1) Generate 'Pink Noise' output from both Center and LFE channels by using the **Signal Generator** on the SR-1000 Web UI **Audio** tab (refer to **Section 8.1.4**).
- 2) Select the **LFE** tab to make it the active channel.
- 3) Set the LFE Parametric EQ **Gain** to 0dB. This disables LFE Parametric EQ so that you can determine the low-frequency resonant peak to be equalized. Note the band where the un-equalized peak appears.
- 4) Decrease the **Gain** slider to -12dB. Using the **Frequency** slider, move the dip in the frequency response along the frequency axis of the RTA display.
- 5) Adjust the **Frequency** so that the Center of the dip is in the same band as the peak displayed in the previous un-equalized frequency response.
- 6) Using the **Gain** slider, slowly increase the Gain to flatten the dip. The Center of the dip should be at the same level as the skirts.
- 7) Click to check other **Bandwidth**(Q) values for the flattest possible frequency response.
- 8) If there is a notch in the transition region between the LFE and Center channel frequencies, try inverting the phase on the LFE channel using the **Phase Invert** drop-down to check if the notch has improved. If this is the case, please check the subwoofer polarity.

8.7.2.5 Final Channel level Adjustment

- 1) Generate 'Pink Noise' output from the Center channel by using the **Signal Generator** on the SR-1000 Web UI **Audio** tab (refer to **Section 8.1.4**).
- 2) Adjust the gain of the Center channel until the level value displayed on RTA (sound pressure meter or SMAART) reaches 85dB.
- 3) Repeat steps 2) and 3) to adjust the **Channel Gain** of the Left/Right/Center channels respectively until the level value displayed on RTA (sound pressure meter or SMAART) reaches 85dB and **Channel Gain** of Ls/Rs/Bs/Bsr channels respectively until the level value displayed on RTA (sound pressure meter or SMAART) reaches 82dB.
- 4) Repeat steps 2) and 3) to adjust the **Channel Gain** of the LFE channel until the level value displayed on RTA (sound pressure meter or SMAART) reaches ~91dB.

8.7.3 Surround Channel Delay Setting

The surround delay is set usually based on the length and width of the Auditorium. Formulas to determine the surround delay with auditorium Length(L) and Width(W) in meters and feet are as follows:

- Surround Delay Using Meters with Length and Width of the auditorium in meters, the surround delay (in ms) should be $\frac{L}{3} - \frac{W}{6} + 20$.
- Surround Delay Using Feet with Length and Width of the auditorium in feet, the surround delay (in ms) should be set to $\frac{L}{2} - \frac{W}{2} + 20$.

8.7.4 Calibration Results

After adjusting the channels one-by-one; the frequency response curve is adjusted within the allowable deviation of the X-curve.

The current EQ Gain values can be saved as a preset. This preset can be recalled when needed in the future.

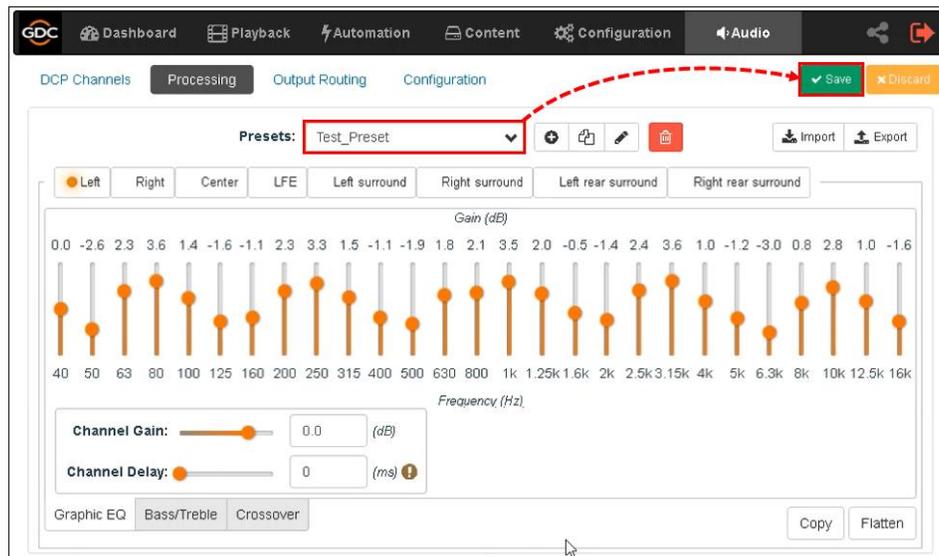


Figure 89: Save EQ Gain Values as Preset

9 OPERATION NOTES

9.1 Power-Up Sequence

Always power-up any external storage before powering up the projector. The external storage must be powered up first in order to be correctly identified by the SR-1000.

9.2 Power-Down Sequence

Always power-down the SR-1000 and the projector in the order mentioned below:

1. Use the **Shutdown** button on the Web UI **Dashboard**, to power-down the SR-1000 Software.
2. Power-down any external storage attached to the SR-1000.
3. Power-down the projector.

10 APPENDIX I

This section describes optional features on the SR-1000 that require licenses from GDC.

10.1 IMB Sync

Two SR-1000 systems can work in sync for dual projector playback of content. This can be used for increasing the brightness of the image by overlaying the output from the projectors on the same screen, for making a video-wall or any other applications where two systems need to play in sync.

Note 1: The SR-1000 systems must be running a software version that supports IMB synchronized playback. Please check with your regional GDC office for the correct software version to be used.

Note 2: IMB synchronized playback is only enabled with a license from GDC. Please check with your regional GDC office for a license to enable IMB synchronized playback.

Note 3: Both server systems that make up one sync solution must be the same model.

Note 4: IMB synchronized playback works with JPEG2000 content only. MPEG is not supported with IMB synchronized playback.

Two servers will be used for IMB synchronized playback:

- The '**master server**' will be used to control playback for the entire IMB sync system.
- The '**slave server**' will be controlled by the master server to play in sync with the master.

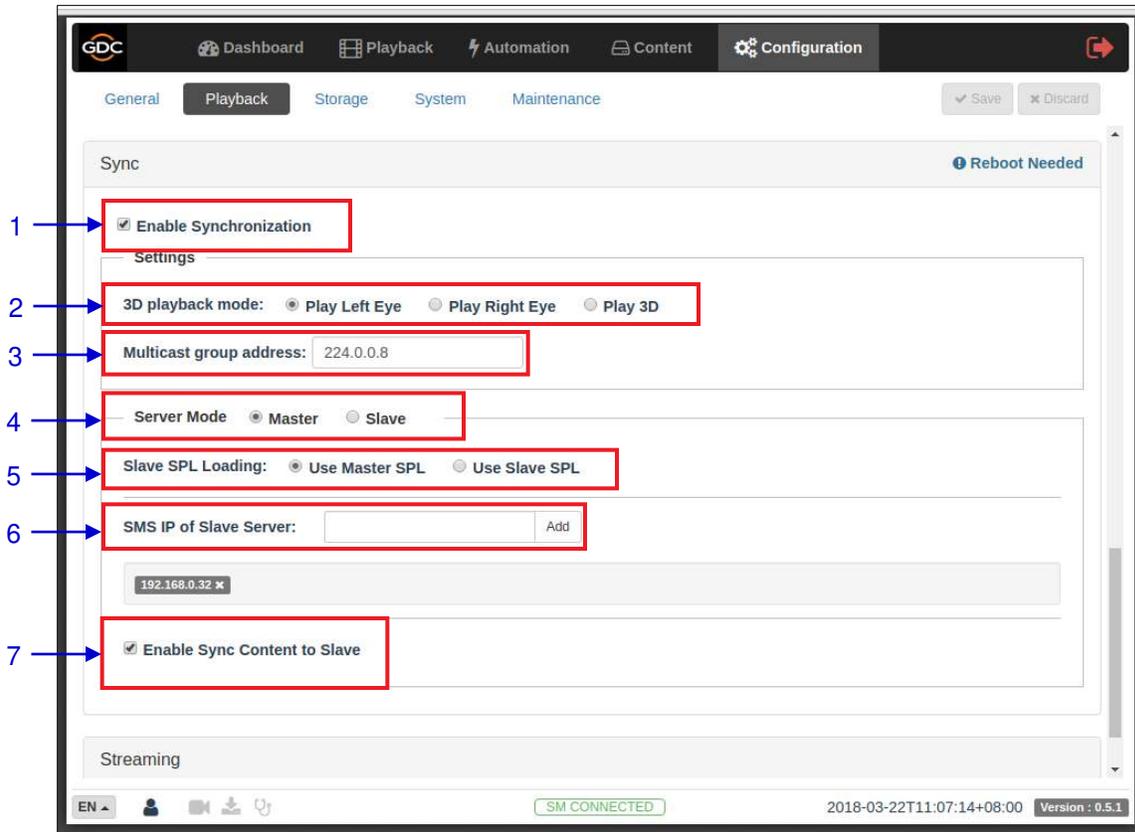


Figure 90: IMB Sync Configuration

1	[Enable Synchronization]	Enable Synchronization must be set on both master and slave servers.
2	[3D playback mode]	Select 3D playback mode for the master and slave server. Each server can be configured to play either the left or right eye frames or both for 3D content. For example, the master server can be set to 'Play Left Eye', and the slave server can be set to 'Play Right Eye'.
3	[Multicast group address]	Set Multicast group address for the master and slave server. Multicast group addresses can range from 224.0.0.0 to 224.0.0.254. Note 1: Multicast group address must be the same for both the master and slave servers. The IMB Ethernet 1 ports on both master and slave IMBs will use this setting for communication. Note 2: If multiple sets of IMB sync systems are present in a theater environment, the Multicast group address for each set of IMB sync systems must be unique.
4	[Server Mode]	Select Master on the master server, and Slave on the slave server.

		Note: If this setting is changed, the server must be rebooted for the setting to take effect.
5	[Slave SPL Loading]	<p>Slave SPL Loading is only enabled on the master server. Select a method for loading an SPL on the slave server.</p> <p>Use Master SPL: the SPL on the master server will be automatically copied and loaded on slave when playback starts.</p> <p>Use Slave SPL: the master server will automatically find a SPL with the same name on the slave server and play that SPL.</p> <p>(Please refer to Section 10.1.1 for details.)</p>
6	[SMS IP of Slave Server]	<p>SMS IP of Slave Server is only enabled on the master server.</p> <p>Enter the SMS IP of the slave server. This setting is required for the master server to load an SPL on the slave server.</p>
7	[Enable Sync Content to Slave]	<p>When this option is enabled, the following actions on the master server will trigger the same action on the slave server:</p> <ul style="list-style-type: none"> • DCP ingest from a network source (NFS/FTP/CIFS) • DCP deletion <p>Note: This feature will not work for the following:</p> <ul style="list-style-type: none"> • DCP ingest from a local source (USB/eSATA/CRU) • KDM ingest

10.1.1 IMB Synchronized Playback Operation

- If the '**Use Master SPL**' option is selected during configuration, the SPL playing on the master server will be automatically copied and loaded on the slave server. SPL content must be loaded on the slave server before playback is started.
 1. Create and load an SPL on the 'master' server.
 2. Make sure the 'slave' server has content and KDM required for this SPL.
 3. Start playback from the 'master' server.
 4. The 'slave' server will automatically start playback with the same SPL on the 'master' server.
- If the '**Use Slave SPL**' option is selected during configuration, the 'master' server will load and play an SPL with the same name on the 'slave' server. This SPL must be prepared on the slave server before playback is started.
 1. Create and load an SPL on the 'master' server.
 2. Create an SPL with same name on the 'slave' server.
 3. Start playback from the 'master' server.
 4. The 'slave' server will automatically start playback of the SPL with the same name.

Note: The above operation implies that content must be downloaded on both servers used for sync playback. For encrypted content, KDMs are needed for both servers and these must be ingested to the respective servers prior to playback.

The following table shows video output mode for 2D and 3D SPLs. This can be used to configure projector macros for IMB synchronized playback.

	IMB sync playback with 'Play Left Eye'/'Play Right Eye' selected	IMB sync playback with 'Play 3D' selected
2D SPL	Will play as 2D on each projector	Will play as 2D on each projector
3D SPL	Will play as 2D left or right eye on each projector	Will play as 3D on each projector
SPL with 2D and 3D content	Will play as 2D on each projector (3D is played as left or right eye)	Will play as 3D on each projector (2D content is played as 3D)

10.2 DTS:X™ Decoding

This section provides information on configuring the SR-1000 for DTS:X™ internal decoding.

10.2.1 Requirements

The following items are required for DTS:X™ internal decoding on the SR-1000:

- SR-1000 Standalone Integrated Media Block (SMS Version: [17.5-build8](#) or higher)
- DTS:X Playback (Internal Decoding) LDM for the server's serial number.
- MDA configuration file for the cinema the server is to be installed in.

10.2.2 Server Configuration for DTS:X™ Playback (Internal Decoding)

10.2.2.1 Setting up the Server for DTS:X™ Playback (Internal Decoding)

1. Use the **Content** → **Source** sub-tab to ingest the 'DTS:X Playback (Internal Decoding)' LDM to the server.
2. Go to **Configuration** → **Playback** → **DTS:X Decoding** section and select 'Internal' from the drop-down, as shown in **Figure 90**.

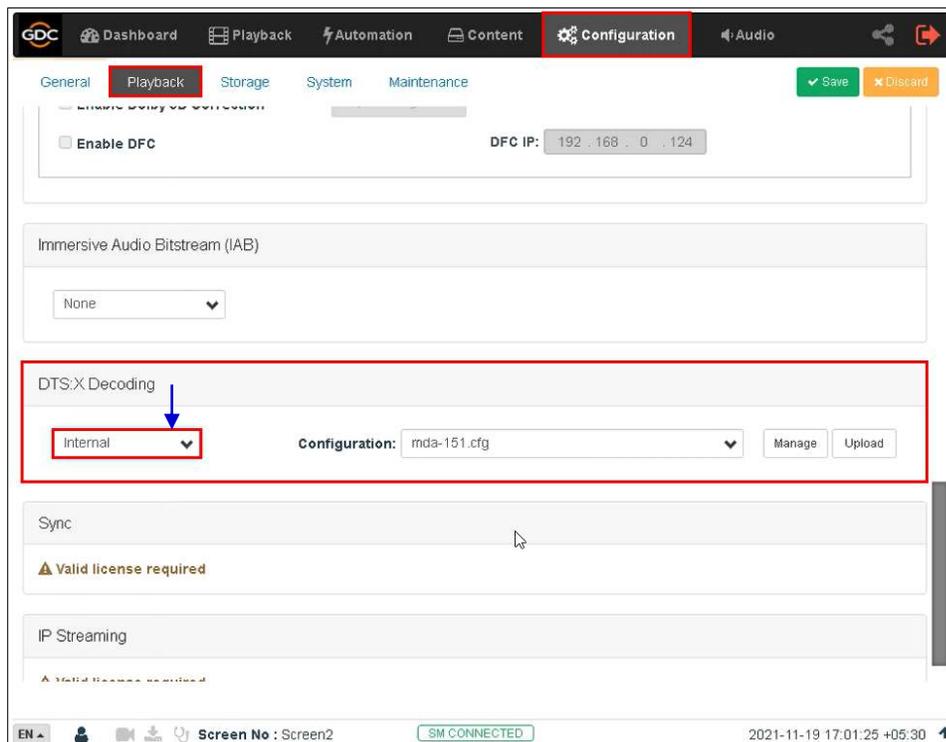


Figure 91: DTS:X Internal Decoding setup

10.2.2.2 Setting up the MDA Configuration file

Note: A valid MDA configuration file **must be set** before playback with DTS-X™ internal decoding. Please get in touch with GDC, for the MDA configuration file based on your auditorium design.

Click the **Upload** button to upload MDA configuration files from the PC/Laptop to the SR-1000. Please note that the MDA configuration files must be named in the format “*mda-<XXX>.cfg*”.

The **Configuration** drop-down can be used to select the active MDA configuration from uploaded configuration files. In this example, the sample “*mda-151.cfg*” configuration has been set to be used for playback (refer to **Figure 92**).

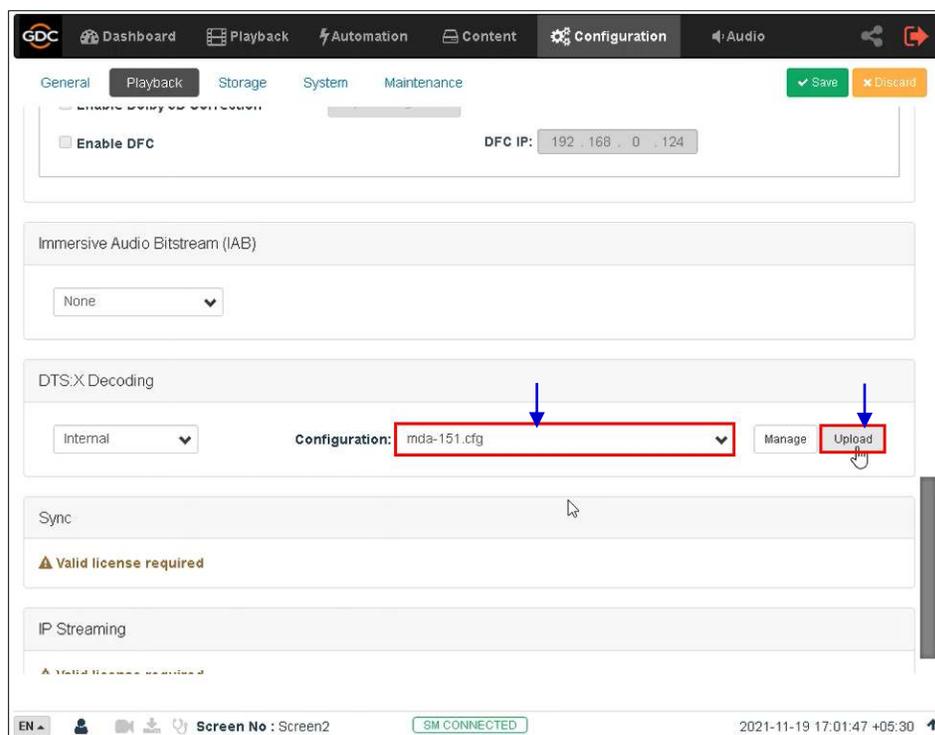


Figure 92: Upload MDA Configuration file

All the uploaded MDA configuration files can be managed by clicking the **Manage** button. The **Manage Configuration** screen will list all the MDA configuration files which have been uploaded to the server.

The **Search** filter can be used to find a particular configuration file. In order to delete any configuration file from the list; select the corresponding checkbox and then click the **Delete** button to delete them from the server (refer to **Figure 93**).

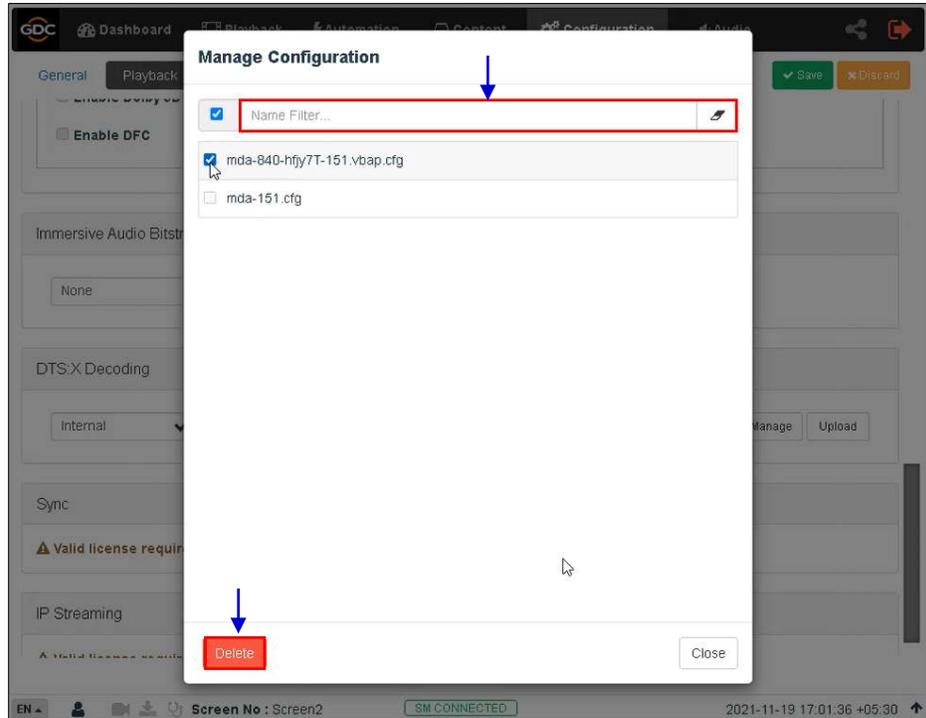


Figure 93: Managing MDA Configuration files

To save the changes under the **DTS-X Decoding** section, click the **Save** button on top (refer to **Figure 94**). Alternatively, click on the **Discard** button to discard the changes.

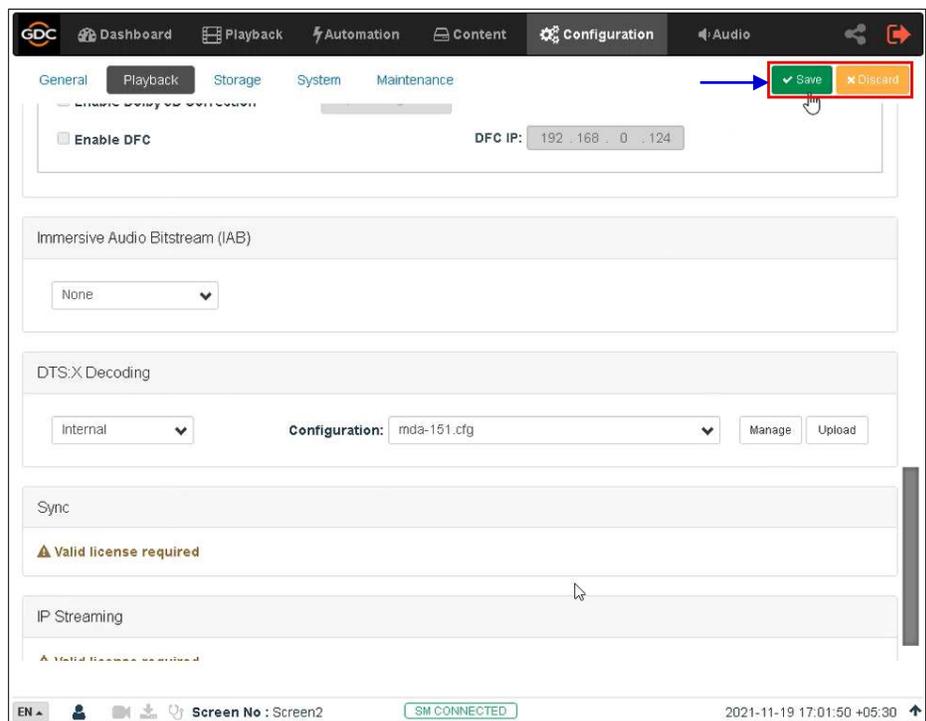


Figure 94: Save/Discard changes

10.3 Immersive Audio Bitstream (IAB)

This section provides information on configuring the SR-1000 for Immersive Audio Bitstream or IAB decoding. Immersive Audio Bitstream content can be decoded by choosing either IAB (Internal) decoding with 16-channels of audio rendered internally by the SR-1000 or Dolby Atmos® (External) decoding via an external Dolby Atmos® cinema processor, such as the CP850.

10.3.1 Requirements

The following items are required for IAB DCP playback on the SR-1000:

- SR-1000 Standalone Integrated Media Block (SMS Version: [17.5-build8](#) or higher)
- IAB Playback and/or Dolby Atmos LDM for the server's serial number.
- IAB configuration file for the auditorium the server is to be installed in, in case the IAB (Internal) decoding is used.

10.3.2 Server Configuration for IAB Playback

10.3.2.1 Setting up the Server for IAB Playback

1. Use the **Content** → **Source** sub-tab to ingest the 'IAB Playback' or 'Dolby Atmos' LDM to the server.
2. Go to **Configuration** → **Playback** → **Immersive Audio Bitstream (IAB)** section and select either 'IAB (Internal)' or 'Dolby Atmos (External)' depending on the decoding desired (refer to **Figure 95**).
3. If 'Dolby Atmos (External)' is selected; please refer to the GDC Technical Bulletin on [Setting up Dolby Atmos on the SR-1000](#).

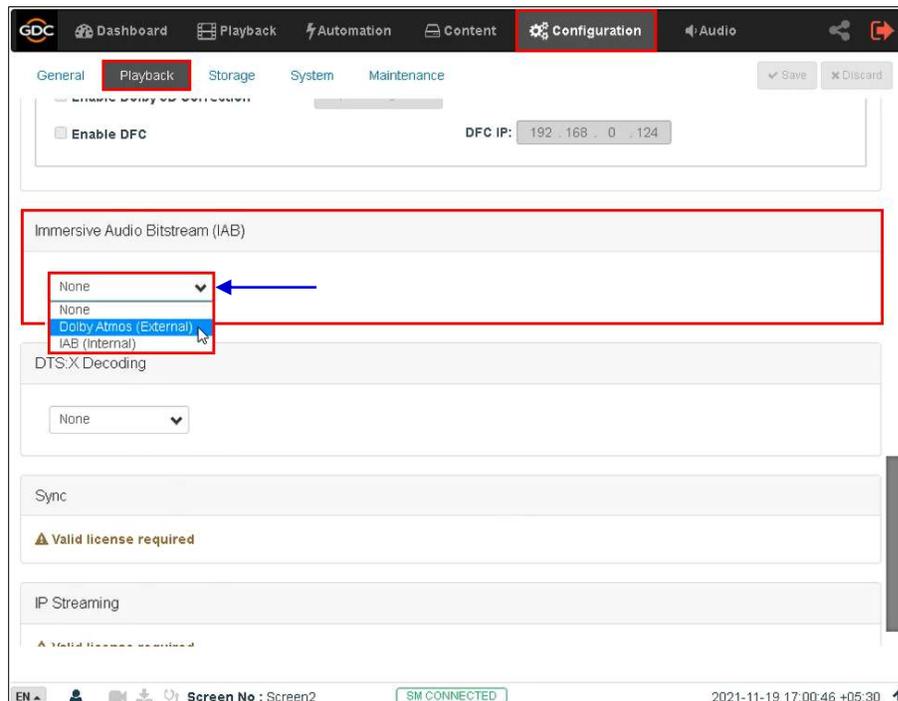


Figure 95: IAB Playback setup

10.3.2.2 Setting up the IAB Configuration file

Note: A valid IAB configuration file **must be set** before playback with IAB (internal) decoding. Please get in touch with GDC, for the IAB configuration file based on your auditorium design.

Click the **Upload** button to upload IAB configuration files from the PC/Laptop to the SR-1000. Please note that the IAB configuration files must be named in the format “iab-<XXX>.cfg”.

The **Configuration** drop-down can be used to select the active IAB configuration from uploaded configuration files. In this example, the sample “iab-151.cfg” configuration has been set to be used for playback (refer to **Figure 96**).

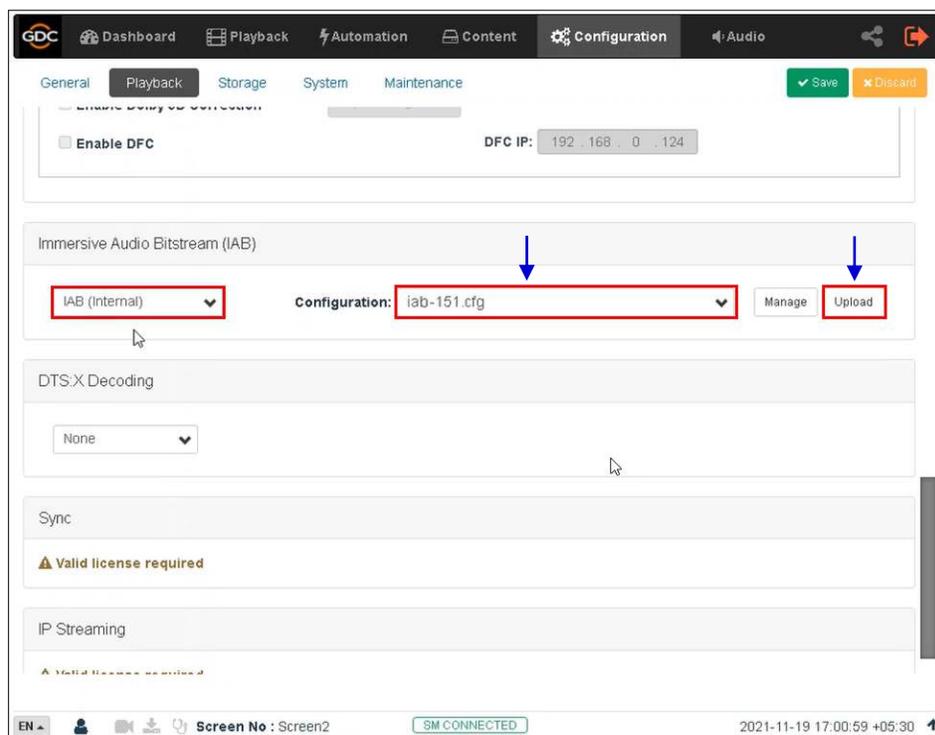


Figure 96: Upload IAB Configuration file

All the uploaded IAB configuration files can be managed by clicking the **Manage** button. The **Manage Configuration** screen will list all the IAB configuration files which have been uploaded to the server.

The **Search** filter can be used to find a particular configuration file. In order to delete any configuration file from the list; select the corresponding checkbox and then click the **Delete** button to delete them from the server (refer to **Figure 97**).

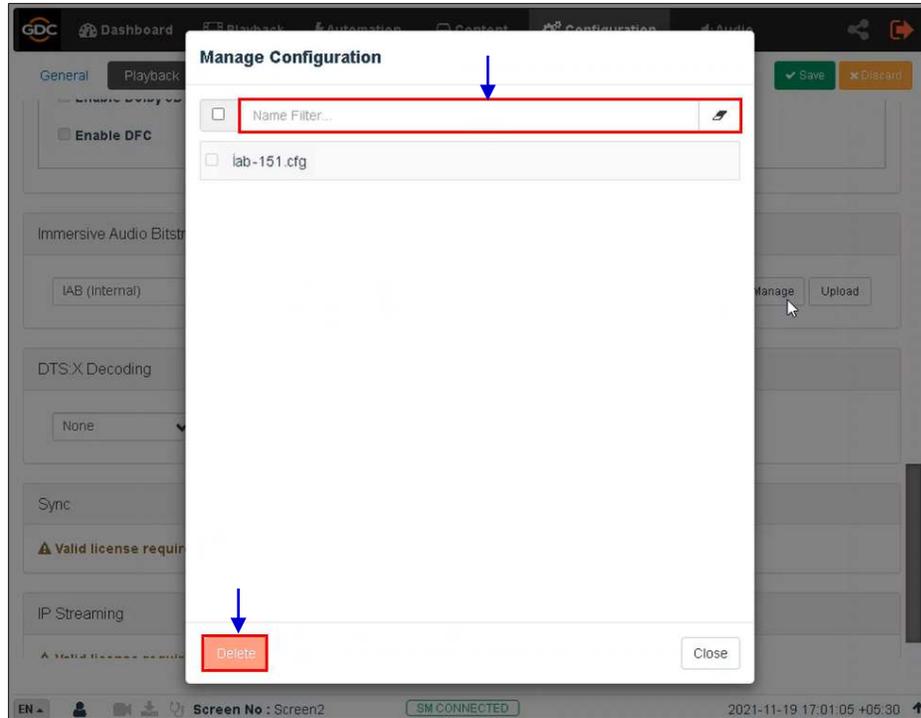


Figure 97: Managing IAB Configuration files

To save the changes under the **Immersive Audio Bitstream (IAB)** section, click the **Save** button on top (refer to **Figure 98**). Alternatively, click on the **Discard** button to discard the changes.

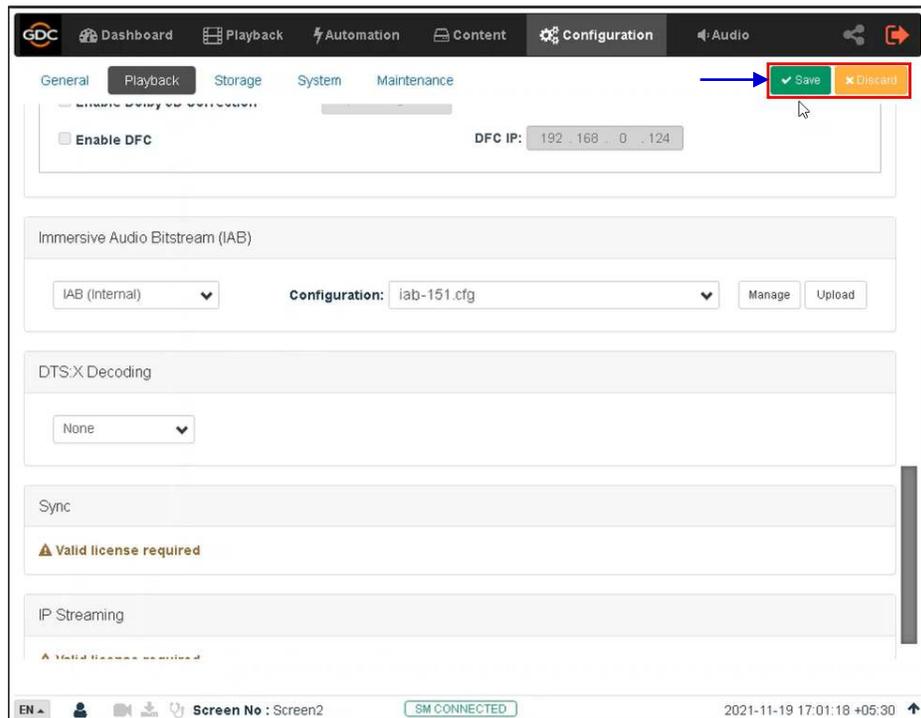


Figure 98: Save/Discard changes

11 APPENDIX II

The SR-1000 has undergone and passed on first attempt the following quality assurance tests, with reports issued by the world's leading inspection, verification, testing and certification company– **SGS Labs** (<https://www.sgs.com>).

1. Temperature Humidity Cycling Test

- SGS Test Report Number: **SZRL2018010392_02**
- Published Date: **March 05th, 2018**

2. Vibration Test

- SGS Test Report Number: **SZRL2018030056**
- Published Date: **March 08th, 2018**

3. Free Drop Test

- SGS Test Report Number: **SZRL2018030081**
- Published Date: **March 15th, 2018**

4. Thermal Shock Test

- SGS Test Report Number: **SZRL2018030235_01**
- Published Date: **April 03rd, 2018**

Website



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Specifications are subject to change without notice due to ongoing product development and improvement.

UM-0738-1803-V1E