Plugin Reference

Show Sequencer

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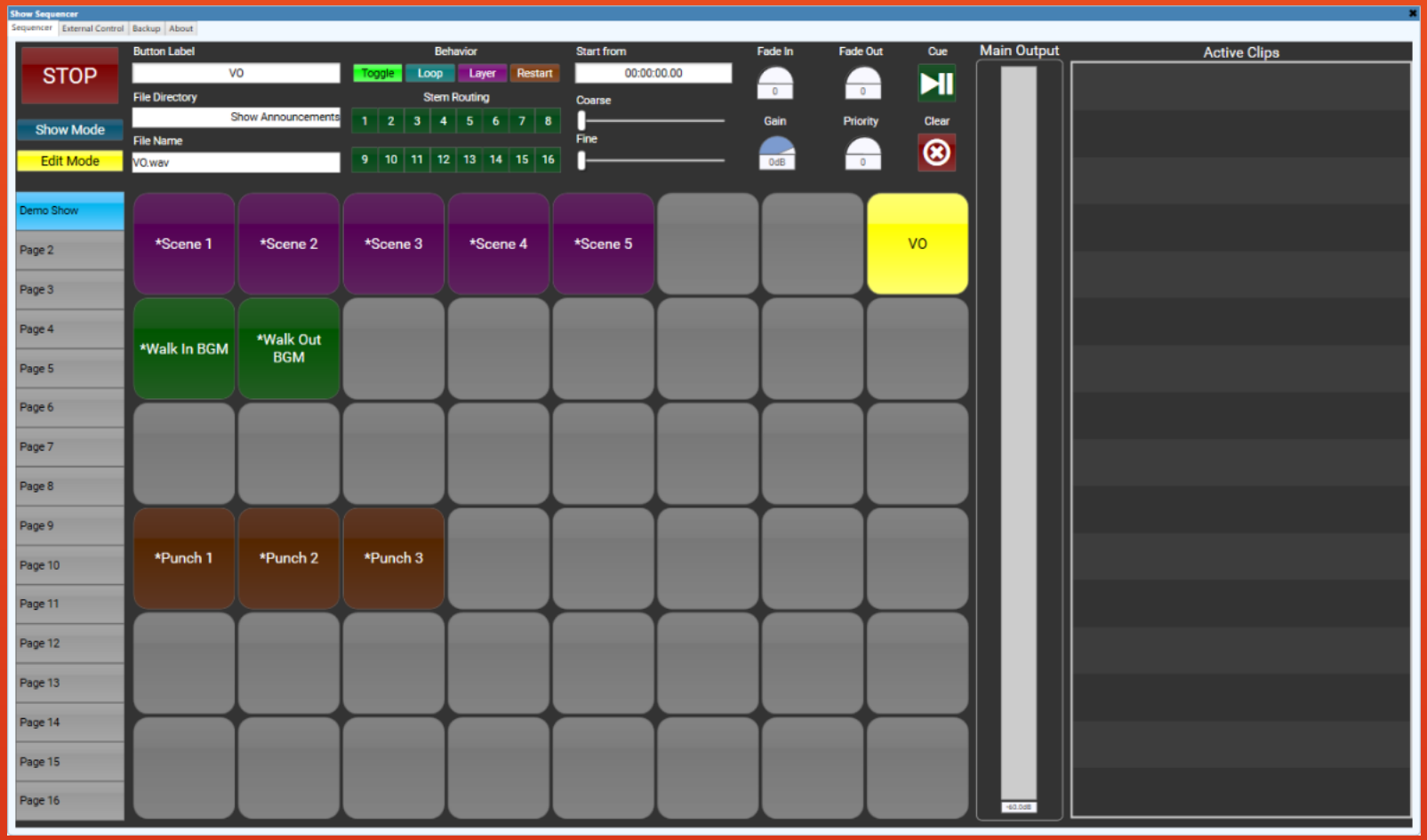

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Introduction

Show Sequencer is a sampler-style audio playback engine capable of handling almost any live performance or event. It is designed to allow rapid playback of many different types of audio assets at the press of a button. The UI offers 48 hot keys per page with 16 pages loaded at once.

Each hot key can be loaded with any audio file from the Audio root, even across different subdirectories. Each button can be configured to act according to one of four behaviors: Toggle, Loop, Layer, and Restart. Additionally, you can set each clip's fade-in time, start time, playback level, priority, and fade-out time when stopping.

The Active Clips pane on the right monitors the oldest 16 playing clips, displaying their names, elapsed and remaining time, discrete clip meters, and a stop button. The number of simultaneous sounds is specified by the Voice Count property.

An important feature of Show Sequencer is the complex audio routing that takes place under the hood. All active clips are mixed together to the main outputs. Cue mode, however, allows you to discretely preview clips at any time without them being audible on the main outputs — instead routing audio to dedicated Cue outputs. In addition, each clip can be sub-mixed to any of the 16 available stems, allowing sub-grouping of items for more granular level control by an outboard mixer.

Each page of buttons can be backed up and saved using the Backup tab. Copy the JSON configuration data to a text editor to save it for future reference. To import a backup, simply paste the JSON data into the editor and Show Sequencer will automatically load it.

Licensing and Agreement

This plugin follows our "Limited Project License" model in which a license key must be purchased for each project in which this plugin will be used. The License Key is paired with the Owner and Project name and the plugin bears this information as a watermark. The Owner is the company or agent that owns or operates the establishment in which the Q-Sys system is installed. The Project is the name of the facility or establishment specific to this Q-Sys system.

With each registration, you may use the plugin an unlimited number of times within the registered Project. Even if a single Project has multiple Cores, you may use it multiple times if all the Cores are part of the same Project. You may not reuse the same registration information multiple times for different Projects, even if they are for the same Owner. For example, Big Theme Park Company should purchase a new license for each of their performance venues or attraction buildings where the plugin is to be used, in each of their different park locations. Each performance venue would be considered a unique Project. It is acceptable to consider the general circulation ("area development") outdoor public areas of a park as a single Project; however, this does not encompass or include standalone performance venues (buildings within the area development boundaries) as part of the same Project.

As a system integrator or system programmer, it is your duty to protect your client and maintain legal compliancy.

Licenses are 16 alpha-numeric characters arranged in 4 groups of 4, delimited by hyphens. They are unique to the plugin and the plugin's major version and are paired with the Owner and Project. The license key may contain ones or zeros but not letters that look like those numbers (I, L, O).

Properties

Channel Mode

A choice of Mono or Stereo that determines the operational mode of the Sequencer. All internal audio players, mixers, meters, and other DSP resources will follow this selection. Keep in mind that Stereo mode will require more DSP resources and will double the required number of playback channels.

Voice Count

The number of simultaneous sounds the Show Sequencer can play. This also sets the number of audio players that will be used internally. If the Channel Mode is set to "Stereo", then the playback track count is two times this number. This number counts against your audio player quota which may require additional licensing on your core.

Control Inputs

The number of GPI controls to provide on the External Control page.

Use XPoint

Sets whether the plugin should attempt to connect to a Skaarhoj XPoint24 control surface.

IP Address

When "Use XPoint" is set to Yes, use this property to specify the IP address of the XPoint24 panel.

Registered Owner

The name of the company or entity which owns or operates the establishment in which this Q-SYS system is installed.

Registered Project

The name of the establishment, facility, performance venue, or otherwise intended usage of the plugin.

Registered Key

The activation license code.

Controls

Master Stop

Trigger button that immediately stops all actively playing clips with no fade outs. Useful for emergencies.

Show Mode

Radio-style toggle button that sets the sequencer for normal playback operation.

Edit Mode

Radio-style toggle button that allows the pages and buttons to be configured. No live playback will occur in this mode.

Page 1 through 16

Radio-style toggle buttons that select which page of buttons to view. Selecting the page button while in Edit Mode will turn yellow. Modifying the Button Label will set the page name.

Hot Key 1 through 48

Toggle buttons that start or stop playback of an audio file. The color of the button reflects the selected playback behavior: Toggle, Loop, Layer, and Restart.

Button Label

Text field that sets or modifies the selected Page button or Hot Key. You can use the pipe character | to break text into multiple lines. For UCIs on iOS or TSCs, use a single pipe which will convert to a carriage return. Using two consecutive pipes || will be converted to a carriage return and line feed for Windows UCIs. This control is only available while in Edit Mode.

Directory

Combo box that selects the Audio root sub-directory of the selected Hot Key. Only available while in Edit Mode.

Filename

Combo box that selects the audio file of the selected Hot Key. Only available while in Edit Mode.

Controls

Behavior

Four radio-style toggle buttons that set the playback interaction behavior of the selected Hot Key. See the notes section below for more information about the behaviors. These options are only available while in Edit Mode.

Stem 1 to 16

Toggle buttons that select which stem the clip should be sub-mixed to, in addition to the master output. Zero or more stems may be selected. These options are only available while in Edit Mode.

» The following controls behave differently between Show Mode and Edit Mode. While in Edit Mode, these settings are saved permanently to the selected Hot Key. While in Show Mode, these settings will temporarily override a Hot Key's settings. The controls will change yellow to show that they have been modified and are not the default settings. Use the Clear button in Show Mode to reset them.

» Start Time (Start From)

Textbox that specifies the desired start time of a clip. Time may be entered as a number of seconds, with or without decimals, or as a time stamp expressed as minutes:seconds.

» Coarse Time

A slider that specifies the whole number of seconds of the Start Time from 0 to 120 seconds.

» Fine Time

A slider that specifies the decimal portion of seconds of the Start Time from 0.0 to 0.999 seconds.

» Fade In

Knob in seconds that sets the length of time the clip will fade from silence to nominal level when starting playback.

Controls

Fade Out
Knob in seconds that sets the length of time the clip will fade from nominal level to silence when stopping. This does not affect clips that naturally end on their own.

Gain
Knob in decibels that trims the playback level of a clip. Audio files are always played back at 0dBFS and are trimmed by the specified gain level.

Priority
Integer knob that specifies a clip's priority level. See the notes section below for more information about priorities.

Cue
Activates cue mode. While in Show Mode, the Cue button acts as a latching mode toggle. When activated, pressing any Hot Key will cause the clip to play to the Cue Outputs. The Master Meters will monitor the cued clip. While in Edit Mode, the Cue button acts as a play toggle and will begin or end playback of the selected Hot Key.

Clear
Trigger button. While in Show Mode, Clear will reset the Start Time, Fade In, Fade Out, Gain, and Priority temporary settings. While in Edit Mode, Clear will delete a Hot Key or Page.

Main Output
Mono or stereo meters that monitor the main mix of all active clips. When a clip is being Cued, the Master Meters monitor the cued clip instead.

Controls

Active Clips

The pane shows the oldest 16 active clips arranged from top down. New clips are always added to the bottom. As clips end or are removed, the list will automatically shift up. Each clip lists the name of the Hot Key, the elapsed time, the remaining time, discrete meters of the clip, and a dedicated stop button.

Panel Connected

An LED that illuminates when the XPoint24 is connected with the plugin. This LED appears whether or not the "Use XPoint" property is set.

Panel Sync

Toggle button that controls whether changing a page on the UCI will also change the page on the XPoint and vice versa. Disabling this allows the UCI and XPoint to work somewhat independently by browsing different pages simultaneously and triggering clips, assuming a playback voice is available.

Control Command In

Textbox that accepts incoming command messages from an external control source, either by direct entry or via control pin. Alternatively, this can be used as a Named Control to more easily trigger clips from a control system outside of Q-SYS. See more information about external control commands in the notes below.

Control Command Out

Text indicator that provides feedback of the activities of the player as it relates to received commands. This control may also be exposed as a Named Control or control pin for easier access.

Page Flip

The pane shows the oldest 16 active clips arranged from top down. New clips are always added to the bottom. As clips end or are removed, the list will automatically shift up. Each clip lists the name of the Hot Key, the elapsed time, the remaining time, discrete meters of the clip, and a dedicated stop button.

Controls

Play Ready Clip

Momentary button that plays and stops any clip marked as ready from a control input or command. This button is digitally latching. A quick tap-on, tap-off will begin playback of the readied clip. To stop the clip, issue another quick on-off of the button. Alternatively, playback will begin when the button is held on and will stop when the button is released after a few moments.

Page Index

Integer knob that specifies what page the control input should correspond to. Setting this to zero will assume the current page as specified by the Page Flip control.

Hotkey Index

Integer knob that specifies what hotkey button the control input should correspond to.

Ready Button

Momentary button that sets the input as ready, which will be played by using the Play Ready Clip control.

Ready LED

LED indicator that illuminates when the selected clip is ready for playback using the Play Ready Clip control. Only one Control Input clip can be set as ready at a time.

Play Button

Momentary button that begins immediate playback of the Control Input clip, if a voice is available. This is a digitally latching button. A quick on-off pulse of the momentary button will latch on playback and a subsequent pulse will stop playback. Maintaining the button in the on position will play the clip and releasing the button will stop playback.

Playing LED

LED indicator that illuminates whenever the clip referenced by the page and hotkey indices of the Control Input is playing, even if playback was started by another means.

Controls

Backup Page Selection

Combo box that selects which Page to backup or restore.

Backup Configuration Data

Textbox that allows you to copy, edit, or paste configuration data for the selected page. See the notes section below for more information on backup/restore.

Hotkey Index

Integer knob that specifies what hotkey button the control input should correspond to.

Ready Button

Momentary button that sets the input as ready, which will be played by using the Play Ready Clip control.

Ready LED

LED indicator that illuminates when the selected clip is ready for playback using the Play Ready Clip control. Only one Control Input clip can be set as ready at a time.

Play Button

Momentary button that begins immediate playback of the Control Input clip, if a voice is available. This is a digitally latching button. A quick on-off pulse of the momentary button will latch on playback and a subsequent pulse will stop playback. Maintaining the button in the on position will play the clip and releasing the button will stop playback.

Playing LED

LED indicator that illuminates whenever the clip referenced by the page and hotkey indices of the Control Input is playing, even if playback was started by another means.

Properties

The plugin block has several configuration properties that should be set during design time, before getting started within the graphical interface. It is important to decide whether the player will operate in Mono or Stereo Channel Mode. It is also important to specify the Voice Count which sets the maximum number of simultaneous sounds that can be played. Bear in mind that for each voice, a playback channel is used and counts against the quota licensed for the core. When in Stereo mode, the consumed playback channel count is double the Voice Count.

It is also highly recommended that all content be formatted the same; either all stereo or all mono. There may be audible artifacts in the right channel when playing mono audio files while in Stereo Mode. It is possible to play stereo audio files while operating in Mono Mode, however only the left channel will be used.

Be certain to also enter your license registration information in the Properties area before attempting to emulate or compile the design. If this information is missing or invalid, the plugin will function for 60 minutes in a demonstration mode before stopping audio and disabling input.

The properties regarding Control Inputs, the Sequencer Number, and the XPoint are discussed in later chapters.

Audio Pins

The plugin block has many audio output pins available that should be wired to your design's signal chain. The number of pins is doubled when using Stereo Mode with each pin specifying whether it is the discrete Left or Right of the buss. The first buss is the Main Mix which is a mix of all active audio clips. For most cases, this is the buss to route to your main signal chain for audience listening.

The second buss is the Cue Out. The Cue feature allows clips to be auditioned separately from the Main Mix. This signal is not mixed to the Main Mix and is instead routed to the Cue Out buss. This buss can be wired to control room speakers or headphones, for example, to allow the playback operator a private monitor.

Remaining are the 16 Stem busses. In addition to clips being mixed and routed to the Main Mix buss, each clip can be selectively routed to any of the Stem busses to create sub mixes. This is useful when there is desire to have sub group level control over different types of clips, such as background music versus effects, or when there is need for more complicated point-source routing. With the right configuration, a single Show Sequencer block can run all audio playback for an entire performance venue.

The Sequencer

The Sequencer page of the plugin is the main user interface where most interaction and usage of the player occurs. The UI is pre-built to fill a 1920x1080 screen and is intended to be directly copied and pasted onto a 1080p UCI for use on a touchscreen PC. The graphical arrangement features enlarged controls to be touch friendly, making it an ideal playback solution for live shows.

At top left is the global section that features a Stop button, and the Show Mode and Edit Mode selection buttons. The Stop button is a global stop and will immediately stop all playback, regardless of any mode or concurrent number of clips. The Show Mode and Edit Mode buttons set the plugin into one or the other operating modes.

The primary area of the Sequencer is a six by eight grid of square buttons referred to as Hotkeys. A single column of 16 buttons on the left side are Page buttons which load a bank of 48 Hotkeys related to that Page. In total, the Show Sequencer offers 768 audio clips to be loaded all at once across the 16 Pages.

Setting Up the Player

To get started with making music, save your design to a core and run the design. On the Sequencer tab, change the player to Edit Mode.

Page Names

Pages can be renamed for more logical organization of clips. While in Edit Mode, touch a Page button. The Page button turns yellow to show that it is the current element being edited. At the top of the UI, the Button Label text box is available for editing. Give the Page a name and press enter. If the name needs to wrap to two lines, use two pipe characters ("||") to create a line break.

Edit Section

Next, select any Hotkey. The entire Edit section in the top area is now available. The Edit section provides all the controls for configuring a single Hotkey. From top-down, left-to-right:

Button Label

Provides a means of editing the label of a button. This is context aware whether you are editing a Page name or a Button name. This will always affect whatever button is highlighted yellow.

File Directory

This is a drop down that shows the available audio root directories on the core's media drive.

Filename

This is a drop down that shows the available audio files within the selected directory on the core's media drive.

Behavior

Each hotkey can be configured for one of four playback behaviors:

- Toggle (Green) - the default playback behavior. Toggle will begin playback when the hotkey is pressed once. To stop the clip, press the hotkey again. If the clip finishes naturally, the hotkey will automatically be deselected.

Setting Up the Player

- Loop (Blue) - Similar to Toggle, touch the hotkey to begin playback. The audio file will loop continuously until the hotkey is deselected. On the next press of that hotkey, the loop will break but playback will continue, allowing for a clean stop if desired. One more press will stop the clip, with a fade-out if configured (see below). Looping behavior is restored the next time the hotkey is pressed.
- Layer (Purple) - Each time the hotkey is pressed, an instance of clip begins playback. If enough voices are available, multiple instances, or layers, of the clip will be played simultaneously. This is useful for short clips like shots, punches, or effects.
- Restart (Orange) - Each time the hotkey is pressed, the clip is started again from the top of the track, or the specified start time. Only one instance of the clip will be played, unless the same audio file is mapped to more than one hotkey. This is useful for creating a stutter effect like an air horn.

Stem Routing

These selection buttons toggle on and off and will cause the clip to be routed to the corresponding Stem busses when played.

Start From

This is the start time of the clip which allows intros or silence to be skipped over. You may enter any time value in the text box using the format of hours:minutes:seconds.milliseconds. You may also substitute the hyphen for colons to make time entry easier on a touch keyboard.

Coarse and Fine Sliders

These sliders allow scrubbing through the minutes and seconds (coarse), and partial seconds (fine) of the start time of the clip. The coarse slider scrubs from 0 seconds to 2 minutes. The fine slider scrubs from 0 milliseconds to 990 milliseconds.

Fade In

This knob ranges from 0 to 10 seconds and sets the length of time it will take for the clip to fade in from silence when beginning playback.

Fade Out

This knob ranges from 0 to 10 seconds and sets the length of time it will take for the clip to fade out to silence before stopping. This fade out only applies when manually stopping the clip in Toggle or Loop behaviors.

Gain

The knob ranges from -100 to +10 dB and specifies the playback gain of the clip. It defaults to 0dB which is full scale. Studio mastered tracks will deliver full power at the amplifier unless other gain adjustments are made outside of the Sequencer block. It may be a wise idea to add a gain block on the main output pins to trim the entire player.

Priority

The priority knob ranges from 0 to 100 with 100 being the highest priority. All clips default to a priority of zero. Priorities are considered when the Sequencer has exhausted all available voices.

> Clip Priority - As there is a practical limitation to the number of simultaneous sounds (as determined by the Voice Count Property), the Sequencer uses the concept of Priorities to determine what should happen in the event that a new clip is added when no voices are available. Priorities range from 0 to 100 and are completely user assignable. By default, each clip has a priority of 0, the lowest logical value. When determining which voice should be used, the sequencer first attempts to find any voice that is not being used. If no voices are available, then the sequencer will compare all active clips from oldest to newest and select the oldest, lowest priority clip to remove where the priority is less than or equal to that of the selected clip. The clip that is interrupted may not be the oldest clip if there is a lower priority clip further in line. If all active clips are a higher priority than the selected clip, then no action will be taken and the new clip will not be played. The practical usage of priorities is intended to influence which audio clips should never be interrupted. For example, music tracks and loops may be set to a higher priority while punches, gunshots, and other single-hit sound effects may be a lower priority where losing them would not be as noticeable.

Clear

While in Edit Mode, touching the Clear button will reset the selected hotkey back to its blank, default state. This will delete all settings for the hotkey. Similarly, when a Page button is focused, pressing the Clear button will reset the entire page and all hotkeys on that page. This action cannot be undone unless you have a backup of the configuration.

Playing Clips

While in Show Mode, playing back clips is as simple as touching the Page button to view the configured hotkeys, and touching the desired Hotkey to begin playback, assuming that a voice is available. The color of the Hotkeys corresponds to the colors of the four playback behaviors. Darker colors indicate that the Hotkey is not playing while brighter colors with a glow indicate that the clip, or an instance of the clip is actively playing. Grey buttons are unloaded, improperly configured, or have their audio file missing. When a clip is fading out and stopping, the corresponding Hotkey will turn red. If a looping clip has been "devamped", indicating the loop has been interrupted, the Hotkey will turn amber.

Offline Files

Important note about audio files: The File Directory and Filename drop down combo boxes will only ever list options on a running system. While in emulation mode, the combo boxes will retain the directory and file names that were configured. It is also possible to manually type in these fields to pre-program a show, even in emulation mode. The data fields will be saved as part of the configuration. You can manually type in the fields by clicking just outside of the combo box and dragging the cursor over top of the white area. The combo box will show a red outline indicating that it is focused. You may now begin typing a new value, pressing enter when done.

When the Show Sequencer runs on a core for the first time, it verifies that all audio files are found according to each Hotkey's configuration. If a file cannot be found, the Hotkey background will be grey and the label on the Hotkey will be prefixed with an asterisk (*). The configuration for the Hotkey is maintained even though pressing the Hotkey will not start any playback. Enter Edit Mode to verify the directory and filename or use the core manager to upload the correct audio files. If audio files have been replaced on the core, enter Edit Mode (again) to refresh the audio file mappings.

Managing Clips

To keep an eye on all the clips that the Sequencer is playing at one time, even across Pages, each clip will appear in the Active Clips area on the right side of the UI. Up to 16 clips can be shown at one time, although many more sounds may be actively playing. The clips are arranged in a first-in, first-out order with the oldest playing clip at the top. As clips end or are stopped, they will be removed from the list and all clips will shuffle upwards. Each clip shows the name of the Hotkey, the elapsed and remaining playback time, and discrete meters of the clip.

At the left of the clip is a dedicated stop button that will only affect that particular clip. This is useful for removing clips that may have been mistakenly activated, or ending clips without having to browse to the correct Page. Using this stop button will still obey the configured Fade Out time for that clip.

On-The-Fly Adjustments

A special feature of the Show Sequencer is the ability to quickly modify playback parameters of Hotkeys and active clips on the fly without having to enter Edit Mode and even while a clip is already playing. While in Show Mode, some controls in the Edit section at the top are still enabled. These controls become global to the entire Sequencer and override any Hotkey configurations while they are active. Once an Edit control has been touched or adjusted, its color will turn yellow indicating that it is now in effect. Only the yellow controls will affect operations of the Sequencer and not all controls are needed to be set in order to have an effect on playback behaviors. To reset these overrides, use the Clear button. The Clear button will illuminate yellow whenever a global override is active.

Use Case - Say that an active clip needs to be manually stopped but other clips are active. Rather than having an abrupt end to the clip, you can first set the Fade Out control to a few seconds, then touch the Active Clip's stop button causing it to fade out. Even if the clip may have been configured with a fade out time, using the global override is a way to ensure it will fade out as desired.

In the event that the Sequencer runs out of voices but a special audio track needs to be played immediately, the Priority override can be used to allow the Sequencer to remove the oldest playing track automatically and allow the special track to begin playback immediately.

Cue Mode

The Cue button in the Edit section is a dual-personality control that is Mode specific. When the Sequencer is in Show Mode, the Cue button sets the Sequencer into a pseudo third mode where any Hotkey activations will only be routed to the Cue buss. This is useful for allowing an operator to preview or "cue up" a clip while the show is live. To use this feature, touch the Cue button to activate Cue Mode. The button will

illuminate light green to indicate that Cue Mode is active. The main level meters will also change to monitor the Cue buss only. Activating any Hotkey will play the clip according to its configured parameters including any on-the-fly override parameters allowing them to be auditioned. While playing, the Hotkey will illuminate a light green color to differentiate it from any other active Hotkeys. Touching the Hotkey while it is playing will stop playback. Touching the Cue button while auditioning will also stop playback and return to normal Show Mode.

While in Edit Mode, the Cue button behaves as a play/stop button rather than a mode change button. First touch a Hotkey to select it, then touch the Cue button to begin playback. Touch the Cue button again to stop playback. Audio routing of the cued clip is still only to the Cue buss.

External Control

The Show Sequencer now allows for more robust external control to better interface with other hardware, control systems, or scripts. All external control capabilities are offered on the External Control page of the plugin.

Control Pins

Because of the advanced use of the Pages and Hotkeys, exposing control pins and trying to control the player in the traditional approach would be very cumbersome. Instead, dedicated, definable control pins allow for direct control without having to second guess button states from user interaction.

Each Control Input allows for a Page and Hotkey index to be defined which associates one input control pin on the plugin with a particular clip. For each Control Input, there are two available input pins and two available output pins that can be exposed using the properties pane during design time. The two inputs are Ready Button and Play Button and the two outputs are Ready LED and Playing LED.

The Ready Button is a momentary button that operates as a digital latch. Activating the button will set the specified Control Input as "ready" and the corresponding Ready LED will illuminate. Activating the Play Ready Clip button will cause the Hotkey associated with this Control Input to begin playback.

> Use Case - When working with external hardware with GPIOs, such as a broadcast console, only one or a few GPIOs may be available to activate playback. The "ready, play" method allows clips to be selected from a button box or touch screen with a GPO from a console set to activate the play button.

The Page Index control also allows for a value of zero. When set to zero, this will assume the current active Page of the main UI as also indicated in the Page Flip control. In cases where a limited amount of GPIOs can be used, this rapidly expands the capabilities by making banks of available clips. Changing the value of the Page Flip control is also possible through a control pin. When changed, the graphical interface will also change to reflect the desired Page. The Play Button is also a digitally latching momentary button that will immediately begin playback of the configured Hotkey. These buttons have dedicated input control pins for easier direct access for playback control. The Playing LED will illuminate with the Hotkey configured for the Control Input is playing.

Using the Digitally Latching Buttons

As mentioned, the Ready, Play, and Play Ready Clip buttons are all digitally latching momentary buttons. They can work in either a true toggle or a tap-on, tap-off fashion depending on what their input pins are tied to or if they are used on a touchscreen. When the momentary button is held on for more than one second, then the button will behave in a toggle mode. As soon as the button is released, playback will stop. If the momentary button is pressed and released within one second, then the state will be digitally latched on and playback will continue until another pulse of the button is actuated.

Control Commands

The External Control page offers two text boxes called "Control Command In" and "Control Command Out". These two text boxes can be exposed to control pins or as named controls in the design to provide easier scripting or external access to the player. Whenever a command is entered into the Control Command In field, the player will accept the string and immediately blank the field to be ready for the next command. Any feedback from the player will be displayed using the Control Command Out field. Refer to the External Commands chapter for more information on the protocol.

In addition to the Control Command text boxes, commands can also be sent from a script inside the same design using the Notifications Lua library. The Show Sequencer listens for commands on the notification channel "ProIO-ShowSequencer-1-Command". The number used in the notification channel corresponds to the "Sequencer Number" property of the plugin. This allows multiple instances of the Show Sequencer in a single design to maintain discrete control when using notifications. The player will respond to commands and provide feedback using the notification channel "ProIO-ShowSequencer-1-Response". Refer to the External Commands chapter for more information on the protocol.

External Commands

The External Command syntax used by the Show Sequencer is somewhat similar to OSC paths in the sense that action words and objects are separated by a forward slash (/). Actions are grouped together by a category or similar function word, followed by object paths, and finally a verb.

The Show Sequencer syntax also allows for parameters to be appended to some commands to provide a greater degree of control and flexibility. A string of parameters are appended to the full path using a comma. Each parameter is expressed as a key/value pair separated with an equal sign. Multiple parameters are separated by a space.

Example of a complete command:

```
/hotkey/1/1/play,fade=2 gain=4
```

Parameters issued through an external command method, either command text box or via a notification will take precedence over any configured clip settings and global override ("on-the-fly") settings. If no parameters are overridden in the command, then the normal rules apply with global overrides and configured clip settings.

All textual commands will be given a textual response as to the current state of the request or general state of the player. When using notifications, more unsolicited feedback commands will be given.

Commands

/hotkey – directly controlling any Hotkey on any Page.

```
/hotkey/page#/hotkey#/action
```

Possible actions:

- /play – begins playback of the clip
- /stop – stops the clip
- /ready – sets the clip as ready, to be used with the Play Ready Clip button or command

External Commands

Possible parameters:

- /play
  - seek – specifies the starting point of the track, expressed in seconds. May be a decimal.
  - fade – specifies the fade in time when beginning playback, expressed in seconds. May be a decimal.
  - gain – specifies the playback gain of the clip as a number, in dB. May be decimal. Do not include "dB".
- /stop
  - fade – specifies the fade down before stopping in seconds. May be decimal.

Feedback verbs:

- /playing – the clip has successfully begun playback
- /stopping – the clip is currently fading down in the process of stopping, but has not stopped yet
- /stopped – the clip has stopped playback

Examples:

Command	Response
/hotkey/1/7/play,seek=15.2 gain=-13 fade=5	/hotkey/1/7/playing
/hotkey/4/13/stop,fade=10	/hotkey/4/13/stopping
/hotkey/3/9/ready	/hotkey/3/9/readied

/mode – causes the player to change between operating modes

```
/mode/state
```

Possible states:

- /show
- /edit

Examples:

Command	Response
/mode/show	/mode/show
/mode/edit	/mode/edit

External Commands

/stop – activates the global stop which will immediately end all playback

Command	Response
/stop	/stopped

/ec – used for various external control usages

```
/ec/controlinput#/action
```

Possible Actions:

- /ready – sets the specified Control Input as ready
- /play – activates the specified Control Input play button to begin playback
- /stop – stops the specified Control Input clip

Examples:

Command	Response
/ec/1/ready	/ec/1/ready
/ec/2/play	/ec/2/playing
/ec/3/stop	/ec/3/stopped
/ec/999/play	/ec/outofrange

/ready – Used for playing or stopping readied clips. This directly controls the "Play Ready Clip" button.

```
/ready/action
```

Possible Actions:

- /play
- /stop

External Commands

Examples:

Command	Response
/ready/play	/ec/4/playing
/ready/play	/ready/unavailable

/page – Used to remotely change the selected Page

```
/page/index#
```

Examples:

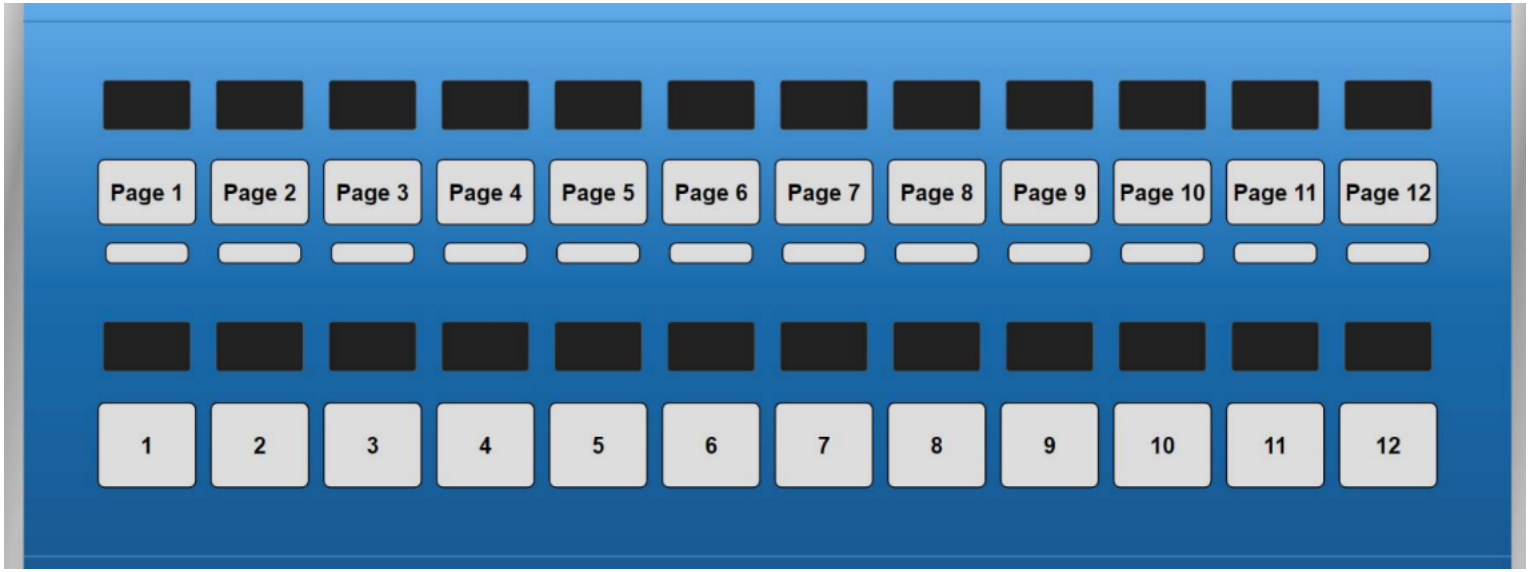
Command	Response
/page/7	/page/7
/page/42	/page/outofrange

Errors

Any command that could not be correctly interpreted will result in no action and will return an error message "/badcommand". In some cases where a Page, Hotkey, or Control Input is to be specified, if the number is outside the available number of controls, then a more specific error of "/outofrange" will be given. When attempting to manipulate the Play Ready Clip button, if a clip is already being played using the button, then an error message of "/ready/unavailable" will be given when a play command is attempted.

Using XPoint 24

Show Sequencer is compatible with the Skaarhoj XPoint 24 button panel which allows for broadcast-grade playback operation from a compact hardware unit. The XPoint 24 is a separate purchase from the Show Sequencer plugin.



The XPoint 24 features two rows of 12 buttons, with each button offering an OLED scribble strip for digital button labeling. The top row allows for access of the first 12 Pages. The bottom row can access the various Hotkeys belonging to the selected page in four groups of 12. Each button illuminates various colors to present helpful playback state information all on the panel with no additional screen required.

The panel communicates over a standard Ethernet network via TCP to the Show Sequencer. The panel can by powered by its included DC power supply or via Power-over-Ethernet.

Using XPoint 24

Getting Started

After unboxing the XPoint 24, the first step is to download the Skaarhoj Updater Utility from http://skaarhoj.com. Connect your panel to DC power and connect the included micro-USB cable to your PC. The updater utility should automatically discover the panel after it boots. The panel will need to be configured with an appropriate IP address that matches your installation. Keep in mind that the Q-SYS core will need to be able to communicate with the panel. You will also need to configure the panel to make use of the "TCP Server" Device Core. The default TCP port of 9923 should be used. More detailed instructions on setting up your panel are available from http://skaarhoj.com.

After adding the Show Sequencer plugin to your design, select the block and review the properties pane in designer. Set the property "Use XPoint" to Yes. This will show the property "IP Address" which should be set to that of the XPoint panel. After running the design, the Show Seqeuncer should connect automatically. The "Panel Connected" LED on the External Control page of the plugin will illuminate when the plugin is connected to the panel.

Operating the Panel

The top row of buttons correspond to the first 12 Pages of the plugin. Pages 13 through 16 are not accessible by the XPoint 24. The scribble strips along the top will be labeled as "Pg 1" through "Pg 12". The currently selected page's scribble strip will have a white heading and the text "Pg 1 (1-12)" to represent that it is active and that Hotkeys one through 12 are available. The Page button will also illuminate blue. The blue color corresponds to Show Mode, just as the plugin UI shows the selected Page button with a blue color.

Each Page button is a 4-way rocker button. Touching near the edges of the button will cause the button to rock in that direction. To access each one of the four groups of Hotkeys on a single page, touch the Page button in each of the cardinal directions:

Up	Group 1	Hotkeys 1-12
Left	Group 2	Hotkeys 13-24
Down	Group 3	Hotkeys 25-36
Right	Group 4	Hotkeys 37-48

Each Page selection will illuminate a segment in the LED bar under the Page button. No LEDs represent group 1 and LED progresses from left to right with groups 2 through 4.

The bottom row of buttons are mapped to Hotkeys as determined by the active Page sub-group. The scribble strip above each Hotkey button will label the Hotkey number.

Scribble Strip Legends

Both Page and Hotkey scribble strips bear the text label of the button as configured in the Show Sequencer UI. Up to two lines of text can be displayed. To force a line a break, use double pipes in the button label ("||").

Hotkey labels also contain a legend symbol in the upper right of the screen that indicates the configured playback behavior of that Hotkey.

- ↓ The downward arrow meeting a horizontal line indicates the Layer behavior.
- ↑ The up arrow indicates the Restart behavior. Up, as in, back to the top of the
- The zig-zag indicates the Toggle behavior. Zig. Zag. Toggle On. Toggle Off.
- The circular arrow indicates the Loop behavior. Loop, as, in loop. I mean, too

Scribble Strip Legends

The Hotkey buttons will illuminate various colors depending on configuration and current playback states. A default button that is unused in the player will not show any text in the scribble strip and the button will also not be illuminated. Configuring a button with a name will show that name in the scribble strip but only when the button is loaded with a valid audio file will the button illuminate white to differentiate it from unloaded or blank buttons.

Upon playback, the button will illuminate with the color of the configured behavior. Green for Toggle, Cyan for Loop, Purple for Layer, and Orange for Restart.

When a looping clip is being devamped, the Hotkey button will flash amber for the rest of the playback. When a clip is stopping, the Hotkey button will flash red for the duration of the fade out. When stopped, the Hotkey button will return to white.

Edit Mode

The operating modes of the Show Sequencer may also be changed by using the panel. To swap between Show Modes and Edit Mode at any time, press the Page 1 and Page 12 buttons at the same time and release. The current Page button will now illuminate yellow to match the color of the UI while in Edit Mode. All Hotkey buttons will now be dark unless you select a Hotkey which will also turn yellow to show that it is the current selection. The UI follows the selection while in Edit Mode following the last touched button. If you touch a Page button the panel, then the Page will be the selected object for editing. There is no effect on playback while using the panel in the manner while in Edit Mode. To switch back to Show Mode, use the same key combination.

Cue Mode

Cue Mode is also able to be triggered from the panel. Press and hold the current Page button while in Show Mode for 2 seconds. The Page button will begin flashing light green. The UI will also update to show that the Cue button is now active in the same color. Touching any Hotkey will audition it on the Cue buss. While auditioning, the Hotkey will also flash the same color in the same pattern on the panel. All Hotkeys behave as Toggle while in Cue Mode, regardless of the configured behavior. Page changes are allowed while in Cue Mode simply by tapping any other page; no need to long press them while in Cue Mode. To exit Cue Mode, long-press the active Page button again for 2 seconds.

Panel Lock

To prevent accidental triggering of the panel, it is possible to lock the panel. To do so, press the Page 1, Page 2, Page 11, and Page 12 buttons simultaneously and release. (Two fingers, each upper corner). The panel will then update to display “PANEL LOCKED” along the scribble strips. All Page sub-group indicators will also illuminate red. To unlock the panel, use the same key combination.

Configuraiton Backup and Restore

The Show Sequencer stores all configuration data as JSON objects in the Design. Each Page of Hotkeys is a separate JSON object that can be individually stored or recalled. On the Backup tab of the plugin, you can use the Page Selection combo box to select which page you wish to modify or store. You can simply copy the JSON data for a page and save it in a text editor like Notepad. This is great for seasonal shows that you may wish to recall later. To recall a show, select the desired page and paste the JSON data, overwriting the editor's text.

Storing the configuration data is only intended for advanced recall and storage purposes and it is not required to permanently save your configuration. By default, any settings of the Show Sequencer are stored within the Q-SYS Design. Only if you want to transfer a Page between two sequencers (like preparing a show offline) would it be necessary to use the Backup and Restore functionality.

You may also directly edit the JSON by hand for automated configuration. For example, you can swap two Hotkeys on the screen by simply changing its index number in the JSON array. Note that only non-default settings of a Hotkey are written to the JSON file to save memory and disk space.

The configuration JSON is a Page object which contains a list of Button objects.

A Page is defined as

```
{
     "Name":"Page 1",      //string
     "Buttons":{},         //keyed array
}
```

The array key of each Hotkey button within the Buttons array is a string representation of the desired Hotkey number. These are strings, rather than integers, which allows the buttons to be listed in any order rather than by having an indexed array. To change a buttons position, you may change the key's string value without having to move the button object definition within the JSON block.

The Button Object is defined as below using default options (except for the example Label, Directory, and Filename.
Default options are not written to the configuration file to save space.

Configuration Backup and Restore

```
"1":{                                   //the string key of the button
                                        //also determines its location
                                        //in the grid
     "Label":"Button Label",            //string
     "Directory":"Shows/My Show",       //string
     "Filename":"Track 01.wav",         //string
     "Behavior":1,                      //integer
     "Routing":[],                      //indexed array of integers
     "Seek":0.0,                        //decimal
     "FadeIn":0.0,                      //decimal
     "FadeOut":0.0,                     //decimal
     "Gain":0.0,                        //decimal
     "Priority":0,                      //integer
},
```

Label

String that will be shown on the Hotkey

Directory

String that represents the path to the audio file within the audio root. No leading or trailing slashes should be added. The path should be specified using the forward slash '/'

Filename

String containing the actual file name of the desired audio clip, with the extension. Only MP3, WAV, WAVE, and FLAC are allowed.

Behavior

Integer representing one of the four Hotkey Behaviors
1 – Toggle (default, may be omitted)
2 – Loop
3 – Layer
4 – Restart

Routing

An indexed array of selected stems. The array should contain integers between 1 and 16. Integers present will be selected for routing. This item may be omitted if no routing is desired.

Seek

Decimal that defines the start point of the file, in seconds. May be omitted for 0 seconds.

FadeIn

Decimal that defines the fade in time when starting playback, in seconds. May be omitted for 0 seconds.

FadeOut

Decimal that defines the fade in time when starting playback, in seconds. May be omitted for 0 seconds.

Gain

Decimal number that defines the playback gain of a clip, in the range of -100.0 to 10.0 decibels. May be omitted for 0dB.

Priority

Integer specifying the priority of the Hotkey clip between 0 and 100. May be omitted for a value of 0.

v2.1.1 – September 15, 2026

- Minor bug fixes to license handling

v2.1.0 – August 13, 2026

- Created a new "About" page to consolidate licensing
- Modified the button color behavior in Edit Mode to make the playback behavior selection more obvious

v2.0.3 – March 26, 2026

- Update to ProIO branding

v2.0.2 – January 1, 2026

- Added a "devamp" behavior for looping clips. When a clip is looping, pressing its Hotkey will break the loop — making the current iteration the last — and turn the Hotkey amber. Pressing the Hotkey a second time will stop the clip immediately, respecting any configured fade-out. Looping behavior is restored when the Hotkey is pressed again to restart playback.

v2.0.1 – October 1, 2025

- Added a demo mode for evaluating Show Sequencer before purchasing a license. If license information is missing or invalid, the plugin will enter demo mode for 60 minutes before disabling audio output.

v2.0.0 – September 1, 2022

- Added external control capabilities, making Show Sequencer an ideal solution for permanent installation and interactive audio use cases. External commands can be sent using the command string text control, by feeding strings in from a control pin, or by sending commands from a script using notification channels.
- Added GPIO support, allowing a broadcast console to select, play, or hot-take any button in the player.
- Added direct support for the Skaarhoj XPoint 24 control surface. The surface can access the first 12 pages of buttons with 48 buttons per page, subdivided into 4 groups. The compact, PoE-powered surface features OLED displays and color-illuminated buttons for professional, broadcast-quality punch box or instant-style playback control.

v1.0.0 – October 1, 2019

Original release