



kaleidescape

Control4 Driver Integration Guide

v204

Introduction

This driver uses a single Media Player proxy to control Kaleidescape movie players.

The driver supports multiple events that can make the movie-viewing experience special. For example, you can respond to player events by dimming the lights and closing the curtains when movie playback begins, and masking a projection screen to the correct aspect ratio for the movie being played. You can even have the lights begin to slowly fade up when the end credits roll. We encourage you to take advantage of this functionality to make your clients' experience special.

The driver also supports relaying of volume controls and level feedback for Kaleidescape mobile applications. This allows users who prefer to control movie playback using those applications to adjust the volume without having to switch to another application. See the **Volume Control and Feedback** section in this document for details.

This document is also available in a [PDF version](#) for easy access.

If you require technical assistance with this driver, please contact Kaleidescape technical support at 650-625-6160 or support@kaleidescape.com.

Quick Start Guide

1. In the *System Design* view, add an instance of the driver to your project for each player that you will control. Ensure that you use the driver that matches your model of player so that the correct connections and commands will be available. Kaleidescape Strato systems running kOS 10.11.0 or later support SDDP discovery.
2. In the *Properties* tab, set the appropriate properties:
 - a. Indicate if you want this player to remain permanently on.
 - b. Indicate if you are using a projection system with screen masking, so that subtitles and user interface elements will be repositioned so as not be obscured by the masks.
 - c. If the player is dedicated to one room, configure the popups in the *Kaleidescape App Volume Control and Feedback* section. This will allow the Kaleidescape mobile applications to provide volume control and level feedback when playing content from the Kaleidescape player. If the player is distributed to multiple rooms, leave these set to None. See the **Volume Control and Feedback** section later in this document for details.
 - d. Observe the default customizable key bindings and make any desired changes. Note that keys can be customized differently for movie playback and OSD navigation.

3. If not using SDDP, define the IP connection in the *Connections* -> *Network* pane to match the player this driver is to control. Note that the player **MUST** be set to use a fixed IP address if not using SDDP.
4. Set up all the AV connections for the player.
5. If desired, use the *Programming* view to add responses to this driver's events, such as automatically dimming the lights on movie playback, raising the lights during the end credits, automatically adjusting screen masking, changing display settings for HDR vs. SDR content, etc.

Driver Configuration

Properties

In the *System Design* view, select the Kaleidescape player to view all available properties for setup:

Property	Description
Version	A read-only field showing the version of the driver.
Status	A read-only field showing the connection status of the driver and standby status of the player.
Debug	Turns on and off debugging messages. Messages may be sent to the Control4 system log (log), to the Lua tab (print), or both. Debugging is automatically set to "Off" after 15 minutes as it will affect system performance.
Power	Indicates if the player should be permanently left on or allowed to enter standby (power off).
Active Protocol Version	A read-only field showing the active protocol version of the player. On startup, the driver will set the active protocol version to the highest supported version.
Video	
Using a Controlled Mask	Set to "Yes" if the video output will be masked down either with a screen masking system or with a 2.35 lens. This setting will reposition system messages and subtitles so they are not obscured by the masks.
Kaleidescape App Volume Control and Feedback	
The settings in this section allow Kaleidescape mobile applications to provide volume control and volume level feedback during media playback. They should be used when the player is dedicated to one room, and not when the player is distributed to multiple rooms. See the Volume Control and Feedback section later in this document for details.	
Kaleidescape App Volume Control	Set this popup to indicate whether the audio equipment in the player's room supports only volume up/down controls, or if it also supports setting a level directly. Changing this

	setting from None reveals the additional options below.
Kaleidescape App Mute Control	Set this popup to indicate whether the audio equipment in the player's room supports mute control.
Kaleidescape App Volume/Mute Feedback	If the audio equipment in the player's room provides volume feedback, set this popup to match what kind of feedback is available.
Room Selection	Choose the room in which the player is used. This ensures that volume controls are routed to, and feedback is received from, the proper room.
Media Playback Key Bindings	
* key ... ●●● key	Customize the action taken when the listed keys are pressed on the Control4 remote or touch panel. These properties apply only during media playback.
On-Screen Display Key Bindings	
* key ... ●●● key	Customize the action taken when the listed keys are pressed from the Control4 remote or touch panel. These properties apply when the onscreen display is active.

Programming Interface

All Events and Actions described here are available through the *Programming* view in Composer.

Events

Events are shown in the left pane of the programming interface.

Event	Description
Power On	The player has powered on.
Power Off	The player has powered off
Play	The player has begun playing content.
Pause	The content has been paused.
Stop	The player has stopped playing content.
CinemaScope Scale Mode ____	Triggers to indicate when an anamorphic lens or zoom mode of a native 2.35:1 projector should be enabled – either No Scaling Required, Anamorphic, or Zoom.
Color Depth ____	Triggers when the video color depth changes – either 24bit, 30bit or 36bit.

Color Sampling ____	Triggers when the video color sampling changes – either None, RGB, YCbCr 4:2:2, YCbCr 4:4:4 or YCbCr 4:2:0.
Color Space ____	Triggers when the video color space changes – either RGB, BT.601, BT.709, BT.2020, or default.
Dynamic Range ____	Triggers when the video Dynamic Range changes – either Unknown, SDR, HDR 10 or Dolby Vision (Strato V only).
Frame ____	<p>Triggers when the video mode is showing this frame ratio - either 4X3 or 16X9.</p> <p>Use these events to trigger video mode changes in a display device when needed.</p> <p>Note: these events are not commonly needed with high-definition or 4K systems.</p>
Lights to ____	<p>Triggers at one of these events - either <i>Movie Playing</i>, <i>End Credits</i>, <i>Menu</i> or <i>Intermission</i>.</p> <p>The <i>Lights to Menu level</i> will trigger when showing a Kaleidescape OSD place or for most DVD menus.</p> <p><i>Lights to Movie Playing</i> will trigger when playback begins or resumes.</p> <p><i>Lights to End Credits</i> will trigger when the end credits are shown.</p> <p><i>Lights to Intermission</i> will trigger when the intermission is invoked.</p>
Mask to ____	<p>Triggers when the playing content is using this aspect ratio - either 1.33, 1.66, 1.78, 1.85, or 2.35. Also triggers as needed when returning to the onscreen display.</p> <p>Use these events to trigger an automated screen masking system or an anamorphic lens.</p> <p>Note that this is different than the Frame; a 2.35 movie has black bars encoded in the content to make it fit in a 16X9 frame.</p>
CinemaScape Mode ____	<p>Triggers to indicate when the current CinemaScape mode is changed – either Off, 2.35 Anamorphic, 2.35 Letterbox, or Native 2.35 Display.</p> <p>Note: CinemaScape mode does not change in typical installations, but this event may be useful in installations where a player is shared between multiple zones via a distribution system, and where some zones use CinemaScape and some do not.</p>

Actions

Actions are shown in the lower-right pane of the programming interface.

Action	Description
Power On/Off	Turn the player on/off.
Play / Pause /Stop / Scan Fwd/ Scan Rev / Skip Fwd / Skip Rev	Perform the indicated transport command.
Menu / Up / Down / Left / Right / Enter	Performs the indicated command. Menu will engage the movie or disc menu when in movie playback and toggle the Kaleidescape menu otherwise.
Keypad ____	Sends the indicated keypad key. This will not strictly send the indicated number command but will sometimes perform as an alpha-key depending on what is showing on the OSD. See the table in the Remote Control Key Bindings section of this document for details. During movie playback, the # key will begin the chapter entry and the next two keys (followed by enter) will select a chapter.
Colored Buttons	Sends the indicated color key for the Blu-ray Disc navigation.
Favorite Scene Markers	Sets the begin and end point of a favorite scene during movie playback. These commands are also available through the Kaleidescape OSD Info menu during playback.
Page and Skip control	Sends a page up/down and a skip previous/next in one command. Useful for interfaces that lack page up/down buttons or channel up/down buttons, like the Control4 mobile application. These commands are already bound to the chapter skip buttons on Control4 interfaces.
Parental Control Mode	Enable <i>Safe</i> or <i>Default</i> parental control level of the player. These commands are handled differently depending on product family. On Premiere systems, the parental control levels are configured in the browser interface. The default level can be set for each player independently. The safe level is the least restrictive level without a passcode. On Strato, Alto, and Cinema One 2 nd Generation, the default level is set in the OSD Settings place. Both Parental Control Mode commands will set the player to the

	<p>default level.</p> <p>Neither command will change the mode to a less restrictive level. For example, if the default mode is <i>R and below</i> but the player is only showing <i>G and below</i> content, the <i>Default</i> command will perform no action.</p>
Instant Replay	Skip back 5 seconds in the movie.
Show an OSD Place	<p>Set the OSD to the specified place. The <i>Movie Selections</i> action will cycle sequentially through each movie place and the <i>Music Selections</i> action (on systems that support music) will cycle sequentially through each music place.</p> <p><i>System Status</i> will show the system status page. All other selections will invoke the specifically indicated movie or music place.</p>
Go to a specific Movie Collection	Allows direct navigation to a specified movie collection; the <i>Collection name</i> is case sensitive.
Go to a specific Music Collection	Allows direct navigation to a specified music collection (on systems that support music); the <i>Collection name</i> is case sensitive.
CinemaScope Mode	<p>Allows setting the player's CinemaScope mode. Possible values include <i>None</i>, <i>2.35 Anamorphic</i>, <i>2.35 Letterbox</i> and <i>Native 2.35 Display</i>.</p> <p>Note: This action is not needed in typical installations. It is provided for cases in which a player is shared between multiple zones via a distribution system, and where some zones use CinemaScope and some do not.</p>
Filter List	Begins entry of a text string to filter list views, or opens a search interface where supported.
Show Navigation Overlay	Opens the playback options overlay, with the Navigation tab selected.
Cover Art	Shuffles or alphabetizes the cover art view.
Angles	Selects the next or previous angle, on content that has angles.
Subtitle Options	Selects the next subtitle option.
Audio Track Options	Selects the next audio track option.
Intermission	Starts, ends, or toggles the intermission.
Screen Saver	Starts or stops the screensaver.
Play a Video Script	Starts playback of the specified script; the <i>Script name</i> is case sensitive.
Disc Controls	Opens the disc menu, the disc top menu, or opens the

	disc-in-tray movie details sheet.
Random Music	Set random music mode for music playback. Options are start, stop, and toggle. Only for systems that support music.
Repeat Music	Set repeat music mode for music playback. Options are start, stop, and toggle. Only for systems that support music.
Control a Music Zone with OSD	Sets the OSD to control a different music zone. Only for systems that support music.
Control the default zone with OSD	Returns the OSD to controlling the default music zone; essentially reverts from the above command. Only for systems that support music.

Variables

Variables show as child objects of the device, with each being available in the *Device Events* pane on the left (as a Changed event), and in the *Actions* pane on the right, where they can be used as Conditionals (if value) and Commands (Set value).

Note that many variables are read-only, and thus cannot be used as a command.

Variable	Description
POWER_STATE	Indicates the power state of the player (Boolean).
CinemaScape Mask	When the player is in CinemaScape Mode, indicates the aspect ratio of the current image. Possible values are from 0 to 999, for example 133 corresponds to an aspect ratio of 1.33:1. This value can be used to determine proper screen masking position.
Color Depth ____	Indicates whether the specified video color depth is active (Boolean). Variables exist for 24 bits, 30 bits and 36 bits.
Color Sampling ____	Indicates whether the specified video color sampling is active (Boolean). Variables exist for None, RGB, YCbCr 4:2:2, YCbCr 4:4:4 and YCbCr 4:2:0.
Color Space ____	Indicates whether the specified video color space is active (Boolean). Variables exist for Default, RGB, BT.601, BT.709 and

	BT.2020.
Dynamic Range ____	Indicates whether the specified video dynamic range is active (Boolean). Variables exist for Unknown, SDR and HDR 10.
OSD Intermission	Indicates the intermission state of the zone (Boolean). Can be set to <i>True</i> to engage intermission or <i>False</i> to clear it.
OSD Screen Saver	Indicates the screen saver state (Boolean). Can be set to <i>True</i> to engage the screen saver or to <i>False</i> to clear it.

Screen Masking

When using a projection system, best results are achieved when the screen is masked to fit the aspect ratio of the currently playing movie. This functionality can be fully automated using the *Mask to* events provided by this driver.

Kaleidescape includes aspect ratio information with every movie, and the player emits appropriate aspect ratio events whenever content plays. It also emits an aspect ratio event when playback stops, so that the screen can be masked properly for the onscreen display.

Kaleidescape systems support projection systems with screens in the 1.78 aspect ratio, and also in the 2.35 aspect ratio. To learn how to use a Kaleidescape player with a 2.35 screen, see the [CinemaScape documentation](#). The aspect ratio events emitted by this driver work with both types of screens. There is also a *CinemaScape Mask* variable for CinemaScape systems.

Mask to events are currently supported for content in the following aspect ratios: 1.33, 1.66, 1.78, 1.85, 2.35. Note that most modern widescreen movies are 2.39 or 2.40 aspect ratio. Since 2.35, 2.39, and 2.40 are very close together, the driver emits the 2.35 event for all three of these ratios. See the **Events** section of this document for more details.

Lighting Control

Create a true “movie theater” experience for your clients at home by integrating lighting control with Kaleidescape playback. Kaleidescape players emit lighting triggers at key points during movie playback, including when a movie begins

playing, when the end credits roll, and when the player returns to the onscreen display.

You can attach programming to these events. For example, you might close the curtains when the Kaleidescape player becomes the selected source, then fade the lights off when movie playback begins. When the end credits roll, you can start a very slow fade up to replicate the experience of a commercial theater.

See the *Lights to* events in the **Events** section of this document for details.

Volume Control and Feedback

Kaleidescape mobile applications for iOS and Android include controls that can be used to change the volume when controlling a Kaleidescape player. This is accomplished by relaying volume commands through the player to the Control4 system, when then adjusts the volume in the corresponding room.

Volume level feedback (when supported by the amplifier/processor and its Control4 driver) can likewise be relayed back through the player to the mobile application, which will display the current volume.

Note that volume control and feedback is appropriate for installations where a room has a dedicated Kaleidescape player. If a player can be used in multiple rooms through a distribution system, volume control and feedback is not recommended.

In order to support volume control and feedback, you must take the following steps, in the *System Design* view in Composer Pro:

1. Select the player, and view its *Properties* tab.
2. Locate the *Kaleidescape App Volume Control and Feedback* section.
3. Set the Kaleidescape App Volume Control popup according to whether the room's audio equipment supports only volume up/down commands, or both up/down and direct level setting. Once you've made this setting, three additional popup menus will appear.
4. Set the Kaleidescape App Mute Control popup according to whether the room's audio equipment supports mute controls.
5. Set the Kaleidescape App Volume/Mute Feedback popup according to whether the room's audio equipment has 2-way communication to report its volume level and mute state.
6. Set the Room Selection to the room in which the player is used. This ensures that commands are sent to, and feedback is received from, the correct room.

Once these settings have been made, play a movie on the Kaleidescape player in the room, and verify that the Kaleidescape mobile application shows appropriate volume controls and feedback, and that volume and mute commands are handled properly.

The Kaleidescape app for iOS and Android and the Kaleidescape Second Screen app for iPad all support volume up/down, mute, and volume/mute feedback. The Kaleidescape app for iOS and Android will also show a slider control for volume when Level Set is supported. The Second Screen app does not support direct level setting at this time.

Remote Control Key Bindings

In addition to the configurable key bindings covered earlier in this document, there are fixed key bindings for core player functionality. The table below shows how the keys on the Control4 remotes and touch panels are bound to these core commands.

Button	Description
Play	Plays the highlighted movie, scene, or song. If playback is paused, resumes.
Pause / Stop / Scan Fwd/ Scan Rev	Perform the indicated transport command. Stop also cancels an action or dismisses a dialog.
Skip Fwd / Skip Rev	Skip by chapter during movie playback, or by scene when playing scenes, or by song when playing songs. Also function as page up/down in lists, for Control4 interfaces that lack dedicated Page Up / Page Down buttons.
Up / Down / Left / Right	Navigate the onscreen display or movie menus.
Select / Enter	Opens details for the selected movie, activates a selected menu item, etc. Some Control4 interfaces use Select; some use Enter. The function is the same.
Menu	Go to the Kaleidescape menu when not playing a movie, or to the movie/disc menu during playback.
Info	Displays playback options overlay during movie playback. While in the onscreen display, jumps to the System Status view.
Cancel / Back	Cancel an action or dismiss a dialog. Some Control4 interfaces use Cancel; some use Back. The function is the same.
Page Up / Page Down	Move quickly through lists

Alphanumeric Keypad	<p>Whenever text entry is active, you can use the alphanumeric keypad to enter text. Each button press cycles through the letters and numbers on that button. Pause briefly after entering a letter in order to enter a new letter that is on the same button. For example, to enter "hi", press 4, 4, <pause> 4, 4, 4 (G-H, G-H-I).</p> <p>When entering text, the * button deletes a character. The # button cycles among various punctuation characters. 1 and 0 can be used to enter either their respective numeric value or space.</p> <p>In the List and Collection views, pressing a button jumps the list to movies starting with the first letter on the button. Pressing the button again jumps to the second letter, and so on. For example, to jump to movies starting with "S", press the 7 key four times (P-Q-R-S).</p> <p>Note: The bindings of the * and # buttons can be changed in the <i>Properties</i> tab in the <i>System Design</i> view. The behaviors described above are always used when text entry is active. The behaviors below reflect the default bindings, but they may be changed.</p> <p>In List or Collection view, pressing the # button starts text entry to filter the list. In the onscreen movie store (on Strato players), the # button initiates a search.</p> <p>During movie playback, jump to a chapter by pressing # and entering the chapter number.</p> <p>To enter a parental control passcode on Premiere systems or Cinema One 1st Generation, press the * button, then enter the passcode.</p> <p>Note: Text entry does work with the numeric keypads on Control4 touch panels, but unlike the SR-250 and SR-260 remotes, only the numbers are shown on the touch panels, so it's challenging to remember which number enters which letters.</p>
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Troubleshooting

Volume controls and/or feedback do not appear on the Remote tab of the Kaleidescape Mobile app, or on the Movies or Music tab of the Second Screen app for iPad

- Ensure that you have selected the correct player for control in the app.

- Verify that you have made the correct setting in the four popup menus in the *Kaleidescape App Volume Control and Feedback* section of the *System Design -> Properties* tab for the correct player.

Volume controls appear in the mobile app during playback, but interacting with those controls does not change the volume

- Ensure that you have selected the correct room in the *Room Selection* menu under *Kaleidescape App Volume Control and Feedback*.
- Ensure that you can adjust the volume correctly in that room using a Control4 remote or touch panel.

Volume feedback or mute state displayed within the mobile app is incorrect

- Verify that the correct volume level and mute state are shown on a Control4 touch panel or the Control4 mobile application. If Control4 is not able to get correct volume feedback from the audio components, the driver cannot relay it to the Kaleidescape mobile app.

Known Issues and Limitations

- No cover art is provided to touch screens.

Support

If you require technical assistance with this driver, please contact Kaleidescape technical support at 650-625-6160 or support@kaleidescape.com.

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