



Fairlight

PART 13 — CONTENTS

166	Using the Fairlight Page	3520	175	Track Groups	3735
167	Setting Up Tracks, Busses, and Patching .	3569	176	Audio Effects	3740
168	Transport Controls, Timeline Navigation, and Markers	3590	177	Fairlight FX	3751
169	Recording	3599	178	Audio Meters and Audio Monitoring	3783
170	ADR (Automated Dialog Replacement)	3608	179	Signal Flow Diagrams	3796
171	Editing Basics in the Fairlight Page	3617	180	Immersive Audio Workflows	3798
172	Audio Clip Specific Inspector Adjustments	3660	181	Using the Fairlight Desktop Console	3819
173	Mixing in the Fairlight Page	3674	182	Using the Fairlight Audio Editor	3872
174	Mix Automation	3715	183	Fairlight Studio Utility	3923
			184	Modular Fairlight Consoles	3932

Using the Fairlight Page

The completely redesigned Fairlight Audio Core engine allows for simultaneous playback of up to 2000 tracks. It also utilizes intelligent load balancing for maximum plugin support.

Fairlight's increased track count meets the demanding needs of both clients and immersive formats, such as Dolby Atmos. Major studio films and series television require high track counts to accommodate complex mixes and the export of multiple deliverables. Immersive formats, such as Dolby Atmos, multiply the necessary track counts with their demands for deliverables from 7.1 up to 22.2.

This chapter covers the basic user interface controls found on the Fairlight page, where they are and what they do, in order to give you an overall orientation of how to work with this integrated audio environment.

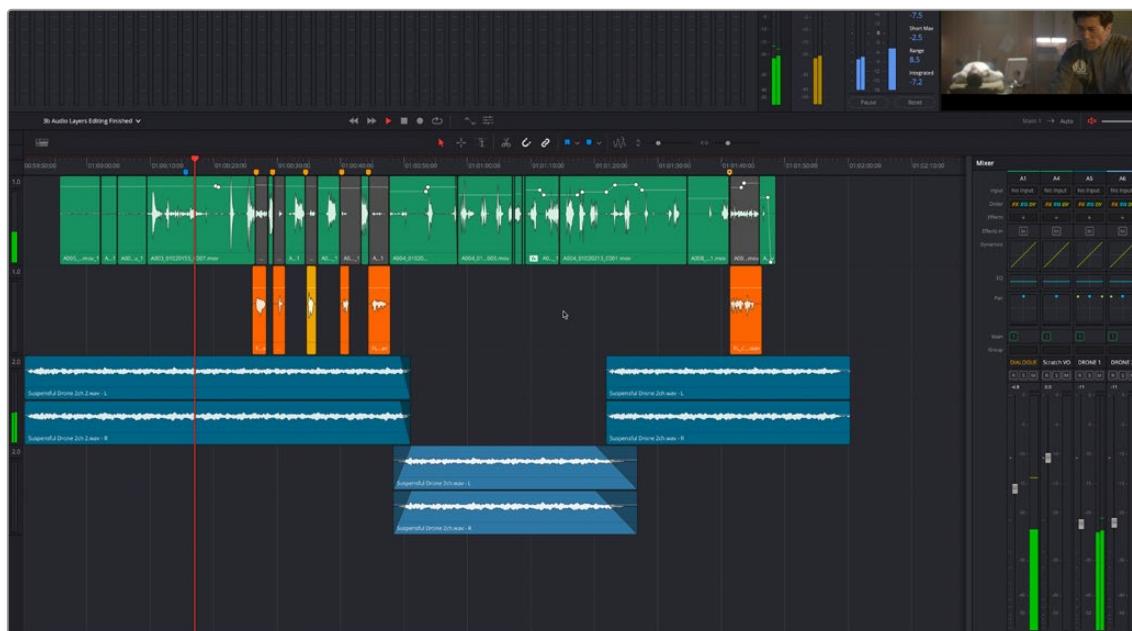
Contents

The Fairlight Page User Interface	3521	Setting the Tempo Grid from a Range Selection	3534
The Interface Toolbar	3522	Customizing Clip Display in the Timeline	3535
The Audio Timeline	3522	Customizing the Timeline's Display	3535
Controls in the Audio Timeline	3523	Playhead Modes	3536
Zooming Audio Waveform Height	3526	Visible Video Tracks	3536
Audio Editing Modes	3527	Video and Audio Scrollers	3537
Switching Among Multiple Timelines	3529	Mixer	3538
Toolbar	3529	The Monitoring Panel	3542
Timeline View Options	3531	Viewer	3543
Grid View Options	3533	The Media Pool	3544
Setting the Tempo Grid Start	3534		

Importing Media Into the Media Pool on the Fairlight Page	3545	Display Controls and the Search Field	3554
Media Pool Preview Player	3545	Preview and Audition Controls	3556
Bins, Power Bins, and Smart Bins	3546	Sound Effect List	3557
Showing Bins in Separate Windows	3547	Index	3557
Filtering Bins Using Color Tags	3547	Edit Index	3557
Sorting the Bin List	3548	Tracks	3558
Filtering Clips With Audio in the Fairlight Page	3548	Markers	3561
Effects Library	3549	Inspector	3561
Effects Library Favorites	3549	Metadata Editor	3561
ADR	3550	Test Tone Settings for Generating Tone, Noise, and Beeps	3562
The List Panel	3550	Generating Timecode	3563
The Record Panel	3550	Pro Tools AAF Import	3564
The Setup Panel	3551	Dual Monitor Layout	3565
Sound Library Browser	3552	Customizing the Fairlight Page	3566
Library Controls	3553	Fairlight Configuration Presets	3566
		Undo and Redo in DaVinci Resolve	3567

The Fairlight Page User Interface

In single monitor mode, the Fairlight page offers an optimized environment for handling the audio tracks of your project, with an expanded mixer and custom monitoring controls that make it easy to edit and manipulate your audio media and evaluate and adjust the levels of your program in order to create a smooth and harmonious mix.



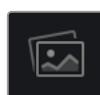
The Fairlight page

The Interface Toolbar

At the very top of the Fairlight page is a toolbar with buttons that let you show and hide different parts of the user interface. These buttons are as follows, from left to right:



The Interface toolbar



Media Pool: Shows and hides the Media Pool, from which you can edit audio clips into the Fairlight page Timeline.

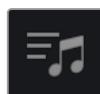


Effects Library: Opens the Audio FX panel of the Effects Library, from which you can apply Fairlight FX, or AU or VST audio effects to clips or tracks in the Timeline.



Index: Shows and hides the Index and its Edits, Tracks and Markers panels.

- **Edit panel:** A list of all edit events in visible tracks of the Timeline.
- **Tracks panel:** Lets you manage the tracks of the Timeline, showing and hiding which ones you want to work with.
- **The Markers panel:** Lets you see every marker in the Timeline, along with associated data. Browse through your markers all at once to quickly find the information you need.



Sound Library: Shows and hides the Sound Library panel. There are search and filter fields to locate desired sounds, and is a playback window to audition the sounds prior to editing into the



ADR: Shows and hides the ADR panel of Fairlight. Here you will find tabbed controls for List, Record, and Setup that control the functions of the ADR panel.



Mixer: Shows and hides the Mixer, to the right of the Timeline, that lets you adjust various effects and levels associated with each track of the Timeline in order to create your mix.



Meters: Shows and hides the Monitoring audio meters and viewer at the top of the Fairlight page.



Metadata: Shows and hides the clip metadata Inspector.



Inspector: Show and hides the Inspector, from which you can edit different clip attributes.

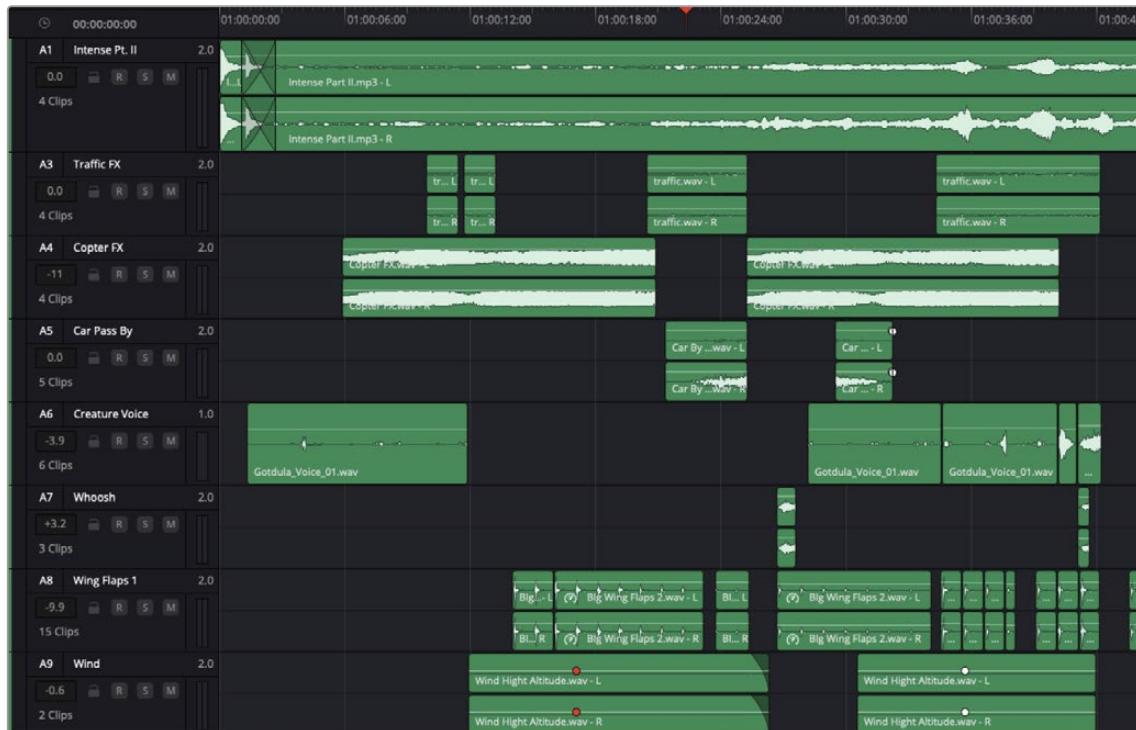
The Audio Timeline

The heart of the Fairlight page, the Audio Timeline, presents the audio channels and tracks of the currently selected Timeline. Each audio track may contain multiple lanes depending on its Track Type, or format.

The clips edited into the Timeline appear within each track, with any multichannel elements within each clip occupying as many lanes as that track type has available (for example, 2 channel stereo, or 6 channels for 5.1). At the left of each track is a header area that contains a number of controls.

These multi-lane audio tracks appear differently from the Edit page, which is optimized for straightforward audio-for-video editing, and shows any multichannel files on single lane tracks with composite waveforms.

The Audio page Timeline cannot be closed.

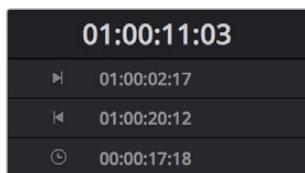


The Audio page Timeline

Controls in the Audio Timeline

The Audio Timeline has the following controls.

- **Timecode fields and Range buttons:** Four timecode fields show the current timecode value corresponding to the position of the playhead (at the very top), the Range In point, the Range Out point, and the Range duration. Clicking the Range In and Range Out buttons (to the left of the timecode fields) set these points and their corresponding timecode value.



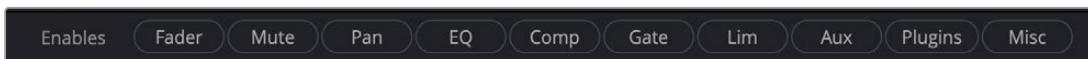
Timecode fields and Range buttons in the Fairlight page

- **Transport controls:** The bar defining the top of the Timeline contains the Fairlight page's audio-specific transport controls, which differ from those found on the Media, Edit, Color, and Deliver pages due to its inclusion of recording capabilities. These include Fast Reverse, Fast Forward, Play Forward, Stop, Record, Loop, and the Automation toolbar display icon.



Fairlight page transport controls

- **Automation toolbar:** Clicking this button opens a secondary toolbar with all the controls you need to configure the recording of mixer automation. For more details on Automation, see Chapter 174, "Mix Automation."



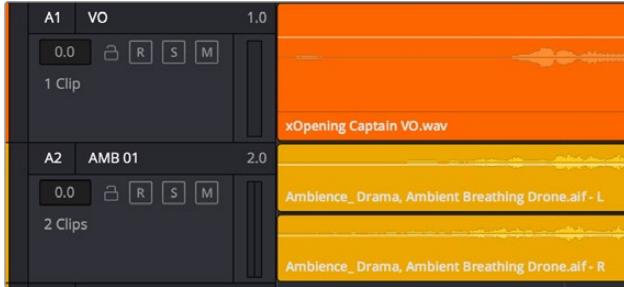
Fairlight page automation toolbar

- **Monitoring controls:** At the far right of the transport controls, a set of three monitoring controls let you quickly control the output volume of your mix. The speaker icon is an Enable/Disable button allowing for muting audio playback. The icon turns red when audio is muted. The slider lets you change the monitor volume and has a decibel indicator of the amount of level that has increased or decreased. The DIM button lets you temporarily reduce the monitored volume being output in order to have a quick chat with your client about sports or the state of the world while keeping half an ear on the mix. The slider turns yellow when audio monitoring is dimmed. Dim and Mute commands are also available from the Fairlight menu.



The monitoring controls

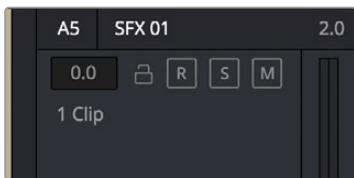
- **Timeline Ruler:** The Timeline Ruler shows the program's timecode. The playhead indicates the current frame (and can display the sample) where you're working in the Timeline, and the playhead has a handle that appears within the Timeline Ruler. Dragging within the Timeline Ruler moves the playhead. When you add markers to the Timeline, these markers appear within the Timeline Ruler as well.
- **Playhead:** Shows the current frame and sample of playback, and provides a visual representation of where you are while playing, shuttling, and jogging through the Timeline. Also used as a reference point for editing operations. The large timecode display at the upper left-hand corner of the Timeline shows the position of the playhead.
- **Audio tracks:** The Fairlight page of DaVinci Resolve supports multiple audio tracks, and each audio track may contain multiple lanes with which to accommodate the audio channels that are contained within multi-channel audio clips using track mappings such as stereo, 5.1, 7.1, Atmos, or Adaptive (1–24 channels). Audio clips that have been edited into the Timeline appear within the tracks, with the recorded channels occupying as many lanes as that clip has available. At the left of each track is a header area that contains a number of controls.



The Fairlight timeline is divided into tracks and lanes; track A1 is a mono track, and has a single lane for mono audio, and track A2 is stereo and has two lanes for stereo audio.

Track header

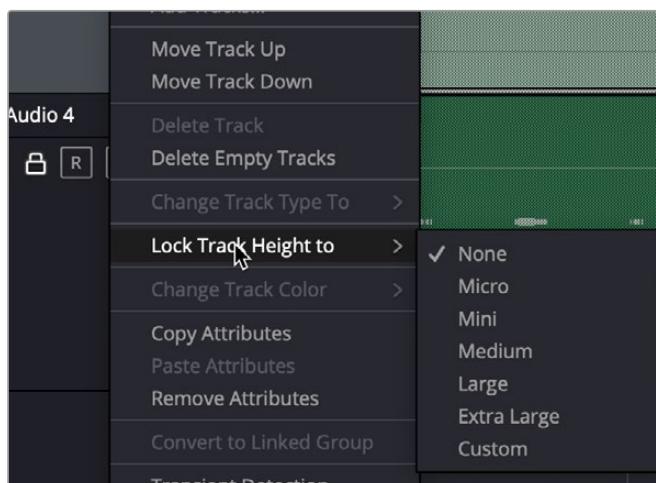
The track header contains different controls for selecting, locking/unlocking, and soloing/muting tracks, and also informational fields showing for the track number, how many clips appear on that track and the track type.



The track header controls of the Fairlight page timeline

- **Track color:** Each track can be color-coded with one of 16 different colors. These color codes correspond to the Edit page Mixer, and to the Fairlight page Mixer, Tracks Index and Audio Meters. You can choose a new color for any track by right-clicking the track header and choosing from the Change Track Color submenu. You can set multiple tracks to the same color by dragging over contiguous track headers, or by Command-clicking on discontiguous track headers of multiple tracks to select them, and then right-clicking and choosing a color from the Change Track Color submenu.
- **Track number:** Indicates the number of each track.
- **Track name:** Each track has a name that defaults to the track number, such as Track 1, Track 2. However, you can click any track's name and edit it to be whatever you like. For example, you can rename each track with the type of audio you're editing onto it, such as Production, Ambience, SFX, or Music. These track names are also used to identify each track's channel in the Mixer, in the middle of each channel strip (each channel strip's track number is simultaneously displayed at the top).
- **Audio channel type indicator:** Audio tracks also show which channel configuration that track uses, listing the number of channels for mono, stereo, 5.1, 7.1, Atmos, adaptive, and others.
- **Fader value:** A field displays the current fader setting at the position of the playhead, in dB. This value corresponds to the track's fader level on the Mixer panel. You can drag this value up or down and the fader will follow.
- **Lock Track button:** When a track is locked, clips can't be replaced, moved, or otherwise edited, although clips on locked tracks can be graded when in the Color page. The lock shows closed when track contents are locked and open when unlocked.
- **Arm button:** This button arms recording onto that track.

- **Solo button:** Disables all other tracks but the current one, enabling you to quickly hear a single track in isolation. This affects rendering, so if one or more tracks are soloed, the muted tracks won't be output or rendered.
- **Mute button:** Temporarily disables audio on that track so it's not monitored or output. This affects rendering, so if one or more tracks are muted, they won't appear in the rendered output.
- **Audio meters:** Each track has audio meters in the track header that let you see levels during playback.
- **Toolbar editing tools:** The toolbar contains both modal and command buttons to let you work on your projects. More detail on these appears in the following section.
- **Vertical and horizontal scroll bars:** If your project is longer than the current width of the Timeline, or the number of audio tracks is taller than the current height of the Timeline, these scroll bars let you drag to navigate around your program. When the view is scrolled horizontally, the playhead moves along with the track waveforms, so may temporarily move out of view—if you start playback, the playhead jumps back into view. You can also scroll vertically using the scroll wheel (or other scroll control) of your mouse or other pointing device, and can scroll horizontally by holding the Command key down while using your scroll control.
- **Individual Timeline track resizing:** Any track in the Timeline can be individually resized by right-clicking anywhere within that track's header control area and choosing a track height from the Lock Track Height To submenu of the contextual menu. You can choose a fixed size including Micro, Mini, Medium, Large, Extra Large, and Custom. When you choose a fixed track height, vertical zooming no longer affects that track until you change that track's "Lock Track Height to" option back to None. You can also highlight several or all tracks and set the track height to one size. All highlighted tracks will change to that particular size unless changed again, either globally or individually.



Resizing an individual audio timeline track using contextual menu options

Zooming Audio Waveform Height

You can zoom into or out of the audio waveforms shown in each clip of one or more tracks, to make them taller or shorter, or you can reset them to their default sizes. This doesn't change the audio levels of clips in affected tracks, it just lets you make the audio waveforms easier to see.

To zoom audio waveform height using your scroll wheel:

Hold down Command-Option, and roll the scroll wheel or control up or down to resize all waveforms in all tracks.

You can also use commands that are accessed in the top menu View > Zoom Audio Waveform for any track on the Timeline. You can select one or multiple tracks to resize their waveforms all at once. There are three sets of commands in the menu:

- Reset
- Zoom Increase Height
- Zoom Decrease Height

Right-clicking any clip in the Timeline allows you to access the Track Waveform Zoom submenu with even more zoom options.

Audio Editing Modes

The Fairlight page has two audio editing modes: Overwrite Mode and Layered Audio Editing Mode.

Overwrite Mode

As the name suggests, if one a portion of a clip overlaps another clip during an edit, the area that is affected on the underlying clip is non-destructively deleted to accommodate the incoming clip. If the overlapping clip is moved or deleted, the underlying clip remains truncated.

Any area that is removed by this process is still present in the original clip and can be exposed by trimming the start or end (depending on what you've affected).

Overwrite is the default mode and is best for most generalized editing.



Overwrite edit showing original clips (left), right hand clip dragged left (middle) and resulting overlap (right)

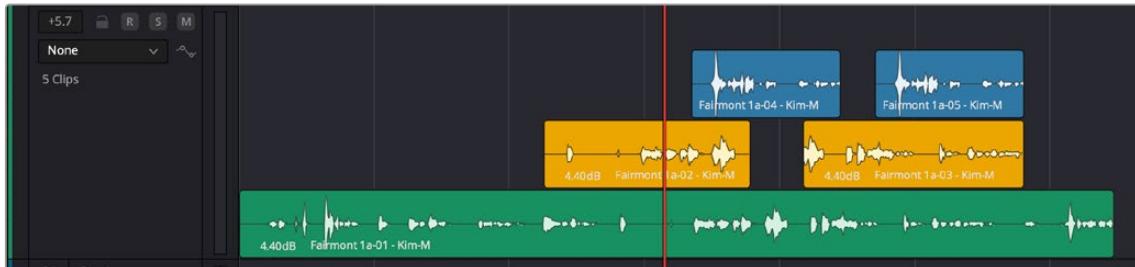
Layered Audio Editing

Layered Audio Editing is a special audio editing mode that lets you superimpose multiple audio clips in the same track, with audio clips edited into the top layers muting overlapping sections of audio clips appearing on lower layers. With layered audio editing enabled (Timeline > Layered Audio Editing), superimposed audio clips are treated similarly to superimposed video clips that have opacity set to 100%, with clips on top obscuring (or muting) clips underneath. You can separately toggle this on and off in the View menu > Show Audio Track Layers.

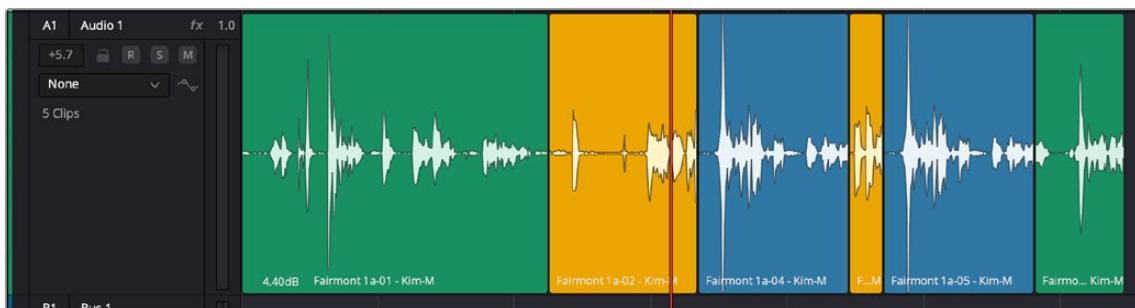
This mode is very useful for any situation where you're combining segments of multiple takes together ("comping") to create a single voiceover, audio vocal track, ADR, or dramatic performance, as you can choose which segments to use via their superimposed position in the stack of clips appearing in that track, while preserving the other takes underneath in case you might want them later.

However, it's important to understand that if you delete any clip on a layer that is "above" another, the lower layer will then "poke through." This can involve extra housekeeping when editing, and is one of the reasons that Overwrite Editing mode is the default mode.

TIP: Layered Audio Editing mode can be used on audio tracks on the Edit page as well.



Layered Audio Editing and Show Audio Track Layers enabled



Layered Audio Editing with Show Audio Track Layers disabled. All layers are folded into a single view.

Flatten Audio Layers

After working with Layered Audio Editing, it can be useful to create a "comp" (composite) of a performance in order to have a single element that reflects the final desired result. Timeline > Flatten Audio Layers allows you to create a single edit without layers where the clip boundaries are preserved. Choosing this command will cut across each layered clip at the in/out points and flatten them into a single layer.



After choosing Flatten Audio Layers, audio layers showing (so blank space above).

NOTE: If you are exporting to an AAF, you'll want to turn off layered audio editing, as only the first, lowest layer is exported. If you had already been using layered audio editing, you can first use Flatten Audio Layers, then perform your AAF export. Keep in mind that if you have created any layered crossfades, only fades on the incoming clip are retained.

Switching Among Multiple Timelines

Timelines can be organized like any other clip in the Media Pool. To open or switch among timelines, use the following procedures. Each Timeline retains the view settings last made within it, including track heights, zoom settings, etc.

To switch timelines, do one of the following:

- In the Edit, Cut or Fairlight page Media Pool, double-click a timeline.
- In the Edit page Timeline Viewer, choose a timeline from the Timelines drop-down menu at the top of the viewer.
- In the Color page, choose a timeline from the Timelines drop-down menu at the top of the viewer.
- In the Fairlight page, choose a timeline from the Timelines drop-down menu to the left of the transport controls.

Toolbar

The Toolbar has buttons that let you choose modes of functionality and other buttons that let you execute commands such as placing markers and flags.



Icons in the Fairlight Page toolbar when the Automation button is highlighted in the transport bar



Timeline View Options drop-down menu: Contains a variety of controls with which to customize the display of clips and set navigation and scrolling options in the Timeline.



Grid View Options drop-down menu: Contains a variety of controls with which to cus



Pointer Mode: The default mode in which you can move and resize clips in the Timeline, roll edits, and do other basic editing tasks. While this mode can be used with the pointer, it's designed for letting you make automatic selections of clips at the position of the playhead in selected tracks, using keyboard shortcuts or the Fairlight Editing console.



Range Mode: An editing mode in which you can select partial regions of one or more clips for partial editing. It's designed for letting you make automatic selections using In and Out points to define regions of selected tracks, using keyboard shortcuts or the Fairlight Editing console.



Focus Mode: In Focus mode you can access Multi Tool behavior depending on cursor position:

- **The Selection tool** (I-beam) appears when you move the cursor over the upper area of the waveform track “lane,” and lets you make time range selections of clips or automation keyframe data (depending on the track view).
- **The Hand tool** appears when you move the cursor over the lower area of the waveform lane, and lets you select a clip or clips by clicking, move them by dragging, or apply Cut, Copy, and Paste operations. This tool is available in the other modes as well.
- **The Trim tool** (Up/Down arrows) appears when you move the cursor close to the clip gain line, and lets you trim the automaton curve for clip gain or keyframe levels. When trimming an automation parameter, a tooltip shows the level along with the delta to the original value. Trim tool cursors for trimming clip boundaries to trim clip start or end, or perform rolling trims are also available. This tool is available in the other modes as well.



Pencil: A tool with which you can write automation data using the pointer as a pencil. The Pencil tool appears when automation is enabled.



Razor: Click to add a cut to every clip on an unlocked track that intersects the position of the playhead.



Snapping: Enables or disables clip snapping. When turned on, clip In and Out points, markers, and the playhead all snap to one another for reference while you’re editing.



Linked Selection: When you select an edit point with both video and audio components, and Linked Selection is enabled, both the video and audio edit points are selected, so when you apply a video transition to an edit, a crossfade is added to the audio.



Automation Follows Edit: Enables or disables automation that is unique to a timeline to be embedded into the clips so that when cutting and pasting new instances of them in the Timeline they retain the levels, panning, filter settings, etc. This is extremely useful when making multiple instances of the same audio clips throughout an edit. The Automation Follow Edit button appears when automation is enabled.



Flag Clip/Flag Colors drop-down menu: Flags identify clips, and indicate all clips that correspond to the same item of media in the Media Pool. Clips can have multiple flags. Clicking the Flag button automatically adds a flag to whichever clip is currently selected in the Timeline. A drop-down menu to the right lets you choose differently colored flags, and clear all flags from the currently selected clip.



Add Marker/Marker Colors drop-down menu: Markers identify specific frames of individual clips. Clicking the Add Marker button adds a marker of the currently displayed color to the clip at the position of the playhead in the Timeline. A drop-down menu to the right lets you choose differently colored markers, and clear all markers from the currently selected clip.



Transient Detection: Enables transient detection on a track’s set of clips. Once enabled, a transient button appears on tracks to enable the transients on the track’s clips to be easily identified and navigated. When the Jump to Transient button is enabled, the Up and Down arrow keys navigate transients within a clip.



Vertical Slider: Lets you adjust the vertical zoom level of tracks.



Horizontal Slider: Lets you adjust the horizontal zoom level of the Timeline.

Timeline View Options



Selecting the Audio Timeline View options

Track Display Options



Video Tracks: This button lets you display or hide the video tracks in the current Timeline, for use as a reference while you work.



Full Waveforms: This button lets you toggle full waveforms on and off, optionally hiding the divider bar that keeps the waveform separate from the file name area of each audio clip, so the waveform occupies the full space of each audio bar in the Timeline.



Waveform Borders: This button lets you toggle waveform outlines on and off, drawing a dark border around the edges of each waveform to make them easier to see.



Gain Line: This button lets you toggle the clip gain indicator line on and off. Also available in the Fairlight Menu > Show Clip Gain Line.

Navigation Options



Jump to Clip: When toggled this lets you jump from clip to clip using the Up or Down Arrow keys.



Jump to Fade: When toggled this lets you jump from fade to fade using the Up or Down Arrow keys.



Jump to Marker: When toggled this lets you jump from marker to marker using the Up or Down Arrow keys.



Jump to Transient: When toggled this lets you jump from transient to transient using the Up or Down Arrow keys. Transient Detection must be turned on in the Timeline and the track for this navigation.

Timeline Scrolling



Fixed Playhead: This button lets you set the playhead to be fixed so that during playback the tracks scroll past the playhead as it remains in place, which is useful when working with the Fairlight control surface.



Page Scrolling: This button lets you set the playhead to scroll to the end of the current Timeline view and then start a new page at the end of the Timeline play. The rate of the page turn is dictated by zoom level of the Timeline.



No Scrolling: This button sets fixes the Timeline in place so that it will not update with the playhead. Depending on the zoom level, it is possible that the playhead will play offscreen with no timeline updating

NOTE: These options are also available in the View menu > Timeline Scrolling.

Scroller



Video: This button lets you see video tracks scrolling in the bottom of the Fairlight timeline with the option of low, medium, or high viewing of the video media immediately surrounding the playhead.



Audio 1: An audio scroll bar and zoomed-in visual reference for the audio media immediately surrounding the playhead. A drop-down menu allows for the choice of what audio track will scroll.



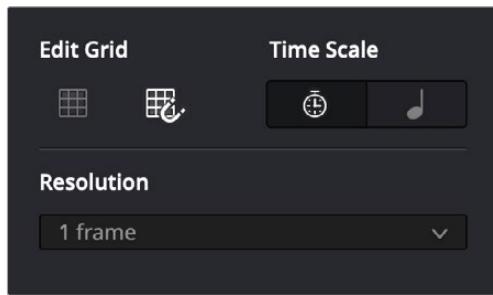
Audio 2: An additional audio scroll bar and zoomed-in visual reference for the audio media immediately surrounding the playhead. A drop-down menu allows for the choice of what audio track will scroll.

Zoom Presets



Presets 1-7: These buttons let you choose from one of seven zoom levels.

Grid View Options



Selecting the Grid View options;
Timecode Time Scale options shown

Edit Grid Options



Show Grid: When toggled, this shows or hides the grid line on tracks under the Timeline.



Snap to Grid: When selected, inserting, moving, or trimming clips on tracks snap to the nearest grid line.

Time Scale Options



Timecode: When selected, the grid follows Timecode according to the selected resolution.



Tempo: When selected, the grid follows bars and beats.

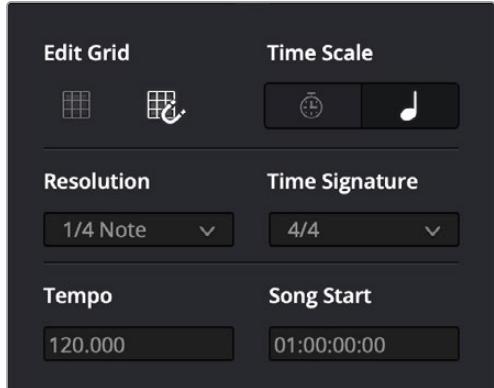
Timecode Grid Resolution

When the Timecode Time Scale option is enabled, the Grid follows the selected Timecode Grid Resolution. The Timecode Grid resolution options include: 1 second, 1 Frame, 1/2 Frame, and 1/4 Frame.

Tempo Grid Options

The following Tempo Grid options determine grid behavior when the Tempo option is selected:

- **Resolution:** Lets you select the desired Grid resolution according to bars and beats:
Bar, 1/2 Note, 1/4 Note, 1/8 Note, 1/16 Note.
- **Tempo:** Lets you enter the tempo in BPM.
- **Time Signature:** Lets you select one of the following as the time signature: 4/4, 3/4, 6/8.
- **Song Start:** Lets you enter the Song Start Timecode location.



Selecting the Grid View options;
Tempo Time Scale options shown

Setting the Tempo Grid Start

To set the Tempo Grid start location:

- Right-click at the desired location on the Timeline ruler.
- Choose Set Tempo Grid start.

The first bar and beat of the tempo grid moves to that location.



Setting the Tempo Grid start location

Setting the Tempo Grid from a Range Selection

To set the Tempo value for the Tempo Grid from a range selection:

- Make a range selection in the Timeline.
- Right-click anywhere in the Timeline ruler, and choose Set Tempo Grid BPM from the contextual menu.
- In the resulting Tempo Grid Setup window, enter the number of bars in the selection.
- If desired, select Set Start from Playhead.
- Click Set Tempo From Range.
- Close the Tempo Grid Setup window.

The tempo in the Tempo Grid Options settings updates accordingly.

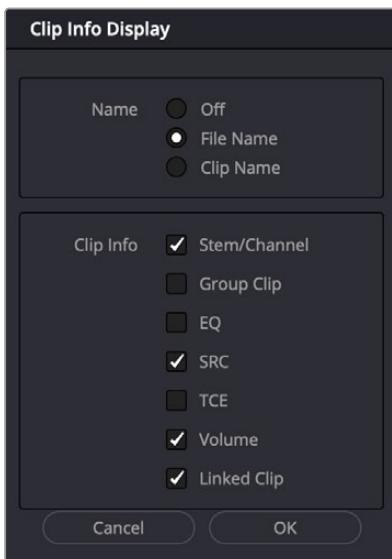


Tempo Grid Setup window

TIP: When setting the tempo based on a range selection, choose a section of the music where it is easy to count out the bars/beats to set the range.

Customizing Clip Display in the Timeline

Choose Fairlight > View Clip Info Display to open a dialog where you can customize what information is shown at the bottom of each clip in the Fairlight timeline. This dialog has options for viewing no clip name, the file name, or the clip name, and for choosing from among a variety of metadata that you might want available to view as you work with clips in the Timeline.



Selecting the audio clip view options

Customizing the Timeline's Display

There are a variety of ways you can customize the Timeline to better see what you're working on.

Playhead Modes

There are options for Page Scrolling ("Page") and No Scrolling ("Disabled") as outlined in the Timeline View Options section above. There is also the option for turning on the Fixed Playhead mode when you are not using Focus mode. This is available in the Timeline View Options drop-down menu, or choosing View > Timeline Scrolling > Fixed. When enabled, the playhead remains fixed in place, and the Timeline scrolls underneath it as you use the transport controls or JKL to play, shuttle, or scrub forward or back.

NOTE: Fixed playhead scrolling is not currently available when using Focus mode.

Also, please keep in mind that when you have changed DaVinci Resolve > Keyboard Customization from the default DaVinci Resolve mapping to a different mapping, many default key commands are altered. For instance, the Pro Tools Keyboard Customization does not offer JKL transport.

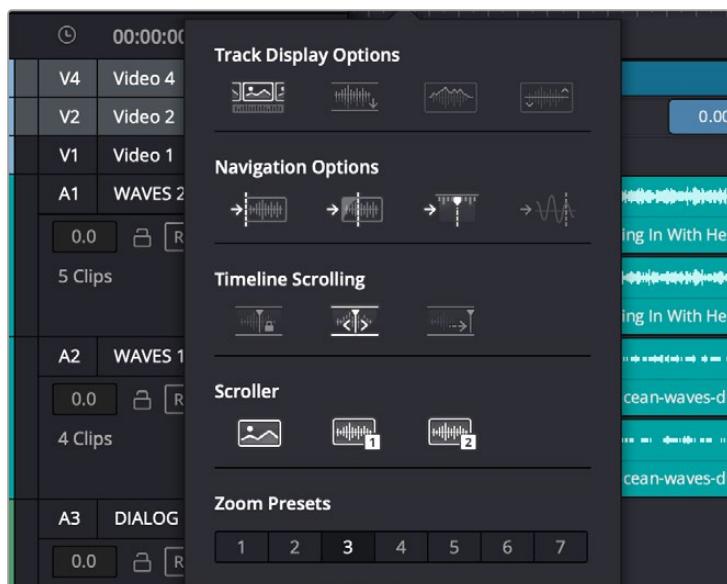
Visible Video Tracks

A checkbox in the Timeline View Options drop-down menu of the toolbar lets you display small height video tracks in the Fairlight timeline for reference. This can be very useful as you can see which audio clips correspond to which video clips. The video clips can also be used as snapping targets for positioning audio.

When the Video Tracks option is on:

- The Track Index can be used to choose which video tracks are visible.
- The video track(s) can be edited, both placement and clip trimming.
- Editing an embedded clip that contains both video and audio will add a clip with both audio and video in the appropriate corresponding tracks.

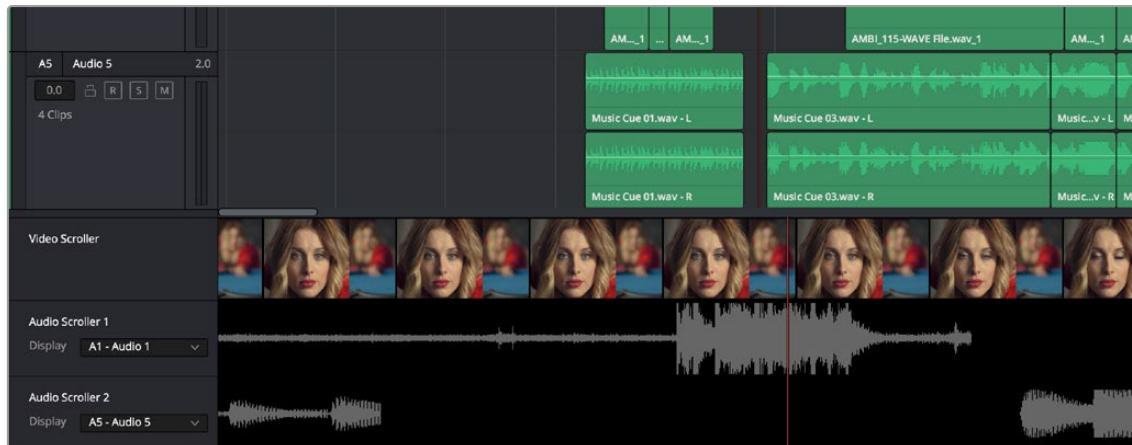
If the Video Tracks option is disabled, adding a clip with both video and audio to the timeline will add only audio to the corresponding tracks.



Showing video tracks on the Fairlight page

Video and Audio Scrollers

Checkboxes in the Timeline View Options let you optionally show one Video Scroller and up to two Audio Scrollers at the bottom of the Fairlight timeline.



Video and Audio Scrollers at the bottom of the Fairlight timeline

At the default Low zoom level, the Video Scroller provides a scrollable frame-by-frame filmstrip view of the video of your program, where one frame of the scroller equals one frame of your video.

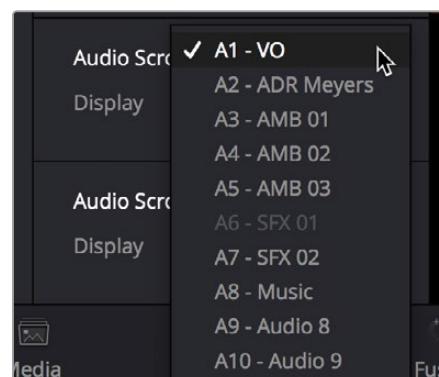
Each of the two Audio Scrollers, on the other hand, let you focus on a continuous waveform view of a particular audio track. Ch

What Are They Used For?

The Audio Scrollers always provide a zoomed-in view of specific audio tracks that you're focused on, regardless of the zoom level of the Timeline tracks above. This means you can focus on subtle details of the audio of one or two tracks that you're working on, while the rest of the Timeline shows you the overall stack of tracks with clips that are playing together at that moment.

Meanwhile, the Video Scroller always shows the exact frame of video that corresponds to the current moment in time, so it's an aid to precision editing involving frame-specific adjustments.

Additionally, both the filmstrip and waveform viewers scroll continuously during playback, giving you a preview of what visual actions and audio cues are coming a few moments forward in time that you can refer to while performing automation or recording foley.



Audio Scrollers showing the drop-down menu that selects which track they display

Repositioning the Scroller Playhead

While the scrollers are visible, the Scroller playhead can be dragged to the left or right in the Timeline to give you more or less preview room to the right.

Zooming the Video Scroller

Right clicking on the Video scroller lets you choose a Low, Medium, or High zoom level. At Low, you get a frame-by-frame view of the program that feels like scrolling a strip of film on a Steenbeck flatbed editor. At Medium and High, you get a progressively abbreviated film strip that scrolls more quickly.

Scrolling the Fairlight Timeline Using the Scroller Tracks

Dragging the scroller tracks to the left or right smoothly scrubs through the Timeline in greater detail, regardless of the zoom level of the Timeline tracks above.

Mixer

The Audio Mixer provides a set of graphical controls you can use to assign track channels to output channels, adjust EQ and Dynamics, add filters and Fairlight FX, set levels and record automation, pan stereo, surround and immersive audio, and mute and solo tracks.

The Audio Mixer exposes two sets of channel strips with controls that correspond to the tracks in the Timeline. By default, the leftmost set of channel strips expose one set of controls for each track in the Timeline, while the rightmost set of channel strips expose another set of controls for each bus you've created to manage signal flow from the audio tracks to submixes and desired outputs.

TIP: You can right-click on a the number at the top of mixer channel strip to copy/paste settings, and also copy/past settings within the mini views of the channel dynamics and EQ as well. Also, effects plugins (Fairlight FX, AUs and VSTs) have local 3 dot Options menus at their top right that allow you to copy/paste settings.



The Audio Mixer, with channel strips corresponding to the tracks in the Timeline

- **Track color:** Each track can be differently color-coded using the right-click contextual menu on a track in the Timeline or Tracks Index, to help you keep organized.

- **Track number:** The number of the Timeline track corresponding to each channel strip appears here.
- **Input:** A drop-down menu that lets you patch inputs, buses, utility signals, and configure the input settings of audio signals routed through Blackmagic Design or other hardware interfaces.
- **Track FX:** Track effects are specialized effects that are built-in to each channel, routed directly from disk, then onwards to other effects processing. The two built-in Track FX are Voice Isolation and Dialogue Leveler. They are disabled by default. Voice Isolation is a DaVinci Neural Engine AI effect and is available in DaVinci Resolve Studio only.
- **Order:** A drop-down menu that lets you choose the order of processing per track of the EQ, Dynamics, and Effects.
- **Effects:** Fairlight FX, VST, and Audio Unit effects that you apply to tracks from the Effects Library appear here, with controls for enabling/disabling each effect, opening an effect's floating user interface or Inspector controls, and deleting that effect.
- **Effects In:** A button to globally mute or enable all insert effects on a track (Fairlight FX, AU or VST). Track FX and the built-in channel dynamics and EQ are not affected by this control.
- **Dynamics:** Double-clicking exposes a set of dynamics controls with three sets of controls corresponding to an Expander or Gate, a Compressor, and a Limiter that can be used separately or in concert to manage the dynamics of the audio on that track.



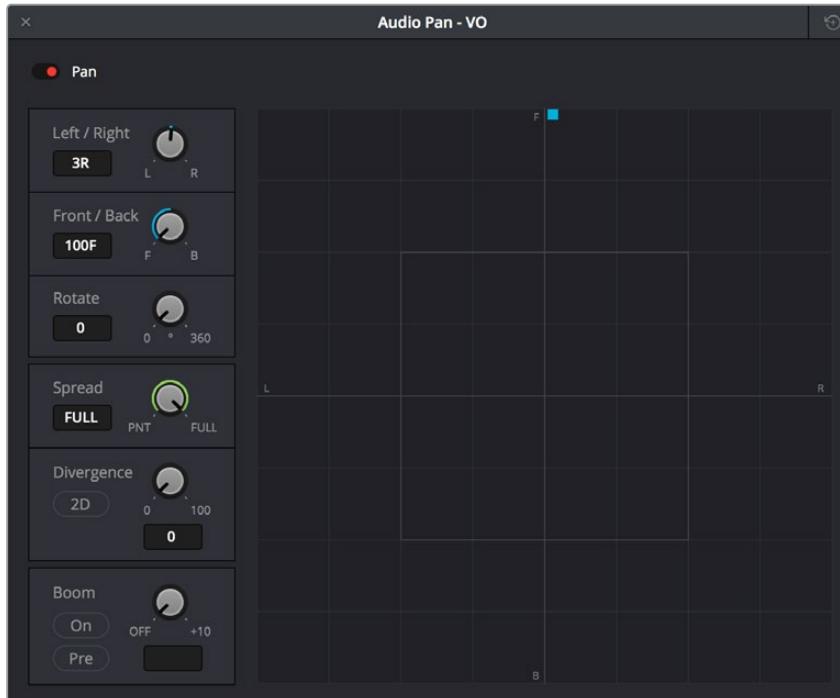
The channel strip Dynamics control window

- **EQ:** Double-clicking exposes a four-band parametric equalizer, with additional High and Low Pass filters, that has both graphical and numeric controls for boosting or attenuating different ranges of frequencies of audio on each track. You can select from among four types of EQ filtering from the Equalizer Type drop-down menu, with options for Earth (the default), Air, Ice, and Fire. These four equalizer types affect the Curves aspect and Q-factor of the transfer function. Each band has controls for the filter type (Bell, Lo-Shelf, Hi-Shelf, Notch), Frequency, Gain, and Q-factor (sharpness of the band), with the available controls for each band of EQ change depending on the filter type.



The channel strip EQ window

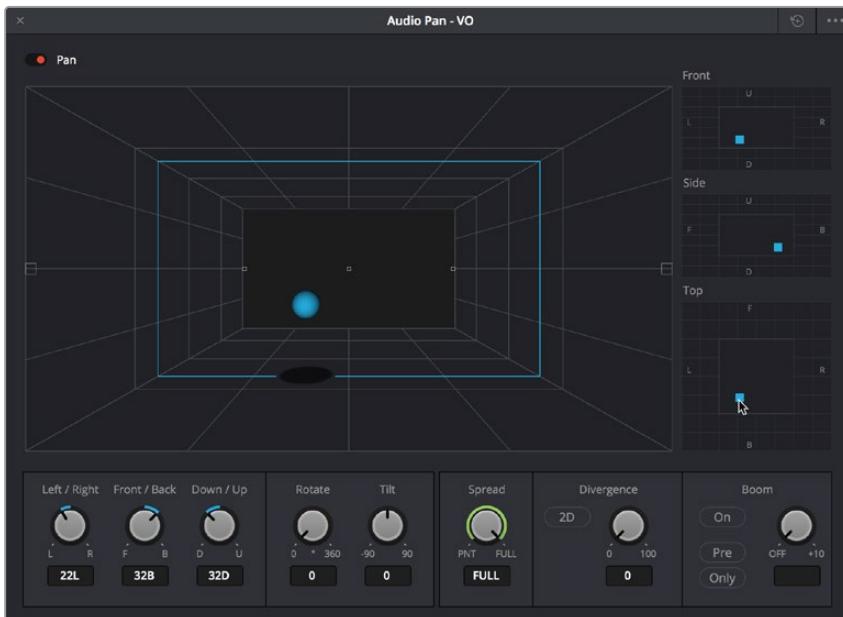
- **Bus Sends:** Click the + sign to add bus sends. Bus sends are only available if there are two or more available busses. Creating a bus send requires at least one additional bus other than the main output bus.
- **Pan:** A pan control compatible with stereo and surround panning. You can drag within this control to adjust pan, or you can double-click to expose a pan window. What controls are available in the pan window depend on the mapping of the audio track, but both stereo and surround panning controls are available, with corresponding numeric controls.



The Pan control window

Option-double-clicking on the Pan control of the Mixer opens an alternate 3D Audio Pan window. Whereas the regular Pan window lets you do stereo and conventional 5.1 and 7.1 surround

panning, the 3D Audio Pan window lets you do the kind of spatial audio positioning enabled by advanced surround formats, such as Dolby Atmos, Auro 3D, and NHK 22.2.



The 3D Pan window

- **Bus Outputs:** These buttons let you assign a track or bus to one or more of the output busses.
- **VCA:** These buttons let you assign that track's channels to VCAs 1-10, or assign from the larger pool of 128 total available VCAs via a secondary dialog box.
- **Track name:** This mirrors the track name found in the header controls of the Timeline. You can customize a track's name in the Mixer by double-clicking and typing in the name field.
- **Arm, Solo, and Mute buttons:** Identical to the controls found in the track header controls of each timeline audio track. Arm enables recording for a track. Solo lets you mute all other tracks in order to play that track in isolation (along with any other Soloed tracks). Mute disables audio playback from that track. These controls are also available the Tracks Index.
- **dB display:** Shows you the volume level, in decibels, that track is currently set to.
- **Automation Arm:** Arm automation control per track. When enabled, will record automation in Latch mode when the transport runs. The control also shows red when a fader is moved. Automation can also be set to "Safe" or "Off" by right-clicking on this control.
- **Level Meter:** This is a real time indicator showing a track's signal level from -60db to 0db. The display and decay characteristics for audio metering can be set in Project Preferences > Fairlight > Audio Metering.
- **Fader:** Each track's main vertical faders let you adjust the level of that track and perform automation recording. Double-clicking the fader handle will reset it to the default level of 0. Holding the Shift key when adjusting a fader allows fine control of level with .1 dB resolution.

NOTE: Starting with DaVinci Resolve 17.4, the mixer panel has changed from prior versions. Some of the items are in a different order than earlier versions. Also, when using the Fixed Legacy Busing option, then the bus structure as it applies to the Mixer panel also offers different busing usage. The redesigned Mixer panel makes a more efficient use of the Fairlight page but rest assured that no features have been removed, simply improved.

The Monitoring Panel

The Monitoring panel that runs along the top of the Fairlight page shows all of the audio meters corresponding to the tracks in the Timeline, as well as the Master Output meter, Control Room meters, and a video viewer.



The Monitoring panel

At left, a row of audio meters corresponds to the channel strips of the Mixer, one meter for every audio track in the Timeline. Each track meter displays the number of channels that corresponds to that track's audio format, with mono tracks having a single audio meter, stereo tracks having two, 5.1 tracks having six, and so on. All of these track and bus meters (with the exception of the Loudness meters) display both peak and RMS (root mean square) levels against a dB scale.

To the right of the Track meters are the Bus meters, where all buses appear separated by type, each displaying a meter with the number channels that corresponds to the bus's audio format. This way you can see the sum of all tracks that have been routed to a particular bus.

The last set of meters, to the right of all others, are the Loudness meters, which consist of two sets of meters and a numerical readout section. The Control Room meter reflects that main output level from the program and the Loudness meter measures the mix's loudness according to the user's chosen scale. This lets you keep track of the "integrated loudness" of the overall mix, which is the standard that all contemporary mixing specifications refer to when specifying client deliverables.

The height of the monitoring panel can be adjusted by dragging the bottom of the panel.

Absolute and Relative Measurement Scales

While some users prefer to measure their levels to correspond to a relative scale of "0," similar to a VU meter where the needle rides above the "0," others want to see the absolute measure of the amplitude in LUFS and true peak. By default, the Loudness meter is set to relative scale, but you now have the option to choose between relative scale and absolute scale in the Loudness meter.

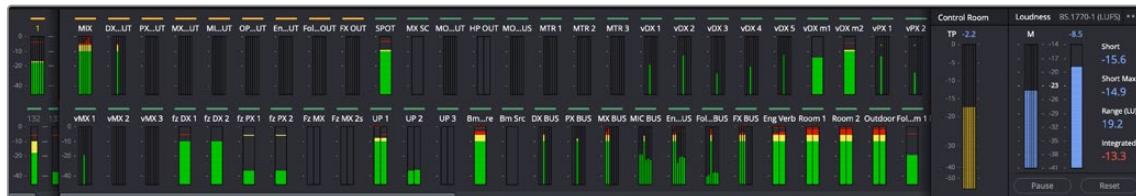
Relative scale in the Loudness menu is relative to the selected scale, so a loudness unit of 0 corresponds to the target of the chosen measure type. For instance, if EBU R128 is selected, whose target measure is -23dB LUFS, the "0" LU (Loudness Unit) is equal to -23dB. If ATSC A/85 is chosen, whose target is -24dB, then that becomes the corresponding equivalent of the relative LU of 0.

When using the absolute scale, the Loudness meter displays the increments to reflect the chosen measure type. In absolute scale the EBU R128 meter will display -23 instead of the relative scale's 0.



The option in the Loudness panel reveals the various measure types as well as the option for absolute scale.

When working with large track counts, you can right-click on the panel and see a contextual menu that offers options for single or dual rows, as well as narrow or wide meters. You can also double click on the bus master meters on the right side to access a double row view for them.



The double height Monitoring panel

Viewer

A small viewer at the far right of the Monitoring panel allows you to view video playback; it always shows the matching video frame at the position of the playhead.



The Monitoring panel

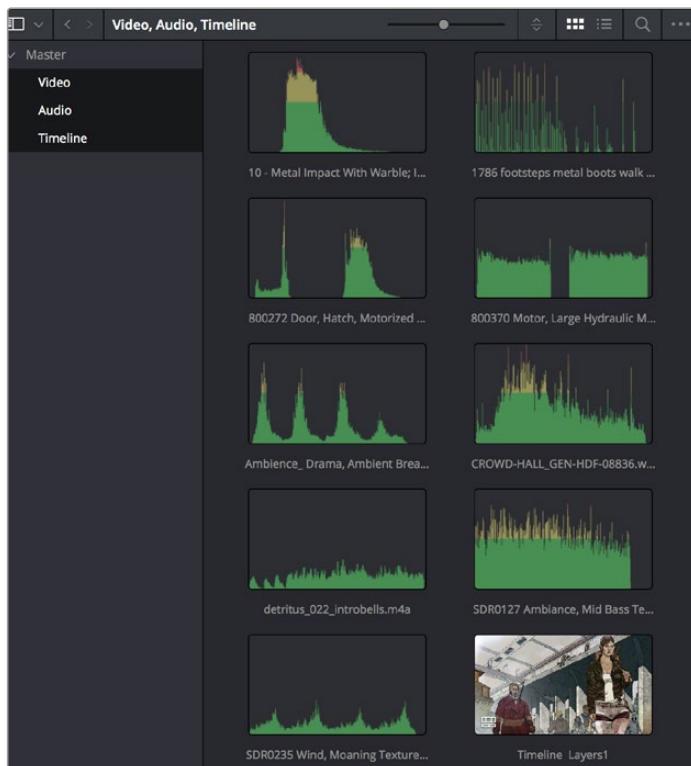
- The viewer can be resized within the monitoring panel by dragging the left or lower edge of its window.
- A button in the lower right-hand corner lets you expand the Viewer into its own floating window.

- The Fairlight page has Cinema Mode viewing (Command-F) or through the Workspace menu, Workspace > Viewer Mode > Cinema Viewer.
- You can also use the Clean Feed mode view on a separate monitor by choosing Workspace > Video Clean Feed and choosing the target monitor for dedicated video playback.
- You can choose to turn the Viewer off entirely in the Workspace > Fairlight Viewer submenu.

The Media Pool

In the Fairlight page, the Media Pool serves as the repository of all audio clips in your project, both clips that appear within the Timeline, and clips that you've added to your project but have not yet used. When you record audio into the Timeline, the resulting clips appear in the Media Pool as well, for future use. The Media Pool appears on all DaVinci Resolve pages, and contains all of the video clips and timelines within your project.

The Bin list at the left shows a hierarchical list of folders called bins used for organizing your media, which can also be used to organize your timelines. By default, the Media Pool consists of a single bin, named "Master," but you can add more bins as necessary to organize timelines and clips by right-clicking anywhere in the empty area of the Media Pool and choosing Add Bin. You can rename any bin by double-clicking on its name and typing a new one, or by right-clicking a bin's name and choosing Rename Bin. The Bin list can be hidden or shown via the button at the upper left-hand corner of the Fairlight page toolbar.



The Media Pool in Thumbnail mode showing audio clips

The browser area to the right shows the contents of the currently selected bin in the bin list. Every clip you import, every timeline you create, and every AAF, XML, EDL and other file types you can import appear here. You can create or import as many timelines as you need within a single project.

As elsewhere, the Media Pool can be displayed in either Metadata view, Thumbnail view, or List view. In List view, you can sort the contents by any one of a subset of the total metadata that's available in the Metadata Editor of the Media page. Of particular interest to audio editors are columns for Clip Name, Reel Name, different timecode streams, Audio Channels, Format, Audio Codec, Date Added, Flags, and Duration.

For more information on using all of the features of the Media Pool, see *Chapter 18, "Adding and Organizing Media with the Media Pool."* In the sections that follow, some key features of the Media Pool are summarized for your convenience.

Importing Media Into the Media Pool on the Fairlight Page

While adding clips to the Media Pool in the Media page provides the most organizational flexibility and features, if you find yourself in the Fairlight (or other) pages and you need to quickly import a few clips for immediate use, you can do so in a few different ways.

Add media by dragging one or more clips from the Finder to the Fairlight page Media Pool (macOS only):

- 1 Select one or more clips in the Finder.
- 2 Drag those clips into the Media Pool of DaVinci Resolve, or to a bin in the Bin list.
Those clips are added to the Media Pool of your project.

Use the File > Import > Media command:

- 1 With the Fairlight page open, choose File > Import > Media.
- 2 Use the Import dialog to select one or more clips to import, and click Open.

Use the Import Media command in the Fairlight page Media Pool:

- 1 With the Fairlight page open, right-click anywhere in the Media Pool, and choose Import Media.
- 2 Use the Import dialog to select one or more clips to import, and click Open.
Those clips are added to the Media Pool of your project.

For more information on importing media using the myriad features of the Media page, see *Chapter 18, "Adding and Organizing Media with the Media Pool."*

Media Pool Preview Player

The Media Pool has a preview player at the top that provides a place to open selected source clips in the Media Pool, play them, add marks to log them, and set In and Out points in preparation for editing them into the Timeline via drag and drop. The Media Pool Preview Player effectively acts as a Source monitor for editing in the Fairlight page.

- Various viewing controls populate the title bar at the top. A drop-down menu at the upper left lets you choose a zoom level for the audio waveform that's displayed. To the right of that, a Timecode window shows you the duration of the clip or the duration that's marked with In and Out points. Next to the right, a real-time performance indicator shows you playback performance. In the center, the title of the currently selected clip is shown, with a drop-down menu to the right that shows you the most recent 10 clips you've browsed. To the far right, a Timecode field shows you the current position of the playhead (right-clicking this opens a contextual menu with options to change the timecode that's displayed, and to copy and paste timecode).

- The center of the Media Pool Preview Player shows you the waveforms in all channels of the currently selected clip, at whatever zoom level is currently selected.
- Transport controls at the bottom consist of a jog bar for scrubbing, Stop, Play, and Loop buttons, and set In and Out buttons.



The preview player in the Media Pool

Bins, Power Bins, and Smart Bins

There are actually three kinds of bins in the Media Pool, and each appears in its own section of the Bin list. The Power Bin and Smart Bin areas of the Bin list can be shown or hidden using commands in the Media Pool Options menu (...): Show Smart Bins and Show Power Bins. Here are the differences between the different kinds of bins:

- **Bins:** Simple, manually populated bins. Drag and drop anything you like into a bin, and that's where it lives, until you decide to move it to another bin. Bins may be hierarchically organized, so you can create nested bins, one inside of the other, if you like. Creating new bins is as easy as right-clicking within the bin list and choosing Add Bin from the contextual menu.
- **Power Bins:** Hidden by default. Power bins are shared among all of the projects in your current project library, making them ideal for shared title generators, graphics movies and stills, sound effects library files, music files, and other media that you want to be able to quickly and easily access from any project. You put whatever materials you want into Power Bins; it's a manual process. To create a new Power Bin, show the Power Bins area of the Bin list, then right-click within it and choose Add Bin.
- **Smart Bins:** These bins build "custom collections" of media that use metadata or analysis to automatically populate the bins dynamically, meaning that the contents will change depending on what the Smart Bin is set to focus on. For example, a sound effects Smart Bin will show only sound effects, and the bin's contents will grow or shrink depending on the number of effects files that have been identified in the project, which may change over time. Smart Bins can allow very fast and efficient organizing of project contents.
 - There are several automatically created Smart Bin types available (see Preferences > User > Edit Tab > Automatic Smart Bins).
 - You can choose to have Resolve's Audio Classification analysis categorize your files (automatically creating "Collections" smart bins). Or, you can manually add metadata to your clips using the Metadata Editor, adding Scene, Shot, and Take information, keywords, comments and description text, and more to make it faster to find what you're looking for when you need it.

- You can create your own criteria for a Smart Bin. To create a new custom Smart Bin, make sure the Smart Bin area of the Bin list is showing, then right-click within it and choose Add Smart Bin. A dialog appears in which you can edit the name of that bin and the rules it uses to filter clips, then click Create Smart Bin.

NOTE: To view Smart Bins other than Keywords and Collections, you must first enable any additional Smart Bin choices in Smart Bin Preferences > User > Edit Tab > Automatic Smart Bins.

Showing Bins in Separate Windows

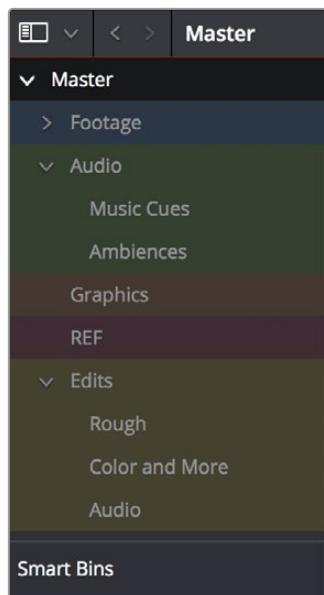
If you right-click a bin in the Bin list, you can choose “Open As New Window” to open that bin into its own window. Each window is its own Media Pool, complete with its own Bin list, Power Bins and Smart Bins lists, and display controls.

This is most useful when you have two displays connected to your workstation, as you can drag these separate bins to the second display while DaVinci Resolve is in single screen mode. If you hide the Bin list, not only do you get more room for clips, but you also prevent accidentally switching bins if you really want to only view a particular bin’s contents in that window. You can have as many additional Bin windows open as you care to, in addition to the main Media Pool that’s docked in the primary window interface.

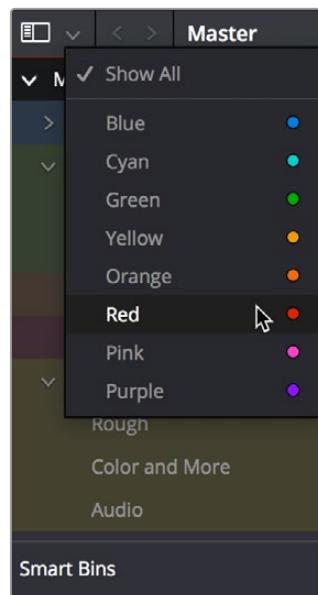
Filtering Bins Using Color Tags

If you’re working on a project that has a lot of bins, you can apply color tags to identify particular bins with one of eight colors by right-clicking any bin and choosing the color you want from the Color Tag submenu.

For example, you can identify the bins that have clips you’re using most frequently with a red tag. A bin’s color tag then appears as a colored background behind that bin’s name.



Using color tags to identify bins



Using Color Tag filtering to isolate the red bins

Once you've tagged one or more Media Pool bins, you can use the Color Tag Filter drop-down menu (the drop-down control to the right of the Bin List button) to filter out all but a single color of bin.

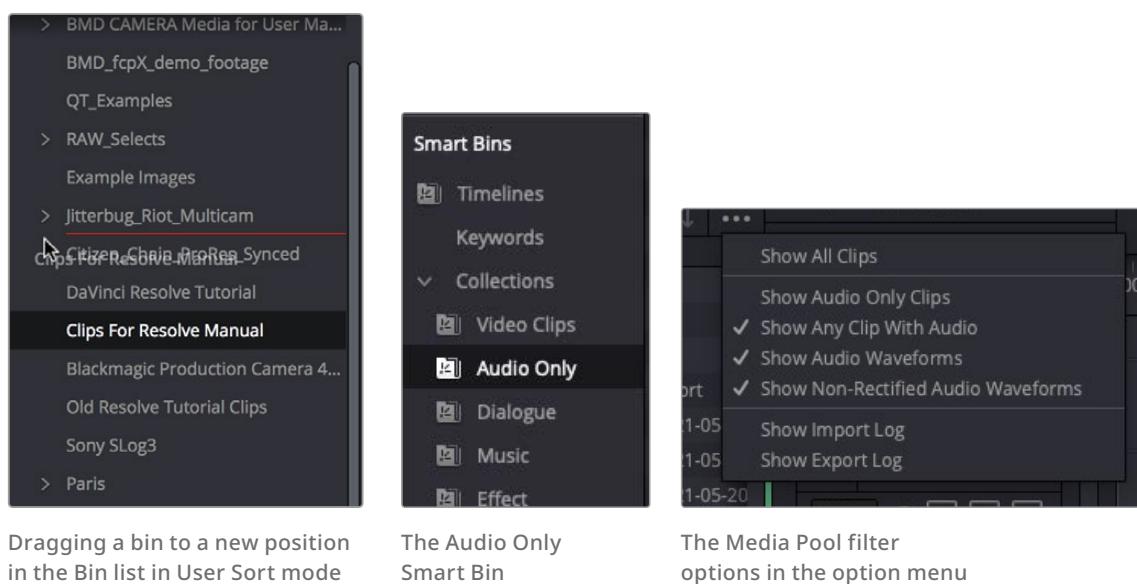
To go back to seeing all available bins, choose Show All from the Color Tag Filter drop-down.

Sorting the Bin List

The Bin list (and Smart Bin list) of the Media Pool can be sorted by Bin Name, Date Created, Date Modified, in either ascending or descending order. Simply right-click anywhere within the Bin list and choose the options you want from the Sort by submenu of the contextual menu.

You can also choose User Sort from the same contextual menu, which lets you manually drag all bins in the Bin list to be in whatever order you like. As you drag bins in this mode, a red line indicates the new position that bin will occupy when dropped.

If you use User Sort in the Bin list to rearrange your bins manually, you can switch back and forth between any of the other sorting methods (Name, Date Created, Date Modified) and User Sort. Your manual User Sort order will be remembered, making it easy to use whatever method of bin sorting is most useful at the time, without losing your customized bin organization.



Filtering Clips With Audio in the Fairlight Page

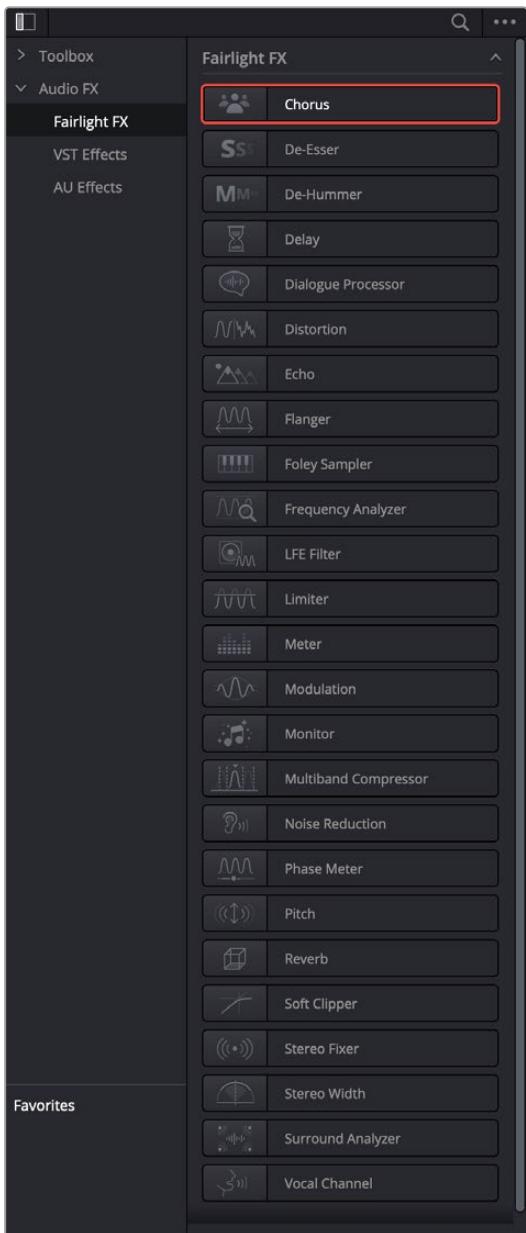
The Media Pool on the Cut, Edit, Color, Fusion and Fairlight pages can show Audio Only clips using the Collections smart bin labeled "Audio Only" found in the Collections are of Smart Bins. This makes it easy for you to find audio clips that you're looking for, which may be hidden along with lots of video clips in the same bin.

If you'd like to work with some additional options, the Media Pool in the Fairlight page also has the ability to filter out audio-only clips, or video clips with audio, in the currently selected bin. To use this feature, click the Option menu of the Media Pool and choose Show All Clips, Show Audio Only Clips, or Show Clips With Audio, Show Audio Waveforms, and Show Non-Rectified Audio Waveforms.

Effects Library

The Effects Library on the Fairlight page displays both the built-in Fairlight FX audio plugins that accompany DaVinci Resolve on macOS, Windows, and Linux, as well as whatever Audio FX are available on your workstation.

- Fairlight FX are built-in audio processing effects that are fully cross-platform on all platforms DaVinci Resolve supports.
- On macOS and Windows, DaVinci Resolve supports the use of third-party VST audio plugins.
- On macOS, DaVinci Resolve supports Audio Unit (AU) audio plugins.



The Effects Library

Once you install third-party effects on your workstation, they appear in this panel of the Effects Library alongside the Fairlight FX that are always available. Audio plugins let you apply effects to audio clips or as a real time process on an entire audio track (affecting all clips on that track), to add basic dynamics or tonal processing compression, limiting or EQ, noise reduction, or creative spatial effects like delay or reverb.

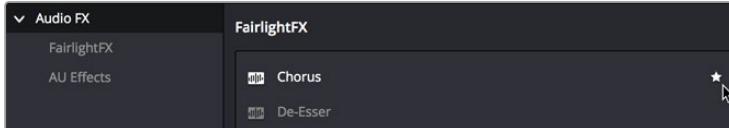
Similar to the Media Pool, the Effects Library's Bin list can be opened or closed using a button at the top left.

Effects Library Favorites

To save an effect as a Favorite:

- Hover over the far right of any effect to see a star
- Click on the star to add the effect to the Favorites effects list.
- Favorites appear in a separate area on the lower left next to the Effects Library Bin list.

NOTE: Items that are set as Favorites in the Effects Library list will also appear at the top of the Mixer's Effects drop-down menu effects list.



Stars indicate a flagged favorite effect,
all favorites are currently filtered

ADR

The Fairlight page of DaVinci Resolve has a sophisticated, yet intuitive interface for doing “ADR” (Automated Dialog Replacement). Comprehensive cue list management, industry-standard audio beeps and visual cues, sophisticated take management with star ratings and layered take organization help you manage your work while getting the best parts of each performance.

When open, the ADR interface consists of three panels to the left of the Timeline: a List panel, a Record panel, and a Setup panel.

The List Panel

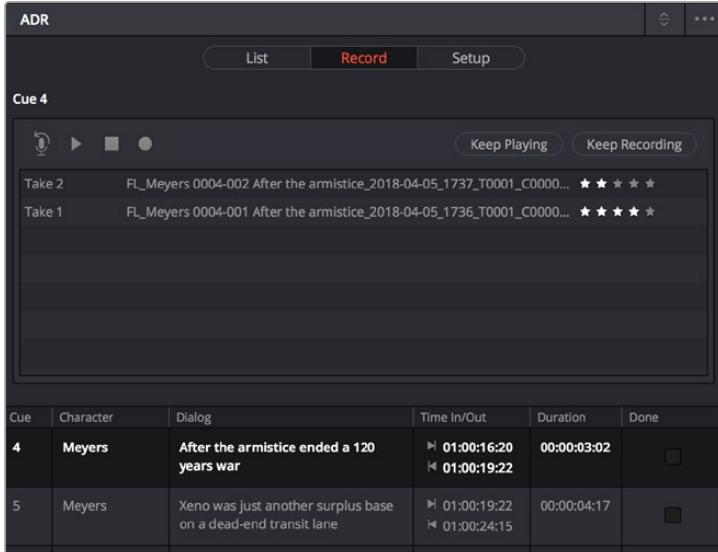
This is where you create a list of cues you need to re-record, either from within the Fairlight page, or imported from a .csv file that someone provides you. It presents controls for adding, editing, importing, and exporting cues that you want to record.

Cue	Character	Dialog	Time In/Out	Duration
4	Meyers	After the armistice ended a 120 years war	01:00:16:20 - 01:00:19:22	00:00:03:02
5	Meyers	Xeno was just another surplus base on a dead-end transit lane	01:00:19:22 - 01:00:24:15	00:00:04:17
6	Meyers	In three years of peace, these ships have become overrun with unempl...	01:00:24:15 - 01:00:30:22	00:00:06:07

The Setup panel of the ADR interface

The Record Panel

This is where you actually run the ADR recording session you’ve set up, using the dialog cues you’ve put into the Cue list. It presents controls for displaying and selecting which cues to record, previewing and initiating recording, and adding metadata to rate the different takes you’ve recorded and to keep track of which cues have been completed.

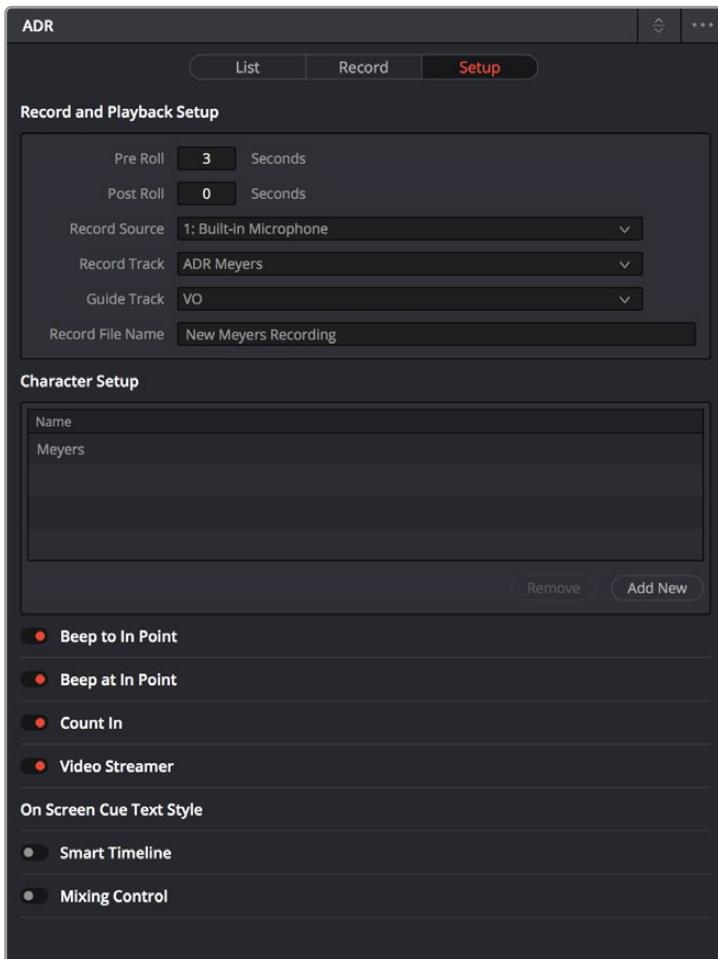


The Record panel of the ADR Interface

The Setup Panel

The Setup panel is where you configure your ADR session. Choose your audio input, your record track and what tracks to monitor. Then access beeps, video streamers and onscreen text that the actors will see on the video output display to help them keep their performance in sync.

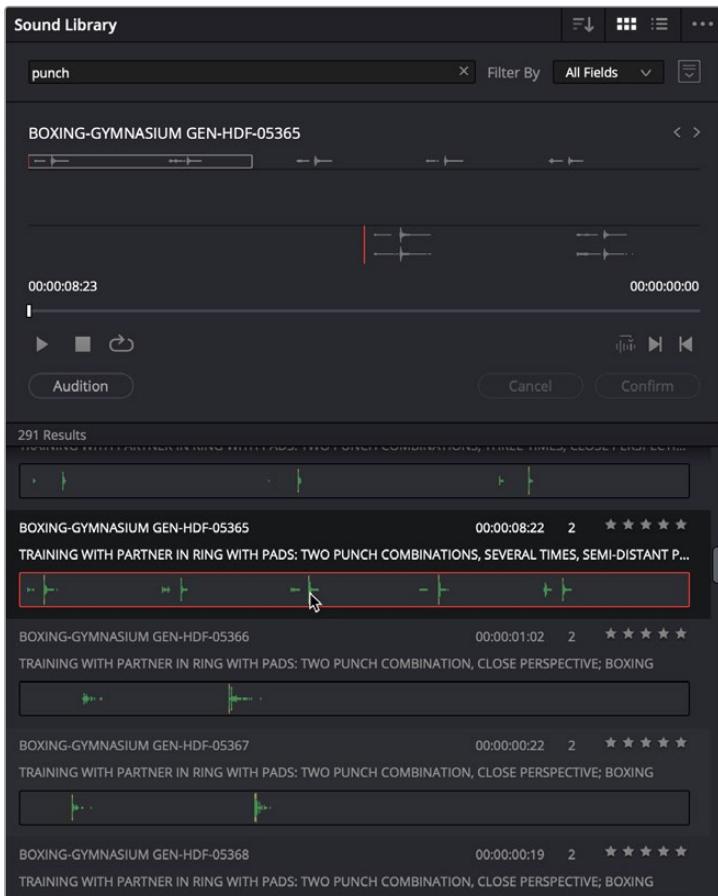
For more information on using the ADR panel, see *Chapter 170, "ADR."*



The Setup panel of the ADR interface

Sound Library Browser

A Sound Library panel is available from the Interface toolbar for browsing sound effects libraries that you have available to you, on your system or on network storage you may be connected to (for example, a SAN). It includes the capability of scanning specified file paths to catalog available sound files and their metadata, storing this data within the currently selected project library (or another project library that you select) to use when searching for the perfect sound effect within your library. Once you've cataloged your sound effects collection, it's easy to search for sounds, preview what's been found in the list, and edit the one you like best into the Timeline.



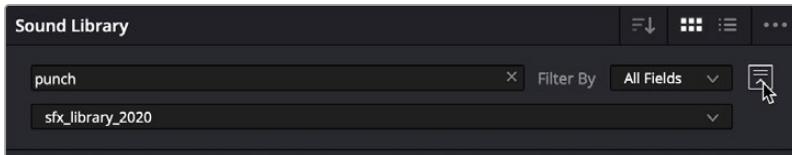
The Sound Library panel

TIP: You can download the Fairlight sound library, a royalty-free collection of over 500 professionally recorded foley sounds that you can use in your own projects, which are directly downloadable from the Sound Library panel. The Fairlight sound library features everything from atmospheric ambient sounds to foley sounds such as foot steps, hits, effects, and more. This free sound library is designed to work with the Fairlight FX Foley Sampler plugin, which lets you use a MIDI keyboard to trigger sounds so they can be recorded at precisely the right time in your program.

Library Controls

Clicking the Library button (to the right of the Search field) reveals a menu that lets you choose which project library to use for searching (and cataloging) sound effects collections. Each network project library can have a different catalog.

NOTE: the Sound Library results pane will be empty until a search is made.



Choosing a library to search

NOTE: The Sound Library is now capable of using the Mapped Mount option in the Media Storage panel of the Preferences, in order to access sound effects located on remote volumes using other operating systems.

To catalog all audio files within a given file path for searching using the Sound Library:

- 1 Using the Project Manager, create an empty network project library in which to store the sound effects catalog.
- 2 Open a project, open the Edit or Fairlight pages, and open the Sound Library.
- 3 (Optional) Click the Library button (to the right of the Search field), and select the project library you created using the drop-down menu that appears. The current project library is selected by default. If you're working within a local project library instead, the top compatible project library in the list will be the default.
- 4 Do one of the following:
 - a) If you've not yet connected a library of sound effects, an Add Library button appears in the center of the Sound Library. Click this button, and from the file dialog that appears, select the top-most directory of a file path that contains sound effects; if you've selected a directory with subdirectories inside, each subdirectory will be examined for content.
 - b) If you're adding more sound effects to an existing library, then click the Option menu and choose Add Library. From the file dialog that appears, select the top-most directory of a file path that contains sound effects; if you've selected a directory with subdirectories inside, each subdirectory will be examined for content.
- 5 Click Open.

A progress bar will show you how long the operation will take. When you're finished, a dialog will appear letting you know how many clips were added to the current library.

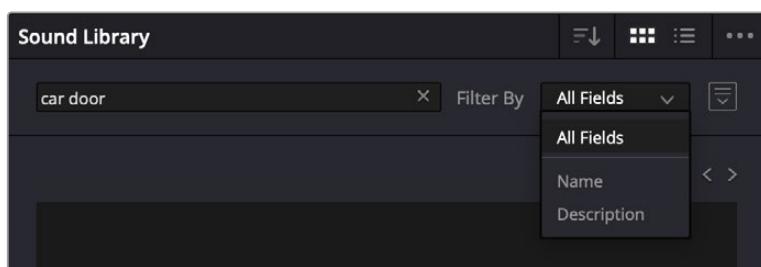
Display Controls and the Search Field

The Sound Library title bar has controls for sorting the sound effects list, showing it in List or Icon view, and an Option menu with various other settings and commands.



Display controls let you choose how the contents of the Sound Effects list are viewed

Underneath, a text field lets you enter search terms, while a drop-down menu to the right lets you choose whether to search the current project library for sound effects by name, description metadata, or all.



The Search field and Filter By menu

To search for a specific sound effect and edit it into the Timeline:

- Type a search term into the Search field. The case of search terms is ignored, except for boolean operators.

To help you to eliminate false positives, the search field supports different kinds of searches, such as literal searches, and/or/not boolean searches, wildcard searches, and ranges of characters.

NOTE: If you want to perform Boolean searches, the Boolean operators must be typed in all upper caps, such as "AND," "OR" and "NOT." If lower case is used, "and," "or" and "not" will be treated as search terms but as regular words.

Or/And/Not Searches

Simply typing words separated by a space is treated as a series of OR searches for each word independently of one another, either literally or as part of another word. For example, if you type either of the following:

```
car door  
car OR door
```

both yield the same results. Every sound effect in your library containing either the letters "car" or "door" (or both) will appear, whether these letters appear independently, or within other words. Results will include files such as "CarExDoorClose," "Doormouse_Squeak," "Carburetor dropped on cement," and "Carpet Shake."

Using AND (it must be upper caps) lets you specify multiple criteria for a search, when each file that's returned should contain every word you type somewhere within, in any order. For example, if you type:

```
car AND door
```

every sound effect in your library containing both the strings "car" and "door" will appear, even if these words appear either singly, in combination, or within other words, such as "NewCarDoorSlam" and "Carpet_Footsteps_Indoors," and "GarageDoorHitsCar."

Using NOT lets you omit sound effects that have a particular word. For example, if you type:

```
car NOT door
```

only sound effects with "car" will appear, and all sound effects with "door" will be omitted.

Literal Searches

Using quotations specifies a literal search for only the specified term, separated from other text by a space. For example, if you type:

```
"cat"
```

every sound effect in your library with the standalone word "cat" appears. Sound effects with "cats" and "caterpillar" will be omitted. Results will include "Space cat drone" or "Cat meowing."

Wildcard and Range Searches

The * (asterisk) specifies a wildcard search of any number of characters. Adding an * between two search terms identifies any sound effect with the two search terms connected by any number or combination of characters with no spaces (even no characters). For example, if you type:

```
close*door
```

results include "Door-Wood Cheap-Wooden-Closet-Door-Kick-In-Flimsy-Rattle," "ElevatorCabinCloseDoor," and "LatchSwingCloseSqueakDoorSecur." If instead type:

```
door*clos
```

results include "DoorHvyMetalCloseSlam," "DoorLidWoodenChestCloseAntique," and "ElevatorDoorCloseSlam." If instead you type:

```
c*r
```

results include "lectrohummin," "KiaShumaEXTBootCloseTrunkaka," and "Ambience with Piana, Louder."

The ? (question mark) specifies wildcard search specifying only a single character. The number of question marks you type specifies how many characters of wildcard searching you want to perform. For example, if you type:

```
door?close
```

you may get no results at all, unless you have a sound effect named "door-close." However, if you type:

```
door????close
```

results include "DoorWoodClose" since the word wood is four letters, matching the number of wildcard letters you've specified.

TIP: typing “***” will show all of the files in your Sound Library

Preview and Audition Controls

Selecting an item in the Sound Effect list loads it into the preview player where you can play it or audition it in your timeline using the controls underneath the search field.

- **Clip name:** The name of the current clip you've selected.
- **Next/Previous buttons:** Two buttons let you select the next or previous sound effect clip in the Sound Effect list.
- **Duration display:** Shows the duration of the current clip, or of the section of the clip marked with In and Out points.
- **Playhead timecode display:** The playhead's current position.
- **Waveform overview display:** The waveform of the entire sound effect appears here, providing a zoomed out view of the selected clip. All channels are summed together in this display.
- **Zoomed in waveform display:** A zoomed-in section of the selected clip that lets you see more waveform detail for setting In, Out, and Sync points.
- **Jog bar:** Lets you navigate through or scrub around the clip.
- **Transport controls:** Play, stop and loop buttons let you control playback, although you can also use the space bar and JKL controls. Right-click the Stop button to switch it into "Stop and Go to Last Position" mode.
- **Marking controls:** The Sync Point button lets you mark a specific frame on the sound effect that you want to sync to the Timeline's current playhead position when you use the Audition controls. The In and Out buttons let you mark which portions of the sound effect clip you want to edit into the Timeline.
- **Audition controls:** The Audition button puts you into Audition mode, where the currently selected sound effect clip is automatically placed at the position of the playhead in the currently selected Timeline track. You can then move over to the timeline and listen to the clip in your mix. Cancel and Confirm buttons let you choose whether you want to remove the clip from the Timeline and try again with another clip, or leave the sound effect clip in.

To audition clips you've selected in the Sound Library in the Timeline:

- 1 Select a sound effect clip you've found from the list that you want to audition in the Timeline.
- 2 (Optional) In the Sound Library, use the scrubber bar to move the playhead to the part of the sound effect that you want to sync to, and click the Sync Point button to place a sync mark on that clip. For example, if you're syncing the sound effect of a car door closing, you might sync the first frame of the door fully closed to the peak of the "slam" sound effect, rather than any door squeaking earlier in the sound effect.
- 3 (Optional) Set In and Out points to define the range of the sound effect you want to potentially use.
- 4 Select a track you want to preview the sound effect in by clicking its track header or Mixer channel strip.
- 5 Position the playhead at the place in the Timeline you want to place your clip.

- 6 Click the Audition button in the Sound Library. That clip now appears, temporarily, in the Timeline, and you can play through that section of the Timeline to see how you like the sound effect in context with the rest of the mix.
- 7 If you like the sound effect, click Confirm to keep it in the Timeline. If you don't, click Cancel, and it will disappear from the Timeline.

NOTE: In order to use the Audition function, a track has to be selected first.

Additionally, if you select another sound effect after auditioning, without first confirming the prior sound, the Audition process is cancelled, and the prior sound is removed from the timeline.

Sound Effect List

All sound effect clips that match the current search criteria appear in this scrollable list. Double-clicking anywhere on an item of this list plays that sound effect in its entirety.

- **Clip Name:** The name of that sound effect file in the storage system.
- **Description:** Any metadata that's embedded within the files of professionally created sound effect libraries appears here.
- **Duration:** The duration of that sound effect file.
- **Audio Channel:** The number of channels in that sound effect file.
- **Star rating:** A clickable control you can use to rate sound effects within DaVinci Resolve. Star rating information is not saved outside of DaVinci Resolve.
- **Waveform:** The overall waveform of the entire sound effect library is stretched or compressed within the available width of the Sound Library, regardless of the actual duration of each clip.

Index

The Index provides a handy interface for listing all of the clips in the current edit, all the tracks in the current Timeline, and all the markers in the current Timeline. Using these lists, multiple items can be selected, tracks can be managed, and marker notes can be consulted with ease. Each of these three categories of information is displayed in separate panels: the Edit Index, Tracks, and Markers.

Edit Index

Displays the Edit Index as seen in the Edit page. Each audio clip in the currently open Timeline corresponds to a row in the Edit Index, with columns for video track, Source In and Out, Record In and Out, Name, and other descriptive metadata. All selected clips (including clips that are automatically selected because they intersect the playhead) are selected in the Edit Index. The Option menu lets you filter the Edit Index by various criteria, for example showing only clips with a particular color of flag, marker, or color, only clips with speed effects, only clips with audio filters, or compound audio clips.

Edit Index										Tracks	Markers	
#	Ree	V	C	Dur	Source In	Source Out	Record In	Record Out	Name	Co		
1	A1	C		00:59:37:09	01:00:05:21	01:00:00:00	01:00:28:12	xOpening Cap...				
2	A2	C		00:00:01:09	00:00:11:18	01:00:00:00	01:00:10:09	Ambience_Dr...				
3	A7	C		00:00:00:00	00:00:28:13	01:00:00:00	01:00:28:13	detritus_022_i...				
4	A3	C		00:00:00:00	00:00:21:03	01:00:07:09	01:00:28:12	SDR0127 Amb...				
5	A5	C		00:00:00:11	00:00:21:14	01:00:07:09	01:00:28:12	1786 footstep...				
6	A2	C		00:00:05:05	00:00:23:08	01:00:10:09	01:00:28:12	SDR0235 Win...				
7	A6	C		00:00:00:07	00:00:01:10	01:00:14:07	01:00:15:10	800370 Motor...				
8	A6	C		00:00:10:09	00:00:12:05	01:00:15:10	01:00:17:06	800370 Motor...				
9	A4	C		00:00:01:20	00:00:13:13	01:00:16:20	01:00:28:13	CROWD-HALL...				
10	A6	C		00:00:00:00	00:00:02:08	01:00:18:23	01:00:21:07	10 - Metal Imp...				

The Tracks panel shows a row of information for each of the tracks in the Timeline

Tracks

Every track in the currently open Timeline corresponds to a row of controls and information in this panel. From left to right, each track has a color control, a visibility control, a number, a name, track controls, a format, ADC, Tags, and, if a VCA is used, the number of that VCA group. These controls can be used to hide or show tracks, color code them, rename them, turn track controls on singly or by dragging over several at a time, change their format, add to (or remove them from) the audio monitor list, and rearrange them (by dragging one or more rows up and down this list) and toggle the automatic delay compensation (ADC) on/off (on by default).

Edit Index										Tracks	Markers	
#	Name	Track Controls			Format	Monitor	ADC	VCA	Tags			
• A1	Intense Pt. II	• R	S	M	2.0	■	✓ 168	VCA 1				
• A2	Intense Pt. I	• R	S	M	2.0	■	✓ 168	VCA 1				
• A3	Traffic FX	• R	S	M	2.0	■	✓ 168	VCA 3				
• A4	Copter FX	• R	S	M	2.0	■	✓ 168	VCA 2				
• A5	Car Pass By	• R	S	M	2.0	■	✓ 168	VCA 2				
• A6	Creature Voice	• R	S	M	1.0	■	✓ 168	VCA 3				
• A7	Whoosh	• R	S	M	2.0	■	✓ 168	VCA 3				
• A8	Wing Flaps 1	• R	S	M	2.0	■	✓ 168					
• A9	Wind	• R	S	M	2.0	■	✓ 168					
• B2	Verb Return		M	2.0		✓	✓					
• B1	Main		M	2.0		✓	✓ 168					
• B3	7.1 Mon		M	7.1		✓	✓					

The Tracks panel shows a row of information for each of the tracks in the Timeline.

NOTE: The ADC column (automatic delay compensation) has a check box allowing the enabling of ADC on a track-by-track basis.

Audio Monitor Checkbox

A monitor checkbox appears for each bus or track in the Tracks list. When checked, that track or bus will appear in the Audio Monitoring drop-down menu as a choice for monitoring. All busses are checked on by default, and will appear in the list unless unchecked here.

MPEG-H Options in the Tracks Panel

If you have MPEG-H enabled for immersive audio authoring in the preference pane of Video and Audio I/O, additional columns appear in this panel.

Tracks														
	#	Name	Track Controls	Format	Monitor	ADC	VCA	Tags	Type	Kind	Language	Switch Group	Presets	
• A1		Intense Pt. II	R S M ↗↘	2.0	■	✓ 168	VCA 1		Static	Music	Unknown	None		
• A2		Intense Pt. I	R S M ↗↘	2.0	■	✓ 168	VCA 1		Static	Music	Unknown	None		
• A3		Traffic FX	R S M ↗↘	2.0	■	✓ 168	VCA 3		Static	Effect	Unknown	None		
• A4		Copter FX	R S M ↗↘	2.0	■	✓ 168	VCA 2		Static	Effect	Unknown	None		
• A5		Car Pass By	R S M ↗↘	2.0	■	✓ 168	VCA 2		Static	Effect	Unknown	None		
• A6		Creature Voice	R S M ↗↘	1.0	■	✓ 168	VCA 3		Static	Effect	Unknown	None		
• A7		Whoosh	R S M ↗↘	2.0	■	✓ 168	VCA 3		Static	Effect	Unknown	None		
• A8		Wing Flaps 1	R S M ↗↘	2.0	■	✓ 168			Static	Effect	Unknown	None		
• A9		Wind	R S M ↗↘	2.0	■	✓ 168			Static	Effect	Unknown	None		
• B2		Verb Return	M ↗↘	2.0	✓	✓			Static	Undefined	Unknown	None		
• B1		Main	M ↗↘	2.0	✓	✓ 168			Static	Undefined	Unknown	None		
• B3		7.1 Mon	M ↗↘	7.1	✓	✓			Static	Undefined	Unknown	None		

When MPEG-H is enabled, the Tracks panel shows additional columns of information for defining each track in the Timeline.

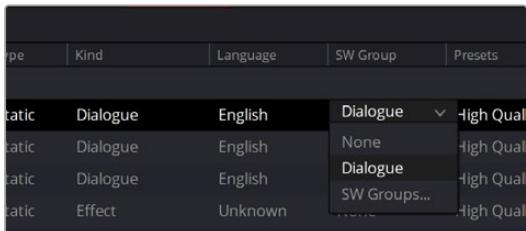
These columns include:

- **Track Type:** Allows definition of either a static component or a dynamic object. When dynamic is selected, the dynamic track-level pan automation from that track is also exported. Only a track can be set to dynamic.
- **Kind:** A content type label, such as Mixed content, Music, Dialogue, Effect, etc. When Kind is defined for a bus (rather than the default state of Undefined), that bus is automatically bounced during the export process.
- **Language:** The content-specific language for that track.
- **Switch Group:** Allows the track to be assigned to a user-defined switch group. A switch group allows the track to be grouped together with other tracks in the final content, forming a selectable item when rendered. For example, a switch group of dialogue, containing an English and a Chinese language track, could allow the user to select between these languages on playback. In order to define a switch group, click that track's cell in the Switch Group column, and choose "Sw Groups..." to open the Switch Groups Manager window, which lets you create new switch groups.



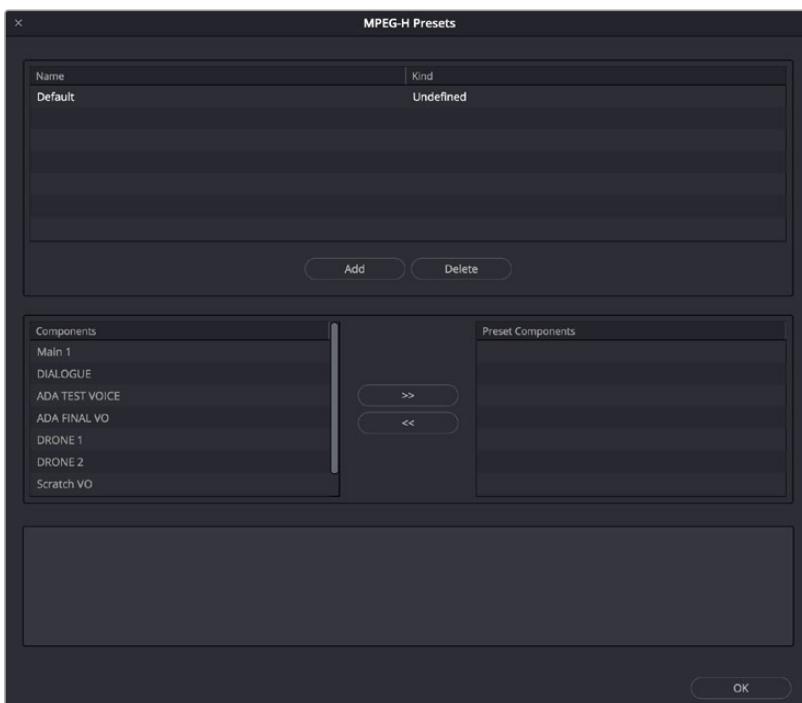
The Switch Group Manager

Once one or more groups has been created, they're available for selection in the drop-down menu of any cell in the SW Groups column. This lets you quickly make a variety of custom assignments.



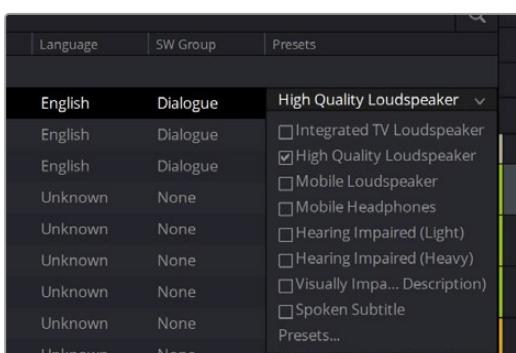
The drop-down in the SW Group column

- **Presets:** Allows a track to be assigned to a user-defined preset. For example, a Bed Mix and Language switch group could form one preset, while the same tracks and a spoken subtitle could form another. In order to define a Preset, click that track's cell in the Presets column, and choose "Presets..." to open the Preset Manager window, which lets you create new Presets.



The Preset Group Manager

Once one or more presets has been created, they're available for enabling in the drop-down menu of any cell in the SW Groups column. Any track can be added to multiple presets, so the Presets drop-down contains one checkbox per preset so you can make multiple assignments.



The drop-down in the Presets column

Once configured, the metadata from these presets form how the content is exported in the final deliverable, so there will be a set of presets that contain all configured components and switch groups.

Markers

The markers panel can be displayed in either thumbnail or list mode. In thumbnails mode, each marker in your timeline corresponds to a thumbnail displaying the timecode of its location underneath it, and the color of the marker to the left of the timecode location. In list view, each marker displays a row with the following information; marker number, frame (showing a thumbnail), marker name, start timecode, end timecode, duration, marker color, and notes.

Markers							
#	Frame	Name	Start TC	End TC	Duration	Color	Notes
1		Marker 1	01:00:02:03	01:00:02:04	00:00:00:01	■	
2		Marker 2	01:00:03:23	01:00:04:00	00:00:00:01	■	
3		Marker 3	01:00:08:13	01:00:08:14	00:00:00:01	■	
4		Marker 4	01:00:12:03	01:00:12:04	00:00:00:01	■	
5		Marker 5	01:00:16:05	01:00:16:06	00:00:00:01	■	

The Markers panel shows a row of information for each of the markers in the Timeline.

Inspector

When you add an audio effect to a clip or a track, those effects appear in the Inspector when that clip or track is selected.

For details on the Inspector for the Fairlight page, *See Chapter 172, “Audio Clip Specific Inspector Adjustments.”*

Metadata Editor

In the File tab of the Inspector there is a Metadata Editor that lets you view and edit the metadata of selected clips in the Fairlight page.



The Metadata Panel is located under the File tab in the Fairlight page Inspector

Test Tone Settings for Generating Tone, Noise, and Beeps

The Fairlight page has a general purpose oscillator, the settings of which you can customize by choosing Fairlight > Test Tones Settings. This opens the Test Tones Settings window that you can configure to generate tones, noise, or beeps using five sets of controls:

- **Enable/Disable Test Tones toggle:** Lets you turn the Oscillator on or off system-wide.
- **Frequency control:** Sets a custom frequency of oscillating tone, from 20 Hz to 15kHz. Defaults to 1kHz.
- **Frequency buttons:** Lets you quickly select 100, 440, 1K, or 2K preset tones, or a continuous rising sweep of frequencies from 20 Hz to 15kHz.
- **Noise type buttons:** Two buttons let you choose from White noise or Pink noise.
- **Level dial:** Sets the output level for the tone or noise, from -50dB to +10dB. Defaults to -15 dB.

You can set up the Oscillator to output whatever kind of tone or noise you require, and then patch it to tracks for recording tones, or patch it to audio outputs for calibrating speakers. If you use the beep options of the ADR panel, those are performed via the Oscillator.

To play the Test Tone out of your speakers:

- 1 Choose Fairlight > Patch Input/Output to open the Patch Input/Output window.
- 2 Choose System Generator from the Source drop-down menu, and choose Audio Outputs from the Destination drop-down menu.
- 3 At the left, click the button of what you want to output, Osc (Oscillator) or Noise.
- 4 At the right, click the connected audio outputs that you want to patch to, and click Patch. Tone or noise should immediately start playing out of your configured speakers. Depending on any particular track's I/O settings, if you have patched the Osc through a track you may need to either Arm the track by pressing the R (record) button, or in the channel's Path Settings press the Thru button, to have the signal pass through for output monitoring.
- 5 To stop, select one of the patched buttons, and click Un-Patch.

To record a tone or noise from the Oscillator to an audio track:

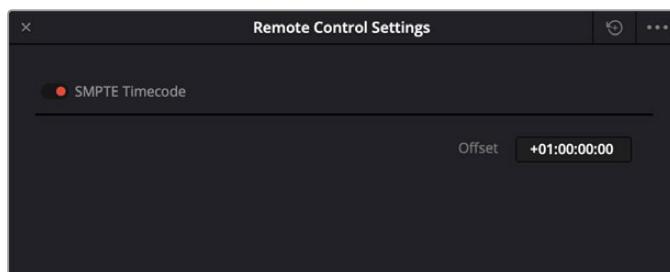
- 1 Choose Fairlight > Patch Input/Output to open the Patch Input/Output window.
- 2 Choose System Generator from the Source drop-down menu, and choose Track Input from the Destination drop-down menu.
- 3 At the left, click the button of what you want to output, Osc (Oscillator) or Noise.
- 4 At the right, click the connected audio outputs that you want to patch to, and click Patch. Close the Patch Input/Output window.
- 5 Click the Arm Record (R) button in the track header of the track you patched the Oscillator to. If your Main is properly patched to your outputs, you should hear the tone or noise, and that track's audio meter should reflect the level being output by the Oscillator.
- 6 Click the Record button of the transport controls to initiate recording of that tone to the patched track. Click the Stop button or press the Spacebar to halt recording when you're done.

Generating Timecode

SMPTE timecode can be generated as an audio signal directly from DaVinci Resolve. The signal can be used to synchronize another Resolve system (requires a Fairlight SX36 audio interface), or any system that use the timecode audio as a reference.

To generate timecode:

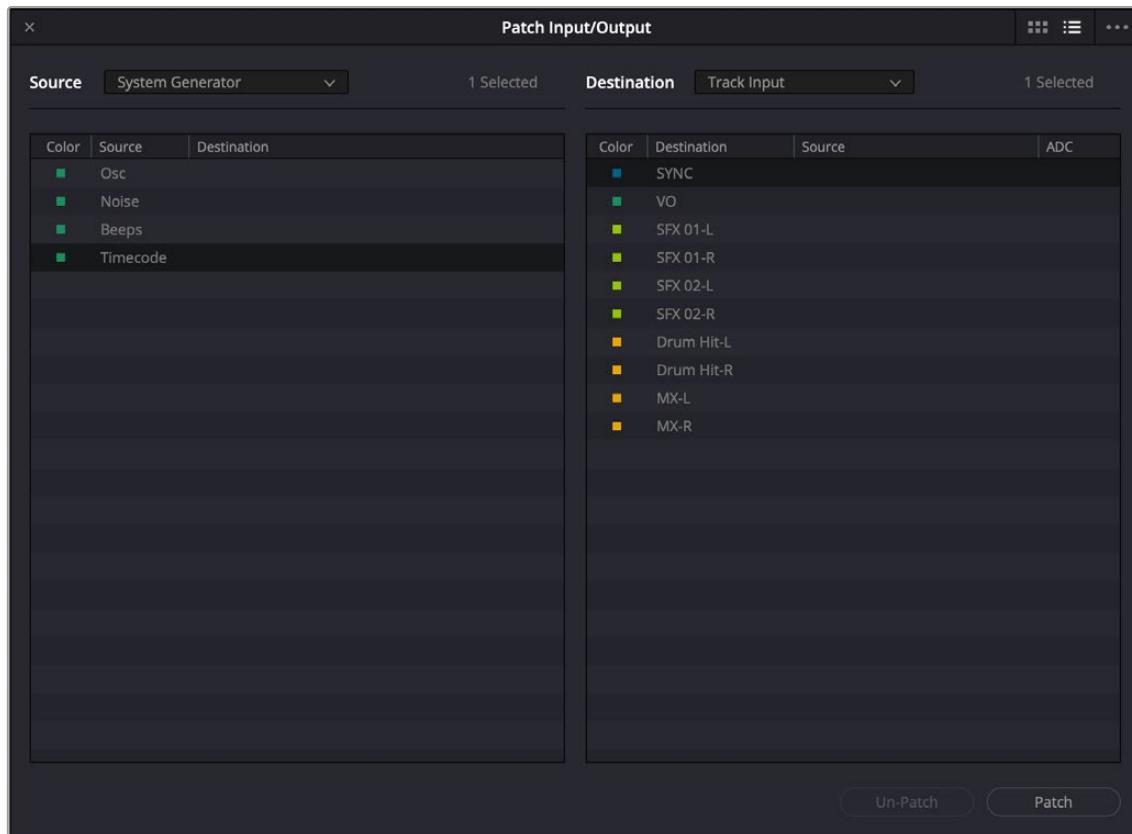
- Choose Fairlight > Remote Control Settings.
- In the dialog box that appears, set your desired time code start time (generally you'll want the starting time code position to match whatever you have set as the start time for the current Timeline).
- Turn on the SMPTE Timecode switch on the upper left.



The Remote Control Settings dialog

- To patch the audio signal from the timecode generator to an output or recording path, choose Fairlight > Patch Input/Output.
- In the dialog that appears, choose System Generator from the Source Dropdown on the upper left.
- Choose Timecode from the source list on the left, and choose the destination you want to route timecode to.

Now, whenever you are playing the timeline, timecode is output to your destination until you press stop. You can disable timecode generation via the Remote Control Settings dialog.



Patching timecode from the System Generator Source list to Track Input destination

Pro Tools AAF Import

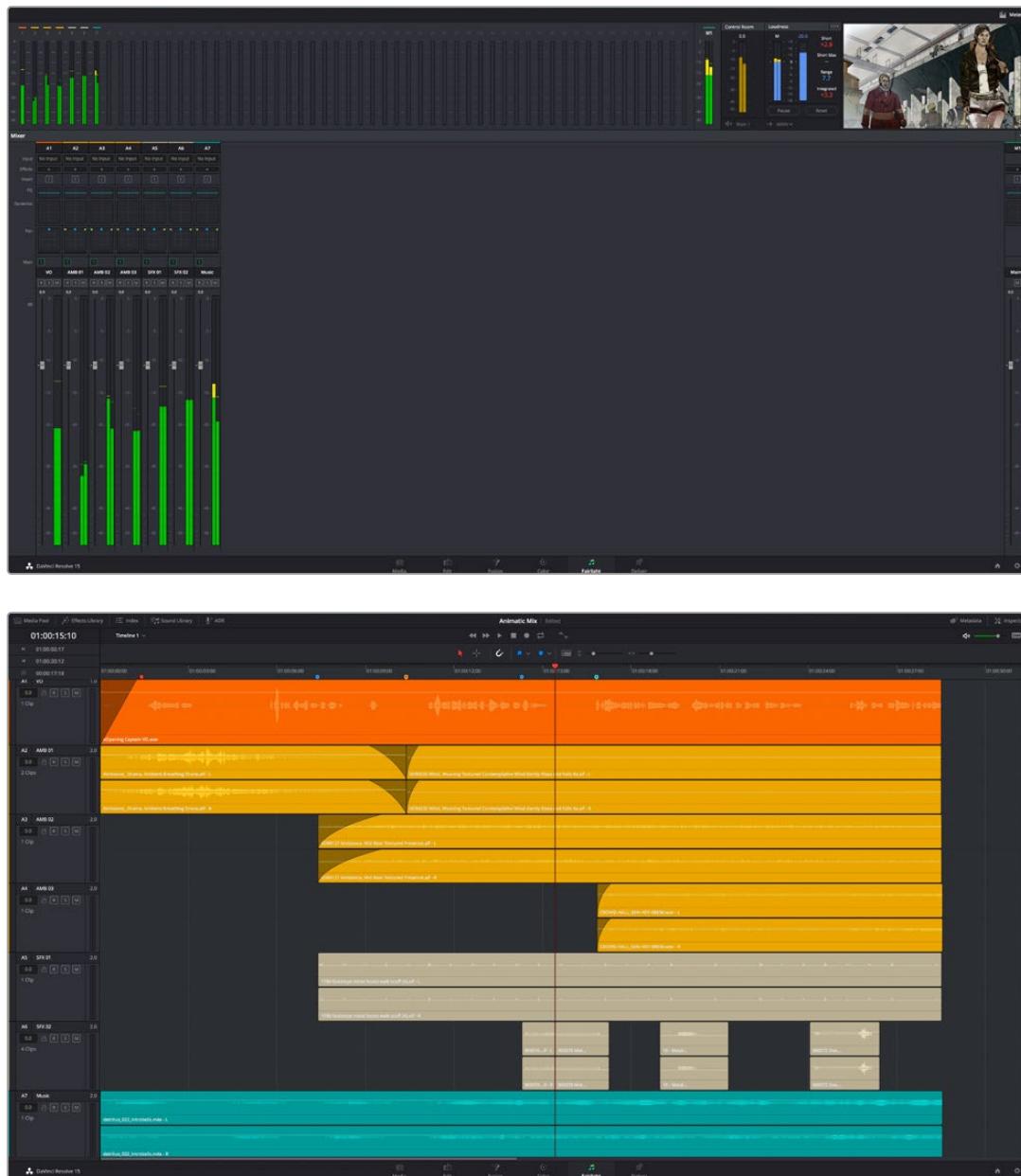
DaVinci Resolve can import AAF projects and media from Pro Tools, enabling you to move an audio project from a Pro Tools workstation to a Fairlight workstation. AAF import supports the import of embedded audio and track automation. To do so choose File > Import Timeline > Import AAF/EDL/XML.

Dual Monitor Layout

The Audio page has a dual monitor layout that provides maximum space for the mixer and audio meters on one screen and a full-screen timeline on the other.

To enter dual screen mode:

- Choose Workspace > Dual Screen > On.



The Fairlight page in dual screen mode

To switch which UI elements appear on which monitors:

- Choose Workspace > Primary Display > Display 1 or Display 2, which reverses the contents of both monitors in dual screen mode.

Customizing the Fairlight Page

The default layout is quite efficient for a number of tasks on most displays. You can always return to the default layout by choosing Workspace > Reset UI Layout. However, the Fairlight page can be customized to create more room for specific areas of the interface to accommodate different tasks.

To resize any area of the Fairlight page:

- Drag the vertical or horizontal border between any two panels to enlarge one and shrink the other.

To resize the height of individual audio tracks:

- Move the pointer to the bottom border of any audio track header, and when it becomes a resize cursor, drag that border up or down to resize that track. Each track can have an independent size when you do this.

To resize any column of the Index:

- Move your pointer over the divider between any two columns and drag when the horizontal resize cursor appears.

To rearrange Index columns:

- Drag the header of any column to the left and right to move that column.

NOTE: if you want to retain the height view set for your tracks when a project is closed and re-opened, right-click on the track header and choose “Lock Track Height to.” You can choose “Custom” as the size for any track height you may want other than standard sizes.

TIP: You can also use the option key to adjust heights for all selected tracks or Command-option to adjust all selected tracks.

Fairlight Configuration Presets

You can store and recall complete configuration presets for the Fairlight page, or individual areas of it, using the Presets Library functions, found in Fairlight > Presets Library. For more information on using the Presets Library, see *Chapter 167, “Setting Up Tracks, Busses, and Patching.”*

Undo and Redo in DaVinci Resolve

No matter where you are in DaVinci Resolve, Undo and Redo commands let you back out of steps you've taken or commands you've executed, and reapply them if you change your mind. DaVinci Resolve is capable of undoing the entire history of things you've done since creating or opening a particular project. When you close a project, its entire undo history is purged. The next time you begin work on a project, its undo history starts anew.

Because DaVinci Resolve integrates so much functionality in one application, there are three separate sets of undo "stacks" to help you manage your work.

- The Media, Edit and Fairlight pages share the same multiple-undo stack, which lets you backtrack out of changes made in the Media Pool, the Timeline, the Metadata Editor, and the Viewers.
- Each clip in the Fusion page has its own undo stack so that you can undo changes you make to the composition of each clip, independently.
- Each clip in the Color page has its own undo stack so that you can undo changes you make to grades in each clip, independently.

In all cases, there is no practical limit to the number of steps that are undoable (although there may be a limit to what you can remember). To take advantage of this, there are three ways you can undo work to go to a previous state of your project, no matter what page you're in.

To simply undo or redo changes you've made one at a time:

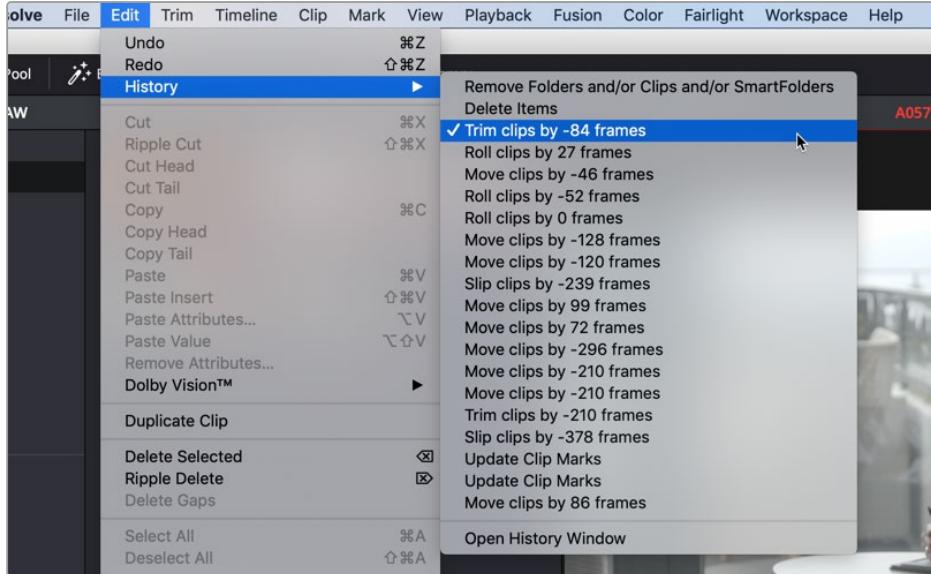
- Choose Edit > Undo (Command-Z) to undo the previous change.
- Choose Edit > Redo (Shift-Command-Z) to redo to the next change.
- On the DaVinci control panel, press the UNDO and REDO buttons on the T-bar panel.

TIP: If you have the DaVinci control panel, there is one other control that lets you control the undo stack more directly when using the trackballs, rings, and pots. Pressing RESTORE POINT manually adds a memory of the current state of the grade to the undo stack. Since discrete undo states are difficult to predict when you're making ongoing adjustments with the trackball and ring controls, pressing RESTORE POINT lets you set predictable states of the grade that you can fall back on.

You can also undo several steps at a time using the History submenu and window.

To undo and redo using the History submenu:

- 1 Open the Edit > History submenu, which shows (up to) the last twenty things you've done.
- 2 Choose an item on the list to undo back to that point. The most recent thing you've done appears at the top of this list, and the change you've just made appears with a check next to it. Steps that have been undone but that can still be redone remain in this menu, so you can see what's possible. However, if you've undone several changes at once and then you make a new change, you cannot undo any more and those steps disappear from the menu.

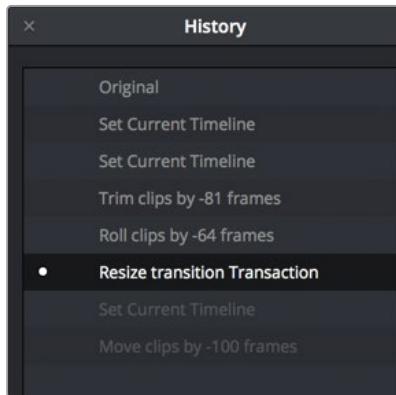


The History submenu, which lets you undo several steps at once

Once you've selected a step to undo to, the menu closes and the project updates to show you its current state.

To undo and redo using the Undo window:

- 1 Choose Edit > History > Open History Window.
- 2 When the History dialog appears, click an item on the list to undo back to that point. Unlike the menu, in this window the most recent thing you've done appears at the bottom of this list. Selecting a change here grays out changes that can still be redone, as the project updates to show you its current state.



The Undo history window that lets you browse the entire available undo stack of the current page

- 3 When you're done, close the History window.

Chapter 167

Setting Up Tracks, Busses, and Patching

One of the first things you need to do when you're setting up a new project for mixing in the Fairlight page is to define the audio tracks and busses you'll need to route and combine the elements of your mix.

This chapter covers how to create audio tracks and how to use busses to manage your mixes in the most efficient possible way. However, the Fairlight page gives you the flexibility to add or change your set up at any time; you can also concentrate on being creative and deal with any required housekeeping as your mix evolves.

Fairlight's FlexBus structure supports bus-to-bus, track-to-bus, or bus-to-track signal routing, along with expanded Dolby Atmos capabilities, including import, export, and manipulation of Atmos ADM files.

Contents

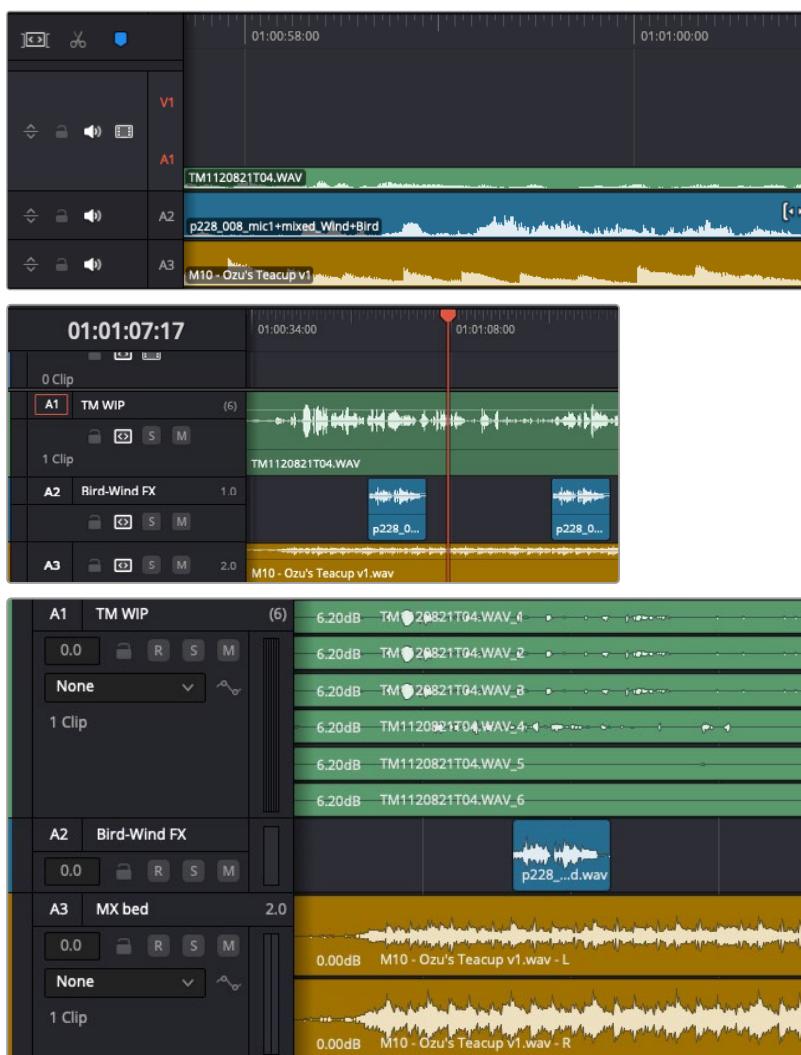
Audio Tracks	3570	Link Grouping	3575
What Is a Bus?	3571	Working Separately with Multichannel Audio File Elements	3577
Surround Panning and Bussing	3571	Creating Busses	3578
Bus to Bus Routing and Mixing	3571	Assigning Busses	3580
Using Legacy Fixed Busing	3572	Bus Assignment Using the Mixer	3580
Busses in Nested Timelines	3573	The Bus Assign Window	3580
Exposing Bus Tracks in the Timeline	3573	Setting Signal Paths	3582
Controlling Signal Flow	3573	Using the Patch Input/Output Window	3582
Defining Audio Track Types	3573	Using a Channel Strip's Input Menu	3586
Adding Tracks (Contextual Menu)	3574	Input Menu with Legacy Fixed Bussing	3587
Rearranging Tracks	3574	The Fairlight Presets Library	3588
Changing Track Type	3574	Using the Presets Library	3589
Deleting Tracks	3574		

Audio Tracks

Each audio track in a DaVinci Resolve timeline corresponds to a single channel strip on the Mixer's left side. Depending on how an audio track has been configured, each audio track is assigned a specific audio format, such as mono, stereo, 5.1 or 7.1 surround, or Dolby Atmos. Track routing allows multiple audio channels within the clips on a track to be correctly routed to the proper audio output for monitoring and rendering via the lanes that can be seen within each track on the Fairlight timeline.

Audio tracks in DaVinci Resolve often contain multiple channels from a given clip, but how those individual audio channels are displayed depends on the page:

- The Cut and Edit pages display a single clip “lane” per audio track in the Timeline, regardless of how many channels the clips on that track are representing. The waveform displayed is a composite, showing a mix of the various channels within the clip.
- This can make it easier to work with multichannel tracks without the distraction of viewing multiple channel lanes, which could make things look a lot “busier.” However, the tradeoff is that detailed activity on any of the various channels on that track are not seen.
- The Fairlight page displays the same number of tracks as the Edit page, but each track on the Fairlight page is divided into lanes, which shows each individual channel of a clip’s audio. This additional visual information can help with editing and mixing.



(Top) 6 channel and stereo audio in the Cut and Edit pages represented by single composite tracks. (Bottom) The same audio in the Fairlight page shows the 6 channel and stereo tracks with multiple lanes that correspond to each of the file types.

Now that you understand how tracks work on the Fairlight page, the next important concept you need to understand in order to unlock the power of the Fairlight page is FlexBus, which lets you combine multiple audio tracks in different ways.

What Is a Bus?

A bus is simply a common signal connection point in an audio mixer. Busses can be mono, stereo, or any larger format, like 5.1 or Dolby Atmos 9.1.6 (where 16 audio signals are used). Bussed connections are mixed together into a single signal that can be controlled via a single bus channel strip. For example, by default a single bus called “Bus 1” combines the levels of every clip edited onto every track of a timeline into the mixed signal that is output to your speakers or headphones.

You can use busses in creative ways to organize mixing of tracks in a timeline. For example, if you have five audio tracks that have all of the edited dialogue audio clips for a particular program, you can route the output of all five dialogue tracks to a dedicated submix bus. This allows the combined levels from all the contributing dialogue tracks to be processed, adjusted, and mixed at once using a single channel strip’s controls.

You can use multiple busses to organize a mix, including routing submix busses into other “main busses.” Individual tracks can be routed to submix busses, then multiple submixes can be routed to one or more “main output” busses. For example, you could have four submix busses, one for German dialogue, one for English dialogue, one for Music, and one for Effects. You could route the German, Music, and Effects submix busses to a Main 1 bus to output the German version of the program, and route the English, Music, and Effects submix busses to a Main 2 bus to output the English language version of the program.

Surround Panning and Bussing

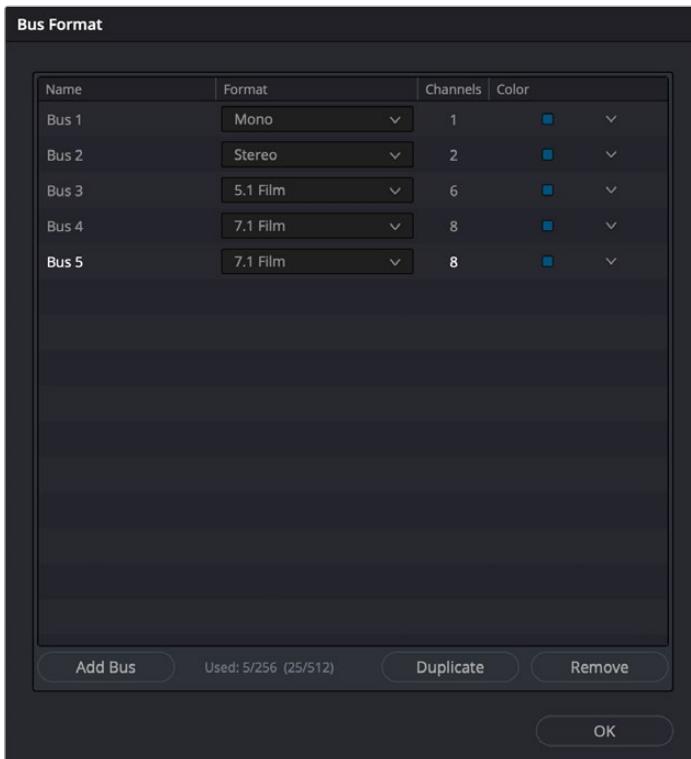
When working on surround or immersive formats, audio tracks from the Timeline are routed to busses via each channel strip’s multi-format surround panner, so busses can be configured to accommodate specific audio formats, such as mono, stereo, LCRS, 5.1 surround, or 7.1 surround, and immersive formats, such as Atmos. By using multiple bus routing, you can even output different formats simultaneously.

Bus to Bus Routing and Mixing

Fairlight’s FlexBus structure offers complete user flexibility for bus types and signal routing, allowing completely user-definable bussing, and making it possible to patch outputs and/or sends in any way you need, as dictated by your project. Each track can output to up to ten busses and sends with additional level and pan controls to a further ten busses. Busses can be sent to other busses up to six layers deep, facilitating complex stem building, processing, and allowing discrete deliverables.

User-definable busses allow for bus-to-bus, bus-to-track, or track-to-bus routing, with each bus having the ability to pass signals from mono to fully immersive formats, such as Dolby Atmos. As with any and all of the track types in Fairlight, these bus types can be changed at any time if needed.

The power of the FlexBus system is that it allows users to direct signals to many different places at one time, achieving complex mixing scenarios. Perhaps you need to generate two mixes that are identical in content but need to be of different output levels. You can designate two mix busses, one with an output level of -2dB true peak and one with an output level of -10dB true peak. The final mix signal is sent to one bus that is then broken into two more busses, one with a limiter set to -2dB and one set to -10 dB, creating these two different mixes at one time.



The FlexBus structure allows for many different bus track types to be created or changed.

Using Legacy Fixed Busing

If you want to work using the previous method of Fixed Bus mapping, you can do so for new projects by opening the Fairlight panel of the Project Settings, and turning on the "Use fixed bus mapping" checkbox.

If your project has Fixed Bussing enabled and you want to change to FlexBus, then uncheck the "Use fixed bus mapping" checkbox. Note that once you have made the change it will not allow you to change it back to legacy bussing. For more information see *Chapter 173, "Mixing in the Fairlight Page."*

Converting Older Fixed Bus Projects to FlexBus

Older Fixed Bus projects can be converted to FlexBus by doing the following:

- Open Project Settings > Fairlight.
- Under the Bussing heading, uncheck "Use fixed bus mapping."
- A dialog will appear allowing you to convert the project to FlexBus.

Busses in Nested Timelines

When you nest a timeline inside another timeline that has busses set up for mixing in the Fairlight page, all bus routings continue to work as intended within the nested timeline, which exposes all channels via the default main bus (Bus 1) in the enclosing timeline. In this sense, the audio of the nested timeline can be considered to be a submix that outputs its resulting audio to the audio track it's edited onto. However, you can also decompose your nested timeline into its own bus structure within the main timeline you've imported into, exposing all of the original tracks as they were. This is a very powerful feature for combining work done at different times or by different contributors. (see *Chapter 173, "Mixing in the Fairlight Page." "Nested Audio Timelines"* for more information.)

Exposing Bus Tracks in the Timeline

You can expose any bus as a track in the Timeline. This makes it possible to view and edit automation that is applied to parameters on that bus.

To show a bus in the Timeline:

- 1 Enable the Toggle Automation button on the Fairlight toolbar. All busses are visible by default.
- 2 If you want to hide any bus, open the Index, and click the eye button for the bus you want to hide in the Timeline.
- 3 If you want to work with automation on a bus, choose the desired automation curve you want to view from the drop-down menu in the track header controls.

Controlling Signal Flow

A good process for setting up editing and mixing in the Fairlight page is:

- Organize and configure the tracks on your timeline as required. For example, clips well organized on tracks, set track types, color, grouping, etc.
- Create the busses needed to organize the desired signal flow in the mix.
- Route the audio tracks, or any submix busses to the desired bus destinations for the mix layout.

Defining Audio Track Types

If you decide to create a new audio track, you have to choose what kind of audio track it will be. Right-clicking in the bottom audio portion of the Timeline track header reveals a contextual sub-menu that lets you create different kinds of audio tracks.

- **Mono:** Holds a single channel with only one lane.
- **Stereo:** Holds stereo left and right channels, with two lanes.
- **5.1:** Holds the six channels corresponding to a 5.1 surround mix, for a total of six lanes. For broadcast, SMPTE specifies Left, Right, Center, LFE, Surround Left, and Surround Right. For cinema distribution these tracks are ordered Left, Center, Right, Left Surround, Right Surround, and LFE.
- **7.1:** Holds the eight channels corresponding to a 7.1 surround mix, for a total of eight lanes. For broadcast, SMPTE specifies Left, Right, Center, LFE, Left Surround, Right Surround, Back Left Surround, and Back Right Surround. For cinema distribution these tracks are ordered Left, Center, Right, Left Surround, Right Surround, Back Surround Left, Back Surround Right, and LFE.

- **Dolby Atmos:** There are several Atmos formats available: 5.1.2, 5.1.4, 7.1.2, 7.1.4, and 9.1.6. The naming of the channel configurations in the Dolby Atmos format includes the height channels in the nomenclature. Channel configurations are presented as three digits separated by periods, such as 7.1.4. The first digit describes the number of main, or ear-height monitoring channels that surround the listener. The second digit describes the number of subwoofer channels. The third digit describes the number of height channels, which are speakers positioned on, or in the case of a soundbar pointed to, the ceiling.
- **Adaptive:** Capable of holding up to 24 audio channels, each with its own lane within the track. An adaptive audio track can hold clips with different combinations of channels, up to the maximum number of channels allowed within that track. The number of channels allowable on a particular Adaptive track is user-definable (1–24) at the time that track is created. If you edit a clip with more channels into an Adaptive track that was created to hold fewer channels, the extra clip channels are muted.

NOTE: The Dolby Atmos bus formats of 9.1.4, 9.1.6, and 22.2 are only available in DaVinci Resolve Studio and also require that Dolby Atmos be enabled in Preferences > Video and Audio I/O > Immersive Audio.

Adding Tracks (Contextual Menu)

There are two commands related to adding tracks in the right-click contextual menu on any audio track's header controls:

- **Add Track:** Adds a single audio track of the type you choose from a submenu.
- **Add Tracks:** Lets you insert as many tracks as you like, designating type and position.

Rearranging Tracks

You can rearrange tracks by right-clicking in a track's header area and choosing either Move Track Up or Move Track Down in the contextual menu that appears. You can also move tracks in the Index by grabbing them and moving them to the desired position. This method works with multiple tracks at once.

Changing Track Type

If you had set up your timeline with one kind of audio track, but you discover you actually need a different type, you can change them at any time. Just right-click anywhere in that audio track's Timeline header, and choose an option from the Change Track Type To submenu of the contextual menu.

Deleting Tracks

Right-click within a track's Timeline header and choose Delete Track. If there are clips on a track you remove, they are also deleted from the Timeline, but preserved in the Media Pool.



Right-clicking on a track or the track field reveals the Delete Tracks and Delete Empty Tracks functions

You can remove all empty audio tracks in the Fairlight timeline by right-clicking any track header and selecting Delete Empty Tracks from the contextual menu.

You can delete a multiple selection of tracks in the Fairlight timeline by right-clicking any selected track header and selecting Delete Tracks from the contextual menu.

Link Grouping

The Link Group function allows you to link mono tracks of material that are related and manipulate them as a one entity controlled by a single fader on a single channel strip. Only mono tracks can be used to create a link group; other track types such as stereo, 5.1, 7.1, Atmos, or Adaptive cannot be used.

Unlike a multi-channel track with lanes, a link group of mono tracks functions as independent, editable tracks in the Timeline. However, each track is mapped when choosing a track type, using one of the standard multi-channel mappings (stereo, 5.1, 7.1, Adaptive).

Link groups are extremely useful. For example, if you've been given independent ".L/R" sides of a stereo mix, or a set of six independent related audio files that need to be assembled as a single 5.1 surround mix, or when you have surround channels that need to be specifically re-edited on a channel by channel basis.

To create a Link Group from individual mono tracks:

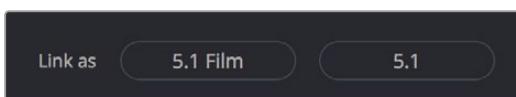
- 1 Create two or more Mono audio tracks that you want to group together. If you need to create a link group with a specific channel mapping, such as 5.1, make sure you create enough tracks (in this case, 6).
- 2 Choose Fairlight > Link Group.

- 3** When the Link Group dialog appears, mono audio tracks are represented by active buttons (all other track types are disabled, since they can't be linked). Click to enable the button of every track you want to include in the link group you're about to create. Which track type mappings are available to use for creating your group depends on how many tracks you've selected.



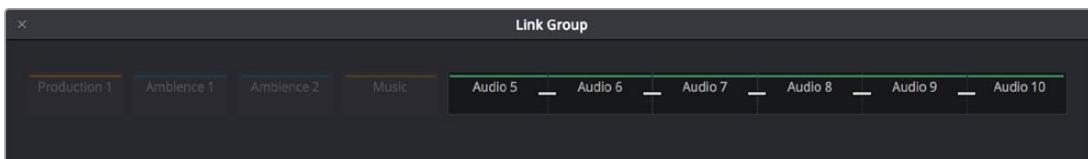
Selecting six tracks to use for creating a link group

- 4** After you've selected all the tracks you need to, click one of the available "Link as" buttons below. In this example, six tracks have been selected, so you could click 5.1 Film or 5.1.



When you select enough tracks, you can create groups linked as specific surround mappings.

Afterwards, the tracks you selected should turn into a single block, showing they've been linked.



The Link Group window shows the link indicator line next to the track names.

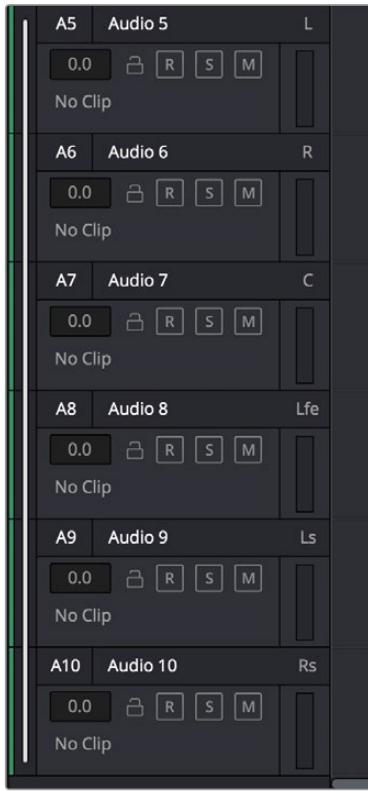
Depending on the number of mono channels selected, Fairlight will offer possible linking options. For instance, when ten channels have been selected, both Atmos 7.1.2 and 5.1.4 are option choices.



The Link As option is dependent on the number of channels being linked.

- 5** Close the Link Group window when you're finished.

Once you've created a link group, the mono tracks in the timeline that you linked appear with a bar to the left in the track header that spans every track that's linked. If the tracks are tall enough, they'll also be labeled to identify which track corresponds to which. For example, with a 5.1 surround mapping, L, R, C, LFE, Ls, Rs, and so on. You also have the freedom to edit additional or different contributing elements of a surround mix into the appropriate track that represents that channel.



Tracks in a linked group are labeled to identify which track corresponds to which surround channel

Working Separately with Multichannel Audio File Elements

If you've edited a multichannel audio clip onto a multichannel track, you can convert that track and its contents into a link group of mono tracks, each of which contains a single clip for that track's channel. This can be useful if you need to fix a multi-channel surround audio clip with an incorrect track mapping. You can convert it into a linked group, at which point you can easily rearrange the channels.

To create a Linked Group from a single multichannel timeline:

- Right-click the track header of a multichannel audio track, and choose Convert to Linked Group from the contextual menu. This automatically creates one new audio track for each channel, all of which are linked together. For example, converting a 5.1 audio track results in six new tracks with six individual audio clips (one for each channel), all of which are linked together.

If necessary, you can also unlink a linked group to turn it back into independent mono tracks.

To unlink a Link Group:

- Choose Fairlight > Link Group.
- When the Link Group dialog appears, select the link group you want to unlink.
- Click Unlink.
- Close the Link Group window when you're finished.

SMPTE and Film order Standards

The variations of routing of the multichannel files are due to the path order of SMPTE or Film standards. They are:

- **5.1 film order:** L, C, R, Ls, Rs, LFE
- **5.1 SMPTE order:** L, R, C, LFE, Ls, Rs
- **7.1 film order:** L, C, R, Lss, Rss, Lsr, Rsr, LFE
- **7.1 SMPTE order:** L, R, C, LFE, Lss, Rss, Lsr, Rsr

Creating Busses

Choosing Fairlight > Bus Format opens the Bus Format window, which lets you create the busses you need (up to the limitations of your system) to organize the tracks and channels of your program.

Name	Format	Channels	Color
Bus 1	Mono	1	● ▾
Bus 2	Stereo	2	● ▾
Bus 3	5.1	6	● ▾
Bus 4	7.1	8	● ▾
Bus 5	Mono	1	● ▾
Bus 6	Dolby Atmos 7.1.4	12	● ▾
Bus 7	Dolby Atmos 9.1.6	16	● ▾
Bus 8	Auro 11.1	12	● ▾
Bus 9	MPEG-H 7.1+4H	12	● ▾
Bus 10	ST2098 9.1 OH	10	● ▾
Bus 11	22.2 Surround	24	● ▾

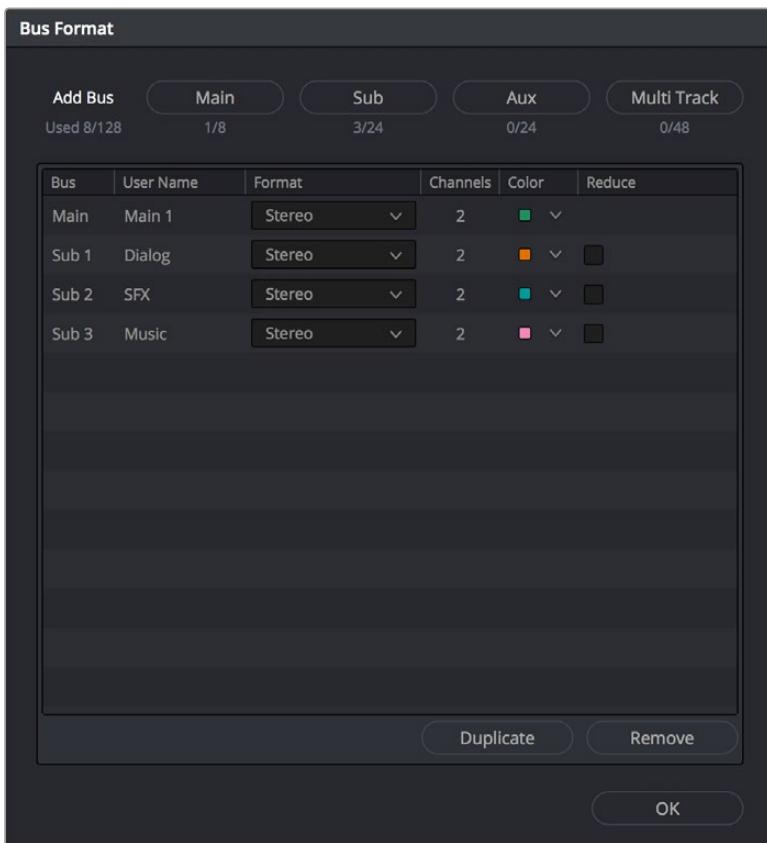
The depth of options in the FlexBus system

The Bus list lets you rename the bus, choose the format of each bus (a drop-down menu appears in the Format column of each entry of the list), shows the number of channels associated with that bus, and lets you color-code each bus (a Color drop-down lets you choose that bus's color). Simply click any item on the Bus list to select it, and choose different options from the Format and Color drop-down menus, or click on the User Name of any bus to select it, and type a custom name.

At the bottom of the list are three buttons that let you Add Bus, Duplicate, or Remove selected busses. When you're done modifying the available busses, you can click OK to accept the changes and close the Bus Format window, or Cancel to close the window without any changes (although all pre-existing busses remain in place). The bottom button row also has a Used tally of what has been used and what is available for your workstation.

Immersive Formats (Studio Version Only)

To turn on the immersive formats, go to Preferences > Video and Audio I/O > System > Immersive Audio, and choose from among the appropriate options. Once enabled, the various immersive bus formats are available in the Bus Format panel's Bus list.



The legacy Bus Format window lets you add busses to the mixer.

Legacy Fixed Bussing

Working with the FlexBus topology is highly recommended for its flexibility. In addition, some newer features are only available using FlexBus. At some point, however, you may need to work with legacy Fixed Bussing in a new project. To use Fixed Bussing in a newly-created project, prior to adding any timeline, open Project Settings > Fairlight, and under the Bussing heading, check "Use fixed bus mapping." Now all bussing is handled with the legacy Fixed Bus topology.

Bus formatting with Fixed Bus

The legacy Bus Format window has four buttons that let you create the various Fixed Bus types. Creating a new bus, whether it's a Main, Sub, Aux, or Multi Track, adds the new bus to the list that appears beneath.

The legacy Bus list works the same as the FlexBus list with choices for rename, format, color code, and so on, and buttons that let you Duplicate or Remove selected busses.

When you're done modifying the available busses, you can click OK to accept the changes and close the Bus Format window, or Cancel to close the window (although any busses you've made remain in place). The bottom button row also has a Used tally of what has been used and what is available for your workstation.

Assigning Busses

Once you've created one or more busses, you can assign different tracks to specific busses or perhaps also busses to busses, busses to tracks, and the final Main bus destinations.

Bus Assignment Using the Mixer

You can easily assign your track(s) to any available busses simply by using the plus ("+" icon on a Mixer channel strip:

- Select a mixer channel, and click on the plus ("+" icon in the Bus Output or Bus Sends section.
- In the drop-down menu, choose the desired destination.
- A rectangle appears with the name of the bus, and the bus is now assigned.



Bus routing drop-down menu on a channel strip

TIP: You can quickly assign a bus to any selected group of tracks, or to all tracks by holding down the Option key (all selected) or Command-option when making an assignment.

The Bus Assign Window

When you have a lot of busses or tracks to handle, the Bus Assign window lets you to easily manage connecting to all of them at once. Choose Fairlight > Bus Assign to open the window. Multiple bus assignments can be created within the dialog; these new assignments will be reflected in the Bus Outputs section on the channel strips in the Mixer.

The top shows the Send and the Out of all of the available busses, while the bottom shows a list of all available tracks and busses to connect to. The Bus Assign window defaults to List view, in which each bus and track is shown as a list, but by using the icon in the upper right of the window, it can be switched to Icon view, in which Available Tracks are shown as buttons.

Making Bus Assignments

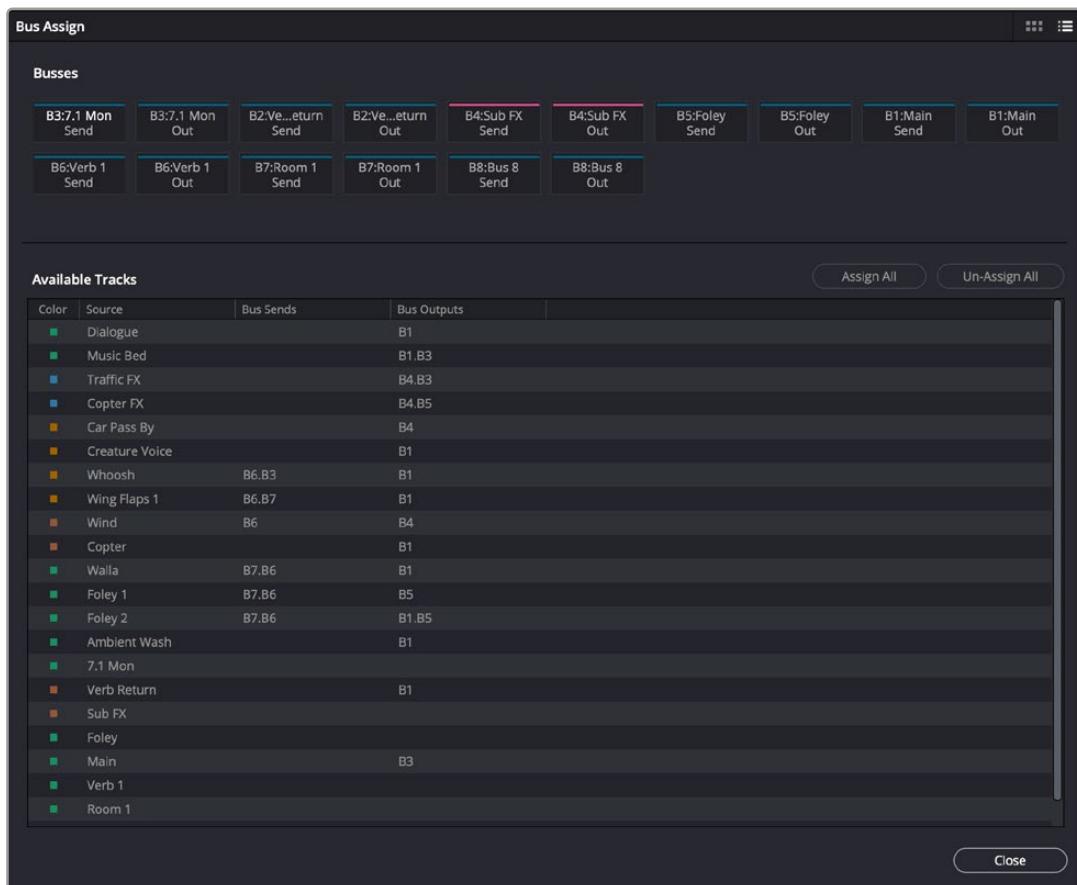
Assigning Using List View

Click a button in the Busses section to select the Send or Out of that bus, and then click on any destination in the tracks/busses list below, or drag over a group of tracks or busses to assign to all of them. When assigned, the bus number will appear in the Bus Sends or Bus Outputs column.

- **To assign every track, Sub, and Aux to a bus:** Click a button in the Busses section to select that bus, and then click Assign All.
- **To clear all track assignments from a particular bus:** Click a button in the Busses section to select that bus, and then click Unassign All.

When you're done making bus assignments, click the Close button to close the dialog.

NOTE: While the dialog is open, you can undo any assignments you've made, one at a time, or redo them, using Command-Z and Command Shift-Z respectively.



Bus Assign window

Assigning Using Icon View

- Click a button in the Busses section to select the Send or Out of that bus, and then either click on a target track button or drag a bounding box over all of the buttons for available tracks that you want to assign to that bus.
- Once assigned, the Available Tracks buttons display which bus they've been assigned to. When assigned, the Bus number will be followed by an "o" or an "s" to indicate if it's the send or the out of that bus.



Assigning multiple tracks to a bus in Icon view by dragging a bounding box

Setting Signal Paths

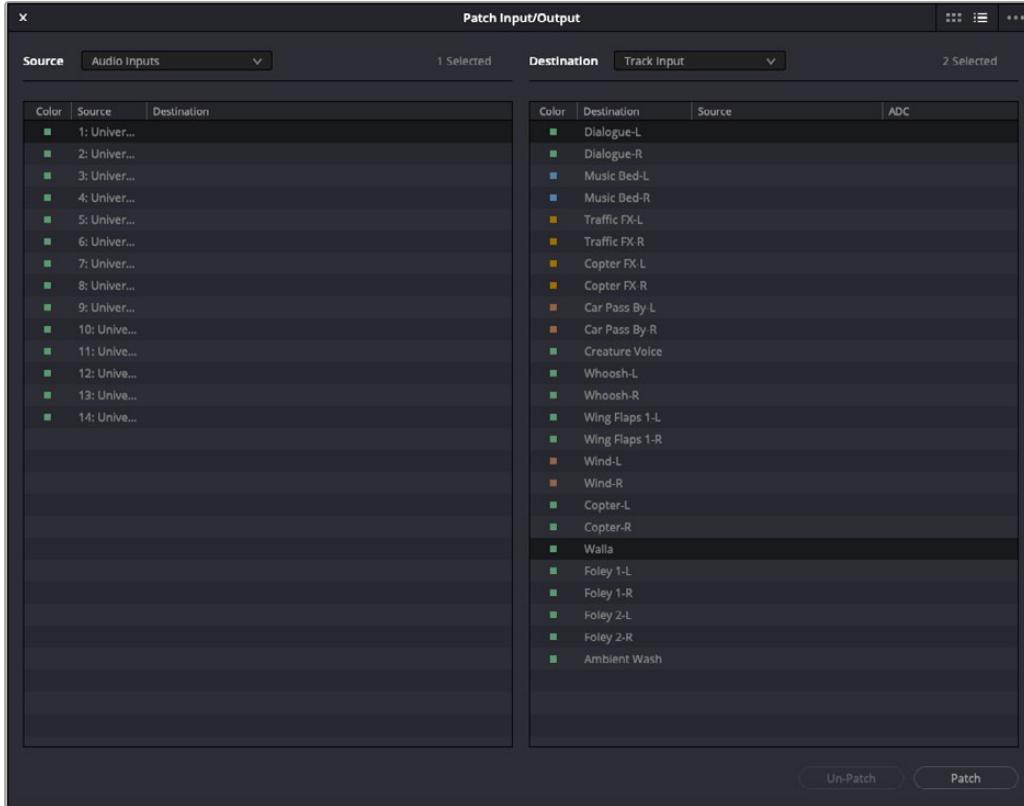
While bus creation and assignment allows you to submix tracks or route from one bus to another, you often need to route signals from individual, external sources to a track or bus. For example, if you need to record audio to a track, you need to patch the audio input on your hardware to the track you want to record to. Making this type of connection is called “patching” in Fairlight and is accomplished using the Patch Input/Output window, which is available on the Fairlight, Edit and Deliver pages, providing patching changes on any of these.

Using the Patch Input/Output Window

Choosing Fairlight > Patch Input/Output opens the Patch Input/Output window, which can be displayed in either List (default) or Icon view. This window is split into two halves, with the left half containing whichever Source controls you choose and the right half containing whichever Destinations you choose.

Creating a Patch

By default, the Patch Input/Output window shows the available Audio Inputs as the Source and the Track Inputs as the destination. This makes it easy to patch whatever audio source (such as a microphone connected to a USB audio interface) to a specific audio track of the Timeline to prepare for recording. Patching and unpatching a source to a destination is straightforward. In the following screenshot, the Audio 1 Input from an audio interface is highlighted and is being patched to a track named “Walla.”



The Patch Input/Output Window showing Source Audio Inputs and Destination Track Inputs

Patching a source to a destination:

- 1 Choose a type of source from the Source drop-down menu at the upper left-hand side of the window.
- 2 Click the item on the source list (or action button in Icon view) that you want to patch from on the left side of the Patch Input/Output window.
- 3 Choose a destination from the Destination drop-down menu at the upper right-hand side of the window.
- 4 Click the list item (or action button) of the destination you want to patch to on the right side.
- 5 Click the Patch button at the bottom right of the window. The source and destination will both display the connection they're patched to.

To unpatch a source and destination pair:

- 1 Click a list item or action button corresponding to a source or destination you want to unpatch.
- 2 Click Unpatch.



Patching in Icon view

Choosing Source and Destination Controls

The Audio Source and Destination drop-down menus let you choose different categories of sources and destinations to patch together.

The following Source options are available:

- **Audio Inputs:** The available physical audio inputs on your workstation, for example the Fairlight SX-36 audio interface, MADI, third party interfaces (for example, USB or Thunderbolt), or system audio. Useful when patching to record audio.
- **Bus Out:** Any Busses.
- **Control Room Monitor Direct:** Monitor system Direct out, routed post fold up/down matrix, pre the Monitor VolumeLevel/Dim/Mute.
- **Control Room Monitor Out:** Monitor system output. Post fold up/down matrix and Monitor VolumeLevel/Dim/Mute.
- **System Generator:** Provides various utility sources, which also include beeps and timecode generation:
 - **System Generator:** Provides a test oscillator or Noise generator with choice of white or pink noise. The System Generator controls appear in a floating window accessed via Fairlight > Test Tone Settings.
 - **Beeps:** Refers to beeps generated by operations on the ADR panel, with controls in the ADR page setup.
 - **Timecode generator:** Generates timecode when enabled and the transport runs, with controls provided in a floating window accessed via Fairlight > Remote Control.
- **Track Direct:** Track Direct Out, can be pre or post the track fader, with an offset.
- **Track Reproduction:** This is the track playback signal, directly from disk, before any processing.
- **Dolby Atmos Renderer:** The output from the Dolby Atmos Renderer in the currently selected Atmos output monitoring format. There is also a parallel stereo binaural output to feed headphones.

The following Destination options are available:

- **Audio Outputs:** For example, the Fairlight SX-36 audio interface, MADI, third party interfaces (for example, USB or Thunderbolt), or system audio. Useful when patching to playback audio to speakers or headphone systems.
- **Talk Back:** The Talkback system for patching the General Purpose Input/General Purpose Output used for talkback.
- **Track Input:** The inputs to the available audio tracks in the current timeline, which are the inputs to the Record and Thru path.
- **Dolby Atmos Send:** You will need to patch this manually if you are creating original content. If you import a Dolby Atmos master file, the Send patching for the bed and object tracks will be created automatically. When an external Dolby RMU renderer is enabled, all sources patched to these sends will be mirrored on the physical outputs to the external renderer, as defined by the base audio outputs set in system preferences.

Legacy Fixed Bus Patching

If you choose to use the legacy Fixed Bussing, the options are a bit different. Here is how they look when that is enabled.appear a bit differently.

The following Audio Source options are available:

- **Audio Inputs:** The available physical audio inputs on your workstation, for example SX-36, MADI, or system audio. Useful when patching to record audio.
- **Track Repro:** Short for Reproduction, this is the signal from the track playback, before any processing.
- **Track Send:** Track Insert send.
- **Track Direct:** Track Direct Out; can be pre or post the track fader, with an offset.
- **MT-Bus Dir:** Multitrack Bus Direct Out; can be pre or post the multitrack bus master fader, with an offset.
- **MT-Bus Out:** Multitrack Bus Out; always post the Multitrack bus master fader.
- **Aux-Bus Send:** Aux bus master insert send.
- **Aux-Bus Dir:** Aux Bus Direct Out; can be pre or post the Aux bus master fader, with an offset.
- **Aux-Bus Out:** Aux Bus Out; always post the Aux bus master fader.
- **Sub-Bus Send:** Sub bus master insert send.
- **Sub-Bus Dir:** Sub Bus Direct Out; can be pre or post the Sub bus master fader, with an offset.
- **Sub-Bus Out:** Sub Bus Out; always post the Sub bus master fader.
- **CR-Mon Dir:** Monitor system Direct out. Post fold up/down matrix, pre the Monitor VolumeLevel/Dim/Mute.
- **CR-Mon Out:** Monitor system output. Post fold up/down matrix and Monitor VolumeLevel/Dim/Mute.
- **Main Send:** Main bus master insert send.
- **Main Dir:** Main Bus Direct Out; can be pre or post the Main bus master fader, with an offset.
- **Main Out:** Main Bus Out; always post the Main bus master fader.
- **Osc:** Oscillator outputs. Sine, Pink noise, White noise.
- **Solo Out:** AFL and PFL Solo Bus Out; always post the respective bus master fader.

The following Audio Destination options are available:

- **Track Input:** Input to the Record and Thru path; simply put, the available audio tracks in the current Timeline.
- **Track Return:** Track insert return.
- **Aux-Bus Return:** Aux Bus master insert return.
- **Sub-Bus Return:** Sub Bus master insert return.
- **Main Return:** Main Bus master insert return.
- **CR-Mon In:** Input to the Monitor system's fold up/down matrices.
- **Talk Back:** The Talkback system, showing Comm1 and Comm2.
- **Audio Outputs:** The available physical audio outputs on your workstation, for example SX-36, MADI, or system audio.

Using a Channel Strip's Input Menu

The Input drop-down menu at the top of each track's channel strip in the mixer provides some shortcuts for patching different inputs and busses to the tracks of your mix. Each option in this menu makes the Patch Input/Output window appear with various Source and Destination selections automatically set up.

Input

The Patch Input/Output window appears set up to let you patch different inputs (such as the system audio input) to the tracks of the timeline. This makes it fast for setting up audio inputs in preparation for recording.

Bus

A shortcut to open the Patch Input/Output window (discussed previously in this chapter) that lets you patch Bus Out or Bus Sends to Timeline track channels.

Path Settings

Choosing Path Settings opens the Path Settings window for that track. This window contains controls for adjusting the input level of audio signals being input via an input/output device.



The Path Settings window showing audio inputs and track inputs

These parameters are as follows:

Mic/Inst

Controls will only appear on this panel if you have connected channels 1 or 2 of a Fairlight SX36 audio interface to your system. If connected, you can remotely control all of the options (including level) for the mic/instrument inputs of the SX36 if they are assigned to the channel. If there is no connection to an SX36, the area is empty.

Record Level

- **Record:** Linked and identical to the Record Enable button on the channel strip; here for convenience. If you hit one, it will enable the other.
- **Thru:** Allows the input signal to pass into the mixer without enabling a record path. This is ideal when you want a source signal to always be available and just want to monitor it.
- **Record Level:** Allows you to apply a digital gain adjustment to the record path to disk, post the output of your audio interface's analog-to-digital converter.

Normally, this control should be left at 0.0 (no change, unity gain), as it affects the level you are recording to disk. It is best practice to use the level controls on your audio interface to control the input level into DaVinci Resolve in order to maximize audio fidelity. However, there might be a time where you need a bit more level, or may not have access to an audio interface's controls, and in those cases you can adjust the input.

Trim

- **Polarity:** Inverts the polarity of the signal coming into the channel strip (sometimes referred to as “flipping the phase”). For example, you may have an input signal, like an explosion, where the transient attack of the signal produces with a massively positive-going waveform (where the waveform mostly appears above the zero line). If you invert the polarity, the signal will now be mainly negative-going and the waveform will be concentrated beneath the zero line. Inverting polarity is sometimes used to more closely align signals from multiple microphones and can be used creatively to affect frequency response of such a signal.
- **Trim Level:** Allows you to trim the level of the signal coming off of disk, post the Track FX (which process directly off of disk) and pre all other effects. Trim Level appears post the recorded signal to disk and doesn’t affect the recording level. Trim is a playback adjustment and allows you to adjust the level of the signal coming into your mix to optimize the level feeding effects and the busses or to slightly trim an otherwise perfect element in the mix up or down in level.

Direct Output

Each audio channel strip can enable a direct output that can be used to feed any other input destination. You can patch this source using the Track Direct choice in the Patch Input/Output dialog via the Source drop-down. For more information see *Chapter 167, “Setting Up Tracks, Busses, and Patching.”*

- **On/Off:** Enables/disables the direct output.
- **Pre:** Sets the direct output tap-off point to be pre (before) the channel fader. On by default.
- **Level Control:** Sets the level from full off (minus infinity) to +10 dB. Default is 0.0 (unity gain).

Insert

Linked and identical to the Effects In button on the channel strip; here for convenience. If you hit one, it will enable the other. Switches all Fairlight FX, AU, or VST effects on a channel in or out of the signal path with a single switched control.

Input Menu with Legacy Fixed Bussing

When using the legacy Fixed Busing, the options there are a bit different. Here is how they look when that is enabled.

Input

The Patch Input/Output window appears set up to let you patch different inputs (such as the system audio input) to the tracks of the Timeline. This makes it fast for setting up audio inputs in preparation for recording.

Aux Bus

A shortcut to open the Patch Input/Output window (discussed previously in this chapter), which appears set up to let you patch different Aux busses to specific submix and Timeline track channels.

Sub Bus

A shortcut to open the Patch Input/Output window (discussed previously in this chapter), which appears set up to let you patch different Sub (submix) bus channels to specific Timeline track channels.

Main Bus

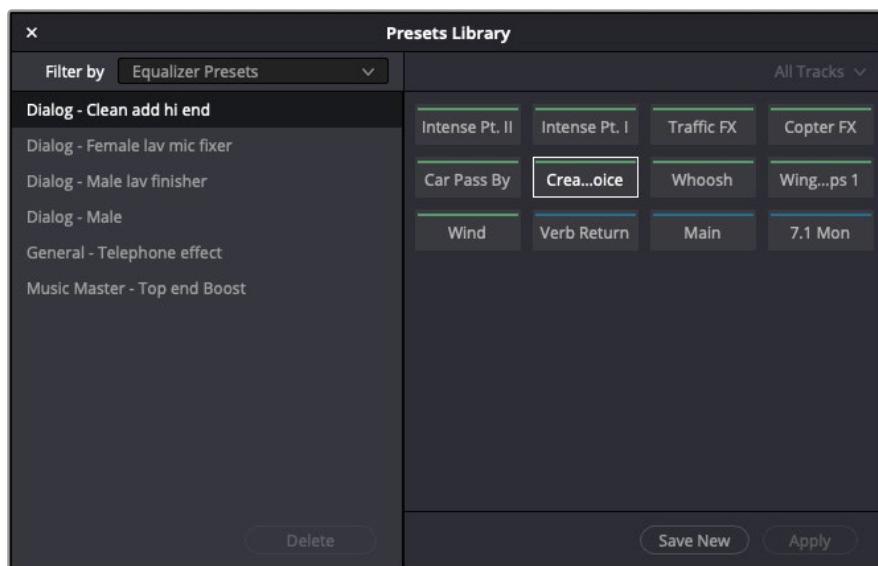
A shortcut to open the Patch Input/Output window (discussed previously in this chapter), which appears set up to let you patch different Main bus channels to specific Timeline track channels.

Path Settings

Choosing Path Settings opens the Path Settings window for that track. This window contains controls for adjusting the input level of audio signals being input via a BMD input/output device.

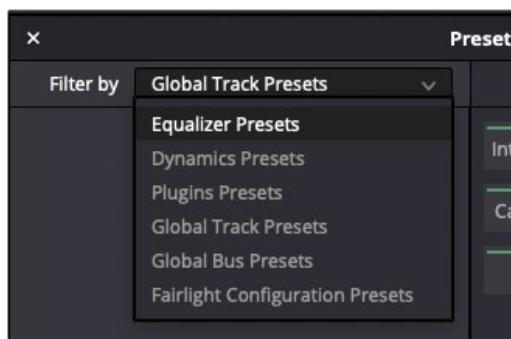
The Fairlight Presets Library

The Fairlight page offers a powerful and flexible preset system that allows you to store and recall presets for everything from the complete configuration of the audio page to individual presets for plugins. To access the presets library, choose Fairlight > Presets Library and the library floating window appears:



Fairlight Presets Library with stored presets on the left panel and destination tracks on the right

A Filter By drop-down menu on the upper left allows you to choose what type of preset you want to work with.



Filter By menu of preset types

The choices are:

- **Equalizer Presets:** Presets for the built-in channel EQ.
- **Dynamics Presets:** Presets for the built-in Dynamics Processor.
- **Plugins Presets:** Fairlight FX, AU, or VST.
- **Global Tracks Presets:** All settings for a Mixer channel strip.
- **Global Bus Presets:** All settings for a Mixer bus.
- **Fairlight Configuration Presets:** Many parameters of the Fairlight page stored as a preset including:
 - Track height.
 - What tracks are shown or hidden in the Tracks pane of the Index.
 - Split point in the Mixer.
 - Full Track vs. Small Track views in the Mixer.
 - Track Groups enable status.

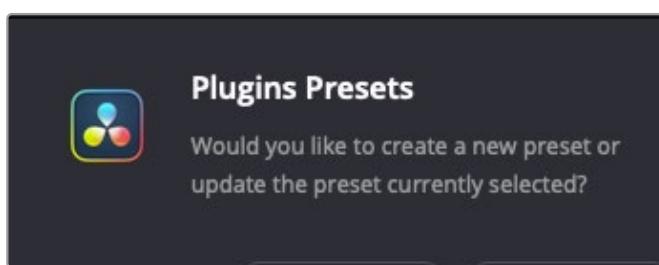
NOTE: Some items are not currently stored in Fairlight Configurations, such as which panels are shown (for example, Media Pool or Index), Meter Panel show/hide, Fairlight video window docking, and size if the video window is set to be floating.

Using the Presets Library

Select the preset type you want to work with from the Filter By drop-down menu on the left.

The tracks list on the right (which appears for most preset types) acts as both a list of sources that contain information you want to store and a list of destinations that you want to assign to when you have presets defined. To store and recall and assign presets:

- If you're storing a preset for the first time, select the source track in the tracks list on the right of the window that you'll be grabbing the preset type from (unless it's a Fairlight Configuration preset, which has no tracks to chose from, as it is global).
- Click the Save New button to save your preset.
- To load your preset onto another track, deselect any tracks currently selected in the track list on the right, and select the track(s) you want to assign to. Click Assign and the preset is loaded.
- To save a new version of an existing preset or update your present version, first choose a track in the track list that has your preset assigned to it. Then click the Save New button, and a dialog appears that allows you to choose to update the current version of the preset or save a new preset based on the current settings.
- To Delete a preset, select it in the list, and click the Delete button.



Update or Create New preset dialog

Chapter 168

Transport Controls, Timeline Navigation, and Markers

The Fairlight page has unique transport control, zooming, and scrolling options not found in the other pages of DaVinci Resolve that help you to work with audio more efficiently.

This chapter covers how to navigate around the Fairlight version of the Timeline.

Contents

Transport Controls and JKL Navigation	3591	Moving the Clip Selection	3594
Transport Controls	3591	Moving the Track Selection	3595
Using JKL to Control Playback	3591	Zooming and Scrolling	3595
Dragging the Playhead to Scrub	3592	Setting the Zoom Level of the Timeline	3596
Looping Playback	3592	Scrolling Through the Timeline	3596
Loop Jog Scrubbing	3592	Using Flags	3597
Moving the Playhead Using Timecode	3593	Using Markers	3597
Clip, Marker, and Track Navigation	3594	Adding Markers to Clips	3598
Selecting Tracks	3594	Adding Markers to Timelines	3598

Transport Controls and JKL Navigation

Because of the Fairlight page's audio-focused workflow, the transport and playback controls differ from those found in the Media, Edit, Color, and Deliver pages.

Transport Controls



Fairlight page transport controls

The Fairlight transport controls are also designed to mirror their counterparts on the Fairlight control panels. They include the following functions:

- **Rewind and Fast Forward:** Initiates accelerated playback through the Timeline in either direction. Pressing either of these buttons multiple times speeds up this motion, cycling through 8x, 24x, 60x, 150x, and 360x play speeds.
- **Play:** Plays forward. Identical to pressing the Spacebar or L keys while playback is stopped.
- **Stop:** Stops playback. Identical to pressing the Spacebar or K keys while playback is engaged.
- **Record:** Initiates recording if you have an audio source patched to a track, and if that track is enabled for recording. For more information about recording, see *Chapter 169, "Recording."*
- **Loop:** Toggles looped playback off and on. While looped playback is on, playback will loop at the end of the Timeline, and will also loop when you use the Play In to Out command, and will continue to loop automatically until you stop playback.
- **Automation controls:** This button exposes the automation toolbar. For more information about recording automation, see *Chapter 174, "Mix Automation."*

Using JKL to Control Playback

The JKL keyboard shortcuts are common to many editing applications, and experienced editors know these to be some of the most useful controls for playback and editing there are. Here's a list of the many different ways you can use these three keyboard shortcuts to play through clips and timelines as you work.

J	Plays 100% backward.
K	Stops playback.
L	Plays 100% forward.
Press J repeatedly	Increases backward play speed each time you press J, for a range of fast-reverse speeds.
Press L repeatedly	Increases forward play speed each time you press L, for a range of fast-forward speeds.

Shift-J	Plays in fast reverse.
Shift-L	Plays in fast forward.
K+J	Plays backward at slow motion (with slow motion audio playback).
K+L	Plays forward at slow motion (with pitch-corrected audio playback on OS X).
Pressing K while tapping J	Moves the playhead back one frame.
Pressing K while tapping L	Moves the playhead forward one frame.

If you're using Fairlight with the keyboard, then this will probably become one of the main ways you move the playhead around in DaVinci Resolve.

NOTE: All of the keyboard commands listed in this document are based on the DaVinci Resolve keyboard customization preset. There is great power in the remapping of keyboard commands to systems that may be more familiar to you like Premiere Pro or Pro Tools. However, if their keyboard command set does not offer the same commands as the DaVinci Resolve keyboard commands, they won't work the same. For instance, the Pro Tools keyboard preset does not support J-K-L timeline navigation.

Dragging the Playhead to Scrub

You can also drag the playhead left and right to scrub through the visible area of the Timeline by clicking and dragging anywhere within the Timeline ruler at the top of the Timeline, directly below the toolbar. If you're zoomed in at a reasonable level for editing, scrubbing the playhead using your pointer will result in smooth, tape-like slow and fast audio playback, giving you a great deal of precision while trimming audio.

Looping Playback

Two controls govern looping on the Fairlight page, similarly to how looping works on the Edit page.

- **Loop:** Command-Forward Slash (/). Toggles looped playback off and on. While looped playback is on, playback initiated with any of the following commands will loop automatically until you stop playback.
- **Play In to Out:** Option-Forward Slash (/). If you've marked a section of a clip or timeline with In and Out points, this command lets you preview how it will play.

Loop Jog Scrubbing

Currently available only on the Fairlight page, choosing Timeline > Loop Jog enables a brief sample preview to be heard while scrubbing the playhead through the Timeline. This can make it easier to recognize bits of dialog or music as you're quickly scrubbing through tracks, in situations where you're trying to locate specific lines or music cues. It also enables this brief sample preview to loop endlessly when you hold the playhead on a frame, so you can pause while scrubbing and hear (by default) the current 80 ms prior to the playhead as it loops.

A pair of settings in the User Preferences let you customize this behavior.

- **Loop Jog Alignment:** Three options let you choose whether you loop audio Pre the position of the playhead, Centered on the playhead, or Post the position of the playhead.
- **Loop Jog Width:** A field lets you choose how many milliseconds of audio to loop when Loop Jog is enabled. How many milliseconds of audio corresponds to one frame depends on the frame rate of the video. For example, at a frame rate of 25 fps, there are $1000/25 = 40$ ms per frame, so the default value of 80 ms equals two frames of looping.

Moving the Playhead Using Timecode

You can use absolute or relative timecode entry to move the playhead in the Timeline. Timecode entry lets you move the playhead very precisely or jump to specific timecode values really quickly.

How to Enter Timecode Values

When entering timecode, type each pair of hour, minute, second, and frame values from left to right, with a period representing a pair of zeros for fast entry. The numbers you enter appear in the timecode field at the upper left-hand corner of the Viewer with focus. When you're finished typing, press the Return key to execute the timecode command. The rules for timecode entry are as follows:

- The right-most pair of timecode values (or period) you enter is always the frame number.
- A period to the left or to the right of any number you type is considered to be a pair of zeroes.
- A single period between two numbers is considered to either be a single zero or ignored if it's between two pairs of numbers.
- Any untyped pairs of values to the left of what you enter are assumed to be whatever those values were prior to the timecode you entered; this makes it easy to type partial timecode values even when the Timeline starts at hour one.
- It's not necessary to enter colons or semicolons.

Absolute Timecode Entry

Absolute timecode is entered simply by typing the timecode value you want to move the playhead to, and when you press the Return key, the playhead will move to that timecode value.

Here are some examples of absolute timecode entry using this method:

Original TC Value	User-Typed Value	New TC Value
01:10:10:10	15245218	15:24:52:18
01:10:10:10	2..	01:02:00:00
01:10:10:10	15	01:10:10:15
01:10:10:10	12	01:10:10:12
01:10:10:10	1.2	01:10:01:02
01:10:10:10	1115..	11:15:00:00
01:10:10:10	23...	23:00:00:00

Relative Timecode Entry

Relative timecode is entered by starting the timecode value with a plus (+) or minus (-). Adding a plus results in the value you type being added to the current timecode value for purposes of offsetting the playhead from its current position. Adding a minus will subtract the value you type from the current timecode value. Here are three examples of relative timecode entry:

User-Typed Value	Result
+20.	00:00:20:00 is added to the current timecode value.
+3..	00:03:00:00 is added to the current timecode value.
-5	00:00:00:05 is subtracted from the current timecode value.

Clip, Marker, and Track Navigation

The Up and Down Arrow keys are used to move the playhead from one edit point to the next in the Fairlight page Timeline, just as in the Edit page Timeline.

However, holding Command-Option down while using the Arrow keys gives you Fairlight page-specific behaviors that are used to navigate among clips, markers, and tracks in the Fairlight page in a way that's different than other pages of DaVinci Resolve but very useful to the way the Fairlight page operates. This section covers the basics.

Selecting Tracks

Which tracks are selected determine the behavior of the Arrow keys.

- **In Pointer mode:** You can select tracks by clicking or Command-clicking (to select multiple tracks) anywhere in the background area or on the track number of the track headers. If you click and drag in the track header, you can use a bounding box to select multiple tracks. Pointer mode will not select in unused areas of the Timeline.
- **In Range or Focus mode:** You can select tracks by clicking or Command-clicking anywhere either in the background area or on the track number of the track header, or in any unused area of the track itself in the Timeline. If you click and drag, you can use a bounding box to select multiple tracks.

Moving the Clip Selection

The Command-Option-Left and Command-Option-Right Arrow key shortcuts are used to move the playhead left and right in the Timeline, navigating from clip to clip or from marker to marker. How these keys function depends on whether or not one or more tracks is selected in the Timeline.

- **If no tracks are selected:** The Left and Right Arrow keys will jump the playhead from Timeline marker to Timeline marker. Clip markers will be ignored.
- **If one or more tracks are selected:** The Left/Right Arrow keys will jump the playhead among clip In points, clip Out points, and Timeline markers.

Moving the Track Selection

The Command-Option-Up and Command-Option-Down Arrow key shortcuts are used to move the track selection up and down in the Timeline, changing which tracks are selected. By changing which tracks are selected, you can alter which clip's In and Out points are used to jump the playhead around the Timeline.

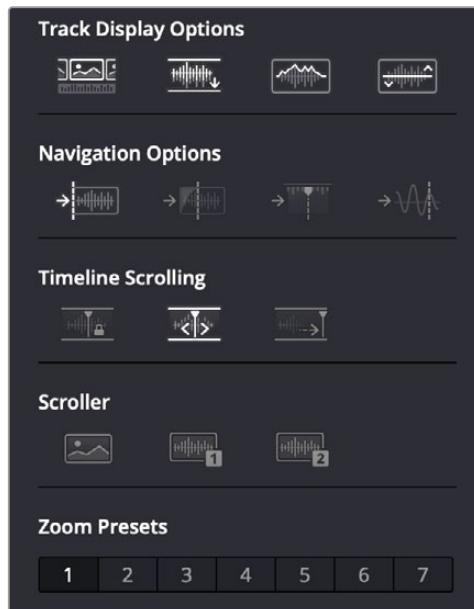
If no tracks are selected, then nothing happens.

Zooming and Scrolling

The Fairlight page has several methods of zooming into and out of the Timeline, and scrolling when you're zoomed to the point where your edited sequence of clips extends past the left and right edge of the visible timeline.

The Playhead

Zooming is always centered on the position of the Playhead. By default the Playhead moves along the Timeline as it plays. However, Fairlight offers the option of a Fixed Playhead where the Timeline moves while the Playhead remains centered.



The Playhead options are found in the Timeline Scrolling panel.

Setting the Zoom Level of the Timeline

Depending on how you like to work, there are several methods of zooming into and out of the Timeline.

- **Using the Vertical Zoom slider:** A pair of sliders at the right of the toolbar let you zoom vertically and horizontally. The first one lets you scroll vertically in order to see more detail in the height of your waveforms. If no tracks are selected, then zooming is centered on the top audio track in the Timeline. If one or more tracks are selected, then zooming is centered on the topmost selected audio track.
- **Using the Horizontal Zoom slider:** A pair of sliders at the right of the toolbar let you zoom vertically and horizontally. The second one lets you zoom horizontally in order to see more detail in the width of your waveforms.
- **Pressing Command-Equal (=) and Command-Minus (-):** Command-Equal (also referred to as Command-Plus) and Command-Minus let you zoom horizontally into the Timeline.
- **Use Shift-Z to Zoom to Fit:** Command-Z lets you zoom horizontally to fit all clips in your program to the available width of the Timeline.
- **Using scroll controls of your pointing device to scroll horizontally:** Holding the Option key down and using the scroll wheel (or scroll control) of your pointing device will zoom horizontally into the Timeline. Holding the Command key down and using the scroll wheel will move the Timeline earlier or later than its current time, without moving Playhead.
- **Using scroll controls of your pointing device to scroll vertically:** Holding the Shift key down and using the scroll wheel (or scroll control) lets you zoom vertically in the Timeline. In this case, if no tracks are selected, then zooming is centered on the top audio track in the Timeline. If one or more tracks are selected, then zooming is centered on the topmost selected audio track.
- **Using the Fairlight panel's Jog/Edit wheel:** If you have a Fairlight panel, you can hold the ZOOM button down while turning the Jog/Edit wheel to zoom into the Timeline at the position of the playhead.

Scrolling Through the Timeline

However closely you're zoomed into the Timeline, if you're zoomed enough so that clips extend past the visible area of the Timeline, scroll bars appear below. If the playhead is offscreen, a small orange tick mark indicates its position relative to the entire timeline, which is represented by the total width of the scroll bar's background.

If you drag the playhead, or otherwise use any of the transport controls or playback key shortcuts to move through the Timeline, the contents of the Timeline refresh every time the playhead hits the left or right edge of what's visible.

Using Flags

Flags are meant to mark an entire clip, and they also flag every other clip in the Timeline that shares the same Media Pool source clip, making this a handy way of quickly identifying which clips in a given timeline come from the same Media Pool source. Flags are visible in every page of DaVinci Resolve, making them an excellent method of tracking media from page to page.



The Flag and Marker buttons and pop-ups.

You can apply multiple flags to clips, with a variety of colors to choose from. In addition to flagging specific media files, flags can be useful for sorting by column in the Media Pool, as well as a variety of other operations. Whenever you enter text into a flag, it displays a small dot that indicates there's more information inside of it.

Methods for flagging clips in the Fairlight page:

- **To flag a clip:** Select one or more clips, and either click the Flag button to flag that clip with the current color, or click the Flag pop-up in the toolbar to choose a different color and then click the Flag button. In the Edit page, flags appear in the Timeline superimposed in the name bar of each clip.
- **To remove all flags from a clip:** Select one or more clips with flags you want to remove, then click the Flag pop-up in the toolbar, and choose the top "Clear All" option.
- **To change the Flag color or remove individually:** Double-click the Flag icon on the clip and a Marker dialog box appears to change the Flag color, remove the flag, or make a note regarding the flag.

Using Markers

Markers are used to call attention to a particular frame within a specific clip. Markers can be individually colored, and can have customized name and note text. Whenever you enter text into a marker, that marker displays a small dot that indicates there's more information inside of it. Once placed, markers snap to In and Out points, edit points, the playhead, and other markers whenever snapping is enabled, making it easy to use markers to "measure" edits and trims that you make in the Timeline. Markers are visible in every page of DaVinci Resolve, making them an excellent method of tracking frames in clips and specific moments in the Timeline from page to page.

You can add markers to the Timeline (in the Timeline ruler) or to clips. The full procedures for placing and editing markers in the Fairlight page's onscreen interface are identical to those for the Edit page, so for more information, see *Chapter 40, "Marking and Finding Clips in the Timeline."* For now, here's a summary.

Adding Markers to Clips

The following procedures describe how to add markers to clips in the Timeline of the Media page.

To mark a clip in the Timeline, do one of the following:

- Select one or more clips you want to mark, then move the playhead to the frame of a selected clip in the Timeline, and click the Marker button in the toolbar (or press M) to place a marker at that frame, using the current color (if multiple overlapping clips are selected, you'll add a marker to all clips).
- To place a marker during playback and immediately open the marker dialog to enter a name or note within it, select one or more clips you want to mark, play through the selection until you want to place a mark, then press Command-M. Playback pauses until you enter some text and close the marker dialog again, at which point playback continues.
- Select one or more clips you want to mark, and then click the Marker pop-up to choose a different color, and click the Marker button.

Adding Markers to Timelines

You can also place markers of any color into the Timeline ruler to denote specific times for future reference, or add notes about issues you want to keep track of. You should note that all markers placed on clips or in the Timeline also appear within the Mini-Timeline of the Color page, making it easy to place notes to reference particular audio cues that might be valuable when editing or grading.

To mark the Timeline itself, make sure all clips are deselected, and do one of the following:

- Click the Marker button (or press M) to place a marker of the currently selected color in the Timeline ruler.
- To place a marker during playback and immediately open the marker dialog to enter a name or note within it, select one or more clips you want to mark, then press Command-M. Playback pauses until you enter some text and close the marker dialog again, at which point playback continues.
- Click the Marker pop-up to choose a different color, and click the Marker button.
- Right-click in the Timeline ruler and choose a marker color from the Add Marker submenu of the contextual menu.

Chapter 169

Recording

It's possible to record to one or more tracks on the Fairlight page, accommodating workflows as varied as editors recording scratch voiceover or temp sound effects, recording engineers recording narration, ADR, or foley as part of the audio finishing process, music studios recording orchestras for the music score, or garage bands recording their latest magnum opus.

While DaVinci Resolve is a comprehensive post-production environment for cinema and video, the Fairlight page can be used for any audio recording application you might have, from books on tape to live music to feature films and television.

Contents

Setting Up to Record	3600
Patching Inputs	3600
Arming Tracks	3601
Record Name Prefix	3601
Choosing Where to Record Audio Clips To	3602
User-Selectable Input Monitoring Options	3602
Recording Using the Onscreen Controls	3602
Recording and Editing Multiple Takes Using Layering	3603
Recording VSTi Instruments	3604

Setting Up to Record

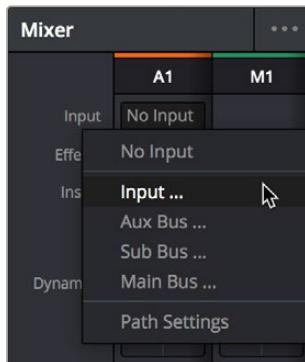
Depending on how your workstation is set up, it's possible to simultaneously record to multiple tracks in the Fairlight page at once. How many tracks you can record to depend entirely on what hardware you have available. This section describes the process of recording to tracks in the Fairlight page.

Patching Inputs

Before you can record anything, you need to use the Patch Input/Output window to patch an available audio input to a track. If your computer has nothing else, the inputs of your workstation are available to connect whatever audio device is set up as the default audio input on your system to the track you want to record to.

To open the Patch Input/Output window, do one of the following:

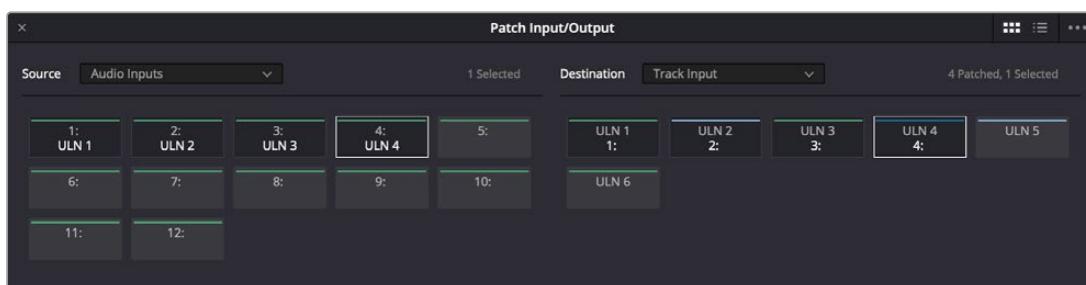
- Choose Fairlight > Patch Input/Output.
- Click the Input menu at the top of the channel strip of the track you want to record to, and choose Input.



The Input drop-down menu lets you open the Patch Input/Output window with that track selected

To patch an audio source to an audio destination:

- 1 Make sure that the Source menu is set to Audio Inputs, and the Destination menu is set to Track Input.
- 2 On the right, click the audio input that you want to patch so it's highlighted.
- 3 On the left, click the audio destination that you want to patch so it's highlighted also, if it's not already. In this simplified example, channel 4 of the ULN is being connected to Audio 4.

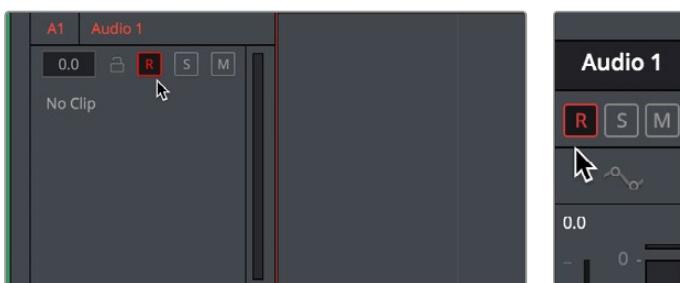


Selecting a source and a destination to patch

- 4 Click the Patch button at the bottom of the window, and your recording setup will be patched.
- 5 Continue steps 2 and 3 until you've patched all the inputs you want to record from to all of the tracks that you want to record onto. You can patch as many inputs to as many tracks as your system is set up to accommodate. In this example, there are twelve available audio sources, and the first four have been patched.
- 6 When you're finished, close the window.

Arming Tracks

To record on a track, it must be armed. You should note that it's impossible to arm a track that hasn't been patched first, so make sure you've patched the audio source you want to record from to the track you want to record to first. Then arming that track is as simple as clicking the R button in the track header controls, or in the channel strip for that track in the Mixer.

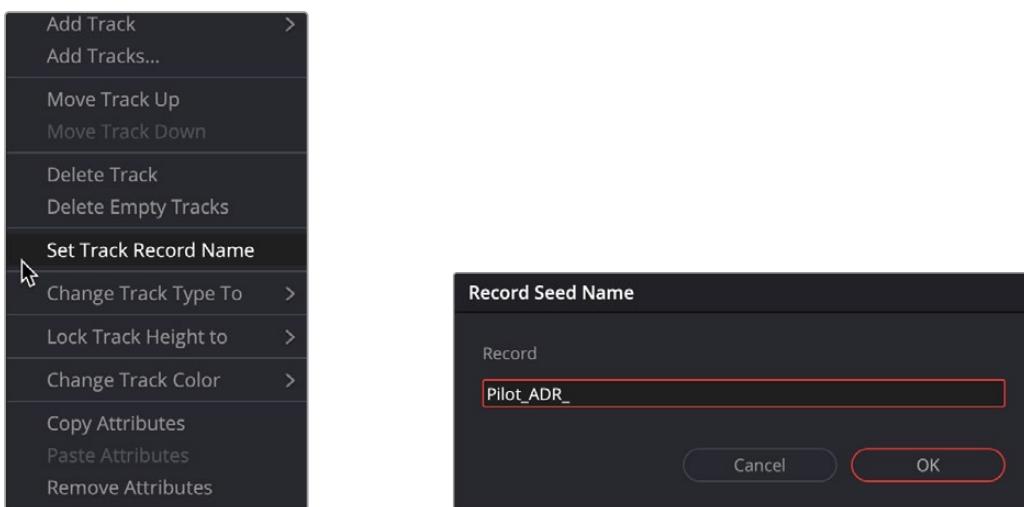


(Left) The arm button turned on in the track header,
(Right) the arm button turned on in the channel strip

Once a track has been armed, you're ready to record.

Record Name Prefix

A right-click on the designated record track header has the option to set a recording name prefix to the recordings for that track. This is a useful way to keep tabs of the various recordings required by your project. For instance, if recording ADR you can add a prefix for each character's recordings as in the example below for a character named Pilot.



Right-clicking a track header reveals the Set Track Record Name option

Example of a recording name prefix for a character called Pilot

Choosing Where to Record Audio Clips To

The process of recording in the Fairlight page creates new clips and generates additional media on disk. You can specify the location on disk where you want to save these recordings by opening the Capture and Playback panel of the Project Settings. In the Capture section use the Browse button, found underneath the “Save clips to” field, to choose a new location (a folder named “Capture” on your scratch disk is the default location).

To choose where the new clips that are created are placed in the Media Pool, simply open the Media Pool and select any bin in the Bin list, or create a new bin and select it if you want to put your recordings in their own location.

User-Selectable Input Monitoring Options

The Fairlight > Input Monitor Style submenu presents five options governing how you want to monitor inputs while recording.

- **Input:** You only hear the live signal being input; you never hear the contents of tracks.
- **Auto:** When one or more tracks are armed for recording, you hear the live input signal; on playback you hear the contents of each track.
- **Record:** You only hear the live input signal while actively recording, meaning the Record button has been pressed while one or more tracks are armed for recording. You don’t hear the input signal while tracks are merely armed.
- **Mute:** You hear nothing.
- **Repro:** While recording, you only hear what’s just been recorded, played from the track. In other words, you’re not listening to the live input, but you’re reviewing what’s just been recorded as it’s recording.

Recording Using the Onscreen Controls

You can record anywhere you want on the currently armed track or tracks by placing the playhead where you want recording to begin. In this way, you can record to specific areas of your program as you record voiceover, sound effects, foley, or other timed performances that need to fit into a particular region of the edit.

To begin recording:

- 1 Position the playhead where you want recording to begin.
- 2 Click the Record button in the transport controls. Recording immediately begins, and the material being recorded immediately begins drawing a waveform in real time, giving you immediate feedback that the input you’re recording is properly connected or not, as well as where on the currently armed track material is being recorded.

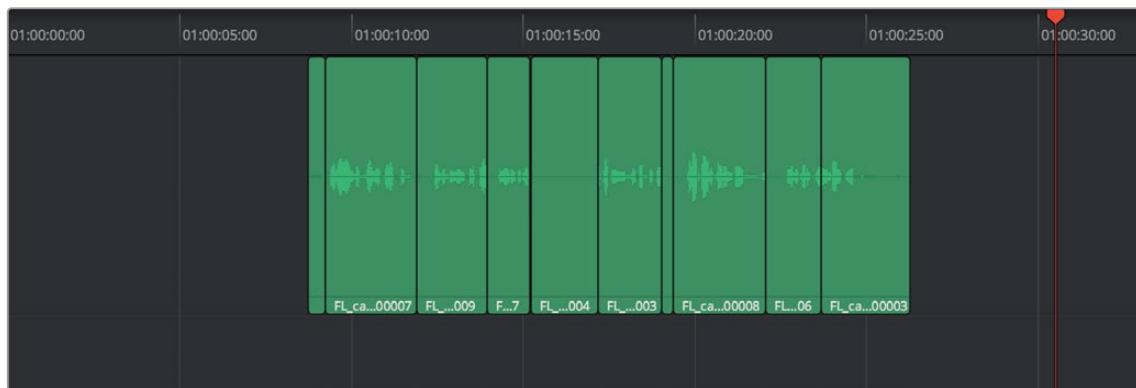
To stop recording, do one of the following:

- Click the Stop button in the transport controls.
- Press the Spacebar.

Recording and Editing Multiple Takes Using Layering

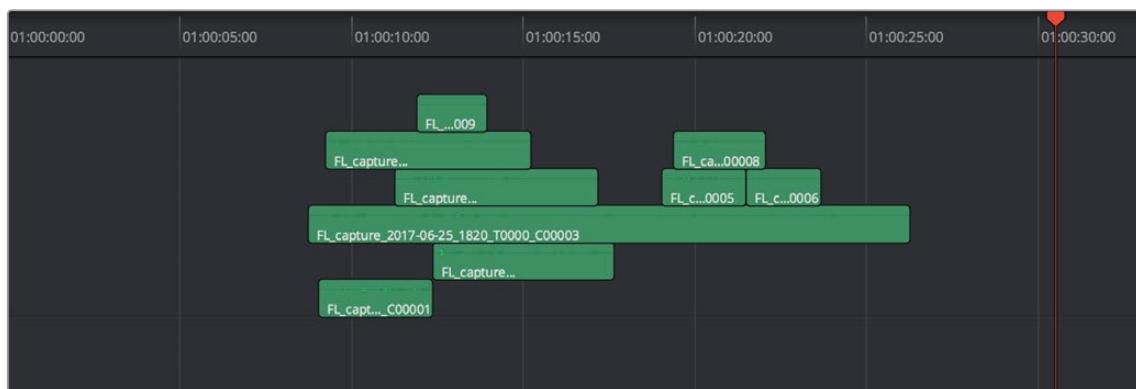
There are two ways you can record multiple takes. You can either record them one after the other, sequentially, and then edit them later. However, you also have the ability to record multiple takes to the same region of the timeline, one on top of another, while at the same time preserving every take using track layering.

In the following screenshot, multiple takes have been recorded over the same section of the timeline, including some partial takes to correct specific phrases in the voiceover being recorded. When you do this, the result looks like a series of cuts and overwritten clips, with the most recently recorded segments being the ones that play back over the previously recorded segments.



Overlapping recordings with Audio Track Layers turned off

However, if you choose View > Audio Track Layers, you'll see that all your recordings have actually been preserved via a vertical stack of overlapping audio clips.



Overlapping recordings with Audio Track Layers turned on, showing layering within the same track

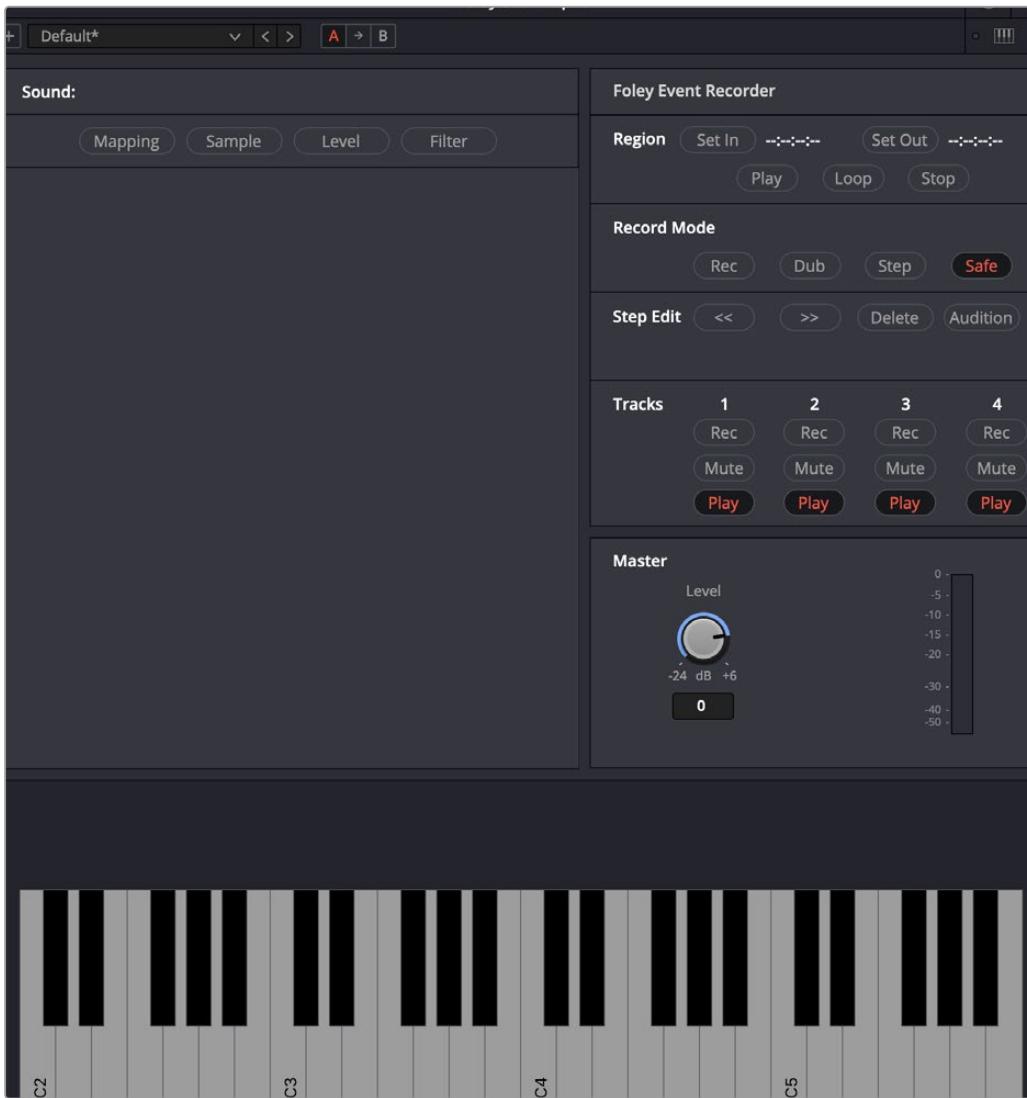
The layering of audio clips in DaVinci Resolve means that the topmost superimposed clips in a layered stack like this mutes the audio of overlapping clips that are lower in the stack.

Using layering, it's easy to edit the best segments of the best takes, while preserving all other takes, simply by adding edits and rearranging clips in the stack so the best parts are on top.

For more information about audio layering, see *Chapter 171, "Editing Basics in the Fairlight Page."*

Recording VSTi Instruments

DaVinci Resolve supports VSTi instruments working with connected MIDI controllers to trigger instrument sounds that can be recorded live on audio tracks of the Timeline. DaVinci Resolve Studio includes the Fairlight FX Foley Sampler. This can be loaded with foley sounds such as footsteps or human movements, so you can perform these sounds in real time and record the result to another track as you watch performers walking or punching in the edit, even if you lack a recording booth with foley pits and props.



The Foley Sampler ready to be filled with sounds

For more information about the Foley Sampler, see *Chapter 177, "Fairlight FX."*

On the other hand, if you're a musician, there's nothing stopping you from loading VSTi musical instruments of different kinds for playback, and using the Fairlight page as a multi-track recorder. DaVinci Resolve doesn't have MIDI sequencing functionality, but you can record live playback straight to the Timeline, using layered audio to manage multiple takes for later re-editing. Bet you never thought you'd be recording music in DaVinci Resolve.



A VST Instrument (in this case Serato Sample) loaded into a track of the Timeline

To enable a MIDI controller in macOS:

- 1 If DaVinci Resolve is running, quit before connecting your MIDI controller and setting it up.
- 2 On macOS you'll use the Audio Midi Setup utility to choose output hardware and select a speaker configuration to be made available on your system. In the Finder, use Spotlight and search for Audio MIDI Setup to open it.
- 3 In Audio MIDI Setup, choose Window > Show MIDI Studio. A window showing icons for all connected MIDI controllers appears. Your controller should be showing an icon. If it's not, you may need to install drivers for it.
- 4 Select the icon for your controller and turn on the "Enter test MIDI setup mode" button (it looks like a little keyboard) to test if your keyboard is connecting with the computer. If it is, then turn this off.

For more information on setting up MIDI on different systems, see the DaVinci Resolve Configuration Guide, available on the web from the Blackmagic Design support page at <https://www.blackmagicdesign.com/support/family/davinci-resolve-and-fusion>.

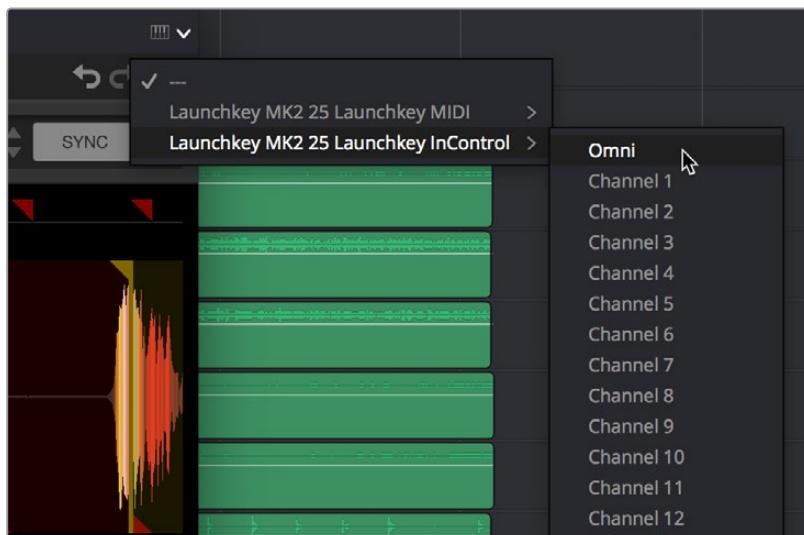
To set up the Fairlight page for VSTi instrument recording using a sampler:

- 1 Open DaVinci Resolve.
- 2 Make sure you have at least two available audio tracks in the Timeline, one for the instrument you'll be playing, and one to record into. This example will use tracks A4 and A5 for this.
- 3 Open the Effects Library, find a VSTi sampler you have installed on your system, and drag it to the track header of the track you want to use for playing, for example track A4.

Massively-featured sampler/synth combinations such as Native Instruments Kontakt and Steinberg Halion are ubiquitous and useful when you want to specifically map a collection of sound effects to specific keys or pads to create re-usable multi-purpose instruments.

However, more streamlined samplers that emphasize automatic audio clip slicing such as Serato Sample (Windows and macOS) or Image Line Slicex (Windows only) can make short work of the more specialized task of loading library sound effects recordings (or custom recordings you create) with multiple footsteps, punches, keyboard presses, cloth rustles, or other foley activities, and quickly splitting them up into individually playable samples you can trigger with pads or a keyboard.

- 4 When the VSTi interface window appears, open the MIDI menu at the upper right-hand corner of the VSTi window and choose the correct MIDI channel from your MIDI controller's submenu. If you've selected the correct MIDI channel, the instrument should start responding to the keys or pads on your controller.



Enabling MIDI control

- 5 Next, configure the VSTi instrument you're using to play the sound effects you want to use for foley. In this example, the Serato Sample VSTi plugin is being used to automatically slice up a recording of footsteps from one of Sound Ideas' many sound effects libraries. Because the VSTi you added is patched to that track's Insert (if you look at the Mixer you should see that the I button is enabled on the channel strip the instrument is patched to), the Send is PRE the Instrument. This means you need to patch that track's Track Direct output to the input of another track to record the instrument.
- 6 Choose Fairlight > Patch Input/Output to open the Patch Input/Output window, then set the Source drop-down menu to Track Direct and the Destination drop-down menu to Track Input. Click Audio 4 to the left, and Audio 5 to the right, and click the Patch button; this sets you up to play the VSTi plugin on track A4, and record its output on track A5. Be aware that after patching Track Direct from the track with the instrument to the track you're recording onto, you also need to turn "Direct Output" on for that track in the Path Settings of that track's channel strip in the Mixer.
- 7 Open the Mixer (if necessary), click the Input drop-down menu at the top of the channel strip that shows the VSTi instrument you're using, and choose Path Settings. When the Path Settings window appears, click the ON button for Direct Output, then close the Path Settings window.

At this point, you're ready to begin recording.

To play and record a VSTi instrument:

- 1 Click the Record Arming button of the track you're recording to (in this example A5), move the playhead to where you want to begin recording, and then click the Record button to begin recording.
- 2 As the video of your program plays, use your MIDI controller to trigger sound effects as necessary. When you're finished, click the Stop button.

If necessary, you can record multiple takes using track layering until you get the timing right. When you're finished, you can remove the instrument from the track it's on since the recorded audio is all you need.

Chapter 170

ADR (Automated Dialog Replacement)

The Fairlight page of DaVinci Resolve has a sophisticated interface for doing ADR, or automated dialog replacement, in a structured and straightforward manner.

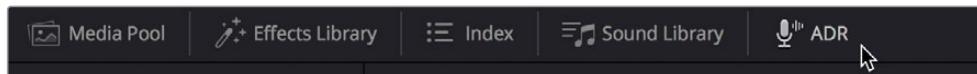
Simple, yet powerful, the ADR panel incorporates Cue list management, industry-standard audio beeps and visual cues, and sophisticated take management with star ratings and layered take organization to create and manage the re-recording of dialog in any program. With this sophisticated organization and layering, it's easy to edit together the best parts of each take into your program.

Contents

ADR (Automated Dialog Replacement)	3609
The ADR Interface	3609
Setting up to Do an ADR Session	3613
Creating and Importing ADR Cue Lists	3614
Manually Creating an ADR Cue List	3614
Importing Cues	3615
Recording ADR to the Timeline	3616

ADR (Automated Dialog Replacement)

Clicking the ADR button on the Interface toolbar opens up the celebrated Fairlight ADR panel, which provides a thoroughly professional workflow for doing automated dialog replacement. Dialog replacement, for those who don't know, is the process whereby audio professionals bring in actors to re-record unsalvageably bad dialog recordings from the comfort of their recording studios, line by line and with a great deal of patience.



The ADR panel on the Fairlight page

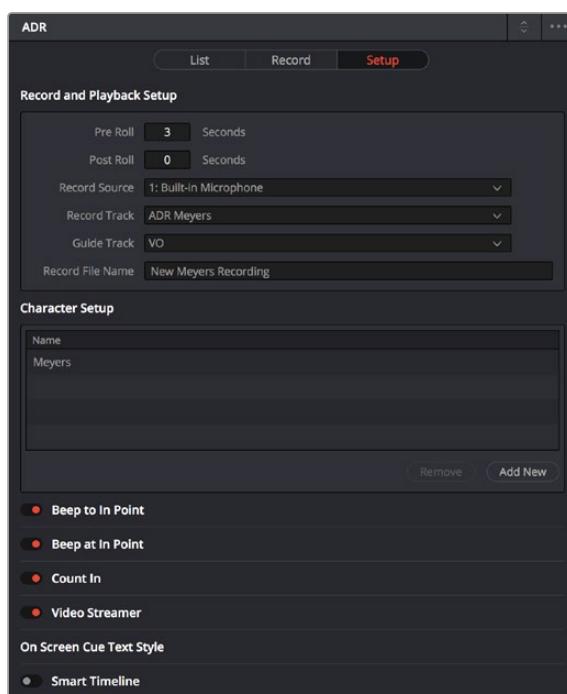
It's an old joke that ADR isn't really automatic, but the Fairlight page aims to give you all the help it can to make this a structured and straightforward process. Simple, but powerful, Cue list management lets you efficiently assemble a re-recording plan. Industry-standard audio beeps and visual cues via your BMD video output device help the actors in the booth nail their timings and their lines. Then, sophisticated take management with star ratings and layered take organization in the Timeline help you manage the resulting recordings to pick and choose the best parts of each take when you edit the results.

The ADR Interface

When open, the ADR interface consists of three panels to the left of the Timeline: a List panel, a Record panel, and a Setup panel. The controls of these panels are described in the order in which they're used.

The Setup Panel

As its name implies, the Setup panel is where you configure your ADR session.



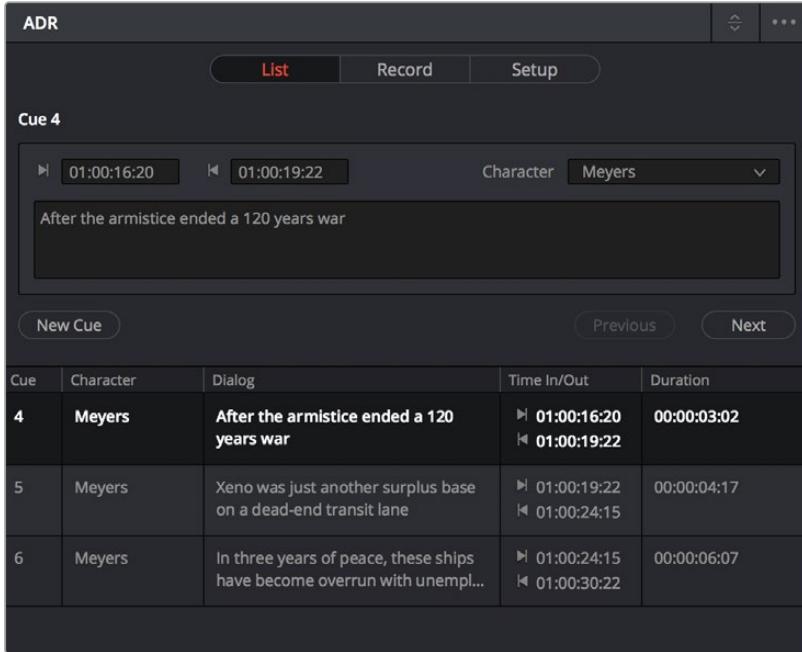
The Setup panel of the ADR interface

This panel presents the following controls:

- **Pre Roll and Post Roll:** Specifies how many seconds to play before and after each cue's specified In and Out points, giving actors a chance to listen to what comes before and after each cue in order to prepare. If you enable the Beep options below, beeps provide a countdown during the specified pre-roll.
- **Record Source:** (Disabled until you select a Record Track) A drop-down menu lets you choose the input you want to record from, creating a patch to the Record Track.
- **Record Track:** A drop-down menu lets you choose the track you want to record to. Selecting a track with this menu creates a patch from the Record Source to the Record Track, and automatically toggles Record Enable on.
- **Guide Track:** A drop-down menu lets you choose which track the original production audio you need to re-record is on. This is used for sending audio playback to the talent to use as a guide for recording their own replacement performance.
- **Record File Name:** A text entry field that lets you provide a name for the audio files being recorded to be saved with.
- **Character Setup:** A list for adding the names of all the characters that have dialog cues you'll be re-recording, to help with cue creation and management. An Add New button lets you add additional names to this list, while a Remove button lets you delete characters you no longer need.
- **Beep to In Point:** Enables a three-beep sequence to be heard leading up to the recording. For beeps to be audible, the Beeps channel of the System Generator is a source that must be patched to your audio outputs using the Patch Input/Output window.
- **Beep at In Point:** Enables one last beep at the In point. For beeps to be audible, the Beeps channel of the System Generator is a source that must be patched to your audio outputs using the Patch Input/Output window.
- **Count In:** An onscreen counter that counts down to the start of the cue.
- **Video Streamer:** A visual cue for the talent to watch during pre-roll to ready them for recording. A pair of vertical lines superimposed over the program being output to video move towards one another across your video output screen during the pre-roll to the cue. This gives the talent a visual indication of the time remaining until they should begin talking. When the beeps play, these lines get taller. Both lines come together at the Time In frame, at which point a cross shows that recording is beginning.
- **Smart Timeline:** When turned on, this option automatically moves the playhead to each cue as it's selected in the Cue list, and zooms in to frame the duration of that cue in the Timeline.
- **Mixing Control:** Enables automated switching of audio playback, to independently control what the talent and the audio engineer hear at various stages of the ADR recording process. For example, with this enabled, the Guide track is not routed to the Control room while the engineer is reviewing a take.

The List Panel

This is where you create a list of cues you need to re-record, either from within the Fairlight page, or imported from a .csv file that someone provides you.



Cue	Character	Dialog	Time In/Out	Duration
4	Meyers	After the armistice ended a 120 years war	01:00:16:20 01:00:19:22	00:00:03:02
5	Meyers	Xeno was just another surplus base on a dead-end transit lane	01:00:19:22 01:00:24:15	00:00:04:17
6	Meyers	In three years of peace, these ships have become overrun with unempl...	01:00:24:15 01:00:30:22	00:00:06:07

The List panel of the ADR interface

This panel presents the following controls:

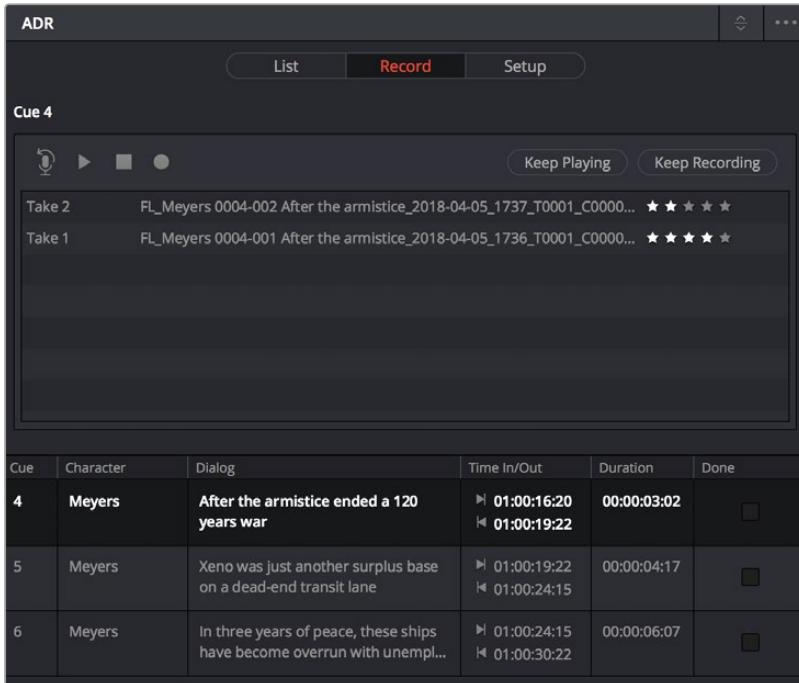
- **Cue editing controls:** Displays the data for the currently selected cue (or a cue that was just created). In and Out timecode fields store the Timeline In and Out points that were set when the cue was created but can be manually edited for fine tuning. A Character drop-down menu lets you choose which character that line of dialog belongs to. A text entry field lets you enter the dialog cue that's to be re-recorded, so you and the talent can both refer to it.
- **New Cue button:** Clicking this button adds a new cue to the list using whatever In and Out points have been set in the Timeline, and whatever character was last selected.
- **Cue list:** The list of all cues that have been entered or imported. The Cue list can be filtered using the Filter drop-down menu at the top-right of the ADR panel (next to the option menu). You can choose to show the cues for all characters, or for any selected combination of characters. You can also choose to hide all cues that are marked as done to experience the joy of this list shrinking more and more the closer you are to being finished.

Additionally, the ADR interface option menu has three commands pertaining to the List panel:

- **Import Cue List:** Lets you import a properly formatted .csv file to create cues that have been prepared in a spreadsheet. Correct formatting for cue lists you want to import is no headers, one line per cue, with four individual columns for In timecode, Out timecode, Character Name, and Dialog.
- **Export Cue List:** Lets you export the contents of the Cue list to a .csv file, for exchange or safe-keeping.
- **Clear Cue List:** Deletes all cues in the Cue list. It's recommended you export a copy of your Cue list before eliminating it completely, in case you ever need to revisit a cue.

The Record Panel

This is where you actually run the ADR recording session you've set up, using the dialog cues you've put into the Cue list.



The Record panel of the ADR Interface

This panel presents the following controls:

- **Record and rehearse controls:** Four transport controls and two buttons let you control recording during ADR sessions. These controls are only clickable when you've selected a cue from the Cue list to record.
 - **Rehearse:** Runs the section of the Timeline specified by a cue without actually recording anything, giving the talent an opportunity to run through their dialog and practice their timing and delivery. Beeps and on-screen streamers are not played during a rehearsal.
 - **Play:** Plays the currently selected take from the Take list (described below). If no take is selected, the most recently recorded one on top is played.
 - **Stop:** Immediately stops rehearsal, playback, or recording.
- **Record:** Initiates recording of the cue to the specified audio track, with cue beeps and video streamer cues.
- **Keep Playing:** At the end of a take you may wish to keep playing, so the talent can hear the next section of the track. Pressing the Keep Playing button at any time, even while recording, results in post roll being ignored and normal playback resuming after the cue's Out time.
- **Keep Recording:** At the end of a take you may wish to keep recording until you manually stop. Pressing the Keep Recording button at any time, even while recording, results in the Out point of the current cue being ignored and recording continuing until you stop it.
- **Take list:** The Take list shows every take you've recorded for the current cue, with take number, name, and a five-star rating that you can set to keep track of which takes worked and which didn't. Earlier takes are at the bottom of this list, while recent takes are at the top (the same order in which the corresponding layered audio clips appear in the Timeline track they've been recorded to).

- **Cue list:** The list of all cues that have been entered or imported. The Cue list can be filtered using the Filter drop-down menu at the top-right of the ADR panel (next to the Option menu). You can choose to show the cues for all characters, or for any selected combination of characters. You can also choose to hide all cues that are marked as done to experience the joy of this list shrinking more and more the closer you are to being finished.
- **Cue list Done column:** A sixth column appears in the Record panel only, labeled Done. It contains check boxes for each cue that you can turn on to keep track of which cues you've successfully finished.

Additionally, the ADR interface Option menu has one command pertaining to the Record panel:

- **Record Early In:** Enables recording during pre-roll, in the event you're working with talent that likes to start early.

Setting up to Do an ADR Session

Setting up to record ADR is straightforward but requires a few steps.

Creating tracks in preparation to record ADR:

- 1 In the Timeline, create a new audio track to which you'll be doing ADR recording. Make sure it has the correct channel configuration for your recording (mono is typical for dialog).
- 2 If you're recording ADR to your main timeline, you may want to Solo both the Guide track and the Record track, so you and the talent can focus on the audio being re-recorded without hearing all the other tracks of the current mix.

Now you're ready to configure the Setup panel.

Configuring the Setup panel:

- 1 Open the ADR interface, and then open the Setup panel.
- 2 Choose the Pre Roll and Post Roll you want to use, in seconds. A pre roll of at least 3 seconds is recommended to give the talent time to get ready.
- 3 From the Record Source drop-down menu, choose the microphone you patched earlier.
- 4 From the Record Track drop-down menu, choose the Record track you created.
- 5 From the Guide Track drop-down menu, choose the track with the original production audio that you're replacing.
- 6 At the bottom of this panel, turn on which Preroll Cue options you and the talent want to use as you record each cue. Options include:
 - a) Beep to In Point and Beep at In Point provide an audible count down to when to start performing.
 - b) An animated Video Streamer gives a countdown to the start time, shows the duration of the cue being recorded, and also displays the text of the dialog for that cue on screen for the actor to refer to, so they can keep their eyes on the screen and not a script.

Next, if you've enabled Beep to In Point and Beep at In Point, you need to patch the Fairlight oscillator to your output channels so the talent can hear the preview beeps.

Patching the Oscillator to play beeps over your audio output:

- 1 Choose Fairlight > Patch Input/Output to open the Patch Input/Output window.
- 2 Choose System Generator from the Source drop-down menu, and click to select Beeps.
- 3 Choose Audio Outputs from the Destination drop-down, and choose the left/right outputs you want these preview beeps to play out of. You can drag a bounding box to select multiple outputs, thereby connecting the mono Beeps input to stereo output for comfortable listening.
- 4 Click Patch to make the connection, then close the Patch Input/Output window.

Creating and Importing ADR Cue Lists

You must have a list of cues to be able to use the ADR interface properly. There are two ways you can create a Cue list to record with, make one from scratch on the Fairlight page, or import one. The ADR panel accommodates both workflows.

Manually Creating an ADR Cue List

If you've been doing all of your dialog editing inside of DaVinci Resolve, you can go ahead and create a list by marking the sections of the Timeline you need to re-record and creating cues from those timings. To create cues properly, you should start by adding the names of each character you'll be creating a cue for in the Setup panel. These names make it easier to enter cues and will help you to filter and sort the list as necessary later on.

To add character names before entering cues:

- 1 Open the Setup panel of the ADR interface.
- 2 Click Add New.
- 3 When a selected entry appears in the Character Setup list, type a name.
- 4 Press Return when you're done.

To edit the Character Setup list, do one of the following:

- If you mis-spell a name, you can double-click any name in this list to edit it.
- To delete a name, you can select it and click Remove to eliminate it.

Once you've created a complete set of character names, you can begin creating your Cue list.

To manually add cues to the Cue list:

- 1 Open the List panel of the ADR interface. This is where all the controls for creating and editing cues are.
- 2 In the Timeline, set In and Out points to mark the section of dialog you want to turn into a cue. Those timecode values appear in the Cue Editing section of the List panel.
- 3 Click New Cue to add a blank cue to the Cue list.

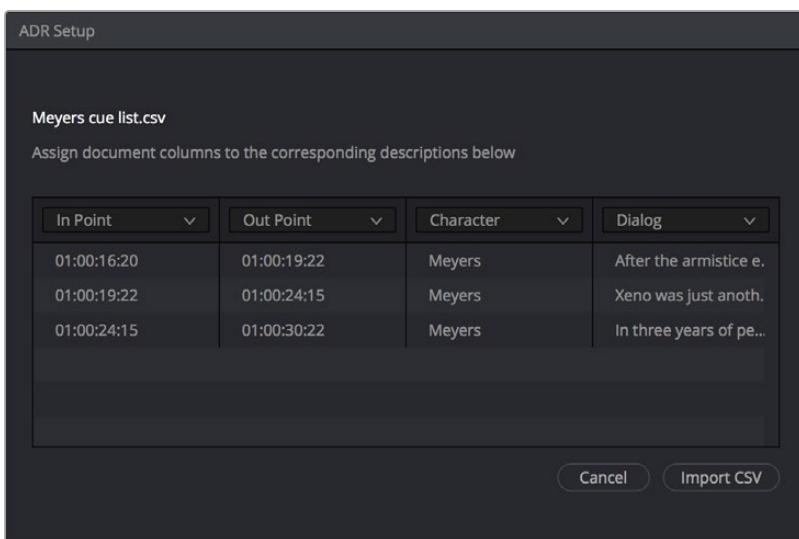
- 4 In the Cue Editing section, choose the character who's speaking that cue from the Character drop-down (only names that have been entered in the Setup tab appear in this list).
- 5 If necessary, select the text field below, and type the dialog that needs to be re-recorded.
- 6 Repeat steps 2 through 5 until you're finished creating all the cues you intend to re-record. If you need to edit any cue, simply click to select that cue, and edit it in the Cue Editing section above.

Importing Cues

If you or an assistant has already created a Cue list using a spreadsheet with separate columns for character names, dialog, and In/Out timecode values, then you can also create a Cue list by importing this data from an exported .csv file.

To import a .csv file to the Cue list:

- 1 Choose Import Cue List from the ADR option menu, then use the dialog to choose the .csv file containing the Cue list you were given, and click Open.
- 2 An ADR Setup dialog appears, showing the data from the .csv file previewed as a series of columns. This lets you see if each column of incoming data is being assigned correctly. If it's not, you can reassign each column of the incoming data to the correct column of the ADR panel.
Correct formatting for Cue lists you want to import is to have no header text, and to enter information using one row per cue, with four individual columns for In timecode, Out timecode, Character Name, and Dialog. If any of these columns are transposed, you can correct this by choosing the correct data type for each column from the drop-down menus at top.



Dialog for rearranging columns of cue data, if necessary

- 3 Click Import CSV. The cues should appear in the Cue list.

To export a .csv file from the Cue list:

- Choose Export Cue List from the ADR option menu, choose a location to save the file, and click Save.

Recording ADR to the Timeline

Once you've configured your workstation for recording, and you've set up a Cue list to work with, it's time to start recording each cue.

To record a cue from the Cue list:

- 1 Open the Record panel of the ADR interface.
- 2 If you want to record a particular character's cues, you can select each unnecessary character in the ADR Option menu to uncheck that character, hiding their dialog in the Cue list.
- 3 With the list showing the character cues you need, select the cue you want to start recording. That cue contains the timecode necessary to determine which part of the Timeline to record to, and the playhead automatically moves to that part of the Timeline.
- 4 Click the Rehearse button a few times to run through the cue with the talent. When you click Rehearse, both audio and video corresponding to that cue will play, including pre roll and post roll, along with all beep and onscreen cues.
- 5 When the talent is ready to try a take, click the Record button, and let the Fairlight page do the work of playing through pre roll with beep notifications and visual streamer cues, initiating recording, and then stopping recording automatically once the cue is done. To record another take, simply click the Record button again.

Every time you complete a recording, a take appears in the Take list. Making multiple recordings results in multiple takes in the list. In the Timeline, all new takes appear as layered audio, so you can record as many takes as you like into the same area of the Timeline. Once you've finished recording takes, you'll have a neatly organized stack of alternate takes to draw upon as you edit together the best parts of each recording.

- 6 If you or the talent want to hear a particular take again, select it in the Take list and click Play. You can use the 5-star ratings control to keep track of how you liked each take.
- 7 When you're finished recording a cue, click the Done checkbox for that cue, and select the next cue you want to record. When you're finished re-recording dialog, simply close the ADR interface.

Editing Basics in the Fairlight Page

You can use the Fairlight page to refine the editing of audio that was initially assembled in the Edit page, or you can use the Fairlight page to both record and edit audio programs from scratch.

Because audio clips have properties that video clips do not, audio editing encompasses additional procedures that are not available in the Edit page. This chapter takes you through the fundamental steps of editing audio the Fairlight way.

Contents

Compatible Audio Formats	3618	Commands For Editing and Extending the Selection	3634
Editing Audio Clips Into the Timeline	3619	Locking Audio Tracks	3635
Overwriting Vs. Layering Clips That Overlap	3619	Splitting Clips	3635
Choosing Parts of Clips to Edit in the Media Pool	3619	Linked Clips in the Fairlight Page	3636
Dragging Audio Clips Into the Timeline	3620	Trimming Clips Without Rippling the Timeline	3636
Moving Audio Clips to Embedded Timecode Position	3622	Multi-Point Editing Overview	3636
Support for Mixed Audio Track Formats from Source Clips	3623	Resizing the In and Out Points of a Clip	3637
Making Audio Clip Selections in the Timeline	3624	Trim Start and Trim End	3638
Fairlight Edit Mode Remains Between Application Restarts	3624	Trim to Selection	3638
Selecting Tracks	3624	Moving and Overwriting Clips	3638
Using Pointer Mode	3626	Subframe Nudging	3639
Using Range Mode	3627	Slipping	3639
Using Focus Mode	3632	Duplicating Clips	3639
		Disabling and Re-Enabling Clips in the Timeline	3640
		Deleting Audio Clips and Regions	3641

Cut, Copy, and Paste	3641	Using Fades	3649
Conventional Cut, Copy, and Paste	3641	Batch Fade and Crossfade Editor in the Fairlight Page	3650
Using the Cut/Copy Head and Tail Commands	3644	Fade In and Out to Playhead	3653
Paste and Remove Attributes	3645	Creating Crossfades With Overlapping Fades	3653
Clip Attributes Naming	3645	Using Crossfades From the Edit Page	3654
Copying and Pasting Clip Attributes	3645	Finding Clips in the Media Pool	3655
Copying and Pasting Track Attributes	3646	Changing Clip Color in the Timeline	3655
Removing Attributes	3646	Editing Audio Clips in External Editors	3655
Audio Clip Layering	3646	Exporting Audio Clips to External Files	3656
Audio Compound Clips	3648	Sample Editing	3658
Audio Crossfades	3648	Waveform Zero Crossing Indicator	3659
Fades and Crossfades	3649		

Compatible Audio Formats

DaVinci Resolve is compatible with WAVE, Broadcast WAVE, AIFF, MP3, AAC (M4A), CAF (macOS only), both MTS and QuickTime containers that use the AC3 audio format, and Enhanced AC-3 (macOS and Windows only). DaVinci Resolve is compatible with audio at sample rates including 32, 44.1, 48, 88.2, 96, and 192 kHz. Linux users have the added ability to encode and decode MP3 files in Fairlight.

DaVinci Resolve 17 adds Dolby Atmos ADM file creation and manipulation as well as the ability to export Atmos masters as IMF deliverables. IMF (Interoperable Master Format) is a SMPTE standard for a single master file format that incorporates all the media and metadata necessary to deliver what's necessary.

ADM Import

Importing an ADM file into a project will open the Bed mix or mixes and any associated Object tracks into a timeline. They will be imported onto corresponding track types of the audio files embedded into the ADM. For instance, if a Bed file is 7.1.2, then on import that file will open in a 7.1.2 track in Fairlight. Object files will be created as separate tracks in Fairlight containing all of their panning data.

NOTE: If bringing in a Dolby Atmos file from the Media Pool, it will render the file dynamically to the chosen output format directly on the Timeline using the Dolby Renderer. However, Fairlight can import the full Atmos file with beds and objects if imported from the Fairlight menu instead - Fairlight > Immersive > Audio > Import Master File. By bringing a file in this way, it will create a timeline with all of that file's Atmos program and dynamic metadata properly mapped and routed.

Editing Audio Clips Into the Timeline

The Fairlight page offers a complete audio editing environment that lets you either record and assemble clips from scratch, or refine tracks full of audio clips that have been edited together in different ways. There are four ways of adding media to the Timeline in the Fairlight page, depending on the type of work you do:

- Recording new audio into one or more tracks, for more information, see *Chapter 169, “Recording.”*
- By dragging and dropping new audio clips from the Media Pool into the Fairlight timeline
- By editing audio clips into audio tracks on the Edit page
- By importing a project with audio clips
- By auditioning and confirming sound effects from the Sound Library

However audio clips come to be in your timeline, the rest of this chapter covers the myriad methods available to edit and sweeten the contents.

Overwriting Vs. Layering Clips That Overlap

When you add clips to the Timeline, what happens when you add a clip that overlaps another clip that's already in the track you're editing depends on the Timeline > Layered Audio Editing setting. By default, with Layered Audio Editing turned off, overwriting one audio clip with another results in the overlapping part of the overwritten clip being non-destructively deleted from the Timeline by the incoming clip.

However, if you turn Layered Audio Editing on, then incoming clips do not overwrite overlapping clips in the Timeline; instead, they're layered within that track, such that the incoming audio clip takes precedence over what was previously there, but overlapping audio segments that were previously in the Timeline are preserved, which can be seen when you choose View > Show Audio Track Layers.

In this way, you can choose whether you want to overwrite previously edited clips, or layer newly edited clips, as your needs require, regardless of whether or not Audio Track Layers are visible. Audio layering can be enabled in both the Edit and Fairlight pages.

For more information about audio layering, see the section later in this chapter.

Choosing Parts of Clips to Edit in the Media Pool

The Media Pool has a preview player at the top that provides a place to open selected source clips in the Media Pool, play them, add marks to log them, and set In and Out points in preparation for editing them into the Timeline via drag and drop. The Media Pool Preview Player effectively acts as a Source monitor for editing in the Fairlight page.



The preview player in the Media Pool

- Various viewing controls populate the title bar at the top. A drop-down menu at the upper left lets you choose a zoom level for the audio waveform that's displayed. To the right of that, a Timecode window shows you the duration of the clip or the duration that's marked with In and Out points. Next to the right, a real-time performance indicator shows you playback performance. In the center the title of the currently selected clip is shown, with a drop-down menu to the right that shows you the most recent 10 clips you've browsed. To the far left, a Timecode field shows you the current position of the playhead (right-clicking this opens a contextual menu with options to change the timecode that's displayed, and to copy and paste timecode).
- The center of the Media Pool Preview Player shows you the waveforms in all channels of the currently selected clip, at whatever zoom level is currently selected.
- Transport controls at the bottom consist of a jog bar for scrubbing, Stop, Play, and Loop buttons, and In and Out buttons.

Dragging Audio Clips Into the Timeline

You can show the Media Pool in the Fairlight page, and edit audio clips into the Timeline in their entirety by dragging and dropping individual clips onto whichever audio track you want them to appear. You can drag any clip onto any track, regardless of whether or not the channels of the clip match the channel mapping of the track. However, if you edit a clip with more channels than a track has (for example, editing a stereo clip onto a mono track), only the channels supported by that track will be output, with all other channels in that clip being muted. If this happens, you can always remap the audio track by right-clicking the track header and choosing a new mapping from the Change Track Type To submenu.

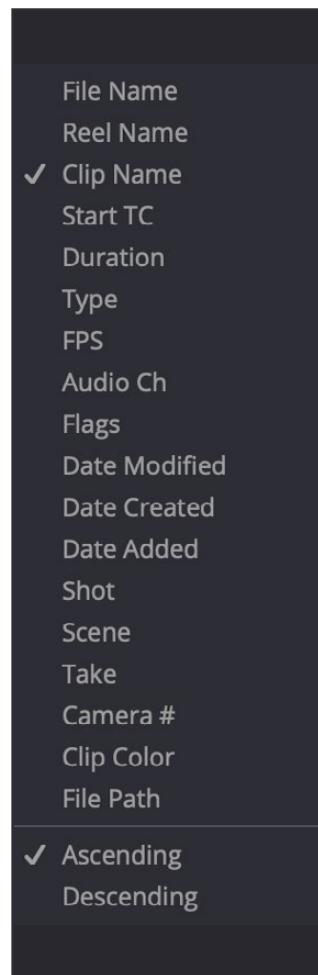
TIP: Dragging one or more clips to the empty area underneath the existing audio tracks of the Timeline results in the creation of new tracks, each of which is automatically mapped to however many channels are required by each audio clip being edited.

If you want to edit several clips into the Timeline at once by dragging them from the Media Pool, you'll probably want to do a bit of preparation to make sure they're edited in the right order.

Dragging several clips into the Timeline as one contiguous series of edited clips:

- 1 Change the sort order of the Media Pool's browser area to put the clips into the order in which you want them to appear. In Thumbnail view you can use the Sort Order menu, but in List view you can click the header of any metadata column to sort by that column's data.
- 2 Use the Media Pool thumbnails, the Media Pool List view Filmstrip, or the Source Viewer to set In and Out points to define the part of each clip that you want to edit into the Timeline.
- 3 Select the Media Pool clips you want to edit into the Timeline by dragging a bounding box, Command-dragging multiple bounding boxes over different sets of clips, by Shift-clicking a range of clips, or by Command-clicking individual non-contiguous clips.
- 4 Drag any of the selected clips to the desired position in the Timeline to perform an overwrite edit.

The clip(s) you drag overwrite whatever other clips they overlap in the Timeline. Multiple clips dragged from the Media Pool will be edited in the order in which they're sorted in the Media Pool, using each clip's In and Out points.

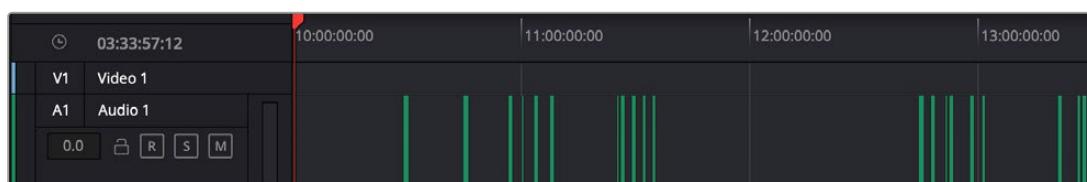


Using the Sort Order menu to change the sort order of clips in the Media Pool

It's possible to edit audio clips into the Timeline so that each clip's timecode lines up with the Timeline Ruler. This can be useful if you're organizing multiple source audio recordings that you want to synchronize together on multiple tracks.

Dragging multiple clips to edit them into a track at their timecode positions:

- 1 Select the Media Pool clips you want to edit into the Timeline by dragging a bounding box, Command-dragging multiple bounding boxes over different sets of clips, by Shift-clicking a range of clips, or by Command-clicking individual non-contiguous clips.
- 2 Hold Command-Shift down, and drag the selected clips into the track you want them to appear, to perform an overwrite edit.



A series of audio clips edited into the Timeline by timecode position

Each clip edited into that track appears at the same timecode position as its embedded timecode. This means that if you were recording time-of-day timecode, each clip will appear on the Timeline at the time it was recorded. A series of clips recorded during hour 10 through 13 will appear distributed throughout hours 10-13 on your timeline.

You can also edit two or more audio clips into the Timeline as a stack, in preparation for layering multiple sound effects for doing sound design work.

Dragging multiple clips to edit them into a track as a parallel stack:

- 1 Select the Media Pool clips you want to edit into the Timeline by dragging a bounding box, Command-dragging multiple bounding boxes over different sets of clips, by Shift-clicking a range of clips, or by Command-clicking individual non-contiguous clips.
- 2 Command-drag the selected clips into a track of the Timeline. The first of the selected clips appears in the track you're dragging to, the other clips appear either in audio tracks underneath the first one, or if there are no audio tracks available, in new audio tracks that will be created to hold those clips.

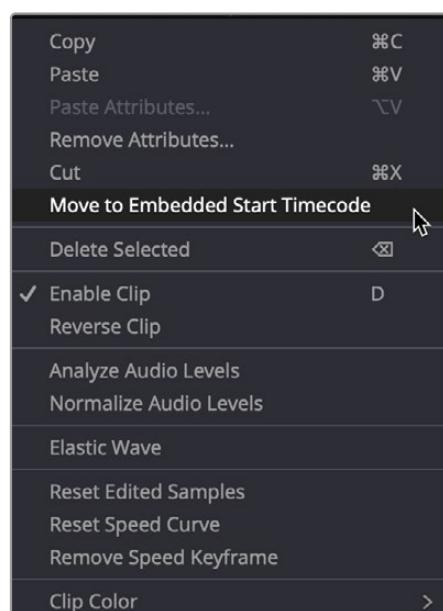
All clips you've edited appear as a parallel stack, in separate tracks, one on top of another.

Moving Audio Clips to Embedded Timecode Position

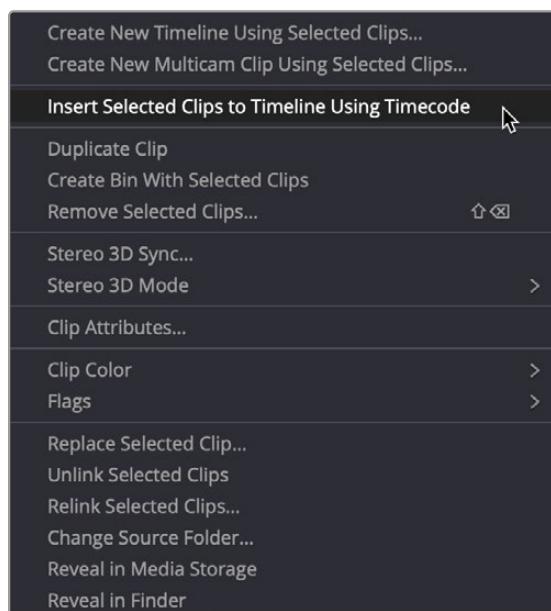
All clips have a timecode embedded into their metadata. There are options to place clips onto the Timeline from either the Media Pool or in the Timeline itself with this metadata.

Right-clicking a clip in the Timeline has the choice to Move to Embedded Start Timecode. When this is clicked the clip will spot onto the Timeline on a selected track with the timecode.

It's important to be aware of the embedded audio timecode and the Timeline timecode. The two must have overlapping timecode, or this function will not work. For example, a clip that has an embedded timecode of 00:00:00:00 may be difficult to find on a Timeline that starts at 00:59:58:00. If you have spotted a clip using these tools and still don't see the clip in question, then check the embedded timecode in the Metadata panel of the Inspector as well as the timecode of the Timeline itself.



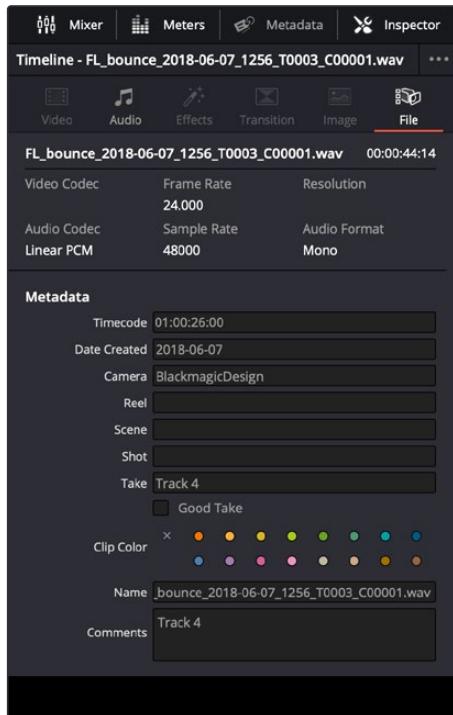
Right-clicking a clip in a Timeline reveals the Move to Embedded Start Timecode option.



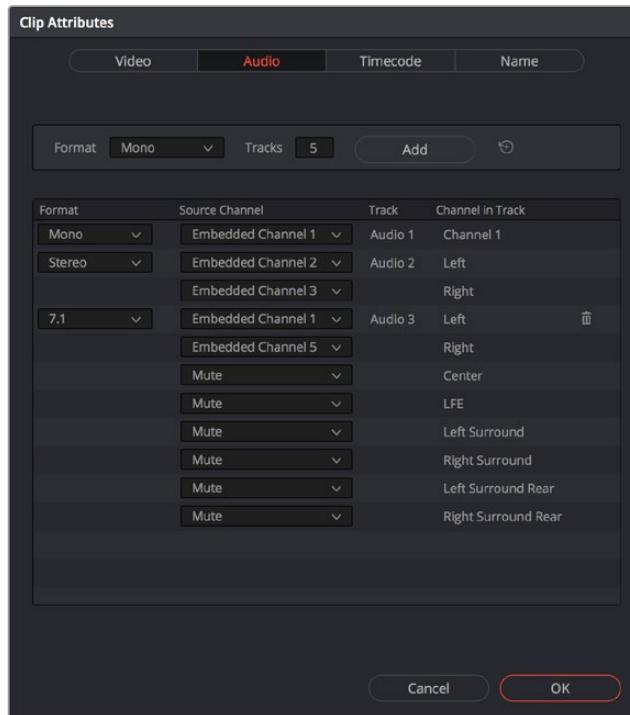
Right-clicking a clip in the Media Pool reveals the Insert Selected Clips to Timeline option.

Right-clicking a clip in the Media Pool has the choice to Insert Selected Clips to Timeline Using Timecode. When this is clicked the clip will spot onto the Timeline on a selected track with the embedded timecode.

NOTE: You can find the embedded timecode for a clip in the Inspector in the File tab under timecode.



Timecode metadata is in the Inspector window under the File tab.



Clip Attributes now lets you assign channels among different tracks with different channel assignments

Support for Mixed Audio Track Formats from Source Clips

DaVinci Resolve supports media with multiple audio tracks that have differently formatted channels embedded within them. For example, a clip with one stereo track, one 5.1 surround track, and six mono tracks can all be appropriately set up in the Audio panel of Clip Attributes after that clip has been imported.

The Audio panel of Clip Attributes has controls over what format (Mono, Stereo, 5.1, 7.1, Adaptive) the channels embedded within a particular audio track should be configured as. This means you can set up clips with multiple tracks, each one using different formats of audio employing different combinations of channels, which is useful for setting up imported audio mix files that you want to output when mastering a program.

Making Audio Clip Selections in the Timeline

Nearly every editing operation described in this chapter and others requires you to make a selection to define which clips will be affected. Three editing modes in the toolbar give you different ways of selecting clips, depending on what you're trying to do, and how you like to work. These are (from left to right) the Pointer mode, the Range mode, and the Focus mode. Which mode you choose determines how clips and clip segments are selected in the Timeline in preparation for all manner of editorial operations.



The Pointer, Range, and Focus modes seen in the toolbar

Fairlight Edit Mode Remains Between Application Restarts

Fairlight retains the Edit Mode the project was saved with between restarts. Whatever edit mode you were working in prior to closing the application will be active when reopened.

Why Are There Three Edit Modes?

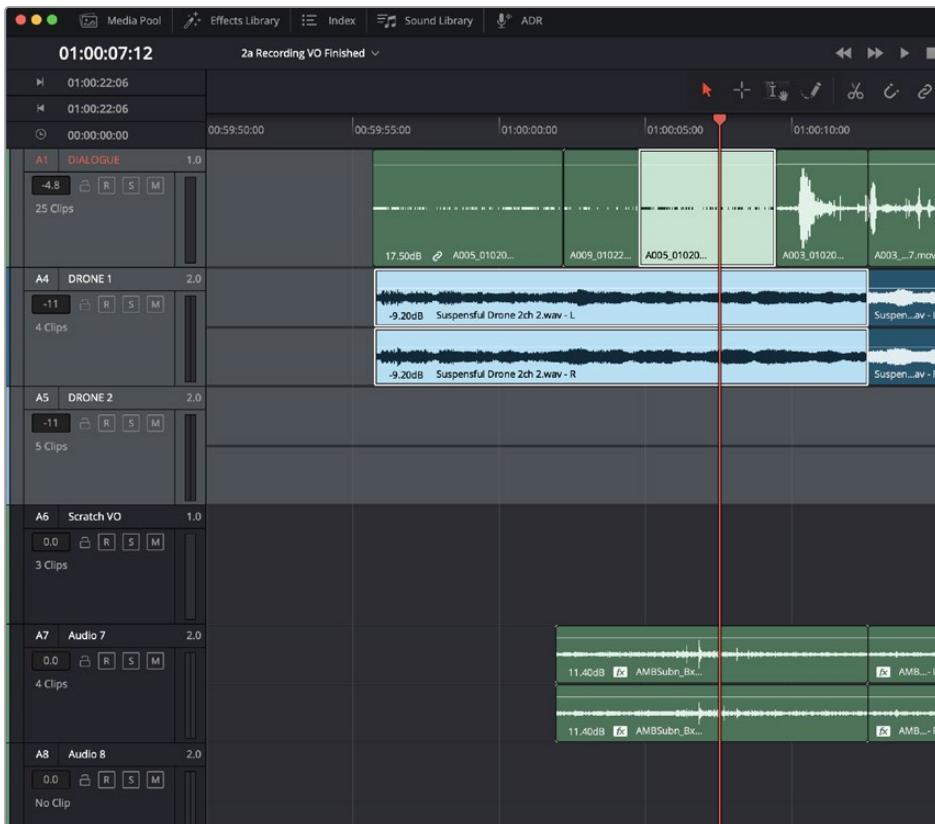
While the Pointer and Range modes can also be used with the pointer, they're really designed to enable automatic selections based on the position of the playhead. This is accomplished when using the Fairlight Editing console, the Fairlight Desktop Console, or keyboard shortcuts to control Timeline transport, while specific tracks are selected to enable selection and editing on those tracks.

The Focus mode is designed for efficient selections made using the pointer via a mouse, trackpad, or pen and tablet, made in conjunction with a variety of commands for extending and editing selections triggered via keyboard shortcuts. If you're editing with a keyboard and mouse, this mode is designed to let you work quickly by enabling a variety of different selection functions based on clicking different parts of clips.

Selecting Tracks

In order to understand clip selection, you must first understand track selection. The Timeline on the Fairlight page lets you select entire tracks to facilitate the automatic selection of clips that intersect the playhead on those tracks using keyboard shortcuts, the Fairlight Desktop Console, or the Fairlight Editing panel, in Pointer and Range modes (described in upcoming sections).

For example, were you to select tracks A2, A3, and A4, then moving the playhead to intersect two clips on those tracks in Pointer mode automatically selects them, so they're ready for any operation you want to perform on both clips. To give a few examples, you could now split both clips at the playhead, Cut Head or Tail to the playhead, Delete both clips, or Copy them in preparation for pasting elsewhere.



Command-clicking multiple track headers selects those tracks

Additionally, there are times when clicking or dragging on one or more clips with the pointer results in both those clips being selected, along with the tracks on which they sit. For example, selecting clips using the Focus mode will also select the tracks those clips are on.

If you're manually selecting tracks using the pointer, there are different ways to do so.

Methods of selecting and deselecting tracks in the Fairlight page Timeline:

- **To select a single track:** Click anywhere in the background or on the track number of that track's header (not on a button). In Range mode you can also click in any unused area of the track itself.
- **To deselect a single track:** Click anywhere in the background or on the track number of a previously selected track's header (not on a button). In Range mode you can also click in any unused area of the track itself. If multiple tracks are selected, Command-clicking one will remove just that track from the selection.
- **To select multiple tracks:** Command-click in the track header background of every track you want to select. In Range mode you can also Command-click in any unused area of the tracks themselves. Command-clicking an already selected track will deselect it.
- **To select multiple continuous tracks:** Click anywhere in the background or on the track number of a track header, and then drag a bounding box up or down over all other tracks you want to select. In Range mode you can also drag a bounding box over any part of the tracks themselves, while also defining a range in which you want to work.
- **To move the selection to higher or lower tracks:** Press Control-Option-Up Arrow or Down Arrow to move the selection state to the next track higher (Control-Option-Up Arrow) or lower (Control-Option-Down Arrow). If multiple tracks are selected, then the multi-selection will be moved as a block; for example, selecting tracks A2 and A3 and then pressing Control-Option-Down Arrow will result in tracks A3 and A4 being selected.

Using Pointer Mode

Pointer mode uses the position of the playhead to make automatic selections when using the Fairlight Editing console or keyboard shortcuts to make clip selections on selected tracks. However, you can also use this mode in conjunction with the pointer and keyboard shortcuts to make selections in a different style. Pointer mode is primarily intended to allow efficient editing of whole clips.

- **If no tracks have been selected:** Clips that intersect the playhead are not selected. You can use the pointer to select one or more clips by clicking, Command-clicking, or dragging a bounding box. Clips you select in this way are highlighted in orange. Making selections in this way is similar to making clip selections in the Timeline of the Edit page.
- **If tracks have been selected:** All clips that intersect the playhead on selected tracks will be automatically highlight selected, but no In and Out points will be set. Clips on de-selected tracks will be ignored. Selecting one or more clips with the pointer (by Command-clicking or dragging a bounding box) creates an orange-highlighted selection.
- **If you set In and Out points:** Some functions will affect ranges of clips between In and Out points on selected tracks. Clips on unselected tracks are ignored.

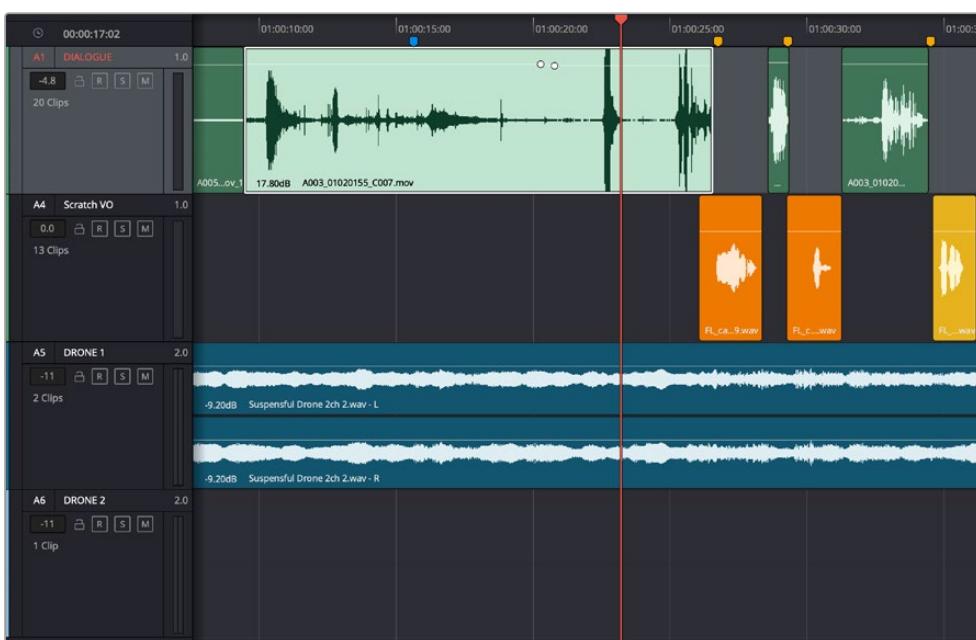
To choose Pointer mode:

- Click the Selection tool (the arrow) in the toolbar.
- Choose Trim > Pointer mode.
- Press A.

To automatically select clips using the playhead position in Pointer mode:

- 1 Press A to enter Pointer mode.
- 2 Select one or more tracks with clips you want to select.
- 3 Move the playhead to intersect those clips.

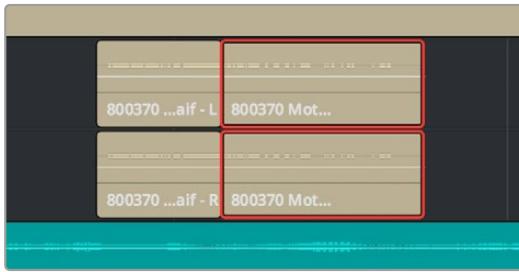
All clips that intersect the playhead on selected tracks of the Timeline are automatically selected in their entirety. Automatic selections are illuminated brighter to indicate their selection. Intersecting clips on unselected tracks are not selected.



Clips intersecting the playhead in Pointer mode are automatically selected with orange highlights

Methods of selecting clips using the pointer:

- Click any clip to select it.



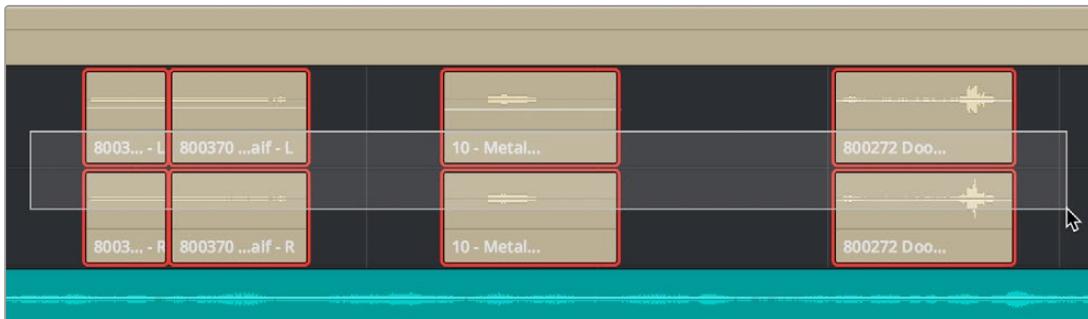
Click a clip to select it

- Command-click multiple clips to select them all at once.



Command-clicking multiple clips selects those clips, even if they're separated by other clips

- Click anywhere in the background of the Timeline and drag a bounding box over multiple clips.



Dragging a bounding box over multiple clips selects all of them

Using Range Mode

Range mode also uses the position of the playhead to make selections of a partial range of clips in the Timeline when using the Fairlight Editing console or keyboard shortcuts. You can also use this mode in conjunction with the pointer and keyboard shortcuts to make partial selections of clips.

- **If no tracks have been selected:** Clips that intersect the playhead are not selected. You can use the pointer to click a clip and select it in its entirety along with the track it's on. You can also use the pointer to drag on one or more clips to select a partial range in preparation for different editing operations. Whenever you make a selection with the pointer, Timeline In and Out points are set to the boundaries of the selection.

- **If tracks have been selected:** Selected tracks are brightened in the Timeline, and any clip on a selected track that intersects the playhead will be automatically highlighted brighter. Clips on deselected tracks will be ignored. Dragging a crosshairs over one or more clips with the pointer overrides all automatic selections and selects the regions of the clips you drag over, and the tracks they're on.
- **If you set In and Out points:** Partial regions of all clips on all selected tracks between the In and Out points will be highlighted brighter. Clips on unselected tracks are ignored. While In and Out points are set, the playhead no longer makes automatic selections; you must set new In and Out points to modify the selection in this mode.

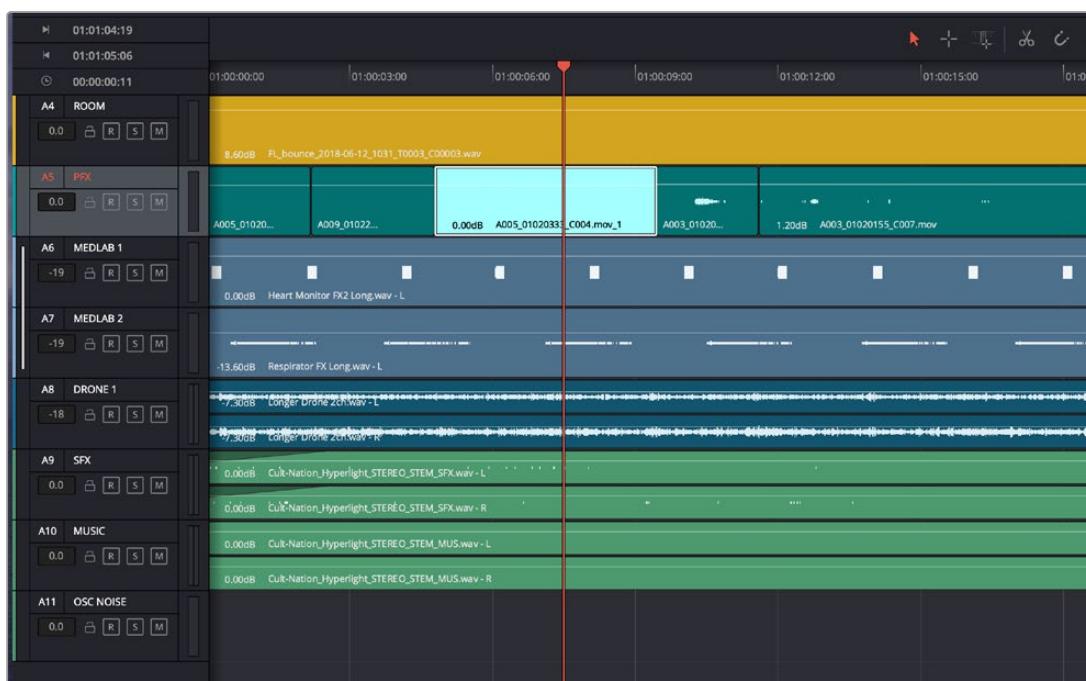
To choose Range mode:

- Click the Range Selection tool (the crosshairs) in the toolbar.
- Choose Trim > Range mode.
- Press R.

To automatically select clips in Range mode using the playhead position:

- 1 Press R to enter Range mode.
- 2 Select whichever tracks have clips you want to select.
- 3 Move the playhead to intersect those clips.

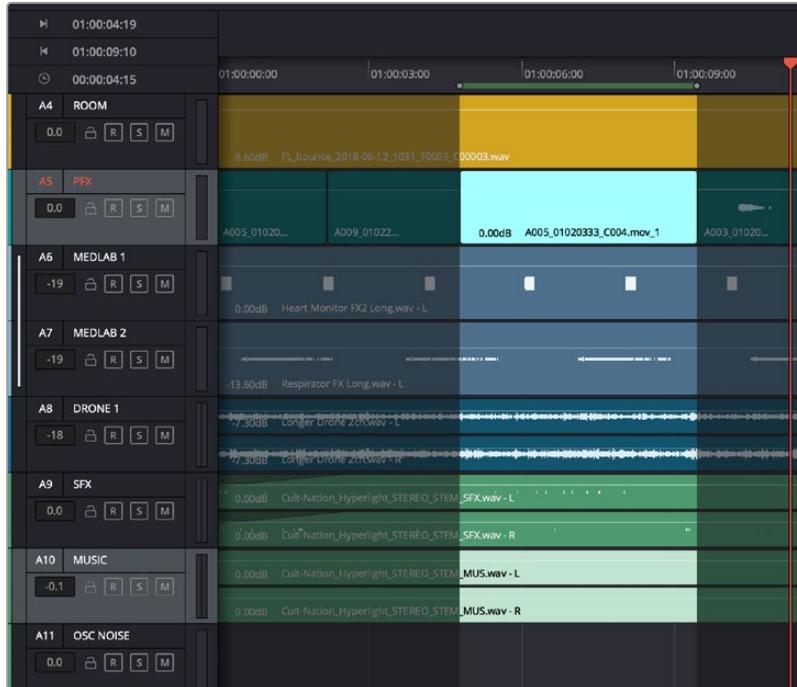
All clips that intersect the playhead, on the tracks you selected, define a selected range from the beginning of the first selected clip to the end of the last selected clip.



Clips intersecting the playhead on a selected track in Range mode are automatically selected

To create custom clip ranges using In and Out points in the Timeline:

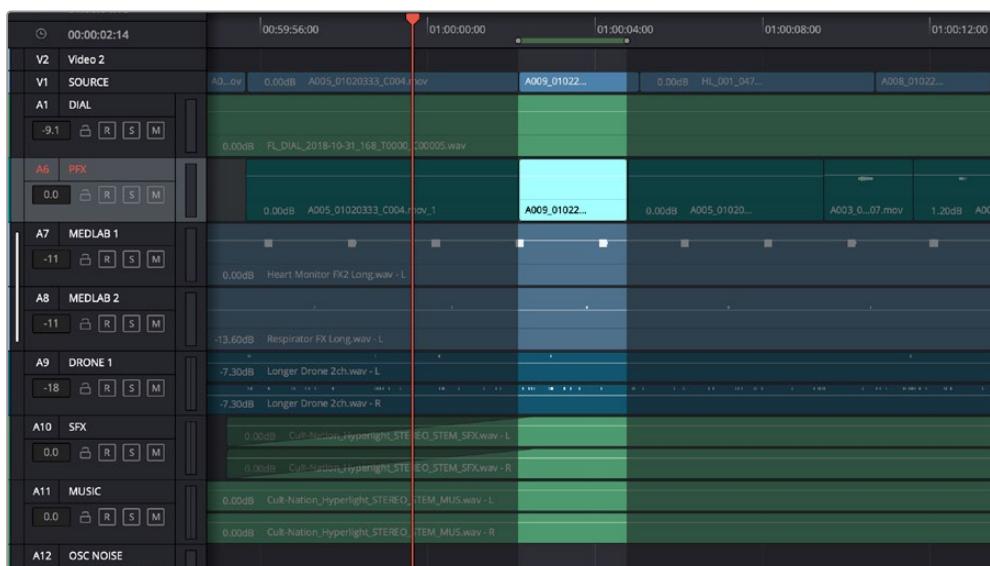
- 1 Press R to enter Range mode.
- 2 Select whichever tracks have clips you want to select.
- 3 Move the playhead and press the I (Mark In) and O (Mark Out) keys to define a range in the Timeline. All clip segments that fall within the range of your In and Out points on selected tracks will be selected.



Using the Range mode to select clip segments on selected tracks using In and Out points

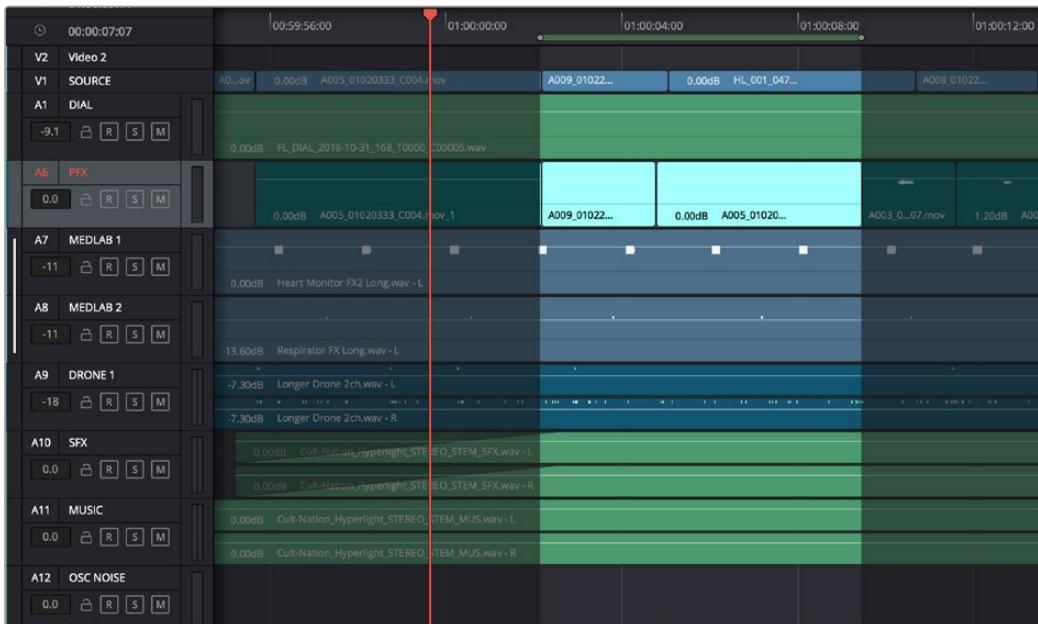
Methods of selecting clips in Range mode via clicking and dragging:

- To select a single clip: Click any clip to select both it and the track it's on, and define a range in the Timeline that matches the duration of that clip.



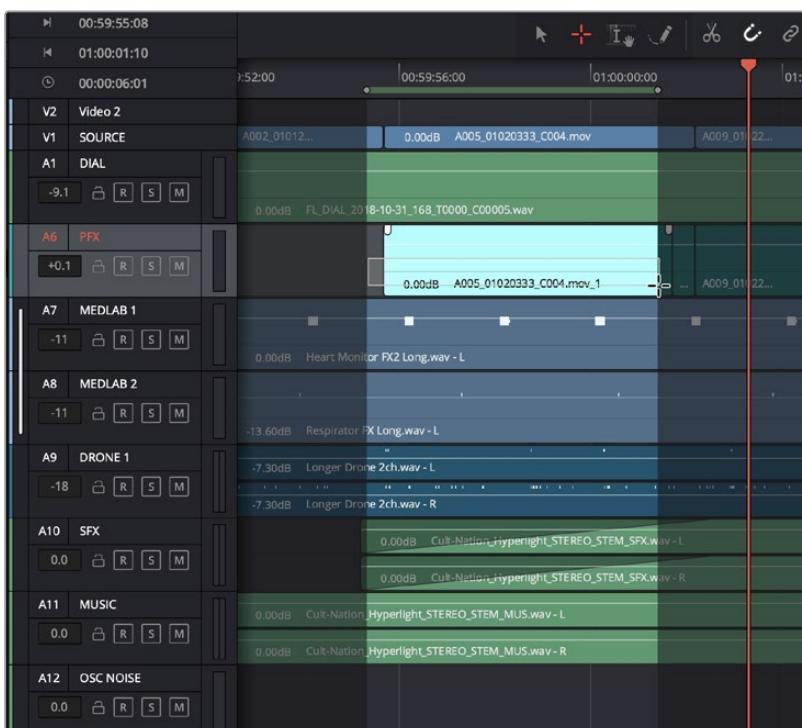
Click to select a single clip as well as the track it's on

- **To select multiple clips:** Command-clicking multiple clips to select them all at once defines a range in the Timeline that matches the total overlapping duration of all clips in the selection, from the beginning of the first selected clip to the end of the last selected clip.



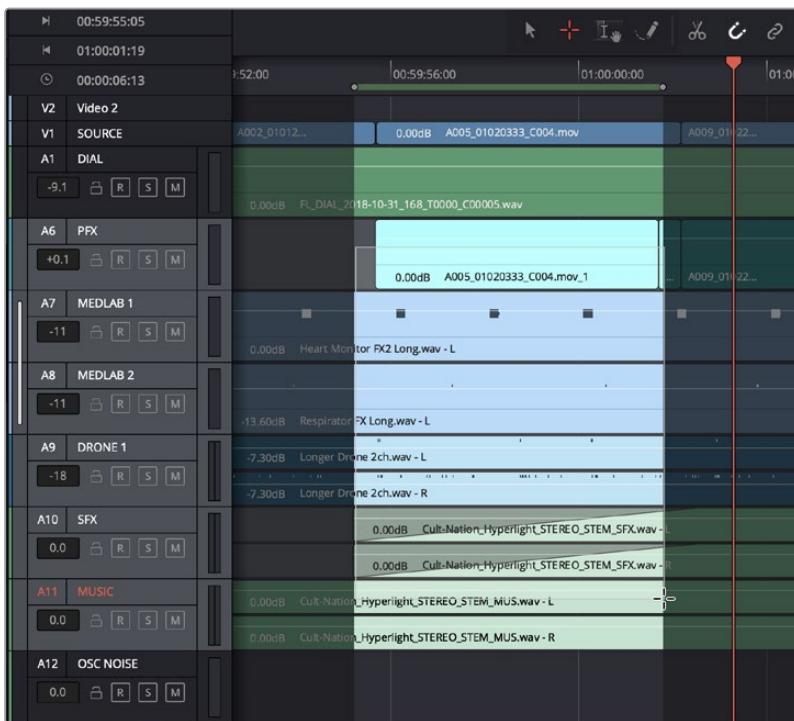
Range selection by Command-clicking multiple clips

- **To drag to select a range within a single clip:** With the Range Selection tool selected, drag anywhere on top of a clip to drag a bounding box over whatever segment of that clip (or of one or more clips) to select both that clip segment and the track it appears on. This is a good way of selecting part of a recording you want to move or delete.



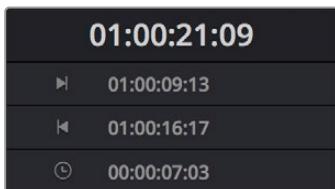
Ranged selection within a clip using a bounding box

- **To drag to select a range within multiple clips:** Click and drag a bounding box over whatever segment of one or more clips you want to select to select both those clip segments and the tracks they appear on. Or, Command-click and drag anywhere on top of any clip to drag a bounding box over whatever region of clips and tracks you like.



Ranged selection across multiple clips using a bounding box

In Range mode, whenever you make a selection, the In and Out point fields update with the range that you've created.



The range fields showing you the In and Out point values that define the current range

These ranges can be cleared if necessary.

Methods of clearing In and Out points to clear the current range:

- Press Option-I to clear the current In point.
- Press Option-O to clear the current Out point.
- Press Option-X to clear both the In and Out points.

Using Focus Mode

Focus mode works as a Multi Tool that is designed for making efficient pointer-based selections and edits, in conjunction with an assortment of commands for extending and editing selections that can be triggered via customizable keyboard shortcuts. If you're editing with a mouse and keyboard, this mode is designed to let you work quickly by enabling a variety of different functions based on clicking different parts of each clip in the Timeline.

Additionally, an important aspect of working in Focus mode is that this is the only mode that lets you edit the Timeline during playback, which you can't do in Pointer and Range modes.

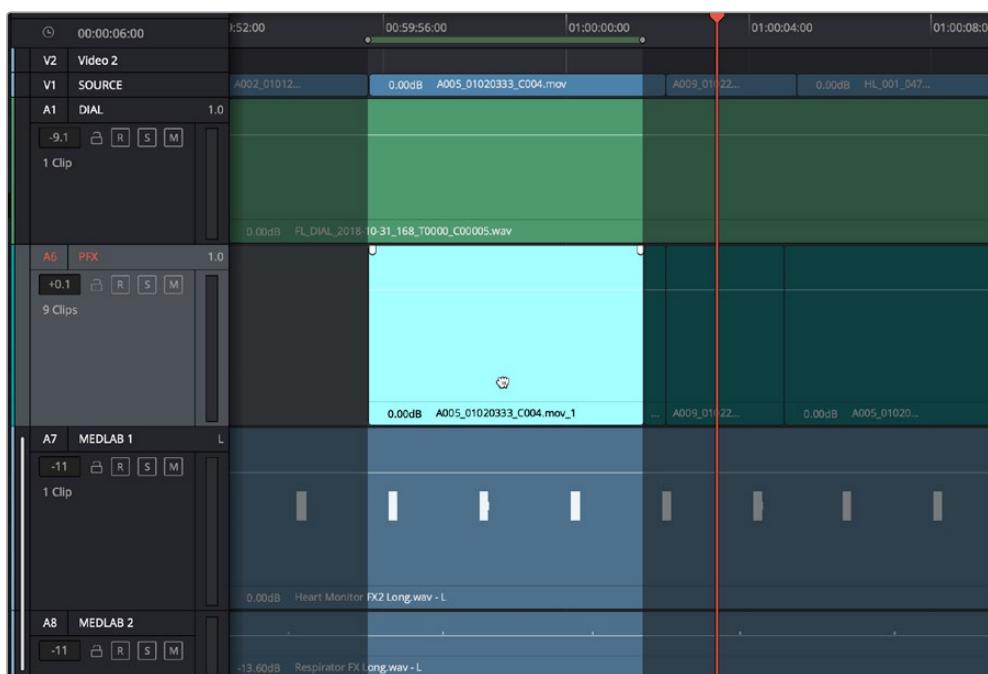
- **If no tracks have been selected:** Whenever you make a selection with the hand, Timeline In and Out points are set to the boundaries of the selection. Whenever you make a selection with the crosshairs, Timeline In and Out points are set to the boundaries of the region you dragged. In all cases, the tracks that contain selected clips and regions of clips are also selected.
- **If tracks have been selected:** Any clip on a selected track that intersects the playhead will be automatically highlighted brightly. Clips on de-selected tracks will be ignored. Dragging a crosshairs over one or more clips with the pointer overrides all automatic selections and selects the regions of the clips you drag over, and the tracks they're on.
- **If In and Out points have been set:** Clicking the bottom half of clips in the Timeline will select that clip and track, and the In and Out points will change to encompass that clip.

To choose Range mode:

- Click the Range Selection tool (the crosshairs at the bottom of a track) in the toolbar.
- Choose Trim > Range mode.
- The keyboard shortcut is pressing - R.

To select an entire clip using the Hand tool of the Focus mode:

- Move the pointer to the bottom half of a clip until a hand cursor appears, and click once to select that clip in its entirety.

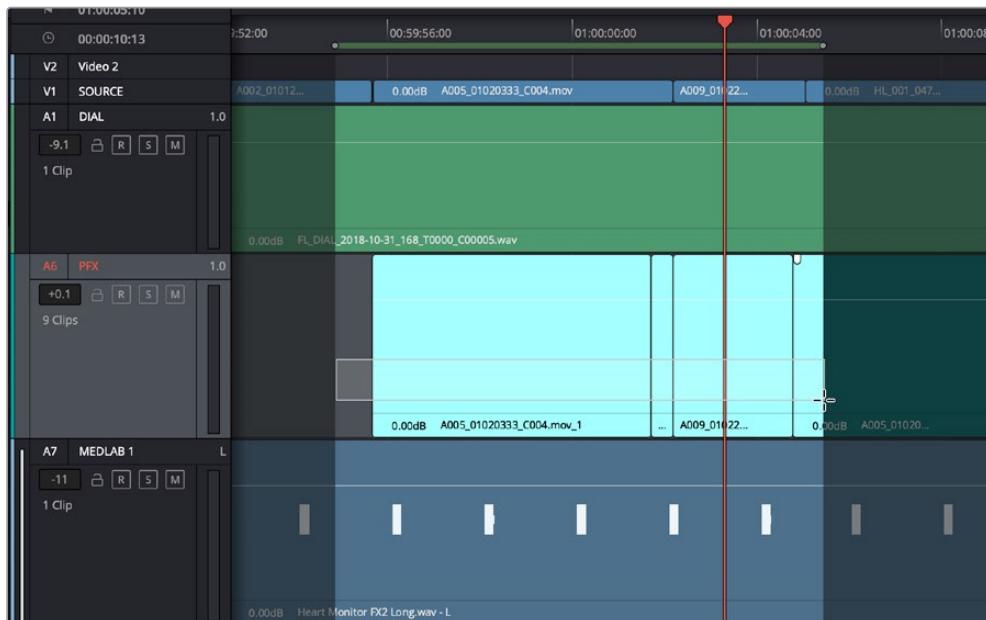


Clicking the bottom half of a clip to select that clip in Focus mode

- Use the Hand to Command-click multiple clips to make either contiguous or noncontiguous selections.
- Use the Hand to Shift-click multiple clips to make contiguous selections.

To select a range using the I-beam cursor of the Focus mode:

- Move the pointer to the top half of a clip until an I-beam cursor appears, and drag to select a region of one or more clips. As you drag, the playhead follows the Out point.

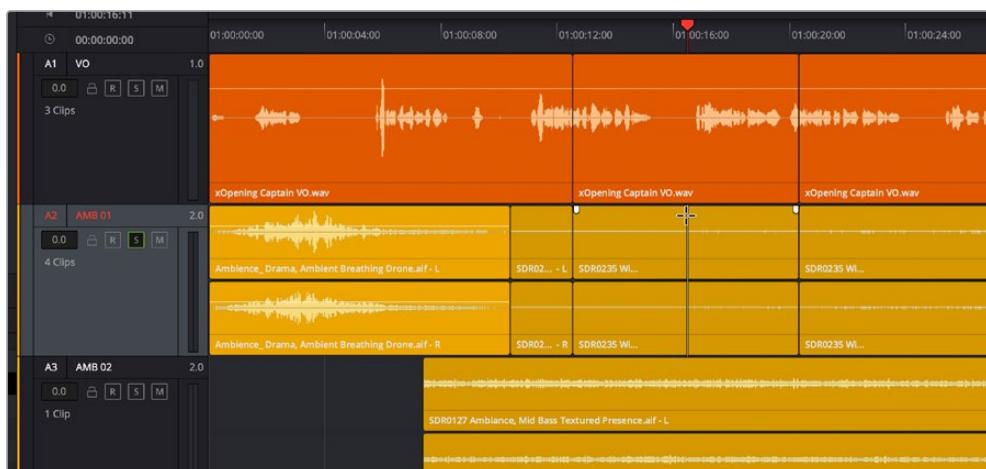


Dragging within the top half of a clip to select a region in Focus mode

- Using the crosshairs, you can also Shift-click to expand or contract the selected region across one or more clips.
- Using the crosshairs, you can also double-click to select an entire clip.
- Partial edit selections that contain a fade will copy with the fade intact.

To select a single frame using the I-beam cursor of the Focus mode:

- Move the pointer to the top half of a clip until the I-beam cursor appears, and click once to place a point selection at the frame you clicked. The playhead also moves to this frame.



Clicking within the top half of a clip to make a single frame selection

- Using the I-beam cursor, you can also Command-click clips on higher and lower tracks to add them to the single frame selection, aligned at the same frame. For example, you could do this to split multiple clips at once. One frame selections can be on discontiguous tracks.



Command-clicking within the top half of multiple clips on multiple tracks to add single frame selections at the same frame

To move a selection using the Hand tool of the Focus mode:

- Once you've made a selection of one or more clips or regions using the Hand or I-beam cursor of the Focus mode, you can move the pointer to the bottom half of any selected clip and drag the selection to another position on the Timeline.

Commands For Editing and Extending the Selection

Once you've made one or more selections in the Timeline, there are a series of commands you can use to modify or expand the selection. These commands were designed to be used alongside the Focus mode, but they can be used in any mode.

Editing the Selection

There are six commands for changing the current selection, moving it from one clip or group of clips in the Timeline to another. These commands only move the range of clips/frames that are selected; they do not move the clips themselves. These commands are found within the Timeline contextual menu when you right-click on a clip.

- Move To Previous/Next Edit:** Moves the current selection to the next clip/edit point to the left or right in the Timeline.
- Move To Previous/Next Track:** Moves the current selection to the next track up or down in the Timeline.
- Move to Previous/Next Frame:** Nudges the current selection to the left or right in the Timeline.

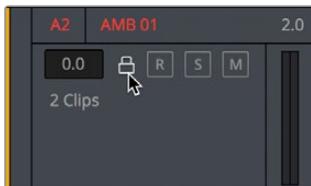
Extend Edit Selection

There are four commands for expanding the range of what's selected in the Timeline, one clip or track at a time. These commands are found within the Timeline contextual menu when you right-click on a clip.

- **To Previous Edit:** Expands the selection to include the previous clip to the left in the Timeline.
- **To Next Edit:** Expands the selection to include the next clip to the right in the Timeline.
- **To Previous Track:** Expands the selection to include the clip in the next track up in the Timeline.
- **To Next Track:** Expands the selection to include the clip in the next track down in the Timeline.

Locking Audio Tracks

Another step you can take to prepare before performing any kind of editorial operation is to lock tracks with media that you don't want to be affected by whatever it is you're about to do. For example, if you have a complex set of music edits on track A3 that you don't want to be affected by operations that will delete media that overlaps it, you can lock track A3 so those clips remain unaffected.



Locking an audio track

Clips on locked tracks cannot be moved, deleted, cut, or otherwise affected by editorial operations. Furthermore, parameters of clips on locked tracks cannot be edited in the Inspector. However, clips on locked tracks can be played back and mixed like any other audio clips.

To toggle the lock or unlock state of audio tracks in the Fairlight page, do one of the following:

- Click any track's lock control to toggle lock on and off.
- Click any track's lock control and drag over the lock controls of other tracks in the Timeline to quickly lock or unlock several adjacent clips.
- Open the Index and click/drag one or more track lock controls to toggle lock on and off.

Splitting Clips

In many situations you may find yourself splitting audio clips in order to separate multiple rolling takes.

To split one or more clips in either Pointer or Range mode:

- 1 Select each track that has a clip you want to split.
- 2 Move the playhead to intersect the clips you want to split at the frame where you want the split to happen.

- 3 Do one of the following:
 - a) Choose Timeline > Split Clip or press Command-\ (backslash).
 - b) Choose Timeline > Razor or press Command-B.

When you split a clip in the Edit page, a through edit appears to show that you currently have an edit with continuous timecode running from the outgoing to the incoming half. This is called a through edit and is displayed in the Edit page with a dotted line running along its edge so you know that it's special. The Fairlight page doesn't display through edits as of the time of this writing.

Linked Clips in the Fairlight Page

Clips can be linked together in the Fairlight page. When multiple clips are linked, Fairlight editing commands treat all linked clips as if they were a single clip. Anything you would do to a single clip is done to all linked clips at once. Selecting one item of a linked clip selects all items. Editing the In point of one item of a linked clip edits them all.

To link two or more clips together:

- 1 Select all clips you want to link together.
- 2 Right-click one of the selected clips, and choose Link Clips from the contextual menu.

A link indicator at the bottom left of every clip you've just linked shows their new linked status.

Trimming Clips Without Rippling the Timeline

Most basic adjustments in the Fairlight page only affect the selected clip or region of the Timeline. Clips to the right of the adjusted area of the Timeline are generally left alone so as not to inadvertently change sync when you don't expect it. This section covers the most basic parts of the Fairlight page's "seven-point editing" paradigm.

Multi-Point Editing Overview

Each clip in the Timeline has several draggable handles and click targets that let you perform different editing tasks using the pointer.

- **In point:** The left edge of the clip can be dragged to resize the beginning of the clip.
- **Out point:** The right edge of the clip can be dragged to resize the end of the clip.
- **Fade In handle:** A handle at the upper left-hand corner of the clip that only appears when the mouse is positioned over that clip, used to fade the audio in by dragging it to the right, or as part of a crossfade between two audio clips. Fades can be reset (eliminated) by double-clicking the fade handle.
- **Fade In curve:** A handle at the center of the Fade In curve that only appears when the curve is exposed, used to adjust the power of the fade in. This handle can be dragged vertically to change the X-Level of the fade, and horizontally to change the X-Point of the fade. Fade curves can be reset by double-clicking the curve handle.

- **Fade Out handle:** A handle at the upper right-hand corner of the clip that only appears when the mouse is positioned over that clip, used to fade the audio out by dragging it to the left, or as part of a crossfade between two audio clips. Fades can be reset (eliminated) by double-clicking the fade handle.
- **Fade Out curve:** A handle at the center of the Fade Out curve that only appears when the curve is exposed, used to adjust the power of the fade out. This handle can be dragged vertically to change the X-Level of the fade, and horizontally to change the X-Point of the fade. Fade curves can be reset by double-clicking the curve handle.
- **Level:** Considered an editorial characteristic, the level of any given audio clip can be adjusted via a level overlay running across each clip. The level of any clip can be reset to the default 0.0 dB by double-clicking the level overlay.
- **Position:** Clicking anywhere within the middle of a clip in Pointer or Range mode, or on the bottom of Focus mode, lets you drag that clip either forward or backward in time, or to another track.

Resizing the In and Out Points of a Clip

Trimming the head or tail of a clip in the Fairlight page means to resize the In or Out point of that clip, making it shorter or longer accordingly.

To resize the beginning or end of a clip:

- **To shorten or lengthen clips:** Move the pointer over the beginning or end of a clip, and when it turns into the Resize cursor, drag the In or Out point to the left or right to change the clip's length. As you drag the In or Out point of an audio clip in the Fairlight page, an overlay appears showing the waveform of all available media at the head (if you're dragging the In point) or tail (if you're dragging the Out point) of the clip you are resizing.



The overlay seen when resizing the In point of an audio clip in the Fairlight page

To quickly resize the beginning or end of a clip to the very beginning or end of available media:

- Double-click the In point of the clip to move the In point to the very beginning of that clip's media.
- Double-click the Out point of the clip to move the Out point to the very end of that clip's media.

If you resize a clip's In or Out point to overlap one or more neighboring clips in the Timeline, the overlapping parts of the neighboring clips will be overwritten by the clip you've resized.

Trim Start and Trim End

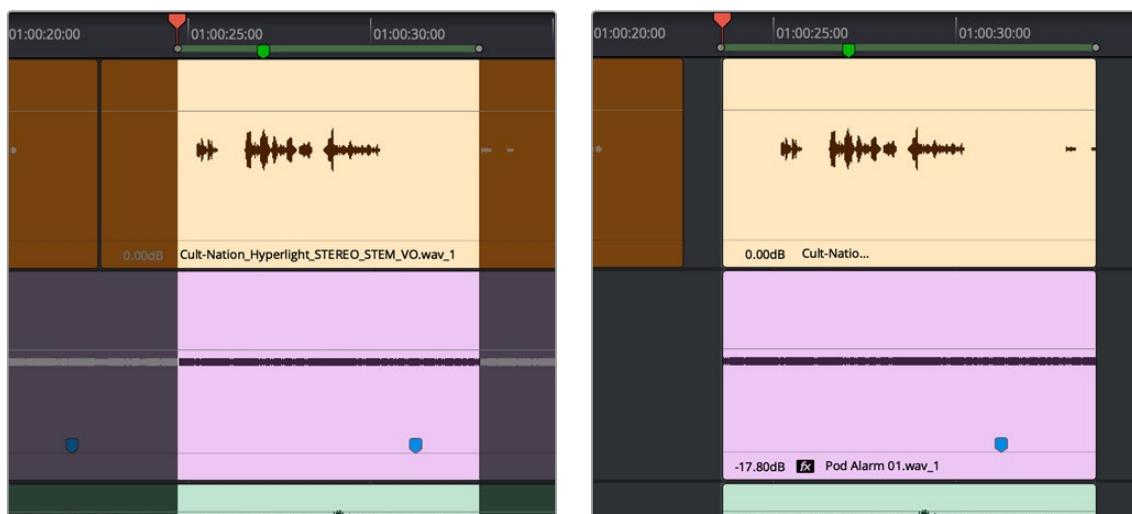
The Trim > Trim Start (Shift-[) and Trim End (Shift-]) commands let you move the In or Out point of all clips that intersect the playhead as either a ripple operation (in Trim mode) or a resize operation (in Selection mode). You do not need to make a selection to use Trim Start and Trim End, making these commands fast to use in the right situation. A classic use of Trim End is when you have several superimposed clips of different lengths that you want to either start or end at the same time.

- Trim Start resizes or ripples (depending on what mode you're in) all clips that intersect the playhead, so that each clip's In point is moved to the current playhead position.
- Trim End resizes or ripples intersecting clips so that each intersecting clip's Out point is moved to the current playhead position.

Clips that don't intersect the playhead are not affected. Furthermore, you can exclude clips on specific tracks from this operation by locking those tracks.

Trim to Selection

The Trim > Trim to Selection (Shift-Command-T) command simultaneously trims the heads and tails outside of a selection of one or more clips so that the selection is all that remains. This command is found within the Timeline contextual menu when you right-click on a clip.



(Left) A selection that includes parts of two clips, (Right) The result of using Trim to Selection to eliminate the heads and tails outside of this selection.

Moving and Overwriting Clips

There are a number of ways to move clips in the Timeline. Clips can be nudged and moved within a track, changing the timing of that clip's position in the edit or they can be moved up or down to other tracks.

To move clips in the Timeline, do one of the following:

- **To move one or more selected clips in the Timeline:** Drag any clip in the Timeline to any other position. If you're in Focus mode, you must drag using the bottom half of the selection. If you drag a clip to overlap another clip, the clip you're dragging overwrites the clip you're moving it over.
- **To nudge one or more selected clips in the Timeline by frame using the keyboard:** Make a selection, then press the Comma key (nudge 1 frame left) or Period key (nudge 1 frame right) to roll the selected edit to the left or right. Shift-Comma and Shift-Period nudges by 5 frames.
- **To move one or more selected clips up or down to other tracks at the same time:** Make a selection, then hold the Shift key down while dragging one of the selected clips up or down in the Timeline to lock their position in time while moving them to other tracks. Or, you can hold the Option key down and press Up or Down Arrow.

Sync Offset Indicator

Audio clips in the Fairlight page display an "out-of-sync" or sync offset indicators when they're moved out of sync with the video items they're linked to.

Subframe Nudging

In the Preferences/User/Editing panel under General Settings you can change the nudge amount by either subframes or by milliseconds for the Fairlight page. These are completely user definable so that you can type your desired nudge amount into the corresponding box.

Be sure to fully investigate this settings panel, which includes pre-roll and post-roll settings and other useful Fairlight adjustments.

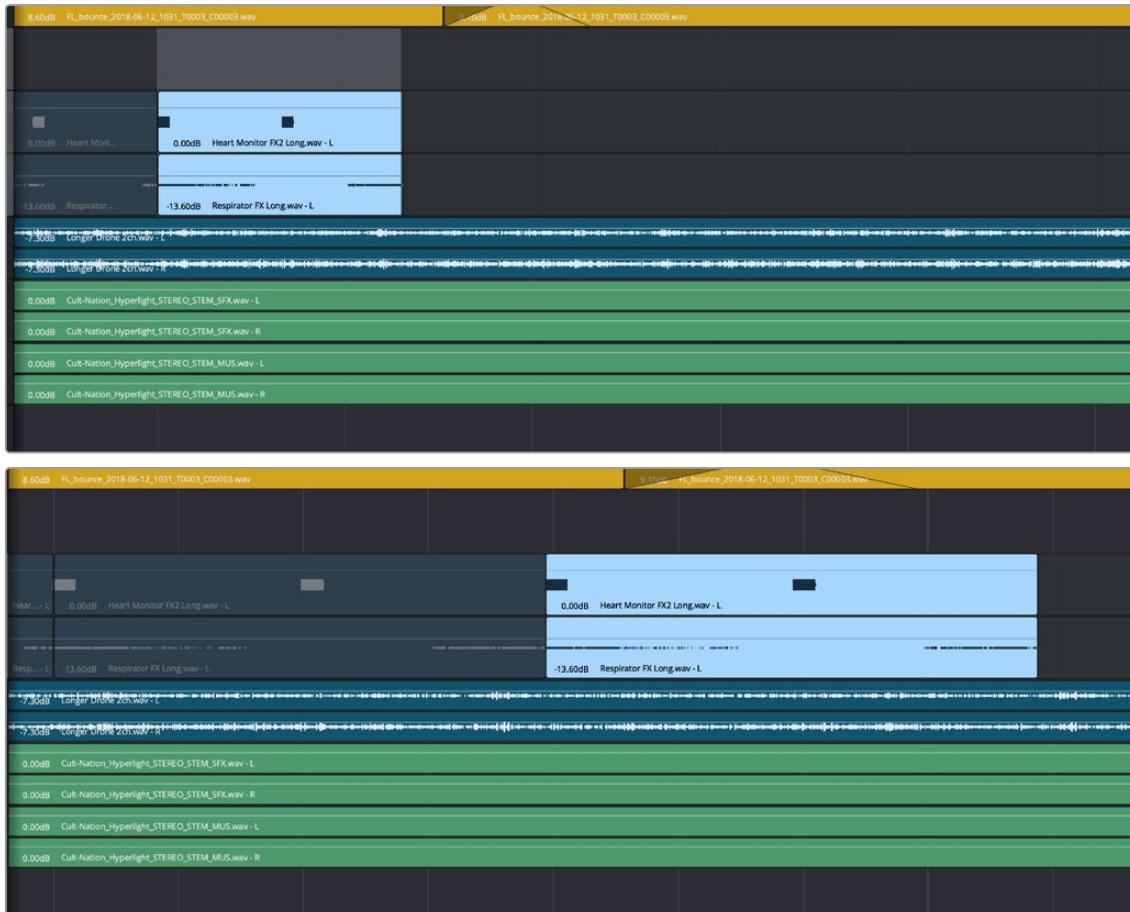
Slipping

Formerly called resyncing, slipping an audio clip keeps that clip in the same place in the Timeline while changing the range of media that appears in that spot. Slip edits do not change the duration of the overall Timeline, and they don't move the clip's position relative to the other clips in the Timeline. Slipping simply changes the range of media that clip represents.

NOTE: While available in previous versions of Fairlight, slipping is not available at the time of this writing.

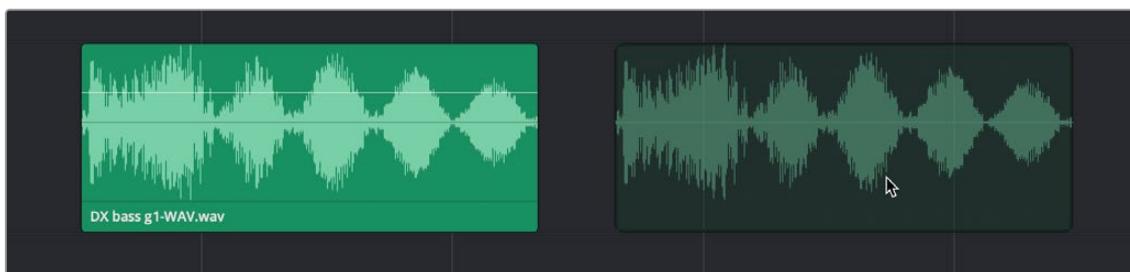
Duplicating Clips

The Duplicate Selection command duplicates one or more selected clips, placing the duplicates immediately after the Out point of the selection. If you're duplicating a region of a clip with tails, or a clip that's in between other clips, the duplicated selection will overwrite whatever is to the right of the current selection, for the duration of the duplicate.



Using the Duplicate Selection command to duplicate a selected region

If you hold the Option key down while dragging a clip in the Timeline, you'll place a duplicate clip wherever you drop it.



Option-dragging to duplicate a clip in the Timeline

Disabling and Re-Enabling Clips in the Timeline

Sometimes there's one or more audio clips in the Timeline that you don't want to play along with the rest of the edited sequence, but you don't want to remove from the Timeline either, in case you change your mind later. For this reason, it's possible to disable clips, effectively turning them off without removing them. Previous versions of Fairlight referred to this operation as Mute clip.

Disabled clips appear dimmed in the Timeline. They don't play back, they're not rendered, and they're not output to video. However, their position is preserved in the Timeline, so you can always re-enable them at a later time if you change your mind and decide you want to use them.

Disabled clips appear in the Timeline in gray.

To disable or re-enable one or more selected clips:

- Right-click part of the selection and choose Enable Clip from the contextual menu.
- Choose Clip > Enable Clip.
- Press D.

Deleting Audio Clips and Regions

You can delete any clips or clip regions that are selected, in either Pointer or Range modes, by pressing the Delete key, or by right-clicking a clip and choosing Delete Selected from the contextual menu. By default in the Fairlight page, deleting anything leaves a gap. Under the Edit Menu > Ripple Delete you can ripple delete selected clips changing the placement of all of the clips that follow.

Cut, Copy, and Paste

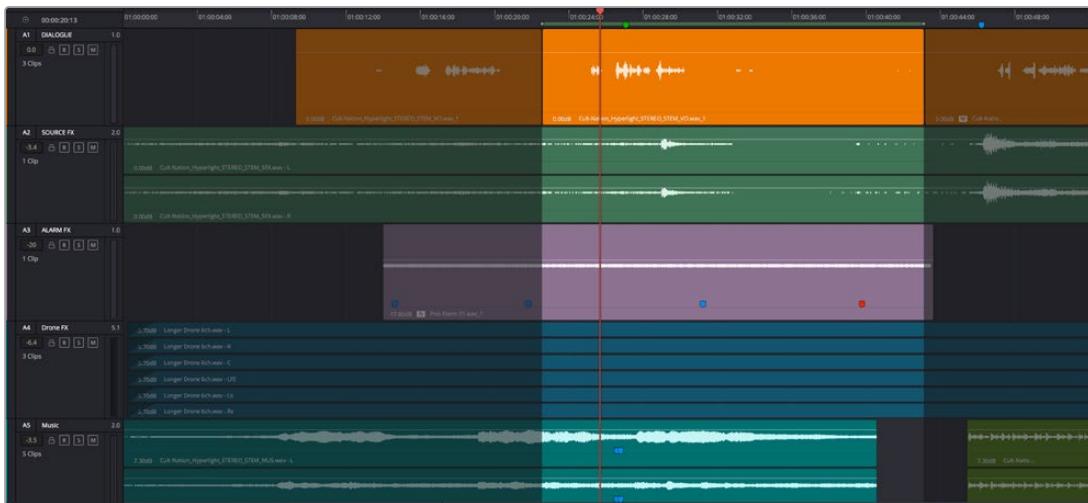
The Fairlight page has a unique copy and paste methodology that takes advantage of the "ghost" overlays that are used for the waveforms of selected audio clips. This method makes it easy to copy and paste clips using keyboard shortcuts and the JKL keys.

Conventional Cut, Copy, and Paste

The typical cut, copy, and paste commands expected of every software application are available in the Fairlight page, but with a unique twist that's particularly advantageous for users of the Fairlight control surface, or for anyone who uses the JKL transport key shortcuts to move around the Timeline for keyboard-driven editing.

To cut or copy and paste either all or part of a clip:

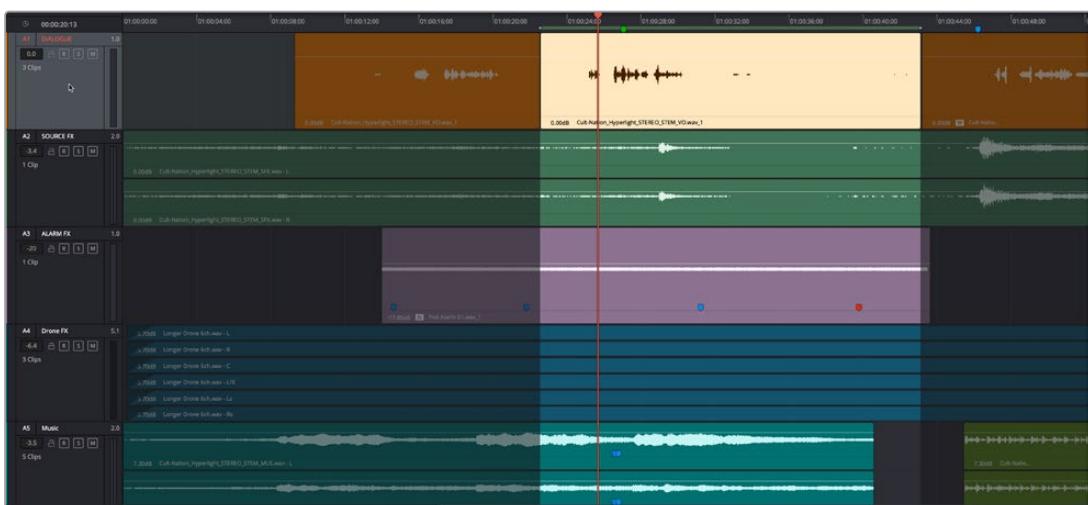
- 1 If you're cutting or copying a whole clip, then choose either the Selection (press A) or Range Selection (press R) mode. If you're cutting or copying part of a clip, then make sure you're in Range mode (press R).
- 2 To use the playhead to make a clip selection, select the track that contains the clip you want to copy or cut. If one or more tracks are already selected, you can use the Control-Option-Up or Down Arrow key shortcuts to move the track selection state up or down to the tracks with the clip you want to cut or copy.



Selecting the track with a clip you need to cut

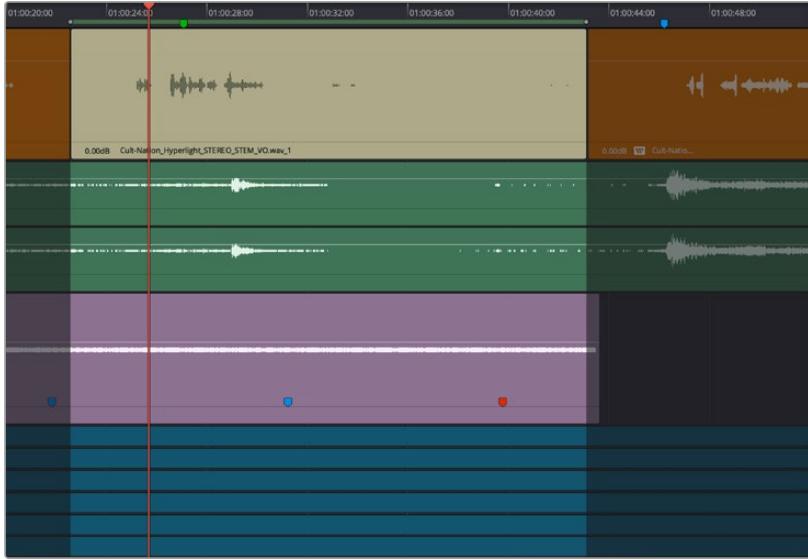
3 Do one of the following:

- a) To cut or copy a whole clip, move the playhead so that it intersects the clip you want to cut or copy. If the playhead intersects a clip on a selected track, that clip should become selected. You should note that even if you use the mouse to select a clip without selecting a track first, you should still move the playhead to intersect the clip you're copying or pasting, as this sets up an important reference point for the operation.
- b) To cut or copy a segment of a clip, move the playhead so that it intersects the clip you want to cut or copy. If the playhead intersects a clip on a selected track, that clip should become selected. Then, using JKL and the I (In) and O (Out) keys, mark a range in the Timeline that includes the segment of the clip you want. That segment should appear highlighted as a result.



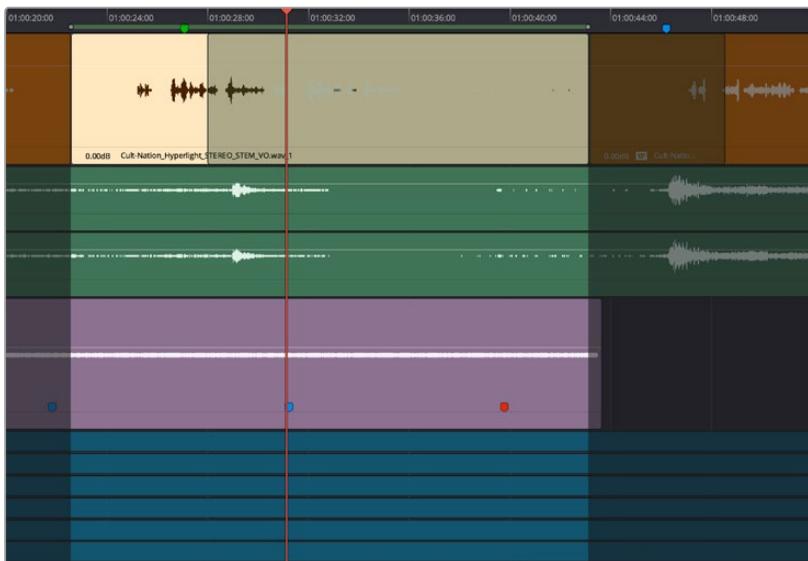
Cutting or copying a segment of a clip using In and Out points

- 4** Making sure the playhead is over the section of the waveform that you want to use as the frame to move the clip by, press Command-X to cut or Command-C to copy that clip (you can also right-click a clip and choose Copy or Cut). That clip will immediately become highlighted.



Cutting or copying a clip at the position of the playhead

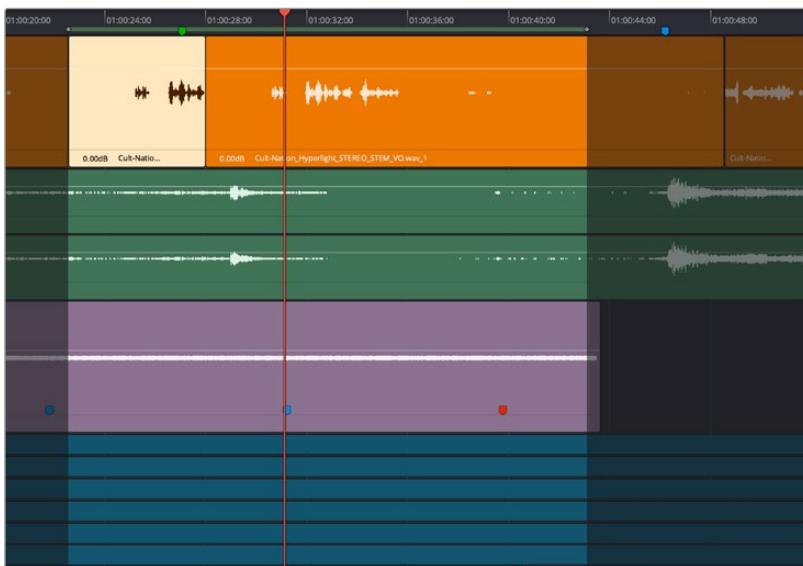
- 5 At this point, there are two things you can do to position the cut or copied clip to the position in the Timeline at which you want to paste it:
 - a) Moving the playhead will now also move the clip you cut or copied, shown as a ghost clip with waveform that's "attached" to the playhead at the frame you chose. Whether you drag the playhead with your mouse or use JKL to move the playhead through the Timeline, the cut or copied clip will move along with it, so that moving the playhead repositions the cut or copied clip on that track.
 - b) If you want to move the cut or copied clip to another track, use the Control-Option-Up or Down Arrow key shortcuts to change the selected track; the ghost clip will move along with change in track selection.



Positioning the cut or copied clip before you paste it

This way, you can use the playhead to align the ghost waveform with other audio clips surrounding it in preparation for pasting it.

- When the clip is positioned where you want it, press Command-V to paste the clip at the position you've chosen (you can also right-click a track and choose Paste from the contextual menu). The clip becomes solid, and you're finished.



The pasted clip

Using this method of cutting and pasting makes it quick to cut or copy clips using only keyboard commands, with the clip's ghost overlay making it easy to precisely align the clip you're pasting to fit exactly where you need it to, perfectly in sync.

Using the Cut/Copy Head and Tail Commands

Four additional commands make it easy to cut or copy portions of one or more clips that intersect the playhead, either from the In point to the current position of the playhead (the Head), or from the current position of the playhead to the Out point (the Tail).

To cut or copy the head or tail of a clip, and paste the result:

- Using these commands, there's no need to make a partial selection, so you can use either the Selection (press A) or Range Selection (press T) modes.
- Select the track that contains the clip you want to copy or cut. If one or more tracks are already selected, you can use the Control-Option-Up or Down Arrow key shortcuts to move the track selection state up or down to the tracks with the clip you want to cut or copy.
- Move the playhead so that it intersects the clip you want to cut or copy at the frame you want to define, either the end of the head or the beginning of the tail. If the playhead intersects a clip on a selected track, that clip should automatically become selected. You should note that even if you use the mouse to select a clip without selecting a track first, you should still move the playhead to intersect the clip you're copying or pasting, as this sets up an important reference point for the operation.
- Choose Edit > Cut/Copy Head/Tail to cut or copy the portion of the selected clip you want to paste. That portion of the clip will immediately become highlighted.
- At this point, there are two things you can do to position the cut or copied head or tail of the clip to the position in the Timeline at which you want to paste it:

- a) Moving the playhead will now also move the clip you cut or copied, shown as a ghost clip with waveform that's "attached" to the playhead at the frame you chose. Whether you drag the playhead with your mouse or use JKL to move the playhead through the Timeline, the cut or copied clip will move along with it so that moving the playhead repositions the cut or copied clip on that track.
- b) If you want to move the cut or copied clip to another track, use the Control-Option-Up or Down Arrow key shortcuts to change the selected track; the ghost clip will move along with change in track selection.

This way, you can use the playhead to align the ghost waveform with other audio clips surrounding it in preparation for pasting it.

- 6 When the clip is positioned where you want it, press Command-V to paste the clip at the position you've chosen (you can also right-click a track and choose Paste from the contextual menu). The clip becomes solid, and you're finished.

Paste and Remove Attributes

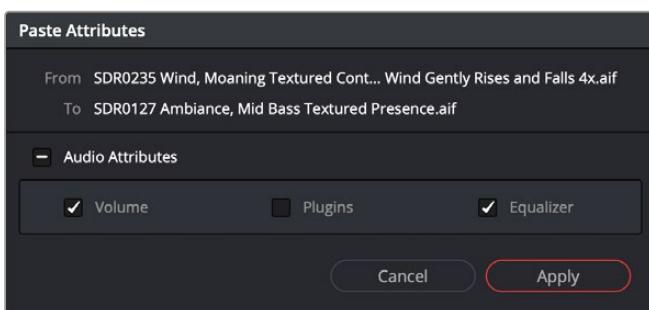
The Fairlight page has Paste Attributes and Remove Attributes commands that allow for the copying and resetting of audio parameters and effects, similar to the same commands on the Edit page.

Clip Attributes Naming

By double-clicking any clip in the Timeline, you can access the Clip Attributes window to rename the clip. You can still access this window with a right-click, revealing the drop-down menu of options.

Copying and Pasting Clip Attributes

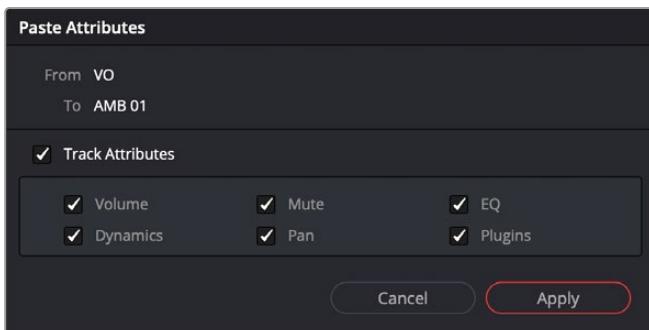
For clips, this works as simply as copying a clip, then selecting one or more audio clips and right-clicking another clip and choosing Paste Attributes from the contextual menu. A dialog appears letting you choose which audio attributes you want to paste before clicking Apply.



The Paste Attributes dialog in the Fairlight page

Copying and Pasting Track Attributes

For tracks, it works a little differently. Right-click on a track header and choose Copy Attributes to copy all track settings and effects. Then, select one or more other track headers, right-click the selection, and choose Paste Attributes. A dialog appears letting you choose which track attributes you want to paste before clicking Apply.



The Paste Attributes dialog in the Fairlight page, used to copy attributes from one track to another

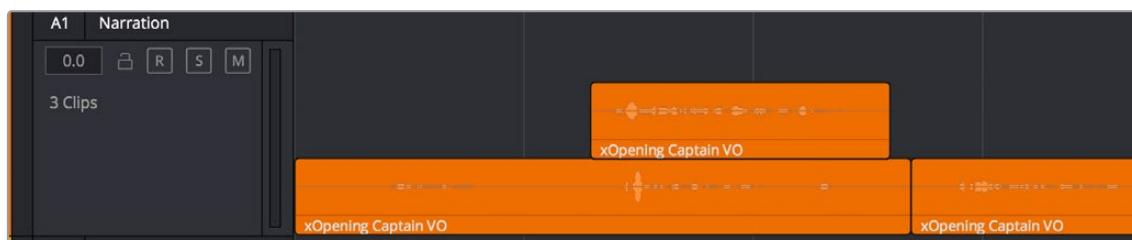
Removing Attributes

For either clips or tracks, you can right-click and choose Remove Attributes to open a dialog with which to choose which attributes you want to reset to their default settings.

NOTE: By choosing the Volume check box in Remove Attributes you will delete all of the Clip Gain keyframes that have been added to a clip.

Audio Clip Layering

Audio layering is a special audio editing mode that lets you superimpose multiple audio clips in the same track, with audio clips edited into the top layers muting overlapping sections of audio clips appearing on lower layers. With audio layering enabled, superimposed audio clips are treated similarly to superimposed video clips that have opacity set to 100%, with clips on top obscuring (or muting) clips underneath.



An example of multiple audio performance editing using layers, where the top layer mutes overlapping sections of audio clips in lower layers

Audio layering is incredibly useful for any situation where you're combining segments of multiple takes together to create a single voiceover, audio vocal track, or dramatic performance, as you can choose which segments to use via their superimposed position in the stack of clips appearing in that track, while at the same time you're preserving the other takes underneath in case you might want them later.

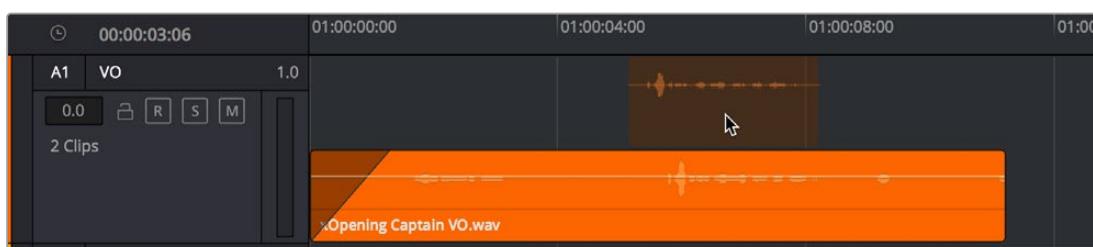
TIP: Track layering can be used on the Edit page as well.

To enable audio layering:

- Choose Timeline > Layered Audio Editing so that a check mark appears by the command. All overlapping audio will be layered instead of overwritten from that point forward.

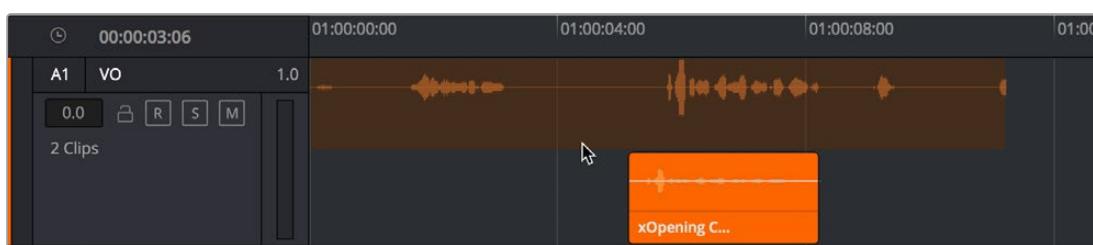
To view audio layering:

- 1 Choose View > Show Audio Track Layers to reveal track layers for each audio track (and each lane within a given audio track) in the Timeline. When layering is on, space appears at the top of each track in the Timeline which provides a region into which you can edit layered audio clips.
- 2 To edit an audio clip or segment as a layer within a particular audio track, drag it from elsewhere in the Timeline or from the Media Pool, and drop it into the empty area above whatever audio is already in that track.



Dragging an audio clip to become layered above another clip

- 3 Edit the different superimposed layers of audio such that the segments of each take that you like are on top. Only the topmost clip segments will be audible. Audio segments that overlap underneath are silent. To put another layer on top, drag it from its current position to the empty area at the top of the track.



Dragging a bottom audio layer to appear on top

- 4 When you're finished editing clips in track layers, choose View > Show Audio Track Layers again to hide the individual layers, so that only the topmost clips appear as a flat sequence in each track and lane.

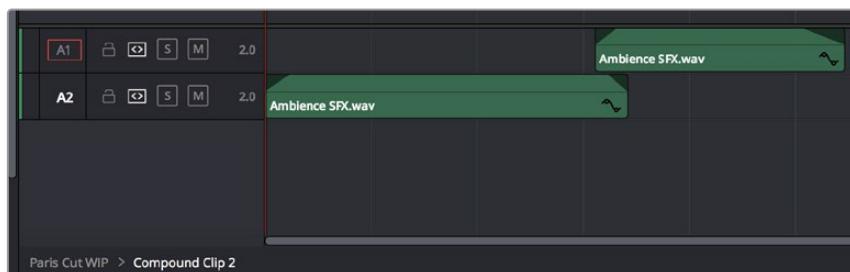


Hiding layers makes all audio layers appear on a single track, as if the top clips are overwriting what's underneath, except the muted material underneath is preserved

Audio Compound Clips

DaVinci Resolve supports audio compound clips, which are created just like any other compound clip, by selecting multiple audio clips, right-clicking one of them, and choosing New Compound Clip. Alternately, compound clips with video clips may now contain multiple audio items as well.

When compound clips containing audio are opened in the Edit or Fairlight pages by right-clicking an audio compound clip and choosing Open in Timeline, breadcrumb controls appear beneath the Timeline that let you exit the compound clip and get back to the master Timeline.

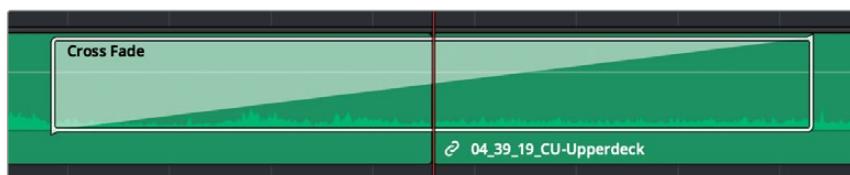


Opening an audio compound clip; note the path control at the bottom left of the Timeline

Audio Crossfades

You can add Cross Fade transitions to any edit point between two audio clips that have enough handles similarly to how you add video transitions, by dragging and dropping from the Effects Library, by right-clicking an edit and choosing an option from the contextual menu, or by selecting an audio edit point and choosing Timeline > Add Audio Only Transition (Shift-T).

Cross Fade transitions are a quick and easy way to fade the volume of the outgoing clip down while simultaneously fading the volume of the incoming clip up, letting you create a smooth aural transition between two audio clips.



An audio Cross Fade transition applied between two clips

You can double-click a Cross Fade transition to open it into the Inspector, revealing the following parameters:

- **Duration:** The duration of the transition, shown in both seconds and frames.
- **Alignment:** A drop-down that lets you choose the transition's position relative to the edit point it's applied to. Your choices are "End on Edit," "Center on Edit," and "Begin on Edit."
- **Transition style:** You can choose -3dB, 0dB, or +3dB to set both the Fade In and Fade Out levels to the same value. For more information on what these levels mean, see the following parameter.
- **Fade In/Fade Out levels:** There are three options that affect the incoming and outgoing halves of the Cross Fade effect independently. 0dB applies a linear fade (this is the default). +3dB applies a boosted curve; when applied to both Fade In and Fade Out, this can compensate for diminished levels in the middle of a Cross Fade. -3dB applies an attenuating curve, which deliberately lowers the level of the Cross Fade.

Crossfades can be created and edited on both the Edit and Fairlight pages.

Fades and Crossfades

Part of audio editing in the Fairlight page is the use of fades and crossfades. This section shows you how to create these effects for smoothly segueing from one audio clip to another.

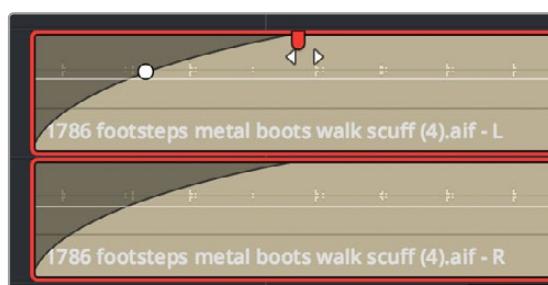
Using Fades

Like the Edit page, each audio clip has fader handles that appear at the upper right and left corners of a clip you're hovering the pointer over.



Fader handles appear when you hover the pointer over a clip

Pulling these handles out creates a fade effect with a duration equal to the length you extended the handle.



Creating a fade effect by pulling out one of the fader handles

Once you've created a fade effect, you can adjust the curve of the fade by dragging the handle that appears right on top of the fader curve. Dragging the handle up and down affects the angle of the curve, and dragging the handle left and right affects the shape of the curve. In this way, you can create all manner of fade effects.



Adjusting the curve of the fade

Batch Fade and Crossfade Editor in the Fairlight Page

Multiple fades are available to multiple clips with multiple tracks selected, significantly increasing fade functionality. The Batch Fades window has fade shapes for Fade In, Cross Fade, and Fade Out. The Fade Length is user definable by frame for each of these fade types, and there is an option to overwrite existing fades on the highlighted clips.



All of the settings in the Batch Fades window

There are six options per Fade type for precise usage. When adding Fades between sources, it's important to determine the shape so that only the desired media is included in the fade. The curves indicate the ramping slopes of the fade.

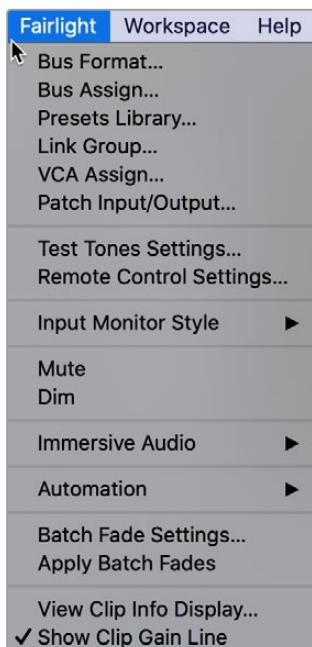
Each box has similar controls for affecting the individual Fade type.

- 1 Next to the Fade type name is the on/off toggle
- 2 There are six Fade curves to create the precise fade needed.
- 3 A Length box determines how many frames the fade will extend,
- 4 A click box to overwrite any previous fades, if needed.

The Crossfade box has three additional controls.

- 1 Equal Power maintains the signal level through the fade.
- 2 Equal Gain is used when crossfading media that could phase when combined. For instance, if a music cue is crossfaded at the mid-point of the fade, there could be a jump in level or added phasing issues. Using this option maintains the gain across the fade for that type of media.
- 3 Unlinked allows for a different curve type on either side of the crossfade.

This window will retain the settings that were last made so once a series of Fade types have been chosen, then Batch Fades can be made without opening this window and can be accessed via the Fairlight menu with a single click across highlighted regions. The Apply Batch Fades in the Fairlight menu are applied with the settings made in the Batch Fades window.



Batch Fade options in
the Fairlight menu

This graphic shows highlighted clips and tracks ready to have Batch Fades applied.



Tracks and clips highlighted for Batch Fades

The graphic below shows how the Batch Fades are applied. Clips that are not connected have Fade In and Fade Out applied. Clips that are connected have Crossfades applied. The Batch Fades window determines each of the Fade parameters and then applies them to all of the selected clips. In this example, the Overwrite box was unchecked. Compare the fades that were already there and see that they retain their original Fade length and shape.

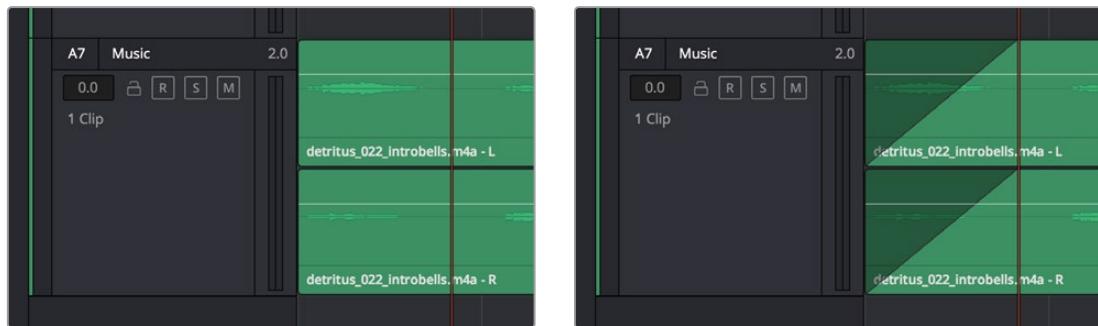


All of the highlighted clips have been faded according to the Batch Fades window.

NOTE: If the media is too short, a dialog box will alert you that there are insufficient handles and that the fade could not be created. You can then choose to trim clips, skip clips, or cancel the Batch Fade. If you cancel, you can then alter the settings to better suit the media.

Fade In and Out to Playhead

A pair of commands in the Trim menu let you move the playhead over a clip, and use the playhead position to “Fade In to Playhead” or “Fade Out to Playhead.” These commands work in both the Edit and Fairlight pages.



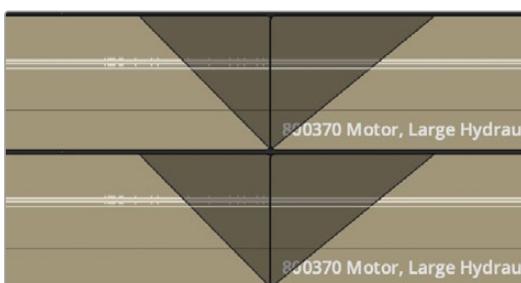
(Left) Placing the playhead where you want a fade in to end, (Right) Using Fade In to Playhead

Creating Crossfades With Overlapping Fades

While a fade gradually fades a single track of audio up or down, a crossfade fades two overlapping clips at the same time, fading one clip up and another clip down, for the aural equivalent of a cross dissolve. There are currently two ways of creating a crossfade in the Fairlight page. Both depend on clip layering to allow you to have overlapping fades over overlapping clips.

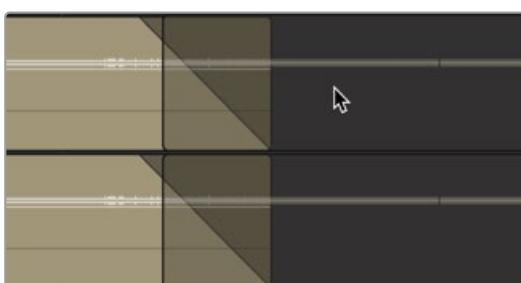
To create a crossfade by overlapping two clips together:

- 1 Add a fade out to the end of one clip, and a fade in to the beginning of another clip. By default, all fades you add in this way are linear, although you can adjust them to whatever gain you want.



Adding fades to adjacent clips

- 2 Drag the first clip to overlap the second clip by the length of the fade you've created.



Dragging the clips to overlap, the overlapping parts will be preserved via clip layering

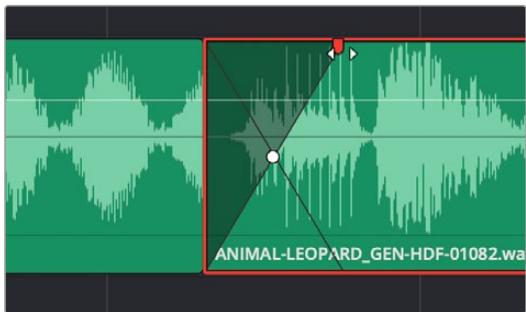
- 3 Drop the clip. The overlapping fades will both be preserved thanks to clip layering, and a crossfade will appear in the Timeline.



The resulting crossfade

To create a crossfade over two clips that are already layered:

- Drag a fader handle at the beginning or end of a clip that's layered, and a crossfade will automatically appear.



Creating a crossfade by adjusting the fader handle of a layered clip

Using Crossfades From the Edit Page

You can also add crossfades in the Edit page, but they appear in the Fairlight page as transitions in the Edit page style.



The resulting crossfade

Finding Clips in the Media Pool

You can right-click any clip in the Timeline and choose Find in Media Pool to automatically select that clip in the Media Pool, for instances where you might want to edit another copy of that clip somewhere else in the Timeline, or re-edit another segment from that clip into the same area.

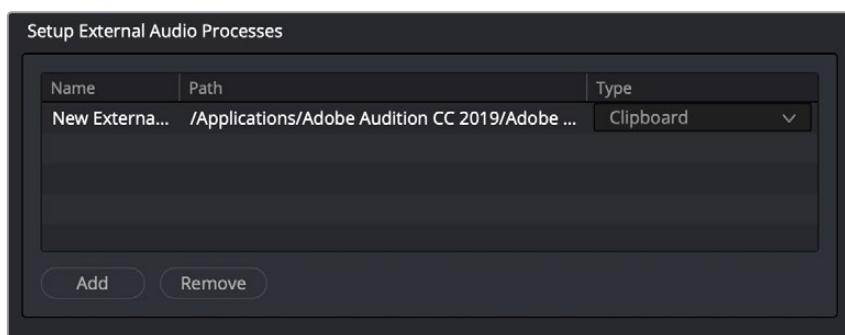
NOTE: Automation Follows Edit when clips with embedded automation are moved or pasted from the Timeline. When clips with automation are instead pulled from the Media Pool, they are in their default state with no automation attached.

Changing Clip Color in the Timeline

You can right-click one or more selected clips in the Timeline to change the clip color, to be more organized. For example, you might set production audio clips containing dialog from different actors to different colors, or you could set clips with dialog, music, and effects to different colors in order to easily differentiate each clip's purpose.

Editing Audio Clips in External Editors

While working in the Fairlight page, you have the ability to process an audio file using a third-party application if necessary, in the event you need to use another application's capabilities to create an effect or solve an issue that can't be accomplished in the Fairlight page itself. To do this, you must first add one or more applications to the External Audio Process list in the Audio Plugins panel of the System Preferences.



The External Audio Process list configured to send audio to Adobe Audition

To add an external audio process:

- 1 Open the System tab of the DaVinci Preferences, and select the Audio Plugins panel.
- 2 Click the Add button in the "Setup External Audio Processes" section.
- 3 To give the audio process a different name, double click in the Name column and type a new name.
- 4 Double-click in the empty Path column for the new process, and choose an application to assign to that process from the dialog.
- 5 Choose the type of process you want it to be from the drop-down menu in the Type column.

Once you have one or more external audio applications configured in Preferences, you can use them to process any audio clip in the Fairlight page by right-clicking an audio clip and choosing the application you want to use from the External Audio Process submenu of the contextual menu.

When you do this, a duplicate of the audio clip media is copied (bounced) to the directory location specified by the "Save clips to" field of the Capture and Playback panel of the Project Settings. At that point, the external application is either opened or launched as a command from the command line (depending on how the external application has been configured in Preferences).

Once the bounced audio is opened in the external application, you can process it however you need to and bake in any changes made by saving/rendering/outputting and overwriting the original copied audio media file. DaVinci Resolve detects when changes have been made, and the altered result is automatically reimported as an additional audio layer on top of the original clip in the Timeline.

The way an audio application is configured in the DaVinci System Preferences dictates how the bounced audio file is passed to the external program. There are three choices:

- **Command Line:** As a command line parameter, if your audio application is able to be run from the Terminal.
- **Clipboard:** By placing the path to the bounced file in the clipboard, so you can paste it into the application which has been automatically launched, or import it via a File > Open dialog.
- **Reveal:** By revealing the bounced copy in the file manager of your workstation, so you can drag and drop it onto the application which has been automatically launched.

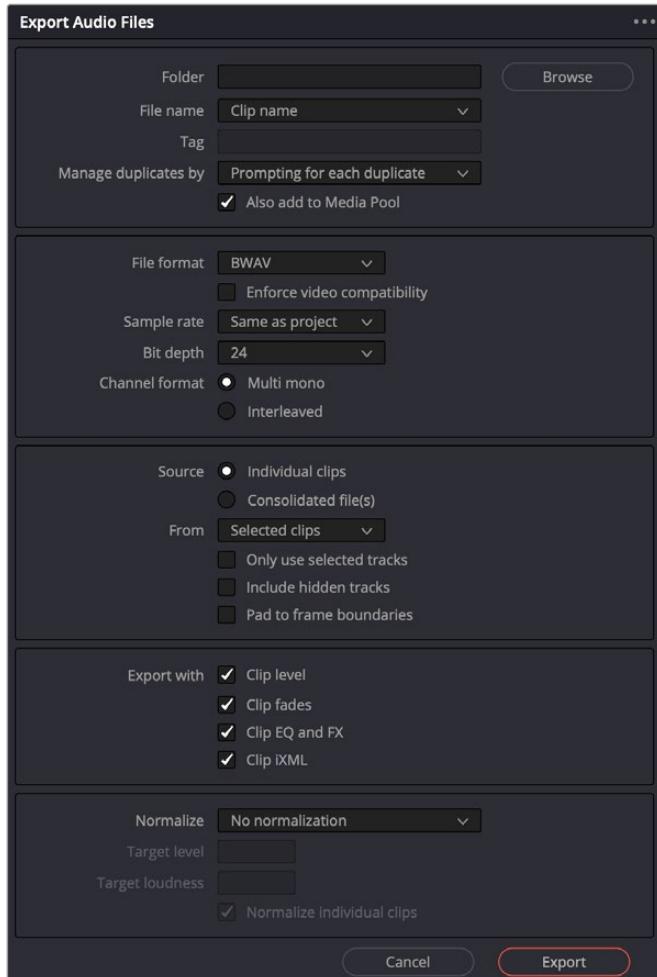
Exporting Audio Clips to External Files

For any workflow where you need to write clips from the Timeline to external files with extensive file altering capabilities, you can use the Export Audio Files command.

To export clips to external files:

- 1 Select one or more clips in the Timeline.
- 2 Right-click the desired selected files and choose Export Audio Files from the contextual menu.
- 3 When the Export Audio Files dialog appears, choose the following:
 - a) Click Browse to choose a location to save the exported audio files.
 - b) (Optional) Enter a tag and one of the various Name options.
 - c) Choose a File Format, Sample Rate, and Bit Depth for the exported files.
 - d) Choose a Channel Format of Multi-Mono or Interleaved for the exported files.

- e) Choose a Source of Individual Clips or Consolidated Clips; a drop-down menu further defines the ranges of the complete timeline, a selected range, or just the selected clips.
- f) Checkboxes can further define using only the selected tracks, including hidden tracks and padding to frame boundaries.
- g) When exporting you can choose to include the Clip Level, the Clip Fades, the Clip EQ and FX, and the Clip iXML.
- h) The exported files can be normalized to predetermined target levels and target loudness values with all of the standards offered throughout the Fairlight page.



The dialog that lets you choose options for exporting clips to files

4 Click Export.

The selected audio files are written to the location you chose.

Sample Editing

You can zoom quite far into audio clips on the Fairlight page timeline, until you see the individual samples that comprise the audio waveform of each clip. Samples are represented by control points once you've zoomed in far enough.



When you zoom in far enough, you can see the individual samples of an audio clip as control points

You can non-destructively edit these control points to eliminate clicks and pops, and to effect other fixes to problem audio clips.

Methods of editing audio samples:

- **To see the editable audio samples:** Zoom all the way into an audio clip until you see the sample control points, using either Command-Plus or Command-Minus, the scroll wheel of your pointing device, or by holding down the ZOOM button of your Fairlight editing panel and turning the JOG/EDITING wheel.
- **To edit a single audio sample:** Click and drag that audio sample up or down to change its height.
- **To edit a section of samples:** Click and drag horizontally left or right across the samples you want to edit to “redraw” the waveform any way you’d like.
- **To reset all edited samples to their original state:** Right-click an audio clip with edited samples, and choose Reset Edited Samples from the contextual menu.



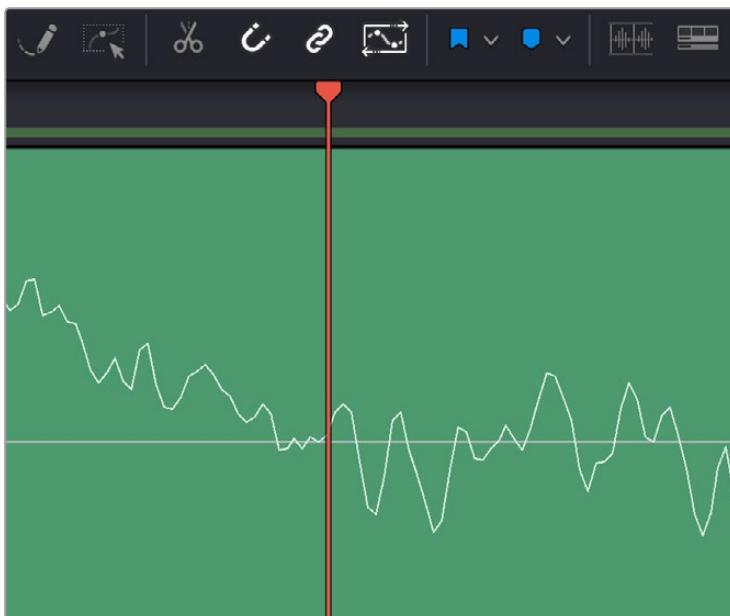
Black points show the previous levels when samples have been edited in a clip

Sample editing can be undone, just like any other editing procedure, as the edited sample points are stored non-destructively within the DaVinci Resolve project.

Waveform Zero Crossing Indicator

Waveforms have a zero crossing indicator line. Since a waveform is an image representation of sound continually moving positive to negative, the zero crossing point is the level at which that fluctuation occurs. When zooming into a waveform at the sample level, the waveform will display the zero crossing line to enable precise editing.

The zero crossing is a useful feature when editing audio, since clean edits are made at the zero crossing to avoid inducing clicks or pops. A crossfade between two audio clips automatically brings both sides of the fade to the zero crossing.



The center line in the waveform indicator is the zero crossing.

Audio Clip Specific Inspector Adjustments

Each audio clip in a track has individual settings that are specific to that clip, which can be adjusted and animated in the Inspector. This makes it easy to adjust the levels and EQ of several clips to match one another, while reserving the track level for your overall mix.

These clip-based effects are different from real time track-based effects in that they apply only to individual clips on the timeline rather than all clips on a track. For more information about real time track-based effects, see *Chapter 176, “Audio Effects.”* and *Chapter 177, “Fairlight FX.”*

An additional set of clip-specific pitch controls make it easy to make small pitch adjustments, either static or keyframed, where necessary. This chapter describes how to use these clip-specific controls.

Contents

Making Adjustments in the Inspector	3661	Volume	3669
Using the Inspector	3661	Pan	3669
Audio Settings in the Inspector	3662	Voice Isolation	3669
Adjusting Multiple Clips at the Same Time	3663	Dialogue Leveler	3669
Animated Inspector Adjustments	3664	Pitch Controls	3670
Paste and Remove Attributes	3665	Speed Change Controls	3670
Setting Clip Volume	3665	Equalizer Controls	3671
Adjusting Volume in the Inspector	3665	Master EQ Controls	3672
Adjusting Volume in the Timeline	3666	Graphical EQ Controls	3672
Adding and Adjusting Volume Keyframes in the Timeline	3667	Bands 1 and 4	3672
Normalize Audio Levels Command	3667	Bands 2 and 3	3672
		Paste and Remove Attributes for Clips and Tracks	3673

Making Adjustments in the Inspector

Clip-specific audio parameters like Volume, Pan, Pitch, and Equalization can be adjusted and animated in the Inspector. This section walks you through how this works.

Using the Inspector

Audio clips in the Fairlight page expose similar controls to those found in the Audio Inspector Panel of the Edit page. Additionally, the Inspector will display controls for audio plugins that you apply to clips as well. All parameters are organized into groups, with a title bar providing the name of that group, along with other controls that let you control all parameters within that group at the same time.



Closed and open Inspector group controls in the Fairlight page

These controls include:

- **Enable button:** A toggle control to the left of the parameter group's name lets you disable and re-enable every parameter within that group at once. Orange means that track's enabled. Gray is disabled.
- **Parameter group title bar:** Double-clicking the title bar of any group of parameters collapses or opens them. Even more exciting than that, Option-double-clicking the title bar of one parameter group collapses or opens all parameter groups at once.
- **Keyframe and Next/Previous Keyframe buttons:** This button lets you add or remove keyframes at the position of the playhead to or from every single parameter within the group. When the button is highlighted orange, a keyframe is at the current position of the playhead. When it's dark gray, there is no keyframe. Left and right arrow buttons let you jump the playhead from keyframe to keyframe for further adjustment.
- **Reset button:** Lets you reset all parameters within that group to their default settings.

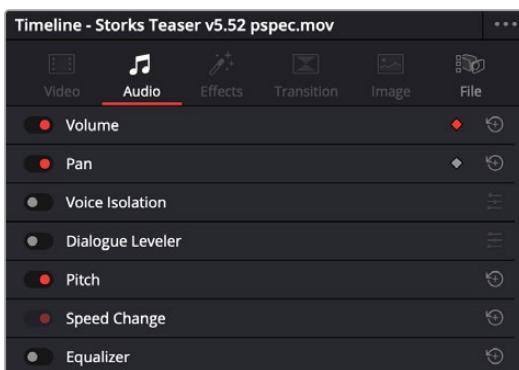
Audio Settings in the Inspector

Each selected clip and each selected Main or Bus channel strip in the Mixer exposes some audio-specific parameters in the Inspector Panel tabs.

The Audio Tab in the Inspector

These are the options in the Audio tab:

- **Volume:** Each clip has a single volume control, which corresponds to the volume overlay over each audio clip.
- **Pan:** (Only exposed for clips) A simple Pan slider that controls stereo panning.
- **Pitch:** (Only exposed for clips) Each clip has two pitch controls for altering clip pitch without altering clip speed. You can control pitch in Semi Tones and Cents.
- **Speed Change:** Any adjustments made using Elastic Wave to the clip is found here.
- **Equalizer:** (Only exposed for clips) Each clip also has a four-band EQ, complete with low-pass, high-pass, and parametric settings for fine tuning and problem-solving audio issues at the clip level.



The Audio tab of the Inspector

The Effects Tab in the Inspector

If you've applied any Fairlight FX, VST plugins, or Audio Unit plugins, those controls will appear in the Effects tab the Inspector. For more information, see *Chapter 176, "Audio Effects."*

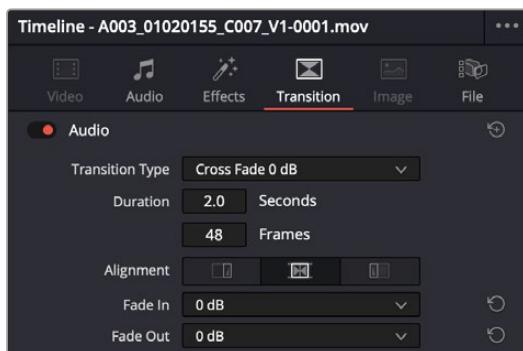
Additionally, when you apply other audio plugins from the Audio FX panel of the Effects Library, additional parameters and controls are exposed.



De-Hummer controls in the Effects tab of the Inspector

The Transition Tab in the Inspector

If you've applied any Transitions between clips, you can make adjustments in the Transition tab.



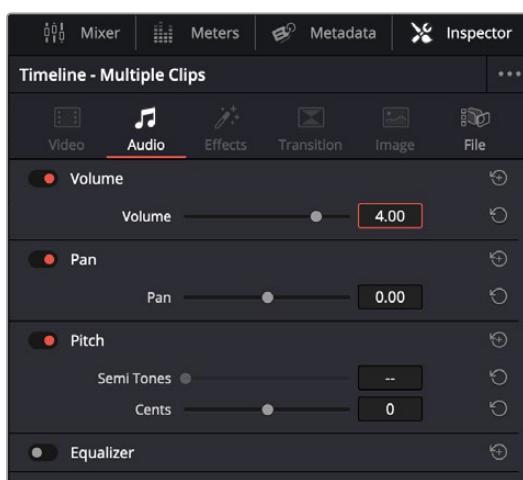
Crossfade controls in the Transition tab of the Inspector

Adjusting Multiple Clips at the Same Time

There's an easy way to make adjustments to the Inspector parameters of multiple clips at the same time, without needing to use Paste Attributes (described later in this chapter). All you need to do is simultaneously select every clip you want to alter, and then modify the parameter in the Inspector that you want to change. As a result, every selected clip will be adjusted by the same amount. This works for compositing effects, transforms, text parameters, filters, and audio settings, just about anything that can be simultaneously exposed in the Inspector for multiple selected clips.

When you select multiple clips, the Inspector will display "Multiple Clips" as the title. If each of the selected clips have different values in the parameter you're adjusting, that parameter will have two dashes in the value field. There are two ways you can make adjustments to multiple clips:

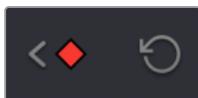
- If you want to make a relative adjustment to all selected clips while keeping their original offsets from one another, then drag the virtual slider in the parameter field which will display a + or - before however many units your adjustment is.
- However, if you want to set all selected clips to the same value, you can double-click in the number field, type the value, and press Return.



Making a relative adjustment of plus 4.00 in the Volume level of all selected clips

Animated Inspector Adjustments

Keyframing in the Edit page works slightly differently than when using the Keyframe Editor in the Color page. Most simple keyframing tasks can be performed in the Inspector using three buttons that appear to the right of any parameter that's capable of being keyframed. It takes two keyframes at minimum to create an animated effect.



The three keyframe controls that appear in the Inspector, from left to right: Previous keyframe, Create/Delete keyframe, Next keyframe

Methods of keyframing parameters in the Inspector:

- **To add a keyframe:** Select a clip, open the Inspector, then move the Timeline playhead to the frame where you want to place a keyframe, and click the Keyframe button next to the parameter of the Inspector you want to animate. Once you've added at least one keyframe to a parameter, all other adjustments you make to parameters in the Inspector, or using the onscreen Transform/Crop controls in the Timeline Viewer, add new keyframes automatically if the playhead is at another frame.
- **To move the playhead to the next or previous keyframe:** Click the small left- or right-hand arrow to either side of a parameter's keyframe control to jump the playhead to the next or previous keyframe. You can also press Right-Bracket ([]) and Left-Bracket (]) to go from keyframe to keyframe.
- **To edit an existing keyframe of a parameter:** Move the playhead to be on top of the keyframe you want to edit, and then change that parameter, either in the Inspector, or using the onscreen controls of the Timeline Viewer.

Methods of changing keyframe interpolation in the Inspector:

- **To change a keyframe to Ease In or Ease Out:** Eased keyframes create animated changes that begin slowly and accelerate to full speed, or slow down gradually to decelerate to a stop. This only works when you have two or more keyframes creating an animated effect. Move the playhead to a frame with a keyframe using the next/previous keyframe controls, then right-click the orange keyframe button and choose Ease In, Ease Out, or Ease In and Out, depending on which keyframe you're editing and the effect you want to create.
- **To change a keyframe to Linear:** Move the playhead to a frame with a keyframe using the next/previous keyframe controls, then right-click the orange keyframe button and choose Linear.

Methods of deleting keyframes and disabling keyframed effects:

- **To delete a single keyframe:** Open the Inspector, move the Timeline playhead to a frame with a keyframe, and click the orange Keyframe button in the Inspector to delete it.
- **To delete all keyframes for one parameter:** Click the reset button to the right of a parameter's keyframe control in the Inspector.

- **To delete all keyframes in a group of parameters in the Inspector:** Click the reset button to the right of a parameter group's title bar in the Inspector.
- **To disable or enable a single parameter's keyframed effect:** In the Timeline, click the toggle control at the left of a parameter's keyframe track. Orange means that track's enabled. Gray is disabled.
- **To disable or enable a group of parameters in the Inspector:** Click the toggle control at the left of a parameter group's title bar in the Inspector. Orange means that group is enabled. Gray is disabled.

Paste and Remove Attributes

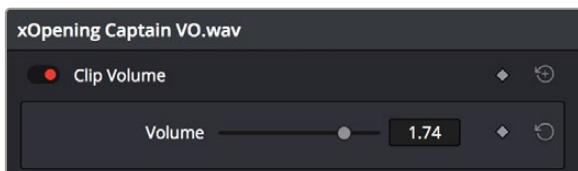
The Fairlight page has Paste Attributes and Remove Attributes commands that allow for the copying and resetting of audio Inspector parameters and effects, similar to the same commands on the Edit page. For more information on how to do this, see *Chapter 171, "Editing Basics in the Fairlight Page."*

Setting Clip Volume

Each audio clip, or audio item in the case of audio clips with linked audio on multiple tracks, has its own Volume level. This means that audio clips with multiple channels share a common Volume setting. There are several ways you can adjust these levels simply.

Adjusting Volume in the Inspector

Each clip has individual Volume parameters that are accessible in the Audio panel of the Inspector when one or more audio clips are selected.



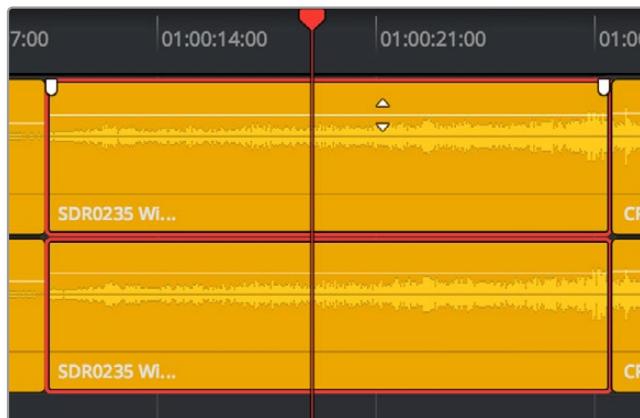
The Volume parameters available for audio clips in the Inspector

Selecting an audio clip in the Timeline and adjusting its Volume only alters the volume levels of that clip, which lets you adjust basic levels for individual clips in your program. The Volume control affects every channel within that clip simultaneously.

If you select multiple clips in the Timeline, then adjusting the Volume or Pan sliders or virtual sliders for all of them simultaneously will make a relative adjustment to all of the clips, preserving their offsets from one another. If you want to set all clips to the same level, then making a numeric adjustment will set all selected clips to the same absolute level.

Adjusting Volume in the Timeline

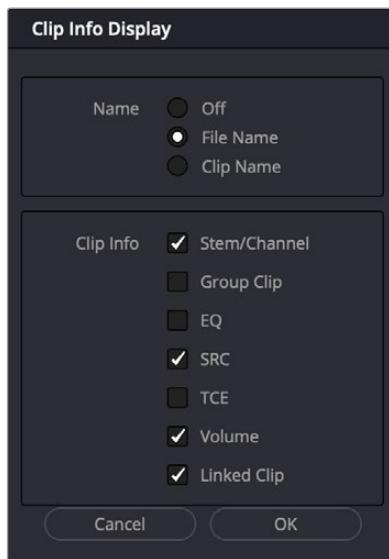
Each clip (or item) of audio in the Timeline has a Volume overlay that lets you set that clip's gain level by simply dragging it up or down with the pointer. This overlay corresponds to the Volume parameter in the Inspector.



Dragging a Volume overlay to adjust the clip level

Additionally, you can click any clip's Audio Curve Editor button, at the bottom right-hand corner of each audio clip, to open an audio-specific Curve Editor with which you can keyframe not just volume, but pan, and the parameters of any audio filters you might have applied to that clip.

NOTE: Under the Fairlight menu > Show Clip Gain Line, you can show each clip's gain in the Timeline. This is a handy way to quickly see all of the relative gains of clips in the Timeline.



Clip information for all clips in the Timeline can be enabled in the Clip Info display.

Adding and Adjusting Volume Keyframes in the Timeline

Mixing audio by adding and adjusting individual keyframes can be a fast and effective way of balancing clip levels with one another and of fixing clip-specific dynamic level problems. When manually editing any audio parameter curve, you can use the following procedures.

Methods of adjusting the Volume curve using the pointer:

- **To adjust any curve segment:** Position the pointer over the overall segment for clips with no keyframes, or position it between any two keyframes, directly on top of the curve segment you want to raise or lower. When the move cursor is displayed, click and drag up to raise the Volume, or down to reduce the Volume.
- **To adjust a section of level in a clip:** Use the Edit Selection tool to highlight the portion to adjust. Then with the Clip Gain line showing, increase or decrease to the desired level and keyframes will automatically be created at the boundary of the gain adjustment.
- **To add keyframes to the level curve:** Hold the Option key down and click the curve to place a keyframe at that frame. You must add at least two keyframes to create an automated change in Volume. By using the Option and Command key you can remove any keyframe.
- **To adjust a keyframe in any direction:** Move the pointer over a keyframe so that the four-way cursor appears, and then click and drag up or down to change the Volume, or side to side to change its timing.
- **To adjust a keyframe in only one direction:** Move the pointer over a keyframe so that the four-way cursor appears, and then click and drag in the intended direction of adjustment, either vertically to change the volume of the clip at that frame, or horizontally to move the keyframe to a different point in time. Once you start dragging a keyframe into a particular direction, keyframe movement is constrained in that direction until you release that keyframe.
- **To select one or more keyframes:** Click any keyframe to select it.
- **To select multiple discontiguous keyframes:** Command-click all keyframes you want to select, whether they're next to one another or not.
- **To select multiple contiguous keyframes:** Click the first keyframe you want to select, and then shift-click the last keyframe you want to select, and all keyframes between will also be selected.

NOTE: When adjusting the gain on clips, the tooltips will show the current gain level and reflect whatever changes you make indicating the amount of change as the keyframe moves.

Normalize Audio Levels Command

The Normalize Audio Levels command automatically adjusts the level of clips to a specific target level, and you can choose the method used to analyze each audio clip's levels to determine how to normalize each clip's volume. Options include a variety of loudness normalization algorithms specific to various international standards, which are useful for balancing the perceived overall loudness of several clips to one another, regardless of transient levels throughout each clip. You can also do Peak normalization, with options for both Sample Peak and True Peak.

The various loudness options are designed to analyze an audio signal based on its perceived loudness to the listener, which results in a more accurate automatic balancing of different clips' audio levels to one another, regardless of transient peaks occurring throughout different clips.

The target peak meter now uses the BS.1774 standard for measuring maximum "true peak," which means that this meter is capable of measuring "inter-sample peaks," rather than only the peaks at each sample of a waveform. However, you still have the option to measure Sample Peak, which is the previous method of measuring the actual peak of the samples in a media file.

The change made by the Normalize Audio Volume command is only a volume adjustment; no dynamics are applied, so the result of using this command is that the loudest parts of each selected clip are going to match one another at the target level. This command is also available in the Fairlight page.

To normalize one or more selected audio clips:

- 1 Right-click one of the selected clips and choose Normalize Audio Levels. The Normalize Audio Level dialog appears.



The Normalize Dialog in the Fairlight page

- 2 Choose the Normalization Mode you want to use. You can choose among a variety of standardized loudness measurement algorithms, or Sample Peak, or True Peak.
- 3 Choose the reference level that you want to set the peak volume of the selected clips to match, in dBFS.
- 4 Choose how you want to set the level of multiple selected clips:
 - When Set Level is set to Relative, all selected clips are treated as if they're one clip, so that the highest peak level of all selected clips is used to define the adjustment, and the volume of all selected clips is adjusted by the same amount. This is good if you have a series of clips, such as a dialog recording, where the levels are consistent with one another, and you want to normalize all of them together.
 - When Set Level is set to Independent, the peak level of each clip is used to define the adjustment to that clip, so that the volume of every selected clip is adjusted by an amount specific to that clip. The end result may be a set of very different volume adjustments intended to make the peak levels of each audio clip match one another. This is good if, for example, you're trying to balance a series of different sound effects with one another that have very different starting levels.

For more information about loudness normalization, see *Chapter 178, "Audio Meters and Audio Monitoring."*

Volume

Each audio clip in the Timeline has a simple Volume control that lets you adjust the gain of that clip.



Volume Control in the Inspector

Pan

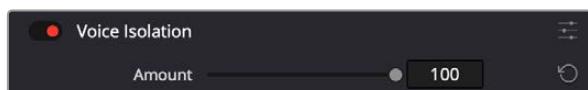
Each audio clip in the Timeline has a simple stereo Pan control that lets you pan that clip. While most professional mixes will restrict panning to the more robust panner found in the Fairlight page Mixer, this simple clip-based Pan control is useful for editors of visuals working in the Edit page to quickly create simple panning effects to aid in a craft edit. Dragging the slider lets you pan audio left to right. This control is centered at 0 by default.



Pan Control in the Inspector

Voice Isolation

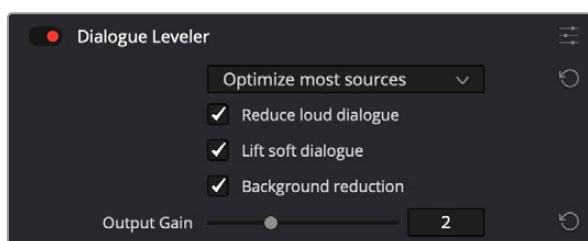
Each audio clip in the Timeline has a simple control for applying Voice Isolation. For more information about Voice Isolation, see *Chapter 177, "Fairlight FX."*



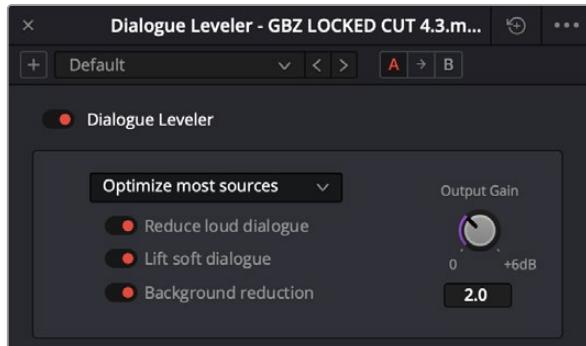
Voice Isolation control in the Inspector

Dialogue Leveler

Each audio clip in the Timeline has Dialogue Leveler controls that let you apply the effect to the clip. For more information about Dialogue Leveler, see *Chapter 177, "Fairlight FX."*



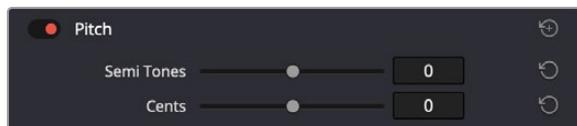
Dialogue Leveler controls in the Inspector



Dialogue Leveler Controls in the Inspector

Pitch Controls

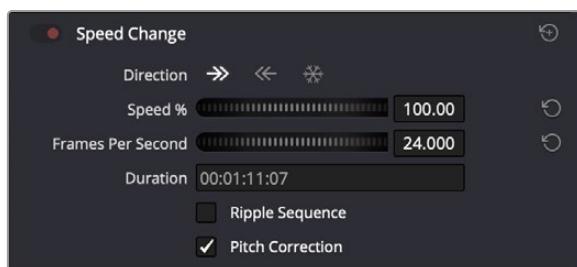
Each audio clip in the Timeline has Pitch controls that lets you alter the pitch of a clip without changing the speed. Two sliders let you adjust clip pitch in semi tones (large adjustments, a twelfth of an octave) and cents (fine adjustments, 100th of a semi tone).



Pitch control in the Inspector

Speed Change Controls

Each audio clip in the Timeline has Speed Change controls that lets you alter the speed of the clip. It has the option to have the clip's pitch follow the adjusted speed change or maintain the original speed's pitch.



Speed Change control in the Inspector

The Speed Change window has the following overall controls:

- **Enable button:** Turns the overall Speed Change effect off and on, without resetting the controls.
- **Reset button:** Resets all controls of the Speed Change window to their defaults.
- **Direction:** The Right Arrow maintains the forward direction of the waveform, the Left Arrow reverses the direction of the waveform, and the Snowflake icon creates a freeze frame.
- **Speed %:** A flywheel control to adjust the speed by a percentage plus or minus 100%.

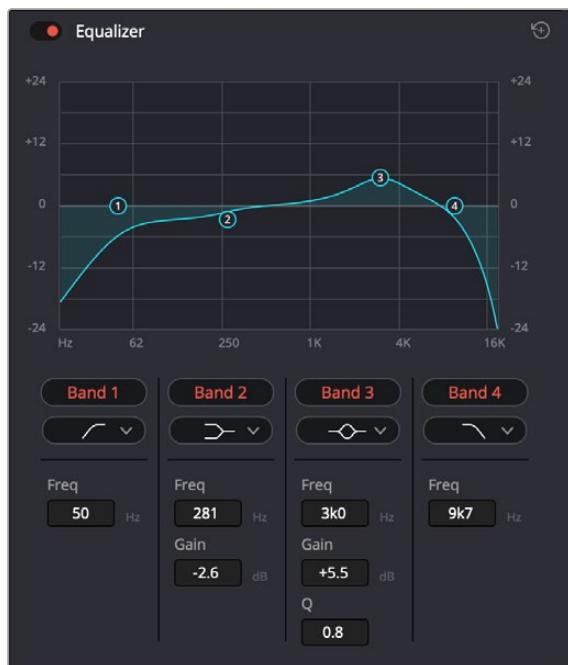
- **Frames Per Second:** A flywheel control that syncs with the Speed % control showing the FPS relative to the speed change.
- **Duration:** Indicates the new timing of the clip.
- **Ripple Sequence:** When checked this moves all the media after the action to ripple edit to the new duration.
- **Pitch Correction:** When checked this maintains the original pitch of the clips when speed changed. When unchecked the audio will speed up or slow down with the speed adjustment. The slower the speed change, the lower the pitch; the higher the speed change, the higher the pitch.

NOTE: When in the Speed Change controls, do not use the freeze frame option. This will negatively affect the selected audio file.

Equalizer Controls

Each audio clip in the timeline has a four-band equalizer that has both graphical and numeric controls for boosting or attenuating different ranges of frequencies within that clip, before it even gets to the EQ built into the mixer. Each band has controls for the filter type (Bell, Lo-Shelf, Hi-Shelf, Notch), Frequency, Gain, and Q-factor (sharpness of the band), with the available controls for each band of EQ changing depending on the filter type.

When a channel strip's EQ is enabled, the equalization curve that's being applied is displayed in the Mixer. A channel strip's EQ settings affect all the clips on that track, so you must open the EQ window to make those modifications.



The channel strip's EQ indicator

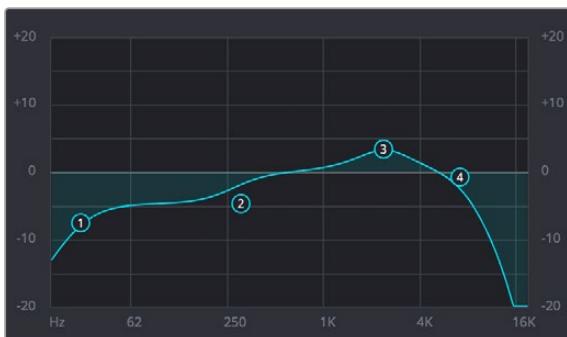
Master EQ Controls

The Equalizer window has the following overall controls:

- **Enable button:** Turns the overall EQ effect off and on, without resetting the controls.
- **Reset button:** Resets all controls of the EQ window to their defaults.

Graphical EQ Controls

A graph at the top shows a curve with handles that correspond to each of the enabled EQ bands listed below. You can drag any numbered handle to boost or attenuate the range of frequencies governed by that band, using whatever type of equalization that band has been set to.



The EQ graph with user-draggable handles

Dragging the numbered handles on this graph in turn modifies the parameters of the corresponding band, and changing each band's parameters will also alter the EQ graph, which serves the additional purpose of providing a graphical representation of the equalization being applied to that track.

Bands 1 and 4

The outer two sets of band controls let you make high-pass and low-pass adjustments, if necessary.

- **Band enable button:** Turns each band of EQ on and off.
- **Band filter type:** Bands 1 and 4 can be switched among six specific filtering options for processing the lowest or highest frequencies in the signal. These include (from top to bottom) Hi-Shelf, Hi-Pass, Bell, Notch, Lo-Pass, and Lo-Shelf. Bands 2 and 3 can be switched among Lo-Shelf, Bell, Notch, and Hi-Shelf.
- **Freq:** Adjusts the center frequency of the EQ adjustment.
- **Gain:** Adjusts the amount by which the affected frequencies are affected. Negative values attenuate those frequencies, while positive values boost those frequencies.

Bands 2 and 3

The middle two sets of band controls let you make a wide variety of equalization adjustments.

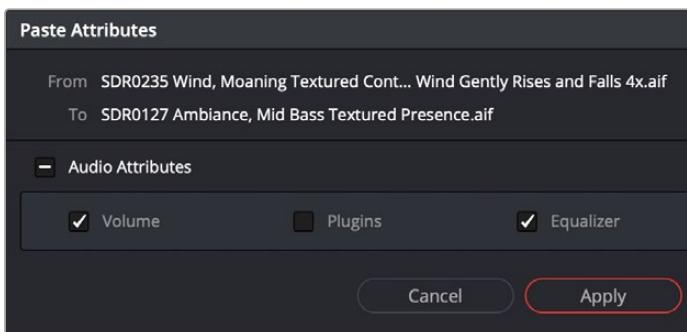
- **Band enable button:** Turns each band of EQ on and off.
- **Band filter type:** Bands 2–5 can be switched among four different filtering options (from top to bottom): Lo-Shelf, Bell, Notch, and Hi-Shelf.

- **Frequency:** Adjusts the center frequency of the EQ adjustment.
- **Gain:** Adjusts the amount by which the affected frequencies are affected. Negative values attenuate those frequencies, while positive values boost those frequencies.
- **Q Factor:** Adjusts the width of affected frequencies. Lower values include a wider range of frequencies; higher values include a narrower range of frequencies.

NOTE: This may seem obvious, but not all parameters are available for every curve type. For instance, a Bell curve filter has Frequency, Gain, and Q adjustments, but a Lo-Pass or Hi-Pass filter will only have Frequency available to adjust.

Paste and Remove Attributes for Clips and Tracks

The Fairlight page has Paste Attributes and Remove Attributes commands that allow for the copying and resetting of audio parameters and effects, similar to the same commands on the Edit page.



The Paste Attributes dialog in the Fairlight page

The Paste Attributes dialog box gives you three types of attributes to choose from. Volume will paste the copied attributes to the clip. Plugins will paste any plugin attributes to the clip. Equalizer will past EQ data copied from another clip. One or all of these can be copied at one time.

The Remove Attributes dialog box gives you the same three types of attributes to choose from for removal of a clip. When the Volume box is enabled, all Clip Gain keyframes will be removed from the clip.

Chapter 173

Mixing in the Fairlight Page

The Mixer is “control central” of the Fairlight page, providing all of the functionality you need to mix the various audio tracks of your program into a harmonious whole.

By using EQ, dynamics, panning, level control, and Fairlight FX, VST and Audio Units audio plugin effects of all kinds, all with full automation, you can hone your sound and balance each track’s elements with one another.

This chapter focuses on explaining the various functions of the Mixer so you can harness its power for yourself.

Contents

Introduction to Mixing	3676
The Mixer	3676
Tracks and Busses	3676
FlexBus Routing and Mixing	3677
Customizing the Onscreen Mixer Controls	3680
Managing Channel Strips Using the Index	3681
Selecting Channel Strips and Tracks	3682
Track Organization	3683
Fairlight Mixer Signal Path	3684
What Is An Effects Insert?	3684
Input	3685
Path Settings	3685
Effects	3686
Changing the Order of Effects on a Channel	3687
Moving Inserts by Dragging	3688
Copying and Pasting Effects	3688
Copying and Pasting Effect Settings	3688

Effects In	3689
Dynamics	3689
The Dynamics Graph	3689
Master Dynamics Controls	3690
Expander/Gate	3691
Compressor	3692
Limiter	3695
EQ	3695
Master EQ Controls	3696
The EQ Graph	3697
Bands 1 and 6	3697
Bands 2–5	3698
Bus Sends	3699
Creating Sends	3699
Accessing the Bus Sends Window	3699
Legacy Bus Sends – “Auxiliaries”	3700
Pan	3701
The Stereo and Surround Pan Controls	3701
The 3D Audio Pan Controls	3702
Bus Assignment Buttons	3704
Legacy Mixer Bus Assignment	3704
Nested Audio Timelines	3704
VCA Faders	3707
Making Fader VCA Assignments	3707
Using VCA Faders	3708
Recording Fader Automation for VCAs	3709
Nesting VCAs	3709
Arm, Solo, and Mute Buttons	3709
Fader Controls	3710
Metering Options	3710
Level Metering Options	3710
Pre-fader Metering	3711
Solo and Pre-fader Metering	3711
Target Loudness Level	3712
Bouncing Audio	3712
Third-Party Control Panel Support for Mixing	3713

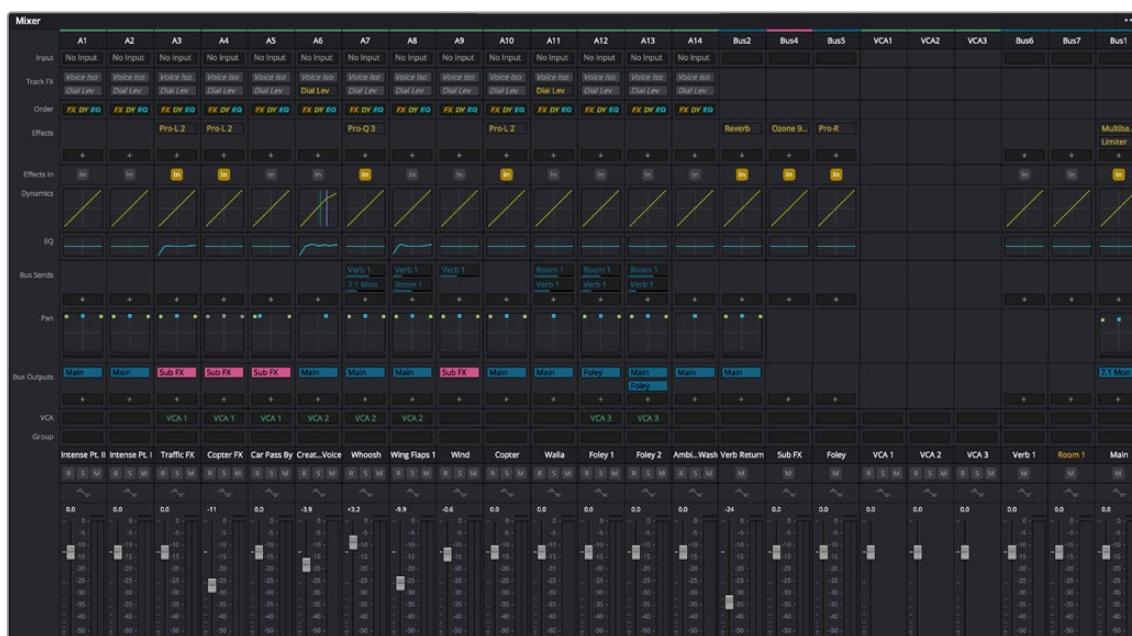
Introduction to Mixing

This chapter describes the use of the Mixer to adjust the levels and fine-tune the audio of each track in the timeline. It's focused on the function of the channel strip controls, with the following exceptions:

- For more information about bussing, see *Chapter 167, "Setting Up Tracks, Busses, and Patching."*
- For more information about recording audio, see *Chapter 169, "Recording."*
- For more information about mix automation, see *Chapter 174, "Mix Automation."*

The Mixer

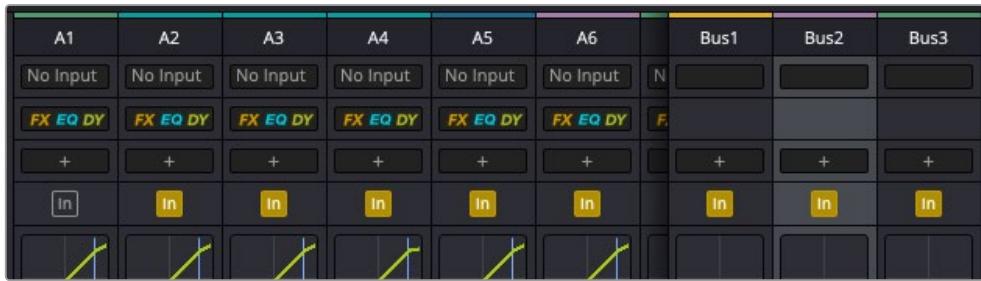
The Audio Mixer provides a set of graphical controls you can use to assign track channels to output channels, adjust EQ and dynamics, set levels and record automation, pan stereo and surround audio, mute and solo tracks, and add Fairlight FX, or VST, or AU effects plugins. At its most basic, each audio track in your timeline corresponds to an individual channel strip in the Mixer, and by default there's a single main stereo mix bus labeled "Bus 1" that combines all these tracks into an overall mix.



The Audio Mixer with channel strips corresponding to the tracks in the Timeline

Tracks and Busses

Once you start creating busses, the Audio Mixer exposes two sets of channel strips. The leftmost set of channel strips correspond to the audio tracks in the Timeline, while the right-most set of channel strips expose sets of controls for each bus that you've created.



By default, the Audio Mixer is divided into two sections, one for tracks (at left) and one for busses (at right).

If you have more tracks and busses than can be displayed all at once given the width of your computer display, then each half of the Mixer has independent scroll bars so you can choose which tracks and which busses you want to see next to one another. You can also remove the split between sections and have a single, continuously scrollable view with all tracks, or change the order or split point for the channels.

FlexBus Routing and Mixing

The Fairlight audio engine bussing system is called FlexBus. As its name suggests, FlexBus offers a high level of flexibility for bus types and signal routing. DaVinci Resolve Fairlight's older Fixed Bus configuration (prior to DaVinci Resolve v17) offered a more limited fixed bus topology, and can still be used, but FlexBus makes it possible to patch outputs and/or sends in any way required, as dictated by your project.

With FlexBus, each track can output to up to ten busses and sends with additional level and pan controls to a further ten busses. Busses can be sent to other busses up to six layers deep, facilitating complex stem building, processing, and allowing discrete deliverables, for more information see *Chapter 167, "Setting Up Tracks, Busses, and Patching."*

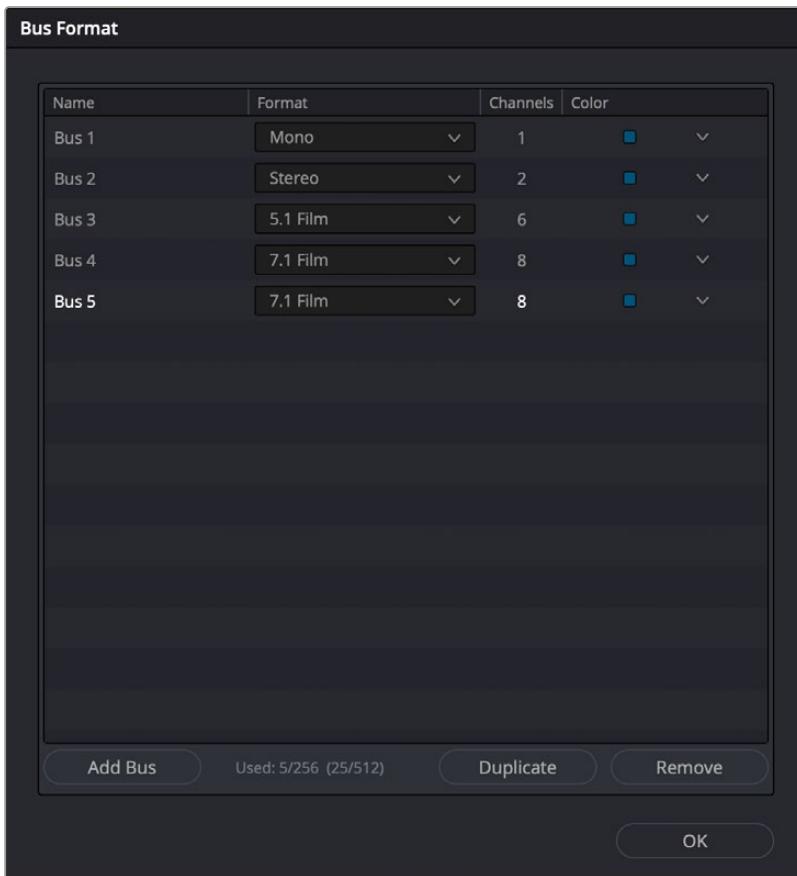
What is a Bus?

A bus is simply a common signal connection point in an audio mixer. Busses can be mono, stereo, or any larger format, like 5.1 or Dolby Atmos 9.1.6 (where 16 audio signals are used). Bussed connections are mix points for the audio, allowing each audio track feeding their signals to the bus to be summed together to create a master output for that bus.

Bus-to-Bus Routing

A mix may use a single bus (for example, the default stereo Main 1 bus may be all that you need if you're doing basic stereo mixing). Or you can create "submixes" where multiple busses feed into other busses to create a master mix. For example, you might have a dialogue bus, an effects bus, and a music bus so you have control over those elements separately via the bus "masters" for each, then feed the 3 masters into a main output bus for final mix rendering.

You may want to route the output of a bus to an audio track to record the resulting signal, or route to monitor speakers to listen to the real time output. Finally, the Deliver page can render the output of your designated master bus to create a final bounced file.



The FlexBus structure allows for many different bus track types to be created or changed.

User-definable busses allow for bus-to-bus, bus-to-track, or track-to-bus routing, with each bus having the ability to sum together signals from mono to fully immersive formats (such as Dolby Atmos) at your discretion. As with any and all of the audio track types in Fairlight, you can change bus types at any time if needed.

The power of the FlexBus system is that it allows you to direct signals to many different places at one time to achieve complex mixing scenarios. Perhaps you need to generate two mixes that are identical in content but need to be of different output levels. You can designate two mix busses, one with a target output level of -14 LUFS and one with a target output level of -24 LUFS. The final mix signal is sent to one bus that is then broken into two more busses, one with a limiter set to accommodate the -14 LUFS mix and one set to the correct level for the -24 LUFS mix, allowing you to create these two different mixes at one time.

FlexBus supports expanded Dolby Atmos capabilities; for more information see *Chapter 180, "Immersive Audio Workflows."*



FlexBus bus routing buttons.

Legacy Fixed Bussing

Prior to DaVinci Resolve 17, the Mixer had a fixed topology with specific, fixed numbers of sends, submix busses, and main outputs. DaVinci Resolve still supports this older “legacy” bussing topology to maintain compatibility with earlier projects.

With the current FlexBus bussing, the Mixer looks slightly different. The Aux panel on the legacy Mixer has been renamed Bus Send, and the Main/Submix panel has been changed to Bus Outputs.

In the legacy Fixed Bus view:

- Each audio track’s channel strip has a set of Main and Submix bus buttons that let you assign the audio output by that channel strip to a Sub (typically used to combine different subsets of tracks into submixes) or to a Main (typically used to output or render overall mixes).
- Each Sub and Aux’s channel strip has a set of Main buttons so that different combinations of Subs can be assigned to each Main. Main channel strips have no buttons because, from a bussing perspective, they’re the final output.
- Main and Submix buttons let you assign tracks to busses, and busses to other busses.



Main and Submix bus buttons

Using Legacy Fixed Busing

If you want to work using the previous method of Fixed Bus mapping, you can do so for new projects by accessing the Project Settings > Fairlight panel, and turning on the “Use fixed bus mapping” checkbox. If you’re starting work in FlexBus, this checkbox can only be enabled in new projects in which no timelines have yet been created. Older projects that were created with Fixed Bus mapping have this setting enabled by default to preserve the previous mix.

Converting Older Fixed Bus Projects to FlexBus

Older Fixed Bus projects can be converted to FlexBus by doing the following:

- Open Project Settings > Fairlight.
- Under the Bussing heading, uncheck “Use fixed bus mapping.”
- A dialog will appear, allowing you to convert the project to FlexBus.

Customizing the Onscreen Mixer Controls

The 3 dot Option menu at the upper right-hand corner of the Mixer provides several different options for customizing the appearance of the Mixer, as well as which controls are shown or hidden:

- **Full Track Mixer or Small Track Mixer option:** While the Full Track Mixer provides more room for buttons and controls that are large enough you don't have to squint to see them, the Small Track Mixer allows many more channel strips to be seen at one time.



The Small Track Mixer view

- **Show Labels option:** These are the sectional names for functional areas of the Mixer that appear at the far left of the Mixer channel strip area. If you're first getting started, these labels are useful, but once you've gotten used to the Mixer's layout, hiding the labels can give you a bit more room to work with for another channel strip or two.
- **Channel Strip Control Visibility options:** Allows controls to be shown or hidden in the Mixer. You can hide controls you know you're not going to be using, no longer need to adjust, or wish to not disturb.

Managing Channel Strips Using the Index

The Index is a consolidated list view of all the tracks in the current Timeline, designed to make it easier to manage timelines with lots of tracks. Columns let you see each track's visibility, track number, name, controls, channel format, monitor assignment (if any), ADC controls, and VCA assignment. The controls in these columns let you manage the tracks in the current Timeline by showing or hiding them, toggling track controls, or rearranging them. You can also right-click on one or more selected tracks to color code them, or change the track type.

Tracklist		Name	Track Controls	Format	VCA
•	A1	SYNC	R S M	1.0	VCA 1
•	A2	VO	R S M	1.0	VCA 1
•	A3	SFX 01	R S M	2.0	VCA 2
•	A4	SFX 02	R S M	2.0	VCA 2
•	A5	Drum Hit	R S M	2.0	
•	A6	MX	R S M	2.0	

The Tracks panel of the Index shows all tracks on both the Timeline and the Mixer.

Showing and Hiding Tracks

You can use the Tracks panel of the Index to hide tracks you don't need to work on in order to create more room for tracks you need to see.

TIP: To quickly show or hide a number of tracks, click and drag up or down over the eyeball button of each track where you want to toggle the visibility.

Color Coding Tracks

Select one or more tracks, then right click one of the selected tracks and choose a color from the Change Track Color submenu of the contextual menu.

Toggling Lock, Record, Solo, and Mute

As with visibility, you can use the Lock, Record, Solo, and Mute controls to quickly enable or disable multiple tracks by clicking and dragging up or down over the Lock, R, S, or M buttons you want to toggle.

Rearranging Tracks

You can rearrange tracks in the Tracks tab in the Index by clicking any track strip area between other controls, and then dragging that track up or down in the Index. As you drag, a white line shows you where that track will be inserted when you release it. You can even select a contiguous series of tracks and drag them all to a new position in the Timeline at once.

Managing the Dividing Line

By default, there are two areas of tracks in the Index; one area is for audio tracks, and one area for busses and VCAs with a dividing line separating them. Busses and VCAs can be dragged up out of the divider and into any position for any order. This can be quite useful when having a series of dialogue tracks, for instance, and pulling the dialogue bus up next to them.

The dividing line's position can be moved to any location by dragging it, so you can keep the split organization of tracks into two different areas but re-order what is shown.

Once the order has been changed in the Index, this is reflected in both the Mixer panel as well as in the Meter panel. By reordering busses and tracks, you can adjust your workflow for whatever set of tasks you are working on.

Single Mixer View

Clicking the three dot Option menu at the top of the Mixer panel offers an option for Single Mixer view. The Single Mixer view removes the divider line from the Tracks tab in the Index entirely, providing a continuous scroll of the tracks, both in the Mixer panel horizontal scroll and the Index vertical scroll. You can restore the divider at any time.

NOTE: You can reset the bus order to its original layout by choosing "Reset Bus Order" from the three dot Options menu on the upper right of the Mixer.

Changing Track Type

Track type refers to the channel width of the audio track and what format it is. The track type can be changed at any time. For example, you could have a mono track, and change it stereo, or to a 5.1 track, or to a 12 channel Adaptive.

To change the track type, select one or more tracks, then right-click one of the selected tracks and choose a different track type from the Change Track Type submenu of the contextual menu.

NOTE: Keep in mind that if you change from a larger track type to a smaller one, you may need to also set which of the channels in the larger source audio file are now audible on the smaller track type. This can be handled via the contextual menu choice Clip Attributes for a clip, using the Audio tab.

Selecting Channel Strips and Tracks

When you select a track in the Timeline, you also select that track's accompanying Mixer channel strip, and vice versa:

- To select single tracks, just click.
- To select multiple contiguous tracks, select a starting track or channel strip, hold down Shift, and click on last item you want in your selection.
- You can also select multiple channel strips in the Mixer by clicking and dragging to create a bounding box around the tracks you want to select.
- To select non-adjacent (discontiguous) tracks or channel strips, command-click on each item you want to add to your selection.



Selecting multiple channel strips selects the same tracks in the Timeline

Track Organization

Each channel strip has three organizational properties that let you keep track of which channel strip is responsible for which part of the mix.

- **Track color:** Each track can be differently color coded to help you keep organized. These colors appear in the Timeline track header, the Mixer, and the meters to help you keep track of which track corresponds to which channel strip and meter.



The track color and track number appear at the top of each channel strip.

- **Track number:** The number of the timeline audio track corresponding to each channel strip appears here.
- **Track name:** This mirrors the track name found in the track header of a track on the Timeline. If you customize an audio track's name in the Timeline or in the Mixer, that name appears here.



Each track's name appears between the assignment buttons and the arm/solo/mute buttons

Fairlight Mixer Signal Path

The signal path or layout (“topology”) of a mixer describes how the audio signals are routed from one place to another.

The default signal flow on the Fairlight channel strip is as follows:

- 1 Audio source: Input menu allows choice of source, including file playback, bus, live input, etc.
- 2 Path Settings: Accessible from the Input menu. Allows adjustments to the input signal.
- 3 Track FX: Built-in effects, Voice Isolation (Studio only), and Dialogue Leveler. Disabled by default.
- 4 Effect: Fairlight FX, AU, or VST effects.
- 5 Dynamics: Dedicated channel dynamics processor with expander/gate, compressor, and limiter.
- 6 EQ: Dedicated 6 band EQ with variable gain, frequency, and Q.
- 7 Output Routing: Panning and bussing.

The main fader for the channel strip then controls the level to any assigned main output busses.

Bus Send faders control the level to any destination set for a mixer channel send and can be set pre-or post-fader.

What Is An Effects Insert?

Each time you add an effect to a channel, a signal processing “insert” (insertion point) is enabled. The source signal flows from the input of the effect to its output, and then onwards to any additional insert(s) to the next stop in the Mixer’s signal flow.

DaVinci Resolve supports a total of 6 inserts per channel in addition to the built in Dynamics and EQ processing.

Click on the Input area to access the Input drop-down menu, letting you patch inputs, patch busses, and configure the input settings of audio signals routed through Blackmagic or other hardware audio interfaces.

“Pre” vs. “Post”

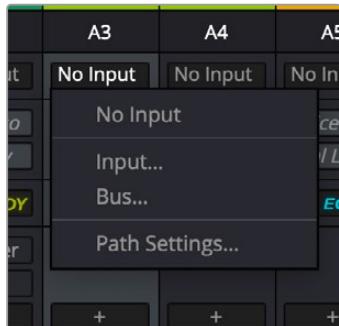
The term pre refers to a signal that is routed for use before another connection point.

For example, you may prefer to work with pre-fader metering as you can always see the original signal level coming off of disk reflected in the meter level.

A signal that is post occurs after a connection point. For example, you generally want effect sends that go to a reverb effect to follow the level of a track’s main fader so that the reverb level follows the overall level. As a result, Bus Sends are set to have post fader routing by default.

Input

For more information on using the options of the Input menu, see *Chapter 167, "Setting Up Tracks, Busses, and Patching."*



The Input drop-down menu allows you to initiate patching any available sources using the Patch Input/Output window.

Path Settings

Choose Input at the top of the Mixer channel strip to access the Path Settings control window. These controls allow you to modify various aspects of the Mixer channel strip that may need adjustment prior to, or post, recording to control the mic/line inputs on Fairlight audio interface hardware, and more.



Path Settings window

Mic/Inst

Controls will only appear on this panel if you have connected channels 1 or 2 of a Fairlight SX36 audio interface to your system. If connected, you can remotely control all of the options (including level) for the mic/instrument inputs of the SX36 if they are assigned to the channel. If there is no connection to an SX36, the area is empty.

Record Level

- **Record:** Linked and identical to the Record Enable button on the channel strip; here for convenience. If you hit one, it will enable the other.
- **Thru:** Allows the input signal to pass into the Mixer without enabling a record path. This is ideal when you want a source signal to always be available and just want to monitor it.
- **Record Level:** Allows you to apply a digital gain adjustment to the record path to disk, post the output of your audio interface's analog-to-digital converter.

Normally, this control should be left at 0.0 (no change, unity gain), as it affects the level you are recording to disk. It is best practice to use the level controls on your audio interface to control the input level into DaVinci Resolve in order to maximize audio fidelity. However, there might be a time where you need a bit more level, or may not have access to an audio interface's controls, and in those cases you can adjust the input.

Trim

- **Polarity:** Inverts the polarity of the signal coming into the channel strip (sometimes referred to as "flipping the phase"). For example, you may have an input signal like an explosion where the transient attack of the signal produces with a massively positive-going waveform (where the waveform mostly appears above the zero line). If you invert the polarity, the signal will now be mainly negative-going and the waveform will be concentrated beneath the zero line. Inverting polarity is sometimes used to more closely align signals from multiple microphones and can be used creatively to affect frequency response of such a signal.
- **Trim Level:** Allows you to trim the level of the signal coming off of disk, post the Track FX (which process directly off of disk) and pre all other effects. Trim Level appears post the recorded signal to disk and doesn't affect the recording level. Trim is a playback adjustment and allows you to adjust the level of the signal coming into your mix to optimize the level feeding effects and the busses, or to slightly trim an otherwise perfect element in the mix up or down in level.

Direct Output

Each audio channel strip can enable a direct output that can be used to feed any other input destination. You can patch this source using the Track Direct choice in the Patch Input/Output dialog via the Source dropdown for more information see *Chapter 167, "Setting Up Tracks, Busses, and Patching."*

- **On/Off:** Enables/disables the direct output.
- **Pre:** Sets the direct output tap-off point to be pre (before) the channel fader. On by default.
- **Level Control:** Sets the level from full off (minus infinity) to +10 dB. Default is 0.0 (unity gain).

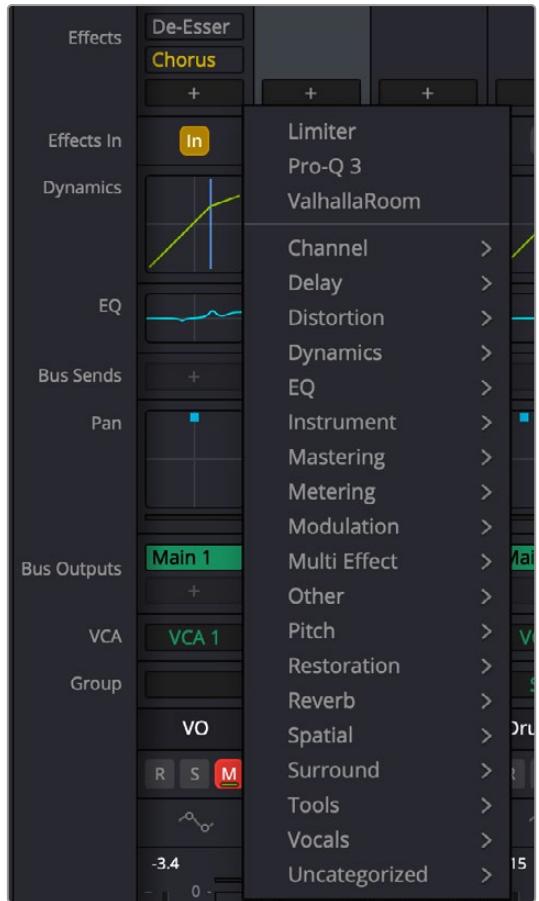
Insert

Linked and identical to the Effects In button on the channel strip; here for convenience. If you hit one, it will enable the other. Switches all Fairlight FX, AU, or VST effects on a channel in or out of the signal path with a single switched control.

Effects

Fairlight FX, VST, or Audio Unit effects can be applied on the Mixer's channel strips. Effects are applied on the entire track, not just on one or more clips in the Timeline for that track.

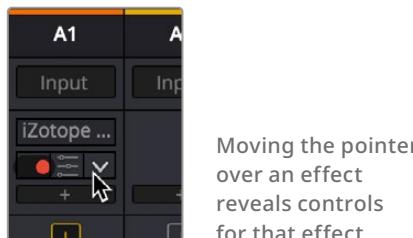
Clicking the plus ("+") button opens a drop-down menu, allowing you to apply any Fairlight FX, VST, or AU effects installed on your machine to that track. The menu is organized by processing type. Within each type, there is a hierarchical choice for Fairlight FX, AU, and VST (if you're on a Mac) or Fairlight FX and VST (if you're on Windows).



NOTE: Depending on what you have installed on your machine, the collection of audio effects available for the Mixer channel strip inserts is often close to (or identical to) those that you can access for clip-based audio processing found in the Effects panel on the left side of Cut, Edit, and Fairlight pages.

TIP: You can store favorite effects for quick access at the top of the list by marking them as favorites in the Effects panel. Mark a favorite by clicking on the star next to the name.

Clicking on the plus sign shows the Effects drop-down list for assignment



Moving the pointer over an effect reveals controls for that effect

Hovering the mouse over any listed effect reveals controls for enabling/disabling, replacing or deleting the effect, or opening an effect's custom controls (the user interface for that effect).

Changing the Order of Effects on a Channel

The order of effects on any Mixer channel strip can be changed by clicking on the Effects Order button. A drop-down menu appears allowing you to change the order between various routing combinations of all insert effects (Fairlight FX, or AU, or VST plugins) and the built-in Dynamics and EQ modules. The default routing is Effects ("FX"), Dynamics, EQ.



Effects Order drop-down menu

Different effects orders can produce very different creative results. For example, it is usually best practice to apply noise reduction first in a signal chain, so you're not affecting the volume or quality of the noise floor you're trying to remove, so the plugin can do its job most effectively. Or you may wish to apply dynamics processing prior to EQ, as changing the spectral content of your source may affect the response of the compressor.

Moving Inserts by Dragging

You can move inserts from one location to another simply by clicking and dragging to a new location. Using this technique, you can move an effect from one channel to another, or swap or move the location of an effect on a channel to another insert position on that channel (displacing the plugin already present). Note that, at this time, you can't use this technique to copy tracks to busses or vice versa.

Copying and Pasting Effects

You can copy entire effect chains with their specific effect parameters intact, track by track. Let's say that you've created a plugin chain on a dialogue track that has Noise Reduction, a De-Hummer, and a Dynamics plugin that you have tweaked to the exact settings needed for those dialogue recordings to sound great.

You also have another track that has similar recordings that could benefit from the exact same chain of plugins and those particular settings. Rather than install each plugin to the track and redo the settings, you can simply right-click the track header (A1 for example) and click Copy. Then go to the track header of the new track you want effected, right-click, and click Paste. You will now have the identical plugin chain copied over to the new track, all with each of the settings exactly as you had created on the source plugin dialogue track

Copying and Pasting Effect Settings

If you have a setting for one effect that you spent a lot of time getting right and see that it could also work just as well on another track's effect, you can copy and paste just those settings.

For example, you have a Reverb on a dialogue track that you have tweaked to perfection. You see that those exact settings will work well for another dialogue track that is on your timeline. Rather than try to recreate those settings, you can duplicate them.

- Hold down the option key and drag the Reverb plugin you want to copy to a new location. This creates a copy at the new location and leaves the original intact.
- Alternatively, you can use Copy and Paste in the plugin three dot Options menu. To apply those settings to the other track, just click Copy from the Options menu of the source Reverb effect, then open the Reverb plugin window of the destination Reverb effect, and click the Options menu to paste. Now all of the parameters are the identical between the two plugins.

For more information on using audio effects, see *Chapter 176, "Audio Effects."*

TIP: You can create and load presets for entire channel strips and use them in any project or timeline using the Fairlight > Presets Library.

Effects In

The Effects In button allows you to bypass all Fairlight FX, AU, or VST effects plugins for the channel with a single control. When it is lit (orange), all effects are enabled; when it is unlit, all effects are bypassed.

NOTE: Track FX (Voice Isolation with Resolve Studio and Dialogue Leveler) and the built-in Dynamics and EQ processors are not affected by Effects In.

Dynamics

Each Mixer channel strip has a built-in Dynamics processor, with a mini Dynamics Indicator graph that appears on the channel strip and acts as the access button. Double-clicking the Dynamics Indicator brings up the Dynamics processor window, with three modules: an Expander/Gate, a Compressor, and a Limiter. Each can be used separately or in concert to manage the dynamics of the audio on the target track.

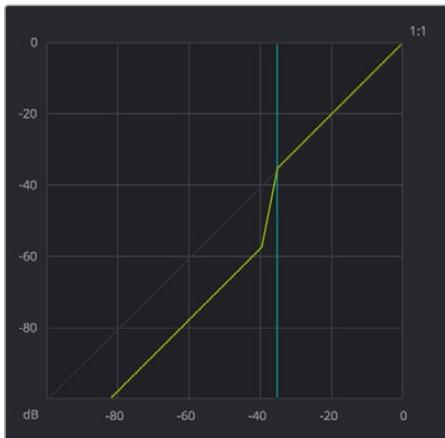


The Dynamics control window

The Dynamics Graph

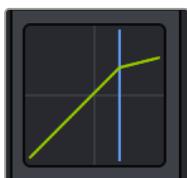
When you enable any combination of the Dynamics window modules you may need for a track, the Dynamics graph updates with curves that show you how the signal is being affected by the Expander/Gate, Compressor, and/or Limiter settings that are being applied. The Dynamics graph also provides a real time animated display that meters the true response of the input/output signals compared against the graphic that shows the basic response curve.

- The X axis (horizontal scale) represents the input signal level.
- The Y axis (vertical scale) represents the output level.
- The blue line represents the threshold.
- The light green line represents the dynamics curve (dependent on the process type and setting; this will change).
- The light green balls that animate in the upper area of the graph follow how the Dynamics control settings affect the signal as it moves above or below the threshold. The balls are affected by the attack and release settings, allowing you to visualize the way the compressor is affecting the input signal.
- The smaller lines that appear on the on the input and outline X-Y lines allow you to see exactly where the input/output levels are.



The Dynamics graph shows the response curve and how the signal is being affected by the current settings in real time

The Dynamics Indicator on the channel strip displays the same curve, so you can see at a glance what is happening on that channel (but without the real time display). This indicator cannot be adjusted; you must open the Dynamics window to make modifications.



The channel strip Dynamics Indicator

Master Dynamics Controls

The Dynamics window contains the following overall controls at the top of the window:

- **Enable button:** Turns the overall dynamics effect off and on, without resetting the controls.

NOTE: You can also turn dynamics on/off by single clicking on the Dynamics button (the mini graph) in the channel strip.

- **Reset button:** The circular reset icon on upper right next to the three dot Options menu resets all controls of the Dynamics window to their defaults.

- **Preset Menu:** Dynamics presets appear here. You can create, change, and save presets, and use the default presets as good starting points for your track's specific needs.
- **Make Up Gain control:** A post-dynamics level control that lets you boost the signal to compensate for dynamics settings that may have lowered the overall level.

Expander/Gate

The first of three sets of dynamics modules, the Expander/Gate controls can be switched between expansion and gating. Expansion emphasizes differences in volume by lowering the level of soft parts of the signal relative to the level of louder parts and can be used to minimize noise while increasing the dynamic range of a signal. Gating reduces the level or even silences parts of a signal that fall below the set threshold level in order to reduce or eliminate noise in quiet parts of a recording.

- **Expander:** This button enables the Expander.
 - **Threshold:** Sets the signal level below which expansion occurs. Defaults to -35 dB. The range is from -50 to 0 dB.
 - **Range:** Amount of decrease in signal level in dB, affected by both threshold and ratio. As ratio increases, range can have more of an effect. At lower ratios, as threshold increases, the effect of range increases.
 - **Ratio:** Sets the attenuation ratio (input to output) applied to signals which fall below the threshold level. It controls the rate at which signals will drop, while range controls how much the signal will drop. Defaults to 1:1.1. The range is 1.0:1 to 10:1. A 1:5 ratio means that for every 1 dB of input level decrease below the threshold, the expander output will decrease 5 dB.
 - **Attack:** Adjusts how quickly the expansion occurs when a signal exceeds the threshold. Defaults to 1.4 ms (milliseconds). The range is 0 to 100 ms.
 - **Hold:** Controls how long the Expander is kept open after the input has fallen below the threshold, in ms. Defaults to 0 ms. The range is from 0 to 4000 ms (4 seconds).
 - **Release:** Adjusts how quickly or gradually the Expander attenuates when the input signal goes back below the threshold. Defaults to 93 ms. The range is 50 to 4000 ms (4 seconds).
- **Gate:** This button enables the Gate.
 - **Threshold:** Sets the signal level below which gain reduction occurs. The range is from -50 to 0 dB.
 - **Hold:** Controls how long time the Gate is kept open after the input has fallen below the threshold, in ms. Defaults to 0 ms. The range is from 0 to 4000 ms (4 seconds).
 - **Range:** Sets the maximum amount of gain reduction that will be applied when the signal falls below the gate threshold. Once the signal has fallen below the level determined by the gate threshold minus the gate range, no gain reduction is applied. The default is 18 dB. The range is from 0 to 60.2 dB.
 - **Ratio:** Unused for gate.
 - **Attack:** Adjusts how quickly the gating occurs when a signal exceeds the threshold. Defaults to 1.4 ms. The range is 0 to 100 ms.
 - **Hold:** Keeps dynamics from being triggered again until a certain amount of time has passed, in ms (milliseconds). Defaults to 0 ms. The range is from 0 to 4000 ms (4 seconds).
 - **Release:** Adjusts how quickly or gradually the sidechain detector stops attenuating when the input signal goes back below the threshold. Defaults to 93 ms. The range is 50 to 4000 ms (4 seconds).

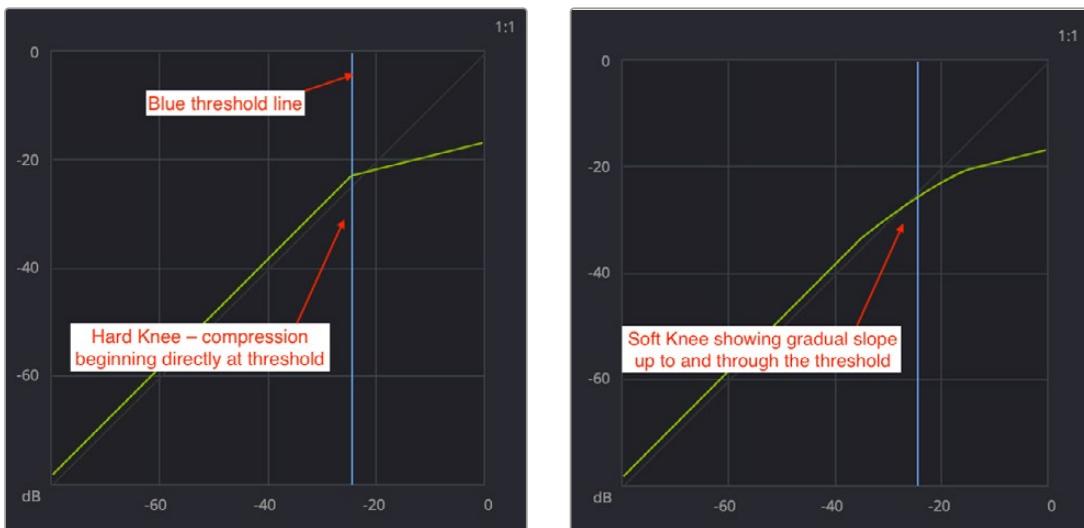
Compressor

The second set of dynamics parameters let you apply compression, which detects the envelope of an audio signal in order to automatically change its level. A compressor is used to compress a signal's dynamic range by reducing differences in level between the loudest and quietest parts of the input signal.

Compression can be used to raise the signal's overall level to be boosted without clipping, increasing perceived loudness. Compression is often used to allow voices to have more presence within a mix, and to smooth out changes in the levels of tracks with too much dynamic range for the task at hand.

However, "overcompressing" can remove natural dynamics of a sound, or remove too many of the natural transients (energy bursts or "attacks") that give the original sound its character. But more extreme compression can also be used creatively to change a sound's character to give it more perceived attack, change its release characteristic, or change the balance and blend of the environment a sound is recorded in (for example, compressing a source signal with a higher ratio and fast release to raise up the presence of a room sound that the source is recorded in).

- **Compressor:** Enables the Compressor.
- **Threshold:** Sets the signal level above which compression is applied. The default is -15 dB. The range is -50 to 0 dB.
- **Ratio:** Adjusts the compression ratio. This sets the gain reduction ratio (input to output) applied to signals which rise above the threshold level. The default is 2.0:1. The range is 1.0:1 to 10:1.
Commonly used ratios for dialogue processing are 2.5:1 to 3:1. With a 3:1 ratio, for every 3 dB of increase in signal above the threshold, 1 dB is output.
- **Knee:** Affects behavior with signals that are very near the threshold. The knee can smooth out the transition between where you don't hear any compression and when the "hard compression" (the set ratio) starts.
 - **The Knee:** Control allows a smoothing of the slope of the threshold point. You can see Knee's effect on the graph when using a ratio like 4:1 and adjusting Knee; the graph will show the line where compression "kicks in" being rounded off by higher values of the Knee control.
 - Normally, compression begins directly above the threshold. This is known as a "hard knee." For a smoother and less audible handling of compression, you can set a softer knee, so the compression turns on gradually as signals approach the threshold and rise above.



Hard and Soft Knee graphs

- **Mix:** Adjusts the mix between the compressed (0) and non-compressed input signal (100), allowing you to balance the compressed signal against the original, unaffected sound. For example, if you're creating a large explosion impact sound effect, it might sometimes be useful to mix in just a bit of the original, uncompressed signal with a more compressed version to preserve more of the original character along with compressed version. The default is 0 (all compression, no original signal).
- **Attack:** Adjusts how quickly the compression will occur when a signal exceeds the threshold. The default is 1.4 ms. The range is 0 to 100 ms.
- **Hold:** After the attack phase has been completed, the Hold parameter controls how long this initial attenuation is maintained, before entering the release phase. Defaults to 0 ms. The range is from 0 to 4000 ms.
- **Release:** Adjusts how quickly or gradually the sidechain detector stops applying compression when a signal falls back below the threshold. The default is 93 ms. The range is 50 to 4000 ms (4 seconds).
- **Send:** Enable Send when you want to use the audio levels of the currently selected track to attenuate those of another track using sidechain compression. For example, you can turn on the compressor and enable Send for all tracks with dialogue, in order to use those levels to attenuate the levels of another track containing music.
- **Listen:** Enable Listen when you want to use the audio levels of tracks that you set to Send to attenuate the levels of your currently selected track. If there are no tracks with Send enabled, then the current track is compressed as usual, using itself as the sidechain.

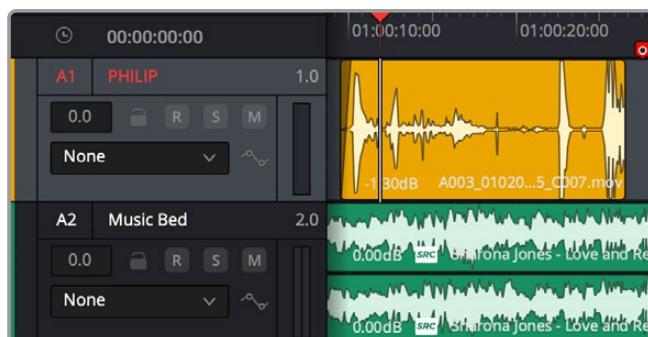
Sidechaining and “Ducking” with Dynamics

The built-in Dynamics module allows you to set up “sidechaining” compression. A “sidechain” refers to a control signal path that allows a source signal to be used to control the response of another processor, in most cases, dynamics processing. This is done by feeding the control signal into a special “side chain input” on the processor you want to affect.

NOTE: DaVinci Resolve presently supports sidechaining exclusively on the built-in dynamics processor.

To use sidechain compression to automatically “duck” music in the presence of dialogue on other tracks:

- 1 Edit dialogue into one track of the Timeline, and edit overlapping music into another track of the Timeline.



Choosing the track header in the Fairlight timeline to add dynamics

- 2 Click the track header or channel strip of a track with dialogue to select that track, and then double-click the Dynamics Indicator on the channel strip in the Mixer to open the Dynamics window.
- 3 Turn on the Send button to automatically send all levels from that track to the sidechain of a Compressor on another track (it's not necessary to turn on the Compressor for this). If you hover the pointer over the Send button, a tooltip will show you which tracks of the current timeline are set to Send. This enables your sidechain "feed."
- 4 If you have multiple tracks with dialogue, you can repeat steps 2-3 for each so that the output levels of all dialogue are sent to the sidechain.



Enabling sidechain Send in the Compressor of a track with dialogue

- 5 Next, click the track header or channel strip of a track with music to select that track. If you haven't closed the Dynamics window, the header will show you that the Dynamics controls are now those of the newly selected track.
- 6 Turn on Compressor, and then turn on the Listen button to connect the "Send" signals from any of the tracks you were feeding to the sidechain of the Compressor on this track. If you hover the pointer over the Listen button, a tooltip will show you which tracks of the current timeline are being received by Listen.
- 7 At this point, you need to lower the Threshold and raise the Ratio controls to the appropriate levels so that as dialogue is heard, the music is compressed in the way you'd like to hear it. You may also want to raise Hold a bit so this gain reduction doesn't fluctuate too wildly, and raise Release slightly so the volume adjustment doesn't end too abruptly.



Enabling side chain Listen on the Compressor assigned to a music track

If you've set up everything correctly, then during playback the Sidechain meter (upper right of the meter area) should show the levels of the dialogue tracks that have Send enabled, and the Gain Reduction meter should show you how much the level of the music track is being reduced when triggered by the dialogue being fed to the sidechain.

As a result, you should hear that whenever speech plays, the music volume is automatically lowered. Adjust Threshold and Ratio to set the amount of this gain reduction, and adjust Attack, Hold, and Release to adjust how quickly gain reduction responds to changes in the Sidechain level (as defined by the Send levels).

Limiter

The third set of dynamics parameters let you apply limiting, which imposes a targeted maximum level allowed for a signal. Limiting is similar to compression but essentially has a very high ratio.

- **Limiter:** Enables the Limiter.
 - **Threshold:** Sets the threshold above which limiting will occur. As the Limiter is designed to hard limit the output, this also essentially sets maximum allowable output level. The default is -21 dB. The range is from -50 to 0 dB. It's best to set the amount of limiting by listening, and looking at the amount of gain reduction in the meter. Too much limiting can "squash the life out of the sound" as all of the internal dynamics of a mix can be lost. Used properly, you can smooth out the final mix and achieve higher average level. You can also watch the yellow animated balls in the display to see how the real time limiting response is affected by the controls.
 - **Attack:** Adjusts the attack rate time constant of the sidechain detector. The default is 0.71 ms. The range is 0 to 100 ms.
 - **Hold:** Once the input level falls below the threshold, Hold keeps limiting active until the hold time has elapsed, when release time will start. Default is 0 ms. The range is from 0 to 4000 ms.
 - **Release:** Adjusts how quickly the sidechain detector stops applying limiting when the signal falls below the threshold. The default is 90 ms. The range is 50 to 4000 ms.

NOTE: When limiting is applied to the final output of your channel (or to an entire mix), you often will need to use the Makeup Gain slider to maximize the output level (if a master) or to match the original level of an individual track (unity). You can audition the difference in level by bypassing the Dynamics module overall, or the Limiter only.

EQ

Each Mixer channel strip has a EQ (equalizer) processor, with a mini EQ Indicator graph that appears on the channel strip and acts as the access button. Double-clicking the EQ Indicator brings up the EQ user interface.

The EQ is a 6-band equalizer with choice of high and low shelving, parametric or notch response curves, and high- and low-pass filters. It has both graphical and numeric controls for boosting or attenuating different ranges of frequencies of audio on each track.

The EQ also offers four different tailored response curves, from the native Fairlight response to emulations of the response characteristics of classic mixing with options for Earth (the default), Air, Ice, and Fire.

Each band has controls for the filter type (Bell, Lo-Shelf, Hi-Shelf, Notch), Frequency, Gain, and Q-factor (sharpness of the band), with the available controls for each band of EQ changing depending on the filter type.



The channel strip EQ window

When a channel strip's EQ is enabled, the EQ Indicator button displays the equalization curve that's being applied. This indicator cannot be adjusted; you must open the EQ window to make modifications. As with Dynamics, single-clicking on the EQ Indicator will bypass the EQ.



The channel strip's EQ Indicator,
(Left) EQ is adjusted, (Right) EQ is default (no EQ)

Master EQ Controls

The Equalizer window has the following overall controls:

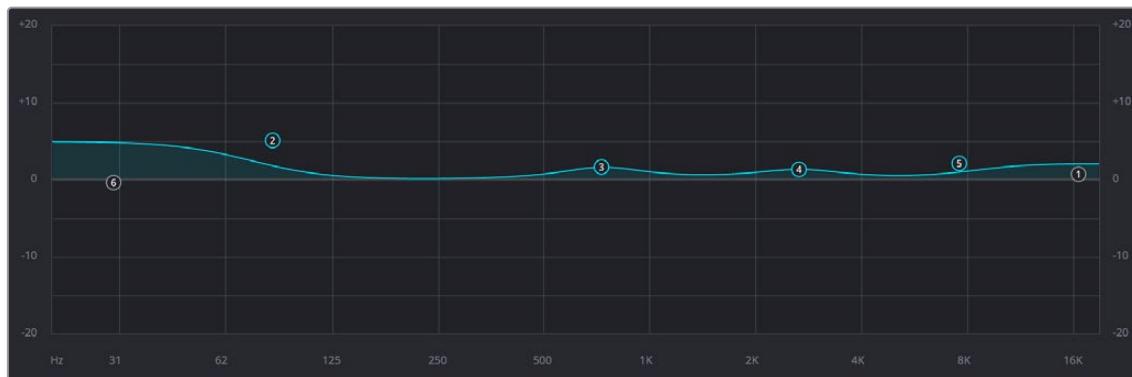
- **Enable button:** Turns the overall EQ effect off and on, without resetting the controls.
- **Reset button:** The circular reset icon on the upper right, next to the three dots Options menu, resets all controls of the EQ window to their defaults.
- **Equalizer Type:** Drop-down menu choices that allow you choose a response curve that can emulate EQ characteristics from several "classic" mixing consoles.

There are four options:

- **Earth:** (Default) Native Fairlight response
 - **Air:** Emulates the SSL 4K
 - **Ice:** Emulates the Neve V
 - **Fire:** Emulates the Focusrite
- **Preset Menu:** A drop-down menu that has several useful EQ presets available. You can create, change, and save presets, and use the default presets as starting points for your track's specific needs.
- **Gain fader:** A post-EQ level control that lets you boost or attenuate the signal to compensate for the EQ adjustment you're making raising or lowering the level. Keep in mind that this control presently affects the EQ graph.

The EQ Graph

A graph at the top of the EQ shows a curve with handles that correspond to each of the enabled EQ bands listed below. You can drag any numbered handle to boost or attenuate the range of frequencies governed by that band, using whatever type of equalization response that band has been set to.



The EQ graph with user-draggable handles

Dragging the numbered handles on this graph in turn modifies the parameters of the corresponding band, and conversely, changing each band's parameters will also alter the EQ graph, which serves the additional purpose of providing a graphical representation of the equalization curve being applied to that track. If you have a mouse wheel, it can be used to control Q.

Bands 1 and 6

The outer two sets of band controls allow access to high-pass and low-pass adjustments but can be switched to other response curves. They're off by default.



Band 1 controls

- **Band filter type:** Bands 1 and 6 can be switched among four specific filtering options for processing the lowest or highest frequencies in the signal. These include (from top to bottom): Low Shelf, Low Peak, High Shelf, High Pass for Band 1, and Low Pass, Low Shelf, High Peak, High Shelf for Band 6.
- **Frequency:** Adjusts the center frequency of the EQ adjustment
- **Gain:** Adjusts gain in dB, with a range of ±20 dB. Only available when bands are set to a peaking or shelving response curve.

Bands 2–5

The middle four sets of band controls let you make a wide variety of equalization adjustments. They're on by default, to make it easy to begin making adjustments.



Band 3 controls

- **Band enable button:** Clicking the band name turns each EQ band on and off.
- **Band filter type:** Bands 2–5 can be switched among four different filtering options (from top to bottom), Low Shelf, Peaking, Notch, and High Shelf.
- **Frequency:** Adjusts the center frequency of the EQ adjustment.
- **L, ML, MH, H Buttons:** Sets the EQ frequency to predetermined frequency ranges per band with Low, Medium Low, Medium High, and High settings.
- **Gain:** Adjusts gain in dB, with a range of ±20 dB. Only available when bands are set to a peaking or shelving response curve.
- **Q Factor:** Adjusts Q (bandwidth). Range of .3 to 10.3. Smaller numbers reflect wider bandwidth and higher numbers are narrower bandwidth. Q is only available when a band is set to a peaking response, or on the Fire Type for shelving, and will control the overall shape of the boost or cut. The Equalizer Types choices in the drop-down menu alter the Q to emulate the chosen console type.

Bus Sends

Bus Sends let you route a channel strip's source signals to a bus destination, with control over level, pan, mute, and pre/post fader routing. You can create bus sends on channels that go to any bus destination you've created.

Some common mixing tasks that sends can be useful for:

- **Submixing:** For example, to render separate mixed outputs that are different formats, such as stereo, 5.1 surround, or Atmos, all at the same time.
- **Feeding signals to a shared effect:** For example, route to a reverb plugin, where post fader sends on various mixer channels feed a reverb placed on a bus channel strip by varying amounts.
- **Headphone cue mixes:** Create separate, pre fader mixes for the talent so you don't disturb what you're listening to on your main monitor speakers.

Creating Sends

To create a Bus Send and access its controls:

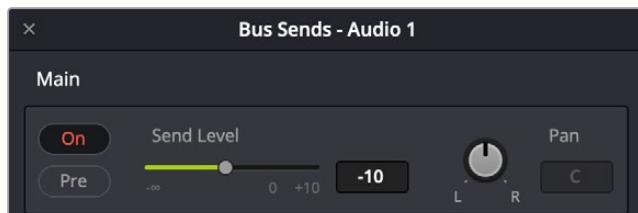
- Click on the assign button with the plus sign (+) in the Bus Sends area of the Mixer.
- A drop-down menu appears with a list of busses; select one to assign.
- Your send is now created.

You can hover over the rectangular name button and access a disable/bypass button, an access icon to show the Bus Send window for the channel, and an "x" to delete the send. A tooltip appears showing the send bus name.



Accessing the Bus Sends Window

You can access the Bus Sends window to control a channel's sends by clicking in the center of the name button.



Bus Send window controls

Each Bus Send you create exposes the following controls in the Bus Send window:

- **On:** Turns the send on or off.
- **Pre:** Switches the send to use pre- or post-fader routing. Enabling this button allows that track to send levels to the destination bus before level adjustments on that track are applied.
- **Send Level:** Adjusts the amount of signal sent from the selected feed to the send bus. The range is OFF to +10dB.
- **Pan:** Provides panning across Bus Send destinations.

Uses for Pre- fader Routing

One common use of pre-fader sends is for cue mixes to ADR or voice over talent, where the artist wants to hear a completely different mix than the control room mix. Using pre-fader sends and setting up a complete mix to a bus that feeds the headphone system allows a mix that is completely independent.

Pre-fader sends can also be used for special creative effects that might involve a dialogue channel being sent to a reverb plugin via a send. If the send is routed pre-fader, when the main channel fader is lowered to close to zero, the dialogue is still being fed to the reverb, so the dialogue will sound extremely reverberant (almost all of the signal is “wet”). Gradually raising the channel fader will make it sound like the voice is moving closer to the listener, changing the reverb balance and sounding more present.

Bus send levels are shown in the rectangles for each send and have the color codes assigned to the destination busses.



Bus Send
levels shown
on the Mixer
channel strip

Legacy Bus Sends – “Auxiliaries”

Prior to DaVinci Resolve 17, the Bus Send panel was called Auxiliaries. Any projects created prior to DaVinci Resolve 17 will use the legacy Fixed Busing. The only difference between the two is the use of “Aux” to refer to sends in the windows and titles.

Pan

The Mixer provides access to two kinds of pan controls, depending on whether you're doing stereo and surround or 3D positioning in your mix.

The Stereo and Surround Pan Controls

When working with stereo or surround, a mini Pan Indicator appears on the channel strip that includes visualization and control of both left/right and front/back panning:

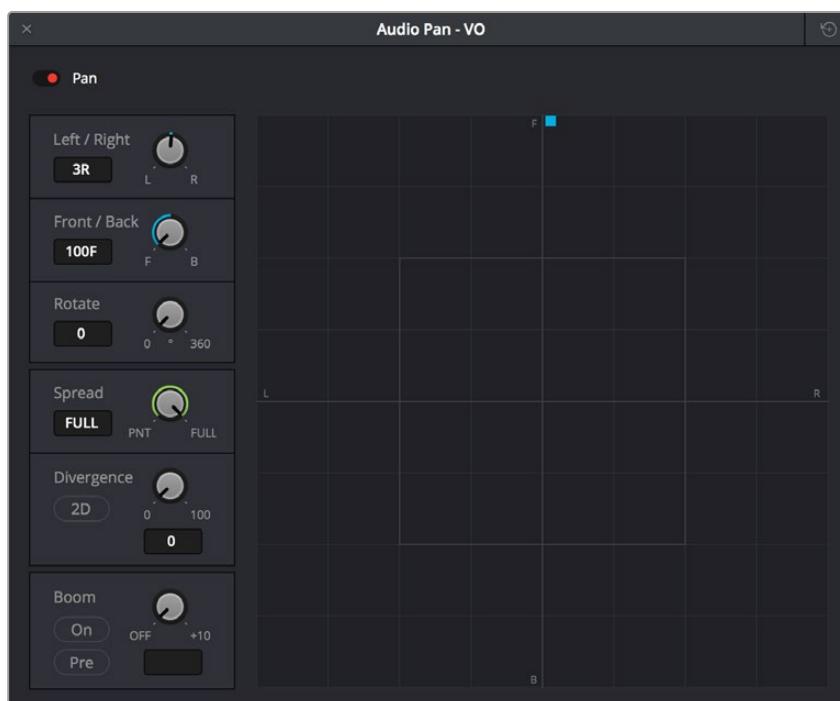
- Click and drag within the Pan Indicator to adjust the basic panning position.
- Single click to bypass panning.
- Command-drag to adjust width.
- Double-click to expose a large, floating Pan window with additional controls.
- With surround, Boom level is displayed as a horizontal blue line at the bottom of the Pan Indicator.



The channel
strip's Pan
Indicator on a
stereo track

The Pan Window

The Pan window's control set depends on the mapping of the source audio track; both stereo and surround panning controls are available with corresponding numeric controls. You can either adjust panning directly within the Pan window's control graphic, or adjust specific panner characteristics using the controls to the left.



The Pan control window

The Audio Pan window contains the following controls:

- **Left/Right:** Changes the balance of signal between the left and right side speakers you're outputting to, depending on the speaker format you're mixing to. Accommodates stereo output and larger front formats.
- **Front/Back:** Changes the balance of signal between the front and back sets of speakers you're outputting to, depending on what surround format you're mixing to.
- **Rotate:** Simultaneously adjusts the left/right and front/back pan controls in order to rotate a surround mix about the centre of the room.
- **Spread:** Adjusts the left/right spread between the speakers, with a numeric scale of 1-99, where 99 is labeled FULL and 1 is labeled PNT ("Point"). Reducing spread gradually moves the overall left/right positions more towards the center, until the signal is only center and has no left/right component (PNT).
- **Divergence:** Spreads or bleeds the signal for an individual feed across more of the adjacent loudspeakers, allowing the sound to be more broadly present in the sound field, with less focus toward a single speaker position.
- **Boom:** The send level to the LFE part of the mix (the Low Frequency Extension subwoofer system).
 - **On:** Enables the Boom output.
 - **Pre:** Routes the LFE signal pre fader.
 - **Only:** A special hidden LFE routing mode that allows the panner to output an LFE signal only from the channel. To enable, option-click the Pre button.



Boom with Only mode enabled

TIP: To constrain left/right position as you adjust panning, hold down the Shift key. Within the large Panner window, you can reset any rotary control to its default value by double-clicking on it..

The 3D Audio Pan Controls

The regular Pan window is for stereo and conventional 5.1 and 7.1 surround panning, but DaVinci Resolve also supports a 3D Audio Pan window lets you do the kind of spatial audio positioning enabled by advanced surround formats such as Atmos, Auro 3D, and NHK 22.2.

Option-double-clicking on the Pan control of the Mixer opens the 3D Audio Pan window.



The 3D Pan window

The 3D Audio Pan window has a few more controls than the ordinary Pan window:

- **Pan enable:** Toggles the entire panning effect on and off.
- **Panner viewer:** A large 3D representation of the listener's perceived sound stage, with a blue sphere that represents the position of the track's audio being positioned within that space, which casts a shadow straight down on the floor and projects a blue box on the four walls of this space to indicate its position more concretely.
- **Front panner:** A 2D panning control that represents the horizontal left/right axis and the vertical up/down axis, letting you make these specific spatial adjustments.
- **Side panner:** A 2D panning control that represents the horizontal front/back axis and the vertical up/down axis, letting you make these specific spatial adjustments.
- **Top panner:** A 2D panning control that represents the horizontal left/right axis and the vertical front/back axis, letting you make these specific spatial adjustments.
- **Left/Right:** A 1D knob that changes the balance of signal between the left- and right-side speakers you're outputting to, depending on what speaker format you're mixing to.
- **Front/Back:** A 1D knob that changes the balance of signal between the front and back sets of speakers you're outputting to, depending on what speaker format you're mixing to.
- **Rotate:** A 1D knob that simultaneously adjusts the left/right and front/back pan controls in order to horizontally rotate a surround mix about the center of the room.
- **Tilt:** A 1D knob that simultaneously adjusts the left/right and up/down pan controls in order to vertically rotate a surround mix about the center of the room.
- **Spread:** Adjusts the left/right spread between the speakers, with a numeric scale of 1-99, where 99 is labeled FULL and 1 is labeled PNT ("Point"). Reducing spread gradually moves the overall left/right positions more towards the center, until the signal is only center and has no left/right component (PNT).

- **Divergence:** Spreads or bleeds the signal for an individual feed across more of the adjacent loudspeakers, allowing the sound to be more broadly present in the sound field, with less focus towards a single speaker position. A 2D button lets you set how this is done. With the 2D button turned off, divergence creates a one-dimensional bleed between the left/right planes only. With the 2D button turned on, divergence creates a two-dimensional bleed between both the left/right and front/back planes of sound.
- **Boom:** The send level to the LFE part of the mix (the Low Frequency Extension subwoofer system).
 - **On:** Enables the Boom output.
 - **Pre:** Routes the LFE signal pre fader.
 - **Only:** Allows the panner to output an LFE signal only from the channel.

Bus Assignment Buttons

To route a bus created in the Bus Assignment dialog directly on the Mixer, click the + sign to see a drop-down menu of all available busses.



The Bus Outputs panel is where you can route bus signals.

Legacy Mixer Bus Assignment

In the Legacy Mixer the bus assignments have two sets of buttons let you route audio from one channel strip's output to Sub and Main buses that you've set up for your mix.



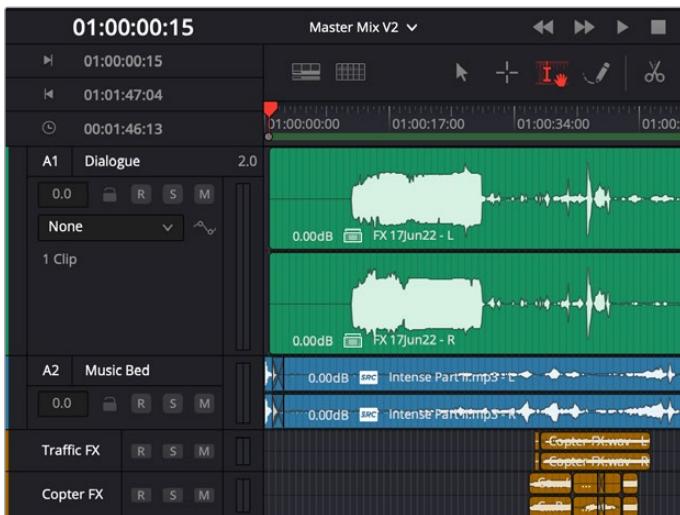
The channel strip's Bus Assignment buttons

- **Main:** These buttons let you assign a track or sub's channels to one or more of the main busses.
- **Submix:** These buttons let you assign that track's channels to one or more submix busses.

Nested Audio Timelines

Edited timelines can be combined with other timelines by dragging the desired nested timeline onto an empty track in the destination timeline. This is a very powerful and useful feature. For general information about nested timelines, see *Chapter 42, “Take Selectors, Compound Clips, and Nested Timelines.”*

For example, you might have created a master timeline that will contain your master mix, and you'd like to bring the work done on a separate timeline that is focused on dialogue editing. The dialogue timeline could now appear as a single nested timeline, represented as single track in the master mixing timeline.

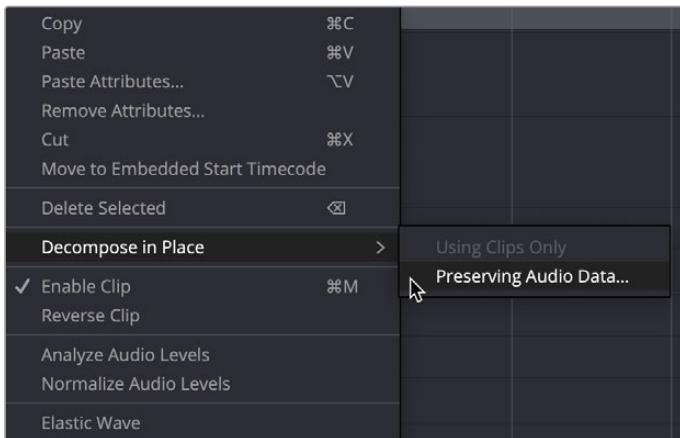


Track A1, Dialogue, is a stereo representation of an edited timeline

If you want to work with the individual tracks and clips again, you can use a process called decompose to change that single nested timeline track back to the edited sequence. There are a number of options to decompose to the original set of tracks, with several bussing options available.

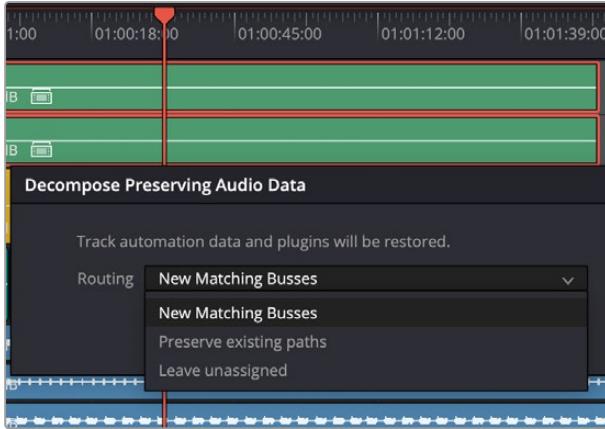
This image shows what was a separate, edited timeline of tracks of dialogue and is now a single track, A1 Dialogue, brought into the destination master mix timeline. By right-clicking the clip, a contextual menu allows you to decompose the track in place, back into its original set of tracks and clip edits.

There are two decompose options for this. On the Fairlight page, you can Preserve Audio Data, and when on the Edit page, you can Preserve Audio Data as well as decompose by Using Clips Only.



Decompose in Place contextual menu

Once you've chosen to decompose the track into its prior Timeline elements, then the Decompose Preserving Audio Data dialog box appears, making several more options available.



Options for signal routing when decomposing a clip

There are three options when choosing to decompose a nested timeline in the Fairlight page. All three options preserve mix and plugin automation on the source tracks; they only differ in terms of routing. The choices are:

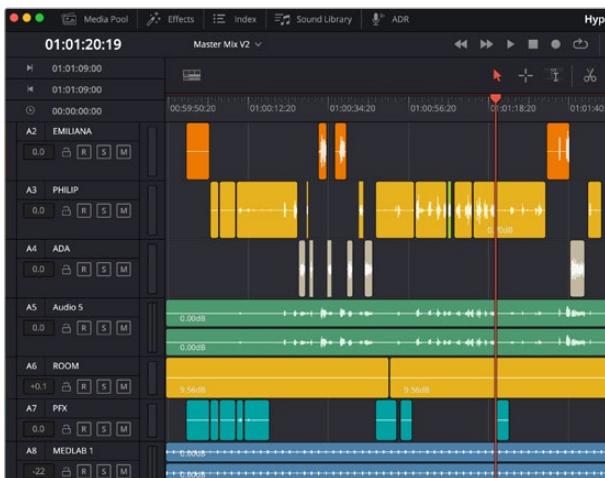
- **New Matching Busses:** All of the busses from the nested source timeline are brought into the current timeline as separate, new busses. These busses will have all of the processing, routings, settings, and automation carried over from the nested source timeline. Any preexisting bus routing in the destination timeline is left unaltered.

This option is best when you want combine different mix layouts and to preserve all preexisting bus routing in the destination timeline, while adding the bus topology from the nested source timeline to the destination to create a single, larger entity.

- **Preserve Existing Paths:** This option preserves all of the master bus information in the current timeline and routes matching busses from the decomposed nested timeline to preexisting, identical busses in the destination timeline.

This option is best when the nested source timeline and the destination timeline share the same bus routing structure, as might be the case of a common layout template. In this case, you just want to add the tracks to the destination timeline and route them to the same designations in the master. You still get all of your mix automation and plugins carried across as well.

- **Leave Unassigned:** This option leaves the new tracks unassigned when created, ready to be routed in whatever way you need.



Decomposed version of the nested dialogue timeline showing the original dialogue tracks and edits

Nested audio timelines can be very useful when managing large projects with many tracks and sophisticated routing. Multiple editors can be working on various aspects at one time. For instance, a dialogue editor could be doing the dialogue and ADR in one timeline, an effects editor can be designing and spotting effects in another timeline, a music editor can be cutting and spotting music in another timeline, all separately. Then these interim timelines can be imported later to a master timeline for a final main mix.

This is also useful for picture editors who don't want to have to deal with many tracks of audio when cutting picture. When working in the Edit page, when a track sequence is decomposed, it can also revert back to the original track layout with all of the audio clips ready to be further edited.

VCA Faders

A VCA fader is used to control the level of multiple tracks with a single control. You can assign multiple faders to a dedicated VCA, and a VCA channel strip then appears at the right of the Mixer. VCAs let you simultaneously adjust the underlying level of multiple faders using one VCA master fader and can be helpful in managing the levels of complex collections of audio tracks.



The controls for doing this are found in the VCA and Group label area of each mixer channel strip, which shows which VCA or Track Group each fader has been assigned to.

Group Labels in each control strip, above the control strip label

Making Fader VCA Assignments

You can assign any channel strip to one of 64 VCAs by right-clicking the VCA label area and choosing a VCA from the drop-down that appears. If a fader is already assigned to a VCA, you can choose "No VCA" to remove it.

NOTE: To reduce unneeded clutter, the VCA Assignment drop-down menu will only display 10 VCAs initially; others are added as needed. If the first 10 have all been assigned, the menu display will add VCAs from the available pool, one at a time.



TIP: You can use the “Do To All Selected” keyboard shortcut to save time in assigning a VCA to a group of channels with a single click. Select the channel strips that you want to assign your VCA to, hold down the option key, then choose the target VCA number from the list. Done!

Right-clicking a VCA Label reveals a drop-down menu that lets you assign faders to or remove faders from that VCA.

Using VCA Faders

Once you’ve assigned multiple faders to a VCA, a dedicated channel strip for that VCA appears at the right side of the Mixer. Making adjustments to the VCA channel strip simultaneously controls all the faders, solo buttons, and mute buttons of all channel strips that are members of that group, as seen below.



Adjusting the VCA 1 fader also adjusts the SYNC, VO, and Drum Hit faders that are assigned to that VCA.

When controlling faders belonging to a VCA, you can still move each individual channel strip fader independently to make relative adjustments.

- Channel strip faders only move together when you adjust the VCA fader.
- While the VCA fader is being moved, each individual fader’s relative offset from other faders controlled by the VCA is maintained.

For example, as seen in the screenshot above, the VCA 1 fader is moving the faders in tracks SYNC, VO, and Drum Hit, while each individual channel strip fader in this group maintains its offset from the others.

Recording Fader Automation for VCAs

You can record automation data to a VCA fader, and all faders in that VCA group will follow even though they're not actually automated themselves. This makes it easy to record complex automation involving multiple faders when you still might want the freedom to finely adjust each individual fader later on.

Nesting VCAs

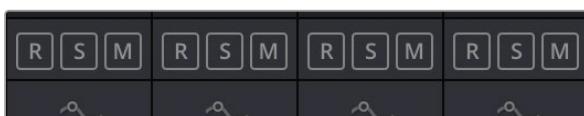
VCAs can also be "nested," where one or more VCAs can be controlled by yet another VCA.

To nest a VCA, simply assign the VCAs you want have controlled to yet another "master" VCA.

Arm, Solo, and Mute Buttons

These controls are identical to the controls found on the track header of each timeline audio track.

- **Record Arm:** Enables a track for recording when the Record button on the transport is engaged (highlights red when enabled).
- **Solo:** Lets you mute all other tracks in order to play a track you need to focus on in isolation (highlights green when enabled).
 - If Solo is enabled for multiple tracks, all soloed tracks will play, and all non-soloed tracks will be muted.
 - Solo status affects rendering, so if one or more tracks are soloed, the muted tracks won't be output or rendered.
- **Solo Safe:** Command-Shift-click a Solo button to put it into Solo Safe mode (highlights blue when enabled).
 - Channel strips set to Solo Safe always play even if Solo is enabled for other tracks.
 - Solo Safe can be useful for effect returns busses with effects like reverb where you may want to hear the reverb when tracks feeding it are soloed.
- **Mute:** Turning on Mute disables audio playback from that track (highlights orange when enabled). This affects rendering, so if one or more tracks are muted, they won't be output or rendered.



The channel strip's Arm, Solo, and Mute buttons

TIP: You can click a button and drag across multiple channel strips to turn that button on or off for multiple tracks easily.

Fader Controls

Each track's vertical fader lets you control the level that's output by that track, either by using your mouse, or using a physical fader of your Fairlight console or third party control surface. If you're working with a console, then the onscreen faders serve as a visual reference of what levels are set.



- **dB Indicator:** Numerical at the top of the track indicates the volume, in decibels, that track is currently set to.
- **Fader:** Each track's vertical fader can be dragged with your mouse or other pointing device to adjust the volume of that track and perform automation recording. Dragging up increases volume, dragging down decreases volume. Fader handles turn red while you record level automation, and they turn green when automation has been recorded for that track.

Methods of adjusting channel faders:

- **To change level:** Click and drag any fader up or down.
- **To reset the level to default level of 0 dB:** Double-click a fader's handle. This does not work after you've recorded automation for a track, unless you erase the automation first.

The fader area

Metering Options

DaVinci Resolve has a variety of metering options that allow you to tailor metering to your workflow. The settings appear in Project Preferences > Fairlight on the Audio Metering pane, but they affect mixer, Fairlight effects, or master metering on the Cut and Edit pages.

Level Metering Options

You can chose the response characteristic of the level meters for channel strips and Fairlight FX.

The Meter Type drop-down allows you to choose between IEC 60268-18, Digital VU, and Custom response characteristics. Both meter types have separate "hold and fall" metering, allowing you to see the highest peak that is reached.

- **IEC 60268-18:** A digital PPM-type meter with reference standard of -18 dBFS, a fast response to peaks, and a slower release characteristic. This is the default in DaVinci Resolve and is used in all Blackmagic Design software and hardware products.
- **Digital VU:** A dual-value meter, showing the peak level as a single segment with fast ballistics, and the RMS (volume unit) as a bar graph. It has a far faster quasi linear decay characteristic, making it easy to monitor average levels while allowing sounds with quick transients and decays to be more easily tracked. This option can be best for audio editing and mixing.
- **Custom:** Allows each aspect of the meter response to be chosen, including level detector, scale, peak, deck, and peak indication.

Pre-fader Metering

By default, “Pre fader metering on tracks” is unchecked (disabled), setting the metering on channel strips to be post (after) the fader level and mute button. For example, if the source audio file has peaks that are hitting -2 dBFS, and the channel fader is lowered from 0 to -10, then the peaks that show on the meter will now be at -12.

When pre-fader metering is on, the metering point is set to be before the fader, and is not affected by the fader’s position. However, the meter is affected by clip gain settings or key framing as these level changes occur before the clip’s signal enters the mixer’s signal path.

With pre-fader metering, you could lower the fader to be fully off (minus infinity) and the meter will still read the level of the source signal. This allows you to always be aware of the source signal and what it is doing before being altered by mixer’s controls or processing.

Many video editors prefer to work with post-fader metering, but most audio mixers prefer to work with pre-fader in order to be aware of what the actual source level is at any time.

Solo and Pre-fader Metering

When pre-fader metering is enabled, soloing one or more tracks will show a lighter “ghost” version of meter activity on non-soloed tracks, allowing you to always see audio levels on tracks that are muted by the soloing process. This makes it easy to focus on tracks that are actually audible while still seeing activity on those that are not.

If pre-fader metering is off (the default), when one or more tracks are soloed, no metering occurs on tracks unsoloed tracks.



Pre-fader metering with light shaded meters on non-soloed tracks

Target Loudness Level

Allows the target loudness level in LUFS for the master Loudness meters to be set to your desired output target level. For example, DaVinci Resolve's default loudness standard target is -23 LUFS, but the YouTube target LUFS specification is -14 LUFS. If -14 LUFS is set, the "0" mark on the loudness meter scale moves to this level, allowing you to focus your master mix levels towards that loudness standard.

Bouncing Audio

Bouncing audio refers to mixing and rendering audio from one or more Timeline tracks onto another track of the Timeline, in the process "baking in" processor intensive effects and complicated or intricate audio edits to create a new continuous piece of audio media. The bounced file is written to the directory location specified by the Project Settings > Capture and Playback panel > "Save clips to" field.

There are two commands available for bouncing audio on the Fairlight page:

- Timeline > Bounce Selected Tracks to New Layer
- Timeline > Bounce Mix to Track

To use Bounce Selected Tracks to New Layer:

- 1 Set In and Out points to define the range of the Timeline you want to bounce. If you don't do this, nothing will happen.
- 2 Command-click the track headers or mixer channel strips of all tracks you want to bounce in order to select them.
- 3 Choose Timeline > Bounce Selected Tracks to New Layer.

The audio on each track is processed and rendered and appears as the top layer of audio on that track. While View > Show Audio Track Layers is turned off, it will appear as if the new bounced audio is the only clip on that track. However, the original audio (with any unrendered clip-based effects) is still available as the bottom of the stack of layered audio on that track; turning on View > Show Audio Track Layers will reveal this.

The bounced audio is a new audio media file that's written to the directory location specified by the Project Settings > Capture and Playback panel > "Save clips to" field.

To use Bounce Mix to Track:

- 1 Choose Timeline > Bounce Mix to Track. The Bounce Mix to Track window appears, showing all busses that are currently available.
- 2 In the Destination Track column, set which mixes you want to bounce by choosing either New Track, or choosing a specific existing track from the drop-down menus.
- 3 Click OK.

The specified mix is processed, mixed, and bounced to the specified track as a new piece of audio. This creates new audio media that's written to the directory location specified by the Project Settings > Capture and Playback panel > "Save clips to" field.

TIP: There's also a Bounce Audio Effects command in the contextual menu of audio clips in the Timeline that have clip-based audio effects applied to them. For more information, see *Chapter 176, "Audio Effects."*

For more information on exporting clips, ranges, and files, see *Chapter 171, "Editing Basics in the Fairlight Page."*

Third-Party Control Panel Support for Mixing

DaVinci Resolve supports HUI- and MCU-compatible third-party mixing control panels with up to eight faders, such as the Mackie MCU Pro Control Surface, connected via USB MIDI, and selectable in the Control Panels panel of the Resolve System Preferences. Supported basic panel controls that correspond to Fairlight features at the time of this writing include the following.

Transport controls including:

- Rewind (REW)
- Fast Forward (FF)
- Stop (double-press the Stop button for Home in the Timeline)
- Play (double-press the Play button to "play again")
- Record (press Record+Play to begin recording if one or more tracks is record-enabled)
- Jog control (Press SCRUB and rotate the jog wheel)

Channel Strip controls including:

- Rotary controls for panning, with Rotary Value display and Rotary touch
- Alphanumeric Track Name display
- Record button to record-enable tracks (only works if an input is patched to a track input)
- Solo, with a double-press selecting or de-selecting that track
- Mute
- Select to select the track corresponding to that channel strip
- Fader control and optional Level display
- Channel and Fader Bank buttons to move left and right among banks of channel strips
- Double-press the Fader Bank Left button to move the playhead Home in the mixer (track 1)
- Double-press the Fader Bank Right to move to the Master channel strips

Marker buttons:

- Marker to add a marker
- Pressing the Marker+Stop buttons sets Home
- Pressing the Marker+FF/REW buttons jumps the playhead forward or backward

Additional supported controls for control panels that have them include:

- Master Solo clear/restore
- Undo (pressing the Undo+Option buttons does Redo)
- Arrows to move the selection
- Zoom horizontal and vertical controls
- Audio Tracks, to turn Automation On/Off
- Write/Trim/Touch/Latch switches
- Nudge controls
- Cut, Copy, and Paste

Monitoring controls include:

- Level control
- Dim
- Mute
- Alt Speaker

For more information on third-party mixing control panel support, see the Blackmagic Support site at <https://www.blackmagicdesign.com/support/family/davinci-resolve-and-fusion>.

Chapter 174

Mix Automation

The Fairlight page provides straightforward, flexible, and powerful automation capabilities for audio mixing. Automation data can be created graphically by drawing automation changes, or by recording the movement of on screen mixer or effects controls, using the mouse or a Fairlight control surface with physical controls. Once recorded, mix parameter automation for any control type—faders or sends, panning, or effects—can be played back in perfect sync with the audio on the timeline.

The Fairlight page is designed to allow the operator to automate every static and dynamic parameter change you make in the process of balancing the mix of tracks in the timeline. Mixer automation can be drawn graphically or recorded for one or multiple parameters or channels at a time. More adjustments may be added with each automation recording pass, letting you build complex and detailed mixes that can be frame-accurately replayed at will.

This chapter covers automation mixing using the combined controls of the onscreen mixer and timeline. For more information on basic mixing operations, see *Chapter 173, “Mixing in the Fairlight Page.”*

Contents

Creating Mix Automation	3716
Drawing Automation	3716
Recording Automation	3716
What Can Be Automated	3717
Why Use Track Automation?	3717
Drawing Mix Automation	3717
Enabling and Viewing Automation	3717
Editing Mix Automation Curves	3720
Using Edit Operations	3720
Adjusting the Automation Line	3721
Recording Mix Automation	3723
Automation Controls	3723

How to Record Automation	3724
Recording Automation for Multiple Tracks	3724
Recording Automation for Specific Individual Tracks	3725
Automation Preview Mode	3726
Automation Active Range	3727
Viewing Automation in the Timeline	3728
Overwriting Automation	3728
Automation Follows Edit	3729
Editing Automation	3729
Adjusting and Deleting Automation Keyframes	3730
Fairlight > Automation Controls	3731
Automation – Copy/Paste/Erase	3731
Automation – Mix List	3732
Playing Automation	3734

Creating Mix Automation

The Fairlight page has a comprehensive toolset for creating and editing mix automation data. You can either *draw* automation data or *record mix* changes, “performing” those changes by moving on-screen controls. Either method can produce the same seamless results. The underlying data is the same whether you draw in automation or record movements of controls; you can choose which method best suits your workflow or the task at hand.

Drawing Automation

If you’re a video editor or audio creative, in many contexts, drawing mix automation data may be simpler and more straightforward when you’re making static level changes or ramped level or switched changes to controls (like mutes), especially if don’t have the benefits of working with a Fairlight hardware control surface and are using a mouse.

For example, you could select over a timeline range and mute several tracks at once, “carve out” fixed level boosts or drops on tracks exactly where you want them to take place to picture, or slowly increase the strength of a reverb effect applied to foley footsteps as a character walks into a long, dark cavern, all without having to play through the material to finesse a real time “performance” of your changes as you would if you were recording automation.

When drawing, you don’t need to pay attention to the various Fairlight automation recording modes or control enable/disables for whatever automation parameter type you want to create or edit; you can just draw or adjust automaton data in the appropriate “lane” right on the Timeline.

Recording Automation

You can also record mix automation by recording changes you make to onscreen controls and/or Fairlight console controls in real time as the Timeline plays. Afterwards, your “performance” can

be accurately played back with extreme accuracy. Recording automation has real advantages over drawing as you're able to perform the changes you want to hear against picture as actions occur, which can make the process intuitive and fast.

In this way, you can create a dynamic mix where different audio level, pan, and EQ, dynamics, and other audio processing settings change over time to fade music up or down against effects or dialogue, pan the sound effect of a car driving by from one speaker position to another, or gradually increase the strength of that reverb effect as your character walks into that long, dark cavern.

While the recording of keyframe automation is most commonly associated with either the onscreen mixer or the Fairlight console, you can also record automation using controls found in the Inspector, or using the controls of the Pan, EQ, and Dynamics plugin effects, thereby enabling you to record automation for the various audio effects that you've applied to a track.

What Can Be Automated

Automation can be recorded for nearly every control in the Mixer for channel strips corresponding to individual tracks, track groups, or busses, including fader, sends, mute, and panning. Additionally, you can record automation for controls found in audio plugins that you use in your mix.

Why Use Track Automation?

If you're a video editor, you may be more familiar with using clip-based automation to make changes to your audio mix, but this approach has limitations. Sometimes there are global changes you may want to make to a track over the Timeline, or want to adjust groups of tracks at once (see *Chapter 175, "Track Groups."*).

And when working with time-based effects like reverb or a repeating delay, you may want to adjust the level of "trails" on these effects dynamically as the track evolves. For example, you may have a situation where a scene changes perspective from a larger space to a smaller one, and the room ambience or tonal quality of the dialogue needs to change immediately or over time characters move through the scene.

This is where track automation techniques (whether drawing or recording the movement of controls) can be powerful and creatively inspiring.

Drawing Mix Automation

Automator can be drawn in the Timeline for any parameter by globally enabling automation recording and playback, viewing a parameter to be automated, then drawing the automation in the Timeline.

Enabling and Viewing Automation

The Toggle Automation button, to the right of the transport controls, turns automation recording and playback on and off. It must be enabled to draw or record track-based automation and to see busses on the Timeline.

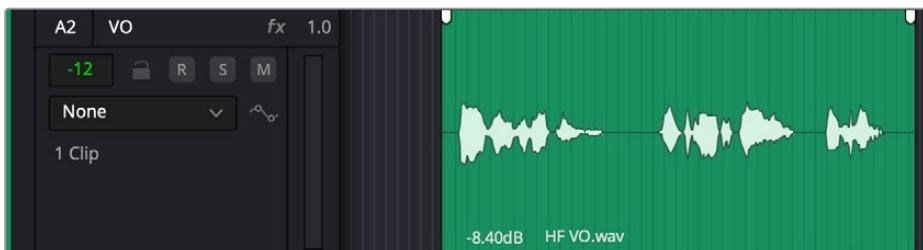


The Automation
Enable button

Automation View

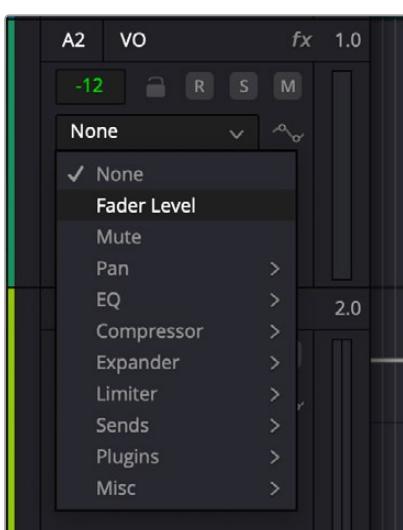
Audio tracks normally display an arrangement of clips on the Timeline (“Clips View”). In Clips View, clips can be placed or edited, and clip gain for individual clips can be adjusted (See Chapter 172, “*Audio Clip Specific Inspector Adjustments.*”). Effects can also be added to clips, which can be managed in the Inspector.

Tracks can also show an Automation View, which appears when the automation button is enabled. When active, a drop-down menu appears under the track controls in the track header. By default, the menu will display “None,” indicating you are working with clips only; no automation data will appear.



Fairlight Automation View showing “None”

Clicking on the drop-down menu allows you to choose an automation parameter to view or edit. Choices are included for all parameters that can be controlled on a track, including fader, sends, pan, mute, and built-in dynamics and EQ as well as AU or VST plugin effects.



Fairlight Automation View menu choices

Once a parameter is chosen, the automation view changes so that the focus is on editing track automation data rather than manipulating clips. The clips darken and the automation data line is shown in light gray. When automation is drawn or recorded for the parameter, the line will change to bright green.

NOTE: When in Automation View you can still move and trim clips, but cut/copy/paste and delete operate on automation keyframe data only. When in Automation View, timeline-based clip gain keyframe adjustment is not available, but overall clip gain can still be adjusted using Volume slider in the Audio tab of the Inspector.

Vector-based Automation

Audio keyframe automation is vector-based, so levels will smoothly ramp between any 2 points on the Timeline based on the direction of the change in control value and the time between the points.

For example, if you have a single keyframe setting fader level to 0 dB that occurs at 01:00:20:00 on the timeline, and then add a point at 01:00:28:00 at -10.5 dB, the level will change smoothly between 0 dB and -10 dB over the 8 seconds between the 2 points.

This allows you to draw individual keyframes to quickly construct different transition shapes, such as fade ins or outs, with just a few points, or adjust them up or down by specific amounts quickly and easily.

Creating Curves

Keep in mind that audio automation keyframes are not Bezier keyframes, so they only let you create a single level adjustment at that point in time. If you make a large adjustment with only a single new keyframe, you can end up with an abrupt level change, or level changes that don't have a curve you may want (exponential changes can be particularly useful on fade ins or outs to get a natural result). You can create convex or concave shapes when drawing by adding just a few keyframes to create your curve, or you can perform the change exactly as you want by recording the automation (see "Recording Mix Automation" later in this chapter).



A fade out transition with 5 keyframes
for an exponential shape

Track Automation Line

Audio automation on a track is represented by a line that extends over length of the Timeline, called the automation line, or "curve." The level of the line can be changed by dragging, entering keyframes one at a time, or using the Pencil tool to draw a series of keyframes.



Automation line for fader level showing multiple keyframes

Sample Accuracy: Audio keyframes allow creation of precisely placed parameter changes on timeline tracks. On the Fairlight page, audio keyframes are sample accurate, meaning they can be placed at any sample location with sub-millisecond precision, allowing more precision than keyframe handling on the Cut and Edit pages. However, sample-accurate audio automation data created on the Fairlight page can be accurately played back on the other pages.

Sample accuracy is important when working to picture as the location of audio events often does not fall on exact frame or sub-frame boundaries.

Working with Audio Keyframes on the Timeline

To draw automated changes to any audio control:

- Enable the Automation button to see Automation View on all audio tracks.
- On the track(s) where you want to create automation, choose the parameter you wish to automate in the Automation type drop-down menu in the track header.
- Using Focus Mode's Multi tool allows you to draw automation using the up/down arrow cursor (to adjust an overall curve), enter or delete keyframes one at a time using modifier keys, create different curves depending on individual keyframe position, select and delete a range of keyframes, and more.

Adding and Deleting Individual Keyframes

Managing keyframes on the automation line is nearly identical to working with clip gain, for more information see *Chapter 172, "Audio Clip Specific Inspector Adjustments."*

To add a keyframe:

- Hold down the option key and a plus sign appears. Click to place a keyframe on the automation line.

To remove a keyframe:

- Hold down Command-option and a minus sign appears. Click on keyframe to delete it.

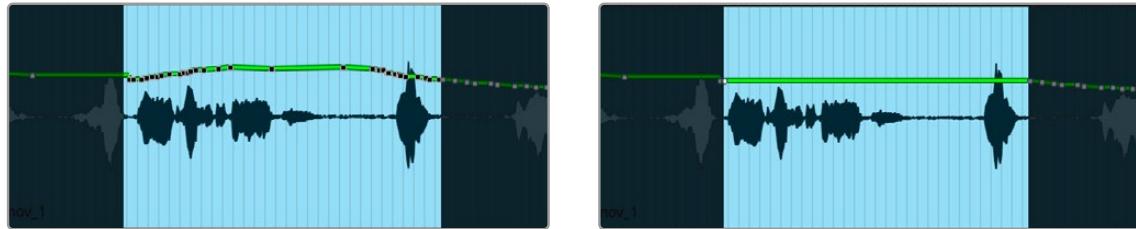
TIP: You can quickly flip between Clips View and Automation View using the keyboard shortcut F4. This can be changed by using the DaVinci Resolve > Customization dialog.

Editing Mix Automation Curves

Using Edit Operations

Normal editing operations such as cut, copy, paste, delete, and nudge can all be used on automation keyframe data. When automation data is cut or deleted, the value at either end of the selection is preserved.

Nudging can be very useful when fine-tuning the location of automation events.

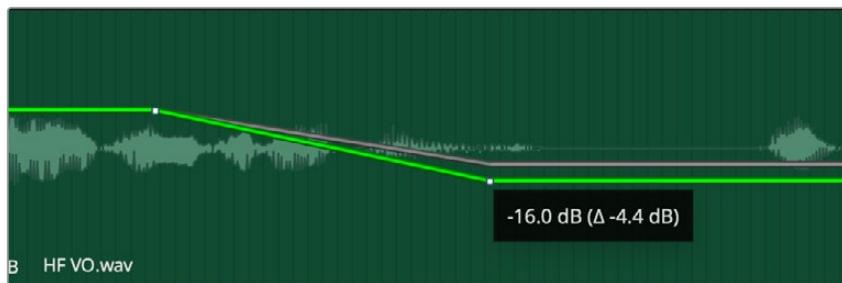


Before and after cut or deletion

Adjusting the Automation Line

Once one or more keyframes are on the automation line, the resulting curve for the entire track can be adjusted. Individual keyframes can be edited up or down using the same techniques as with adjusting clip gain; the whole line can be adjusted, or a selection can be affected.

If you adjust the last keyframe on a line with multiple keyframe points, the line will change from that point onwards to the newly set level.



Adjusting an individual keyframe changes the line from that point onwards

Adjusting the Entire Line

To adjust the entire line:

- With automation view enabled, click anywhere within the track, and select all automation data on the curve by choosing Command-A.
- Position the cursor close to the line and the dual arrow cursor appears, allowing the level of the entire line to be adjusted.



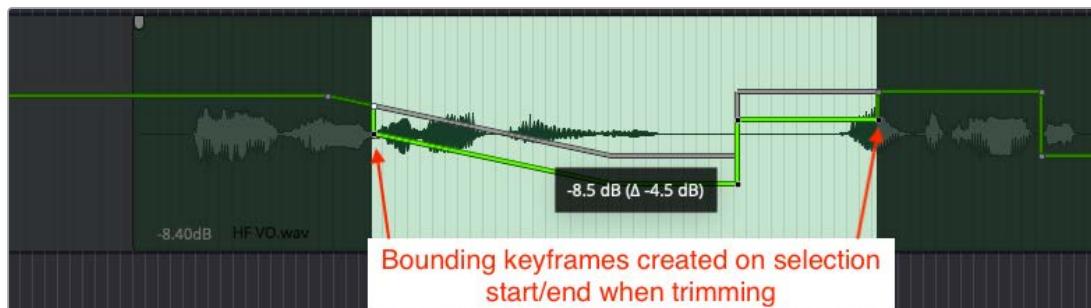
Select all automation to adjust the entire line

Adjusting a Selected Range

You can perform adjustments to only a specific range of the automation curve. This can be useful when you want to make “snapshot” changes for a specific scene.

To adjust only a selected range:

- Use the Focus Mode Select tool (I-beam cursor) to select the range you want to affect.
- Position the mouse close to any area of the line, and the up/down arrow cursor appears.
- Trim the line up or down. A tooltip will appear showing the current value and a delta to the original value, so any difference in a control's value can be seen.
- At the bounds of the selection, “bounding keyframes” are automatically created, so the level at the edge of the selection is preserved.



Trimming a selected range of the automation curve

TIP: Hold the Shift key when adjusting levels to maintain precision. When adjusting fader levels this allows .1 dB accuracy, even when working with small track heights.

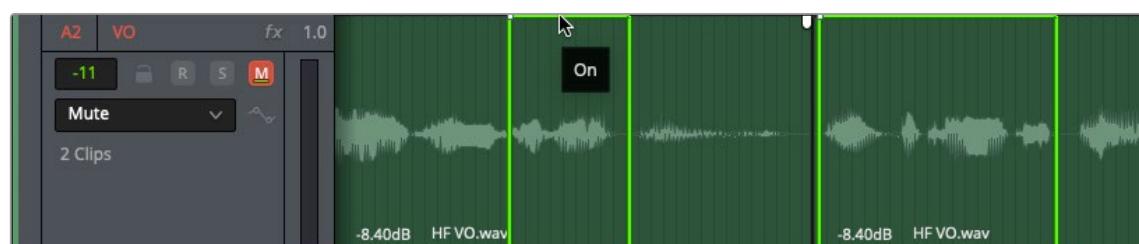
Drawing Automation with the Pencil Tool

The Pencil tool allows automation keyframes to be drawn freely:

- Choose the Pencil tool in the Automation toolbar, or when in Focus mode, hold down Option-Shift to temporarily switch to the Pencil tool.
- Click the mouse and drag to draw keyframes in either direction.

Automating Switched Controls

Some automation parameters are switched (i.e., they have only fixed states). Examples of this type of control are mutes (on or off). When adjusting switched automation, keyframes can only be at the bottom end of the Automation view or the top.



Mute automation showing on and off states

Recording Mix Automation

Recording mix automation uses many of the same techniques as drawing but allows you to capture a performance where you are moving the controls you want to automate. This can be flexible and creative as you “perform to picture” to get the results you want.

To get started, you’ll need to ensure that Automation recording is enabled (see “Enabling and Viewing Automation” above) and that one or more parameters are enabled for automation recording.



Clicking the Automation Controls button displays the Automation toolbar

Automation Controls

The Automation Controls button, to the right of the transport controls, lets you show and hide the Automation toolbar.

The Automation toolbar has buttons for each option that’s available for preparing to record automation in your mix.



Automation toolbar options

The Automation toolbar displays the following options:

- **Automation Modes:** Controls how automation data is recorded.
 - **Write:** Records absolute changes to a control’s position, replacing any data that was there previously.
 - **Trim:** Records relative changes to a control’s position, maintaining relative existing levels created over time, but increasing or reducing those levels overall. This can be very useful when incrementally refining a mix.
- **Touch Modes:** Defines what happens when an automatable control is moved during a mix.
 - **Off:** No automation is recorded.
 - **Latch:** Automation is recorded once a control is moved and continues recording after the control is released until the transport is stopped.
 - **Snap:** Automation is recorded once a control is moved and then smoothly glides back to the pre-existing level at the point it was released, to create a seamless transition.
 - At the point where the glide transition ends, automation is no longer recorded unless the control is moved once again while the transport is playing. You can continue to capture additional automation with Snap until the transport is stopped.
 - The time for the glide transition can be set in milliseconds in Preferences > User > Fairlight > Automation. The default is 250 ms.

- **Snap Latch:** A combination of Snap and Latch modes, where faders operate in Snap and all other controls operate in Latch. This can be useful when dynamically changing fader levels through a mix pass are desired, while other controls “stick” when they’re moved. It is particularly useful when working with Fairlight mix control surfaces where faders and rotary controls can be changed simultaneously during a mix pass.
- **On Stop:** Defines what happens when entering Stop at the end of an automation pass.
- **Event:** The last recorded automation value overwrites previous levels to the start of the next available recorded automation data (or event) in that track.
- **Hold:** Deletes all previously recorded mixing data after what you’ve just recorded, to hold the last recorded level for the rest of that track.
- **Return:** The last recorded automation value is interpolated to ramp back to the previously recorded automation values on that track.
- **Enables:** The following buttons let you enable or disable different controls for recording automation.
 - **Fader:** Automates track and bus volume.
 - **Mute:** Automates the mute button.
 - **Pan:** Automates all pan controls.
 - **EQ:** Automates all EQ controls.
 - **Comp:** Automates just the Compressor controls in the Dynamics window.
 - **Gate:** Automates just the Gate controls in the Dynamics window.
 - **Lim:** Automates just the Limiter controls in the Dynamics window.
 - **Sends:** Automates the Send controls in the Sends window.
 - **Plugins:** Automates all Fairlight, VST or Audio Unit (AU) plugins.
 - **Misc:** Automates Buss on/off, Insert, and Direct Out controls. If a project is using the Fairlight legacy Fixed Bus configuration, it allows automation of fixed bus Main and Sub bus enables.

How to Record Automation

There are two different ways you can set up the recording of automation for levels, panning, EQ, Dynamics, and other audio controls in the mixer.

Recording Automation for Multiple Tracks

You can use the following steps to record automated changes to any audio control in any control strip:

- 1 Open the Automation toolbar, and do the following three preparatory steps:
 - a) Choose whether you’re going to write new automation, or trim automation that’s already recorded. Write mode is appropriate when you’re recording automation for the first time, or when you’re overwriting previous automation with brand new values. Trim mode is appropriate when you’re making incremental changes to previously recorded automation. Note that Trim mode works as a delta trim system only with fader positions at zero (unity) on Fairlight control surfaces at this time.
 - b) Next, choose Touch and On Stop behaviors that are appropriate for the kind of automation recording you need to do.

- 2 Move the playhead to the beginning of the section of the timeline you want to record automation for.
- 3 Next, initiate playback using any method (Spacebar, L, Play button, Fairlight or third-party audio control surface), and make whatever adjustments you want to the controls you've enabled automation recording for. As you make adjustments, the affected fader control turns red to let you know you're recording automation.
- 4 When you're finished, stop playback using any method (Spacebar, K, Stop button, third-party or Fairlight audio control panel). Automation recording stops as well.

Recording Automation for Specific Individual Tracks

You can use the following steps to record automated changes to controls in specifically armed control strips:

- 1 Open the Automation toolbar, and do the following three preparatory steps:
 - a) Choose whether you're going to write new automation, or trim automation that's already recorded. Write mode is appropriate when you're recording automation for the first time, or when you're overwriting previous automation with brand new values. Trim mode is appropriate when you're making incremental changes to previously recorded automation.
 - b) Next, set Touch to Off, which disables across-the-board automation recording and requires you to arm specific tracks that you want to automate.
- 2 Click the automation arm button above the fader of any Mixer track or any track header to which you want to record automation. Even though the Touch control is set to off, moving a control on an armed channel strip will record automation in Latch mode.



The automation arming button above a fader in the Mixer

The automation arming button in the track header

- 3 Move the playhead to the beginning of the section of the timeline you want to record automation for.
- 4 Next, initiate playback using any method (Spacebar, L, Play button, Fairlight or third-party audio control panel), and make whatever adjustments you want to the controls for which you've enabled automation recording. While you make adjustments, the affected fader control turns red to let you know you're recording automation. If you're displaying the same automation data in the Timeline that you're recording, you can see the new automation being drawn in real time, in red.



New automation line in red while being recorded

- 5 When you're finished, stop playback using any method (Spacebar, K, Stop button, Fairlight or third-party audio control panel). Automation recording stops as well. Displayed automation turns green once recording has stopped.

If you don't like what you've done, you can undo and start over, or you can edit the automation using methods described later in this chapter. Or, you can back the playhead up and overwrite automation at any time with new automation.

Automation Preview Mode

Preview is an additional mix automation workflow, specifically for working across scene-based material. When enabled, mix items that are in preview are not controlled by pre-recorded automation, so they respond manually to their controls. These can subsequently be placed into write (or trim) to write actual automation.

Typically, Preview mode is used to audition new mix settings for one particular section of a timeline, while other sections already have recorded automation data. Preview mode prevents pre-recorded automation from moving the controls you are trying to adjust in a targeted section. As soon as you're happy with the new adjustments, they can be written to the targeted section.

Preview mode frees the faders (and other controls) from automation control, and lets you move them freely while you experiment with different levels and settings. Ordinarily, moving one or more controls implies writing automation data for those controls, but entering Preview mode lets you play with the controls as much as you like without committing to anything, only writing automation data when you're ready.

To engage the Preview state on enabled mix items, first enter Preview mode by doing one of the following:

- Toggle Preview in the Automation toolbar.
- Press the Preview key on the Mix page of the Fairlight controller.

Once Preview is engaged:

- Individual parameters can be switched into Preview Touch Latch.
- You can use the AUTO key next to a fader to preview all enabled parameters on a channel.
- You can use the Auto button on the screen mixer strips.
- When you're in Preview mode, all parameters in Preview are indicated by a BLUE automation indicator.

Once in Preview mode, mix items can be placed into write (or trim) by:

- Dropping in manually via the Fairlight > Automation > Punch In menu choice.
 - Dropping in manually with the In key on the Fairlight controller.
 - Automatically using the Active In and Out points on the Fairlight controller.
- Once enabled for Preview, parameters remain in that state regardless of transport starts and stops. This is different from putting mix items into WRITE, which must be done again after each transport stop.

Other Preview-related operations include:

- Filling a range defined by In and Out points with all parameters currently in Preview.
- Gliding all parameters from their existing values at the Range In point to the Preview values at the Range Out point.

Automation Active Range

The Automation Active Range allows you to set only a specific range on the timeline to record automation to, so that everything outside of that range is “write protected” and will not be disturbed.

- To enable the Active Range, choose Fairlight > Automation > Active Range, where you can mark the Active Range In/Out points, or enable or disable the Active Range.
- Once a range is defined, automation writing will only take place within the range.
- You can set the automation mode you wish to work in (e.g., Snap).
- Once playback begins, all automation data produced prior to the range automatically occurs in Preview mode (without having to enable the Preview switch), up and until you reach the Active Range in point. Once inside the Active range, automation recording will start.
- At the end of the range, automation recording is automatically punched out.
- The Active Range can be disabled by unchecking Fairlight > Automation > Active Range > Enable.

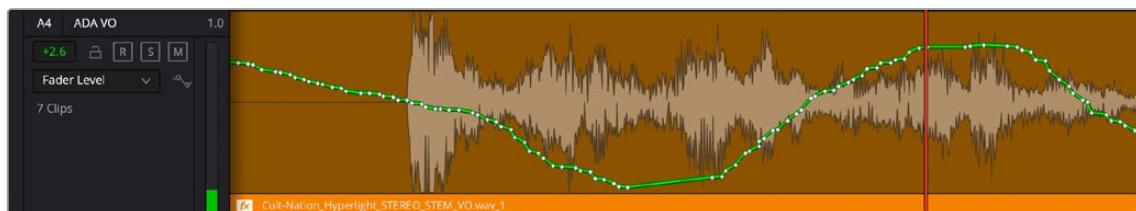
NOTE: Any controls in Read mode will playback their automation regardless of the status of the Active Range.



Active Range shown in the ruler with red bar; Automation data being written within the range..

Viewing Automation in the Timeline

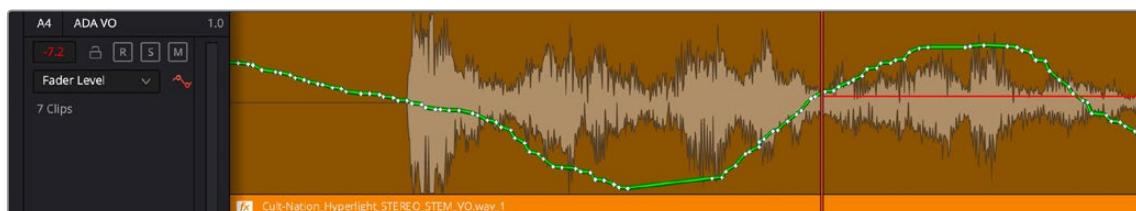
Once you've recorded automation keyframes for a particular parameter, they can be made visible in Automation view on a track. When automation is enabled via the Toggle Automation button, you can use the Automaton drop-down menu on the track header to choose which automation curve to view, with options for Fader, Mute, Pan, EQ, Compressor, Limiter, Aux, Plugins, and Misc controls.



Mixing automation for the Fader shown in the Timeline

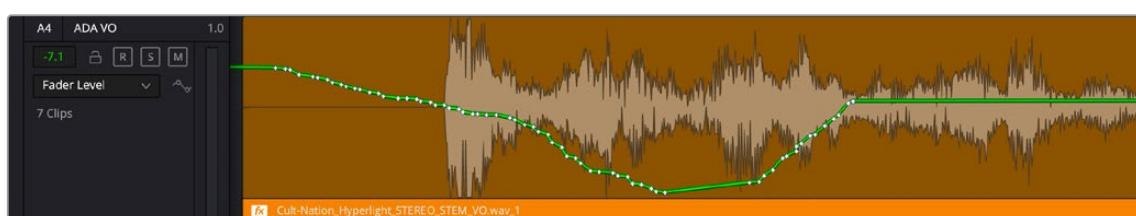
Overwriting Automation

Once you've recorded automation for a particular clip, you can overwrite that automation in subsequent passes. Using either of the previously described methods of recording automation, adjusting the levels of a track control with previously recorded automation displays a red line that shows the new level relative to the previously recorded level.



Setting new levels to overwrite previously recorded automation displays a red line

Pressing play to actually record this new automation will overwrite the previous levels at this new value.



New automation overwrites the previous levels

Automation data can be copied, pasted, and erased under the Fairlight Menu > Automation > Copy/Paste/Erase.

Automation Follows Edit

When editing your timeline, you can choose whether automation will follow the movement of clips or stay locked to its position. This is enabled by default but can be changed by unchecking Fairlight > Automation > Follows Edit.

When enabled, anytime you move or edit a clip on the Timeline, the automation you'd written over its range will follow with it, ensuring that as you make changes to the edit, the automation for a given clip range will remain the same.

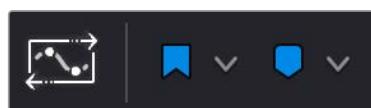
This is also extremely useful when doing an initial edit of audio clips that contain automation data. For instance, if you have a recurring sound effect that pans left to right, first automate that panning to the audio clip. When this clip is copied through the Timeline it will retain the same panning automation for each new instance. This can be very useful for a variety of edits that require the same automation data for audio clips in a timeline.

Be aware, however, that Automation Follows Edit will need to be turned off when copying and pasting clips or sequences where the automation that has been applied is not relevant to the new edits.

When Automation Follows Edit is enabled, automation data "lives with" the time range it came from.

Any of that data, like volume or panning, will travel with clips. So if a complete section has been removed, all of the automation inside of the clips contained in that section are also removed. If a section of clips changes its location in the Timeline, all of the automation embedded in those clips move to the new location on Timeline with the clips.

When the Automation is enabled in the Fairlight toolbar, the Automation Follows Edit button will appear.



The Automation Follows Edit button to the left of the Flag button on the toolbar

Editing Automation

When automation is enabled (Toggle Automation button is on), the Pencil tool appears. Combined with the Focus mode, these tools let you edit automation in different ways.



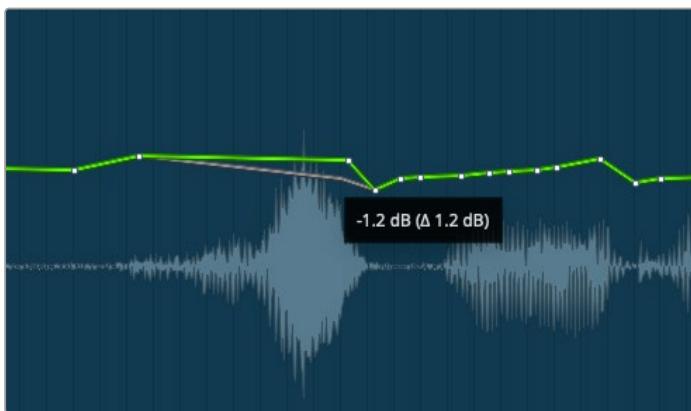
Focus mode provides the main tools used for editing automation. The Pencil appears when automation is enabled (Toggle Automation is on).

Adjusting and Deleting Automation Keyframes

The Focus tools let you adjust automation in two different ways.

Adjusting Individual Keyframes

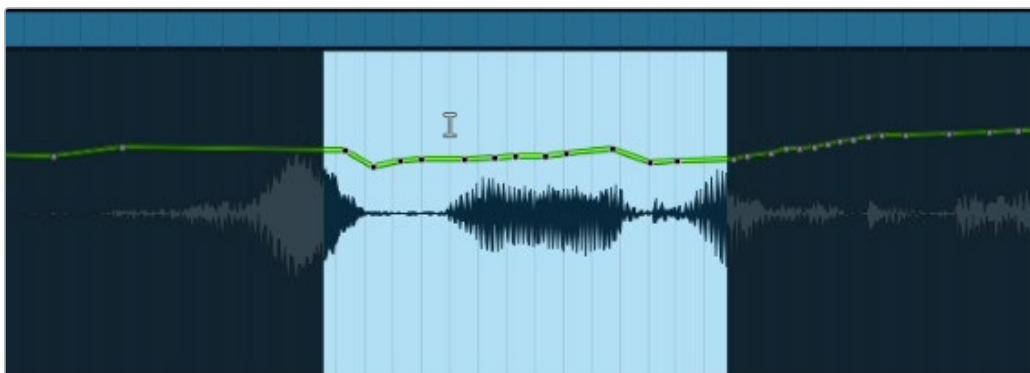
Using the Focus tools, you can click and drag any automation keyframe up or down and left or right (bounded by its neighboring keyframes) to adjust it directly. When zoomed in, this can be an effective way of making precise adjustments. The segment of automation affected by the keyframe being dragged continues to show green to indicate the new curve being created, and a tooltip with the currently adjust value appears, while the previously created data is shown in gray. When you release the mouse button, the curve is adjusted



Single keyframe being adjusted showing prior level in gray

Adjusting and Deleting Multiple Keyframes

You can also use the Focus Mode Selector I-beam tool to create a selection of select multiple keyframes, or to move or delete them.



Use the Focus mode I-beam selector to select a range of keyframes

If you delete the keyframes in the range, the remaining section of the curve flattens out to fit the first and last keyframe of the selection..



Automation curve after deleting the selected keyframes

Adding and Editing New Keyframes

See “Working with Audio Keyframes on the Timeline” earlier in this chapter for more information about working with drawing and editing keyframes..

Fairlight > Automation Controls

A series of commands in the Fairlight > Automation submenu let you initiate various automation tasks. These commands are:

- **All Read:** Switches all parameters that are in Trim or in Write mode back to Read mode.
- **Punch In:** When Preview mode is on, switches all parameters currently in Preview (blue) into Write or Trim. When Preview mode is off, this switches all Automation-enabled parameters on all selected channels into Write or Trim.
- **Punch Out:** When Preview mode is on, switches all parameters currently in Write, Trim or Preview into Read. When Preview mode is off, this switches all Automation-enabled parameters on all selected channels into Read.
- **Fill Range:** When there is an active In and Out range in the Timeline, the current value of all parameters in Preview will be written over that range.
- **Glide Range:** In Preview mode, “glides” all parameters from their existing values at the In point to the preview values at the Out point of the Timeline.
- **Join Mix:** Lets you manually resume writing automation in Latch mode from the current level and moving to any other.

Automation – Copy/Paste/Erase

The Fairlight > Automation submenu also has special local choices for Copy, Paste, and Erase of automation data. Copy/Paste allows you to do powerful range-based manipulation of automation, or to create a “snapshot” change where all automation data is pasted for a single point in time, allowing all enabled parameters to switch at once to new levels.

Using these commands requires that you choose which automation parameters are affected explicitly by using the Automation Enables controls (the same ones used to choose what automation data is recorded). For example, if you want to affect fader, mute, and pan automation, you must activate the enables for those parameters first. Only the parameters enabled are affected.

NOTE: Clip view or Automation view (any parameter) can be used with these commands; the choice of what is affected is governed by the Automaton Enables, not by the view.



Enables set for copy, paste, or erase of Fader, Mute, and Pan data only

- **Copy:** If there is an active In and Out range in the Timeline, Fairlight > Automation > Copy will copy the automation data of all selected channels and enabled parameters within this range to the clipboard. If there is no active In and Out range, this command copies the data of all automated parameters on all selected and enabled data at the playhead (Snapshot mode).
- **Paste:** Pastes the active range or in point for all automation data copied to the clipboard for Automation-enabled parameters.
 - If there is an active In to Out range defined, then the range will be filled with any automation data copied to the automation clipboard using Automation > Copy. If there is no active In to Out range defined, then the automation clipboard is simply pasted in its entirety.
 - The contents of the clipboard can potentially target a different channel set and/or with a different target time, just by using a new in point or track selection.
 - If there is an active In to Out range defined in the Timeline, and the clipboard was in Snapshot mode when the data was copied, then this range will be filled with static values of the snapshot data.
- **Erase:** If there is an active In and Out range in the Timeline, Erase will delete the automation data of all selected channels within the range, obeying all Automation Enable buttons. If there is no range selected, nothing is affected.

TIP: To clear all automation from a timeline or group of tracks, select the entire timeline range, enable the Automation Enable buttons for the types of automation you wish to clear, and choose Fairlight > Automation > Erase. Alternatively, Fairlight > Automation > Mix List can be used to clear all automation from the Timeline.

Automation – Mix List

The Mix List allows you to create and manage multiple mix “passes” and complete routing and effects setups for a single Timeline. Each stored mix can have totally different mix automation data that is changing over time, routing, plugin setup, track grouping, etc.

This capability is incredibly powerful and allows a lot of creative freedom for creating different versions of mixes (for example moving between stereo, 5.1, and Dolby Atmos as formats), or between using totally different plugin effects or different creative approaches to the mix itself using all of the automated parameters.

So the Mix List's utility is not limited to storing mix automation data; it can be used to store a dynamic preset of literally anything about the setup of the Mixer.

Keep in mind that the Mix List is particular to a single Timeline and also cannot be shared between projects. However, using the Mix List can be more convenient than saving multiple different versions of timelines or projects.

The Mix List can act as a floating window where you can see the various mixes, or it can be hidden until you need to load or save a new version.

Name	Notes	Created
System		6/14/23
1st pass - balance pre SFX pass	Early AM; Jocelyn sending stems	6/14/23
SFX pass - bus changes	switch from stereo to 5.1	6/14/23
DX Integration	Bill M. 1st pass work	6/14/23
MX Integration	Composer stems v1s	6/14/23
Check Add Chorus	Chorus FX on A2	6/14/23

Save Mix Load Mix New Mix Delete Mix

The Mix List Window

Using the Mix List Window

- Set up your mix, including all routing and automation as you like.
- When you're ready to save a mix version, choose Fairlight > Automation > Mix List, then choose "Save Mix" and give it a name, along with any notes you make want to add.
- You can then change your mix automation, any routing, etc. you wish and save a new version, load a different version, or delete an existing mix.

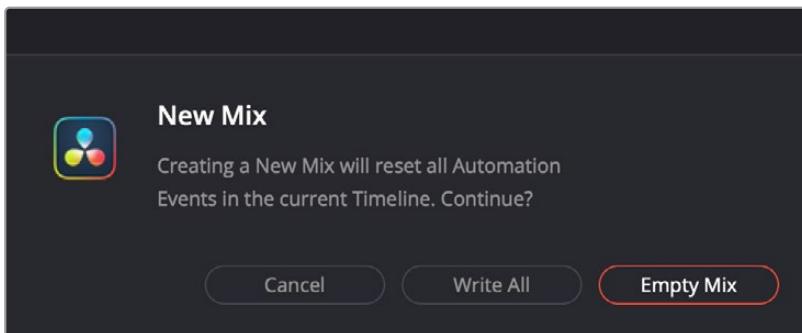
The "System" preset is an internal system preset that can't be altered; it can be ignored.

The "New Mix" Dialog

For "New Mix" in the Mix List window, a dialog appears with the following options:

- **Cancel:** Lets you cancel the operation.
- **Write All:** Writes present levels of all controls to their automation curves establishing a baseline "snapshot" of all parameters.

- **Empty Mix:** Clears all automation data from the mix, leaving only the assignments, routing, track group enables, etc. This option offers a simple way to start “fresh” with a mixer setup on a new mix.



New Mix dialog

Playing Automation

After you've automated a mix, playing it back is as simple as moving the playhead to an area of the timeline prior to the recorded automation, and initiating playback. As the timeline plays, the onscreen controls for each automated parameter are shown in green, and move and update to show the recorded levels for those controls.



Controls that have recorded automation during playback are shown in green.

Chapter 175

Track Groups

Track Groups are a way to organize and structure your project to make it easier to affect multiple tracks at the same time with the same operation.

Contents

Track Groups	3736
Editing with Track Groups	3736
Mixing with Track Groups	3736
Creating and Editing Track Groups	3738
The Mixer and Track Groups	3739

Track Groups

You can group audio tracks for editing and/or mixing tasks. When editing with a track group, any edit you make to one track applies to all tracks in the group (such as nudging or trimming an audio clip). When mixing, any changes you make to one track apply to all tracks in the group while maintaining relative mixer settings (such as adjusting track fader positions).

Editing with Track Groups

When editing, track groups let you switch focus from individual tracks, to smaller groups of tracks (2 or 3), to larger groups (for example, all tracks of a certain type, a larger multitrack sub-mix, or all timeline tracks).

When a group is enabled, any editing operation applies to all of the tracks in the group together. However, some operations that involve moving clip boundaries or trimming obey rules having to do with individual tracks. For example, pressing up/down arrows to navigate to the next/previous clip boundary obey the boundaries of the individual tracks within the group, regardless of their vertical position in the Timeline.

Groups can be disabled, allowing you to change focus. Smaller groups can be “nested” within a larger one, so if you disable a larger group(s) that contains a smaller group of tracks, any smaller group will continue to work.

NOTE: In some cases, the clips in an edit group may be of differing lengths. However, group behavior still applies, and any trim, cut, paste operation, and the like, follows the group at its present boundaries.

Mixing with Track Groups

When mixing, track groups let you make changes to all group members at once, such as faders or send levels, mute, solo, or track arming state, and/or related automation.

Fader and sends maintain their relative levels, preserving their absolute levels when they may “top out” or “bottom out” (top or bottom of their range). For example, if you have 2 faders that are part of a group, with one starting at +6 and the other at -7.5 (a delta of 13.5 dB), and you move the lower fader to +2, the first fader will show +10 and won’t change as the lower level fader is increased. As you decrease the group level, the offset of 13.5 dB is maintained so that the higher level fader eventually falls below +10 and keeps the correct offset as the group level lowers.

NOTE: Plugin controls cannot be added to Mix groups.

Showing the Groups List

The Groups list appears beneath the Tracks list in the Index. Closing the Index, or choosing another heading in the Index, will hide the Groups list.

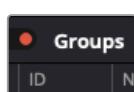
Groups		
ID	Name	Selected
All	All	-
G1	SFX	-
G2	Dialogue	-
G3	All Non-Dialogue	-
G4	Biggie	-

Groups list

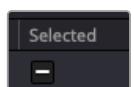
Groups List Controls



Group Name: The group name or "ID" appears in this column.



Groups Switch: Toggles all groups on or off, allowing you to switch easily from working with groups to working with individual tracks.



Selected Checkbox: When checked, all tracks that are members of the group are selected. If some members are selected, a hyphen is shown.



Action Icons on Hover: These icons only appear when hovering over the group row. The Tools icon accesses the Modify Groups dialog, and the Trash icon deletes the group.

The All Group

The All Group contains all tracks in the Timeline and mixer channels in the Mixer, making it easy to perform edit or mix tasks on all tracks at once. It is always present in topmost in the Groups list.

The Selected Checkbox

When the Selected checkbox is checked on, all members of a group are selected. This makes it easy to add to a current group (shift-clicking to add more members and using Create Group), or to control routing of all selected tracks at once by holding option (Alt Windows) while assigning/de-assigning. For example, let's say we have Group 1 with six tracks and Group 2 with 10. Just click on the Selected checkbox for Group 1 and all tracks Group 1 are selected. Hold down Shift and click on the checkbox next to Group 2. Now all members for both groups are selected, and you can create a new Group 3 that contains all members.

If only some members or a group are selected, the checkbox shows a hyphen ("‐").

If you click on the checkbox when in the selected or partially selected state, it will turn off (no tracks in the group will be selected).

NOTE: The Selected checkbox operates independently of whether a group is enabled or disabled; it's a separate control that is not directly tied to grouping.

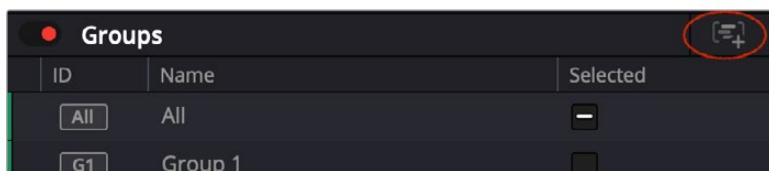
Group Key Commands

- Enable/Disable Groups using Command + num keypad 0 key (Control on Windows).
- You can use Command (Control on Windows) + num keypad number 1-9 to enable/disable the first nine groups.
- Use Command (Control Win) + num keypad * key to toggle the special All Group.

Creating and Editing Track Groups

To create a track group, do one of the following:

- Select one or more tracks via their track headers in the Timeline. Right-click on any track you want to include in the group and select Create Group. This also works in the Mixer on a channel strip.
- Select one or more tracks via their track headers in the Timeline. Then click the Create Group icon in the upper-right corner of the Groups list.



Create Groups icon

In the resulting dialog, do the following:



Create Group dialog

- 1 Type a name for the group. Click on the right of the name field to set a color for the group.
- 2 Select which controls you want to include for the group (Editing, Fader, Solo, Mute, Arm, Sends, and Automation). Click Set As Default to retain your settings for creating groups in the future.
- 3 Select tracks in the Add Channels column on the left, and then click the >> icon to add selected tracks to the group. You can also select tracks in the Channels Added column on the left and click the << icon to remove those tracks from the group.
- 4 Click Save to save the group.
- 5 The new group appears in the Groups list.

To enable (or disable) a group:

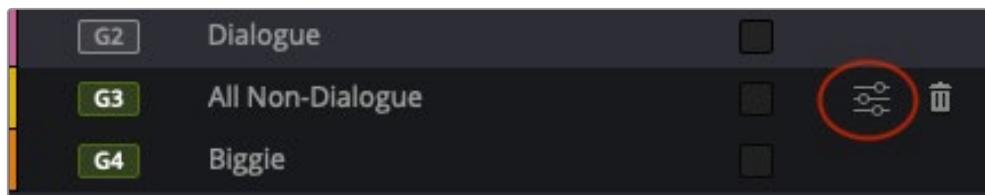
- Select (or deselect) the group in the Groups list. Selecting a group will highlight it, indicating it is active.

To rename a group:

- Double-click the group name in the Groups list.
- Type the new name you want for the group.

To edit a group:

- Hover over the group you want to edit and click on the Tools icon to bring up the Modify Groups dialog.
- Make any changes you wish, then choose Save.

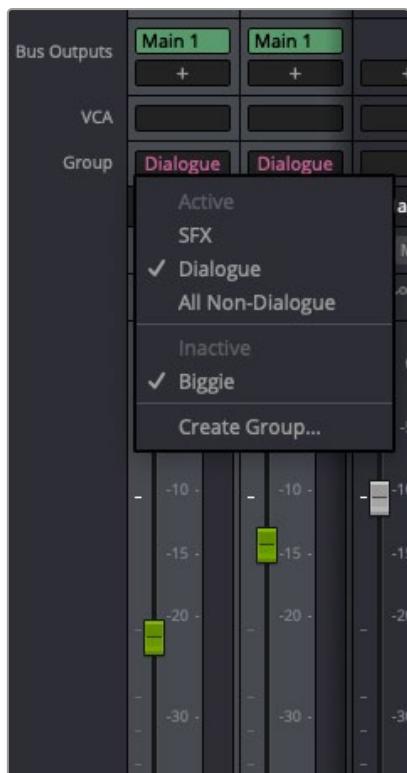


Tools icon to launch Modify Groups dialog

To delete a track group:

- View the Tracks list/Group list.
- Hover over the group you want to remove and click the Trash Can icon to delete.

The Mixer and Track Groups



Groups menu on Mixer channel strip

Temporary Override ("Clutch")

When working on the Mixer, holding down Command-Shift (Mac) or Control-Shift (Win) and moving a fader or faders within a group allows them to be manipulated independently of other group members. I.e., this is like suspending the group for just the faders that are "clutched."

Group Management on Mixer Channel Strips

You can manage aspects of group operation directly on a mixer channel strip. Clicking on the group name area on a channel shows a menu that allows you to:

- See which groups are active and which groups the channel belongs to. Active groups are represented by a check mark.
- Select any group in the list to make it active or inactive.
- Create a new group from selected channels.

Chapter 176

Audio Effects

Audio plugins let you apply effects to the audio clips in your mix, such as echo or reverb, noise reduction, aural enhancement, click and pop removal, and so on. DaVinci Resolve is compatible with a wide variety of third-party VST and Audio Unit effects for audio processing, and these can then be used either in the Edit or Fairlight pages.

This chapter goes through the different methods available for applying and customizing effects for clips and for tracks.

Contents

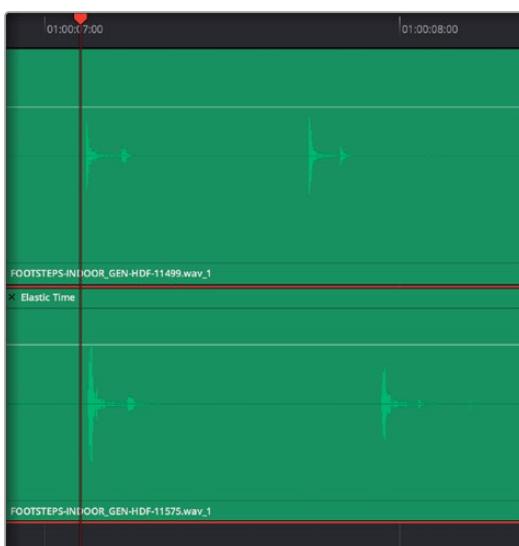
Elastic Wave Audio Retiming	3741
Elastic Wave Options	3743
Elastic View	3743
Clearing Timing Points	3744
About Audio Plugins	3744
Fairlight FX	3744
VST and VSTi	3744
Audio Units	3745
Using Audio Plugins	3745
Applying Audio Plugins to Buses	3749
Dealing With Processor Intensive Plugins	3749
Caching Audio Clips With Plugins	3749
Exporting Audio Clips With Plugins	3750

Elastic Wave Audio Retiming

Elastic Wave retiming is a fast and easy keyframe-based way of dynamically retiming audio, squishing and stretching different parts of a waveform to subtly retime audio playback for a variety of reasons, all while maintaining constant pitch. For example, if you're using the audio from another take to replace that of the current take, but the performer's timing is just a little bit different, you can use Elastic Audio to make small adjustments to retime the second performance to match the first.

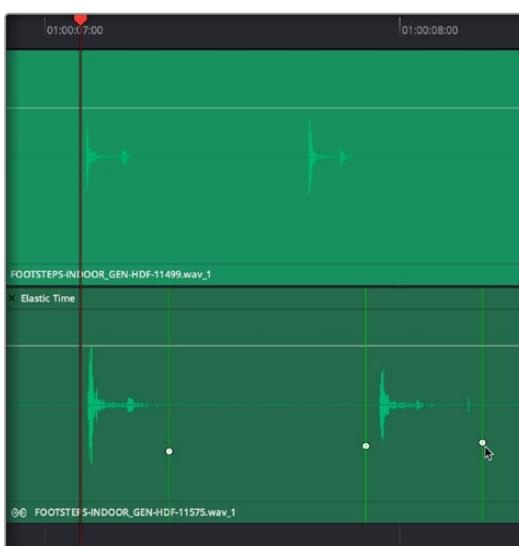
To use Elastic Wave retiming on an audio clip:

- 1 In this example, two tracks of foley effects have been recorded, and the bottom one needs to be retimed to match the top one.
- 2 Right-click an audio clip and choose Elastic Wave retiming from the contextual menu to reveal the Elastic Wave retiming controls.



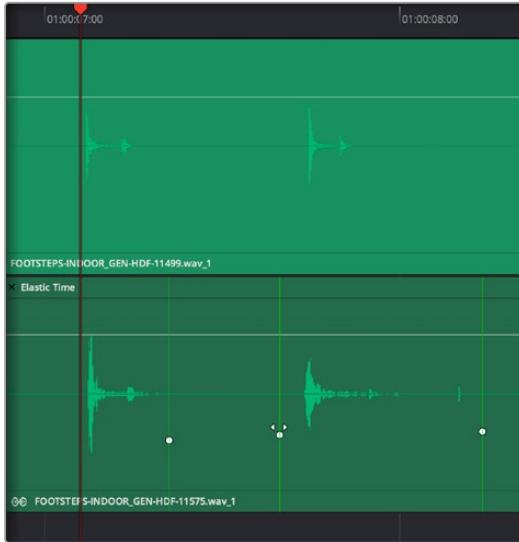
Enabling Elastic Wave

- 3 Command-click anywhere on the clip to add speed keyframes to parts of the waveform you want to retime by stretching or squishing. You can also place speed keyframes to lock parts of a waveform you don't want to retime.



Adding a speed keyframe with
Elastic Wave retiming enabled

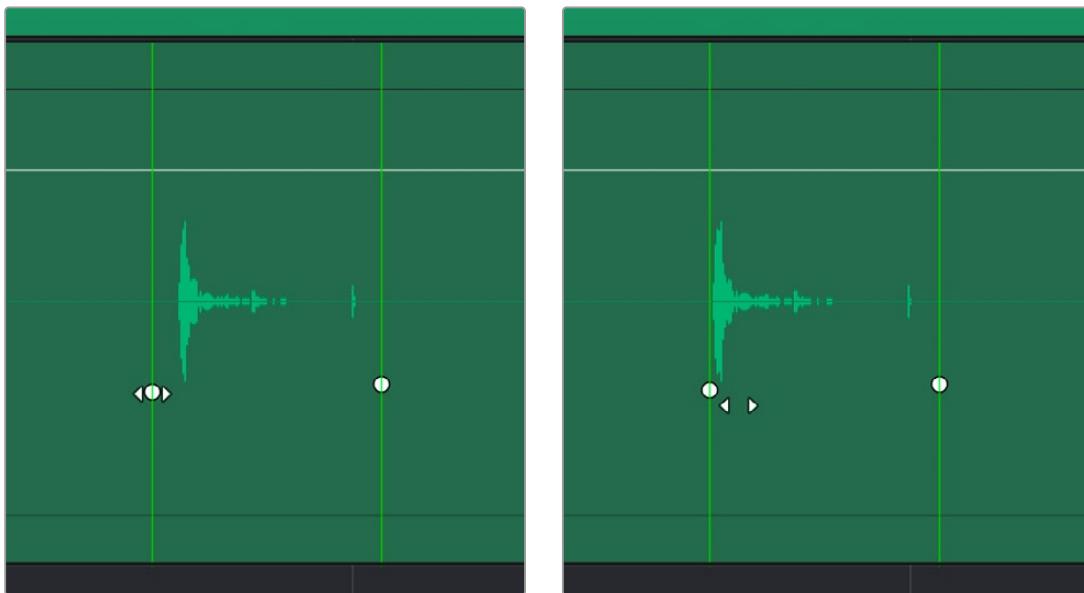
- 4 Dragging the speed keyframe to the left or right speeds up the audio on one side of the keyframe and slows down the audio on the other side of the keyframe, from that keyframe to the neighboring keyframes applied to that clip. Using an audio clip's waveform as your guide, you can use multiple speed keyframes to match the waveform of one performance to the waveform of another, in order to make the timing match. Or, you can adjust speed keyframes freeform to manipulate performances or sounds for creative effect.



Adjusting a series of speed keyframes to retime one performance to match another

You can also drag the beginning or end of an audio clip to retime that portion of the clip going forwards or back to the next speed keyframe that's been added.

- 5 If you've made some speed keyframe adjustments, but you find yourself wishing a speed keyframe you created had been placed at a different position relative to the audio waveform being adjusted, you can hold the Command key down and drag any speed keyframe to move it closer to or farther away from a part of the waveform you want it to retime. This fine-tunes the audio retiming adjustment occurring at that point in the clip.



(Left) Before Command-dragging a speed keyframe to be closer to the original beginning of the sound being retimed, (Right) After

- When you're done, you can click the close button at the upper-left-hand corner to hide the Elastic Wave retiming controls.

To remove Elastic Wave retiming keyframes, do one of the following:

- To remove a single speed keyframe:** Right-click on a speed keyframe and choose Remove Speed Keyframe from the contextual menu.
- To remove all speed keyframes and eliminate the Elastic Wave retiming effect:** Right-click a clip and choose Reset Speed Curve.

NOTE: All Elastic Wave retiming adjustments you make in the Fairlight page appear in the Edit page as variable speed effects, accessible using the Retime controls. Be aware that while all Elastic Wave retiming effects can appear as Edit page retime effects, not all Edit page retime effects can appear as Elastic Wave retiming effects on the Fairlight page.

Elastic Wave Options

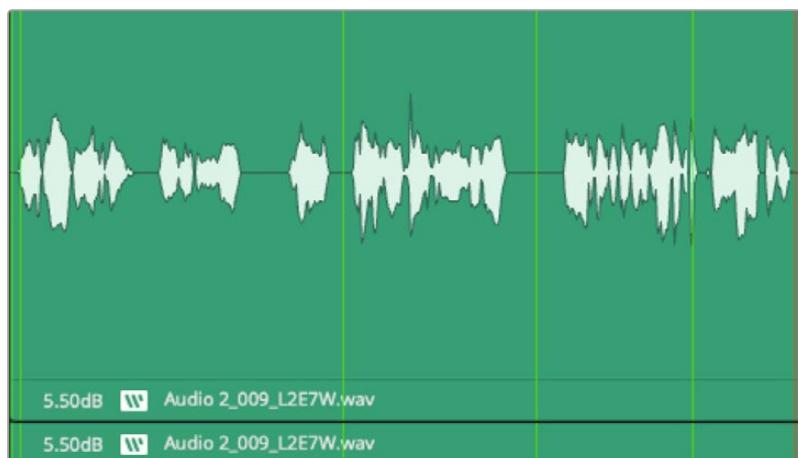
The Elastic Wave context menu has three options for processing:

- Off:** Elastic Wave is not enabled for the clip (Default).
- Voice:** Focused on human speech or singing. Note that this is not a good option for other material.
- General Purpose:** Ideal for music and effects.

Elastic View

Elastic view shows Elastic Wave "Time Points," which are similar, but not the same as, Resolve keyframes. Keyframes represent a point in time plus a value, and Elastic Wave time points represent only a point in time.

When Elastic View is enabled, time points are visible on the selected clip.



Elastic Wave Time Points

When disabled, the time points are not visible, but the info lane still shows that Elastic Wave is enabled with the Elastic Wave icon:



Elastic Wave disabled

Clearing Timing Points

"Timing points" are the moveable Elastic Wave control points that stretch or compress a given area of a clip. If you choose "Clear Timing Points," all selected points within a clip are cleared (deleted).

Elastic Wave can operate in the Edit window where video editors may want to re-time spoken word performances so that when the audio is re-timed, the video follows the retiming to match. However, when working in the Fairlight page, re-timing of video is disabled so that you can have separate control of the audio file.

About Audio Plugins

There is no limit to the number of single or multiple plugins when in Flexbus mode that can be applied to clips and to tracks. However there is a limit of 480 when using Fixed Bus Legacy. Plugins are accessed via each track's control strip, or via the Inspector which provides access to both clip and track plugins.

Fairlight FX

Fairlight FX are a DaVinci Resolve-specific audio plugin format that runs natively on macOS, Windows, and Linux, providing high quality audio effects with professional features to all DaVinci Resolve users on all platforms.

VST and VSTi

VST (Virtual Studio Technology) is an audio plugin standard created by Steinberg. The VST standard allows third-party developers to create VST plugins for use within VST host applications, or to create VST host applications themselves. The VST plugin standard is the most widespread audio plugin standard in use today, with thousands of available plugins spanning the gamut from EQ and compression to reverb, denoising, de-essing, aural exciting, and much more.

The Fairlight page supports VST effects from Mono to 7.1 - and beyond. These effects can be inserted on mono channels or Link Groups. If a stereo VST effect is inserted on a LCR, LCRS, or 5.1 Link Group, the left and right channels will be allocated to left and right Link Group channels automatically.

DaVinci Resolve supports VST3. VST effects are available on macOS and Windows workstations, but not on Linux.

VST Effects versus VST Instruments (VSTi)

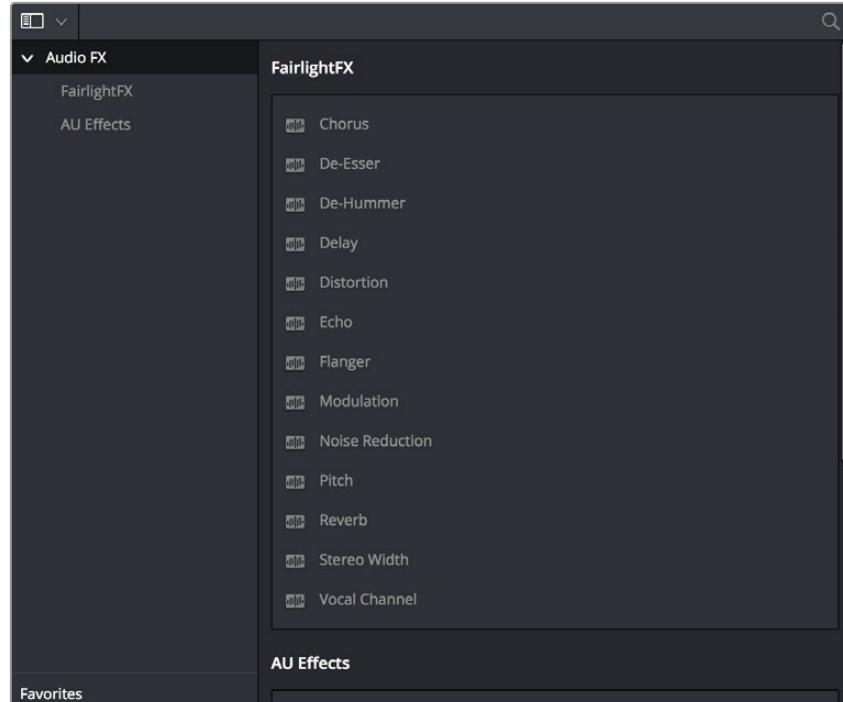
A VST effect is a type of VST plugin that is used to process audio. A VST effect might be a Reverb, Compressor, or EQ. VST Instruments are typically used to synthesize sound or play back sampled audio. VSTs have rapidly replaced hardware synthesizers and dedicated samplers due to their flexibility, repeatability, and low cost.

Audio Units

Audio Units are an audio plugin API created by Apple. Similarly to VST, Audio Units (AU) can either process audio, or work as instruments. Audio Units are only available on macOS workstations.

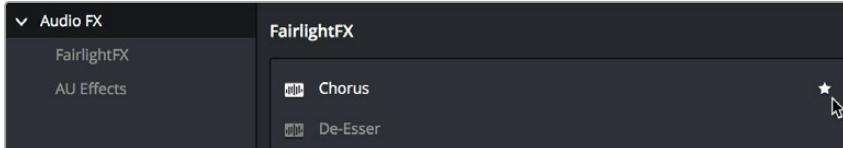
Using Audio Plugins

Fairlight FX are pre-installed on all DaVinci Resolve installations. If you install additional VST or Audio Unit effects on your workstation, they appear in the Audio FX panel of the Effects Library, organized in separate categories.



Audio plugins in the Effects Library

You can click on the far right of any effect to flag it with a star as a favorite effect. When you do so, the favorited effects appear in a separate Favorites area at the bottom of the Effects Library Bin list, and it also appears at the top of the Effects button's menu on the Mixer when you click the "plus" button.



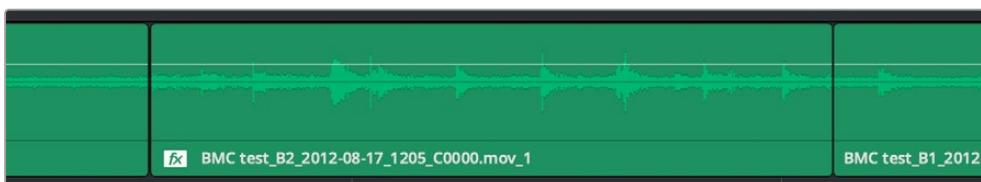
Stars indicate a flagged favorite effect; all favorites are currently filtered

Audio plugins let you apply effects to individual audio clips or entire tracks worth of audio, to add creative qualities such as echo or reverb, or to take care of mastering issues using noise reduction, compression, or EQ.

Methods of applying audio plugins to clips on the Fairlight page:

- **To apply an audio filter to a clip:** Drag any filter from the Audio FX panel of the Effects Library onto the clip in the Timeline you want to apply it to.
- **To apply an audio filter to multiple clips:** Select all of the clips you want to apply an audio filter to, then drag any filter from the Audio FX panel of the Effects Library onto any of the selected clips.

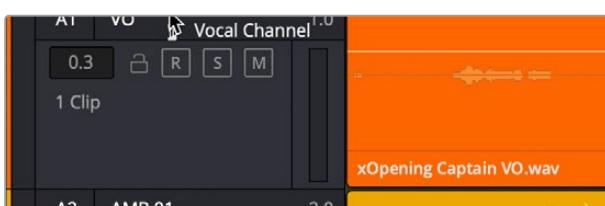
When you apply an audio plugin to a clip, a badge appears to the left of that clip's name bar in the Timeline to let you know there's an effect applied to it.



Timeline clips with audio plugins applied appear with a badge.

Methods of applying audio plugins to tracks on the Fairlight page:

- **To apply an audio filter to an entire track in the Timeline:** Drag any filter from the Effects Library onto the track header.



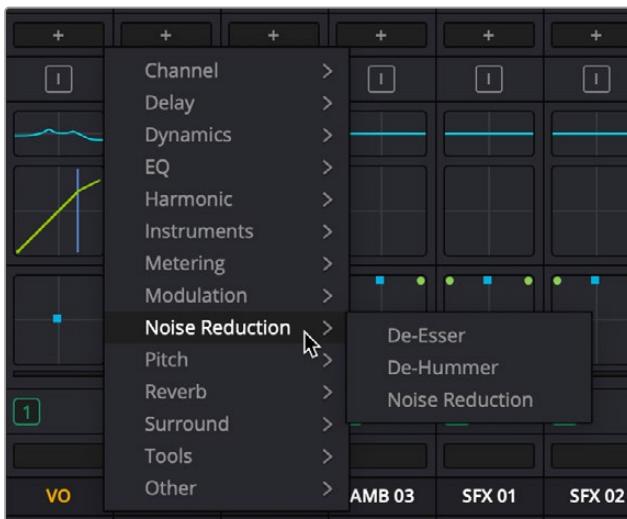
Applying an audio filter to a whole track via the Timeline

- **To apply an audio filter to a track or bus in the Mixer:** Drag any filter from the Audio FX panel of the Effects Library onto the clip in the Timeline you want to apply it to.



Applying an audio filter to a whole track via drag and drop to the Mixer

- **To apply an audio filter to a track or bus using the Mixer controls:** Click the plus button in the channel strip of the track you want to apply an effect to, and then choose a filter from the drop-down menu that appears. All filters appear within categories to make them easier to find. If you've clicked the star button of any filters in the Effects Library to favorite them, these favorite filters appear at the top of the plus button's drop-down list.
- **To copy audio filters from one mixer channel to another:** Hold the Option key and click and drag the effect to the desired channel and slot to copy.
- **To reorder audio filters in the mixer:** Click and drag the audio filter to move to the desired slot position.



Applying an audio filter to a whole track
via the Mixer's own controls

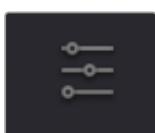
TIP: The categories that audio filters are organized into in the Mixer can be edited in the audio plugins panel of the DaVinci Resolve System Preferences window. All plugins on a workstation are shown in the Available Plugins list, and clicking within the Category column lets you use a drop-down menu with which to change categories.

To edit a clip's audio plugins:

- Select that clip and open the Inspector. All audio plugins applied to that clip appear in the Effects tab, with that filter's controls appearing directly in the inspector.

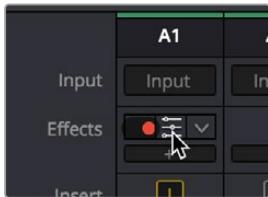
To edit a track's audio plugins, do one of the following:

- Click in the background of the Timeline header to select that track, and then open the Inspector. Click the custom UI button for that filter to open its controls.



The custom UI button for
audio plugins in the Inspector

- Move the pointer over the plugin's name in the Effects area of the Mixer, and click on the custom UI button to open its controls.



The custom UI button for audio plugins in the Mixer

Nearly all Fairlight FX, VST, and Audio Unit audio plugins have a custom user interface that makes it much easier to manipulate that filter's controls. These can be opened from within DaVinci Resolve.



The custom audio filter interface for iZotope RX Voice De-noise

Methods of working with audio plugins in the Inspector:

- **To rearrange the order of multiple video filters applied to a clip:** Click the move up or move down buttons in any filter's title bar, to the left of each filter's Trash Can button.
- **To disable or re-enable a filter:** Click the toggle button at the far left of each filter's title bar.
- **To remove a filter:** Click the Trash Can button.
- **To reset any filter parameter:** Click the Reset button at the far right of the parameter you want to reset.
- **To open or collapse a filter's parameters:** Double-click the title bar.
- **To open or collapse the parameters of all filters:** Hold the Option key down and double-click any filter's title bar.

Once applied to a clip or track, audio plugins can also be keyframed or automated just like volume and pan settings, to create dynamic audio effects that change over time.

Applying Audio Plugins to Buses

You can apply audio plugins to Main and Sub buses just like any other track, with which to apply any audio mastering effects operations you require to individual submixes, or even to an entire main.

Dealing With Processor Intensive Plugins

As you apply more and more plugins directly to clips in complicated mixes, you may discover you lack the processing power to play all audio tracks and effects in real time. When this happens, there are two ways you can ease the burden that audio clip effects are placing on your workstation.

Caching Audio Clips With Plugins

One quick fix is to manually enable the caching of one or more selected audio clips with audio effects applied to them to improve your project's performance. Once an audio clip is cached, all plugin effects are "baked in" and that clip's audio waveform updates to reflect the altered audio. Cached clips appear with a small badge to the right of the FX badge in the name bar of the clip.



A cache badge lets you know this audio clip has cached effects

This is a non-destructive operation that has no lasting effect on the source media of cached clips. You can still alter a cached clip's plugin parameters whenever you want. Opening the graphical controls of a cached clip temporarily suspends audio caching, and when you're finished, the clip is automatically re-cached and its waveform is updated to reflect the change so long as Cache Audio Effects remains enabled.

To cache audio effects for one or more selected clips:

- Right-click an audio clip with a plugin applied and choose Cache Audio Effects to enable audio effect caching for that clip. If you right-click one of multiple selected clips, you'll enable Cache Audio Effects for all selected clips at once. Once enabled, that clip will continue to be cached (and re-cached if you change the plugin's parameters) until you manually disable audio caching.

To disable audio caching for one or more selected clips:

- Right-click an audio clip that's been cached and choose Cache Audio Effects to disable audio effect caching for that clip.

Exporting Audio Clips With Plugins

Another way of easing the burden of audio clip effects on your system is to export the effected clip to another layer. This creates a new piece of audio media with the effect "baked in," which is written to the directory location specified by the "Save clips to" field of the Capture and Playback panel of the Project Settings.

To bounce one or more selected audio clips with effects to another layer:

- Right-click an audio clip with a plugin applied and choose Export Audio Files. If you right-click one of multiple selected clips, you'll have options for what you would like exported for each selected clip all at once.

Exported clips no longer have editable effects, but you can always choose View > Show Audio Track Layers to see the original underlying clip that still has the original plugin effect applied, and you can unmute it, move it back up to the top, edit the effect, and export another version of the clip, which appears as the topmost layer.

For more information on exporting clips to files, see *Chapter 171, "Editing Basics in the Fairlight Page."*

Chapter 177

Fairlight FX

Fairlight FX are a DaVinci Resolve-specific audio plugin format that runs natively on macOS, Windows, and Linux, providing high-quality audio effects with professional features to all DaVinci Resolve users on all platforms.

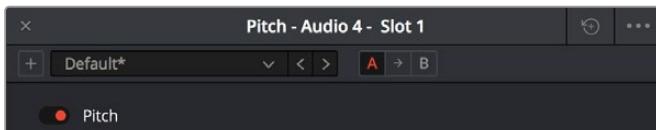
These audio plugins that can be used both in the Edit and the Fairlight page include a wide variety of plugins for repairing faulty audio, creating effects, and simulating spaces. This chapter explains what they do and how to use them.

Contents

Common Controls For All Fairlight FX	3752	Meter	3770
Chorus	3753	Modulation	3771
De-Esser	3755	Multiband Compressor	3773
De-Hummer	3756	Noise Reduction	3774
Delay	3757	Phase Meter	3775
Dialogue Processor	3758	Pitch	3775
Dialogue Leveler	3759	Reverb	3776
Distortion	3760	Soft Clipper	3778
Echo	3762	Stereo Fixer	3778
Flanger	3763	Stereo Width	3779
Foley Sampler	3764	Surround Analyzer	3780
Frequency Analyzer	3768	Vocal Channel	3781
LFE Filter	3769	Voice Isolation	3782

Common Controls For All Fairlight FX

Before going into the specific controls of each Fairlight FX plugin, there are some common controls that all plugins share, found at the top of the custom GUI window for each plugin.



Common controls for all Fairlight FX

- **Presets:** A cluster of controls that let you recall and save presets specific to each plugin.
- **Add Preset button:** Click this button to save the current settings of the Fairlight FX you're using. A dialog box lets you enter a Preset name and click OK.
- **Preset drop-down menu:** All presets for the currently open plugin appear in this menu.
- **Previous/Next preset buttons:** These buttons let you browse presets one by one, going up and down the list as you evaluate their effects.
- **A/B Comparison:** A set of buttons that lets you compare two differently adjusted versions of the same plugin. The A and B buttons let you create two sets of adjustments for that plugin, and toggle back and forth to hear which one you like better. The arrow button lets you copy the adjustments from one of these buttons to the other, to save the version you like best while experimenting further.
- **Reset:** A single reset control brings all parameters in the current plugin to their default settings.

When the Automation is turned on, an automation button appears at the top right of each of the plugins. Automatable parameters for that effect are available in the Plugin drop-down menu for that track.



Automation activated and available to the Fairlight FX

NOTE: Although Default is the preset when initially opened, many of the plugins, have presets already created. Reverb, for instance, has Cathedral, Concert Hall, and Studio presets built in. These can be excellent starting points to change, rename, and save for your specific needs. These new presets will also be available in the Preset drop-down menu.

Chorus

An effects plugin. A classic Chorus effect, used to layer voices or sounds against modulated versions of themselves to add harmonic interest in different ways.

An animated graph shows the results of adjusting the Modulation parameters of this plugin, giving you a visualization of the kind of warble or tremolo that will be added to the signal as you make adjustments.



The Chorus Fairlight FX

Chorus has the following controls:

- **Bypass:** Toggles this plugin on and off.
- **Input Format:** (Only visible when Chorus is inserted on a multi-channel track.) Lets you choose how multiple channels are input to the Chorus. Stereo sets separate Left and Right channels. Mono sums Left and Right to both channels. Left inputs the Left channel only, and Right inputs the Right channel only.
- **Delay:** The amount of delay between the original sound and the Chorus effect.
 - **Delay Time:** Length of the Chorus delay lines.
 - **Separation:** Time separation of the delay voices.
 - **Expansion:** Sets L/R length differences, phase offset of modulators.

- **Modulation:** These controls adjust the low frequency oscillator (LFO) that drives the tremolo of the chorus effect in different ways.
- **Waveform:** Specifies the shape of the LFO that modulates the rate of the Chorus, affecting the timing of the oscillations. There are six options for the oscillator for you to choose from:



Sine (smooth oscillations)



Triangle (sudden oscillations)



Saw1 (jerky oscillations)



Saw2 (jerky oscillations)



Square (hard stops between oscillations)



Random (randomly variable oscillations)

- **Frequency:** Rate of LFO controlling the Chorus. Lower values generate a warble, higher values create a tremolo.
- **Pitch:** Amount of frequency modulation, which affects the pitch of the Chorus.
- **Level:** Depth of level modulation. Affects the “length” of the segment of Chorus that’s added to the sound. Low values add only the very beginning of the Chorus effect, high values add more fully developed Chorus warble or tremolo.
- **Feedback:**
 - **Amount (%)**: The percentage of signal fed back to the Chorus Delay Line. Values can be positive or negative, the default is 0 (no effect). Increasing this parameter adds more of the Chorus effect to the signal, lowering this parameter adds more of the inverted Chorus effect to the signal. At values closer to 0, only a faint bit of Chorus can be heard in the audio, but at values farther away from 0 (maxing at +/- 99), a gradually pronounced Chorus becomes audible.
 - **Blend (%)**: Amount of feedback which bleeds into the opposite channel (Stereo mode only).
- **Output:** Controls for adjusting the final output from this plugin.
 - **Dry/Wet (%)**: A percentage control of the output mix of “dry” or original signal to “wet” or processed signal. 0 is completely dry, 100% is completely wet.
 - **Output Level (dB)**: Adjusts the overall output level of the affected sound.

De-Esser

A repair plugin specific to dialog. The De-Esser is a specialized filter that's designed to reduce excessive sibilance, such as hissing "s" sounds or sharp "ts" sounds, in dialogue or vocals.

A graph shows you which part of the signal the controls are set up to adjust, while reduction and output meters let you see which part of the signal is affected and what level is being output.



The De-Esser Fairlight FX

The De-Esser has the following controls:

- **Bypass:** Toggles this plugin on and off.
- **Listen to Ess Only:** This checkbox at the top right lets you listen only to the ess that is being removed. This is very useful to determine if too much signal is being removed or if more ess attenuation can be applied.
- **Frequency Range:** Two controls let you target the frequency of the "s" sound for a particular speaker.
 - **Target Frequency:** A knob that lets you target the frequency of the offending sibilance. Sibilant sounds are usually found in the range of 5 - 8kHz.
 - **Range:** switches the operational mode of the De-Esser. Three choices (from top to bottom) let you switch among Narrow Band, Wide Band, and All High Frequency which processes all audio above the source frequency.
- **Amount:** Adjusts the amount de-essing that's applied.
- **Reaction Time:** Adjusts how suddenly de-essing is applied. There are three choices.
 - **Slow:** Equivalent to a slow attack.
 - **Medium:** Equivalent to a medium attack.
 - **Fast:** Equivalent to a fast attack.

De-Hummer

A repair plugin with general applications to any recording. Eliminates hum noise that often stems from electrical interference with audio equipment due to improper cabling or grounding. Typically 50 or 60 cycle hum is a harmonic noise, consisting of a fundamental frequency and subsequent partial harmonics starting at twice this fundamental frequency.

A graph lets you see the frequency and harmonics being targeted as you adjust this plugin's controls.



The De-Hummer Fairlight FX

De-Hummer has the following controls:

- **Bypass:** Toggles this plugin on and off.
- **Listen to Hum only:** This checkbox at the top right lets you listen only to the hum that is being removed. This is very useful to determine if too much signal is being removed or if more hum attenuation can be applied.
- **Frequency:** Target source fundamental frequency. A knob lets you make a variable frequency selection, while radio buttons let you select common frequencies that correspond to 50Hz/60Hz electrical mains that are the typical culprits for causing hum.
- **Amount:** Adjusts how much De-Hum extraction you want to apply.
- **Slope:** Adjusts the ratio of fundamental frequency to partial harmonics, the adjustment of which lets makes it possible for various kinds of hum to be targeted. For example, a value of 0 biases hum extraction towards the fundamental frequency, while a value of 0.5 gives equal extraction of all harmonics (up to 4), and finally a value of 1.0 targets the higher frequency partials.

Delay

An effects plugin. A general purpose stereo delay effect, suitable for tasks varying from track doubling, to early reflection generation, through simple harmonic enhancement. Processes in stereo or mono, depending on the track it's applied to.

A graph shows the timing and intensity of the echoes generated by this plugin on each channel, and an Output meter displays the output level of the resulting signal.



Delay has the following controls:

- **Bypass:** Toggles this plugin on and off.
- **Input Format:** (Only visible when Delay is inserted on a multi-channel track.) Lets you choose how multiple channels are input to the delay. Stereo sets separate Left and Right channels. Mono sums Left and Right to both channels. Left inputs the Left channel only, and Right inputs the Right channel only.
- **Filters:** Alters the proportion of frequencies that are included in the delay effect. When the Delay plugin is inserted on a Mono Channel, the Left and Right sections are replaced with a single "Delay" section.
 - **Low Cut (Hz):** A global High Pass filter.
 - **High Cut (Hz):** A global Low Pass filter.
- **Delay:** Adjusts the timing of the delay.
 - **Left/Right Delay (ms):** Delay time of each channel.
 - **Left/Right Feedback (%):** Feedback % of the Left or Right channel back to itself. A negative value equates to % of feedback with a phase reverse from the original signal.
- **Feedback:** Controls for adjusting the amount of bleed between channels.
 - **High Ratio:** Adjusts the frequency of a damping filter for the feedback signal.
 - **Stereo Blend:** Adjusts the proportion of signal from Left and Right channel feedback which feeds into the opposite channel. When the Delay plugin is inserted on a Mono channel, Stereo Blend control does not appear.

- **Output:** Controls for adjusting the final output from this plugin.
- **Dry/Wet (%):** A percentage control of the output mix of “dry” or original signal to “wet” or processed signal. 0 is completely dry, 100% is completely wet.
- **Output Level (dB):** Adjusts the overall output level of the affected sound.

Dialogue Processor

The Dialogue Processor chains together six different common audio processing operations inside of a single plugin, each tuned to the specific needs of adjustments to improve recorded dialog. The specialized De-Rumble, De-Pop, De-Ess, Comp(ressor), Expander, and Excite controls each have a streamlined set of controls tailored to the specific types of common adjustments that may be required for a great sounding dialogue track.



The Dialogue Processor plugin

- **De-Rumble:** Controls the frequency cut-off for the filter which can reduce or eliminate rumble.
 - **Frequency:** Sets the high-pass filter to frequencies between 40Hz to 235Hz.
- **De-Pop:** These controls adjust the low frequency oscillator (LFO) that drives the tremolo of the chorus effect in different ways.
 - **Frequency:** Sets the filter to frequencies between 50Hz to 200Hz.
 - **Amount:** Sets the amount of the filter effect on the signal with lower values effecting less and higher values effecting more. A meter next to the amount knob shows how the signal is being effected.
- **De-Ess:** These controls adjust the low frequency oscillator (LFO) that drives the tremolo of the chorus effect in different ways.
 - **Frequency:** Sets the filter to frequencies between 700Hz to 9000Hz.
 - **Amount:** Sets the amount of the filter effect on the signal with lower values effecting less and higher values effecting more. A meter next to the amount knob shows how the signal is being effected.
- **Compressor:** These controls adjust the low frequency oscillator (LFO) that drives the tremolo of the chorus effect in different ways.
 - **Threshold (dB):** Sets the level at which the signal will start to be effects from -40dB to -8dB.

- **Amount:** Sets the amount of the compression on the signal with lower values effecting less and higher values effecting more. A meter next to the amount knob shows how the signal is being effected.
- **Fast/Slow:** Determines the speed at which the effect is applied, fast or slow.
- **Expander:** These controls adjust the low frequency oscillator (LFO) that drives the tremolo of the chorus effect in different ways.
 - **Frequency:** Rate of LFO controlling the Chorus. Lower values generate a warble, higher values create a tremolo.
 - **Amount:** Sets the amount of the expansion on the signal with lower values effecting less and higher values effecting more. A meter next to the amount knob shows how the signal is being effected.
 - **Fast/Slow:** Determines the speed at which the effect is applied, fast or slow.
- **Excite:** These controls adjust the low frequency oscillator (LFO) that drives the tremolo of the chorus effect in different ways.
 - **Amount:** Sets the amount of the exciter on the signal with lower values effecting less and higher values effecting more. A meter next to the amount knob shows how the signal is being effected.
 - **Female/Male:** Allows for precise use on either male or female voices.

Dialogue Leveler

The Dialogue Leveler analyzes source material to detect dialogue, and then “ride down” louder areas, “lift up” softer areas, and lower background sounds that are not dialogue. It works without typical dynamics processor “pumping” (compression/limiting) or other obvious side effects, and produces results similar to detailed manual clip gain adjustments or by carefully “riding” the track with fader automation. Dialogue Leveler can often “fix and mix” a recording with a single boom mic where one character is closer than another or turns away from the mic at times, and level it out so that the original relative dynamics are preserved while increasing intelligibility and average level.



The Dialogue Leveler plugin

Dialogue Leveler can be used on track audio in real time but not on live audio input. Dialogue Leveler can be used on any mono or stereo (or multi-mono) audio track, but it is not supported on greater-than-stereo tracks.

Dialogue Leveler has the following controls:

- **Dialogue Leveler:** Enables or disables Dialogue Leveler processing.
- **Waveform Processing display:** Shows a scrolling waveform display and indicates Dialogue Leveler processing with a gray line. However, note that the display does not appear in the version of Dialogue Leveler for clip-based processing.
- **Preset Menu:** The preset menu provides the following options:
 - **Allow wider dynamics:** This is the default, and is best for sources with wider ranging dynamic levels from loud-to-soft, and where the clip levels are medium to high.
 - **More lift for low levels:** Select this option if the source has more low level dialogue that you want to boost.
 - **Lift soft whispery sources:** Select this option if the source has whispered dialogue and background noise.
 - **Optimize moderate levels:** Select this option if the source has wider ranging dynamic levels from loud-to-soft. Select this option if the source is at medium levels throughout.
- **Reduce Loud Dialogue:** When enabled, louder dialogue is ridden downward on peaks and acts somewhat like a “perfect limiter” where you don’t have to adjust threshold or time constants. Due to the “near real time” aspect, analysis occurs prior to audible playback for optimal results.
- **Lift Soft Dialogue:** When enabled, finds low level dialogue and lifts and evens out material that is more variable in level and softer, but because the process is dialogue focused, it doesn’t tend to raise background sounds (unless they are happening at the same time as the dialogue itself). More often than not, the Lift Soft Dialogue option is the most useful of the three options, as it makes less audible lines of dialogue more audible and naturally smooth, while not boosting background noise.
- **Background Reduction:** When enabled, reduces background sounds by focusing on dialogue and gently removing them based on the internal presets (Preset menu).
- **Output Gain:** Adjust the Output Gain by clicking and dragging on the Output Gain control or by entering a value in the numeric field (Output Gain control in dB with 0 to +6 dB range with .1dB resolution).

Distortion

An effects plugin. Creates audio distortion that’s useful for sound design and effects, ranging from simple harmonic distortion simulating an audio signal going through primitive or faulty electronics (such as bad speakers, old telephones, or obsolete recording technologies), all the way to mimicking an overdriven signal experiencing different intensities of hard clipping (think someone yelling through a cheap bullhorn, megaphone, or PA system). This plugin includes soft tube emulation in the output stage.

An animated graph shows the results of adjusting the Distortion parameters of this plugin, giving you a visualization of the kind of harmonic distortion, waveshaping, and clipping that will be modifying the signal as you make adjustments. Input and Output meters let you see how the levels are being affected.



The Distortion Fairlight FX

Distortion has the following controls:

- **Bypass:** Toggles this plugin on and off.
- **Filters:** Two filters let you simulate devices reproducing limited frequency ranges.
 - **LF Cut:** Low frequency distortion shaping.
 - **HF Cut:** High frequency distortion shaping.
- **Distortion:** Three sets of controls let you create the type and intensity of distortion you want.
 - **Mode buttons:** Switch the operational mode of distortion. The one to the left, Distortion, creates harmonic distortion. The button to the right, Destroy, is a more extreme polynomial waveshaper.
 - **Distortion:** Adjusts the amount of distortion that's applied to the signal. Higher values distort more.
 - **Ceiling:** Adjusts the level of input signal that triggers clipping.
- **Output:** Controls for adjusting the final output from this plugin.
 - **Dry/Wet (%):** A percentage control of the output mix of "dry" or original signal to "wet" or processed signal. 0 is completely dry, 100% is completely wet.
 - **Output Level (dB):** Adjusts the overall output level of the affected sound.
 - **Auto Level button:** Applies automatic compensation for gain added to the signal due to the distortion being applied. Having this button turned on prevents the signal from becoming dramatically and unexpectedly increased, while turning it off frees you to do what you want, if what you want is to hear a lot of distortion.

Echo

An effects plugin. A classic Echo effect, simulating the reflection of sounds that occur with a delay after the direct sound is heard. Processes in stereo or mono, depending on the track it's applied to.

A graph shows the timing and intensity of the echoes generated by this plugin on each channel, and an Output meter displays the output level of the resulting signal.



The stereo Echo Fairlight FX

Echo has the following controls:

- **Bypass:** Toggles this plugin on and off.
- **Input Format:** (Only visible when Echo is inserted on a multi-channel track.) Lets you choose how multiple channels are input to the echo. Stereo sets separate Left and Right channels. Mono sums Left and Right to both channels. Left inputs the Left channel only, and Right inputs the Right channel only.
- **Filter:** Alters the proportion of frequencies that are included in the delay effect. When the Delay plugin is inserted on a Mono Channel, the Left and Right sections are replaced with a single "Delay" section.
 - **Low Cut (Hz):** A global High Pass filter.
 - **High Cut (Hz):** A global Low Pass filter.
 - **Feedback:** Adjusts the frequency of a damping filter for the feedback signal.

- **Left Channel:** Parameters that independently affect delay on the Left Channel. When the Echo plugin is inserted on a Mono Channel, the Left Channel and Right Channel sections are replaced with a single “Echo” section with only the Delay Time, Feedback Delay, and Feedback controls.
 - **Delay Time:** Global Delay time for the Left Channel.
 - **Feedback Delay:** Echo Delay time for the Left Channel.
 - **Feedback:** Feedback percentage of the Left channel back to itself.
 - **L > R Feedback:** Percentage of Left feedback signal which feeds back to Right Channel.
- **Right Channel:** Parameters that independently affect delay on the Right Channel.
 - **Delay Time:** Global Delay time for the Right Channel.
 - **Feedback Delay:** Echo Delay time for the Right Channel.
 - **Feedback:** Feedback percentage of the Right channel back to itself.
 - **R > L Feedback:** Percentage of Right feedback signal which feeds back to Left Channel.
- **Output:** Controls for adjusting the final output from this plugin.
 - **Dry/Wet (%):** A percentage control of the output mix of “dry” or original signal to “wet” or processed signal. 0 is completely dry, 100% is completely wet.
 - **Output Level (dB):** Adjusts the overall output level of the affected sound.

Flanger

An effect plugin, giving that unmistakable Flanger sound dating from the days of dual tape machines with a slight delay added to one in periodic intervals causing flanging as they got back in sync with one another. Typically used to add a sort of warbling harmonic interest to a signal, in a wide variety of ways.

An animated graph shows the results of adjusting the Modulation parameters of this plugin, giving you a visualization of the kind of warble that will be added to the signal as you make adjustments.



The Flanger Fairlight FX

The Flanger has the following controls:

- **Bypass:** Toggles this plugin on and off.
- **Input mode:** (Only visible when the Flanger is inserted on a multi-channel track.) Lets you choose how multiple channels are input to the Flanger. Stereo sets separate Left and Right channels. Mono sums Left and Right to both channels. Left inputs the Left channel only, and Right inputs the Right channel only.
- **Modulation:** A low frequency oscillator (LFO) used to drive the Flanger effect.
 - **Waveform (Hz):** Specifies the shape of the LFO that modulates the rate of the Flanger. The three choices are Sine (a smooth change in rate), Triangle (a jerky change in rate), and Sawtooth (an abrupt change in rage). Affects the timing of the warble that is added to the sound.
 - **Rate:** Speed of the LFO, affects the speed of the warble that is added to the sound. Low rate values create a slow warble, while high rate values create more of a buzz.
 - **Depth:** Affects the “length” of the warble that is added to the sound. Low values add only the very beginning of a warble, high values add more fully developed warble.
- **Width:** Consists of a single parameter, Expansion, which sets Left/Right channel length differences, along with the phase offset of modulators.
- **Feedback:** These controls determine, in large part, how extreme the Flanging effect will be.
 - **Amount (%):** The percentage of signal fed back to the Delay Line. Values can be positive or negative, the default is 0 (no effect). Increasing this parameter adds more of the Flange effect to the signal, lowering this parameter adds more of the inverted Flange effect to the signal. At values closer to 0, only a faint phase shift can be heard in the audio, but at values farther away from 0 (maxing at +/- 99), a gradually increasing warble becomes audible. The type of warble depends on the Modulation controls.
 - **High Ratio:** Determines the attenuation of the echo over time.
- **Output:** Controls for adjusting the final output from this plugin.
 - **Dry/Wet (%):** A percentage control of the output mix of “dry” or original signal to “wet” or processed signal. 0 is completely dry, 100% is completely wet.
 - **Output Level (dB):** Adjusts the overall output level of the affected sound.

Foley Sampler

The Foley Sampler is a built-in sampler that makes it easy to add sound effects that you want to play using a keyboard, pad, or other MIDI performance device connected to your computer, to add timed sound effects to sync with onscreen visuals. This plugin has been designed to simplify the process of recording performed audio cues on the current track to which the sampler has been added.

Setting Up the Foley Sampler

Using the Foley Sampler to record samples played with a MIDI controller is easy.

- 1 Create an audio track for your sound effects or instrument recording.
- 2 Drag the Foley Sampler onto the track header to assign it to that track. The Foley Sampler window automatically appears. The Fairlight page knows this is an instrument with no inputs to the plugin, so this effect is automatically patched to that track’s input, ready for recording.

- 3** If you have a MIDI controller of some kind connected to your computer and properly configured, it will appear in the MIDI drop-down menu at the upper-right corner of the Foley Sampler window (next to the Keyboard button). Choose your device from this menu, and the Keyboard button will highlight to show it's enabled.

At this point, the Foley Sampler is ready to be used, but by default it has no samples loaded to play. The next step is to add sound effects.

Adding Sound Effects

You can add prerecorded sound effects or instruments to the Foley Sampler in the following ways:

- Drag and drop an audio file in a supported format from the file system onto the Foley Sampler window
- Drag and drop a sound effect from the Sound Library onto the Foley Sampler window
- Click the Foley Sampler window's Option menu and input sounds from your attached drives.

Once you've loaded a sound effect of some kind, it's automatically mapped to the top four keys of your instrument, starting at C2. Pressing a key or pad of your controller will play that sound.

To see the sound's waveform, click the Sample button at the top of the Sound panel. In this example, there are a series of continuous footsteps recorded in a row that we can use.

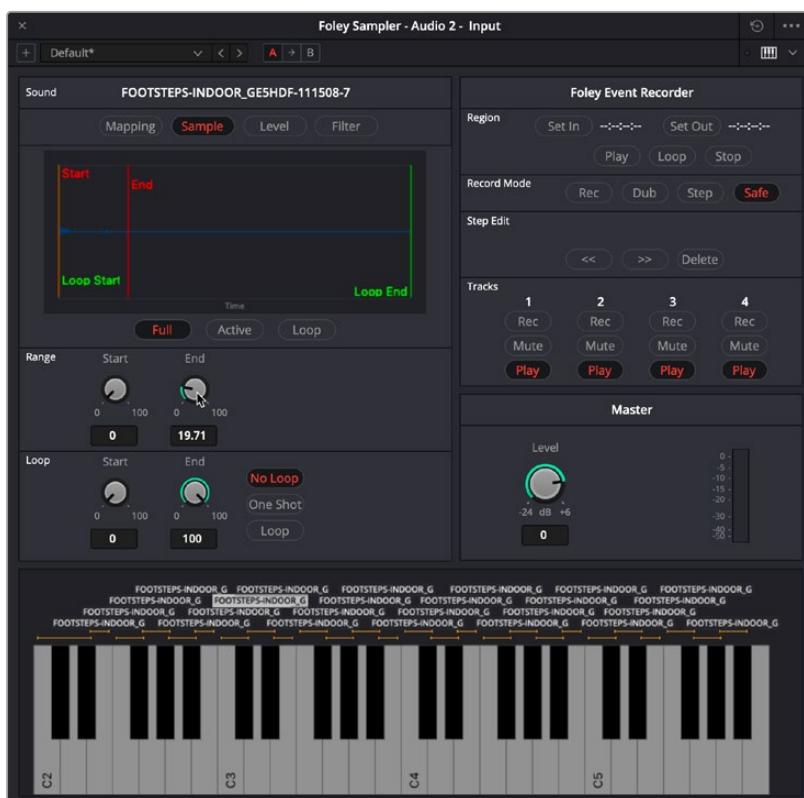


A footsteps recording loaded into the Foley Sampler

Splitting Sound Effects

It's common to use pre-recorded library sound effects that consist of a series of recorded footsteps, cloth rustles, punches, or other "foleyed" sound recordings, in order to play variations of a specific kind of repetitive sound effect in sync to action that's happening on screen. The Foley Sampler lets you do this easily.

- 1 After you've loaded a sound effect, click the Foley Sampler window's Option menu and choose Split Sample to automatically split the current sample into slices based on an analysis of its noise floor, and assign each slice to a set of keys or pads on your selected MIDI device. Continuing with the previous example, each footstep has been split and assigned to a different key.
 - 2 To adjust the timing of each slice of the sound effect that's been split apart, you can click on the assignment text above the keyboard at the bottom of the window to see that slice in the Sample view.
 - 3 You can adjust the Range Start and Range End parameters to encompass as much or as little of that slice as you want to play back.
 - 4 If you want a sample to loop if a note is held down, you can enable the Loop button, and then adjust the Loop Start and Loop End parameters to choose how much of each slice will loop.
 - 5 To delete slices that aren't useful, you can select a slice you don't like and press Shift-Delete to clear that slice from the virtual keyboard.



A single slice of the footsteps recording after being split in the Foley Sampler, with the range of the effect adjusted

Assigning Sound Effects Manually

When you first load sound effects into the Foley Sampler, they're automatically assigned to a series of notes. Each additional sound effect that you load is automatically assigned to the next series of notes to the right. Once all notes are occupied, additional sound effects will shuffle all previous assignments to the left.

You also have the option of manually assigning sound effects that you load. This is useful when you want to manually load a variety of different sound effects all at once (such as a combination of punch sounds, human grunts, and cloth rustles to use in a fight scene), and assign them to particular notes of your choosing.

- 1 Load a sound effect you want to map.
- 2 Click the Mapping button to remap the range of notes it corresponds to.
- 3 Use the Low and High parameters to select a range of notes for the selected sound.
- 4 You also have the option of tuning the pitch of specific sound effects, if necessary.



The Mapping controls used to assign a sound to a particular set of notes

Adjusting Sound Effects

If you want to customize a sample or slice further, you can select it above the virtual keyboard and use the controls on the Level panel to control the dynamics of audio playback, or you can use the controls on the Filter panel to EQ the sound.

TIP: If a sample or slice is set to loop, you can press the Control key and click a key on the virtual keyboard to initiate looping, so you can hear these adjustments as you're making them.

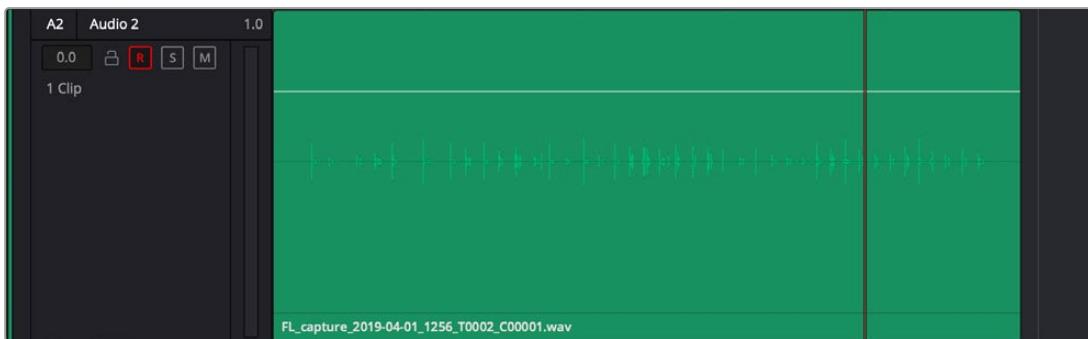
Playing and Recording Sound Effects

Once you've set up the Foley Sampler with sound effects you can play from a MIDI controller, recording those sound effects is simple.

- 1 Make sure that the "Save clips to" field in the Capture and Playback panel of the Project Settings is correctly set up to record to the desired storage volume, using the Browse button, if necessary.
- 2 Click the R button in the track header of the audio track to which you applied the Foley Sampler, to put that track into Record Enable mode.

- 3** Click the Record button in the Fairlight toolbar.
- 4** While Fairlight records, use the keys or buttons of your MIDI controller to play sounds in sync to the picture on your display. When you're done, click the Stop button.

You should now have a recorded clip containing the sound effects you played, in sync to the picture. If they're a bit out of sync, you can always use the Elastic Wave audio retiming controls to tighten the sync without re-recording everything.

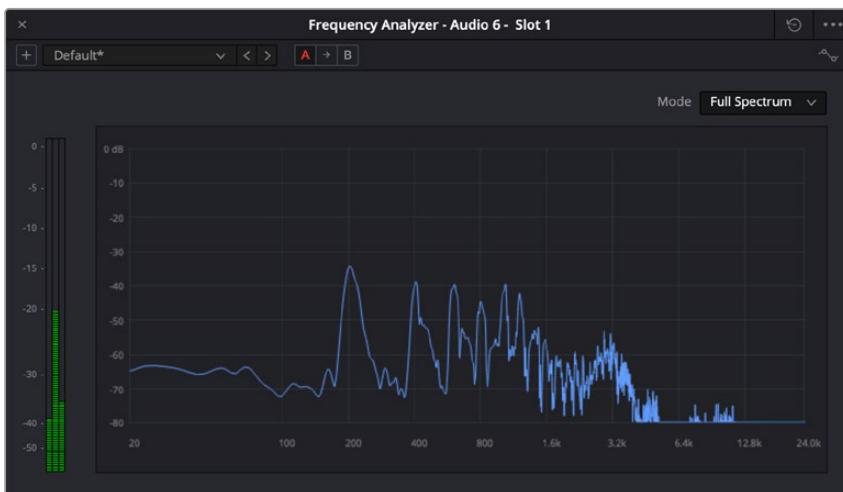


A new clip of audio created by recording sounds played via the Foley Sampler

Frequency Analyzer

This lets you see a visualization of the levels across all frequencies of a clip or track. A Mode dropdown lets you choose to see the full audible spectrum, or to restrict the visualization to low, medium, or high frequencies.

This utility tool can analyze a clip or a track's frequencies. With this added information you can then use the EQ to further sculpt the audio to reduce the unwanted frequency and boost the desired ones.



The Frequency Analyzer plugin

LFE Filter

A low-pass filter that you can apply to a FlexBus or Main that's in a surround sound format, to feed low-frequency sound to an LFE channel as part of a surround sound mix. The filter will exclude any sounds above your chosen frequency setting to the audio that is sent to a sub-woofer in the LFE channel. It helps keep unwanted and unnecessary audio from being sent to the sub-woofer and increases playback clarity.

A Frequency control lets you choose which low frequency range you want to include, and a Trim control lets you set the level of the resulting LFE channel. If it is multi-channel but has no LFE channel available, such as a 5.0 format, then this plugin does nothing.



The LFE plugin

Limiter

A true peak limiter that is capable of looking 64 samples ahead of the input, in order to limit the audio in a very smooth fashion. An Input control lets you adjust the level of the incoming signal, while Threshold and Release controls let you adjust the limiting that's being done. A graph shows you an analysis of the audio as it's processed, with a visual indication of what parts of the signal are being affected by this plugin.

It is used to detect and reduce the peaks of an audio signal so that the overall level can then be boosted without clipping, thus reducing the dynamic range of a given signal, similar to compression.



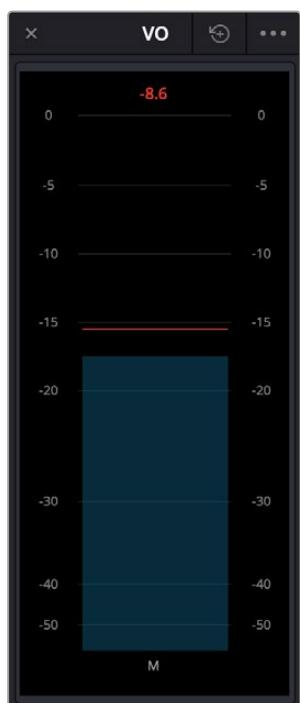
The Limiter plugin

The Limiter has the following controls:

- **Bypass:** Toggles this plugin on and off.
- **Input Meter:** Shows the input level into the Limiter.
- **Input Level:** Allows you to adjust the level incoming to the Limiter, allowing for reducing down to -18dB or boosting up to an additional 18dB. A Soft button, when activated, makes a more gentle attack to the limit amount.
- **Limit Threshold:** Determines at what level the Limiter will activate and reduce the input signal. When set to -24dB any signal above that is limited, when set to 0 then no limiting will take place.
- **Release:** Determines the speed of the Limiter's release from the signal's reduction, from very fast at the lowest setting of 0.01 milliseconds to its slowest release of 1000 milliseconds.
- **Reduction Meter:** Shows the level reduction applied to the input signal.
- **Output Meter:** Shows the output level after the limit.

Meter

A sample peak processing meter that's useful for temporarily adding a meter to a specific track or FlexBus. These meters are useful for instances where you want a large meter that focuses on a specific bus or track while you're working.



These meters are presented very simply, with a gray bar indicating level and a red peak line that holds for two seconds, which indicates the highest peak. A numeric reading at the top of the meter gives the exact level, in dB. This number continues to hold, indicating the loudest level measured for any given stretch of playback.

Meter can be resized by pulling from the bottom right and has the following controls located in the option menu:

- **Reset Peak on Play:** When enabled, the numeric peak level is reset every time playback stops and starts again. When disabled, the numeric peak level persists until changed by a higher peak.
- **Reset:** Resets the numeric peak level.

The Meter
Fairlight FX

Modulation

An effect plugin. General purpose modulation plugin for sound fx/design. Four effects combine an LFO, FM adjustment, AM adjustment, Sweep and Gain filters to allow simultaneous frequency, amplitude and space modulation. In conjunction with the Rotation controls, simple Tremolo and Vibrato effects can be combined with auto-filter and auto-Pan tools in order to provide texture and movement to a sound.

An animated graph shows the results of adjusting the Modulator, Frequency, and Amplitude parameters of this plugin, giving you a visualization of the kind of modulations that will be applied to the signal as you make adjustments. Output meters let you see what level is being output.



The Modulation Fairlight FX

Modulation has the following controls:

- **Bypass:** Toggles this plugin on and off.
- **Modulator:** A low frequency oscillator (LFO), shown in blue in the animated graph.
 - **Shape:** Specifies the shape of the LFO waveform that modulates the audio. Six options include Sine, Triangle, Saw1, Saw2, Square, Random.
 - **Rate (Hz):** Adjust the speed of the modulating LFO. Lower settings result in warbling audio, while extremely high settings result in buzzing audio the timbre of which is dictated by the shape you've selected.
- **Frequency:** Frequency modulation (FM) of a secondary oscillator, shown as green in the animated graph.
- **Level (%):** Acts as a Dry/Wet knob controlling the amount of Frequency Modulation that's applied, intensifying or easing off the effect.

- **Phase:** Since each of the four primary effects within this plugin can be applied together, along with the fact that modulation with level components (Tremelo/Rotation/Filter) have the ability to combine or cancel out one another, phase controls are available. Altering the phase of an individual effect allows control of such interaction (e.g., cancel out a high level change, or offset a cancellation).
- **Filter:** Sweep and gain filters.
 - **Filter (%):** Acts as a Dry/Wet knob controlling the amount of filter sweep and gain to additionally use to modify the signal. The amount you've selected is previewed in a 1D graph to the side.
 - **Tone:** Adjusts the center frequency of sweep.
- **Phase:** Since each of the four primary effects within this plugin can be applied together, along with the fact that modulation with level components (Tremelo/Rotation/Filter) have the ability to combine or cancel out one another, phase controls are available. Altering the phase of an individual effect allows control of such interaction (e.g., cancel out a high level change, or offset a cancellation).
- **Amplitude:** Amplitude modulation (AM) of a secondary oscillator, shown as green in the animated graph.
 - **Level (%):** Acts as a Dry/Wet knob controlling the amount of Amplitude modulation applied. (Disabled in Ring Modulation Mode.)
 - **Phase:** Since each of the four primary effects within this plugin can be applied together, along with the fact that modulation with level components (Tremelo/Rotation/Filter) have the ability to combine or cancel out one another, phase controls are available. Altering the phase of an individual effect allows control of such interaction (e.g., cancel out a high level change, or offset a cancellation).
 - **Ring Modulation Mode:** Enables a Ring Modulation effect (where the signal is multiplied by the modulator, rather than modulated by it).
 - **Rotation:** These controls are only available when applied to a multi-channel track.
 - **Rotate:** Amount of Rotation applied.
 - **Offset:** Start offset of rotation in order to further place the signal in space.
 - **Phase:** Since each of the four primary effects within this plugin can be applied together, along with the fact that modulation with level components (Tremelo/Rotation/Filter) have the ability to combine or cancel out one another, phase controls are available. Altering the phase of an individual effect allows control of such interaction (e.g., cancel out a high level change, or offset a cancellation).
- **Output:** Controls for adjusting the final output from this plugin.
 - **Dry/Wet (%):** A percentage control of the output mix of "dry" or original signal to "wet" or processed signal. 0 is completely dry, 100% is completely wet.
 - **Output Level (dB):** Adjusts the overall output level of the affected sound.

Multiband Compressor

A dynamics processor that compresses in highly definable frequency bands. The graph displays frequencies in Hertz horizontally and gain in decibels vertically. This allows for precise compression specific to defined frequency bands and is useful for taming only one or several parts of a signal.



The default setting of the Multiband Compressor

Each band has dynamics control in the determined frequency ranges of Low, Med, and High and are adjustable by pushing the intersection mark on the graph per band or by typing in a frequency.

Bands 1 – 4: Controls for each band.

- **Threshold:** Sets the maximum allowable output level. The default is -25dB. The range is from -50 to 0dB.
- **Gain:** Can add or attenuate up to 12 dB of gain.
- **Ratio:** Adjusts the compression ratio. This sets the gain reduction ratio (input to output) applied to signals that rise above the threshold level. The default is 1.5:1. The range is 1.0:1 to 7:1.
- **Limit:** Limits the output amount by up to 15 dB. The default is 4.5 dB.
- **Attack:** Adjusts the attack rate time constant of the sidechain detector. The default is 1.4 mS. The range is 0.1 to 100 mS.
- **Hold:** Keeps dynamics from being triggered again until a certain amount of time has passed, in mS (milliseconds). Defaults to 0mS. The range is from 0 to 4000 mS.
- **Release:** Adjusts how quickly the sidechain detector stops applying dynamics when a signal goes back below the threshold. The default is 150 mS. The range is 50 mS to 4.0 S.

- **Master:** Controls for adjusting the final output from this plugin.
- **Gain (dB):** Adjusts the overall output level of the affected sound by adding or reducing 18 dB of gain.
- **Q:** Adjusts the width of affected frequencies. Lower values include a wider range of frequencies, higher values include a narrower range of frequencies.

Noise Reduction

A repair plugin designed to reduce a wide variety of noise in all kinds of recordings. A graph shows a spectral analysis of the audio being targeted, along with a purple overlay that shows what noise is being targeted. Two audio meters let you evaluate the input level (to the left) versus the output level (to the right), to compare how much signal is being lost to noise reduction. There are three default presets: De-Hiss, De-Rumble, and De-Rumble and Hiss.



The Noise Reduction Fairlight FX in action

Noise Reduction has the following controls:

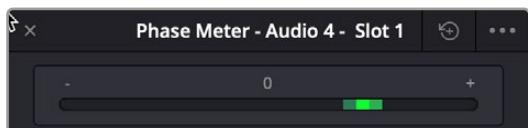
- **Bypass:** Toggles this plugin on and off.
- **Listen to Noise Only:** This checkbox at the top right lets you listen only to the noise that is being removed. This is very useful to determine if too much signal is being removed or if more noise attenuation can be applied.
- **Threshold (in dB):** Relates to the signal-to-noise ratio (SNR) in the source recording. Recordings with a poor signal-to-noise ratio will require a higher threshold value, resulting in more noise reduction being applied.
- **Attack (in ms):** Primarily useful in Auto Speech mode, this controls the duration over which the noise profile is detected. Ideally, the attack time should match the variability of the unwanted noise. A low value corresponds to a faster update rate of the noise profile and is useful for quickly varying noise; a high value corresponds to a slower update rate and can be used for noise that's more consistent.
- **Sensitivity:** Higher sensitivity values exaggerate the detected noise profile; the result is that more noise will be removed, but more of the dialogue you want to keep may be affected.

- **Ratio:** Controls the attack time of the signal profile relative to the attack time of the noise profile. A faster ratio detects and preserves transients in speech more easily, but the resulting speech profile is less accurate.
- **Frequency Smoothing:** Smooths the resulting signal in the frequency domain to compensate for harmonic ringing in the signal after the noise has been extracted.
- **Time Smoothing:** A toggle button enables smoothing of the resulting signal in the time domain as well.
- **Dry/Wet:** A percentage control of the output mix of “dry” or original signal to “wet” or processed signal. 0 is completely dry, 100% is completely wet.
- **Level:** To let you compensate for level that may be lost due to the noise reduction operation you’re applying, this applies a pre-gain in, from -6dB to +18dB, just before the dry/processed mix.

Phase Meter

Phase cancellation is a phenomena where the waveforms of a stereo recording (for example a stereo recording of a music performance) go slightly out of sync with one another for whatever reason, and begin to cancel one another out in unpredictable ways, resulting in the audio sounding strange. This results in poor quality audio and can cause problems when you’re trying to compress a mix to a distribution format such as AAF or MP3.

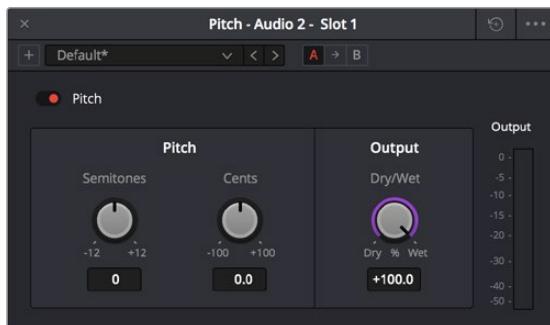
The Phase Meter plugin is a visual meter that lets you evaluate whether or not a signal is in phase and is meant to be applied to a bus so you may evaluate the phase of a mix and correct whatever problems may be occurring. The position of a green dot within a horizontal meter indicates the phase of the signal. When there’s no signal or a signal on only one half of a stereo bus, the dot appears in the center (0). When the signal is out of phase, the dot appears all the way to the left (-). When the signal is in phase, the dot appears all the way to the right (+).



The Phase Meter plugin

Pitch

An effects plugin that shifts audio pitch without altering clip speed.



The Pitch Fairlight FX

Pitch has the following controls:

- **Bypass:** Toggles this plugin on and off.
- **Semitones:** A “coarse” adjustment that can shift audio pitch up to +/- 12 semitones.
- **Cents:** A “fine” adjustment that can tune audio pitch in +/- 100ths of a semitone.
- **Dry/Wet:** A percentage control of the output mix of “dry” or original signal to “wet” or processed signal. 0 is completely dry, 100% is completely wet.

Reverb

A spatial simulation plugin, capable of recreating multichannel reverberation corresponding to rooms of different sizes, adjustable via a graphical 3D cube control. This plugin lets you take a “dry” recording and make it sound as if it’s within a grand cathedral, an empty room, a tiled bathroom, or other spaces.

To understand this plugin’s controls, it helps to know that the signal follows three paths which are combined to create the final effect:

- A direct path.
- An early reflection path (ER) simulating early reflection rays obtained from the first multiple reflections on the walls, traveling from the virtual source to the virtual listener.
- A late reverberation path (Reverb) simulating the behavior of an acoustic model of the room.

A graph shows an approximate visualization of the reverb’s effect on the frequencies of the audio signal.



The Reverb Fairlight FX

Reverb has the following controls:

- **Bypass:** Toggles this plugin on and off.
- **Room Dimensions:** By controlling the size of the virtual room a sound is to inhabit, these parameters simultaneously control the configuration of Early Reflection and Late Reverberation processing. The acoustic modes from this simulated room are computed and fed to Late Reverberation processing. The shape, gain, and delay of the first reflections are computed and then fed to Early Reflection processing.
 - **Height, Length, Width:** Defines the dimensions of the reverberant space, in meters.
 - **Room Size:** The calculated Room Width x Length, in meters.
- **Reverb:** Additional controls that further customize the configuration of Early Reflection and Late Reverberation processing.
 - **Pre Delay:** Increase or negate the propagation time from the virtual source to the virtual listener. As a result, it modifies the initial delay time between the source signal and the first reflection.
 - **Reverb Time:** Decay time of the Reverb tail. It controls the overall decay time of the acoustic modes from late reverberation processing.
 - **Distance:** Modifies the distance between the virtual source and the virtual listener. It modifies only the configuration of early reflections processing.
 - **Brightness:** Modulate the shape of the decay time over frequency. At maximum brightness, decay time is identical at any frequency. At minimum brightness, higher frequencies result in shorter decay time and therefore duller sound.
 - **Modulation:** Adds random low-frequency phase modulation from the tapping point of ER processing. At 0%, modulation is not used.
- **Early Reflection Tone:** Four post equalization controls modify the tone of early reflections to suit a particular room's characteristics.
 - **Low Gain:** Amount of gain added to the low frequency.
 - **Low Frequency:** Frequency range of 150 Hz to 500 Hz.
 - **High Gain:** Amount of gain added to the high frequency.
 - **High Frequency:** Frequency range of 1k Hz to 16k Hz.
- **Reverb Tone:** Four post equalization controls modify the tone of the reverb tail to suit a particular room's characteristics.
 - **Reverb Tail Low Gain:** Amount of gain added to the low frequency.
 - **Reverb Tail Low Frequency:** Frequency range of 150 Hz to 500 Hz.
 - **Reverb Tail High Gain:** Amount of gain added to the high frequency.
 - **Reverb Tail High Frequency:** Frequency range of 1k Hz to 16k Hz.
- **Output:** These controls recombine the three audio processing paths into a single output signal.
 - **Dry/Wet:** A percentage control of the output mix of "dry" or original signal to "wet" or processed signal. 0 is completely dry, 100% is completely wet.
 - **Direct Level:** The amount of the direct level to mix into the final signal.
 - **Early Reflection Level:** The amount of early reflection to mix into the final signal.
 - **Reverb Level:** The amount of reverb to mix into the final signal.

Soft Clipper

The Soft Clipper is a limiting processor that reduces the output level above a defined threshold in a rounded manner so that peaks are more cleanly attenuated. The Soft Clipper plugin will impart saturation effects when pushed hard above the threshold, allowing for the introduction of warmth and subtle distortion to the sound. A graph shows the shape of the curve adjustment this plugin makes to the audio.

A soft clipper is often combined with a standard limiter in order to increase perceptual loudness of material without imparting harshness.



The Soft Clipper Fairlight FX

- **Threshold:** Introduces input gain to the signal prior to hitting the clipper, forcing audio peaks over the threshold by that amount. As such, it will drive the saturation and distortion.
- **Shape:** The shape of the clipper can be varied to change the character of the soft clipper from full soft-clipping (all the way right, where the peaks are rounded) to full hard-clipping (all the way left, where the peaks are squared off).
- **Output Level:** Lets you adjust the output gain to compensate for signal lost during soft clipping, if necessary.

Stereo Fixer

A simple plugin designed to fix stereo source material in cases where only one side of a stereo signal was recorded, where one side of a stereo recording is a different level to the other, or where the stereo channels have been incorrectly Left/Right swapped.

This plugin can also be used as a "Mid/Side" decoder, for recordings that were made using this microphone technique.

This plugin is for stereo clips only.



The Stereo Fixer Fairlight FX

- **Format:** The input processing mode you want to use to fix the stereo output.
 - **Stereo:** (Default) No format conversion is performed.
 - **Reverse Stereo:** Swaps the Left and Right side.
 - **Mono:** The output from the plugin is a mono mix of the two inputs.
 - **Left Only:** The left input is sent to both left and right outputs.
 - **Right Only:** The right input is sent to both left and right outputs.
 - **M/S:** The left output is the left (Mid) input minus the right input (Side). The right output is the left (Mid) input plus right input (Side).
- **Left/Right Gain:** Lets you apply independent gain on the left or right outputs. This gain is applied after (post) the input processing mode.

TIP: For a comprehensive M/S decoder solution, simply chain two Stereo Fixer plugins together. Use the first unit to control the Side signal level, thus controlling the width of the second unit (set to M/S).

Stereo Width

An enhancement plugin that increases or reduces the spread of a stereo signal in order to widen or reduce the separation between channels. If this plugin is added to a Mono channel, it will be disabled, as there is no stereo width to either distribute or control.

A graph shows the currently selected width of stereo distribution as a purple arc, while inside of that graph a stereo meter shows the Left and Right distribution of the audio signal. Two audio meters measure levels, an Input meter to the left, and an Output meter to the right.



The Stereo Width Fairlight FX in action

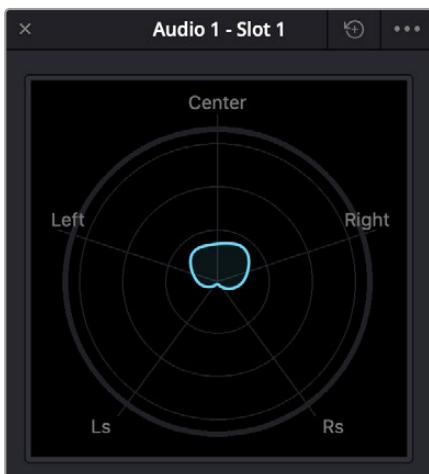
Stereo Width has the following controls:

- **Width:** Lets you control the spread of the stereo output. Settings range from 0 (Mono) to 1 (Stereo) to 2 (extra wide stereo).
- **Diffusion:** Adds more complexity to the output.
- **Sparkle:** Adds more high frequencies to the spread.

Surround Analyzer

The Surround Analyzer is a graphical meter that shows a spatial image of the audio being measured, rather than a typical bar graph meter. Due to its changing shape because of the signal being played, sometimes it is referred to as the “jellyfish meter.”

This type of metering is very useful; rather than relying on bars to indicate the directions in which audio is radiating, you can clearly see the relationship of all of the channels to one another.



The signal here is radiating more to the right, indicating the panning of the audio.

Vocal Channel

An enhancement plugin for general purpose vocal processing consisting of High Pass filtering, EQ, and Compressor controls.

Side by side EQ and Dynamics graphs are presented above the controls. An output audio meter lets you monitor the final signal being produced by this plugin.

Vocal Channel has the following controls:

- **High Pass:** Enabled by a toggle, off by default. Has a single frequency knob that sets the threshold below which frequencies are attenuated to reduce boominess or rumble.
- **EQ:** A three-band EQ for fine tuning the various frequencies of speech, enabled by a toggle, including Low, Mid, and High Mode, Frequency, and Gain controls
 - **Low/Mid/Hi Mode:** Lets you choose from different filtering options to use for isolating a range of frequencies to adjust. Different bands present different options.
 - **Low/Mid/Hi Freq (Hz):** Lets you choose the center frequency to adjust.
 - **Low/Mid/Hi Gain (dB):** Lets you boost or attenuate the selected frequencies.



The Vocal Channel Fairlight FX

— Compressor:

- **Threshold (dB):** Sets the signal level below which compression occurs. Defaults to -25dB. The range is from -40 to 0dB.
- **Reaction:** Adjusts how quickly compression is applied when a signal exceeds the threshold. The default is 0.10.
- **Ratio:** Adjusts the compression ratio. This sets the gain reduction ratio (input to output) applied to signals which rise above the threshold level. The default is 1.5:1. The range is 1.1 to 7.0.
- **Gain (dB):** Lets you adjust the output gain to compensate for signal lost during compression, if necessary.

Voice Isolation

Voice Isolation is a plugin that can remove loud, undesirable sounds from existing voice recordings. This effect utilizes AI to provide models that let you completely remove undesired sounds. The AI model is trained for any type of human voice, male or female, young or old, so you can get incredible results that isolate dialogue from background sounds in a recording—including everything from air conditioning or fans to extremely loud sounds like a jackhammer, restaurant background noise, or music playing at the same time that the subject is speaking, and so on).

Voice Isolation can be used on track audio in real time but not on live audio input. Voice Isolation can be used on any mono or stereo (or multi-mono) audio track, but it is not supported on greater-than-stereo tracks.



The Voice Isolation plugin

Voice Isolation has the following controls:

- **Amount:** Lets you adjust the amount of voice isolation processing.

Chapter 178

Audio Meters and Audio Monitoring

The Meters panel, which appears at the top of the Fairlight page when it's enabled, provides a visual reference of the levels of each track in your mix, along with specialized meters showing the busses, monitoring mix, loudness, and a Viewer for seeing the video of the current project as you work.

This chapter describes the use of these meters, and provides information about the different options that are available.

Contents

The Monitoring Panel	3784
Track Meters and Monitoring Controls	3784
Bus Meters	3785
Meter Plugin	3786
Surround Analyzer	3786
Compound Meters and Output Bus Selection Menu	3787
Monitoring Menus	3787
Control Room Meters	3788
Loudness Meters	3788
Offline Loudness Analyzer	3791
Metering Options	3792
Level Metering Options	3792
Pre-fader Metering	3793
Target Loudness Level	3794
Viewer	3794
Cinema Viewer on Fairlight Page	3795

The Monitoring Panel

Turning on the meters in the UI toolbar displays the Monitoring panel that runs along the top of the Fairlight page, which shows all of the audio meters that correspond to the tracks in the Timeline, as well as the Bus meters that correspond to the Mains, Subs, and Aux busses of your mix, the Control Room meters, and a video viewer.



The Monitoring panel

Double-clicking anywhere on the Tracks panel of the meters hides or reveals a double-height Track display. With the increased track counts necessary for immersive audio, the extra metering allows you to see more tracks display in real time.

Hovering a mouse below the Tracks panel shows a cross-hairs that allows you to resize the Monitoring panel to fit a particular need for viewing.

The Compound meters and the Bus Output meters can also be resized by hovering on the right side of the Loudness meter and dragging to the desired dimensions.

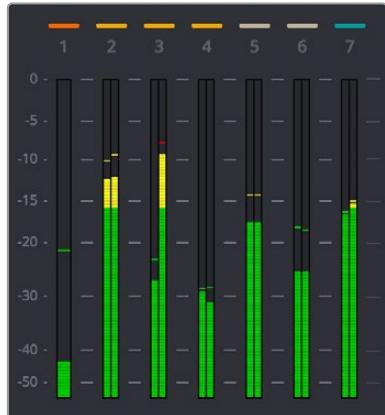


The double-height Monitoring panel

Track Meters and Monitoring Controls

At left, a row of audio meters corresponds to the channel strips of the Mixer, one meter for every audio track in the timeline. Each track displays the number of meters that corresponds to that track's audio mapping, with mono tracks having a single audio meter, stereo tracks having two, 5.1 tracks having six, and so on.

Each track and bus meter (with the exception of the Loudness meters) display RMS (root mean square) levels against a dB scale. A single line indicating the maximum value at any given moment in time is held briefly just above the current RMS levels, which appear as a solid bar extending from the bottom of the meter. RMS meters display a weighted “average” representation of the audio level that’s closer to the way audio is actually perceived, although not as accurate in measuring perceived loudness as the loudness meters discussed later in this section.



Track audio meters with different numbers of meters depending on that track's audio mapping



The peak meter at top

Each meter bar is color coded to indicate three different sound level “zones,” from low to medium (green) to moderately high (yellow) to very high (red).

Each meter is identified by the track number it represents (track names are not shown over track meters) as well as the color of that track.

Bus Meters

To the right of the track meters are the bus meters, in which all user-created mains and busses appear, separated by type, and each displaying the number of meters that corresponds to that track's audio mapping. These meters allow you to monitor the sum of all tracks that have been routed to a particular bus, as you can on bus channel strips.

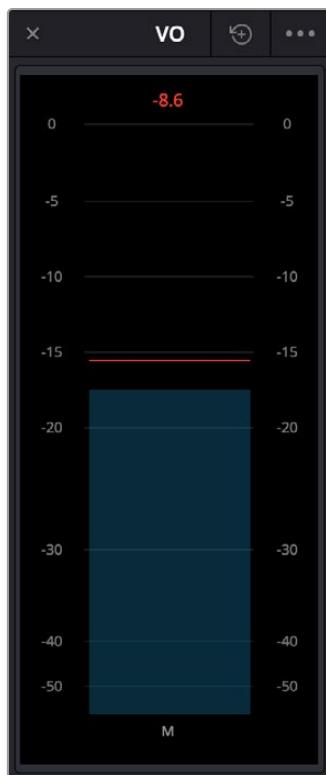


Bus meters for the Mains, Subs, and Aux busses

Meter Plugin

There is a Meter plugin available for temporarily adding a meter to a specific track, FlexBus, or when using fixed busing to Sub, Aux, or Main. These are sample peak processing meters that are useful for instances where you want a large meter that focuses on a specific bus while you're working.

These meters are presented very simply, with a gray bar indicating level and a red peak line that holds for two seconds, which indicates the highest peak. A numeric reading at the top of the meter gives the exact level, in dB. This number continues to hold, indicating the loudest level measured for any given stretch of playback. The option menu in this meter's floating window presents different settings you can choose. For more information, see *Chapter 177, "Fairlight FX."*



The Meter Fairlight FX



The signal here is radiating more to the right, indicating the panning of the audio.

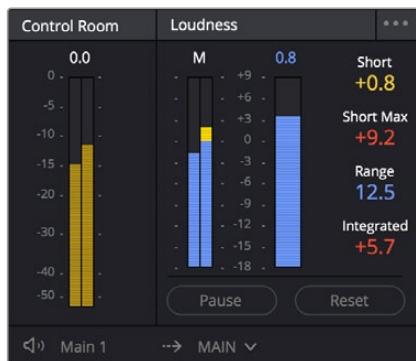
Surround Analyzer

The Surround Analyzer is a graphical meter that shows a spatial image of the audio being measured, rather than a typical bar graph meter. Due to its changing shape because of the signal being played, sometimes it is referred to as the "jellyfish meter."

This type of metering is very useful; rather than relying on bars to indicate the directions in which audio is radiating, you can clearly see the relationship of all of the channels to one another.

Compound Meters and Output Bus Selection Menu

The compound meters, to the right of the bus meters, consist of Control Room meters and Loudness meters, shown side-by-side to provide a comprehensive analysis of your overall audio mix. Below, drop-down menus let you choose which bus you want to monitor, as well as which set of speakers you want to use to do the monitoring.

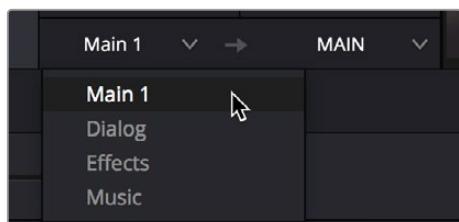


The Control Room meters (at left) and Loudness meters (at right)

Monitoring Menus

Bus Monitoring Menu

The bus monitoring drop-down menu determines which bus is monitored by your audio output (speakers or headphones), and thus which gets analyzed by the compound meters, letting you choose which bus you want to monitor as you work. You can choose one of your mains or any other bus (or track) you've set up that you want to focus on for more detailed work.



The monitoring menu lets you choose which bus you want to monitor while working

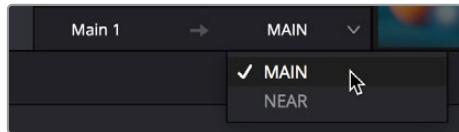
Speaker Set Monitoring Menu

To the right of the Monitoring menu, the output is set to "Auto" by default (if you have Automatic speaker configuration checked on in Preferences > Video and Audio I/O > Audio I/O). This means that your basic speaker set up is routed to the stereo or surround output your hardware supports automatically and can't be altered.

Monitoring with Multiple Speaker Sets

If you want to manually configure multiple speaker sets, unchecking the automatic speaker configuration preference will display a drop-down to the right and lets you choose one of the available sets of speakers once they have been configured in the Video and Audio I/O panel of the System Preferences. This gives you the flexibility to quickly compare your mix on a variety of speakers and configurations to see how it holds up in different situations.

For more information on configuring different speaker setups, see *Chapter 4, "System and User Preferences."*



The monitoring menu lets you choose which bus you want to monitor while working

Control Room Meters

The mustard-colored Control Room audio meters show the sum of all audio channels that are routed to the currently selected bus being monitored (as selected in the drop-down menu below). These are peak meters measured in dBFS.

A true peak audio measurement is displayed at the top of the Control Room meter.

Loudness Meters

The set of meters all the way to the right are the Loudness meters, which consist of a set of two graphical meters and a numerical readout. This lets you keep track of the “integrated loudness” of the overall mix, which is the standard that all contemporary mixing specifications refer to when specifying client deliverables. Unlike the RMS audio meters found in the Timeline or Mixer, which measure audio in dB, Loudness meters do a different kind of analysis, measured in LUFS (loudness units relative to full scale).

What Is LUFS?

LUFS measurements evaluate sound levels that are averaged over time referenced to full scale. Full scale is the loudest level a digital audio system can handle before overloading (“clipping”). LUFS allows totally different types of program material to be matched in perceived level by human ears and has become the standard way that mixes are measured for final delivery of your program material. LUFS are shown as negative numbers, such as -23, -14, etc., because the level is referenced to full scale (digital 0).

Loudness Meter Options

Two options in the General Options of the Project Settings let you customize the Loudness meters.

- **Target Loudness level:** Lets you set the LUFS value that’s used as a reference level for loudness metering. Defaults to -23 LUFS, which conveniently makes the display of these meters scale similarly to traditional audio meters that you’re already used to.
- **Loudness Scale:** Lets you choose which scale you want to use with which to measure the meters. Options currently include the default of EBU +9 Scale (-18 to +9), and EBU +18 Scale (-36 to +18).

Support for Multiple Loudness Standards

The Loudness Meter can be switched among a variety of international industry-standard loudness monitoring standards. The standard you choose uses the integrated loudness value (along with a specified tolerance defined by each selected standard) to indicate whether or not the current mix level is of acceptable loudness via color coding of the Integrated Loudness value, and in the Integrated Loudness graph described below. Blue values indicate loudness levels that are below tolerance, yellow indicates loudness values that are within tolerance, and red indicates loudness values that are above tolerance.

The built-in standards you can switch among include the following:

- **BS.1770-1:** An older loudness standard used by DaVinci Resolve version 15 and before.
- **BS.1770-4:** The most up-to-date loudness standard as of DaVinci Resolve 16; the algorithms specified by this standard govern the other standards that are listed below in this drop-down menu.
- **ATSC A/85:** The American standard for acceptable loudness in broadcast.
- **EBU R128:** The European standard for acceptable loudness in broadcast.
- **OP-59:** The New Zealand and Australian standard for acceptable loudness in broadcast.
- **TR-B32:** The Japanese standard for acceptable loudness in broadcast.
- **AGCOM 219:** The Italian standard for acceptable loudness in broadcast.
- **NETFLIX:** The Netflix standard for acceptable loudness in broadcast.

All of these loudness standards are available for off-line readings as well, using the Loudness Analyzer described in the next section.

NOTE: The target peak meter now uses the BS.1770-4 standard for measuring maximum “true peak,” which means that this meter is capable of measuring “inter-sample peaks,” rather than only the peaks at each sample of a waveform.

Graphical Loudness Meters

Two separate meters give you a dynamic graphical measurement of the loudness of the selected bus being monitored according to the loudness standard you've selected, which determines how to analyze the subjective loudness of a given audio mix for purposes of compliance with required broadcast quality control (QC) standards.

- A steel-blue meter labeled M (for momentary) has as many channels as the selected bus you're monitoring, excluding the LFE channel(s) of surround formats, which aren't factored into loudness metering. This meter measures LEQ (equivalent sound level), within a 400ms window following the playhead as measured every 100ms. This lets you evaluate the LUFS (Loudness Units Full Scale) level of the mix at the current frame as you play. This discrete-channel analysis is used to calculate all other values of the loudness metering system.
- A second steel-blue mono meter to the right displays the sum of all channels in the M meter, displayed in LU (loudness units). The number value displayed at the top of this meter is the maximum LU value that's been analyzed during any stretch of timeline playback. This value is held until it's reset, either by stopping and initiating playback a second time while Link to Playhead is enabled, or when you click the Reset button at the bottom of the loudness meter area.

Numeric Loudness Meters

A set of values to the right of the meters give running reports on the audio level of your mix. While the graphical meters are useful for analyzing your mix as you work, these numeric readouts are particularly valuable for providing the strict information you need to adhere to written QC standards. Their meaning is as follows:

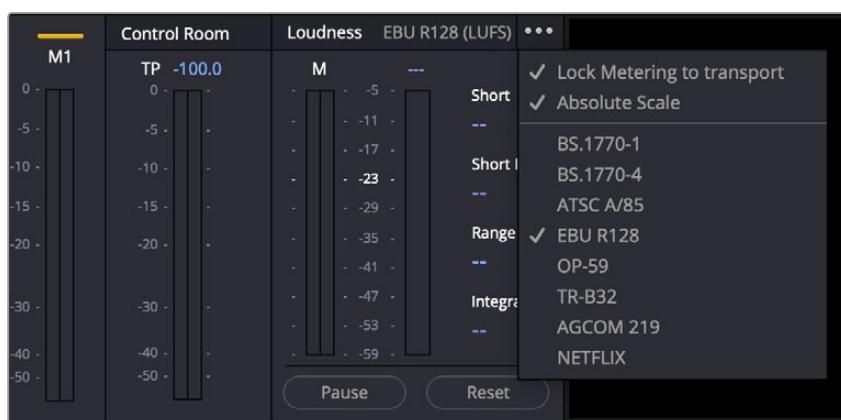
- **Short:** Measures the average LU level over a 30-second window following the playhead.
- **Short Max:** Shows the maximum level over the same 30-second window. This analysis is required by EBU R128.
- **Range:** Measures the dynamic range of the Loudness of your mix (in LU, or loudness units), which is the difference between the average soft and average loud parts of your mix. Analyzes the overall loudness over a played range of the mix, discounts the lowest 10% and highest 5%, and then gives a standardized expression of the difference between the remaining soft and loud levels that were analyzed. The window of analysis is as long as you've been playing. This analysis is required by most QC specifications.
- **Integrated:** Measures the LUFS value of the portion of the range of the mix you've played through. As you play, this integrated value accumulates. This analysis is required by most QC specifications.

Absolute Scales and Dialog

While some users prefer to measure their levels to correspond to a relative scale of "0," similar to a VU meter where the needle rides above the "0," others want to see the absolute measure of the amplitude in LUFS and true peak. By default, the Loudness meter is set to relative scale, but you now have the option to choose between relative scale and absolute scale in the Loudness meter.

Relative scale in the Loudness menu is relative to the selected scale, so a loudness unit of 0 corresponds to the target of the chosen measure type. For instance, if EBU R128 is selected, whose target measure is -23dB LUFS, the "0" LU (Loudness Unit) is -23dB. If ATSC A/85 is chosen, whose target is -24dB, then that becomes the corresponding equivalent of the relative LU of 0.

When using the absolute scale, the Loudness meter displays the increments to reflect the the chosen measure type. In absolute scale the EBU R128 meter will display -23 instead of the relative scale's 0.



The option in the Loudness panel reveals the various measure types as well as the option for absolute scale.

Using the Loudness Meters

When using the Loudness meters to do a structured analysis of your mix to determine QC adherence, a group of controls let you determine when analysis begins and ends.

- **Lock Metering to Transport:** This setting is found in the compound meter option menu. When enabled, all loudness metering analysis is automatically reset whenever you move the playhead to another location in the Timeline. This is useful when you're spot-checking different parts of your mix, or working on a particular scene. Uncheck this option if you want the measurement of playback to that point in the Timeline to remain.
- **Absolute Scale:** An absolute measure of the selected scale type.
- **Pause and Reset buttons:** When you're doing a formal analysis of your mix, the Reset button lets you reset all currently accumulated analyses, and the Start button initiates loudness value accumulation. If you need to stop playback briefly to do something else, you can click Pause, and then click Resume when you're ready to continue the analysis.

Offline Loudness Analyzer

Users also have the ability to analyze an audio file's loudness offline. This is a fast way to measure loudness in imported audio files or bounced mixes.

To initiate offline loudness analysis:

- Right-click the file in the Timeline, and choose Analyze Audio Level from the contextual menu. A dialog box displays the available options for measurement.

All of the measurements available in the real-time loudness meter are accessible in the drop-down menu inside the Analyze Audio Level panel. When the analyzer mode is chosen, the target measurements for that mode will display next to the reading in parenthesis. Once you have clicked the analyze button, the results will display in the panel next to the chosen mode's target measurement values.



Select the audio file, choose the desired analyzer mode, in this case EBU R128, and click analyze.

Visualizing Loudness Monitoring

When you show the track of a Main bus in the Timeline, as long as the track is high enough (ahem, tall enough), you can show or hide a series of "Loudness History" curves to visualize the loudness analysis of the mix on that bus over the duration of the mix.

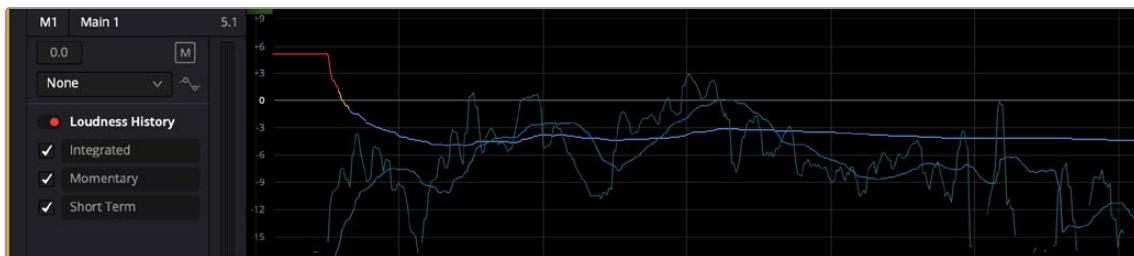
The available curves are:

- **Integrated:** A thick curve shows the averaged "integrated" loudness analysis of the current mix, which is a measurement that's taken from the beginning to the end of playback. This graph is the primary gauge of whether or not measured loudness is acceptable. The color of each segment of this curve indicates whether that part of the mix is "to spec." Blue indicate loudness levels that are below tolerance, yellow indicates loudness values that are within tolerance, and red indicates loudness values that are above tolerance. By evaluating the colors of the curve, you can easily spot which parts of your mix might need adjustment to meet the necessary specification.

- **Momentary:** A measurement of the loudness measured in the past 400ms, shown by a thin green-blue curve, which provides an analysis of transient level changes.
- **Short Term:** A measurement of the loudness of the past 3 seconds, shown by a thin blue line, which provides a more averaged analysis than the Momentary curve, yet still indicates the dynamics of the mix.

To show the loudness history for Main 1:

- 1 Open the Automation controls by clicking the automation button on the Fairlight toolbar.
- 2 Open the Index, and click the eye button for the Main you want to see in the Timeline. Loudness History appears as an option in the track header controls as long as the track is tall enough to show the controls. These controls will be hidden on short tracks.
- 3 Turn on the Loudness History toggle, and check the curves you want to see. The Integrated, Momentary, and Short Term loudness analyses can be individually displayed or hidden, to expose overlapping graphs in that track in which you can see your program's loudness over time.



Viewing the loudness graph of the mix going out of a Main

NOTE: Currently, loudness history is only supported for Main 1.

Metering Options

DaVinci Resolve has a variety of metering options that allow you to tailor metering to your workflow. The settings appear in Project Preferences > Fairlight on the Audio Metering pane, but they affect mixer, Fairlight effects, or master metering on the Cut and Edit pages.

Level Metering Options

You can chose the response characteristic of the level meters for channel strips and Fairlight FX.

The Meter Type drop-down allows you to choose between IEC 60268-18, Digital VU, and Custom response characteristics. Both meter types have separate "hold and fall" metering, allowing you to see the highest peak that is reached.

- **IEC 60268-18:** A digital PPM-type meter with reference standard of -18 dBFS, a fast response to peaks, and a slower release characteristic. This is the default in DaVinci Resolve and is used in all Blackmagic Design software and hardware products.

- **Digital VU:** A dual-value meter, showing the peak level as a single segment with fast ballistics, and the RMS (volume unit) as a bar graph. It has a far faster quasi linear decay characteristic, making it easy to monitor average levels while allowing sounds with quick transients and decays to be more easily tracked. This option can be best for audio editing and mixing.
- **Custom:** Allows each aspect of the meter response to be chosen, including level detector, scale, peak, deck and peak indication.

Pre-fader Metering

By default, “Pre fader metering on tracks” is unchecked (disabled), setting the metering on channel strips to be post (after) the fader level and mute button. For example, if the source audio file has peaks that are hitting -2 dBFS, and the channel fader is lowered from 0 to -10, then the peaks that show on the meter will now be at -12.

When pre-fader metering is on, the metering point is set to be before the fader, and is not affected by the fader’s position. However, the meter is affected by clip gain settings or key framing as these level changes occur before the clip’s signal enters the mixer’s signal path.

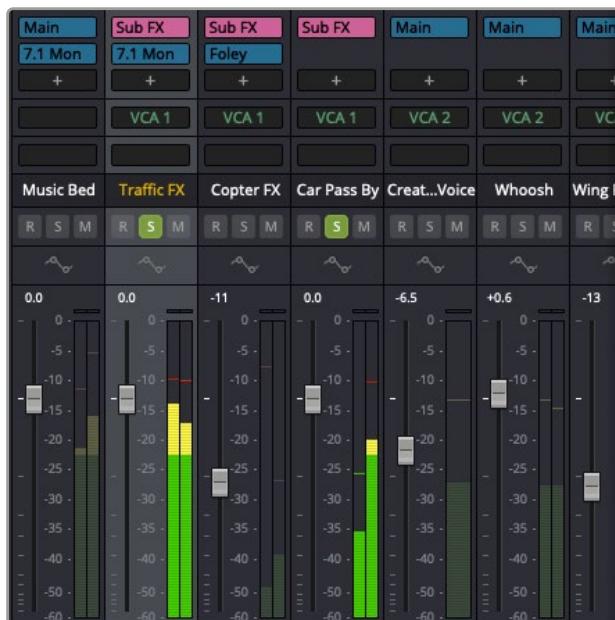
With pre-fader metering, you could lower the fader to be fully off (minus infinity) and the meter will still read the level of the source signal. This allows you to always be aware of the source signal and what it is doing before being altered by mixer’s controls or processing.

Many video editors prefer to work with post-fader metering, but most audio mixers prefer to work with pre fader in order to be aware of what the actual source level is at any time.

Solo and Pre-fader Metering

When pre-fader metering is enabled, soloing one or more tracks will show a lighter “ghost” version of meter activity on non-soloed tracks, allowing you to always see audio levels on tracks that are muted by the soloing process. This makes it easy to focus on tracks that are actually audible while still seeing activity on those that are not.

If pre-fader metering is off (the default), when one or more tracks are soloed, no metering occurs on tracks unsoloed tracks.



Pre-fader metering with light shaded meters on non-soloed tracks

Target Loudness Level

Allows the target loudness level in LUFS for the master Loudness meters to be set to your desired output target level. For example, DaVinci Resolve's default loudness standard target is -23 LUFS, but the YouTube target LUFS specification is -14 LUFS. If -14 LUFS is set, the "0" mark on the loudness meter scale moves to this level, allowing you to focus your master mix levels towards that loudness standard.

Viewer

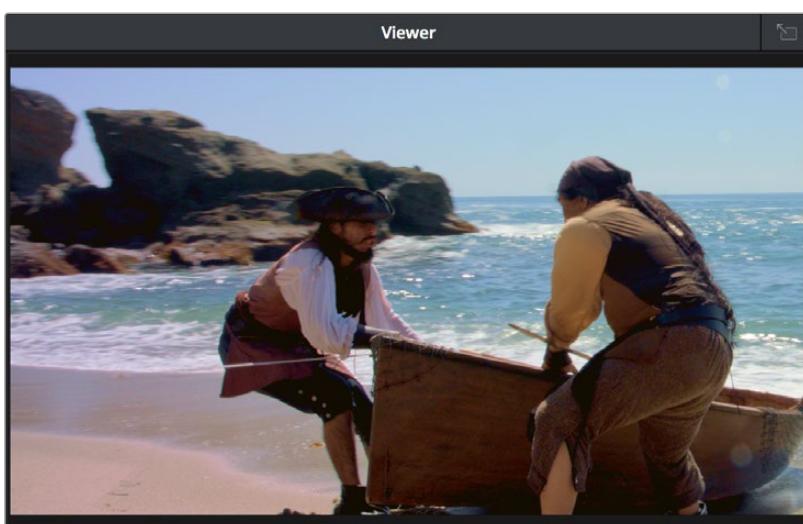
A small viewer to the right of the Monitoring panel shows the frame of video at the position of the playhead. This is the same image that's output to the external broadcast display of your workstation if you have one connected.



The Viewer lets you see the picture you're mixing to.

Clicking the Expand Viewer button at the bottom right-hand corner lets you open the Viewer into a floating window, which you can then position anywhere you want.

To close the floating Viewer, click the Dock Viewer button at the upper right-hand corner of the floating viewer window.



Click the button at the upper right-hand corner to dock the Viewer again.

Cinema Viewer on Fairlight Page

Sometimes when you need to verify lip sync, sound effects sync, or simply review a new section of a mix you've been working on, it helps to watch the visuals of the program full screen as you listen to your mix. You can now set the Fairlight page Viewer to Cinema Mode by choosing Workspace > Viewer Mode > Cinema Mode (Command-F).

Chapter 179

Signal Flow Diagrams

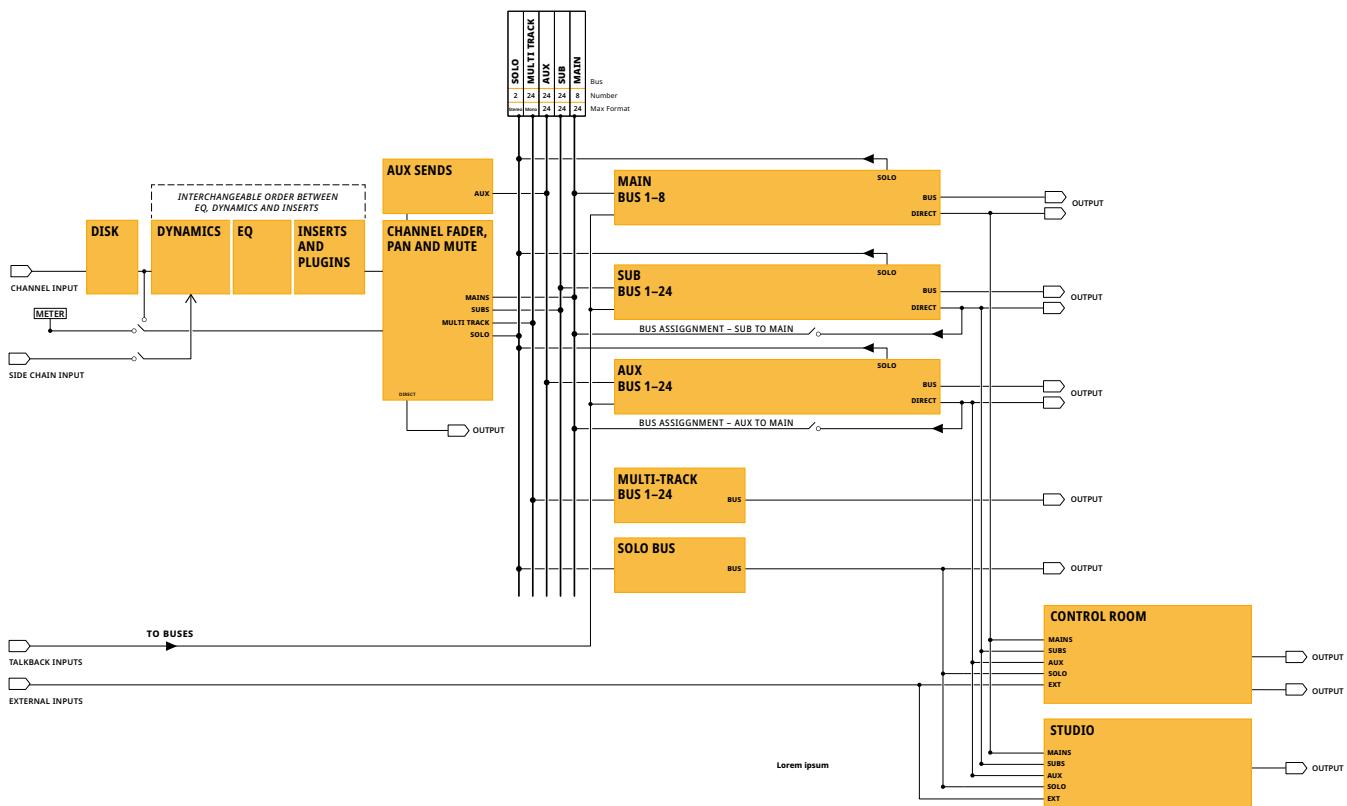
The diagrams in this chapter describe the audio signal flow that takes place within the Fairlight audio processing used by DaVinci Resolve. They're intended for people who want an in-depth understanding of how audio is processed.

Contents

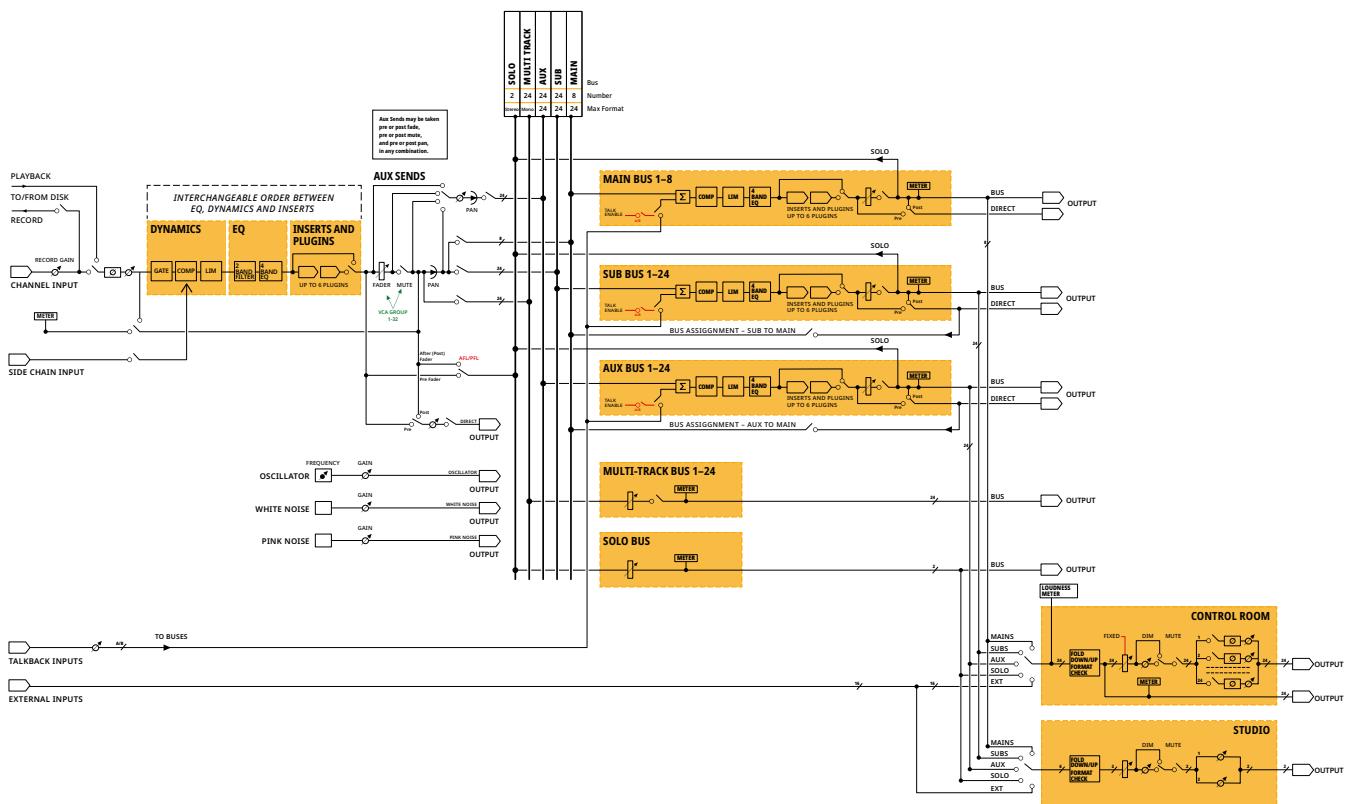
Signal Flow Overview	3797
Audio Processing Path	3797

Signal Flow Overview

The following simplified flow diagram describes Fairlight audio processing overall.



Audio Processing Path



Chapter 180

Immersive Audio Workflows

DaVinci Resolve offers substantial support for object and channel-based surround or immersive audio formats.

This chapter describes how to set up and mix with these formats when mixing in the Fairlight page.

Contents

About Immersive Audio Formats	3799	Object-Based Format Support (Studio Version Only)	3808
Dolby Atmos^(tm)	3799	Auro-3D Support (Studio Version Only)	3809
Dolby Atmos Speaker Configurations	3800	Dolby Atmos Configuration Controls	3809
Enabling Dolby Atmos	3801	Atmos Re-Renders	3809
The Components of a Dolby Atmos Mix	3801	MPEG-H Authoring	3810
Predetermined Dolby Atmos Master Rules	3802	Track Configuration	3811
Dolby Atmos Integration	3802	Export	3812
Binaural Audio Monitoring	3803	Quality Control	3813
Binaural Render Options	3804	B-Chain Support for Audio Monitoring (Studio Version Only)	3813
Immersive Format Configuration	3805	Overview of Setting Up a B-Chain Configuration	3814
Exporting ADM BWF	3806	Space View Channel Monitoring	3818
Parallel Loudness Measurement	3808		
Low-latency Rendering	3808		
New Surround Buses in Fairlight (Studio Version Only)	3808		

About Immersive Audio Formats

Immersive audio formats use multiple channels of audio to position audio around an audience, to add a specially creative dimension to sound design. At their simplest, formats such as 5.1 and 7.1 surround allow the mixer to send varying amounts of any given track to the combination of speakers that makes audio sound centered in front, ambient from the rear, or weighted towards the left or right of an auditorium or living room. More sophisticated “object-based” formats such as Dolby Atmos™ define a virtual soundstage on which you can actually position tracks in 3D space, and the resulting positional audio is rendered by specialized encoder/decoders to however many speakers in whichever configuration a venue happens to have.

Dolby Atmos^(tm)

The traditional surround sound experience outputs a specific set of monitoring channels that requires a specific number of monitor speakers placed in particular areas of a room, which can position sound approximately within a ring around the listener. Dolby Atmos improves upon this by being an object-based sound system operating within a 3D immersive space that can accommodate a wider variety of different speaker configurations using more speakers positioned around the listener. This increases dimensionality with more precise sound placement, adding height channels to produce sound that comes specifically from above. DaVinci Resolve supports Dolby Atmos output render formats 5.1.4 to 9.1.6.

A practical example of this difference can be heard when panning in a 7.1 mix; since you’re sending signals to specific points in a speaker array, those points are fixed. Although the physical size of rooms can be larger or smaller, the mix is always sent to those assigned point speakers, so the experience from room to room may be inconsistent. By comparison, Dolby Atmos gives re-recording mixers a way to mix to an idealized space instead of fixed speaker positions. This means a Dolby Atmos mix, when played in a Dolby Atmos room, takes into account the actual dimensions of the space, as well as the number of speakers that are used, to recalculate audio playback to suit that exact space and playback equipment, giving a more faithful recreation of the mix with much more specific sound placement, when necessary.

To give a clear example of the benefits of Dolby Atmos, think of a small theatre that has standard left, center, and right front-screen speakers. It then has four left surround and four right surround, four overhead left, and four overhead right. For this example, let’s say you have sent a sound to the surround left in Atmos, positioned at about one-half of the distance from the screen.

Now move the Atmos mix to a much larger room with twice as many monitor speakers. The new theatre has eight left surrounds, eight right surrounds, eight overhead left, and eight overhead right. Playing in this new configuration, Atmos automatically calculates the ratio of the room and the new speaker array. In this example, when that sound is reproduced at one-half of the distance from the screen, Dolby Atmos calculates the ratio of the sound in relation to the new playback setup, so the listener hears exactly what the re-recording mixer intends.

For this example, let's say to have that audio playing back at one-half of the distance from the screen in the small room, the audio is played on the second surround speaker on the left. When this same audio is played in the larger room, Atmos determines that the fourth surround speaker is one-half the distance from the screen. The importance is not what speaker the sounds are assigned to but rather where in space the sound should be heard. Atmos calculates the ratio of the playback spaces and monitor speakers to faithfully reproduce a mix, rather than assign sounds to a fixed speaker position.

Dolby Atmos Speaker Configurations

It is important to understand that the term Dolby Atmos isn't restricted to describing any particular speaker layout. Dolby Atmos is a complex metadata-driven system that interprets the audio from a configured Atmos mix, determines the playback system of the end user, and calculates the mix to fit each particular space and system. Assuming the possession of a Dolby Atmos compatible system, if a 7.1.4 Atmos mix is played by someone with only a two channel playback system, then it will intelligently down mix the 7.1.4 Atmos to stereo. If a user has a standard 5.1 monitor system, then the 7.1.4 Atmos soundtrack will down mix to five channel surround with a subwoofer.

The naming of the channel configurations in the Dolby Atmos format includes the height channels in the nomenclature. Channel configurations are presented as three digits separated by periods, such as 7.1.4, which is a typical speaker configuration. The first digit describes the number of main, or ear-height monitoring channels that surround the listener. The second digit describes the number of subwoofer channels. The third digit describes the number of height channels, which are speakers positioned on, or in the case of a soundbar pointed to, the ceiling.

An example of a 7.1.4 Atmos monitor speaker configuration:

- Seven surround channels
 - Left
 - Center
 - Right
 - Left Surround
 - Right Surround
 - Left Back Surround
 - Left Right Surround
- One Subwoofer
- Four height channels

Enabling Dolby Atmos

Atmos must be enabled by going into Preferences > Video and Audio I/O > Immersive Audio panel and turning on Enable Dolby Atmos. When enabled, the Change Track Type contextual menu when right-clicking on a track will then include the additional Atmos track types.

The Components of a Dolby Atmos Mix

Mixes created in Atmos have several specifically identified components. These work together to create an immersive mix, but each element allows the Dolby Atmos system to fit the sound specifically to the space and speaker configuration during playback.

These consist of:

- **The Bed track:** Contains the bulk of mixed audio, including dialog, ambient sound effects, and music. These sorts of sounds will contain panning information, but the panning will be general. Wind, traffic in the distance, room tones, and sync dialog would all most likely fall within the bounds of a standard bed track of 7.1.2 or 5.1.
- **Object tracks:** Pinpoint the placement of sounds moving specifically across the immersive space. Users can use these specific tracks to create panning anywhere in the room. Sounds can fly through space, around a room from height channels, to side and back channels, mimicking the motion of objects on the screen. Object tracks use the Atmos metadata to do the calculations discussed in the last example. ADM files are Atmos exports used with the IMF file type as master deliverables, which are in the broadcast wave file format.

It's up to users to define which tracks are Bed tracks, and which are Object tracks; these track designations, are descriptions of what the tracks you create are going to be used for. Ultimately, it's up to the mixer which audio is organized on Bed tracks, and which is organized on Object tracks. Theoretically, users can create a mix consisting entirely of Object tracks if desired, but typically the mix would be split into beds consisting of generally panned sounds, and Object tracks for sounds requiring specific room placement.

Object tracks and height channels open up possibilities that were never possible prior to Atmos. Imagine a scene where a man is hiding from Police while a helicopter circles overhead, or a scene where kids are in a basement and are startled to hear loud footsteps above them. With Atmos, the audience can now experience these immersive sounds along with the characters.

These are real-world examples, but sound in animation, science fiction, and fantasy can explore space in ways that are only limited by the creator's imagination. Flying fairies or creatures can move about the space front to back, high and low. Perhaps there's a scene with a ship moving full speed ahead underwater, breaking up and out into the sky, flying and dodging weapons coming from all sides. Object tracks are ideal to pinpoint sound effects requiring spatial specificity, but more importantly, Atmos assures the re-recording mixer that the final choices made in the mix will be faithfully recreated from theatre to theatre, and from room to room.

NOTE: Buses feeding the Atmos master become beds, and Tracks feeding the Atmos master become objects.

Predetermined Dolby Atmos Master Rules

The first ten tracks in every Dolby Atmos Master are assigned as a bed by default. From there the default bed is a 7.1.2 bed, however, it can be designated to a 2.0 up to the 7.1.2 bed. There is no option to add objects to these first ten tracks. Starting at track eleven, the tracks that follow can then be made into various beds or objects as needed.

A simple way to think of this is that buses routed to the Atmos Master are treated as beds, carrying predefined multiple sources. An Atmos bed is a fixed surround format that can contain height channels. Objects, are generally mono but can send any format track that DaVinci Resolve supports and follow the metadata as a single object element. Objects routed to the Atmos Master are treated as tracks, carrying dynamic audio content and positional metadata. LFE will need to be sent to a bed, since objects are positional metadata. If the object is 5.1 for example, the LFE channel will need to be routed to a Bed bus in order to be rendered in the Atmos master.

The Dolby Renderer will render the file if it is dragged from the Media Pool into a track in the Timeline. In this case it will render the media with the embedded metadata to the master's output format. This is a simple way to monitor pre-mastered content and to perform simple actions, such as trimming or syncing for new packaging and deliverables.

When importing a Dolby Master file from the Fairlight menu, Fairlight > Immersive Audio > Import Master File, the resulting import will extract all of the audio and metadata for further content creation. This type of importing into Fairlight maps all of the metadata, tracks, beds, and objects from the master file into the Timeline, allowing you to adjust, process, and manipulate further, to rewrite panning, punch-in and add new media, and create a new Atmos Master.

Dolby Atmos files are a package of items. Simply linking files will not create an Atmos Master file. It is not possible, for instance, to take a rendered set of twelve tracks, link them, and then configure their outputs to a 7.1.4 Atmos bed. Note that 7.1.4 is not a Atmos bed type. Although this is the way typical PCM audio is linked and routed, it is not the case for Atmos content, which is far more than just a collection of tracks.

The renderer takes the 128 channels consisting of the beds and objects and renders it. Those channels are either internal sources or contained within the master file. A simple linked file will not play back through the Renderer. It must be played back as all linked files in Fairlight do, through the native monitor. The Dolby Atmos Renderer plays, renders, and extracts Atmos Master files. Fairlight allows for .atmos, ADM, and IMF file types to be imported and played through the Renderer.

NOTE: As mentioned above, the LFE can only be rendered in an Atmos master when routed as part of a bed due to the Dolby Atmos specification.

Dolby Atmos Integration

There is native Mac M1 and Linux support for the internal Dolby Atmos workflow including:

- Input
- Content creation
- Internal renderer
- Export of Dolby Atmos Master Files

There is a dedicated Dolby Atmos Master bus format which provides a master fader in the Mixer for the Dolby Atmos Renderer and is indicated by the Dolby logo in its header. It also provides a loudness history graph in its Timeline view with integrated, momentary, and short term loudness measures. In the Bus Format window you will see that there are no outputs from this track; it is a control for the Dolby Atmos Renderer.

Only a single master bus can be created, and it will always mirror the format and metering of the internal renderer. When there are no patches to the Dolby Atmos Sends, all sources routed to a Dolby Atmos Master bus will target the master, as with a traditional bus workflow. In this send workflow, buses become beds and tracks become objects.

For Mac and Windows machines, the integration of the external Dolby Atmos Renderer has been updated, providing a much closer integration when running an external workflow. This has unified the tools available within the internal renderer workflows with the external renderer. This includes:

- External Renderer discovery within the preferences.
- UI enable to switch between the internal and external workflow.
- Tally of the master connection state and master file status.
- Storage and recall of the program metadata within the DaVinci Resolve Timeline, including all input configuration, trims, down-mix, and binaural settings.
- Direct control of the metadata from the renderer and binaural controls within DaVinci Resolve and bi-directional control of that program metadata from the server.
- Tally of the input configuration within the Patch page.
- Multi-client workflow support, allowing multiple instances of DaVinci Resolve to run attached to the same server for larger workflows.
- Tally of the active bed and object assignments on the Dolby Atmos Sends within the Patch page. When assigning a bed or track to the Atmos Master on the Patch page, beds are indicated with a purple marking and objects are indicated with a green marking.

Binaural Audio Monitoring

You can monitor your Dolby Atmos Master in Binaural by choosing Binaural in the monitor section.



The Binaural monitoring option

Depending on your monitoring system, you can also create a parallel speaker monitoring set up with Binaural. For instance, you can create a 5.1. external monitor mix along with a binaural headphone mix.

In Preferences > Video and Audio I/O, you can set Binaural to the headphone outs in the Audio I/O panel, and a 5.1 monitor in the Monitor Speaker configuration. Then, in the Patch Input/Output panel, you can route to the appropriate positional channels specific to your system and settings and also assign available channels for the headphones.



Using the Patch Input/Output to assign parallel binaural monitoring

Binaural Render Options

Binaural rendering is a simulation of the distance between the sound source and the listener. In the Index there are options on how you can choose to render the binaural objects. The default option is Mid, but you can also choose Off, Near, or Far, depending on the desired rendering for binaural. These choices will all be stored in the Dolby Atmos file.

Edit Index Tracks Markers								
Tracklist		#	Name	Track Controls	Format	ADC	Group	Binaural
<input checked="" type="checkbox"/>	V1		Video 1	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	7.1.2	<input checked="" type="checkbox"/>	Comp B...	
<input checked="" type="checkbox"/>	A1		Composite Bed	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Dialog	<input checked="" type="checkbox"/> Near
<input checked="" type="checkbox"/>	A2		Dialog Object 1	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Dialog	<input checked="" type="checkbox"/> Near
<input checked="" type="checkbox"/>	A3		Dialog Object 2	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Dialog	<input checked="" type="checkbox"/> Near
<input checked="" type="checkbox"/>	A4		Dialog Object 3	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Dialog	<input checked="" type="checkbox"/> Near
<input checked="" type="checkbox"/>	A5		Dialog Object 4	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Dialog	<input checked="" type="checkbox"/> Near
<input checked="" type="checkbox"/>	A6		Dialog Object 5	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Dialog	<input checked="" type="checkbox"/> Near
<input checked="" type="checkbox"/>	A7		Dialog Object 6	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Dialog	<input checked="" type="checkbox"/> Near
<input checked="" type="checkbox"/>	A8		Music Object 1	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Music	<input checked="" type="checkbox"/> Mid
<input checked="" type="checkbox"/>	A9		Music Object 2	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Music	<input checked="" type="checkbox"/> Mid
<input checked="" type="checkbox"/>	A10		Music Object 3	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Music	<input checked="" type="checkbox"/> Mid
<input checked="" type="checkbox"/>	A11		Music Object 4	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Music	<input checked="" type="checkbox"/> Mid
<input checked="" type="checkbox"/>	A12		Music Object 5	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Music	<input checked="" type="checkbox"/> Far
<input checked="" type="checkbox"/>	A13		Music Object 6	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Music	<input checked="" type="checkbox"/> Far
<input checked="" type="checkbox"/>	A14		Music Object 7	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Music	<input checked="" type="checkbox"/> Far
<input checked="" type="checkbox"/>	A15		Music Object 8	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Music	<input checked="" type="checkbox"/> Far
<input checked="" type="checkbox"/>	A16		Music Object 9	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Music	<input checked="" type="checkbox"/> Mid
<input checked="" type="checkbox"/>	A17		Music Object 10	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Music	<input checked="" type="checkbox"/> Mid
<input checked="" type="checkbox"/>	A18		Music Object 11	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	Music	<input checked="" type="checkbox"/> Mid

Binaural choices in the Tracks Index for assigning perceived distance

You can use Clip Attributes to render a Dolby Atmos Master in Binaural. Simply right click the file to open Clip Attributes, select Binaural, and then right-click to create a new Timeline with the file. In the example below, a 7.1.4 file will be rendered to a Binaural audio file.

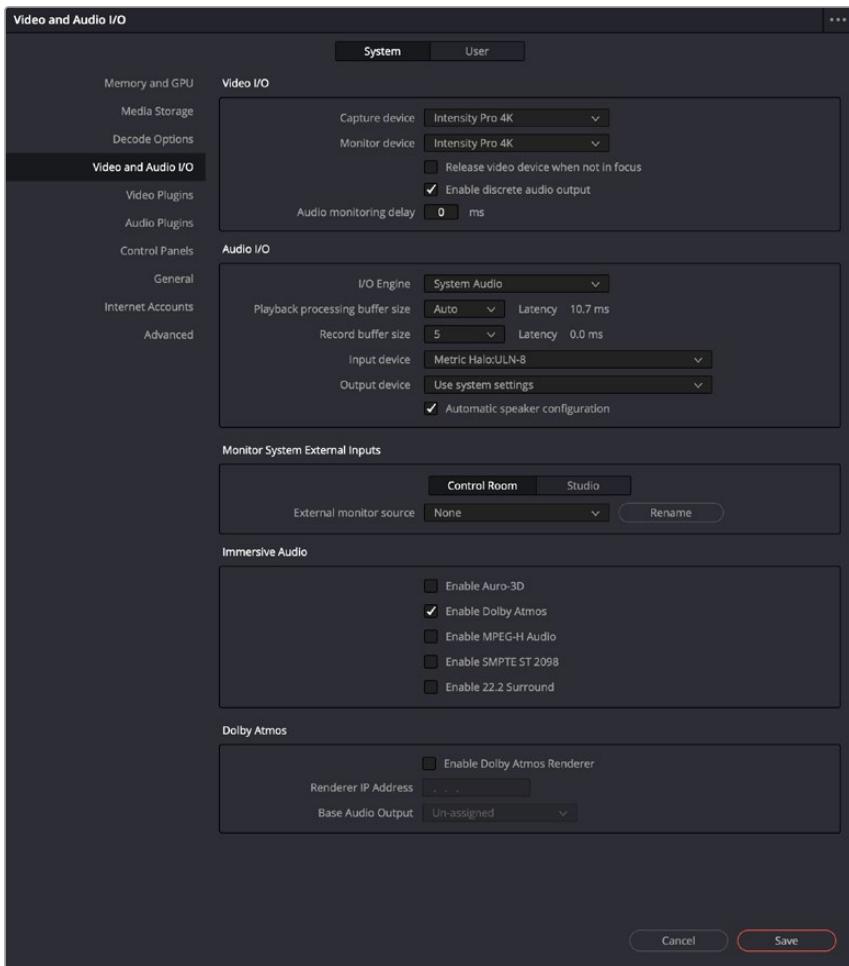


Using Clip Attributes to render to a Binaural file

Immersive Format Configuration

In Preferences > Video and Audio I/O > Immersive Audio, you can enable the various Immersive options that are available. These are Auro 3D, Dolby Atmos, MPEG-H Audio, SMPTE ST 2098, and 22.2 Surround.

In Preferences > Video and Audio I/O > Dolby Atmos, you can configure the use of an external Dolby Atmos Renderer for Dolby Atmos monitoring and mastering. You can manually enter the IP address of the server, or select a discovered server using the drop-down menu. You should also choose the base audio output of the audio outputs, which will be used to send the audio to the external renderer.

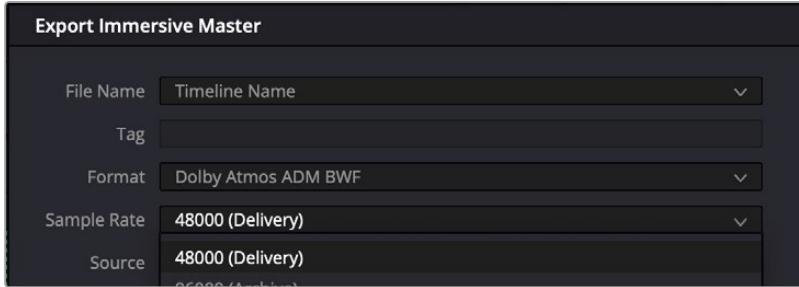


Controls for enabling various surround sound formats in the Preferences panel of the Video and Audio I/O

Exporting ADM BWF

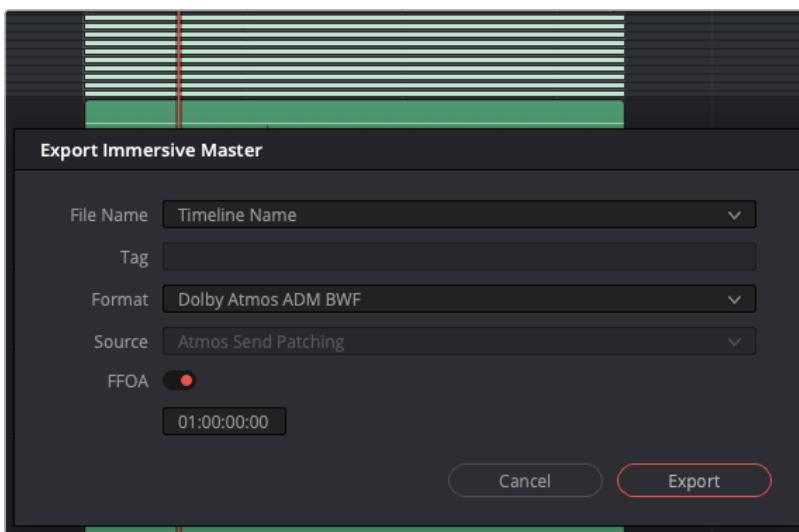
You can export a Dolby Atmos master file as an audio-only ADM BWF, right from the Fairlight timeline. These same options are also available in the Deliver page. Exporting a Dolby Atmos master file from the Fairlight timeline uses the Timeline name as the filename. Be sure to change the Timeline name to the desired filename.

- In the Media Pool, locate the current Timeline.
- Change the Timeline name to your desired export filename.
- As with all other bouncing and delivery methods, you will need to mark a range in the Timeline to export.
- Press R for the Range Selection tool. Double-click any of the Timeline clips to set a range for the entire clip.
- Choose Fairlight > Immersive Audio > Export Master File.



Export Immersive Master options

- In the Export Immersive Master dialog, set the File Name to Timeline Name and the Format to Dolby Atmos ADM BWF. You can select either 48000 (delivery) or 96000 (delivery) for the Sample Rate of the exported file. The Source is automatically set to the Atmos Send Patching. This patching passes the signal through the sends to the internal Dolby Atmos Renderer for processing and to generate a new Dolby Atmos master file.
- Click Export.
- In the Export Immersive Master finder window, navigate to the folder you want to file to save to. Click Save.

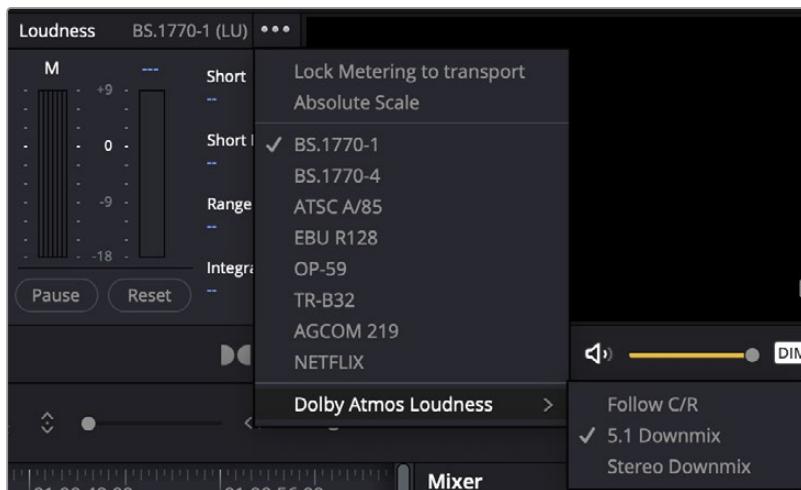


The Export Immersive Master dialog shows the source and format for the new ADM export.

The Export allows for several types of file types: Dolby Atmos ADM BWF, Dolby Atmos IMF IAB, Fraunhofer MPEG-H Production, and Fraunhofer MPEG-H Production XML.

Parallel Loudness Measurement

A parallel 5.1 down-mix can be performed during the render as a source for a 5.1 loudness measurement. Certain delivery specifications (such as for Netflix) require that the loudness measurement of Atmos Masters be performed at 5.1. You can enable this parallel 5.1 (or stereo) render for the loudness measurement and monitor in the room's native format.



Selecting a Downmix option

Low-latency Rendering

Previous versions of the Dolby Atmos Renderer were able to run at a specific latency of 10.67 ms. This restriction has been removed, allowing selection of lower latency engine processing block sizes, and thus lower monitoring latency through the Dolby Atmos renderer. However, the larger block size is enforced by the renderer during certain operations, such as Binaural renderer, or when a parallel loudness down-mix is enabled.

New Surround Buses in Fairlight

(Studio Version Only)

The new Flexbus structure in Fairlight enables user-definable buses. Atmos mixes call for several bus formats that are now available in DaVinci Resolve 17.

- 9.1.6
- 22.2

Object-Based Format Support

(Studio Version Only)

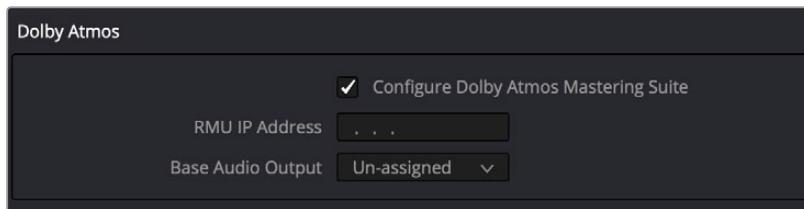
- Dolby Atmos with support for 7.1.2 and 7.1.4
- MPEG-H with support for 5.1.4, 7.1.4, and 7.2.3
- SMPTE ST.2098 with support for 9.1 OH, 9.1 HT, 11.1 HT, 13.1 HT, and 15.1 HT

Auro-3D Support (Studio Version Only)

Auro-3D with support for 9.1, 10.1, 11.1 (7+4), 13.1

Dolby Atmos Configuration Controls

The Video and Audio I/O panel of the Resolve System Preferences lets you enable and configure the use of a Dolby RMU for doing Dolby Atmos mixing. You can enter the IP address of the RMU, and choose the base audio output.

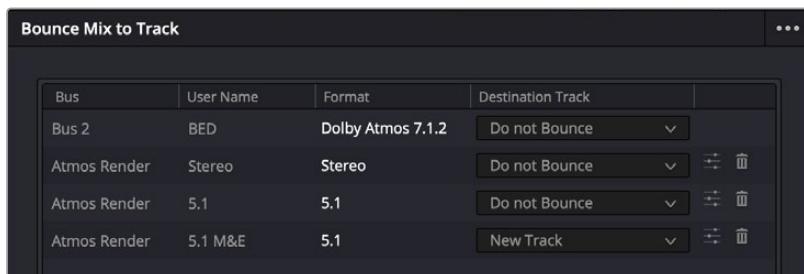


Configuring Dolby Atmos in the Resolve System Preferences

Atmos Re-Renders

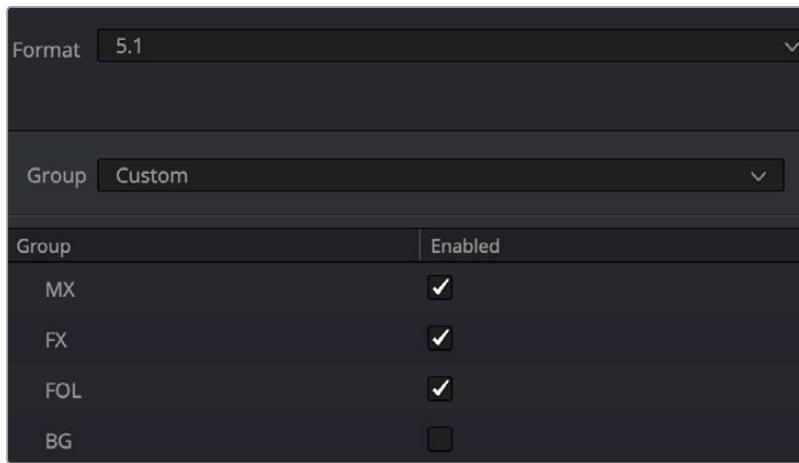
In order to provide parity with the external renderer, you can create presets that let you define a PCM output format and a set of sources using the bed, object, and group definitions (such as 5.1).

Bounce Mix to Track accommodate these re-render presets in Dolby Atmos timelines, allowing you to generate multiple deliverables in a single pass. These render presets are stored and recalled as part of the timeline.



Bounce Mix to Track Dolby Atmos re-render options

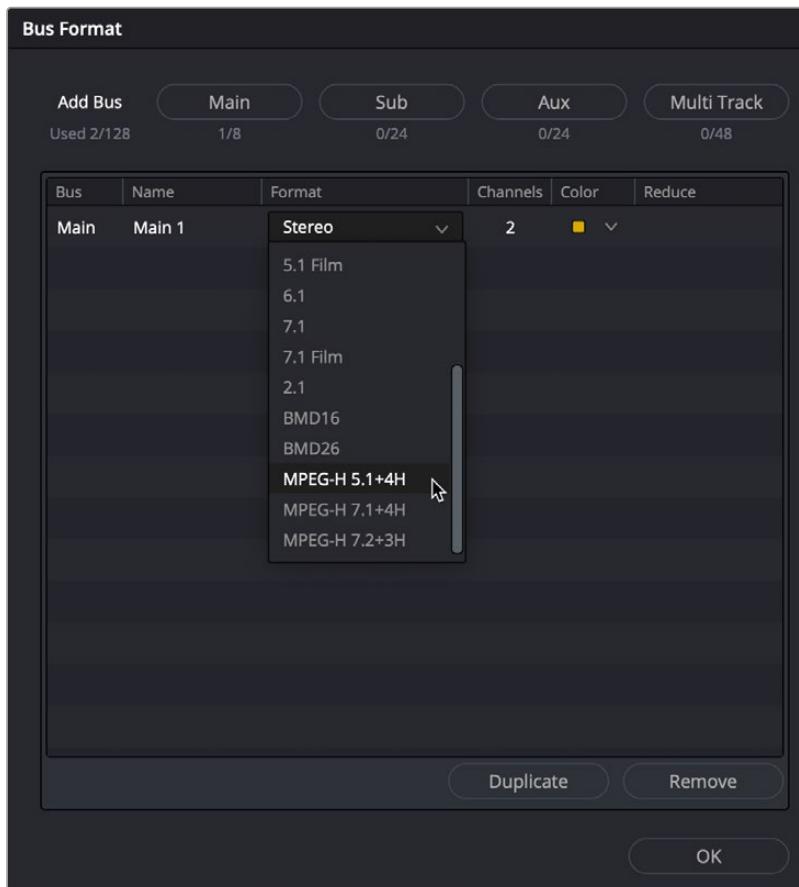
In addition to render format, you can select the source from a combination of Beds, Objects, or defined VCA Groups.



Dolby Atmos Render Preset options

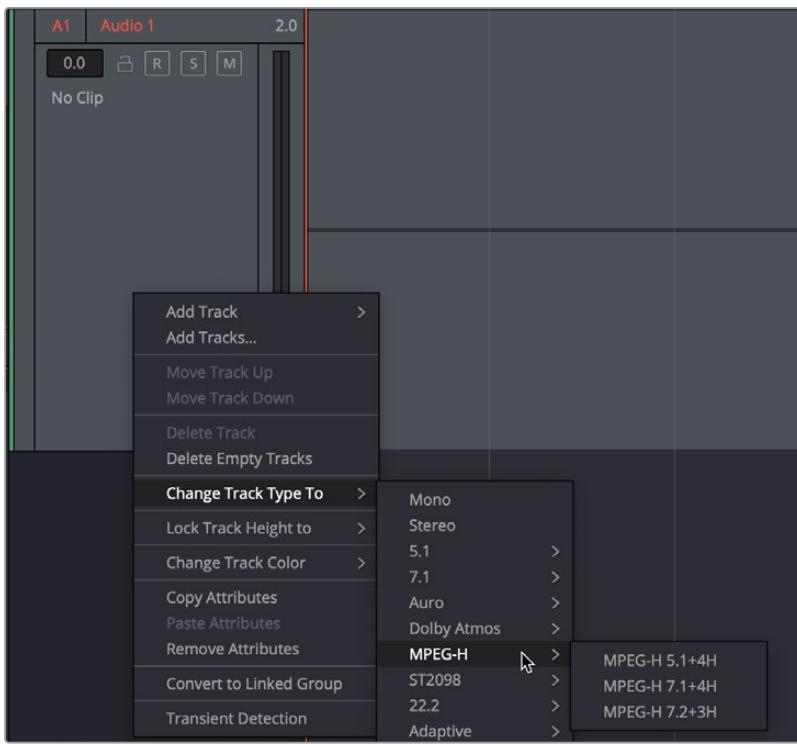
MPEG-H Authoring

DaVinci Resolve enables MPEG-H authoring. This includes Native MPEG-H track and bus formats and monitoring, including the ability to define basic track-level meta-data for export into an MPEG-H scene, and export of a MPEG-H Master file. Once enabled, the formats become available for selection as a bus, track, or monitoring format, in the Bus Format window.



The MPEG-H format options in the Bus Format window

These formats also become available for multi-channel track assignment.



The MPEG-H format options in the Track Format submenu
The MPEG-H format options in the Bus Format window

Tracks are mixed natively in a similar manner to most immersive content, with the creation of a bed mix consisting of a set of immersive object tracks that use dynamic panning. These are combined onto the main bus to form the immersive mix.

Track Configuration

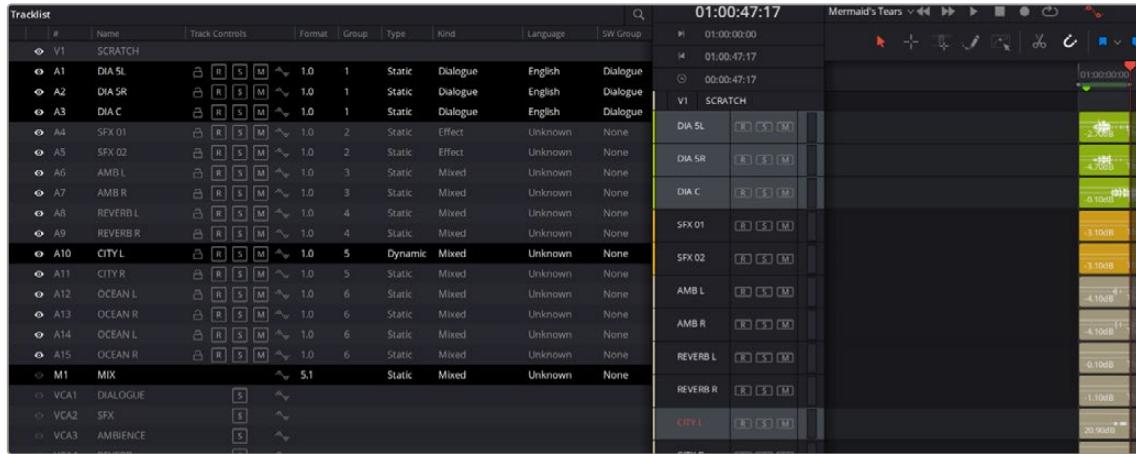
In addition to this process, once the format is enabled, a set of MPEG-H meta-data columns become enabled in the DaVinci Resolve Track index, including Track Type, Kind, Language, SW Group, and Preset. For more information about these columns and how to configure them, see *Chapter 166, "Using the Fairlight Page."*

Tracklist											Edit Index	Tracks	Markers
#	Name	Track Controls	Format	Group	Type	Kind	Language	SW Group	Presets				
• A1	VO	□ R S M	1.0	0	Static	Undefined	Unknown	None	Default				
• A2	AMB 01	□ R S M	2.0	0	Static	Undefined	Unknown	None	Default				
• A3	AMB 02	□ R S M	2.0	0	Static	Undefined	Unknown	None	Default				
• A4	AMB 03	□ R S M	2.0	0	Static	Undefined	Unknown	None	Default				
• A5	SFX 01	□ R S M	2.0	0	Static	Undefined	Unknown	None	Default				
• A6	SFX 02	□ R S M	2.0	0	Static	Undefined	Unknown	None	Default				
• A7	Music	□ R S M	2.0	0	Static	Undefined	Unknown	None	Default				

When MPEG-H is enabled in the Project Settings, the Tracks panel shows additional columns of information for defining each track in the Timeline

Export

Once everything is configured, and your project is mixed, you export a master file. In order to do this, you must select a range In and Out point on the Timeline to define an export range. Additionally, you must define whichever busses are designated for rendering by defining their Kind, and you can select tracks you want to export additionally.



Selecting tracks and busses to export

NOTE: An MPEG-H master file can only contain a maximum of fifteen channels total.

If the selected track and bus stems exceeds this, then the export will fail, issuing a warning.

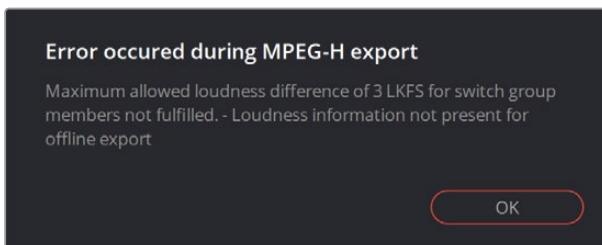
The same will occur if a range is not selected.

To export an MPEG-H mix:

- 1 Choose Fairlight > Immersive > Generate MPEG-H Audio File.
- 2 Choose a save location and name, and click Save.

At this point, all defined buses are rendered. Then, track loudness is measured for compliance. Lastly, the source audio is exported and the metadata embedded into the deliverable MPEG-H wav file.

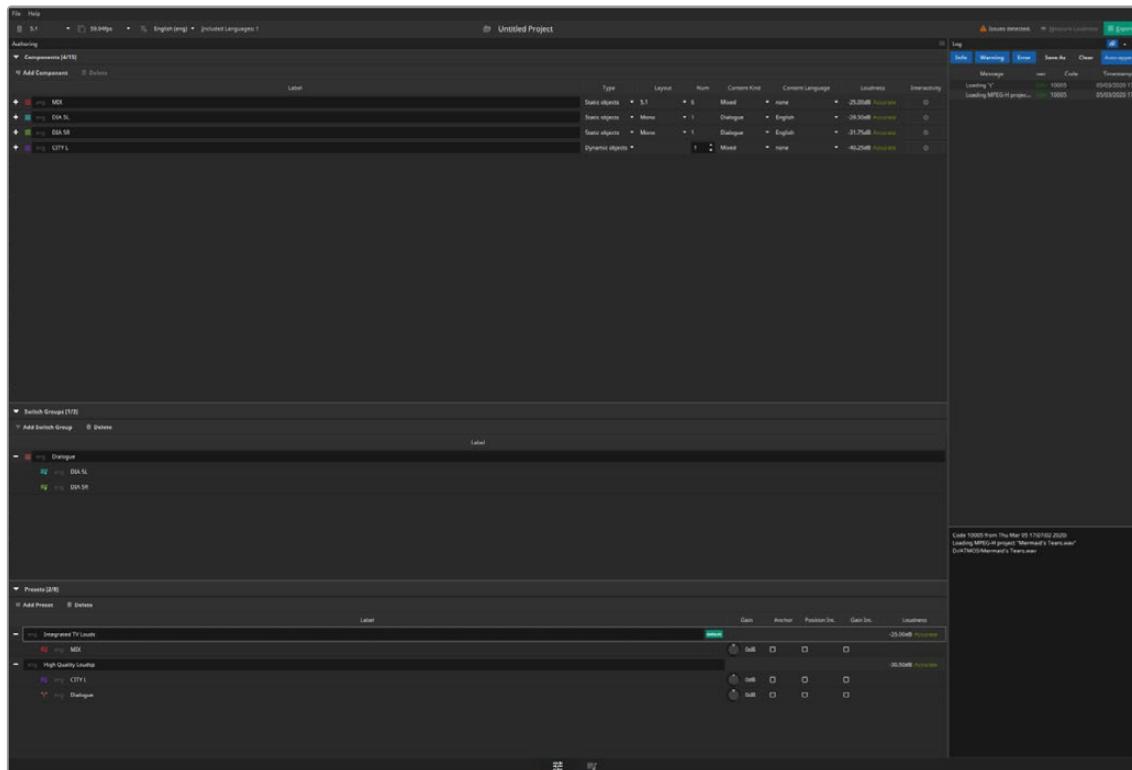
There are several error conditions, which are deleted during the export process, that will all cause the export to fail. For example, all tracks must contain audio. Audio within switch groups must be within a specific loudness tolerance of one another. If any of these conditions occur, a dialog will appear.



Warning dialog during MPEG-H export

Quality Control

You can do a quality control check of the final audio export using a Fraunhofer MHAPI tool which can open up the exported content. This includes compliancy tests, and visualization of the contained metadata. It can also render and monitor the content, but this aspect of the tool is basic, and only works with external audio that's linked to the metadata. In other words, you must manually link the components back to the source audio files.



Quality control using the Fraunhofer MHAPI tool

B-Chain Support for Audio Monitoring (Studio Version Only)

Choosing Fairlight > Immersive > B-Chain Control opens the B-Chain Control window. Using traditional cinema audio postproduction terminology, the "A-Chain" is all of the busing and signal processing that happens within the mix (in our case using the Fairlight page) and the "B-Chain" is the signal processing, amplification and speaker system that takes the sound from your workstation's output and gets it "into your ears." This typically includes all necessary signal decoding or pre-processing hardware, amplification systems, and speaker setups for most professional and commercial listening environments, especially for immersive audio or surround sound formats. These options are complex and have many variables in terms of speaker configuration, selection, and placement, output channel timing, attenuation, and phase, and a host of other considerations.

In DaVinci Resolve, these B-Chain controls affect how the channels of audio being output by the Main you're mixing is mapped to the actual audio signals being output from your workstation into the amplification and speaker system of the current viewing environment. The extensive level of control the B-Chain presets offer is most useful in situations such as surround-sound configured grading and mixing theaters, to define how the immersive audio standard you're mixing is mapped to the speaker setup of your particular application, and to fine-tune the channels being output to each speaker specifically for your environment. In simpler monitoring situations, the B-Chain controls can be useful for configuring the standard you're mixing with to play out of a non-standard speaker setup in your room.

Ultimately, the B-Chain controls are designed and intended for users who need to create custom, fine-tuned settings for their specific monitoring situation. For this reason, pretty much every real-world use of these B-Chain controls will require custom configuration for your unique environment.

Overview of Setting Up a B-Chain Configuration

Setting up a B-Chain configuration takes some doing, but once set up, you have a preset that's easy to reopen at any time. In the following example, a B-Chain preset will be configured to convert a 5.1 surround output to a 3-channel left-center-right room speaker setup.

To set up a B-Chain:

- 1 Choose Fairlight > Immersive > B-Chain Control to open the B-Chain Control dialog. This exposes the monitoring controls but not the configuration controls.
- 2 Click the Option menu in this window and choose Setup B-Chain Presets. The B-Chain Setup window appears.
- 3 Click the New button to create a new B-Chain preset, then enter a name in the dialog and click OK. In this example we'll use the name "5.1 to LCR." The Name you enter here is the name of the saved setting data.

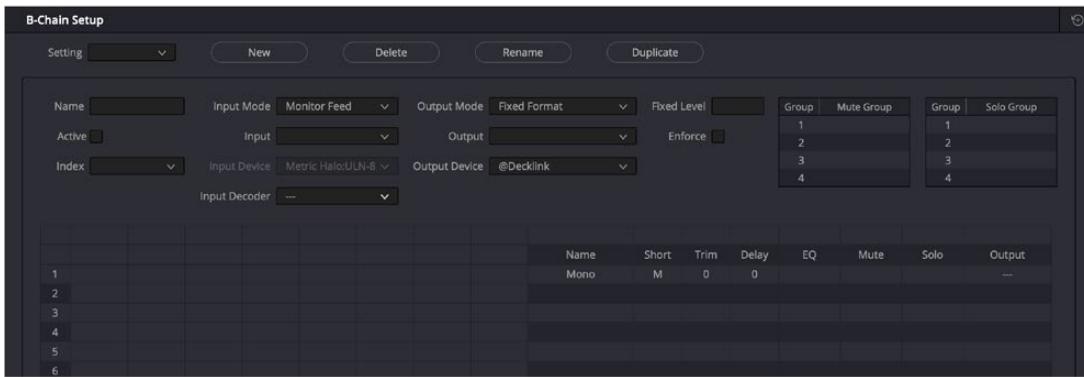
Additional buttons let you Delete, Rename, or Duplicate presets that you've already created once you choose them from the Setting pop-up.

- 4 Enter a label in the Name field (this is the name that appears in the preset menu). The name you enter here is the name that appears in whatever pop-up menus you select these options from.
- 5 Choose Input Mode > Fixed Format, and Input > 5.1 from the pop-up menus. These define the signal coming out of your mix. (Input Mode > Monitor Feed sets the B-Chain to listen to the selected monitor source, while Input Mode > Custom Format lets you choose an arbitrary number of channels.)
- 6 Choose an Output Mode > Fixed Format, and Output > LCR from the next set of pop-up menus. These define the speaker setup you'll be playing the mix out of. In this example, we've chosen LCR, which stands for Left, Center, Right.

At this point, you can see that once you've defined the Input and Output channels, the "Inputs/Outputs" table of cells becomes populated:

- At the left of this table, each channel of your selected Input occupies a vertical column. In this example, the Input columns are labeled L, R, C, LFE, Ls, Rs, corresponding to the 5.1 channels you've selected to be output. It's possible to specify setups with many more channels, in which case the left half of the table becomes scrollable.
- At the right of this table, each channel of your selected Output occupies a horizontal row that intersects the Input columns. In this example, the rows are labeled Left, Center, Right.

In this way, every Input column intersects with each Output row, making it possible for you to assign how much of each Input is fed to each Output by entering values into each intersecting cell.



The Inputs/Outputs table of the B-Chain preset window

- 7 To assign Input channels to Output channels, double-click the field where the desired Input intersects the desired Output, and type a value to set how much level from the Input to assign to the Output. Typing 0 assigns Input to Output at "unity" gain (0dB). Numbers you type here specify tenths of a dB. Typing -3 assigns half of the level from Input to Output. Typing -100 mutes that Input to that Output completely. Blank cells with no value make no assignment. In this example, we're typing:
 - a) 0 into cell L-1 to assign all of the Left source to the Left output
 - b) 0 into R-3 to assign all of the Right source to the Right output
 - c) 0 into C-2 to assign all of the Center source to the Center output
 - d) -6 into Ls-1 to assign a fraction of Left surround to the Left output
 - e) -6 into Rs-3 to assign a fraction of Right surround to the Right output
 - f) -8 into LFE-1 to assign a smaller fraction of LFE to the Left output (LFE is not directional)
 - g) 8 into LFE-3 to assign a smaller fraction of LFE to the Right output as well (LFE is not directional)

At this point, we've fully defined how much of which Input channels go to which Output channels. In the process, you can see that this table interface makes it possible to assign the full levels of Input channels to Output channels, to assign partial levels of Input channels to Output channels, and to assign fractions of Input channels to multiple Output channels.

This screenshot shows the same 'B-Chain Setup' window as above, but the 'Inputs/Outputs' table is now fully populated with values. The table has columns for L, R, C, LFE, Ls, and Rs, followed by blank columns, and then columns for Name, Short, Trim, Delay, EQ, Mute, Solo, and Output. The populated values are as follows:

	L	R	C	LFE	Ls	Rs	---	---	Name	Short	Trim	Delay	EQ	Mute	Solo	Output
1	Main 1	---	---	Left	L	0	0	---	---	---	---					
2					0		---	---	Centre	C	0	0	---	---	---	---
3					-8		---	---	Right	R	0	0	---	---	---	---
4						-6	---	---								
5							---	---								
6							---	---								

The Inputs/Outputs table of the B-Chain preset window fully populated to assign inputs to outputs

- 8 At this point, you should notice there are additional columns to the right of the Output channels that provide various options that let you fine-tune each channel's output in order to optimize the acoustics and layout of your room:
 - Trim each channel (in tenths of a dB)
 - Add a Delay (in milliseconds)
 - Add specific EQ (None, LFE Only, Surr Mode)
 - Mute or Solo groups.

- 9 The last thing you need to do is to right-click each Output channel row's right-most Output column, and choose the hardware output of your audio or video+audio interface that you want that channel to go to. See one of the following I/O Setup procedure for how to rename these options to make this easier.

	Name	Short	Trim	Delay	EQ	Mute	Solo	Output
-	Left	L	0	0	---	---	---	1: Decklink
-	Centre	C	0	0	---	---	---	2: Decklink
-	Right	R	0	0	---	---	---	3: Decklink
-	---	---	---	---	---	---	---	---

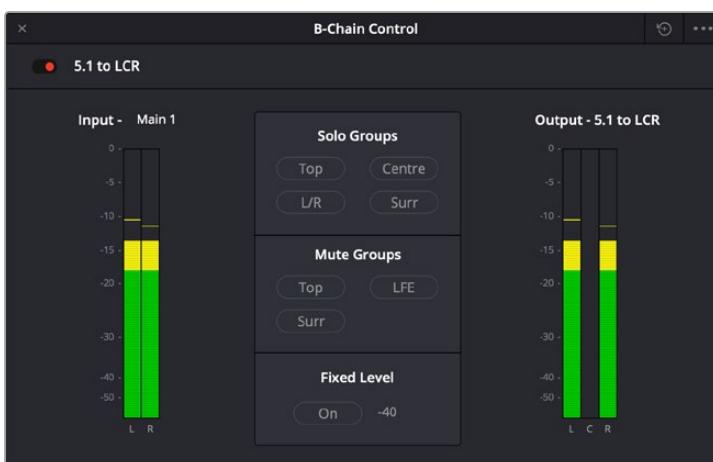
Assigning I/O channels to output to

- 10 Once you've finished setting up your B-Chain preset, click OK, and that preset will be saved and available for use.

To choose a B-Chain preset to use and enable B-Chain:

- 1 Choose Fairlight > Immersive > B-Chain Control to open the B-Chain Control dialog.
- 2 Turn on the toggle at the upper left-hand corner of the window to enable B-Chain, and choose a preset from the pop-up menu.
- 3 Choose the Input you want to assign that B-Chain preset to.
- 4 A set of Solo and Mute buttons lets you selectively choose sets of channels you want to listen to in isolation, or mute from the whole, in order to better evaluate selected portions of your mix.
- 5 A Fixed Level button lets you fix the output level in the DaVinci Resolve UI to a single value. With this enabled, you cannot drag the level slider to change the monitoring volume.
- 6 When you're finished using B-Chain for monitoring, turn off the toggle at the upper left-hand corner.

NOTE: While the B-Chain is enabled, the Speaker Setup controls in the Video and Audio I/O panel of the Resolve System Preferences is disabled.



The B-Chain Control Window where you can choose and enable a B-Chain preset to affect the output

To name the various outputs of your system's channels for easy assignment:

- 1 Choose Fairlight > Immersive > B-Chain Control to open the B-Chain Control dialog.
- 2 Click the Option menu in this window and choose Setup I/O Names. The I/O setup window appears, showing every single audio input and output on every audio interface that's connected to and recognized by your system.

The I/O Setup window lets you rename the Inputs and Outputs associated with your workstation setup, to make it easier to configure Fairlight when you're managing hundreds of channels.

The names you choose here are shown everywhere in DaVinci Resolve where channels are selectable and/or exposed.

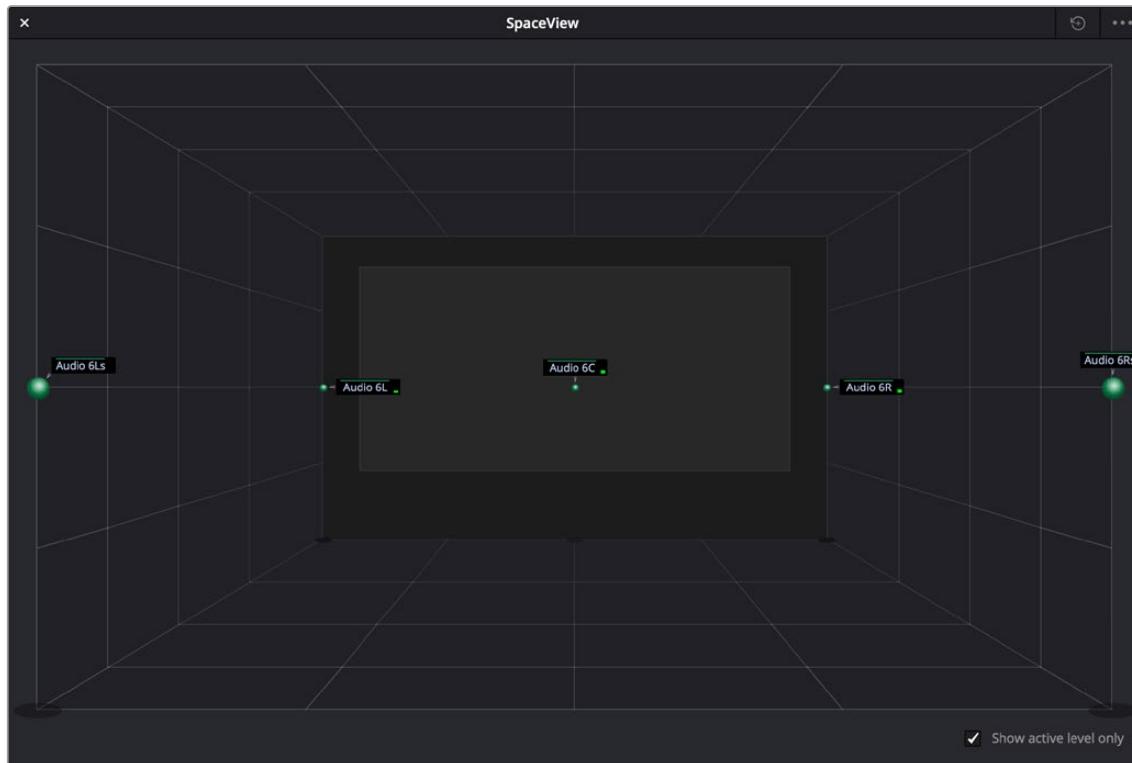
- 3 To rename a channel, double-click that channel's field in the Name column, type a new name, and press Return.
- 4 To protect a channel, click the checkbox in the Protect column. Protected channels are prevented from being patched to. This is intended for potentially high-volume speaker outputs, to which it would be hazardous to accidentally connect the wrong input. Protected channels can be seen everywhere patches can be made, but they're grayed out. Protected channels can only be used in the Speaker Setup controls in the Video and Audio I/O panel of the Resolve System Preferences, and in the B-Chain Setup window.
- 5 When you're finished, close the window. The names and protected status of channels are a system-wide setup.

I/O	Number	Name	Protect
Input	1	1: Scarlett 2i2 USB	<input type="checkbox"/>
Input	2	2: Scarlett 2i2 USB	<input type="checkbox"/>
Input	3	1: LG UltraFine Display Audio	<input type="checkbox"/>
Input	4	1: MacBook Pro Microphone	<input type="checkbox"/>
Output	1	1: Decklink	<input type="checkbox"/>
Output	2	2: Decklink	<input type="checkbox"/>
Output	3	3: Decklink	<input type="checkbox"/>
Output	4	4: Decklink	<input type="checkbox"/>
Output	5	5: Decklink	<input type="checkbox"/>
Output	6	6: Decklink	<input type="checkbox"/>
Output	7	7: Decklink	<input type="checkbox"/>
Output	8	8: Decklink	<input type="checkbox"/>
Output	9	9: Decklink	<input type="checkbox"/>
Output	10	10: Decklink	<input type="checkbox"/>
Output	11	11: Decklink	<input type="checkbox"/>

The I/O Setup window where you can rename your system's audio outputs and protect channels going to amplified speakers

Space View Channel Monitoring

Once you've configured your DaVinci Resolve workstation to mix audio via an Immersive format, you can use the Space View to facilitate surround sound mixing. Choose Fairlight > Immersive > Space View Scope to open the Space View window, which is a virtual representation of your control room with all defined source channels positioned in space according to the speaker that channel is intended to play out of. This view makes it easy to see which audio channels on which timeline tracks are playing out each speaker.



The Space View window gives you a spatial representation of what levels are playing where; this example shows the various stems of a 5.1 mix.

Each channel shows a label and a meter that lets you see, at any given part of the mix, what audio levels are playing where, spatially. However, you only see channels that are unmuted and with a fader level of more than -70dB. A checkbox lets you choose whether to see labels for all track channels in your mix, or to only show labels for track channels with active levels that are currently playing. The Space View is also aware of the state of all Solo controls, allowing you to quickly focus on just what you hear.

Using the Fairlight Desktop Console

The Fairlight Desktop console is the newest member of the Fairlight console family and offers professional mixing controls for editors and audio professionals alike. This compact desktop console has enhanced mixing controls for both the Edit and Fairlight pages in DaVinci Resolve.

This chapter provides details and functional descriptions of each section of the Desktop Console and should be read in conjunction with the Fairlight chapters in the DaVinci Resolve Reference Manual to get the best from your console.

NOTE: To set up a Fairlight Desktop Console and connect it to your DaVinci Resolve system, open the Control Panels settings in System Preferences, and change the Audio Console Select this console for Fairlight drop-down menu to Fairlight Desktop Console.

Additionally, firmware updates for the Desktop Console are installed via the DaVinci Control Panels Setup utility. You'll find details for downloading and installing firmware updates at the end of this chapter.

Contents

About the Fairlight Desktop Console	3820	Automation Buttons	3841
Connecting to a Monitor via HDMI	3821	Channel Buttons	3843
Desktop Console Functional Overview	3823	Monitoring Controls	3845
Types of Controls	3823	Search Dial and Transport Controls	3847
Desktop Console Modes	3824	Modifier and Undo Buttons	3850
Undo, Modifier and Arrow Keys	3825	Arrow Keys	3852
Track Select Buttons	3825	User Buttons	3853
Fairlight Desktop Console	3827	Fairlight Desktop Console Configurations	3868
Control Buttons	3827	Performing Firmware Updates	3870
Fader Channel Strips	3837		

About the Fairlight Desktop Console

Fairlight Desktop Consoles offer traditional and enhanced mixing controls for both the Edit page and Fairlight page in DaVinci Resolve. All that you need to connect a Fairlight Desktop Console to your DaVinci Resolve computer is a standard USB-3 or Ethernet cable. Once connected to your workstation, you can use the transport controls and search dial on the Desktop Console for timeline navigation, recording, playback, and more.



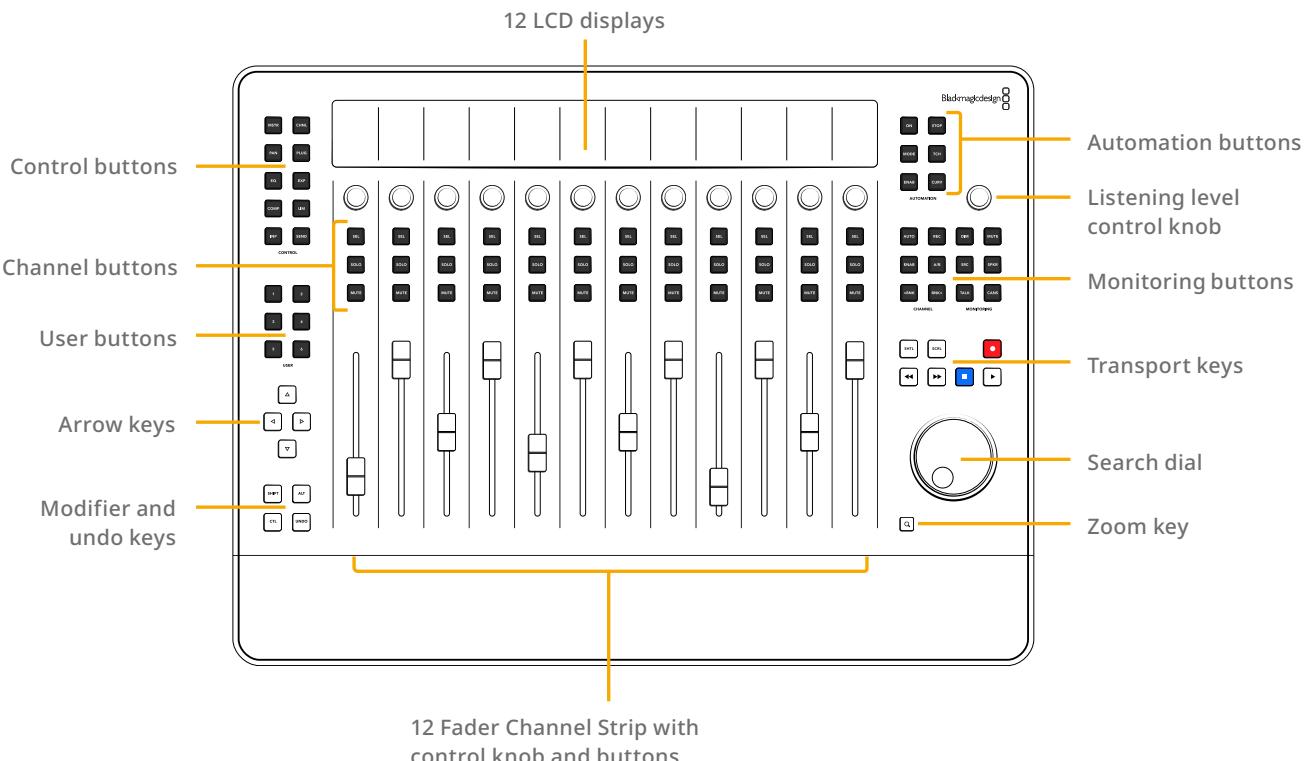
Fairlight Desktop Console Sections in Clockwise Order

On the upper-left of the Desktop Console there is a set of 10 control buttons that are used to map the 12 adjacent encoder knobs and select buttons to focus mode mixing parameters. Moving to the upper-right of the Desktop Console, you'll find the Automation section with six buttons used to control the automation system. Below the Automation section are the channel and monitoring controls.

The channel controls include three buttons that work in conjunction with the channel select buttons above the faders and two bank buttons for banking faders in groups of 12 in the relative direction. To the right of the Channel section are the monitoring controls complete with an encoder knob and four buttons to target the Control Room monitoring. Additional TALK and CANS buttons add studio controls and can be pressed and held for talkback and re-targeting the monitoring controls for studio monitoring. The lower-right of the Desktop Console includes an electronic search dial for full shuttle and scroll transport control, along with a set of transport keys. A handy Zoom Icon button below the dial lets you use the dial for quick timeline zoom functions including: horizontal, vertical, and waveform zoom.

The center of the Desktop Console includes 12 fader channel strips, each with a belt-driven touch-sensitive fader, Mute, Solo, and Select (SEL) buttons, as well as an encoder knob for panning in default mode and controlling additional parameters in Focus modes. At the top of each channel strip you'll find an LCD screen that displays information for that channel in default mode or alternative parameter information in Focus modes.

Arrow and Modifier keys are located in the lower-left of the Desktop Console and can be used in conjunction with the Transport, Channel, and Automation buttons for expanded functionality. Directly above the Arrow keys is the User section, containing six sequentially numbered buttons that can be used in combination with other keys to change the current operation depending on the mode and task at hand.



Connecting to a Monitor via HDMI

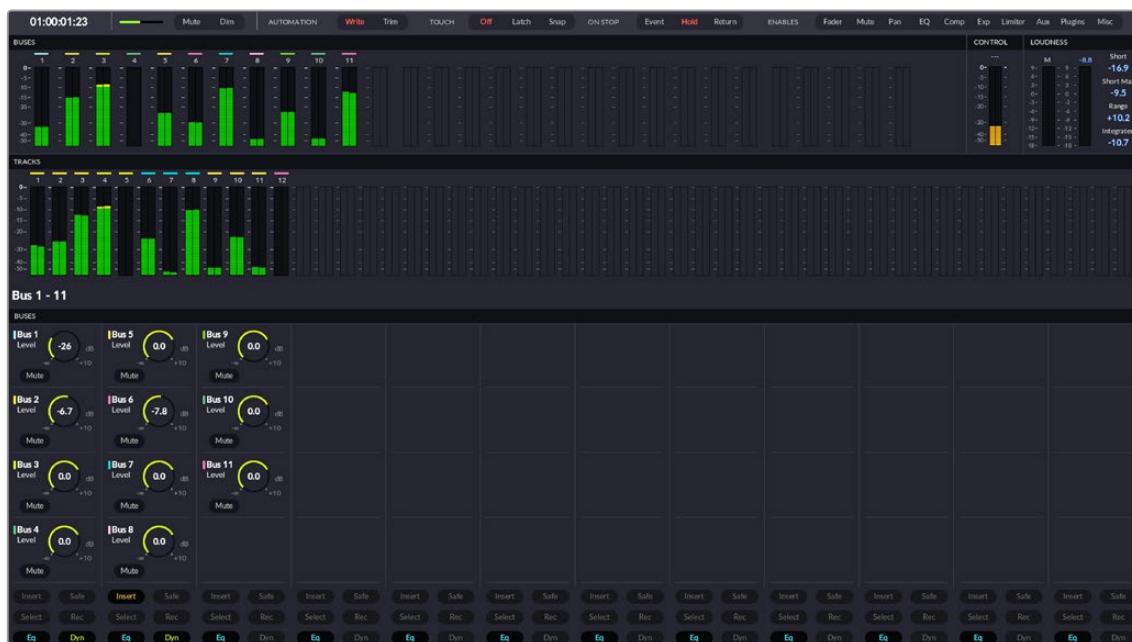
For additional visual feedback, you can add an HDMI display to the Fairlight Desktop Console. There's no configuration needed, simply plug in an HDMI monitor and start working! This allows you to see an extensive graphical display of everything happening on the console. The screen automatically switches between Strip, Channel, and Master layouts depending on the current control mode. Along the top of the HDMI screen you'll always see a fixed display that includes: timecode, monitoring controls, automation toolset, and the Bus, Control Room, and Loudness meters. While at the bottom of the screen you'll see 12 sets of Channel Extension Buttons for quickly identifying channel status while you work.



Optional HDMI monitor displaying Strip mode layout with an identical set of parameters in-line with each of the 12 channel strips, including from the top down: Track color, Name, Level, Status, EQ, Dynamics, Panning controls, and Channel Extension buttons.



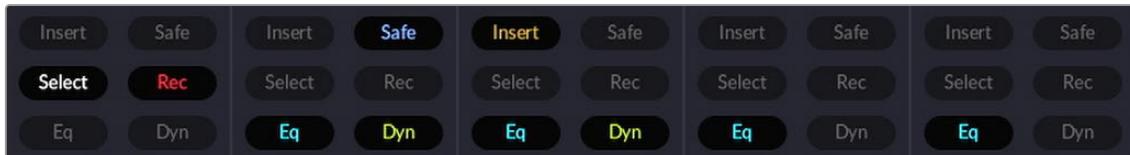
Optional HDMI monitor displaying the Channel Control mode layout, which includes 192 different parameters for the active channel. Parameter controls currently mapped to the LCD displays, knobs, and SEL buttons are highlighted with blue text.



Optional HDMI monitor displaying the Master Control mode layout with bus meters, level, and mute for each of the master buses.



HDMI Fixed Monitoring section with timecode, monitoring controls, Automation toolset, Bus, Control Room, and Loudness meters.



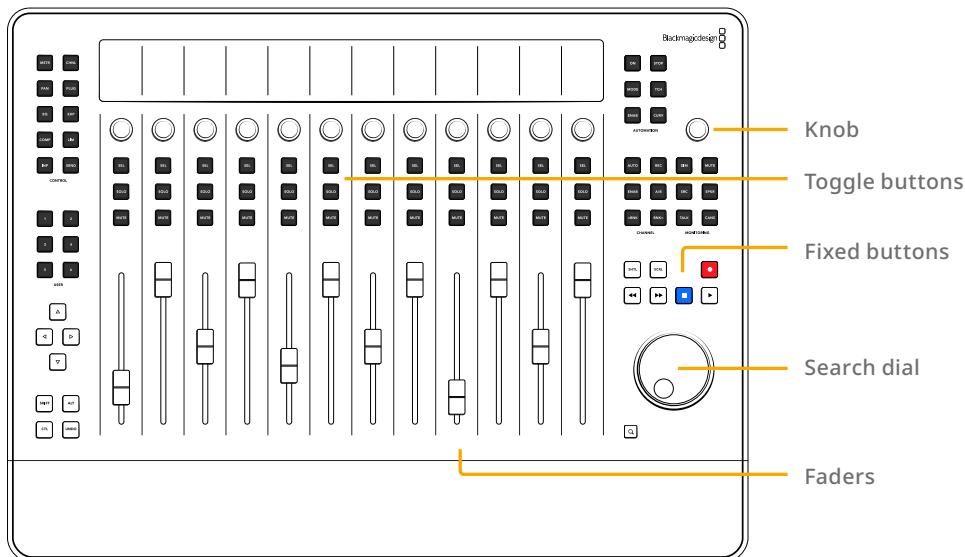
Channel extension buttons along the bottom of each HDMI layout showing six highly-visual status switches for each of the 12 channels, including in clockwise order from the top: Insert, Solo Safe, Select, Record (Arm), EQ and Dynamics.

Desktop Console Functional Overview

This section offers a rundown of the various types of controls, operational modes, transport, and modifier keys, as well as pointing out the multi-purpose track selection buttons, encoder knobs, and LCD display screens within the console.

Types of Controls

The Fairlight Desktop Console comes loaded with an assortment of 111 physical controls that you can use to record, monitor, mix, and sweeten your soundtracks. Some buttons serve a single purpose, while others serve multiple functions, therefore it's a good idea to understand the different types of controls before moving on to the specific button, knob, and fader details.



- **Search Dial:** To quickly navigate, scroll, and zoom, this fully integrated, highly-responsive electronic dial offers smooth free rotation control.
- **Knobs:** When you want to make fast changes to specific parameters, these versatile knobs give you precision rotary control, as well as touch-sensitive input for enabling automation or resetting levels. Holding the Shift modifier key changes the gearing for finer precision control, while holding the Control modifier key while touching one of these knobs will reset the knob's current parameter to its default value.

- **Fixed Buttons:** Fixed buttons serve a specific function and produce the same results every time they are used, regardless of the operational mode or current workflow.
- **Soft Menu Toggle Buttons:** The twelve Select (SEL) buttons near the top of the fader channel strips are multi-functional toggle switches that change based on the console mode and active control button.
- **Faders:** The 12 touch-sensitive electronic faders give you precision volume control for your tracks and buses, and correspond with faders on the onscreen Mixer in DaVinci Resolve.

Desktop Console Modes

The upper section of the 12 Channel Strips, including the Select (SEL) buttons, knobs, and LCD screens, can operate individually per channel in Strip mode or combined for a comprehensive set of parameter controls in Focus mode. In both cases, the different tasks are engaged via the button selection in the Control section to the left of the knobs and LCD display area.

Strip Mode

This is the default console mode, when none of the control buttons are active.

Strip mode functionality includes:

- 12 identical sets of fader channel controls, one for each fader channel strip.
- Each LCD display, knob, and SEL button is associated with the Fader, Mute and Solo button that is in line with that channel strip.
- The Select buttons are used for track selection and illuminate accordingly when they are switched on.

Focus Mode

In contrast, Focus mode, focuses all of the knobs, Select buttons, and LCD displays on a single mixing task or parameter control set determined by the active Control button. These focused control sets mirror signal processing available in the Fairlight page Mixer, such as Pan and EQ, as well as dynamics like the Compressor and Limiter.

Focus mode functionality includes:

- The LCD display at the top of each channel strip provides visual feedback for the active parameter set assigned to the adjacent knob and SEL button.
- SEL buttons become toggle switches for the active parameter control set.
- Knobs are mapped as precision encoders for the active parameter control set.
- Focus mode controls collectively mirror the corresponding parameter controls in the Fairlight page UI.
- Focus mode parameter sets control the signal processing for the active track or bus determined by the selection buttons prior to entering Focus mode. The active track is the most recently selected track.
- When the Master (MSTR) control button is active, the focus mode LCD, SEL buttons, and knobs are mapped to each bus as Mute and Level controls, respectively.
- When the Channel (CHNL) control button is active, the focus mode LCD, SEL buttons, and knobs are mapped to the most commonly used signal processing parameters for the active track.

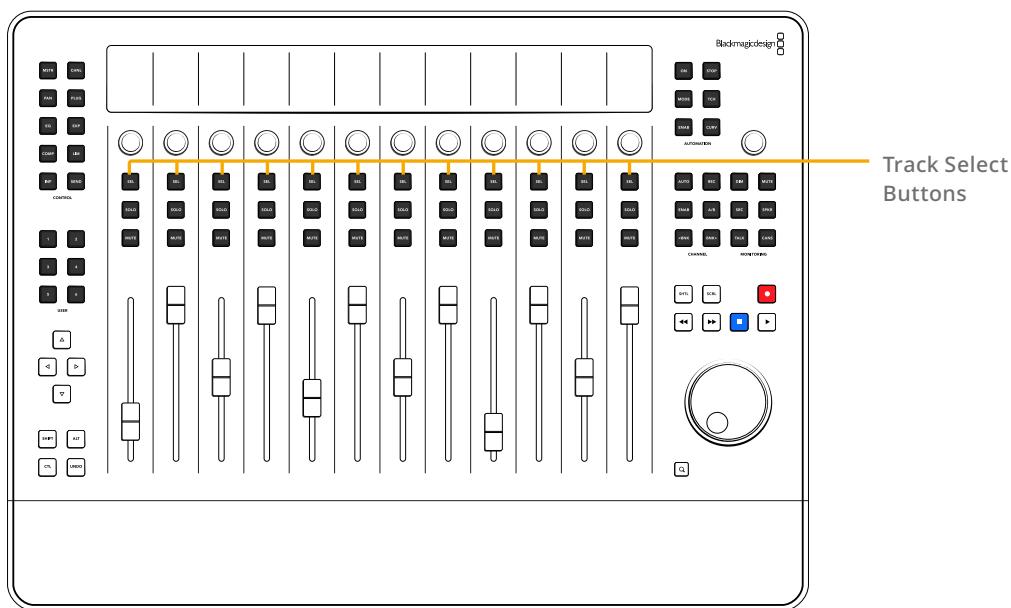
Undo, Modifier and Arrow Keys

While working with the Fairlight Desktop Console, you will always have access to the Undo, Modifier, and Arrow keys, conveniently located on the lower left side of the console. The Arrow keys function like the Arrow keys on a standard keyboard and are used in conjunction with the transport buttons to move the playhead (CTI), selected clip, range, or selected tracks incrementally up, down, right, or left. The Undo key offers the failsafe option to go back a step at any time, just as you would expect during normal keyboard and mouse workflows. Additionally, the SHIFT, ALT and CTL modifier keys are used with other console controls to expand functionality and speed up your workflow. For example, while you hold the Control key, the Rewind and Fast Forward transport buttons act as Project Start and Project End buttons to quickly jump to the beginning or end of the Timeline. The Shift modifier key can be used with the knobs for fine incremental parameter control, while the ALT modifier key used with Undo results in Redo functionality to go forward a step.

NOTE: If your Desktop Console is connected to a Fairlight Audio Editor, the Control (CTL), Shift, and ALT keys on the Desktop Console work in tandem with the modifier keys on the Fairlight Audio Editor.

Track Select Buttons

The Fairlight Desktop Console includes a dedicated row of multi-function Select (SEL) buttons at the top of the channel strips for selecting either tracks or master buses. From left to right, the 12 Select buttons follow the order of the tracks in the Mixer, and in the Timeline from top to bottom. Use the bank buttons to move to the next or previous set of 12 tracks.



12 Track Select (SEL) buttons

- **In Focus mode**, track Select buttons become toggle switches for switched parameters assigned to the focused channel strip. Focus mode parameter sets are determined by the control buttons in the upper left of the Desktop Console.

- **In Strip mode**, the Select buttons can be used to select the track or bus assigned to that specific channel strip. Pressing a Select button is the same as clicking a track header or channel strip in the Fairlight page Mixer with your mouse. Select buttons illuminate when latched and the top of the corresponding LCD brightens so you can always see at a glance which tracks are selected in Strip and Focus modes. Likewise, if you are using an optional HDMI monitor with your Desktop Console, you'll see illuminated Select buttons for each selected track in the Channel Extension buttons along the bottom of the screen.
- **The Active track** reflects whichever track is actively being controlled or touched with any of the channel strip controls. You can select and control multiple tracks at once, however only the most recently touched track is considered the active track. For easy identification, the active track's name turns red in both the LCD display and the Fairlight page Timeline. It is important to recognize the active track because that will be the track that receives focused parameter controls in Focus mode.

Track Select Button Press Options

The default Strip mode Select buttons include some unique selection nuances to improve your efficiency without the need for a mouse.

- Press once to select or deselect a track.
- Select as many tracks as needed, one track at a time, by simply pressing the corresponding SEL button.
- Double-press any SEL button to deselect all other tracks and exclusively select the current track.
- To select a range of tracks, hold a SEL button, then double-press another SEL button to select both tracks as well as all contiguous tracks between them. In this case, the button that was double-pressed will become the active track.

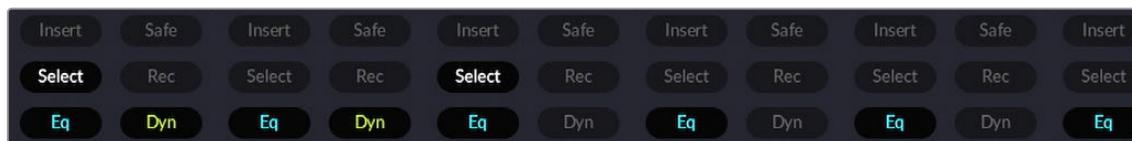
TIP: To select all tracks or an extensive range of tracks, open the Tracks Index panel in the Fairlight page. Select a track in the Index, then hold Shift while turning the dial to extend selection. Additionally, you can select a track in the Tracks Index and choose Edit > Select All, or press Cmd-A on your keyboard to select all tracks.



Strip mode Select buttons latched on tracks A1, A3, and A5, and the red track name on the A3 track indicating it is the active track



The Fairlight Timeline and Mixer showing the same track selection, A1, A3, and A5, with A3 as the active track.



Channel extension buttons on the optional HDMI monitor showing illuminated Select Buttons for tracks A1 and A5.

Fairlight Desktop Console

Now that you are familiar with the general layout, types of controls, modes, and other options in the Fairlight Desktop Console, you are ready to take a more detailed look at the different areas of operation and how everything works together. One primary concept to keep in mind is that the Fairlight Desktop Console is designed specifically to control the DaVinci Resolve Fairlight page. Therefore, the better you understand the Fairlight page, the more proficient you'll be with your console.

Please refer to previous Fairlight chapters for detailed information on the software interface, tools, functions, and audio workflows. Meanwhile, this section will give an overview of the entire Fairlight Desktop Console and focus in-depth on unique features and functions that go beyond the standard keyboard and mouse options in the Fairlight page.

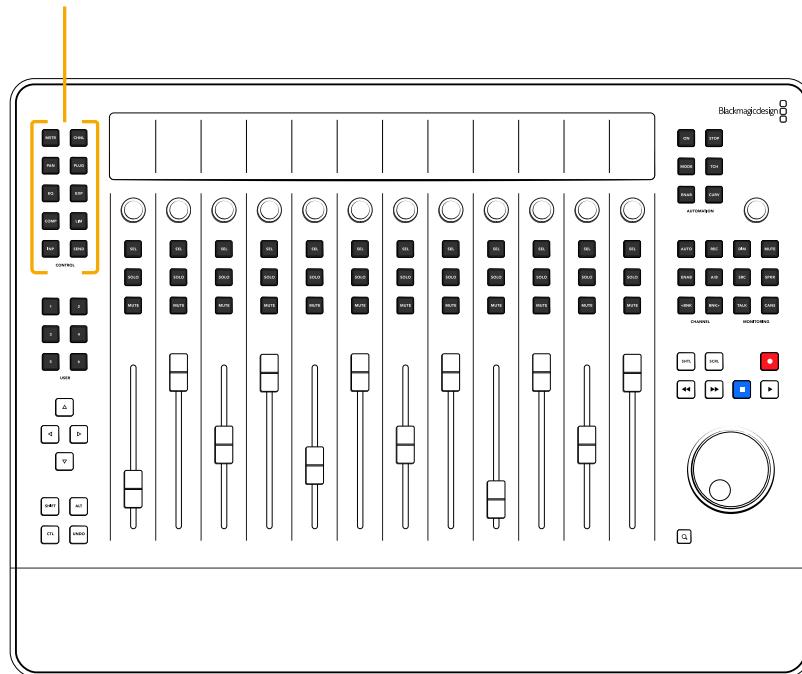
Control Buttons

The twelve control buttons in the upper-left corner of the Desktop Console offer fast access to all of the mixing parameters available in the Fairlight Mixer, without the need to grab your mouse. Each control button maps a different set of mixing parameters to the upper section of the channel strips. These parameter control sets are identical to the parameter controls in the corresponding UI windows

accessible in the Fairlight Mixer. Additionally, if you are using an HDMI monitor with your Desktop Console, the active control set parameters on the monitor screen are highlighted in blue text.

The control sets include the LCD screens, knobs, and SEL buttons and work collectively for Focus mode operations. The control area defaults to the standard operational strip mode whenever there are no control buttons active.

Control buttons
that assign control
sets to the adjacent
Select buttons,
knobs, and LCDs



Default mode where SEL is Select button, knob controls Pan, and LCD shows channel info for each of the 12 channel strips.

NOTE: In each of the following control set examples, track A3 DIA - Kate is the active track.

You can easily identify the active track because the track-based Focus mode control sets always display the active track's name, number, and color in the first channel strip's LCD.

Control Buttons from left to right, starting with the top row, include:

MSTR

MSTR: The Master control button dedicates the adjacent LCDs, knobs, and SEL buttons to the Master buses. The default Master control set gives you direct channel control for up to 11 master buses. The knob controls the corresponding Master bus level, while the SEL button allows the bus to be muted.



Master control set mapping shows MAIN 1, MAIN 2, SUB 1, SUB 2, AUX 1, and AUX 2

CHNL

CHNL: The Channel control set assigns up to 11 of the most commonly used channel controls to the knobs and also to the SEL buttons, if populated or active, primarily used as In/Out or On/Off switches.

Knob controls update in realtime as they are adjusted. SEL switches illuminate when enabled and the label on the corresponding user interface switch in the LCD turns red. The Channel controls from left to right are; Active Track DIA - Kate A3, Path Trim, High Pass Filter Frequency, Low EQ Gain, Low Mid Gain, High Mid Gain, High Gain, Low Pass Filt Frequency, Compressor Threshold, Lmter Threshold, Pan Left/Right and Front/Back. These controls are also available in the associated Focus mode control sets.



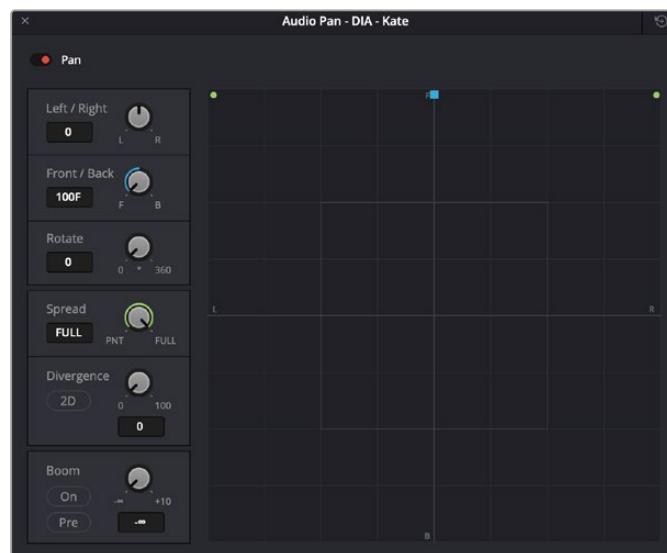
Page 1 of the Channel control set mapping

PAN

PAN: The Pan control set maps all of the pan parameters available in the Pan window to the control area knobs with graphical feedback in the LCD. Pan controls are applied to the selected track. Pan controls assigned to each knob from left to right are: Pan, Left/Right, Front/Back, Rotate, Spread, Diverge, and Boom. Pan, Divergence, and Boom have On/Off switches assigned to the adjacent SEL switches.



Pan control set mapping includes all parameters in the Fairlight Pan window.



Pan window available in the Fairlight page Mixer



Pan control set visual feedback in optional HDMI monitor

PLUG

PLUG: The Plugin control sets differ from plugin to plugin. However, for each plugin slot there are up to two pages (12+12) of user-mappable parameters on the encoder knobs as well as On/Off on SEL1, plus up to 11 user-mappable switch functions. In this example, the Fairlight FX Echo plugin automatically maps parameters to the first nine knobs and first two switches: Echo On/Off, Filter LowCut and Stereo Switch, Feedback High Ratio, Left Channel Delay Time, Right Channel Delay Time, Feedback Delay, Output Dry/Wet, and Level.

Hold Plug and press User 1 to User 6 to choose a different plugin slot for focus. This also opens the corresponding Plugin window in the Fairlight page interface.



Echo control set mapping



Echo Plugin window
that mirrors the Plugin
control set on the
Fairlight Desktop Console

EQ

EQ: The EQ control set includes two pages of controls. Press the EQ button to load the Page 1 control set, mapped left to right across the encoders and SEL switches. Master Gain trim appears at knob position 2, and knobs 3-12 control Bands 2-5, alternating gain and frequency. The SEL switch at position 1 switches the EQ on/off, and the remaining SEL switches toggle either the Frequency band ON/OFF or the shape per band.

EQ

Hold CTL and press EQ to switch to Page 2.

This EQ control set focuses on the High Pass and Low Pass filters on Bands 1 and 6, and the corresponding SEL switches toggle the filters ON/OFF or shape. Press EQ again to return to Page 1 and repeat as needed to toggle between Page 1 and Page 2. The EQ control set mirrors all of the parameter controls available in the Fairlight EQ window.



EQ control set Page 1 with controls for Bands 2-5



EQ control set Page 2 with controls for the filters on Bands 1 and 6



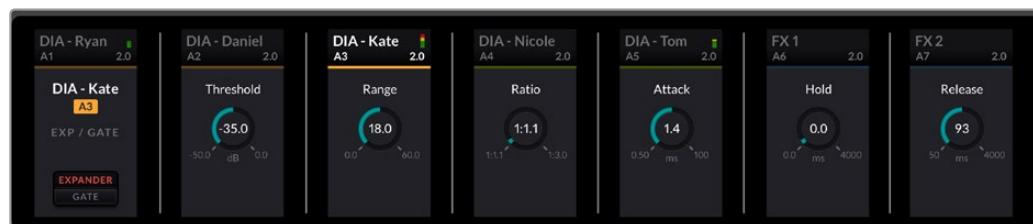
Fairlight EQ controls available via the Fairlight Mixer



EQ control set
visual feedback
in optional
HDMI monitor



EXP: The EXP control set includes all of the Expander and Gate parameter controls available in the Fairlight Dynamics window. The first channel strip shows which track is in focus, or active, while the SEL button toggles between Expander/Gate controls. The subsequent six channel strips include knob control for the Expander/Gate parameter in the order they appear on the Dynamics window. From left to right in Channel Strips 2-7 the controls are: Threshold, Range, Ratio, Attack, Hold, and Release.



Fairlight Expander/Gate control set



Fairlight Expander/Gate parameters
in the Dynamics windows

COMP

COMP: The Compressor control set includes all of the Compressor parameters as available in the Dynamics window. As with all of the other control sets, the Channel 1 position is where you'll find the On/Off switch assigned to the SEL button. These subsequent controls from left to right include: Threshold, Ratio, Attack, Hold, and Release on the 2-5 knobs, and a Send/Listen SEL toggle for SideChain compression in the channel 6 position.



Fairlight Dynamics window, Compressor controls



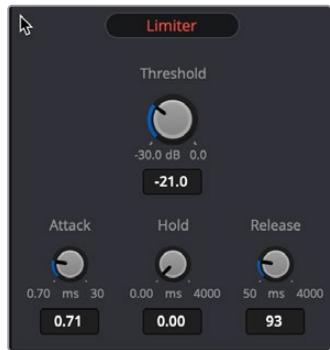
Fairlight Compressor controls available via the Fairlight Mixer

LIM

LIM: Like the other dynamics control sets, the Limiter control set includes all Limiter parameter controls assigned to the encoder knobs in the order they appear in the Dynamics window. The Limiter controls include: On/Off, Threshold, Attack, Hold, and Release.



Fairlight Dynamics window, Limiter controls



Fairlight
Limiter controls
available via the
Fairlight Mixer



Fairlight Dynamics
Window, which
includes Expander,
Gate, Compressor,
and Limiter.



Compressor control set
visual feedback in optional
HDMI monitor. All Focus
mode dynamics parameters
grouped together in
one section of the HDMI
data screen. The active
dynamics controls are
highlighted in blue.

INP

INP: This is the Input button and mirrors the Path Settings controls available on the Input section of the Fairlight Mixer. These controls appear in the same order as the do in the Fairlight page: SOURCE, PATH Mic/Inst, Rec Level, Trim, and Direct Output. The INP control set maps Mic Gain to the Channel 3 knob, or hold ALT to use the same Knob for Rec Level adjustments.



Input control set mapping



Path Settings available in the Input section of the Fairlight Mixer



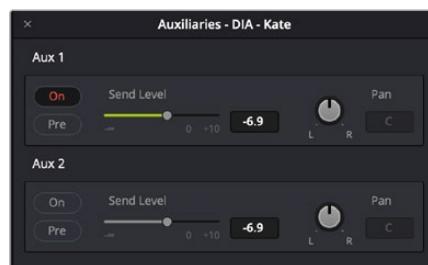
Input control set with Path visual feedback in optional HDMI monitor



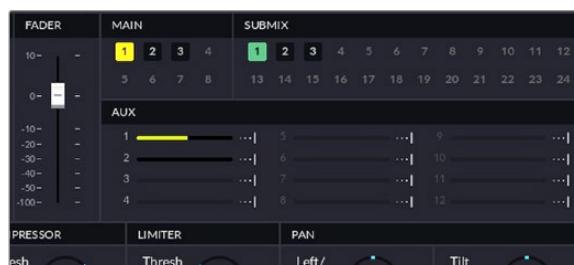
SEND: This control set uses the SEL buttons to toggle Bus Send 1 On/Off for each of the 12 channels. These send controls mirror the Bus Send controls available in the Fairlight Mixer. When active, the knob controls the Bus Send 1 Level, or press and hold ALT to control the Bus Send L/R Pan.



Send control set mapping



Bus Send window available in the Fairlight page Mixer



Send control set visual feedback in optional HDMI monitor

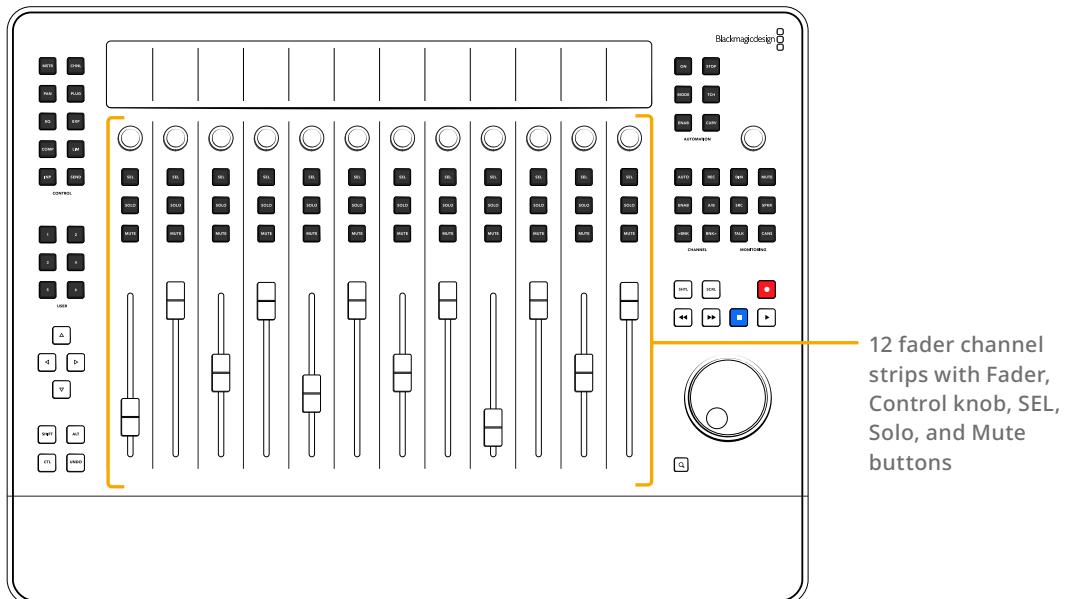
Fader Channel Strips

The most prominent real estate on the Fairlight Desktop Console is dedicated to the fader channel strips. The upper section of these channel strips operate independently in Strip mode, or collectively for Focus mode tasks. The default operational mode of the console provides 12 fader channel strips, each with a Fader, Mute, Solo and Select (SEL) button, a rotary control knob for pan adjustments and a LCD Screen that displays channel information. Any changes applied to the channel strip controls are mirrored in the DaVinci Resolve Timeline and Mixer accordingly.

The desktop console remains in default mode for standard mixing operations unless one of the buttons in the control section is selected. For example, you may be using the faders and pan knobs on-the-fly to adjust track levels and panning during playback. Without stopping, you'd like to adjust the EQ for the active track. No problem, just press the EQ control button and the entire upper section of the channel strips, including the SEL buttons, knobs, and LCD screens, change function to the EQ focused mode. In EQ focused mode, the collective LCD screens, SEL switches, and knobs control specific EQ parameters that mirror the Fairlight Mixer's EQ window controls.

When you finish adjusting the EQ, simply unlatch the EQ control button, and the console returns to the default mixing functionality. You can switch between control modes as often as you like during playback, recording, or other mixing tasks.

This section describes the default functionality of the fader channel strips.



Touch-Sensitive Faders

The bottom-half of the Fader Channel Strip area comprises 12 identical touch-sensitive motorized faders that offer precision gain controls for 12 signal paths. These faders correspond with faders on the Fairlight page Mixer. Touching a fader results in realtime graphical and numeric feedback of the current level on the adjacent LCD screen. Additionally, each 100mm fader has a DC belt-driven coreless motor and offers precision touch-control fader automation.

Faders can be reset to unity (0dB) by simply pressing the Control (CTL) button while touching a fader. Hold Control and swipe your hand along each of the twelve faders to reset them all in a single maneuver.

Channel Strip Control Buttons

Each channel strip also contains illuminated Mute, Solo, and Select status buttons for the individual channels. These toggle buttons can be pressed individually or swiped on or off. Highly-visual LED lights make it easy to spot which buttons are switched on or off at a glance, which is especially important in the middle of a mixing session. These channel strip buttons and their toggled states are mirrored in the DaVinci Resolve Edit and Fairlight page Mixers and Timeline track headers, as well as in the strip mode layout in the optional HDMI monitor.

Channel Strip Control Buttons include:



SEL: In default mode, this button can be used to select a track, VCA master, or bus master assigned to that channel strip. Press SEL once to select or de-select a track. You can select as many tracks as you need for a given task. Channel buttons, located to the right of the Channel Strip control buttons, can be used as modifiers to change the SEL switch functions.



Latch the AUTO channel modifier button to change the SEL switch function to Automation Write.



Latch the REC channel modifier button to change the SEL switch function to Arm for recording.



In Focus mode, latch the ENAB channel modifier button to enable the SEL switches to be used as Track Select buttons.



SOLO: Use this button to hear only this channel during playback.

Multiple tracks can be soloed simultaneously to isolate selective tracks for playback while all non-soloed tracks will be muted.

Solo buttons work for the corresponding channel in both Strip and Focus modes.

Use modifier keys for enhanced solo functionality;



Hold Control and press any Solo button to clear all soloed buttons.

Hold Control and press any Solo button again to restore soloed tracks.



Hold ALT and press Solo to toggle on or off Solo Safe status.

Tracks set to Solo Safe will always play, even if Solo is enabled for other tracks, and are easily identified by the blue-highlighted Solo status icon in the Fairlight page Mixer and Timeline track headers.



MUTE: This button turns the channel off and on for playback. Mute buttons on the Desktop Console correspond with the Mute buttons on the Fairlight page Mixer and track headers.



Desktop Console with active Mute, Solo, and Select buttons in the fader channel strips

PHILIP	ADA VO wFX	ROOM	PFX	IMPACT	DRONE 1	FX 2
0- -10- -20- -30- -40-	Rec Solo Mute	0- -10- -20- -30- -40-	Rec Solo Mute	0- -10- -20- -30- -40-	Rec Solo Mute	0- -10- -20- -30- -40-

Optional HDMI monitor display showing track status for the channels in Strip mode

Channel Control Knobs

Each channel strip includes a touch-sensitive multi-function encoder knob with realtime graphical and numeric feedback of the current position on the adjacent LCD screen. The Channel Control knobs default to left-right (L/R) Pan controls and offer smooth precision rotary adjustments. The handy touch-control of these knobs is perfect for recording Pan automation because you can start recording data the instant you touch a knob and stop when you release it. Knob settings are mirrored in the corresponding Mixing window in DiVinci Resolve.

Use modifier keys for enhanced control knob functionality:



Hold SHIFT in conjunction with the knob for refined incremental control.



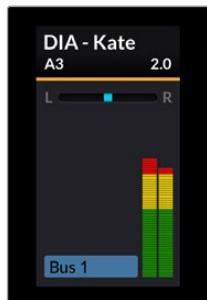
Hold ALT to switch from L/R Pan to front-back (F/B) panning and corresponding feedback on the LCD screen.



Hold CTL and touch any knob to reset the designated parameter to the default value.

LCD Screens

At the top of each channel strip you'll find a high-resolution LCD color display that shows the Track or Bus name, color, metering up to 7.1.4 wide, bus assignments, and panning if in Default strip mode. The information displayed for each track directly correlates with the Fairlight page Mixer and track headers.



Fader channel strip LCD screens showing track name, number, color, pan status, level meters, and VCA group number

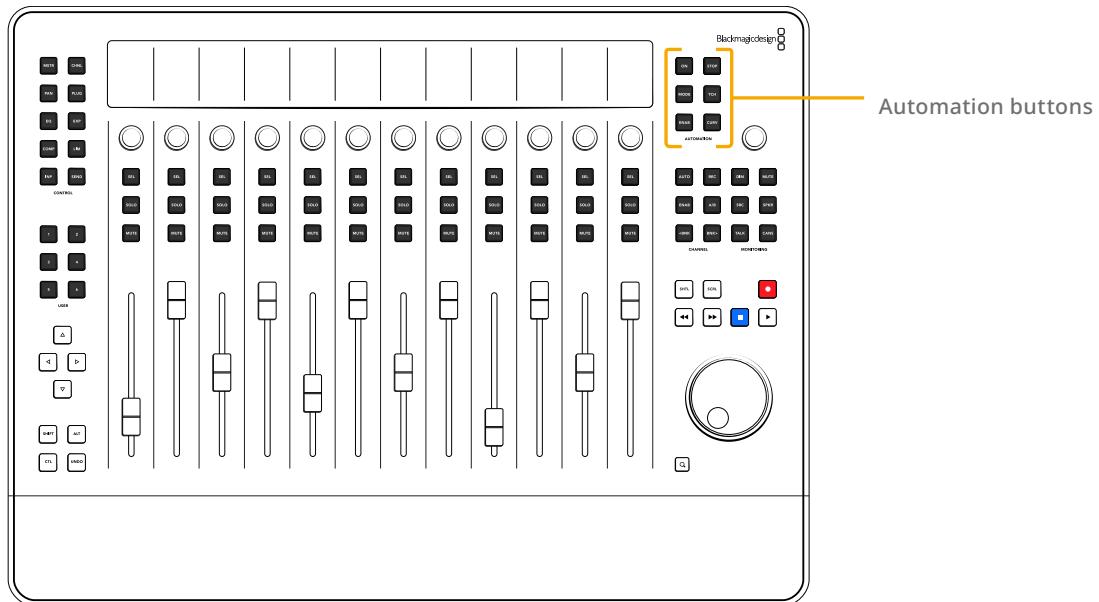


Fairlight page track headers showing track name, number, color, and level meters

NOTE: The LCD screens display different information based on the current Control mode in use on the Fairlight Desktop Console. You'll find detailed images of the other Control modes later in this chapter.

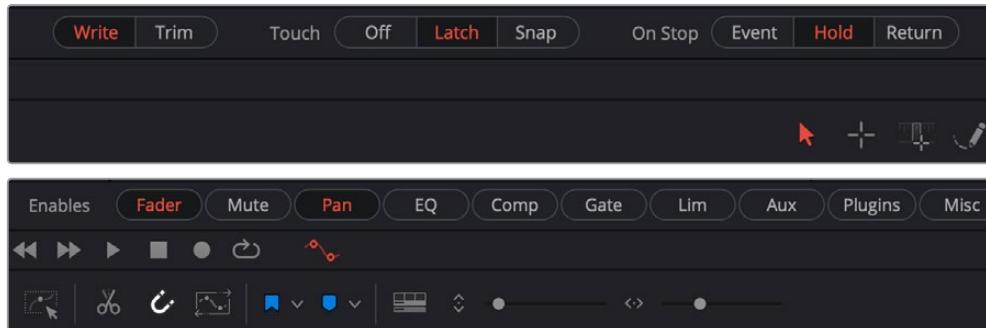
Automation Buttons

The Fairlight Desktop Console includes automation controls designed to allow the operator to record every static and dynamic parameter change you make in the process of balancing, mixing, and sweetening the overall sound of your timeline in the Fairlight page. The six Automation buttons offer the same automation controls available in the Fairlight page Automation toolset.

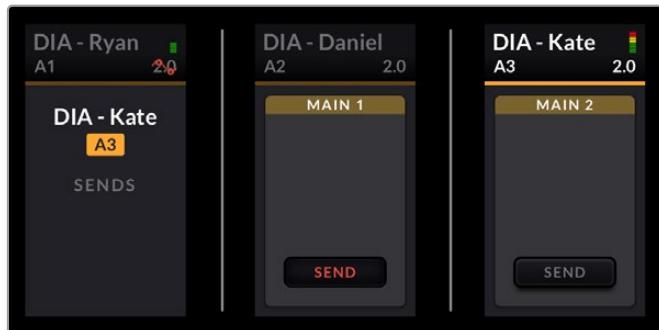


Automation buttons include:

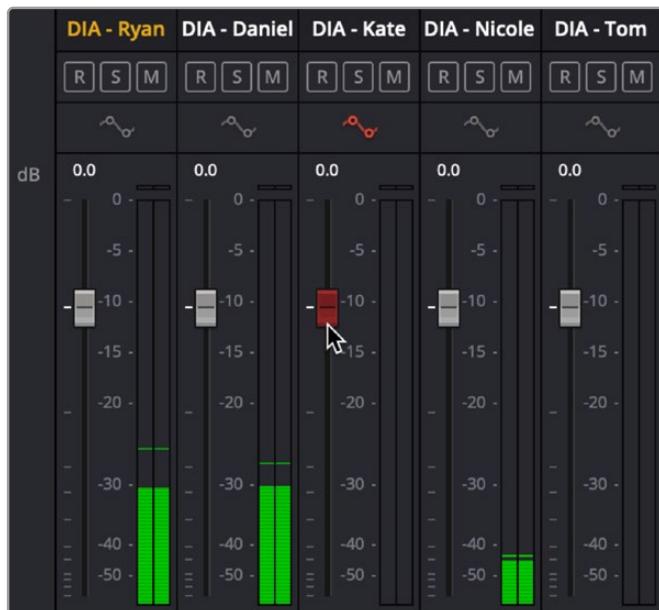
-  **ON:** Use this button to turn automation mode on and off.
-  **STOP:** Toggles the On-Stop mode through Event, Hold, or Return.
-  **MODE:** This button toggles between Write or Trim action.
-  **TCH:** The Touch button toggles the automation touch mode through three recording options: Off, Latch, and Snap.
-  **ENAB:** Hold this button while touching any fader, pan knob, or Mute button to enable/disable that parameter for automation recording. Additionally, the User button Mix User set offers additional enables in the Enables Quick Menu layout.
-  **CURV:** Hold the Curve button and touch any fader strip control on a selected track to show its parameter's automation curve on the selected channels in the Fairlight page Timeline.



Fairlight page Automation controls



Automation writing fader automation data on the A3 track



Automation mirroring the Desktop Console,
writing fader automation data on the A3 track

NOTE: Automation is only available in the DaVinci Resolve Fairlight page.

For detailed information about Fairlight's automation recording toolset and how it works in DaVinci Resolve, see *Chapter 174, "Mix Automation."*

Channel Buttons

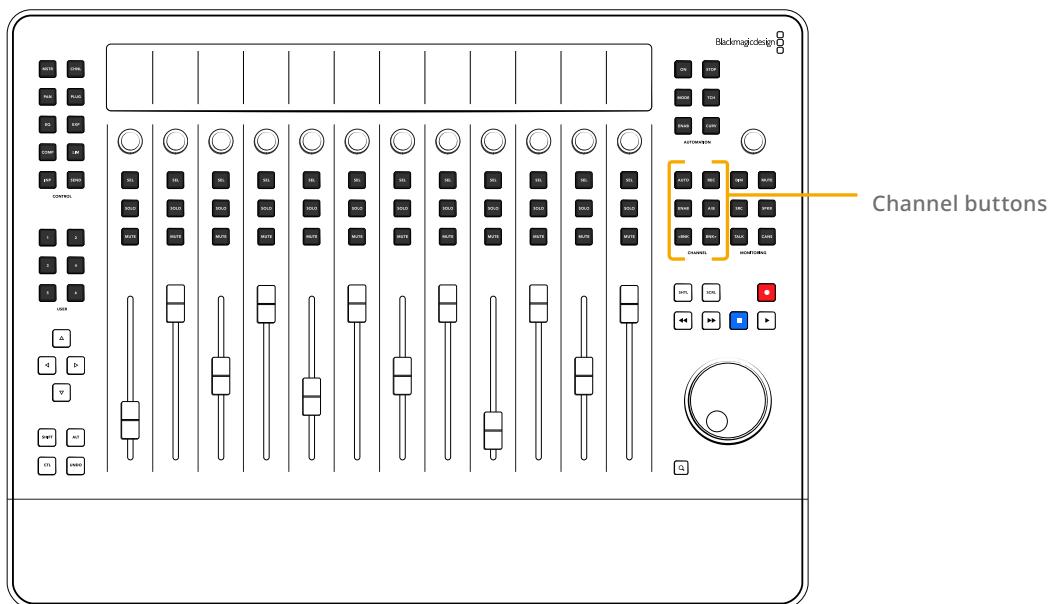
One way the Fairlight Desktop Console is able to pack enhanced functionality with minimal Channel strip buttons, is to repurpose the SEL button as needed for different workflows. Even in default mode, the channel select button (SEL) can easily be used as a switch for common strip mode functions. That's where the Channel buttons come into play. The Channel buttons temporarily assign channel-specific button functions from the Fairlight page track headers and Mixer to the Channel Select button (SEL). When engaged, the Channel buttons turn the SEL button into a toggle switch that mirrors its functional counterpart on the Fairlight page.

These functional override Channel buttons include ENAB, AUTO, and REC. Plus, there is an A/B channel button, as well as Left and Right Bank buttons for mapping and toggling through banks of tracks.

The AUTO, REC, and ENAB channel SEL switch modifier buttons can be latched for extended use or engaged via momentary press, so you can quickly use the modified SEL switch and release to return to the task at hand. Pressing any of the focus mode Control buttons will automatically unlatch the Channel modifier button and reassign the SEL switches accordingly.



Track header includes Automation Write and REC Arm buttons that mirror Channel Button functions.



Channel buttons include:



AUTO: This button modifies the SEL buttons to switch the channel in and out of automation writing and can be used on-the-fly to punch in and punch out during playback. This functions the same as clicking the Automation Write button on the track header or channel strip in the Fairlight page Mixer.



REC: Latch this button to assign the SEL switches as Arm buttons to quickly arm tracks for recording.



ENAB: Use this SEL button modifier to temporarily override the Focus mode SEL switches and enable them to be used as Track Select buttons.



A/B: Press the A/B button while the Views - Tracks quick menu is active to show six user-defined View presets of which tracks/buses are visible in the Timeline and Mixer. These View presets can be customized in the Tracks Index tracklist and are based on the tracks and busses currently marked as visible while a numbered User view is selected.



BNK >: Bank Forward banks the faders to the right in groups of 12, or the next 12 channels or buses in the Timeline from your starting position.



Hold SHIFT while pressing this button to bank the faders one at a time. You can use this SHIFT banking option to create custom fader banks.



Hold CTL and press the BNK > button to locate the first bus.



Hold a fader while pressing the BNK > button to leave that channel on that strip.



< BNK: Bank Back banks to the previous set of 12 tracks or buses.



Hold SHIFT while pressing this button to bank the faders one at a time in the relative direction.



Hold CTL and press the < BNK button to locate the first track.

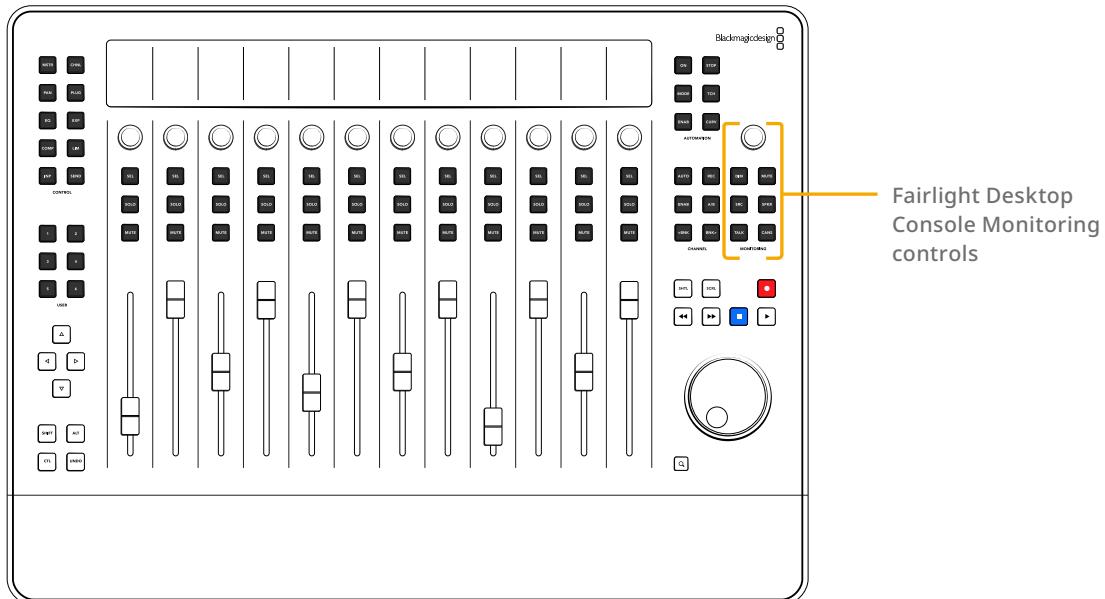


Hold a fader while pressing the < BNK button to leave that channel on that strip.

TIP: When working with high track counts, you can quickly jump to the last track/first bus by pressing CTL+ BNK >. Once you have located the first bus, you can press < BNK to bank through your right-most tracks 12 at a time from the last track toward the first. To jump back to the first tracks, press CTL+ < BNK.

Monitoring Controls

The Monitoring controls on the right side of the Fairlight Desktop Console is where you control the listening levels for the Control Room and Studio speakers. These controls default to Control Room monitor levels and can be changed at any time using the Monitor knob and buttons. Hold the CANS button to re-target all of the Monitoring controls for studio monitoring.



Monitoring Knob

Use this knob anytime during recording, playback, or mixing to adjust the Control Room or Studio listening levels. Changes to the Control Room levels are reflected in the DaVinci Resolve Timeline monitoring controls located in the upper-right corner of the Edit page and Fairlight page Timelines. If you are using an optional HDMI Monitor, you'll see the monitoring controls in the upper-left corner of the screen. Sometimes the monitoring environment must be set to a standard level and not changed. This is called Fixed Level monitoring. For example, if your control room has been calibrated with a sound pressure level (SPL) meter, you will probably want to set a Fixed monitoring level. When fixed, the Control Room knob has no affect on the monitoring levels. When Fixed Level monitoring is toggled on, the listening level meter in the upper-right of the Timeline GUI turns from green to blue.

Control Room monitoring controls include:



DIM: This button reduces the Control Room monitor volume by -15dB. Press to toggle Dim on or off. The DIM button state is mirrored in the DaVinci Resolve monitoring controls. When DIM is toggled on, the level slider in the onscreen monitoring controls turns yellow. Control Room levels automatically DIM during Studio talkback. Use the Monitoring knob to adjust the DIM level.

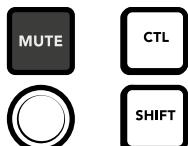


MUTE: Use this button to mute or unmute the Control Room monitors as well as turn on or off Fixed Level monitoring.

Press to mute or unmute Control Room monitoring.



Hold CTL and press Mute to switch on or off Fixed Level monitoring. When Fixed Level monitoring is switched on, the level slider in the onscreen monitoring controls turns blue.



Hold CTL + SHIFT while turning the Monitoring Control Knob to adjust the fixed level.



SRC: Use this button to toggle between the last two selected monitor sources. Holding this Source button along with the associated USER button selects a specific bus for monitoring. For example, If you Hold SRC and press USER 2, the monitoring will change to bus 2, while holding SRC and pressing USER 5 will change the monitoring to bus 5.



SPKR: This button toggles between the last two selected monitor sets. Holding this Speaker button and pressing the associated USER button selects the specific monitor set. The two default speaker sets are MAIN and NEAR. Holding SPKR and pressing USER 2 will switch to the NEAR monitoring set, and holding SPKR and pressing USER 1 will return the Control Room monitoring to the MAIN speaker set.

The Studio monitoring controls adjust the Studio monitoring circuit of a Fairlight accelerator card installed on your workstation. Hold the CANS button to target the monitoring controls for Studio monitoring.

Studio monitoring controls include:



Studio knob: Hold CANS to use this to dial the monitoring level of the speakers in the Studio.



DIM: Hold CANS and press this button to reduce the Studio monitor volume by -15dB.



MUTE: Hold CANS and use this button to mute or unmute Studio monitoring.



SRC: Hold CANS while pressing this button to toggle between the last two selected Studio monitor sources.



SPKR: Hold CANS and press this button to toggle between the last two selected Studio monitor sets.



TALK: Either Momentary press or latch this button to engage a talkback microphone. When latched, the talkback mic remains live.

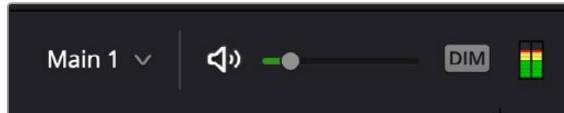
Press and hold the talk button to use talkback without latching. In this case, the talkback mic will remain live only during the momentary-press and shut off when you release. Engaging talkback also DIMS the Control Room circuit. You can modify the talkback functionality and general purpose input and output (GPI/GPO) in the Talkback controls available in the Fairlight menu in DaVinci Resolve.



Press CTRL + Talk to show or hide the Talkback Settings window.

CANS: Hold this button to temporarily target all of the monitoring controls for Studio monitoring.

NOTE: “Cans” is audio studio jargon for headphones and are part of most any recording studio monitoring setup. Often the producer, engineer, and clients sit in the control room and monitor the session via loudspeakers, while the talent, within the studio, monitors playback and performances via cans.

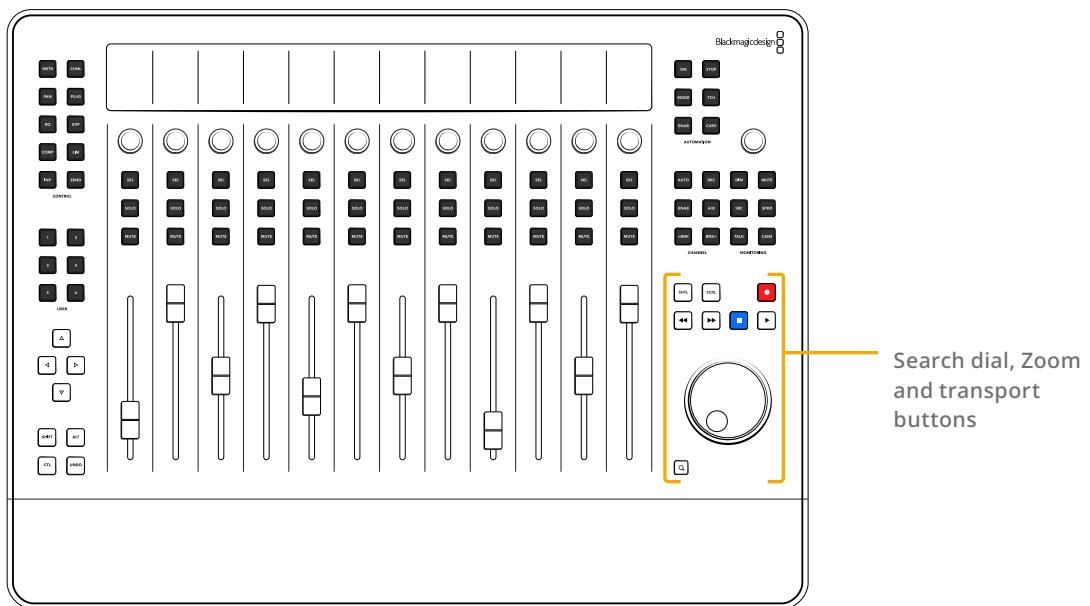


Fairlight page monitoring controls

Search Dial and Transport Controls

Some of the most useful controls on the Desktop Console are the search dial and transport buttons which function exactly as expected for a professional audio control surface. The search dial and surrounding transport buttons offer a complete set of transport commands designed to let you keep your hand in one position while you quickly navigate the Timeline from end to end or anywhere in between in seconds. Additionally, the dial can be used for focused timeline zooming and scrolling.

As a means of navigation, scrubbing, playback and zooming, the dial has four modes of operation that are initiated by the respective buttons located above and below the search dial.



Search dial operational modes include the following:



Jog : This is the search dial's default operational mode.

In Jog mode, the playhead movement is contingent on the movement of the dial, so you can freely jog forward or in reverse at variable speeds while turning the dial and stops when the dial is released. Jog mode is often used to scrub a specific area to focus on audible cues for mixing, editing, and trimming.



If the transport is stopped, press Play to engage the dial. Then turn the dial to jog.

If the "Always On" option is checked in System Preferences, the jog dial unconditionally controls the transport immediately whenever you move the dial, even during playback. This "always on" convenience does not affect the transport during recording, Shuttle or Scroll operations.



Hold CTRL while turning the jog dial to increase playhead movement. Release CTRL to return to standard jog speed.



Shuttle: In Shuttle mode, turning the dial forward (clockwise) or back (counter-clockwise) starts playback in fast forward or rewind at variable speeds based on the amount the dial is turned. Releasing the dial while shuttling forward or back will continue constant playback at the current speed until the playhead reaches the beginning or end of the project.



In Shuttle mode, holding CTRL while turning the jog dial increases the speed 8X.



Scroll: In Scroll mode, the playhead position is controlled by the dial to quickly move earlier or later in the Timeline.



Hold CTL while scrolling to move the playhead from the project start (first frame) to the project end (last frame) in a single rotation of the dial.



Zoom: The Zoom button, which looks like a magnifying glass, is used in combination with the dial and modifier keys to offer numerous quick zooming and scaling options while you work.

The Zoom button can also be combined with the User buttons to show and map the onscreen User Mapping menu.



Hold Zoom and turn the dial to change the horizontal scale of the Timeline on the computer screen.



Hold CTL + Zoom and turn the dial to change the vertical scale of the Timeline, which in turn changes the height of the tracks and the subsequent number of tracks visible in the Timeline.



Hold Shift + Zoom and turn the dial to move the current track selection to higher or lower tracks.



Double-press Zoom to zoom your entire program to fit within the current visible width of the Timeline. Double-press Zoom again to toggle back to the previous zoom level.

- | | | |
|--|--|---|
| | | Zoom + any User button toggles on or off the User Mapping menu onscreen.
The User Mapping menu is a 2x3 grid that changes in real time by using the ALT and CTL modifier buttons. |
| | | Hold Zoom + SEL button on Bus or VCA master to spill or unspill member tracks to neighboring faders, either to the left or right depending on the settings in the Setup-Console Quick Menu. |

NOTE: Horizontal scaling zooms around the playhead, while vertical zooming focuses on the active selected track.

In addition to the jog dial, you'll find a set of five standard transport control buttons that can be used for recording, playback, and navigation.

The transport buttons include:

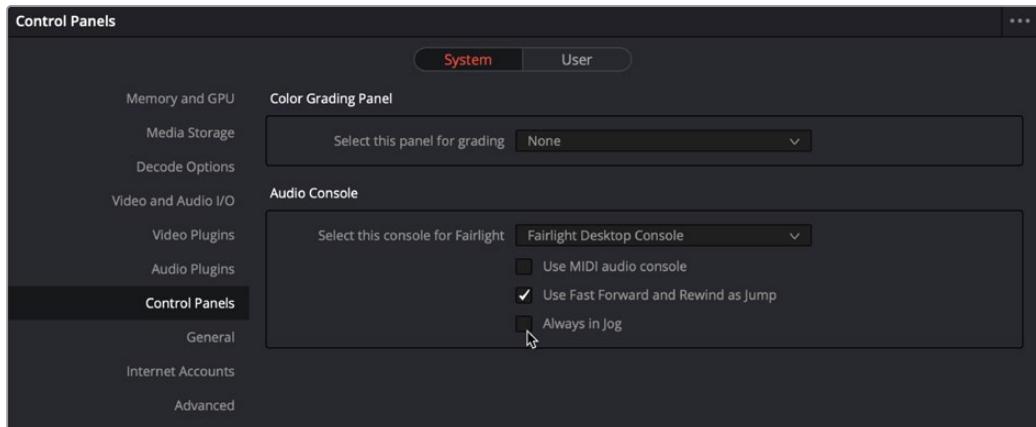
- | | |
|--|---|
| | Record: When used in conjunction with Play starts and stops, recording switches the transport in and out of record mode for the record-enabled channels. |
| | Fast Reverse: Depending on Control Panel options in System Preferences, this button either places the transport into rewind or jumps left. |
| | Hold CTL and press the Fast Reverse button to jump the playhead to the project start. |
| | Fast Forward: Depending on Control Panel options in System Preferences, this button either places the transport into fast forward or jumps right. |
| | Hold CTL and press the Fast Forward button to jump the playhead to the project end. |
| | Stop: This button stops playback or recording. |
| | Play: Places the transport dial into the default jog mode.
Press again starts playback. |
| | Hold CTL and press Play to locate to the last play point and play again. |

Control Panels Options in DaVinci Resolve Preferences

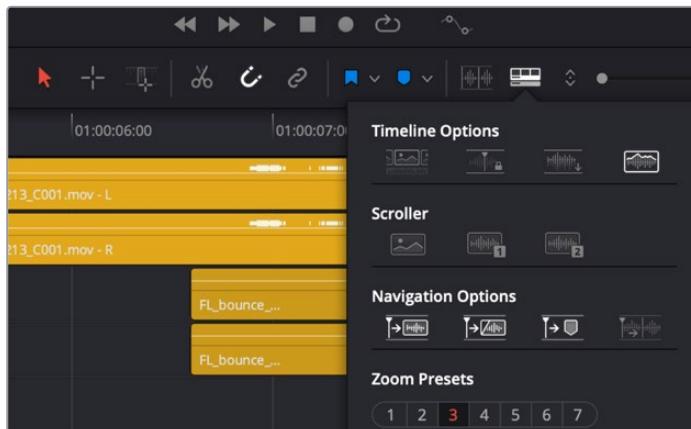
The Control Panels preferences offer several options to customize your Desktop Console transport controls, including:

- **Use Fast Forward and Rewind as Jump:** Check this option if you want to use the Fast Forward and Rewind keys to jump to clips, fades, markers, or transients on the selected tracks. Choose the Jump navigation options in the Timeline Options menu in the Fairlight Page toolbar.
- **Always in Jog:** When this option is On, any movement of the dial will cause the transport to switch to Jog. Always in Jog affects the dial when the transport is not in motion and does not override Shuttle, Scroll, or Record operations.

TIP: Always in Jog is handy while previewing new material, editing, arranging, and organizing tracks. This is great because you can grab the dial and instantly navigate. However, when performing complex mixes and writing automation, it's a good idea to turn this option off, so you can't accidentally bump or nudge the dial while you work.



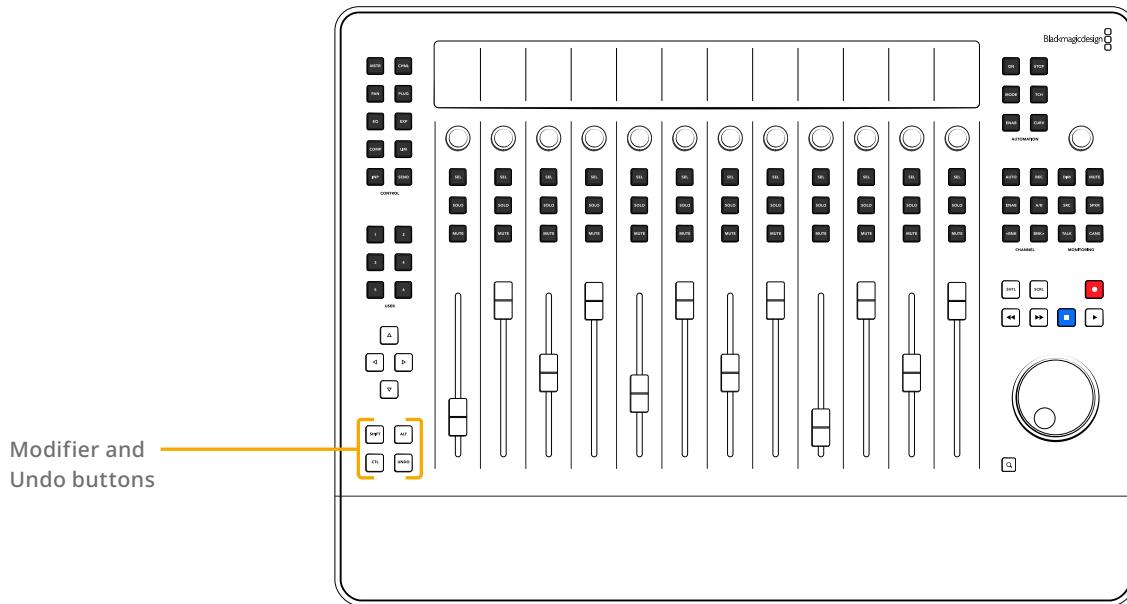
Audio Console options in System Preferences



Timeline Options menu with navigation options, including: clips, fades, markers, and transients

Modifier and Undo Buttons

The modifier buttons are conveniently located in the lower-left corner of the console, just where you are accustomed to finding them on a standard computer keyboard. These versatile buttons add functionality to other controls throughout the console. There's also an Undo button that you can use as often as needed while you work.



Modifier and Undo keys include:



SHIFT: The Shift modifier key is used in conjunction with numerous other buttons and controls to expand functionality. For example, hold Shift while turning a Channel knob for refined control. Hold Shift + Zoom while turning the dial to move the current selection to higher or lower tracks.



ALT: Use the ALT button to reveal alternative parameters or functions. A few examples of ALT modifier functions include:



Hold ALT to change the Strip mode Pan control knob function from left/right panning to front/back panning.



Hold ALT and press Solo to toggle Solo Safe status on or off.



CTL: The Control button is the most commonly used modifier button and is the easiest to find without looking, since it is the first button in the lower-left corner of the console. A few examples of the CTL button's uses include:



Hold CTL while touching any Channel Control knobs or faders to reset them to the default value.



Hold CTL while using the search dial to increase speed.



Hold CTL and Zoom while turning the dial to zoom vertically.



Hold CTL and press UNDO to REDO one step.



Hold CTL and press Left Arrow to mark an In point.



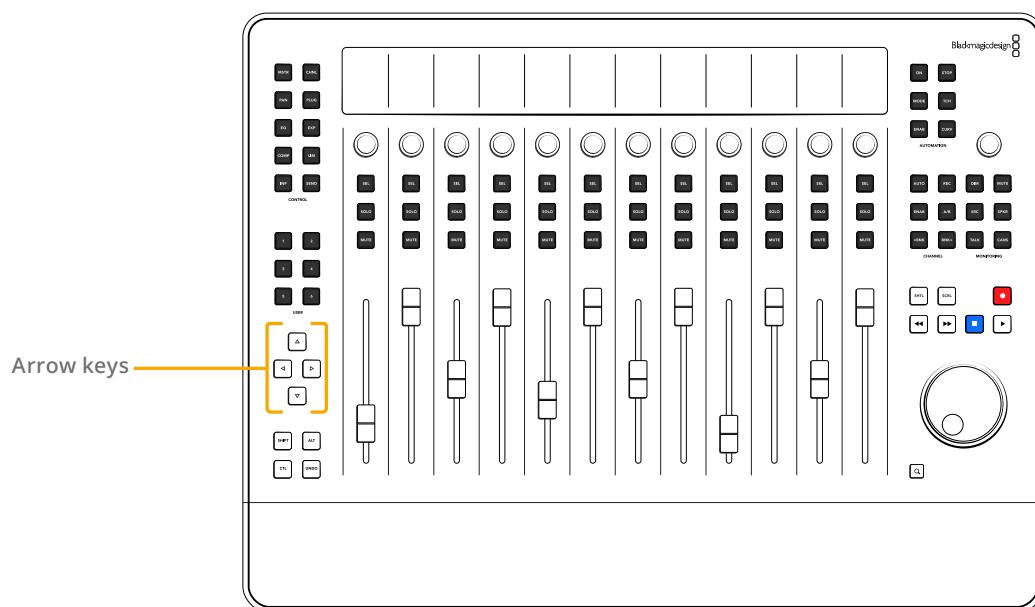
Hold CTL and press Right Arrow to mark an Out point



UNDO: Use this button anytime you need to go back and Undo your last step. This works as expected, no surprises here. Just a reliable means of taking a step back if you make a mistake or get ahead of yourself and perform an operation you didn't intend. And you can also hold CTL and press UNDO to REDO a step.

Arrow Keys

These Arrow keys serve a myriad of uses during your post production workflows, from moving the playhead one frame left or right with the Left and Right Arrows, to jumping clip to clip up or down the Timeline with the Up and Down Arrows. The Fairlight Desktop Console includes a set of four arrow keys that you can use for standard arrow movement, as well as console-specific operations.



Arrow buttons, clockwise from the top, include:



Up Arrow: Use this button to move a selection up in a list, Media Pool or sound library. The Up Arrow is also used for navigation to move the playhead to the next clip, fade, marker, or transient in the Timeline. These “jump to” navigation functions are determined by the Navigation options in the Timeline Options menu.



Hold Shift and press Up Arrow to move forward to the next marker.



Right Arrow: Used to move the playhead forward one frame or one second at a time.

Press Right Arrow to move the playhead one frame forward.



Hold Shift and press Right Arrow to move one second forward.



Hold CTL and press Right Arrow to mark an Out point.



Down Arrow: Use this button to move a selection down in a list, Media Pool or Timeline. The Down Arrow is also used for navigation to move the playhead to the previous clip in the Timeline. Shift plus the Down Arrow button moves to the previous marker.



Left Arrow: Used to move the playhead back one frame or one second at a time.

Press Left Arrow to move the playhead one frame back.



Hold Shift and press Left Arrow to move one second back.

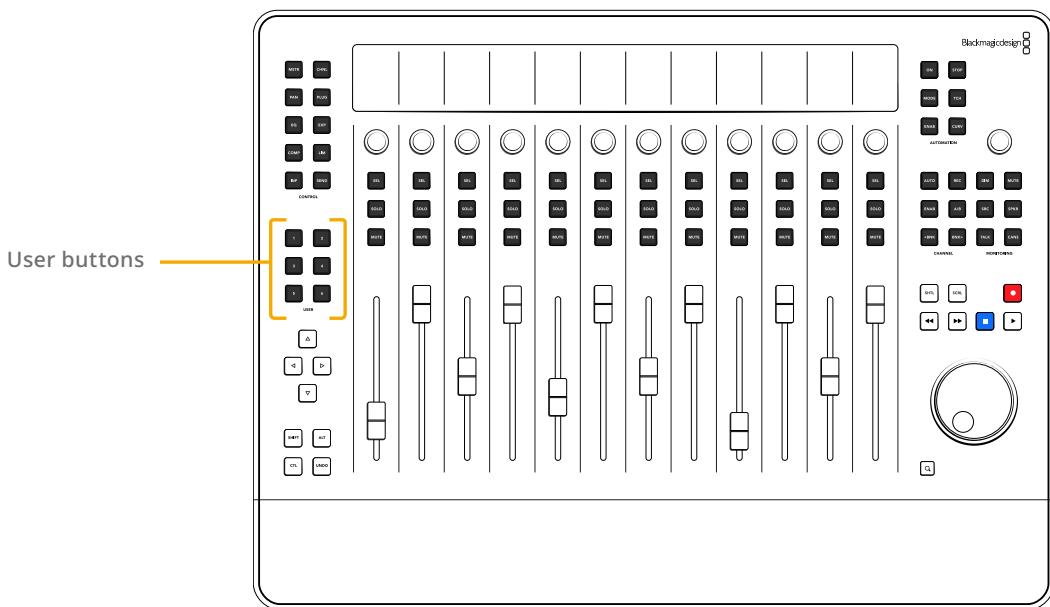


Hold CTL and press Left Arrow to mark an In point.

NOTE: Once you set an In or Out point in the Timeline, you can use the dial to extend the selected range. To clear the In and Out points (Range), press Option-X on the computer keyboard.

User Buttons

The six sequentially numbered User buttons are user-defined quick keys that change operation depending on the mode and function in combination with other button groups. For example, a re-recording mix engineer performs different tasks than the ADR engineer, so each professional would set up the User buttons to give them easy access to the functions and modes they need most for their workflow. User buttons can be used alone, or in combination with other buttons for specific functions and workflows.



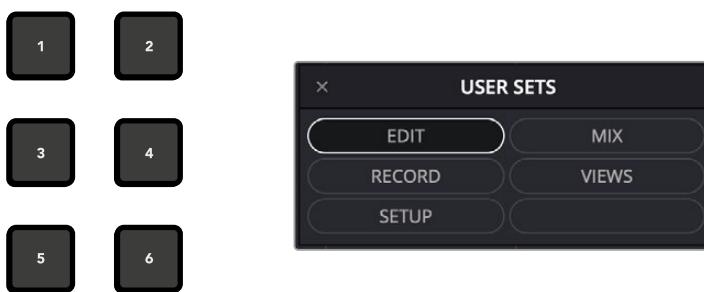
At the time of this writing, the User buttons are mapped to six User sets, including Edit, Mix, Record, Views, Setup, and a blank unassigned User set. Each of the six User Sets is then mapped to additional menu layouts each with six menu options related to that set. User button quick menus offer fast

mouse-free two-handed editing options, like those available in the Fairlight Audio Editor. The difference is that you look at the Quick Menu dialog on the computer screen to see which functions are assigned to the User buttons instead of the labels on the console keys.

The current User Button Quick Menus are an early incarnation of this feature and will undergo visual GUI improvements and enhanced functionality in future updates.

Working with the User Buttons and the Quick Menu Dialog

The Quick Menu is a dialog in the Fairlight page user interface that you can show or hide by holding Zoom and pressing any of the User buttons. What makes the Quick Menu dialog unique is its 2x3 grid design containing six user-defined buttons that can be toggled from the corresponding User buttons on the Desktop Console. To select an option from the Quick Menu, once you've chosen the desired User Set page, you simply press the User button that corresponds to the function you need. This innovative physical button-to-dialog button relationship makes it easy to learn the quick menus and functions as well as build lightning-fast muscle memory to trigger the actions while you work.



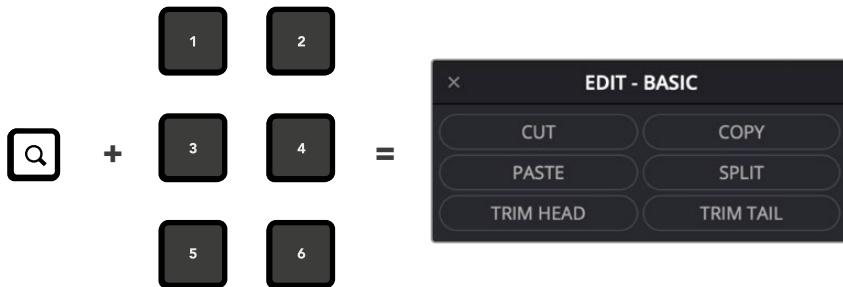
Six User buttons in a 2x3 pattern and Quick Menu dialog with a 2x3 button grid that matches the User buttons; Quick Menu shows the User Sets menu and Edit set (User Button 1) option highlighted.

NOTE: The Quick Menu dialog can be moved anywhere on the Fairlight page interface, so you can see it at a glance, without obstructing view or workflow.

User Button and Quick Menu Functional Overview

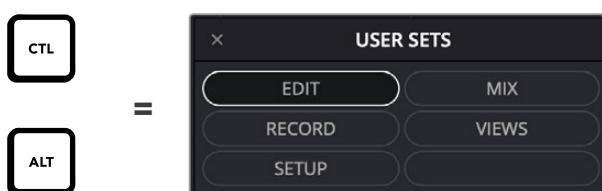
The default Quick Menu layout is Edit, however you can change the layout anytime by pressing the appropriate modifier keys along with the corresponding User button. For ease of operation, you use the Zoom button to show or hide the Quick Menu, and the modifier keys to change layouts. It requires two modifier keys (ALT+CTL) to change to a different User set, and one modifier (ALT) to select a different submenu layout within the current User Set. This is similar to using a mouse to open a submenu in the Fairlight Page interface, or pressing Menu keys to reveal Menu Option keys on the Fairlight Audio Editor. Once you have selected a Quick Menu layout, such as Edit - Basic, you can then engage any of the six actions by pressing the corresponding User button. User Button layouts are identified by the name in the Quick Menu header. Hyphenated names represent the current User Set followed by the submenu layout. For example, EDIT - BASIC identifies the Edit User Set showing the Basic submenu layout of six different Edit actions that can be engaged by pressing the corresponding User button.

- Press Zoom plus any User button to Show the floating Quick Menu dialog on the Fairlight Page interface



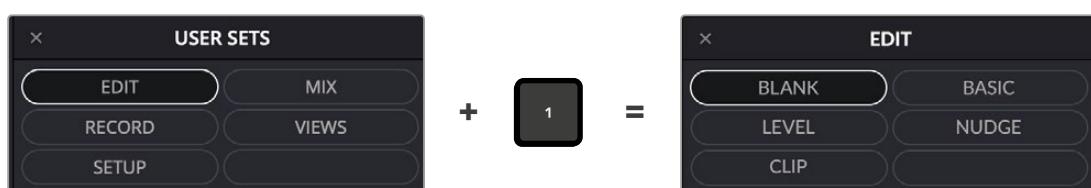
Six User buttons and the Edit-Basic User Set

- Once the Quick Menu dialog is showing, it will remain on screen until you press Zoom plus a User button to close. You can also close the Quick Menu dialog by clicking the Close (x) button on the dialog.
- The Quick Menu retains the most recently used layout whenever you show or hide it.
- Press CTL + ALT to show the six User Sets including; Edit, Mix, Record, Views, Setup, and Blank.

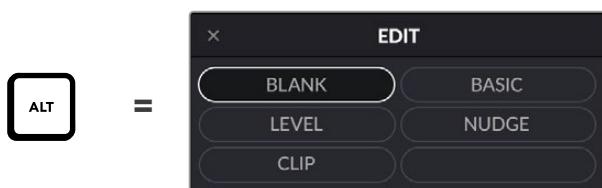


Press CTL + ALT to view the six User Sets

- To choose an option from the Quick Menu, press the User button in the same position. For example, in the Edit User Set, the Nudge submenu layout is in the same position as User 4, therefore, you press User 4 to choose the Edit-Nudge layout. The Edit-Nudge layout, in turn, offers two clip-based actions that can be engaged by pressing the corresponding User button. No modifier keys are needed to choose an option from the current user set layout, hence the name Quick Menu.

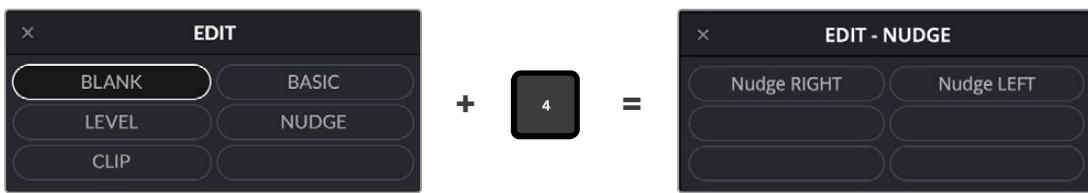


- Press ALT to show the submenu layouts for the current User Set. In this example, there are five Edit submenu layouts mapped to the first five buttons.

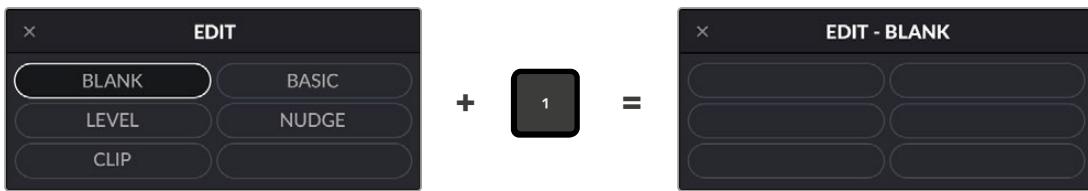
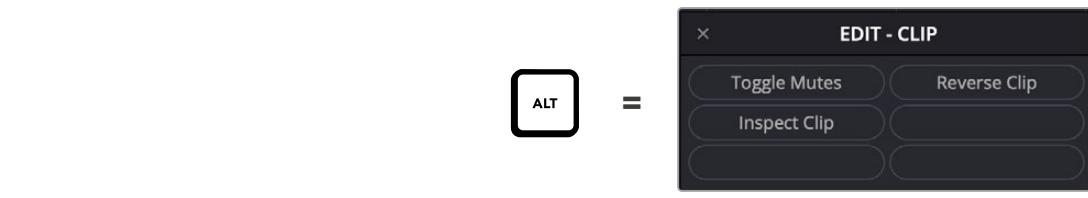


NOTE: Quick Menu buttons that are blank have not been mapped to a function. The Edit Blank layout is the default User set when engaging the User Button layouts for the first time. With this layout, none of the User buttons are assigned to actions, and therefore, new users can avoid accidentally applying editing actions to the Timeline.

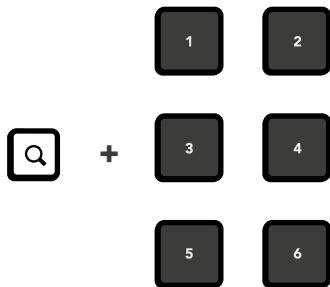
- To choose an option from the Quick Menu, press the User button in the same position. For example, In the Edit User Set, the Nudge submenu layout is in the same position as User 4, therefore, you press User 4 to choose the Edit-Nudge layout. The Edit-Nudge layout, in turn, offers two clip-based actions that can be engaged by pressing the corresponding User button. No modifier keys are needed to choose an option from the current user set layout, hence the name Quick Menu.



- To quickly change to a different submenu options layout in the same Quick Menu User Set, press ALT to show the submenu option sets, then press the User button for the desired layout. In this example, to change from the Edit-Clip options to the Edit-Blank options, press ALT to see the different submenu options, and User 1 to choose the Basic option in the 1 position.



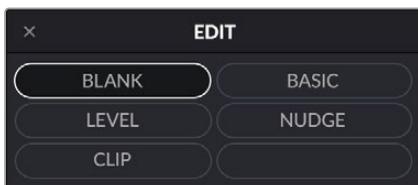
- To engage the options currently mapped to the Quick Menu, press the corresponding User button. For example, in the Edit-Basic Quick Menu, press User 1 to Cut, User 2 to Copy, User 3 to Paste, User 4 to Split, User 5 to Trim Head, and User 6 to Trim Tail.
- To hide the Quick Menu dialog, Press Zoom plus any User button.



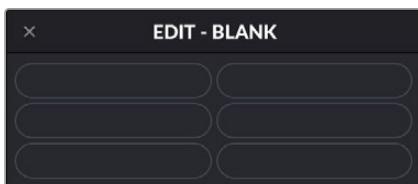
NOTE: Once you incorporate User buttons and Quick Menu options into your everyday workflows, you'll find that switching between layouts and engaging options is as effortless as using keyboard shortcuts or right-click menu options in the DaVinci Resolve interface.

Edit User Set

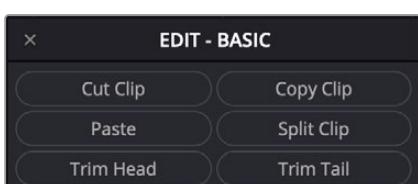
There are five Edit menu layouts: Blank, Basic, Level, Nudge, and Clip. Press ALT to show the different Edit menu layouts in the Quick Menu dialog. Press the associated User button to choose an Edit layout. In this case, the Blank button is in the top-left grid position, and the Edit Basic layout is in the User 2 position. Pressing User 2 button would select the Edit-Basic layout. Once selected, the button in the Quick Menu dialog is highlighted. Release Alt to show the selected Quick Menu layout with button-menu options related to specific Editing tasks. Similar to working with the Fairlight Audio Editor, the options on the EDIT-BASIC layout change from "Clip" to "Range" if a range is active in the Timeline. Additionally, the Shift and Control modifier keys offer secondary functions.



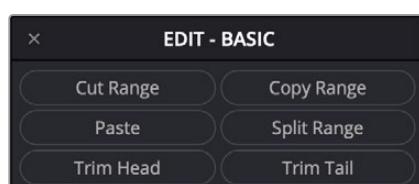
Edit Quick Menu layouts include Basic, Level, Nudge, and Clip.



Edit-Blank Quick Menu layout (default)



Edit-Basic Quick Menu layout for clip-based editing



Edit-Basic Quick Menu layout for range-based editing



Edit-Level Quick Menu layout



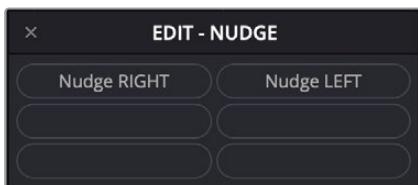
Edit-Level Quick Menu layout with CTL and Shift keys



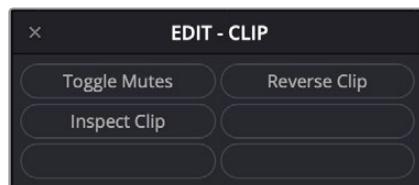
Edit-Level Quick Menu layout with Shift key



Edit-Level Quick Menu layout with CTL key



Edit-Nudge Quick Menu layout



Edit-Clip Quick Menu layout

Edit Quick Menu layouts and button options include:

- **BLANK:** This default layout has no actions assigned to the six User buttons. This is to prevent new users from accidentally editing their projects via User buttons.
- **BASIC:** Use to this button layout to place common fast-editing actions at your fingertips. Use the dial and transport controls with your right hand for navigation and selection, while quickly choosing editing actions via the User buttons with your left hand.
- **Cut Clip/Cut Range:** Press User 1 to cut the currently selected material and place it in the clipboard. The cut material maintains its relationship to the playhead in a semi-transparent form, so you can see exactly where it will be pasted as you move the playhead or selection to a new location. To Paste the clip, press the User 3 button. Alternatively, you can cut and paste clips on-the-fly by holding the User 1 button to cut, continue playback or move the playhead until the semi-transparent clip is in position, then release the User 1 button to paste.
- **Copy Clip/Copy Range:** Press User 2 to copy the currently selected material to the clipboard. Move the semi-transparent copied clip to position, then press the User 3 button to paste. Since this is a standard clipboard editing tool, you can paste additional copies of the material by pressing User 2 again. If you'd rather copy and paste during playback, press and hold User 2 to copy the selection and release to paste.
- **Paste:** Press User 3 to paste the current clipboard material into the Timeline based on the selected tracks and playhead position.
- **Split Clip/Split Range:** Press User 4 to split the clip or range at the playhead position, creating a new edit point between two clips or at the range boundaries. The split editing action is based on the selected tracks and playhead position.

- **Trim Head:** Press User 5 to erase the portion of the selected clip to the left of the playhead. Alternatively, press and hold User 5 while the playhead is over a selected clip to reveal all of the clip's handles (unused frames) to the left of the playhead. While continuing to hold User 5, move the playhead along the extended clip to find a new starting frame. Release User 5 to trim the head of the clip to the new playhead position.
- **Trim Tail:** Press User 6 to erase the portion of the selected clip to the right of the playhead. Alternatively, press and hold User 6 while the playhead is over a selected clip to reveal all of the clip's handles (unused frames) to the right of the playhead. Continue holding User 6 while moving the playhead to the last desired frame. Release User 6 to trim the clip's tail to the new playhead position.

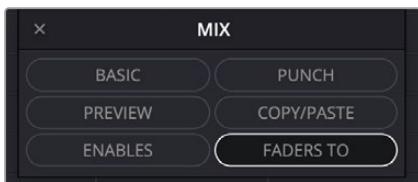
NOTE: Although you can manually click to select individual clips with a mouse while editing with a standard keyboard, Fairlight Console audio editing is centered around automatic clip selection based on the selected tracks and playhead position for fast, on-the-fly workflows. As the playhead passes over a clip on a selected track, that clip is automatically selected, thus allowing effortless Cut, Copy, Paste, and Trim functions at the touch of a button.

- **LEVEL:** As the name suggests, the options in this User Button menu are all based on controlling the selected clip's level. Like the Edit-Basic options, the Edit-Level options are based on selection and playhead position. Additionally, modifier keys offer more User Button menu options. In most cases these expanded options are directly related to the default menu option so that you can quickly fine tune your actions as you go.
- **Clip Level:** Hold User 1 and turn the dial to increase or decrease the selected clip's level. This affects the selected clip beneath the playhead and can be performed while the transport is stopped or during playback as the playhead passes over a clip in the selected track.
- **Display Level:** Hold User 1 + CTL and turn the dial to increase or decrease the waveform zoom level in the selected tracks. Changing the waveform display level does not change the volume levels of the affected clips or tracks.
- **Fade Head:** Press User 3 to apply a fade from the playhead to the head of the selected clip.
- **Head Shape:** Hold Shift + CTL to show the Head Shape menu option. Press User 3 and turn the dial to change the shape of the fade at the head of the clip.
- **Head X-Level:** Hold CTL to show the Head X-Level menu option. Press User 3 and turn the dial to change the level curve of the fade or crossfade at the head of the clip beneath the playhead.
- **Head X-Point:** Hold Shift to show the Head X-Point menu option. Press User 3 and turn the dial to change the height of the crosspoint in the crossfade at the head of the clip beneath the playhead.
- **Fade Tail:** Press User 4 to apply a fade from the playhead to the tail of the selected clip.
- **Tail Shape:** Hold Shift + CTL to show the Head Shape menu option. Press User 4 and turn the dial to change the shape of the fade at the head of the clip.
- **Tail X-Level:** Hold CTL to show the Head X-Level menu option. Press User 4 and turn the dial to change the level curve of the fade or crossfade at the head of the clip beneath the playhead.
- **Tail X-Point:** Hold Shift to show the Head X-Point menu option. Press User 4 and turn the dial to change the height of the crosspoint in the crossfade at the head of the clip beneath the playhead.

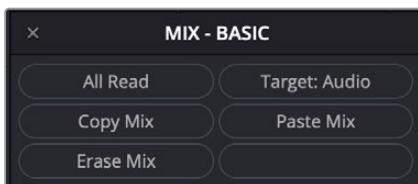
- **Top Layer/All Layers:** Press User 5 to toggle between Top Layer and All Layers. When set to Top Layer, any clip level or editing actions that you apply to a stack of overlapping clips in audio track layers will only be applied to the top clip. When set to All Layers any editing actions applied to a clip with overlapping audio clips in layers will be applied to the entire stack of clips beneath the playhead. This function works, even when audio track layers are hidden.
- **NUDGE:** This User Button menu layout focuses on refining the positions and timing of the clips.
 - **Nudge Left:** Press User 1 to move the selected clip one frame at a time to the left.
 - **Nudge Right:** Press User 2 to move the selected clip one frame at a time to the right.
 - **Media Left:** Hold CTL to show the secondary option and Press User 1 to move the media within the selected clip one frame at a time to the left without chaining the clip duration or position.
 - **Media Right:** Hold CTL to show the secondary option and Press User 2 the move the media within the selected clip one frame at a time to the right without chaining the clip duration or position.
- **CLIP:** Use this menu layout for quick control of the selected clip.
 - **Toggle Mutes:** Press User 1 to mute (disable) the selected clip or clips beneath the playhead on selected tracks. Press User 1 again to un-mute (enable) the clip or clips.
 - **Reverse Clip:** Press User 2 to reverse the clip beneath the playhead on the selected track. Press User 2 again to reverse again, so it plays forward.
 - **Inspect Clip:** Press User 3 to show the Inspector panel in the Fairlight Page interface. Press User 3 again to hide the Inspector.

Mix User Set

There are six Mix menu layouts for working with mix automation: Basic, Punch, Preview, Copy/Paste, Enables and Faders To. Press ALT to show the different Mix menu layouts in the Quick Menu dialog. Press the associated User button to choose a Mix options layout.



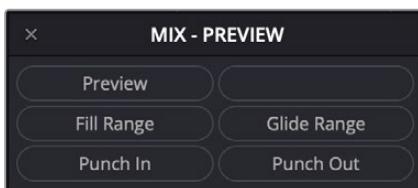
Mix Quick Menu layouts include Basic, Punch, Preview, Copy/Paste, Enables and Faders To.



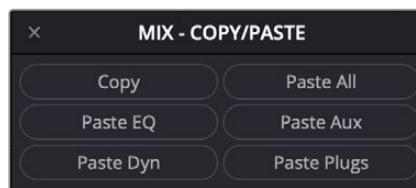
Mix-Basic Quick Menu layout



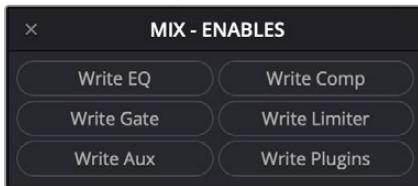
Mix-Punch Quick Menu layout



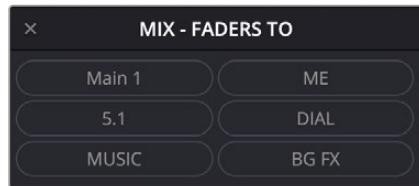
Mix-Preview Quick Menu layout



Mix-Copy/Paste Quick Menu layout



Mix-Enables Quick Menu layout



Mix-Faders To layout

Mix Quick Menu layouts and buttons include:

- **BASIC:** Use this submenu options layout to access common functions while previewing or working with previously recorded automation data.
- **All Read:** Press User 1 to get controls out of Write or Preview before the transport starts moving.
- **Copy Mix:** Press User 3 to copy all automation data within the selected range to the clipboard. This is the first step in copying automation data from one track or bus to another.
- **Paste Mix:** Press User 4 to paste data from a copied automation range into the range selection in the Timeline, based on enabled parameters in the Automation toolset. For example, if you copy a range of automation from the MUSIC 1 track, all of the automation data within that range is copied to the clipboard. However, if only the Fader and Pan parameters are enabled in the Automation toolset, only those automation curves will be pasted to the selected range on the Music 2 track in the Timeline.
- **Erase Mix:** Press User 5 to erase the automation data within the selected range.
- **PUNCH:** As the name suggests, the options in this Mix layout offers range-based options to control when and where new automation data is written into an existing mix.
- **Auto In:** Press User 1 to start an automation pass, pre-rolling, then punching In at the range start point.
- **Auto Out:** Press User 2 to start an automation pass, pre-rolling, then punching in at the range Out point.
- **Punch In:** Press User 3 to switch automation from Preview or Read to Write during playback. Once you Punch In, all enabled parameters will remain in Write mode until you stop playback or press User 4 to Punch Out.
- **Punch Out:** Press User 4 to stop writing Automation and enter Read mode during playback.
- **Auto Punch:** Press User 5 performs an automation pass, pre-rolling, then punching In and Out at the range start and end points.
- **Join Mix:** Press User 6 to punch into Automation Write with all enabled parameters during playback, with exactly the parameter values you had when Write last stopped. This is handy for making a second pass and finessing a section you just mixed.
- **PREVIEW:** This Mix menu layout offers Preview-related mix options that allow you to suspend Automation Read or Write for enabled controls while you find new settings for them.
- **Preview:** Press User 1 to switch on the Preview automation controls and audition new settings for the enabled controls without changing the recorded automation data.
- **Fill Range:** Press User 3 to perform an instant automation pass, writing the current values of all parameters that are in Preview mode through the range.

- **Glide Range:** Press User 4 to perform an instant automation pass that writes a glide through the range from the value at the start of the range to the current control level of the parameter, for all parameters that are in Preview mode.
- **Punch In:** Press User 5 to switch from Preview to Write mode starting at the point where you press Punch In and applying the current control levels until you stop playback or press User 6 to Punch Out.
- **Punch Out:** Press User 6 to stop writing automation and return to Preview mode during playback.
- **COPY/PASTE:** Use this Mix menu layout to quickly copy and paste automation from one range to another.
 - **Copy:** Press User 1 to copy all automation data within a range.
 - **Paste All:** Press User 2 to paste all copied automation data to a range.
 - **Paste EQ:** Press User 3 to paste only the copied EQ automaton data to a range.
 - **Paste Aux:** Press User 4 to paste only the copied Aux buss automaton data to a range.
 - **Paste Dyn:** Press User 5 to to paste only the copied Dynamics automaton data from the built-in Fairlight Dynamics processing on each track to a range. Dynamics include: Expander, Gate, Compressor, and Limiter automation.
 - **Paste Plugs:** Press User 6 to paste only the copied plugins automaton data to a range.
- **ENABLES:** Use this menu layout to quickly enable or disable automation recording for specific parameter sets.
 - **Write EQ:** Press User 1 to enable or disable EQ automation.
 - **Write Comp:** Press User 2 to enable or disable Comp button automation.
 - **Write Gate:** Press User 3 to enable or disable Gate automation.
 - **Write Limiter:** Press User 4 to enable or disable Limiter button automation.
 - **Write Aux:** Press User 5 to enable or disable Aux automation.
 - **Write Plugins:** Press User 6 to enable or disable Plugin automation.
- **FADES TO:** Use this menu layout to remap faders to the first six sends.

NOTE: The Mix user set and subsequent Quick Menu options are only functional while the Automation toolset is On and showing in the Fairlight Page user interface. Press the On button in the Automation area at the top of the Desktop Console to toggle Automation On or Off. The Faders To menu layout allows users to re-map faders to Sends 1-6 via the User keys and does not require Automation to be turned on.

Record User Set

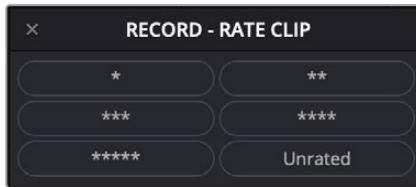
This user set offers the same recording options that are available in the Fairlight Audio Editor for both Manual and ADR recording. There are four Record Quick Menu layouts: Manual, Rate Clip, ADR List, and ADR Record.



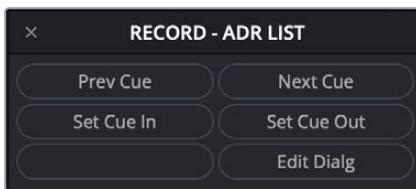
Record Quick Menu layouts include Manual, Rate Clip, ADR List, and ADR Record.



Record-Manual Quick Menu layout



Record-Rate Clip Quick Menu layout



Record-ADR List Quick Menu layout



Record-ADR Record Quick Menu layout

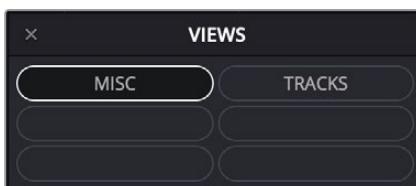
Record Quick Menu layouts and buttons include:

- **MANUAL:** Use to this button layout to place common fast-editing actions at your fingertips. Use the dial and transport controls with your right hand for navigation and selection, while quickly choosing editing actions via the User buttons with your left hand.
- **Record Here :** Press User 1 to initiate the Record Here action from the current playhead position. When you engage Record Here, the playhead goes back the pre-roll duration, then punches into Record at the location where you issued the command.
- **Record Again:** Press User 2 to repeat the last recording you made, both entry and exit, whether it was manually or automatically punched in.
- **Record Clip:** Press User 3 to initiate the Record Clip manual recording method. After pre-roll, the playhead punches in and out to match the duration of the clip under the playhead on the selected track. If no clip is beneath the playhead, the transport moves forward to the next clip in the track and records there.
- **Record Range:** Press User 4 to record the current range. With this manual recording method, the playhead includes a pre-roll and punches into Record at the Range In point, and then punches out at the Range Out point.
- **PunchIn Again:** Press User 5 to engage Punch Again recording. Punch Again pre-rolls, then enters record at the exact same place as last time, whether it was manually or automatically activated. When entering this record operation, you still need to manually Punch Out. This allows you to get the same start point for recording but with a manual exit.
- **Rec Head:** Press User 6 to enter the Record Head method, which pre-rolls, then starts recording at the head of the first clip to come beneath the playhead in the selected track. When entering this record operation, you still need to manually Punch Out.

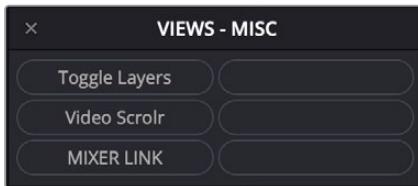
- **RATE CLIP:** As the name suggests, the options in this User Button menu are all based on rating the ADR recordings from 1-Star (*) to 5-stars (*****). These ratings appear in the ADR Record panel Take list after each recorded take.
 - *****: Press User 1 to mark a 1-star rating on the selected take.
 - ******: Press User 2 to mark a 2-stars rating on the selected take.
 - *******: Press User 3 to mark a 3-stars rating on the selected take.
 - ********: Press User 4 to mark a 4-stars rating on the selected take.
 - *********: Press User 5 to mark a 5-stars rating on the selected take.
 - **Unrated:** Press User 6 to remove star ratings.
- **ADR LIST:** This ADR recording layout offers actions available in the ADR List panel. These actions are used for selecting and setting ADR cues.
 - **Prev Cue :** Press User 1 to select the previous cue in the Cue list.
 - **Next Cue:** Press User 2 to select the next cue in the Cue list.
 - **Set Cue In:** Press User 3 to set the current Timeline In point as the Cue In.
 - **Set Cue Out:** Press User 4 to set the current Timeline Out point as the Cue Out.
 - **Edit Dialog :** Press User 6 to highlight the text field and active text cursor in the ADR List panel so that you can type or edit the text for the current cue.
- **ADR RECORD:** Use this this ADR recording layout for rehearse and record options available in the ADR Record panel.
 - **Prev Cue:** Press User 1 to select the previous cue in the Cue list.
 - **Next Cue:** Press User 2 to select the next cue in the Cue list.
 - **Play Cue:** Press User 3 to play the currently selected take from the Take list (described below). If no take is selected, the most recently recorded one on top is played.
 - **Rec. Cue:** Press User 4 to initiate recording of the cue to the specified audio track, with cue beeps and video streamer cues.
 - **Rhrse Cue:** Press User 5 to rehearse the selected cue. This runs the section of the Timeline specified by a cue without actually recording anything, giving the talent an opportunity to run through their dialog and practice their timing and delivery. Beeps and on-screen streamers are not played during a rehearsal.
 - **Edit Dialog:** Press User 6 to highlight the text field and active text cursor in the ADR List panel so that you can type or edit the text for the current cue.

Views User Set

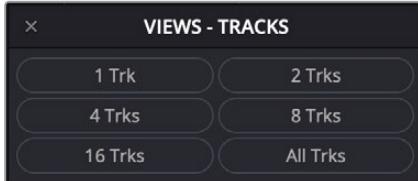
This user set offers quick access to view options and track zoom views that can be toggled on or off as needed while you work. There are two View Quick Menu layouts: Misc and Tracks.



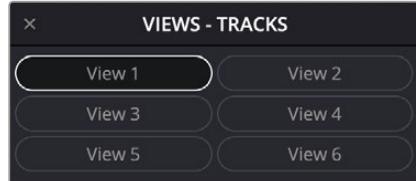
Views Quick Menu layouts include Misc and Tracks.



Views-Misc Quick Menu layout



Views-Tracks Quick Menu layout



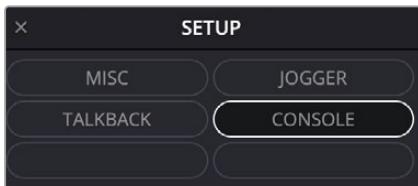
Press A/B button to show custom Views-Tracks User Quick Menu layout

Views Quick Menu layouts and buttons include:

- **MISC:** Use to this button layout to quickly show or hide common enhanced view features that are also available in the Setup mode layout on the Fairlight Audio Editor.
- **Toggle Layers :** Press User 1 to show or hide Audio Track Layers.
- **Video Scrolr:** Press User 2 to show or hide the Video Scroller.
- **Mixer Link:** Press User 3 to toggle on or off the Mixer Link feature. When Mixer Link is on, the Fairlight page mixer automatically scrolls to show the most recently selected track.
- **Tracks:** As the name suggests, the options in this User Button menu are all based on rating the ADR recordings from 1-Star (*) to 5-stars (*****). These ratings appear in the ADR Record panel Take list after each recorded take.
 - **1 Trk :** Press User 1 to vertically scale the Timeline tracks to show only the active track.
 - **2 Trks:** Press User 2 to vertically scale the Timeline to show two tracks, including the active track.
 - **4 Trks:** Press User 3 to vertically scale the Timeline to show four tracks, including the active track.
 - **8 Trks :** Press User 4 to vertically scale the Timeline to show eight tracks, including the active track.
 - **16 Trks:** Press User 5 to vertically scale the Timeline to show sixteen tracks, including the active track.
 - **All Trks:** Press User 6 to vertically scale the Timeline tracks to show all tracks.
- **Tracks View Presets:** Press the A/B button while the Views-Tracks Quick Menu is showing to see the Tracks View presets. Each of the six user-defined View presets can be used to quickly change which tracks/buses are visible in the Timeline and Mixer. These View presets can be customized in the Tracks Index tracklist and are based on the tracks and buses marked as visible when a numbered User View is selected.
 - **View 1 :** A/B + 1 to scale the Timeline to show the View 1 preset.
 - **View 2:** A/B + 2 to scale the Timeline to show the View 2 preset.
 - **View 3:** A/B + 3 to scale the Timeline to show the View 3 preset.
 - **View 4 :**A/B + 4 to scale the Timeline to show the View 4 preset.
 - **View 5:** A/B + 5 to scale the Timeline to show the View 5 preset.
 - **View 6:** A/B + 6 to scale the Timeline to show the View 6 preset.

Setup User Set

This User set offers setup options that are available in the Fairlight Audio Editor setup mode. There are four Setup Quick Menu layouts: Misc, Jogger, Talkback and Console.



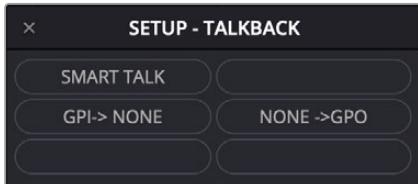
Setup Quick Menu layouts include Misc, Jogger, Talkback, and Console.



Setup-Misc Quick Menu layout



Setup-Jogger Quick Menu layout



Setup-Talkback Quick Menu layout



Setup-Console Quick Menu layout

Setup Quick Menu layouts and buttons include:

- **MISC:** Use to this button layout to quickly access common features that can enhance your Fairlight user experience.
- **Normal Solo/Solo Follow:** Press User 1 to toggle between Normal Solo and Solo Follow. When set to Normal Solo, pressing a Solo button on the Desktop Console or soloing a track on the Fairlight page results in the normal track solo behavior. When set to Solo Follow, solo is linked to track selection, so that any track you select or deselect will automatically solo or unsolo the corresponding track.
- **Undo: Editor/Undo All:** Press User 2 to toggle between Undo Editor and Undo All. This functionality is a matter of operator preference. When set to the default, Undo Editor, tasks performed in Mix mode, including recording and editing automation data, will not be undoable. You can, however, simply record new mixing data to override the previous data as needed. Latching this key enables the Undo All mode, which in turn will undo all actions including automation applied in Mix mode
- **Toggle Layers:** Press User 3 to on or off Audio Track Layers.
- **CTI:Moving/CTI:Fixed:** Press User 4 to choose whether the playhead (CTI) moves across the Timeline, or is fixed in place with the Timeline scrolling past.

- **Preview:Mon/Preview:Track:** Press User 5 to determine where preview monitoring goes when auditioning a sound and comes in handy when you need to preview a clip in the Media Pool or Sound Library. When toggled to Preview Track, you will put the track in Thru mode so it works like a live mic input and the sound you preview will be subject to the track's fader levels, solo or mute state, and any processing applied to the track. If toggled to Preview Mon, the sound goes directly to the monitors without any processing or controls via the track's channel strip in the mixer or console.
- **Write Paste:** Press User 6 to automatically set controls to write when pasting from one channel to another.
- **Jogger:** As the name suggests, the options in this User Button menu are all based on Jog settings for the Search Dial. These options are identical to those found on the Fairlight Audio Editor.
- **Gear:13:** Press User 1 and turn the dial to change the "gear ratio" when jogging between 1 and 20. In other words, it determines how quickly the transport moves in response to turning the jog wheel. The lower the Gear number, the slower the transport will go; the higher the Gear number, the faster the transport will go. The default Gear setting is 13.
- **Rescale Jogger:** Press User 2 to change the gear ratio based on the current zoom level so that three revolutions a second of the jog wheel reaches normal play speed.
- **Follow Zoom:** Press User 3 to toggle Follow Zoom on or off. When on, the gear ratio of the jog wheel is affected by the Zoom setting.
- **Jog DIM:** Press User 4 to toggles Jog Dim on and off. When on, it causes the monitoring level to automatically dim during Loop Jog to the user-defined value set in the Monitor mode Dim level.
- **Loop Jog:** Press User 5 to toggles Loop Jog on and off. When Loop Jog is on, the transport plays a small length of audio (between 5ms and 2000ms), repeatedly, at play speed. The loop moves as you jog the transport forward or backward. This is a great tool for editing, because it maintains the correct pitch of the audio, allowing you to hear clicks, pops, sibilants in the middle of words, and so on. Some of the other soft keys in this menu control additional Loop Jog parameters.
- **Width:80:** Press User 6 and turn the dial to sets the width for the Loop Jog in milliseconds between 5ms and 2000ms. This is the amount of audio that is repeated in each loop. The default width is 80ms.
- **Talkback:** This Setup layout offers three options to customize the Desktop Console Talkback functionality.
 - **Smart Talk/Push-2 Talk:** Press User 1 to toggle between the default unlatched Smart Talk option and the latched Push-2-Talk option. Smart Talk allows the user to either latch the Talk button for extended hands-free talkback, or Push-2-Talk with a momentary press on the Talk button. Latching this key toggles on the Push-2-Talk mode, which limits talkback to the momentary-press Push-2-Talk method similar to using a 2-way radio.
 - **GPI>None/Talk/DIM:** Press User 2 to toggle the Monitoring Controls for the general purpose input (GPI) between None, Talk plus DIM, or DIM only.
 - **None/Talk/Armed/Record>GPO:** Press User 3 to determine when the general purpose output (GPO) sends a signal during a session. This Quick Menu button toggles between Talk, None, Armed and Record.
- **Console:** This Setup layout offers four options to customize the console functionality.
 - **Mixer Link:** Press User 1 to toggle Mixer Link on/off. When Mixer Link is on, the DaVinci Resolve Mixer GUI will scroll any newly selected tracks into view.

- **Trim from Unity (0):** Press User 2 to toggle Trim from Unity on/off. In automation Trim mode, when Trim from Unity is on, pressing the SEL key on any channel will re-locate the fader to the unity (0) position and stop playing back existing moves.
- **Spill:** Left/Spill: Right: Fader Spill temporarily spills the member tracks of a master bus or VCA group to nearby faders and is a fast way to finesse member track levels while mixing. The User 3 button determines the direction in which member tracks are temporarily mapped to the adjoining faders on the Fairlight Desktop Console. Press User 3 to toggle between Spill: Left and Spill: Right, which in turn dictates whether the member tracks of a bus are assigned to neighboring faders to the left or right of a bus when Spill is engaged in the Channel Fader panel.
- **Spill: Tracks/Spill: Any:** Press User 4 to toggle between Spill: Tracks/Spill: Any. When in the default (unselected) state, the Spill: Any option allows member tracks of a bus to be spilled to the nearest faders to the left or right, including faders assigned to Master buses and VCA groups. When toggled to the Spill: Tracks option, member tracks of a bus spill either left or right, starting with the nearest track fader in the designated direction. This option is useful if you need to maintain fader control of your buses while you spill their constituent tracks to the nearest track faders.

NOTE: At the time of this documentation, the blank User Set and subsequent blank button options are not yet functional. Stay tuned for future updates.

Fairlight Desktop Console Configurations

There are three ways that you can configure the Fairlight Desktop Console with your DaVinci Resolve workstation:

As a standalone mixing controller, simply connect the Fairlight Desktop Console to your DaVinci Resolve computer for professional control of the Edit page Mixer as well as the Fairlight page recording, mixing, and automation workflows.



Fairlight Desktop Console

Add a second monitor via HDMI for enhanced visual feedback of the mixing parameters while you work with the console. This configuration gives you realtime graphical updates on the screen, similar to the Channel Control LCD in the full-sized modular Fairlight consoles.



Fairlight Desktop Console connected to a second monitor via HDMI for enhanced visual feedback



Fairlight Desktop Console connected to a second monitor via HDMI with nearby computer screen to display the DaVinci Resolve interface and enhanced channel-based visual feedback from the console on the HDMI screen

Connect to a Desktop Fairlight Audio Editor and DaVinci Resolve computer for control of nearly every function on the Fairlight Page interface. This expanded desktop configuration is similar to a 2-bay Fairlight modular console at about half the price.



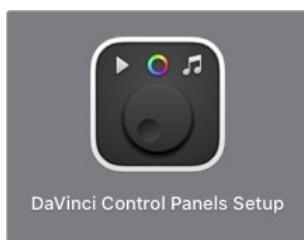
Fairlight Desktop Console connected to a second monitor and the Fairlight Audio Editor with DaVinci Resolve computer screen

Performing Firmware Updates

Some DaVinci Resolve updates, such as 17.2.1, require firmware updates to implement the improvements to the Fairlight Desktop Console. To use the DaVinci Control Panels Setup utility for the first time, you need to perform a custom install of the latest version of DaVinci Resolve and in the custom settings, check the option to install the DaVinci Control Panels utility. Once installed, you can select any DaVinci Resolve panel connected to your system and perform network setup and firmware updates.

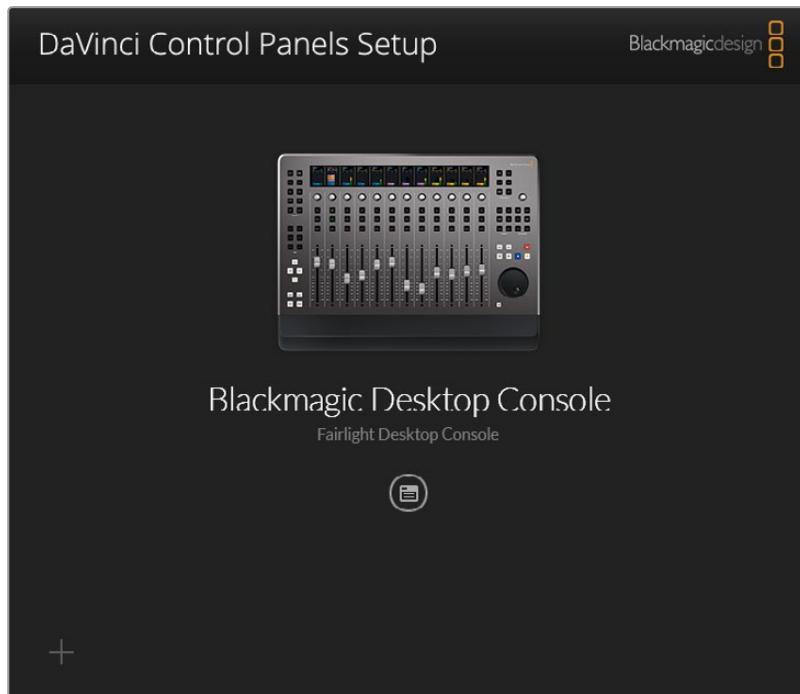
Updating firmware on a Fairlight Desktop Console:

- 1 Quit DaVinci Resolve, if necessary.
- 2 Open the DaVinci Control Panels Setup utility.



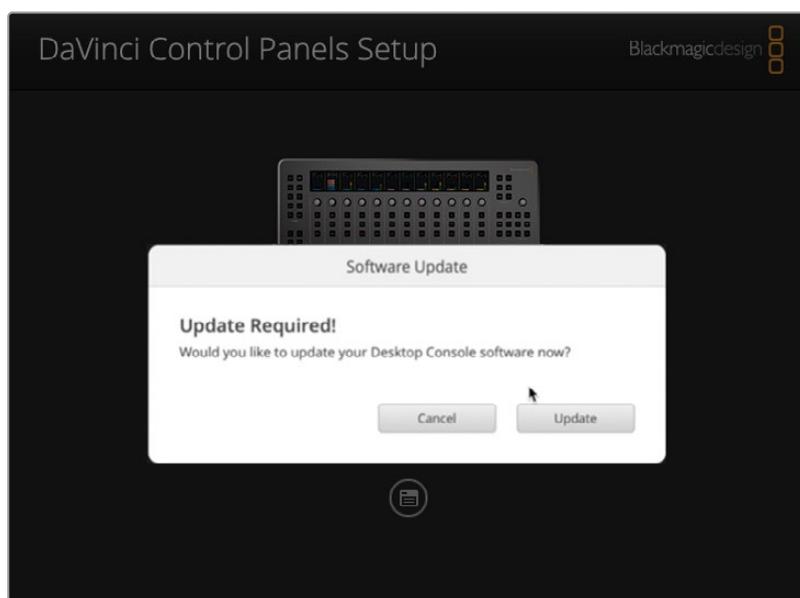
The DaVinci Control Panels Setup Utility

- 3 In the DaVinci Control Panels Setup Utility, select the Fairlight Desktop Console.



NOTE: If you are working with the Fairlight Desktop Console or Desktop Fairlight Audio Editor, there will only be one panel from which to choose.

- 4 Click the circled icon below the panel name.
- 5 If there is a firmware update available, you will see an update dialog.



Firmware Update Available dialog

- 6 Click Update to install the updated firmware on that panel.
- 7 Once the update is complete, click Done.
- 8 Close the DaVinci Control Panels Setup.
- 9 Open DaVinci Resolve.

Using the Fairlight Audio Editor

The Fairlight Audio Editor lets you quickly navigate large projects and precisely edit audio much faster than using a regular mouse and keyboard.

Using the Audio Editor to control the Fairlight page provides fingertip access to nearly every Audio tool, function and workflow you'll need to create incredible soundtracks within DaVinci Resolve. In addition to editing audio tracks, clips and waveforms, the Fairlight Audio Editor can also be used to set up, record, arrange, sweeten, mix and master your projects.

Whether you are using a Fairlight Desktop Audio Editor or a Fairlight Audio Editor panel in a Fairlight console, the tools and functionality of both models are the same. This chapter covers details about the Fairlight Audio Editor's powerful design features, controls, edit modes, multi-functional keys and how they work with DaVinci Resolve. Please refer to the previous Fairlight chapters for details on using the Fairlight page.

Contents

About the Fairlight Audio Editor	3873	Jog Wheel with Fixed Keys and Soft Menu Picture Keys	3891
Audio Editor Functional Overview	3874	Self-Labeling Picture Keyboard	3899
Types of Controls	3874	Selecting a Clip vs a Range	3901
Audio Editing Modes	3876	Setup Mode Toolset	3902
Transport, Modifier, and Escape Keys	3877	Record Mode Toolset	3907
Latch, Long, and Momentary Key Press Functions	3878	Monitor Mode Toolset	3908
Track Selection Keys	3881	Macros Mode Toolset	3908
Moving Track Selection with the Jog Wheel	3884	Mix Mode Toolset	3912
Switching Pages	3884	Edit Mode Toolset	3913
Fairlight Audio Editor	3885	Alternate Picture Key Toolsets	3917
Monitor Section	3885	Editor Screen with Soft Controls	3919
Numeric Keypad	3887	Visual Feedback between Soft Controls and the Editor Screen	3921
		Macro Quick Keys	3922

About the Fairlight Audio Editor

Fairlight Audio Editor panels are designed to meet modern audio post production workflow demands while providing ease of use so that audio professionals can quickly and precisely execute both simple and demanding audio editing tasks. These dedicated Fairlight editing control panels are available in either desktop or console models. The difference is that the desktop model is a stand-alone panel designed for audio editors working at individual computer workstations, while the console model has an extended frame that fits into the Fairlight console chassis and is then connected to all of the console's modular panels. Both models are essentially the same panel, aside from how they are mounted, so if necessary, you can use a Console Audio Editor on your desktop, and likewise a Desktop Audio Editor can be connected to a Fairlight console that does not already include an Audio Editor component.



Fairlight Audio Editor

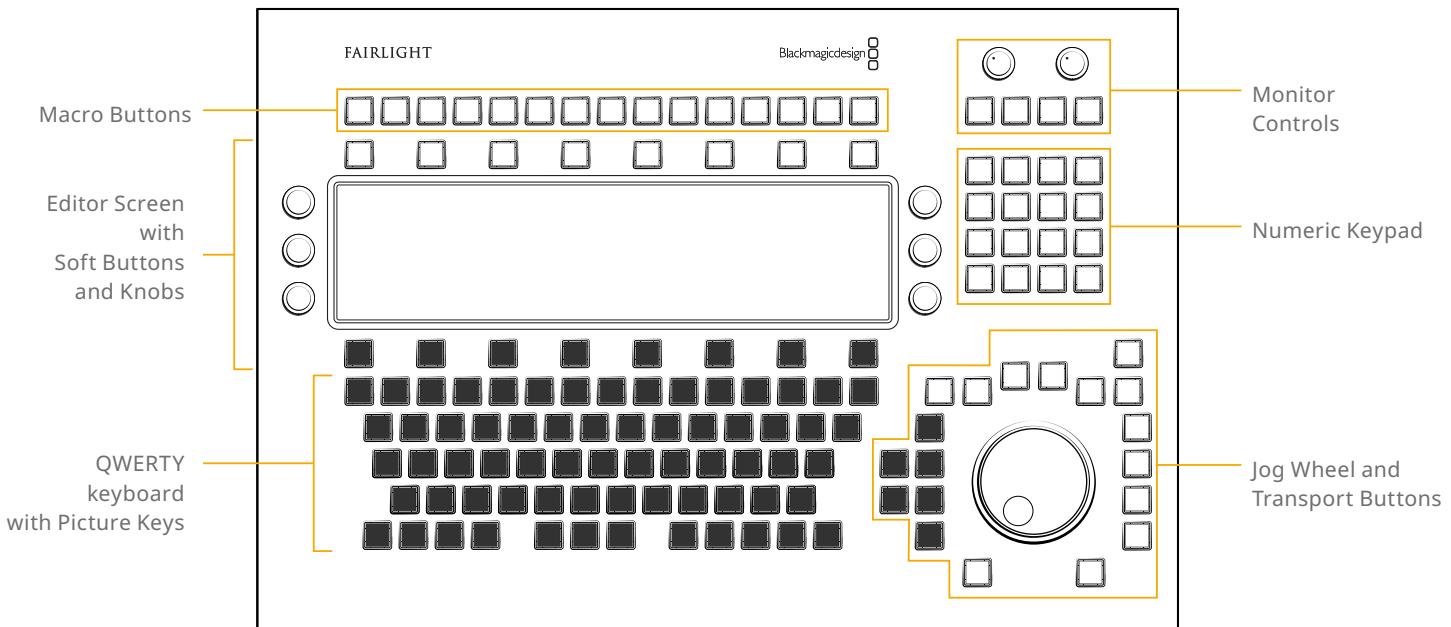
With its modest size that fits any desk or workspace, the Fairlight Audio Editor keeps every function within reach for simple navigation as well as performing complex two-handed operations. Plus, the user-friendly design is easy to learn and master with a variety of highly visual, intuitive controls including: touch-sensitive control knobs, macro buttons, built-in Editor screen with soft buttons, number keypad, jog wheel, and a full QWERTY keyboard with multi-functional picture keys.

The Fairlight Audio Editor is organized into six sections, each with a specialized set of controls that work in tandem with the Fairlight page interface to perform high-speed, audio tasks within your DaVinci Resolve project.

Audio Editor Sections in Clockwise Order

On the upper-right of the Editor, you'll find the Monitor section complete with knobs and buttons to control the level of the speakers in both the control room and studio as well as talkback. Below the Monitor section is a numeric keypad for entering timecode and go-to operations. The lower-right of the Editor includes an electronic jog wheel for full shuttle and jog transport control, along with a handy set of fixed transport buttons, Undo, Redo, Zoom and Shuttle playback and Jog response keys. To the left of the jog wheel and control buttons is the full-sized QWERTY keyboard with multi-functional self-labeling picture keys for nearly every audio action, tool, function, or workflow. Located directly above the keyboard is the built-in Editor screen which offers an interactive graphical display

of the signal processing parameters for the selected track or master bus. The Editor screen is surrounded by sixteen soft menu buttons and three touch-sensitive knobs on the left- and right-side of the screen for dial parameter control. Finally, along the top there is a row of 15 fixed buttons that include ESC and 14 user-defined Macro Quick keys.



Audio Editor Functional Overview

At face value, the control knobs, jog wheel, buttons, and keys function as expected, based on the current Audio Editor mode. However, the way you press keys and the addition of modifiers can place even more options at your fingertips, without the need for changing editing modes or mousing through menus on the Fairlight page interface. So, before diving into a detailed rundown of the Fairlight Audio Editor, it's important to understand some of the multifaceted controls and functional nuances designed to minimize your keystrokes while maximizing your speed and productivity.

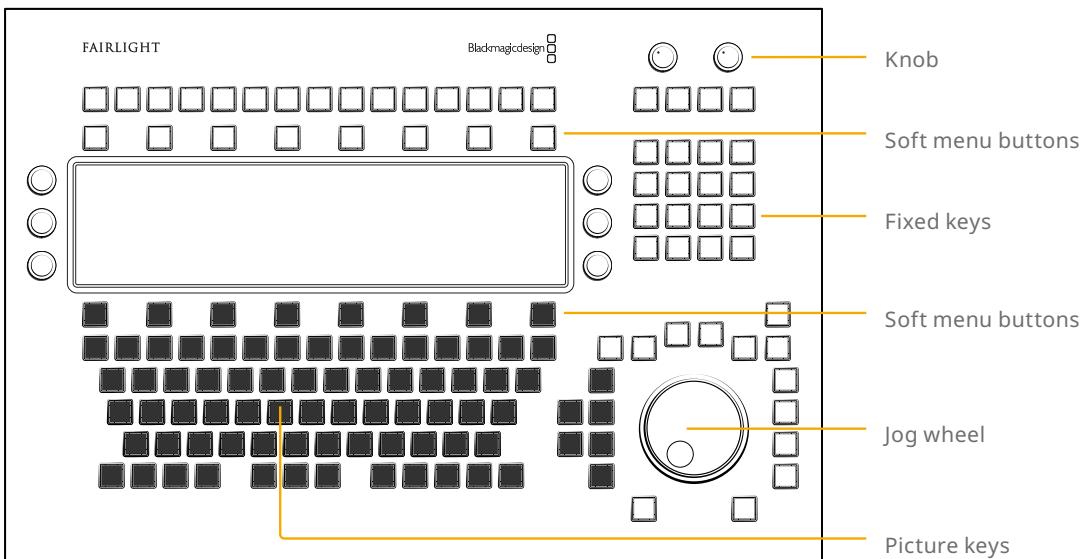
This section offers a quick overview of the types of controls, editing modes, transport and modifier keys, key-press options, as well as pointing out the designated Track Selection, Menu and DaVinci Resolve interface page keys.

Types of Controls

A good starting point for getting to know the Fairlight Audio Editor is to acquaint yourself with the different types of physical controls.

- **Jog Wheel:** To quickly navigate, zoom, change clip levels and more, this fully integrated, highly responsive electronic dial offers smooth free rotation or clutch action control.
- **Knobs:** When you want to make fast changes to specific parameters, these versatile knobs give you precision rotary control, as well as touch-sensitive input for enabling automation or resetting levels. The Audio Editor includes two fixed-parameter knobs with the monitoring controls and six multifunctional soft menu knobs around the Editor screen which are assigned to parameters based on the current Editor mode and active toolset. Holding the Shift modifier key changes the

gearing for finer controls, while holding the Control modifier key while touching one of these knobs will reset the knob's current parameter to its default value. For example, if the Audio Editor is in Monitor mode, holding the Control key while touching the knob controlling Fixed Level resets the parameter to 0 dB.

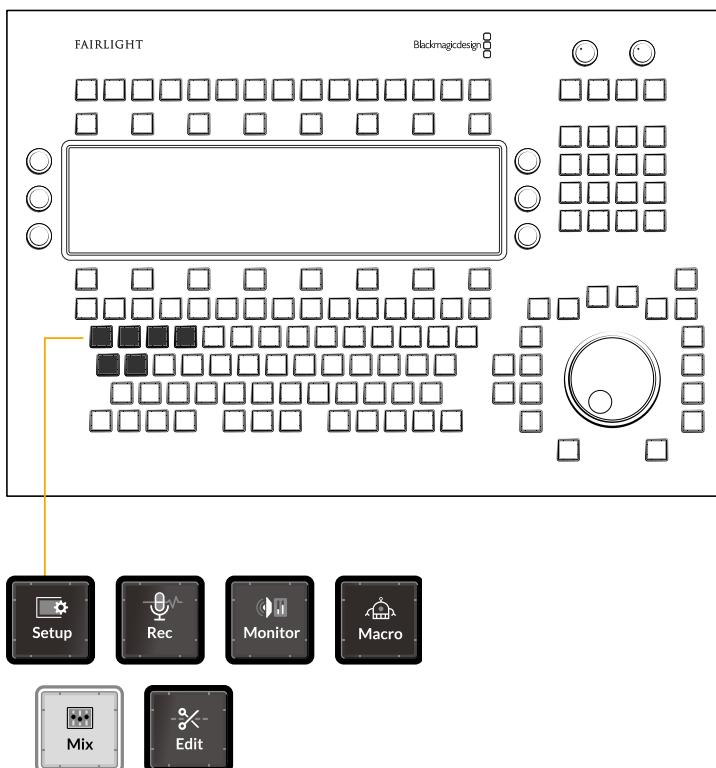


- **Fixed Keys:** These keys are located along the top and right side of the Audio Editor. Unlike the multi-functional soft menu buttons and picture keys, the fixed keys have printed labels based on their designated purpose. Among the fixed keys you'll find the Macro quick keys, Monitoring Control keys, Numeric keypad keys, Jog and Transport Control keys, along with Undo, Redo, Record, Zoom, and Enter. Fixed keys are white with black labels, with the exception of the two red Mute keys in the Monitoring controls.
- **Soft Menu Buttons:** Above and below the Editor screen are two rows of eight soft menu buttons for a total of 16 buttons used to either toggle or show alternate pages of controls in the Editor screen based on the current Editor mode. The upper row of soft menu buttons are always toggles, such as the EQ In or EQ Bypass, when the EQ parameters are active, or a Boom toggle that alternates between: Boom Post, Boom Pre and Boom Only when the Pan parameters are active. The eighth button in the upper row toggles between page 1 and page 2 of functionality assigned to the first seven soft menu buttons. The lower soft menu buttons control parameters assigned to the six knobs, with the middle six lower soft menu buttons controlling which primary set of parameters are assigned to the knobs, like Track Level, Left/Right and Front/Back controls when the Pan parameters are active in the Editor screen. The left and right lower soft menu buttons reveal alternative controls assigned knobs, such as the alternate Pan parameters, Rotate, Tilt and Up/Down, assigned to the right three knobs.
- **Picture Keys:** These self-labeling picture keys change their appearance and function dynamically, based on whatever the user is doing at that time and offer control for nearly every tool, panel, action, and task on the DaVinci Resolve Fairlight page. Additionally, the picture keys default to a standard QWERTY keyboard whenever user text input is needed (this setting is governed by the QWERTY: Auto/Off setting in the Setup mode), or when the DaVinci Resolve software displays a page other than Fairlight.

Audio Editing Modes

To accommodate the numerous audio post production toolsets and workflows, the Fairlight Audio Editor includes six primary Editor modes that change the picture keyboard layout and Editor functions based on the operational task at hand. These six “mega” Editor modes are conveniently named after their toolsets as follows:

- **Setup:** This mode provides quick access to non-editing operational windows, view options, and functions such as opening the Bus Format and Bus Assign windows, toggling on and off audio track layers, and saving a project.
- **Record:** As you probably guessed, this mode presents the precision tools you'll need to perform manual, punch-in and ADR recording.
- **Monitor:** Use this mode to quickly change your fixed monitoring levels, isolate speakers, buses or mains, switch to alternate speaker sets, toggle phase, and other control room playback monitoring functions.
- **Macros:** This mode presents 30 programmable Macro keys where you can record sequences of keystrokes for repetitive tasks to each Macro key.
- **Mix:** Transforms the Fairlight Audio Editor into a robust mixing tool with full control of Fairlight page Mixer functions like track EQ, Dynamics and Pan settings, copy and paste settings between tracks, as well as utilizing the full automation recording and editing toolset.
- **Edit:** This is where the Fairlight Audio Editor got its name and reputation for unparalleled speed and accuracy for every aspect of audio post editing from auditioning and syncing sound effects to checkerboard editing dialogue tracks on the fly.

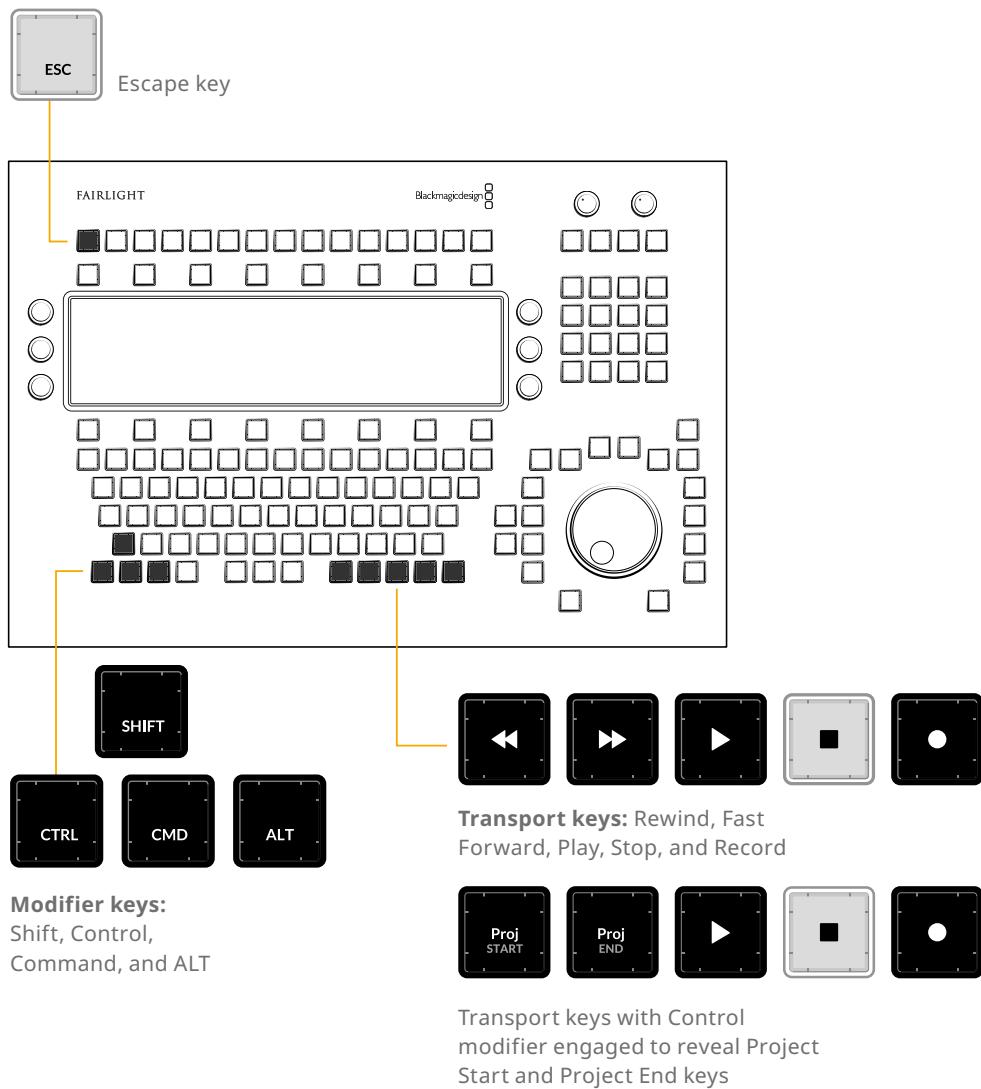


Editor mode keys: Setup, Record, Monitor, Macros, Mix, and Edit, with Mix mode currently active

Transport, Modifier, and Escape Keys

While working with the Fairlight Audio Editor, you will always have access to the standard Transport, Modifier, and Escape keys, even while using the QWERTY keyboard for entering data. The Transport and Modifier keys are located at the bottom of the keyboard, and the Escape (ESC) key is at the top row of the editor with the Macro Quick keys.

You'll use the Transport keys: Rewind, Fast Forward, Play, Stop, and Record for navigation, playback and recording along with the jog wheel and its adjacent fixed transport keys.



The standard modifier keys: Shift, Control, Command and Alt, work in conjunction with the QWERTY keys for default and user-defined keyboard shortcuts along with your mouse while operating other pages of DaVinci Resolve. When you are using the Fairlight Audio Editor to control the Fairlight page, the Control key (CTRL) is an essential modifier for revealing secondary functions on the self-labeling picture keys. For example, when you press the Control modifier key, the Rewind and Fast Forward transport keys become Project Start and Project End keys. Additionally, the Shift modifier key can be used in conjunction with the knobs for refined incremental parameter control.

Another important key that you'll find on a standard computer keyboard as well as the Audio Editor is the Escape key. This key lives up to its name as an all-purpose "escape" that can be used at any time to exit an operation, action, data entry or menu without saving the changes since the last save. The Escape key works as an operational override for a variety of functions including: GoTo functions, naming clips, setting values in dialog boxes, opening, closing and saving files, and any time a Cancel button is shown in a dialog on the computer screen.

As you learn your way around the Editor, you'll soon appreciate the convenient locations of the Transport, Modifier and Escape keys in the lower-right, lower-left, and upper-left positions respectively.

NOTE: If your Audio Editor is connected to a Fairlight console, the Control key on the Editor works in tandem with the Control buttons on the Fairlight Console Channel Control panel and Channel Fader panels to access secondary functions, parameters and controls. Also, there is an independent ALT key below the built-in Editor screen that is used to toggle between additional parameters on the left- and right-side of the screen. This ALT key is dedicated to the Editor Screen controls.

Latch, Long, and Momentary Key Press Functions

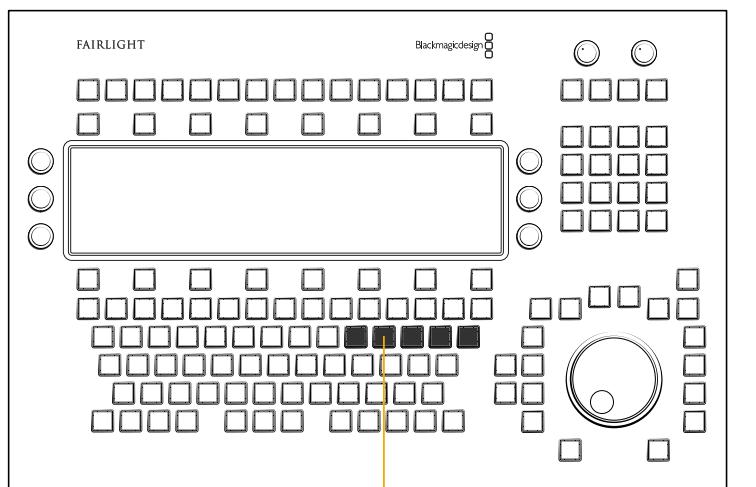
Unlike standard keyboard and numeric keypad keys, which deliver the same result whether the keys are typed or held down, many Fairlight Audio Editor keys have multiple operational states which elicit different results depending on how you press or hold the key. The three types of key presses are:

- **Latch:** Quickly pressing and releasing a key, just as you would with normal typing, is referred to as latching and results in toggling on or off that key's function.
- **Long-press:** A long-press is performed by simply pressing a key longer than you would if you were simply typing it. When performing a long-press, you only need to press the key long enough to see the desired result, such as opening or closing a window on the Fairlight page GUI. Long-presses are only slightly longer than typing, about 300 milliseconds, so they don't slow you down, they just offer more functions within a fixed number of keys. These long-presses can be real time savers, and in many cases replace the need to reach for the mouse to click the Fairlight page interface.
- **Momentary hold:** A momentary hold involves pressing and holding a key with one hand to reveal additional keys and functions that can be quickly latched with the other hand.

NOTE: From this point forward, descriptions such as type or press indicate a latched operation, long-press means to press longer than usual until you see the desired result, and instructions to hold and release refer to momentary operations.

Examples of Long-Press and Momentary Key Press Actions

Here are three examples of these types of button presses in action.



Signal Processing keys: Pan, EQ, Dynamics, Aux, and Plugin with EQ key latched

Using a long-press to open or close GUI windows:

There are five signal processing picture keys, including Pan, EQ, Dynamics, Aux, and Plugin. These correspond with the graphical display in the built-in Editor screen as well as the Fairlight Mixer on the computer screen. If you latch one of these keys, such as EQ, the Editor screen displays EQ parameters for the selected track. In turn, these parameters can be controlled by the adjacent soft buttons and knobs without opening the GUI controls on the computer screen. However, long-pressing the EQ key both selects these controls and opens the EQ window on the computer screen. The EQ window will stay open until you long-press the EQ key again to close it. This works the same as double-clicking the EQ control on the Fairlight Mixer UI, and then clicking the Close button on the EQ window to close it.



Editor screen displaying EQ processing controls assigned to adjacent soft buttons and knobs



DaVinci Resolve Fairlight interface displaying EQ window that can be opened and closed with a long-press on the EQ key

NOTE: Once you open a signal processing window using a long-press, the GUI window will automatically change to follow the current latched signal processing displayed in the Editor Screen and vice versa. So if you open the EQ window with a long-press, then latch the Pan key, the GUI window on the computer screen will change to the Pan window and the Editor screen will display controls for the Pan signal processing. If you want to see more than one signal processing window at a time on the computer screen, you'll need to double-click them independently with the mouse.

Using a momentary key press to briefly enter a different Editor mode:

Each Editor mode includes a picture key toolset unique to that mode, however, audio work is a fluid process that sometimes requires users to jump back and forth quickly between toolsets while they work. Rather than reach for the mouse to access a menu, panel, setting, or tool via the Fairlight page interface, you can momentarily jump into another mode to access the tool you need, then jump back and continue your current task.

For example, you could be monitoring playback levels and recording automation data in Mix mode when you decide to reset the Loudness meters to check the section that is coming up. The Loudness Reset controls are accessed via the Monitor mode Editor Screen controls. To get to them, momentarily hold the Monitor mode button with your left hand to reveal the Monitor mode picture keys and Editor screen controls. With your right hand, quickly latch the Loudness soft key below the Editor screen to display the Loudness settings, then press the Reset Loudness toggle key above the Editor screen to reset the Loudness meters. Release the Monitor mode button to return to Mix mode without interruption in playback or automation recording. This type of momentary operation is one of the secrets to harnessing the Fairlight Audio Editor's speed and power because at any time, in any workflow, you can momentarily jump to a different mode to access a key to do something else and return to the previous task without stopping. In fact, it is common to momentarily jump into the Setup

mode toolset while you work because that is where you'll find keys to quickly toggle on and off track layers, show or hide the Video Scroller, set the playhead (CTI) to fixed or moving, as well as save your project and modify the Audio Editor's playback controls.

Another advantage of momentary key presses is that they don't change the latched state of the key you are holding. Working with momentary key presses requires a bit of skill to master, but it can greatly increase your overall speed and efficiency.

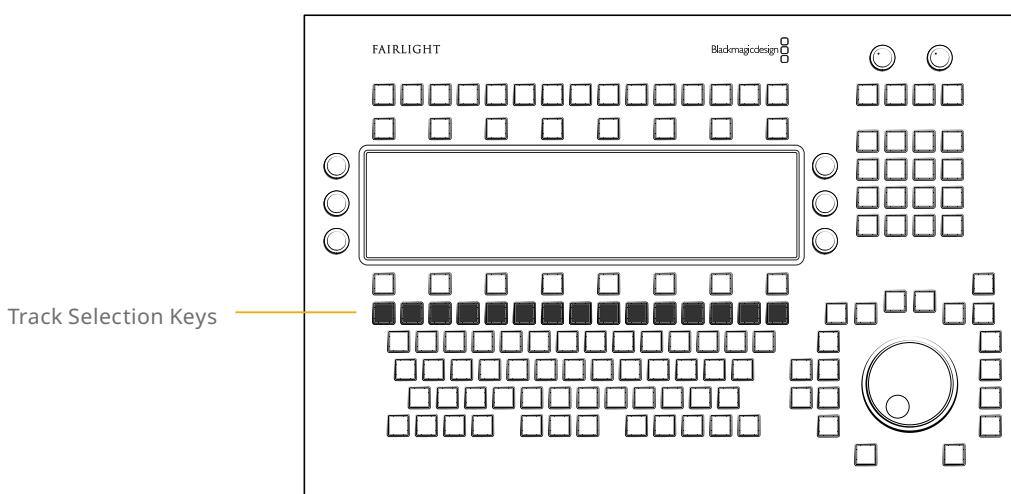
Using a momentary key press to reveal related menu option keys:

Latching the Play Jog key starts playback and unlatching the same key engages the jog wheel. Momentarily holding the Play Jog key reveals six related menu option keys in the picture keys along the left side of the jog wheel without changing the current latched or unlatched state of the Play Jog key. While momentarily holding the Play Jog key, you can quickly latch any of the menu option keys. When you release the Play Jog key, the menu option keys are no longer visible. This maneuver can easily be done with the right hand while controlling the jog wheel.



Track Selection Keys

Quickly identifying and selecting tracks and buses is a vital part of recording, editing, and mixing workflows. Therefore, the Fairlight Audio Editor includes a dedicated row of picture keys, at the top of the keyboard, for selecting either tracks or master buses.



Track Selection keys utilize the Fairlight Audio Editor's unique self-labeling picture key technology to display each track's user-defined name and color just as it appears in the Fairlight page Timeline. Additionally, the Track Selection keys change appearance to reflect their current state so that you can quickly identify which tracks are selected and which track is actively displayed in the built-in Editor screen. When multiple tracks are selected, the most-recently selected track is always the track actively displayed on the Editor screen. Track Selection keys also reflect each track's status with a colored icon that indicates if the track has been muted (M), soloed (S), or armed for recording (R).

TIP: Holding the CTRL key down reveals alternate commands, including Mute Clear and Solo Clear (to clear either Mute or Solo states from all tracks). Holding the CTRL key and pressing Mute Clear or Solo Clear a second time acts as a specialized undo/redo toggle to restore all tracks to their previous Mute or Solo state prior to being cleared. This is incredibly useful during mixing so that you can focus on a set of soloed tracks, un-solo them all simultaneously to hear them with the mix, then quickly return them to their soloed state.

Track Selection key states and appearance changes include:

- **Unlatched:** The track is deselected, with the track's color showing as a bar above the track's name.
- **Latched:** The track is selected, with the track's color expanding over two thirds of the button.
- **Active:** The active track can easily be identified by a white bar on the lower third of the key and the track's color in the upper two thirds. Additionally, the active track's name, track number, track color and signal processing parameters are displayed on the Editor screen.



ADA VO wFX and ROOM tracks are selected, Room track is active, PFX muted, MEDLAB 1 and MEDLAB 2 tracks are soloed, and the DRONE track is deselected.



Master buses showing in the Track Selection keys with Main 1 active and the main named 5.1 muted.

NOTE: Pressing a Track Selection key is the same as clicking a track header or channel strip in the Fairlight page Mixer with your mouse.

Pressing a Track Selection key does all of the following simultaneously:

- Latches or unlatches that Track Selection key with visual feedback accordingly.
- Selects or deselects that track in the Fairlight page Timeline and Mixer.

- Displays that track's signal processing in the built-in Editor screen.
- Tallies on or off that track's Channel Select button and calls up that channel's parameters on the Fairlight Console Channel Control panel, if you are working on a Fairlight console.

The dedicated Track Selection keys are located in the top row of the picture keyboard, where the number keys would be on a standard keyboard. Here you'll find 12 track selection keys as well as All Tracks, Page Up (\wedge), and Page Down (\vee) keys.

You can select multiple tracks by pressing additional Track Selection keys. However, there can only be one active track at a time and it's always the last Track Selection key pressed. Like most Fairlight Audio Editor keys, the Track Selection keys include some unique selection nuances to improve your efficiency without the need for a mouse.

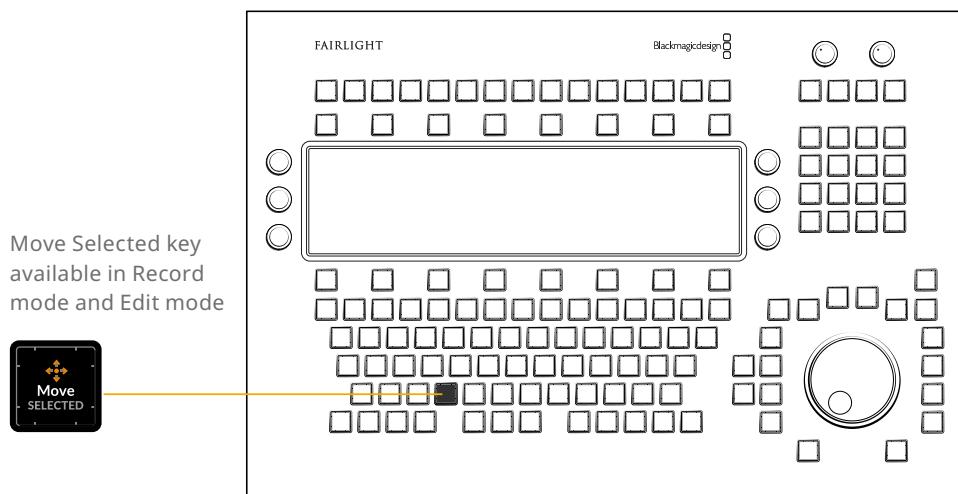
Track Selection keys and key-press options:

- **Track Selection keys:** There is one Track Selection key for each track in the Fairlight page Timeline. From left to right the first 12 keys are Track Selection keys that follow the order of the tracks in the Timeline from top to bottom. Press once to select or deselect a track. Select as many tracks as needed, one track at a time, by simply latching the corresponding Track Selection keys. Double-press any Track Selection key to deselect all other tracks and actively select the current track. Hold a Track Selection key, then double-press another Track Selection key to select both tracks as well as all contiguous tracks between them. In this case, the key that was double-pressed will become the active track.
- **All Tracks:** Press this key to quickly select or deselect all tracks in the Timeline. Long-press the All Tracks key to change the entire picture keyboard to Track Selection keys for up to 48 tracks from left to right top to bottom. When All Tracks is latched, you'll also have the option to continue to show tracks, or display master buses such as the Mains, Submix and Aux buses, and VCA groups. Below the All Tracks key, on the far right side of the picture keyboard, you'll see the Tracks and Masters keys. Here you can choose which type of feed is displayed in the top row of the picture keyboard. Tracks are all of the Timeline tracks, and Masters are the buses for mixing and output. Long-press the key again to return to the default picture keyboard with one row of 12 Track Selection keys at the top.
- **Page Up (\wedge):** Pages up to display the previous 12 tracks in the top row of Track Selection keys, or the previous 48 tracks when the picture keyboard is set to display 48 Track Selection keys. Holding Ctrl- changes the Page Up key to a Bank button for loading a user-defined bank of tracks.
- **Page Down (\vee):** Pages down to display the next 12 tracks in the top row of Track Selection keys, or the next 48 tracks when the picture keyboard is set to display 48 Track Selection keys. Holding Ctrl- changes the Page Down key to a Bank button for loading a user-defined bank of tracks.

NOTE: Hiding track visibility in the Timeline, using the Index, or using the Hide Track key on the Audio Editor hides a track from the Timeline and Mixer, but does not change the corresponding track's state, output or Track Selection key. Additionally, in DaVinci Resolve 16 and higher you can show all master buses including Mains, Subs and Aux buses as tracks in the Timeline as long as the Automation toolset is showing and the buses are marked visible in the Tracks Index.

Moving Track Selection with the Jog Wheel

Whether you select a single track or multiple tracks, you can quickly move the entire selection up or down with the use of the Move Selected picture key and the jog wheel. The Move Selected key is available in both the Record and Edit mode toolsets. This is incredibly useful when working with high track counts so that you can select a track or group of tracks much higher or lower in the Timeline without the need to grab your mouse to scroll. Simply hold the Move Select key while you turn the jog wheel clockwise to scroll the selection down to lower tracks, or counter-clockwise to scroll up to higher tracks. Keep in mind this only moves the selection and does not move the tracks or the contents of the tracks.



Switching Pages

Although the Fairlight Audio Editor is designed to work exclusively with the Fairlight page in DaVinci Resolve, there may be times when you need to switch to a different page in DaVinci Resolve, such as importing and syncing audio files in the Media page, or rendering a finished mix in the Deliver page. The Menu key, located next to the modifier keys in the lower-left corner of the picture keyboard, lets you quickly access the QWERTY keyboard, or any of the other pages in DaVinci Resolve. A momentary-press on the Menu key reveals keys for each of the DaVinci Resolve pages in the order that they are listed at the bottom of the software interface: Media, Cut, Edit, Fusion, Color, Fairlight, and Deliver. There is also a QWERTY key to temporarily change the picture keys to a QWERTY keyboard.



NOTE: The Fairlight Audio Editor is designed to work with the Fairlight page. If you switch to a different page in DaVinci Resolve, you'll need to use your computer keyboard and mouse for any operations in the user interface. While other pages are open, the Fairlight Audio Editor shows a QWERTY keyboard that you can use to trigger keyboard shortcuts while working on those pages, just like an ordinary computer keyboard. Once you return to the Fairlight page, the Audio Editor will resume working.

Fairlight Audio Editor

Now that you are familiar with the general layout, types of controls, Editor modes and key-press options in the Fairlight Audio Editor, it's time to dive deeper into the different areas of operation and how everything works together. Keep in mind that the Fairlight Audio Editor is essentially an over-sized mouse designed specifically to control the DaVinci Resolve Fairlight page. Therefore, the better you understand the Fairlight page, the more proficient you'll be with your Audio Editor panel.

Please refer to the previous Fairlight chapters for detailed information on the software interface, tools, functions, and audio workflows. However, with the increased functionality and physical controls available on the Fairlight Audio Editor, there are some functions and workflow enhancements that are only available via the Editor panel. This section will give an overview of the entire Fairlight Audio Editor and focus more in-depth on unique features and functions that go beyond the standard keyboard and mouse options in the Fairlight page.

Monitor Section

The Monitor section in the upper-right corner of the Fairlight Audio Editor panel is where you control playback levels for the Control Room and Studio speakers. Control Room monitor levels can be changed at any time using the Control Room knob. Adjusting these controls also adjusts the corresponding onscreen monitoring controls in DaVinci Resolve.

Control Room monitoring controls include:

- **Control Room knob:** this can be used to quickly dial the level of the speakers selected in the control room. You can select alternate control room speaker sets in the Monitor mode toolset.
- **DIM:** This button reduces the Control Room monitor volume by a user-defined amount. Press to toggle Dim on or off. You can set the Dim level on the Editor screen in Monitor mode.
- **MUTE:** Use this button to mute or unmute the Control Room monitors.

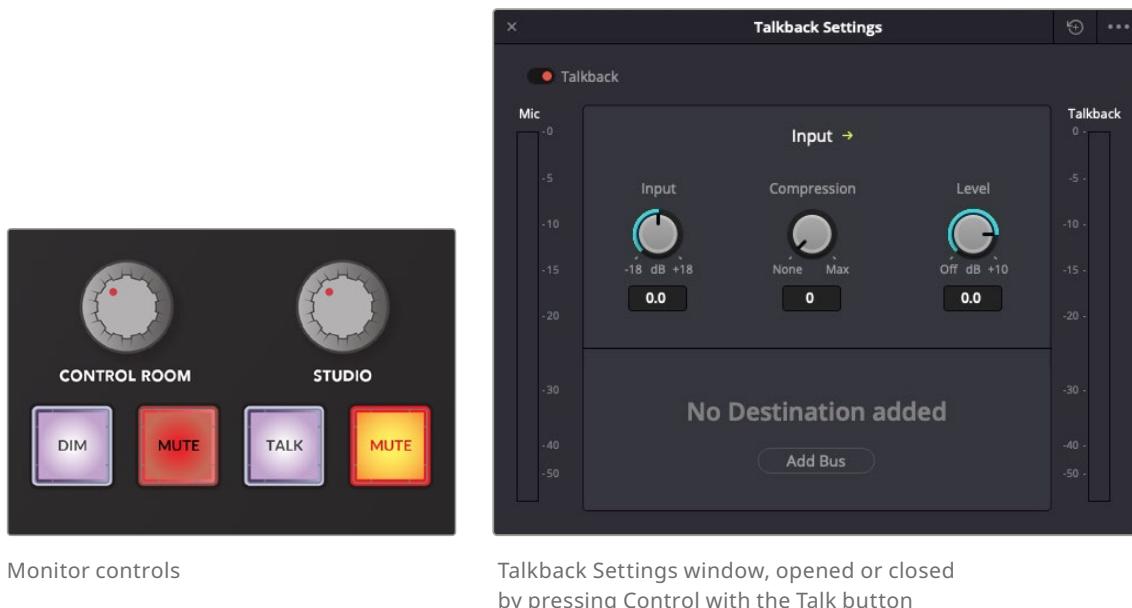
The Studio controls control the Studio monitoring circuit of a Fairlight Accelerator card installed on your workstation.

Studio monitoring controls include:

- **Studio knob:** Use this to dial the level of the speakers in the Studio.
- **Talk:** Latch this button to toggle on or off a talkback microphone. When latched, the talkback mic remains live. Momentary-press the talk button to use talkback without latching, in this case, the talkback mic will remain live only during the momentary-press and shut off when you

release. Press Control with the Talk button to open or close the Talkback Settings window on the computer screen. Engaging Talk also dims the Control Room circuit. You can modify the talkback functionality and general purpose input and output (GPI/GPO) via the Talk Setup menu option keys in the Setup mode picture keys.

- **MUTE:** Use this button to mute the Studio monitors.



Monitor controls

Talkback Settings window, opened or closed by pressing Control with the Talk button

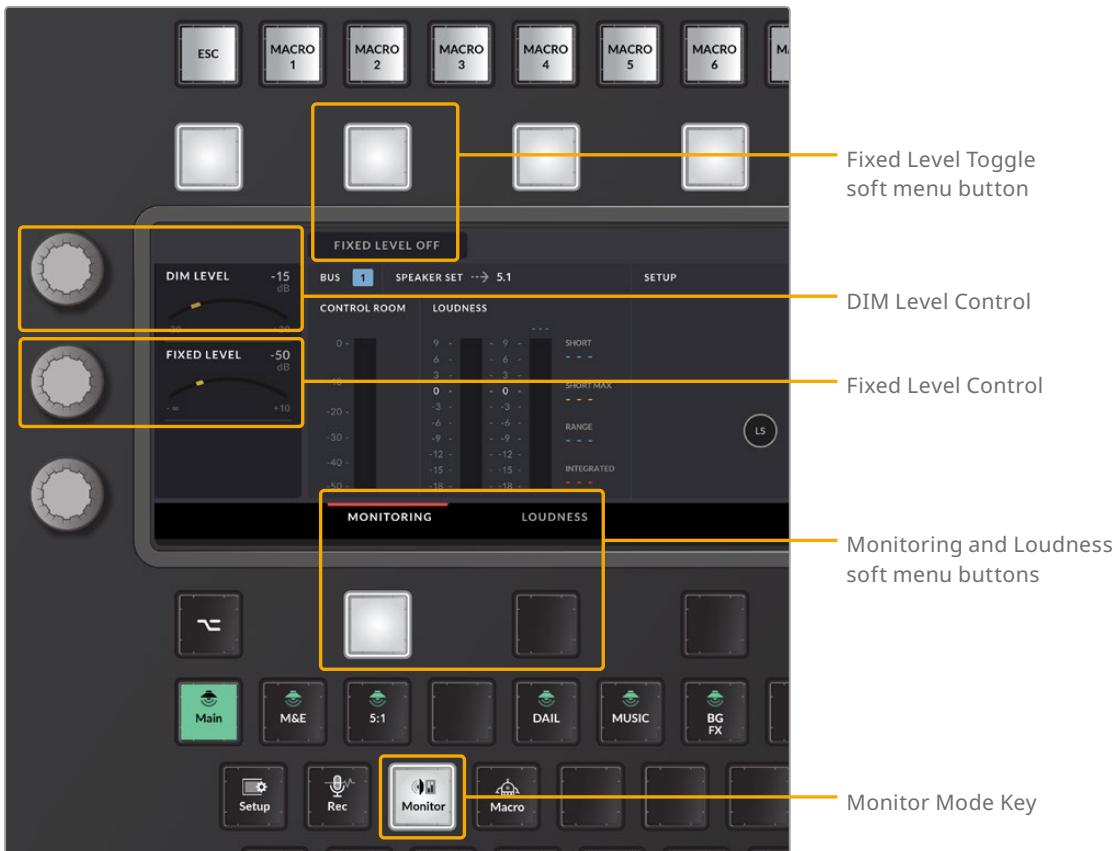
User-defined Fixed Control Room and Dim levels

Sometimes the monitoring environment must be set to a standard level and not changed. This is called Fixed Level monitoring. For example, if your control room has been calibrated with a sound pressure level (SPL) meter, you will probably want to set a Fixed monitoring level. When fixed, the Control Room knob has no affect on the monitoring levels. You'll find controls for Fixed Level monitoring on the built-in Editor screen in Monitor mode. Here you can also toggle on and off Fixed level monitoring and adjust the Dim level. When Fixed Level monitoring is toggled on, the listening level meter in the upper-right of the Timeline GUI turns from green to blue.

To set and reset Fixed and Dim Control Room monitor levels:

- 1 Latch or momentary-press the Monitor mode key to enter the Monitor toolset and show the Dim Level and Fixed Level controls on the left side of the Editor screen.
- 2 Use the top control knob to adjust the adjacent Dim level amount onscreen. As you turn the knob left or right, the Dim level GUI changes accordingly.
- 3 Use the middle knob to adjust the adjacent Fixed Level control using the GUI display in the Editor as a guide.
- 4 To toggle Fixed Level monitoring on or off, press the soft button directly above the Fixed Level On/Off button on the Editor screen. This can be done anytime during playback, recording, or mixing sessions by simply using a momentary-press on the Monitor mode key then toggling on or off the Fixed Level On/Off soft button.
- 5 Hold the Control key while touching a touch-sensitive knob to reset it to the default value. In this case, the default Dim level is -15dB and the default Fixed Level is 0.0dB.

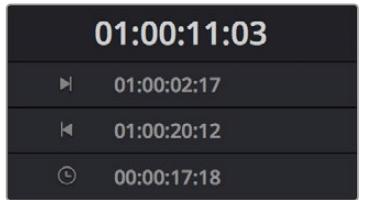
- When finished, release the Monitor key If you were performing a momentary-press. Otherwise, simply latch a different Editor mode key to exit Monitor mode.



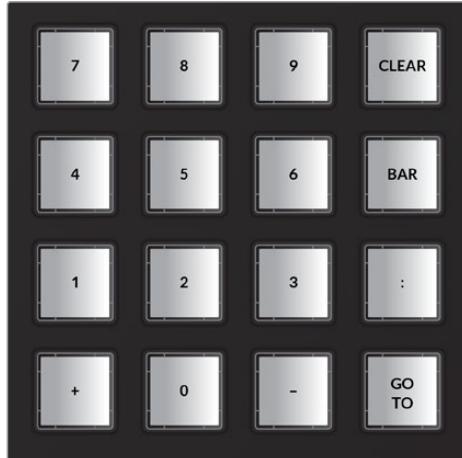
TIP: Setting monitor levels is an example of how different areas of the Fairlight Audio Editor work together to quickly achieve a goal. To further define an example, a user could be in the middle of a session and decide to change the Dim level. Without interrupting the current task, the user could momentarily hold the Monitor mode key with one hand and with the other hand, quickly adjust the Dim Level. When finished, the user only needs to release the Monitor key to resume whatever they were working on. Latching the Dim button on the Monitor controls will now reduce the Control Room monitors to the newly defined Dim level.

Numeric Keypad

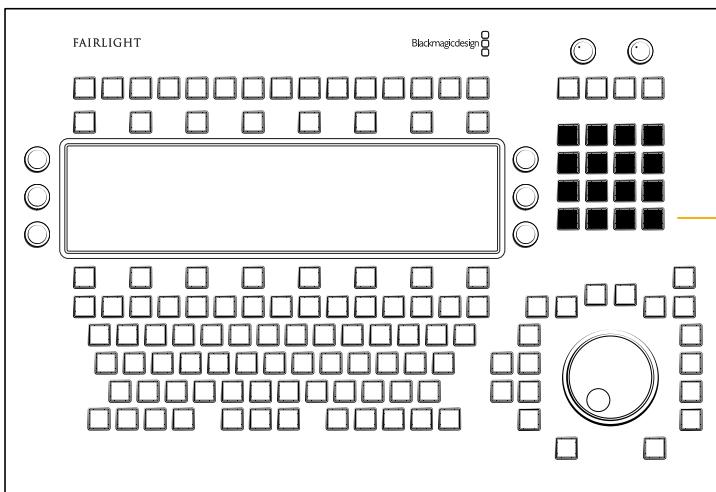
For the most part, the numeric keypad on the Fairlight Audio Editor is self explanatory and functions exactly the same as the numeric keypad on an extended keyboard for entering timecode and number values. There are, however a few specialized keys, such as Colon (:), Clear, and GoTo, that can be used to expedite timecode entry, set locators, and quickly move the playhead or clip to a specific time. Additionally, there are some user-definable operations, such as Review, where you can combine a momentary hold on the Review key plus a Number Key (1 to 9) to set the number of seconds you'd like the playhead to jump back for the Review operation. The timecode is displayed in the Timecode field in the upper-left corner of the Timeline on the computer display, so you can always see the new timecode values as you type.



Corresponding Timecode
Display and Range buttons
on Fairlight page Timeline

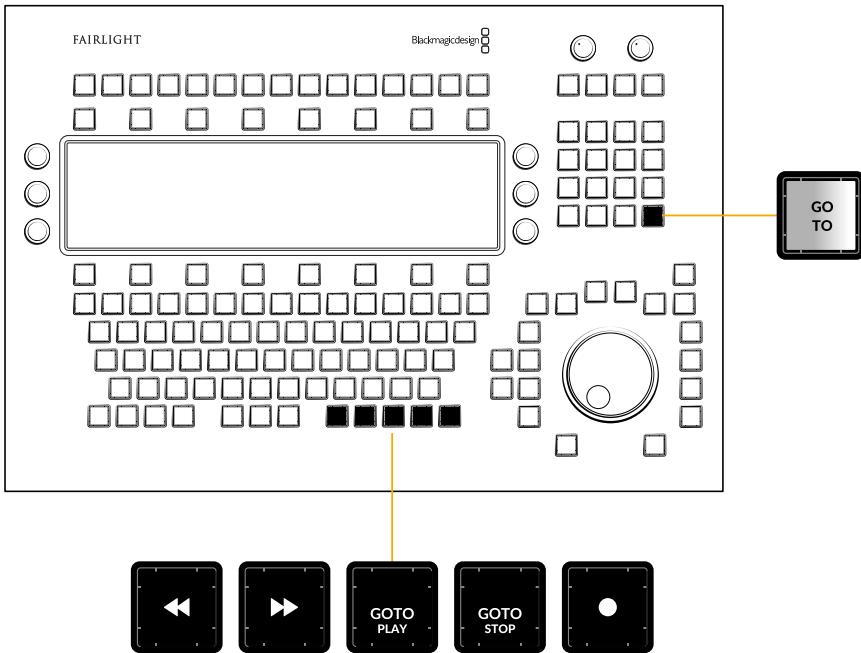


Numeric keypad



Numeric Keypad Keys:

- **Number Keys 0 to 9 :** Used for entering number values and timecode entry. Timecode entry requires latching the GoTo Key first.
- **GoTo:** When latched, the numeric keypad is in GoTo entry mode and numbers you enter determine where the playhead will move when you unlatch the GoTo key. Numeric entry can include numbers, timecode, or timecode increments. Positive numbers move forward in the Timeline and negative numbers move back.
 - Use a momentary press on the GoTo key to jump to one of the three user-definable locator positions in the Timeline.
 - Additionally, when the GoTo key is latched, the standard Play and Stop transport keys become GoTo Play and GoTo Stop keys. This can save a keystroke for the operator so they can type in timecode and immediately go to that location and play or stop without first unlatching the GoTo key.



Transport controls while GoTo key is latched on the numeric keypad

- **Plus (+):** Used in typing or to increment numbers. Typing a Plus before entering a numeric timecode value moves the playhead forward by that value. For example, latching the GoTo key, then typing +0500 and unlatching the GoTo key moves the playhead forward five seconds. When typing values with Plus or Minus keys, the values are entered as timecode from right to left. In this example, +0500 = move playhead 05:00 later.
- **Minus (-):** This key is used in typing or to increment numbers. Typing a Minus before entering a number value moves the playhead forward by that value. For example, latching the GoTo key, then typing -0500 and unlatching the GoTo key moves the playhead back five seconds earlier in the Timeline. When typing values with Plus or Minus keys, the values are entered as timecode from right to left. In this example, -0500 = move playhead 05:00 earlier.
- **Clear:** Clears the current number or timecode entry while in GoTo entry mode. The Clear key can also be used to clear user-defined number values, such as locators.
- **Colon (:):** This key can be used to separate Hours:Minutes:Seconds:Frames in timecode entry, or as a numeric shortcut key that represents a timecode position and replaces 00 when entering timecode. When you type two numbers, a colon is automatically added before the third number. Likewise, typing two numbers followed by a colon also places the colon directly after the two numbers you just typed. This follows standard timecode entry rules for typing in timecode numbers. In this case, to substitute 00 with the colon key, you need to type a second colon. Subsequent typed colons in the same timecode entry event will automatically substituted 00.

The number of colons typed before or after a number indicates the timecode position of the number in the GoTo command. For example, latching GoTo then typing 02:::02 (zero, two, colon, colon, colon, zero, two), then unlatching GoTo moves the playhead to 02:00:00:02. Additionally, the Colon key is a real time saver for navigating to specific areas of the Timeline without the need to type the entire number. The position of the Colon in the numeric shorthand value typed determines if the numbers entered as timecode start from the right as frames, or if you keep the current timecode and move to a designated hour from the left.

For example, if the playhead is currently positioned at 01:00:00:00 and you latch GoTo, then type :20 (colon, two, zero) when you unlatch GoTo, the playhead will move to 01:00:00:20. However, if you then latch GoTo and type 02: (zero, two, colon), then unlatch GoTo, the timecode entry is incremental from right to left, so the result is 01:00:02:00.

TIP: Timecode entry appears in the upper-left corner of the Fairlight Timeline on the computer screen. If you wish to change the timecode to display subframes, you can right-click the timecode display and choose the display setting you wish from the drop-down menu. You can also open a floating Timecode window that displays the playhead position (CTI) from the Workspace menu.

Numeric Keypad Locators

The Fairlight Audio Editor includes three user-defined locators that are used to quickly move the playhead to a stored timecode location. These non-permanent locators are designed to use freely in editing and mixing, but are not saved with the project. A momentary-press on the GoTo key is required to use, set, or clear the locators, which are assigned to the 1, 2 and 3 keys on the numeric keypad. Navigating with locators is a fast and easy way to jump to key positions in the Timeline. Setting a locator based on the current timecode position is often the first and last operation when recording macros so that the macro can start and end at the current timecode position. At this time, locators are only available in the Fairlight Audio Editor.

To set one of the three user-defined locators:

- 1 Move the playhead to the timecode position that you wish to save as a locator position. In this example you will assign the current playhead position to the first locator on the 1 key.
- 2 Momentary-press the GoTo key. This illuminates the 1, 2, and 3 keys on the numeric keypad. Continue to hold the GoTo key.
- 3 Momentary-press the 1 key until it tallys on to show that it has been set.
- 4 Release both the GoTo and 1 keys. You can follow the same steps to set the second and third locators that are assigned to the number 2 and 3 keys. Locators can be set to new timecode positions anytime while you work and do not have to be cleared before setting a new location.

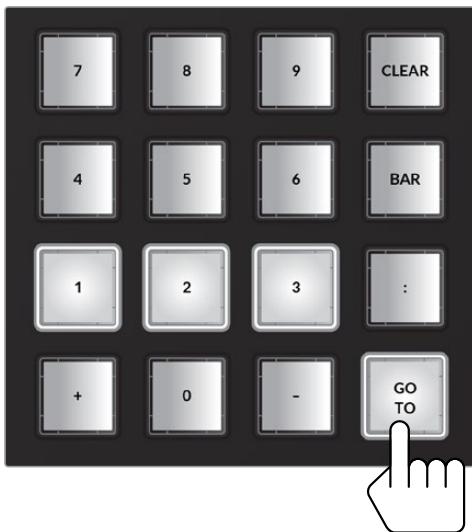
To use a locator for navigation:

- 1 Momentary-press the GoTo key. The number keys, 1, 2, and 3 illuminate. In this example, you will go to locator number 2.
- 2 Continue to press the GoTo key. Quickly press and release the 2 key.
- 3 Release the GoTo key. The playhead jumps to the second locator timecode position.

NOTE: You need to first set a locator before it can be used. Locators are not saved with the project.

To clear all locators:

- 1 Momentary-press the GoTo and Clear keys. The number keys, 1, 2, and 3 illuminate, but continue pressing the GoTo and Clear keys.
- 2 Long press each of the 1, 2, and 3 number keys to tally them on.
- 3 Release the GoTo and Clear keys. The locators are now clear and will not affect the playhead position until they are set to new timecode locations.



Numeric keypad with Locator keys illuminated during momentary hold of the GoTo key

Jog Wheel with Fixed Keys and Soft Menu Picture Keys

The jog wheel and surrounding Fixed keys offer a complete set of transport commands, designed to let you keep your hand in one position while editing. Here you can not only navigate the Timeline from end to end or anywhere in between in seconds, but also go from seeing all tracks to a focused zoom on a single clip at the sample level faster than you could reach over and pick up a traditional mouse.



Shuttle/jog wheel with Fixed keys and default Play menu and Loop picture keys

The combination of the jog wheel and Fixed keys offer standard and advanced playback and navigation options that can be defined in Setup mode and with the adjacent picture keys. The soft menu picture keys to the left of the jog wheel display menu options related to Fixed key and Shuttle functions. Since this section of the Fairlight Audio Editor includes such an extensive set of features and functionality, let's start with the jog wheel as a means of navigation and playback, then move on to the Play menu picture keys, Fixed keys, and subsequent additional soft menu picture keys.

Shuttle/Jog Wheel

The jog wheel is the most versatile control on the Fairlight Audio Editor, and is designed for ease-of-use with all of the associated keys within reach. As a means of navigation and playback, the wheel has two modes of operation, shuttle and jog, that are initiated by the respective Shuttle Position and Play Jog keys above the wheel.

In Shuttle mode, turning the wheel forward (clockwise) or back (counter-clockwise) starts playback in fast forward or rewind at variable speeds based on the amount the wheel is turned. Releasing the wheel while shuttling forward or back will continue constant playback at the current speed until the playhead reaches the beginning or end of the project.

In Jog mode, the playhead movement is contingent on the movement of the wheel, so you can freely jog forward or in reverse at variable speeds while turning the wheel and playback stops immediately when the wheel is released. Jog mode is generally used to scrub a specific area to focus on audible cues for editing and trimming, or for subframe loop-jog scrubbing to pinpoint issues and fine-tune edits. Shuttle mode is used to quickly navigate to a specific location or start playback at a variable speed. Additionally, the wheel can be used for common functions such as zooming, quickly scrolling track selection to different tracks, changing clip volume levels or even dialing the shape of clip fades.

TIP: Holding CTRL and Play/Jog puts the wheel into Shuttle mode. This maneuver also initiates Free shuttle movement even if the Editor setup controls are set to Fixed Shuttle. Thus, pressing CTRL + Play/Jog is a common audio editor shortcut for Free Shuttle control. Additionally, holding CTRL while turning the jog wheel increases the speed 8X. Releasing CTRL returns the wheel to standard jog speed.

Soft Menu Picture Keys

The six picture keys to the left of the jog wheel display soft menu options when you momentarily press the Play/Jog, Rewind, Fast Forward, and Zoom keys. The default soft menu keys that are always available are the Play Menu and Loop keys. Latching the Play Menu key shows six specialized playback options and likewise a long-press on the Loop key shows the Loop Playback options keys that change the looped playback mode assigned to the Loop key.

Latching the Play Menu key displays special play commands on the adjacent soft menu picture keys:

- **Play Again:** Plays from the same place as the last time, such as the timecode where the transport last entered Play. This could also include Play and Record at the same time. This key is the same as the Play Menu key so when the Play Menu keys are not displayed, you can simply press Play Menu twice for Play Again.
- **Play Range:** This operation plays from the In Point (beginning) to the Out Point (end) of a range in the Timeline.
- **Play Clip:** This plays the clip beneath the playhead on the active selected track. If there is no clip beneath the playhead, the next clip on selected track is played.
- **Play In:** Plays from one second before the In Point of a range in the Timeline.
- **Play Out:** Plays from one second before the Out Point of a range in the Timeline.
- **Exit:** Exits the Play Menu.

A long-press on the Loop key displays the Loop Playback Options menu keys:

- **Loop Range:** Loops playback around the marked range, from In Point to Out Point in the Timeline.
- **Loop Clip:** This operation loops playback around the clip beneath the playhead on the most-recently-selected track. If there is not a clip beneath the playhead on the active track, the next clip in the track is played. If a track is not selected, this key has no affect on playback.
- **Loop +/- 1:** This creates a two second playback loop around the current playhead position that starts one second before the playhead and ends one second after the playhead.
- **Loop +/- 3:** This creates a six second loop around the current playhead position that starts three seconds before the playhead and ends three seconds after.
- **Exit:** Exits the Loop Options menu without changing the current loop playback mode.



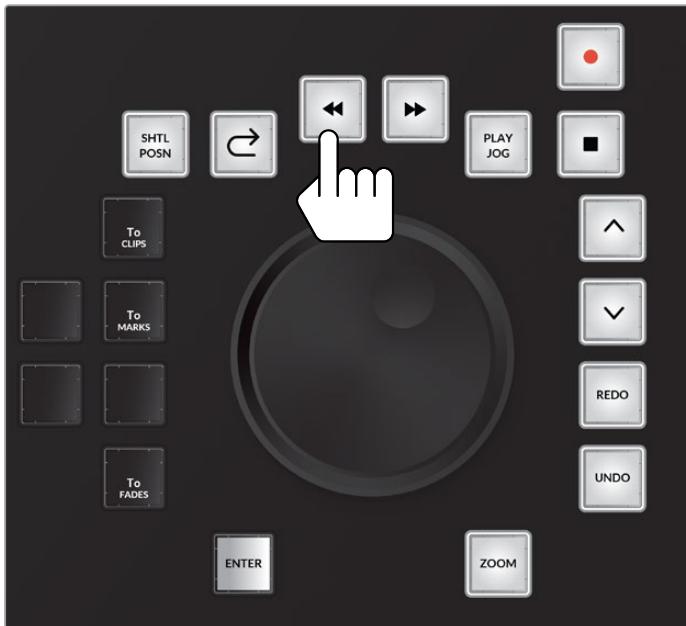
(Left) Default soft menu keys with Play Menu key unlatched with Loop key set to Loop Clip, (Center) Play Menu key latched, showing Playback Options keys, (Right) Loop key latched, showing Loop Options menu for assigning Loop Playback mode

Fixed Keys in Clockwise Order Starting in the Upper-left Above the Jog Wheel:

- **Shuttle/Position:** Latch this key to engage the wheel as a shuttle control for navigation and playback. Unlatch or press Stop to stop playback and disengage the shuttle wheel. While Shuttle is active, the Rewind and Fast Forward transport keys light up to indicate which direction the transport is moving. In the Setup mode, Editor Setup keys you can change the shuttle to either Free or Fixed mode.
- **Free Shuttle mode:** When engaged, the shuttle wheel turns freely clockwise or counter-clockwise, can change direction instantaneously, and shuttles at variable speeds based on the amount and direction you turn the wheel.
- **Fixed Shuttle mode:** Turning the wheel forward or back starts fast-forward or reverse playback at a fixed speed with built-in stops whenever you change direction.
- **Position mode:** Hold the Shuttle/Position key while turning the wheel to quickly position the playhead (CTI) in the Timeline. In position mode, you can move the playhead from the beginning to the end of the Timeline in a single rotation of the wheel.

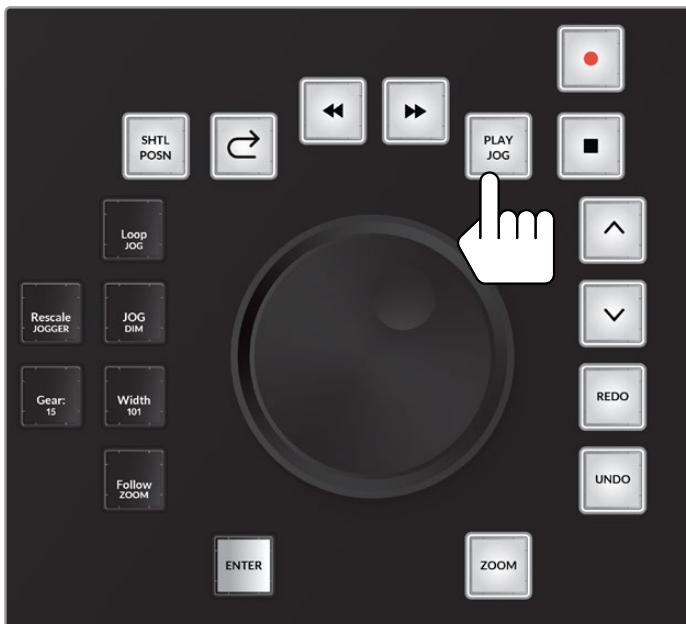
TIP: When the shuttle is set to Fixed Shuttle mode you can temporarily override the fixed setting with a long-press on the Shuttle/Position key after it is latched.

- **Review:** This key jumps the playhead back a number of second, then plays. Press this key repeatedly to make multiple jumps. The default review jump back time is four seconds. You can change this setting to any number of seconds by long-pressing the Review button and pressing any button between one and nine on the numeric keypad.
- **Rewind/Jump Back:** This key can operate as either a Rewind key or Jump Back key. You can toggle between key functions in the Setup mode, Editor Setup option keys.
- **Rewind key:** The operation works exactly as the Rewind key in the Transport keys section of the keyboard; you can press the Rewind key repeatedly to increase speed.
- **Jump Back:** Use this key to jump back to the previous target based on user selection in the Jump soft menu picture keys to the left of the shuttle wheel. Press and hold either the Fast Forward or Rewind key to choose jump to targets, including To Clip, To Mark, and To Fade from the soft menu picture keys. Jump Back moves to the previous Clip or Fade based on track selection.
- **Fast Forward/Jump Forward:** This key can operate as either a Fast Forward key or Jump Forward key. You can toggle between key functions in the Setup mode, Editor Setup option keys. Since there is already a dedicated Fast Forward key, as well as a shuttle wheel for engaging variable speed Fast Forward, this key is often set to Jump Forward instead.
- **Fast Forward:** This operation works exactly as the Fast Forward key in the Transport keys section of the picture keyboard. You can press the Fast Forward key repeatedly to increase speed.
- **Jump Forward:** You can use this key to Jump forward to the next target based on user selection in the Jump soft menu picture keys to the left of the shuttle wheel. Press and hold the Jump Forward key to choose jump to targets, including Clip, Marker, and Fade. Jump forward to the next Clip and Fade targets are based on track selection. Marker targets can be either Timeline markers or Clip markers.



Momentary-press on Rewind or Fast Forward fixed keys shows jump targets in the soft menu keys: To Clips, To Marks and To Fades; latch the jump targets you wish to use for navigation with the Jump Forward and Jump Back keys

- **Play/Jog:** Use this key to start playback or engage the jog wheel for manual jog control. By default, the first press of the Play/Jog key engages the jog wheel. The second press latches the key in Play mode and starts playback. If the Play/Jog key is latched, unlatching the key re-engages the jog wheel. Once the key has been latched, it toggles between Play and Jog. To disable the jog wheel, press the Stop key. Press and hold Play/Jog to show the associated soft menu options in the adjacent picture keys on the left side of the jog wheel.



Play/Jog soft menu keys with Momentary-press on Play/Jog key:
Loop Jog, Rescale Jogger, Jog DIM, Gear, Width, and Follow Zoom.

- **Loop Jog:** This key toggles Loop Jog on and off. When Loop Jog is on, the transport plays a small length of audio (between 5ms and 2000ms), repeatedly, at play speed. The loop moves as you jog the transport forward or backward. This is a great tool for editing, because it maintains the correct pitch of the audio, allowing you to hear clicks, pops, sibilants in the middle of words, and so on. Some of the other soft keys in this menu control additional Loop Jog parameters.
- **Rescale Jogger:** Use this key to change the gear ratio based on the current zoom level so that three revolutions a second of the jog wheel reaches normal play speed.
- **Jog DIM:** Toggles Jog Dim on and off. When on, it causes the monitoring level to automatically dim during Loop Jog to the user-defined value set in the Monitor mode Dim level.
- **Gear:** This changes the “gear ratio” when jogging between 1 and 20. In other words, it determines how quickly the transport moves in response to turning the jog wheel. You can change the Gear ratio by pressing the Gear key while turning the jog wheel. The lower the Gear number, the slower the transport will go; the higher the Gear number, the faster the transport will go.
- **Width:** Sets the width for the Loop Jog in milliseconds between 5ms and 2000ms. This is the amount of audio that is repeated in each loop. You can set this amount by holding the Width key and turning the jog wheel.
- **Follow Zoom:** This toggles Follow Zoom on or off. When on, the gear ratio of the jog wheel is affected by the Zoom setting. The default setting for this control is toggled on.
- **Record:** Latch this key along with the Play key in the standard Transport keys to begin recording to the armed track or tracks. Press the Stop key to stop recording. To arm a track for recording, press and hold the Record key, then press the Track Selection key for the track you want to arm. Tracks must be patched to an input before they can be armed for recording.
- **Stop:** As you may have guessed, this key stops playback or recording.
- **Up:** You can use this key to move the track selection up to the previous track in the Timeline.
- **Down:** Use this key to move the track selection down to the next track in the Timeline.
- **Redo:** Reverses the effect of the last Undo. This can be used repeatedly to step forward through the editing history.
- **Undo:** Reverses the effect of the last edit and can be used repeatedly to step back through the editing history. Also returns to the location and track selection of the edit being undone. A list of the actions can be seen in the Edit menu > History. There you can also Open History Window to see a full edit history list.

NOTE: Undo and Redo works on all editing actions while in Editing mode. While in Mix mode, you can choose either Undo All or Undo Editor. The default Undo setting for mixing is Undo Editor, which limits Undo to editing functions and disables Undo for mixing and automation in Mix mode. The Undo settings can be changed in the Setup mode. For more information about Undo and Redo operations in DaVinci Resolve, see Chapter 1, “Introduction to DaVinci Resolve.”

- **Zoom:** The Zoom key in combination with the jog wheel and modifier keys offers numerous quick zooming and scaling options while you work.
- Hold Zoom and turn the jog wheel to change the horizontal scale of the Timeline on the computer screen.
- Hold Control + Zoom and turn the jog wheel to change the vertical scale of the Timeline, which in turn, changes the height of the tracks and the subsequent number of tracks visible in the Timeline. Horizontal scaling always zooms around the playhead, while vertical zooming focuses on the active selected track.
- Double-tap Zoom to zoom your entire program to fit within the current visible width of the Timeline.
- Press and hold Zoom to show the Zoom menu option keys in the adjacent picture keys. These Zoom menu option keys are a fast way to change vertical scaling while zooming horizontally with the jog wheel for dynamic scaling while you work.

These options are:

1 Track	Vertically scales the Timeline tracks to show only the active track.
2 Tracks	Vertically scales the Timeline to show two tracks, including the active track.
4 Tracks	Vertically scales the Timeline to show four tracks, including the active track.
8 Tracks	Vertically scales the Timeline to show eight tracks, including the active track.
16 Tracks	Vertically scales the Timeline tracks to show sixteen tracks, including the active track.
All Tracks	Vertically scales the Timeline tracks to show all tracks.

- Hold Control + Zoom to show a secondary set of Zoom menu option keys, including the following:

32 Tracks	Vertically scales the Timeline to show 32 tracks, including the active track.
48 Tracks	Vertically scales the Timeline tracks to show 48 tracks, including the active track.
U1	Scales the Timeline to a user-defined view.
U2	Scales the Timeline to a user-defined view.
U3	Scales the Timeline to a user-defined view.
U4	Scales the Timeline to a user-defined view.



Zoom soft menu picture keys, including 1 Track,
2 Tracks, 4 Tracks, 8 Tracks, 16 Tracks, and All Tracks

- **Enter:** When using the Fairlight Audio Editor for Cut, Copy, and Paste operations, the Enter key functions as a Paste key. Additionally, the Enter key completes and executes many operations. For example, if you are renaming a track using the QWERTY picture keyboard, pressing Enter after typing the name updates the track name, clears the keyboard, and returns to the previous Editor mode.

NOTE: In DaVinci Resolve 16.2 and later, a second Zoom button was added to the left side of the picture keyboard while in Mix and Edit mode, so editors can easily reach it with either the left or right hand while working.

The Review, Shuttle mode, Rewind, and Fast Forward keys can all be customized and used in a variety of ways.

To change the Review jump back amount, do the following:

- 1 Momentary-press the Review key to illuminate the current Review setting in the numeric keypad.
- 2 Long-press a different number of seconds from 1 to 9 on the numeric keypad until it tallies on to set a new review duration.
- 3 Release the number and the Review key.
 - a) **Free Shuttle mode:** When engaged, the shuttle wheel turns freely clockwise or counter-clockwise, can change direction instantaneously, and shuttles at variable speeds based on the amount and direction you turn the wheel.
 - b) **Fixed Shuttle mode:** Turning the wheel forward or back starts fast-forward or reverse playback at a fixed speed with built-in stops whenever you change direction.

To toggle Shuttle mode between Free Shuttle and Fixed Shuttle, do the following:

- 1 Latch or Momentary-press the Setup mode key.
- 2 Latch the Editor Mode key in the Setup toolset to show the Editor Mode menu option keys.
- 3 In the Editor Mode menu option keys, latch or unlatch the Shuttle option key to toggle between Shuttle Fixed and Shuttle Free settings.

To toggle the Rewind and Fast Forward keys to Jump keys or vice versa, do the following:

- 1 Latch or Momentary-press the Setup mode key.
- 2 Latch the Editor Mode key in the Setup toolset to show the Editor Mode menu option keys.
- 3 In the Editor Mode menu option keys, latch the Mode Wind key to toggle on Mode Jump. The Fixed Rewind and Fast Forward keys above the jog wheel are now set as Jump keys.
- 4 If the Fixed Rewind and Fast Forward keys are in Jump mode, you can toggle them to Wind mode by following steps 1 and 2, then unlatch the Mode Jump key to toggle it back to Mode Wind.

To set a user-defined Zoom view in the Timeline.

- 1 Momentary-press the Zoom and CTRL keys.
- 2 In the soft menu picture keys, long-press one of the user keys (U1, U2, U3, or U4) until the main picture keyboard shows all tracks.
- 3 In the picture keyboard, latch the track selection keys for all of the tracks you would like to include in the user-defined view.
- 4 At the bottom of the picture keyboard, momentary-press the Menu key and the Fairlight key to exit the user Zoom setup mode.
- 5 You can repeat steps 1-3 for each of the four user-defined Zoom view keys.

To use a user-defined Zoom view in the Timeline.

- 1 Momentary-press the Zoom and CTRL keys.
- 2 In the soft menu picture keys to the left of the jog wheel, press the user view key (U1, U2, U3, or U4) to choose that view.
- 3 Release the Zoom and CTRL keys.
- 4 Latch or unlatch track selection keys to add or remove them from the current zoomed view.

Self-Labeling Picture Keyboard

The picture keyboard offers six different key layouts based on the six Editor modes. It also functions as a QWERTY keyboard for typing and data entry. Each Editor mode includes a specialized toolset of keys, unique to that mode. If you are familiar with the Fairlight page in DaVinci Resolve, the picture key functions are self-explanatory as they are clearly labeled with text and icons. For even easier identification, you can change the appearance of the picture keys to text only in the Editor Setup options on the Setup mode keyboard toolset by toggling the Icon Buttons key to reflect as Text Only.

Since there are hundreds of picture key tools for nearly every function on the Fairlight Page in DaVinci Resolve, this section will focus on the types of picture keys, the different Editor mode toolsets, and keys in each Editor mode that offer tools and options that are only available in the Fairlight Audio Editor.

Types of picture keys:

- **Editor Mode Keys:** These keys determine the current mode of operation in the Fairlight Audio Editor. There can only be one active mode at a time, however, you can momentarily jump into a different mode to choose a setting, tool, or task, then jump back to the current mode. These modes include: Setup, Record, Monitor, Macro, Mix, and Edit.
- **Menu and Menu Option Keys:** Pressing or latching a Menu Key reveals a group of Menu Option keys adjacent to the latched Menu key. In most cases the Menu Option keys remain visible until you unlatch the parent menu key. For example, in Edit mode, you can latch the Track Menu key to show seven Track Menu-related option keys, including Unlock Height, Lock Micro, Lock Mini, Lock Large, Track Safe, Hide Track, and Un-Hide All. These options are also available when you right-click a track's header, or click the Visibility icons on the Tracks pane of the Index Panel in the Fairlight page. When the picture keys are in Text Only mode, the Menu keys can be easily identified by the colored tag in the upper-left corner of the key.

NOTE: At this time, there is not an Un-Hide all tracks function on the Index panel in the Fairlight page. However, you can click your mouse on the Hide icon and drag it down over other hidden tracks to quickly swipe on or off track visibility. The Un-Hide All key is an example of a feature that is only available in the Fairlight Audio Editor.

- **Toolset Group Keys:** These are groups of similar operation keys that are placed together within an Editor mode toolset. For example, in Mix mode there is a group of Paste tools for pasting attributes from one track to others, including Paste EQ, Paste Dynamics, Paste Aux, Paste Path, Paste Plugins, and Paste All. This toolset group offers the same options that are available in the Paste Attributes sub-menu options in the Edit menu and right-click menu on a Track Header.
- **Toggles:** Toggle keys choose between a pair of options, often On or Off. In some cases, toggle keys toggle through multiple options. For example, in Record mode, the OSC key toggles the Oscillator on or off. However, the Input Monitor mode key toggles between all five Input Monitoring modes: Input, Auto, Record, Mute, and Repro. You can also latch the Input Monitor key to show the five input monitoring modes as menu option keys, similar to a drop-down menu. These same Input Monitoring modes are available via the Fairlight > Input Monitoring Style menu.
- **Open/Close:** These keys open or close the associated panel or window on the Fairlight page interface. If pressing the key opens the panel or window, pressing the key again closes it, in most cases.
- **Action:** Action keys cause an immediate result when pressed, such as Mark In, Mark Out, Trim Head, and Trim Tail in Edit mode.
- **Secondary Functions:** Instead of reaching for the mouse for some commonly used operations, you can simply press the Control modifier key to reveal them as secondary functions in the picture keyboard. For example, press the Control key to transform the Mix, Edit, and Monitor mode keys into toggle keys to Show/Hide the Mixer, Index, and Meters panels respectively on the Fairlight page. Having the option to quickly show and hide these panels can really speed up your workflow.

Selecting a Clip vs a Range

The Fairlight page in DaVinci Resolve has two prioritized selection options for recording and editing functions, both of which use track selection to determine the contents included in the selection.

- **Clip selection:** Selects clips beneath the playhead on a selected track or tracks. The exception is if clips are manually selected with the mouse. Clips that have been manually selected with the mouse are outlined in red and override selection based on the playhead and selected tracks. Clip selection is ideal If you only wish to edit a single clip or clips beneath the playhead on selected tracks.
- **Range Selection:** Involves setting In and Out points in the Timeline by either using the In and Out keys, or marking either In or Out and moving the playhead to create a range. Marking a range automatically toggles on the Range key. Range selection allows you to select a portion of a clip or multiple clips on all of the the selected tracks. When the Range key is latched, recording and editing operations may include all selected tracks within the range. If no tracks are selected, all of the timeline material within the Range boundary will be selected. This is useful if you are copying or cutting and pasting an entire range of the Timeline and pasting it elsewhere in the Timeline.

As you learn the different Record and Edit mode toolsets, remember that they will change based on the state of the Range key and the type of selection you have at the time of the operation.



Range key unlatched and Range key latched



Range selection within the selected track and clip selection of the clip beneath the playhead on the selected track

Setup Mode Toolset

The Setup mode toolset is for the behind-the-scenes setup of operational elements that in many cases are set up when you start a project and left alone for the duration of the project. Here you'll find specialized keys for setting up the Audio Editor's functionality, toggling controls, or opening and closing settings windows that would otherwise require a mouse and menu selections on the Fairlight page. There are also some specialized setup keys that are only available on the Audio Editor, where you may wish to momentarily jump into Setup mode to enable or disable functions, then jump back to your current task.



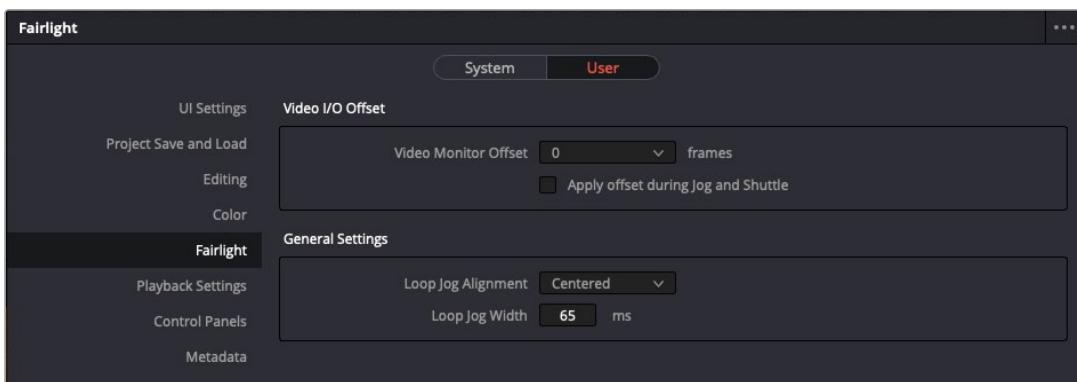
Setup mode default toolset

Setup mode keys for new features or enhanced features only available in the Fairlight Audio Editor:

- **Video Online/Offline:** When toggled On (Online) the playhead is sync locked to the current video timecode in the Timeline. When toggled off (Offline), the playhead moves freely, and can be used to go to another area of the Timeline or Media Pool to add or edit a clip. Toggling this key back On (Online), returns the playhead to the exact position it was prior to going offline. This is a great way to temporarily move the transport offline so that you can go to a clip in another part of the Timeline, use the playhead as a sync point to copy or cut the clip, then toggle the Video back Online to jump the playhead and copied clip to the previous timeline location.
- **Display Setup:** This menu key reveals Display Setup Source keys to accommodate all of the Fairlight LCD screens on a console. Each Source key toggles between DATA, HDMI and SDI as needed.
- **Fader Spill:** Temporarily spilling the member tracks of a master bus or VCA group to nearby faders is a fast way to finesse member track levels while mixing. Use this menu key to reveal two menu Spill option keys that determine the type of fader channel and direction in which member tracks are temporarily mapped to the adjoining faders on the Fairlight Channel Fader panel.
- **Spill Left/Spill Right:** This menu options key toggles between Spill: Left and Spill: Right, which in turn dictates whether the member tracks of a bus are assigned to neighboring faders to the left or right of a bus when Spill is engaged in the Channel Fader panel.
- **Spill Any/Spill Tracks:** When in the default (unlatched) state, the Spill: Any menu option allows member tracks of a bus to be spilled to the nearest faders to the left or right, including faders assigned to Master buses and VCA groups. When latched to the Spill: Tracks option, member tracks of a bus spill either left or right, starting with the nearest track fader in the designated direction. This option is useful if you need to maintain fader control of your buses while you spill their constituent tracks to the nearest track faders.

NOTE: Fader spill is engaged on the Channel Fader panel with a momentary-press on the Bank/Flip key, then latching the call button on a bus channel in the current fader bank. For more detailed instructions on using Fader Spill and creating custom Fader Banks, see *Chapter 184, "Modular Fairlight Consoles."*

- **DL Off:** This is the Decklink Offset key that lets you offset the Decklink Output so the picture and audio are in sync. Momentary press the DL Offset key and turn the jog wheel to increase or decrease the frame offset between 0 and 7 frames. This feature is also available in the Fairlight, Video I/O Offset section of the the DaVinci Resolve User Preferences.
- **ADV In Jog:** Latch this key to apply the Decklink Output offset while playback is in Jog or Shuttle mode. This feature is also available as a checkbox in the Fairlight section of the DaVinci Resolve User Preferences.



Fairlight - Video I/O Offset settings in DaVinci Resolve User Preferences that mirror the DL Offset and ADV in Jog picture key functions on the Audio Editor

- **Talk Setup:** This menu key reveals three menu option toggle keys to customize the Editor's Talkback functionality:
 - **Smart Talk/Push-2-Talk:** This key toggles between the default unlatched Smart Talk option and the latched Push-2-Talk option. Smart Talk allows the user to either latch the Talk button for extended hands-free talkback, or Push-2-Talk with a momentary press on the Talk button. Latching this key toggles on the Push-2-Talk mode, which limits talkback to the momentary-press Push-2-Talk method similar to using a 2-way radio.
 - **GPI:** Talk/DIM/None: This key toggles the Monitoring Controls for the general purpose input (GPI) between None, Talk plus DIM, or DIM only.
 - **GPO:** Talk/None/Armed/Record: Use this menu options key to determine when the general purpose output (GPO) sends a signal during a session. This key toggles between Talk, None, Armed and Record.



Console Setup menu option keys

- **Console Setup:** This menu key reveals toggle keys to customize the Editor functionality, including:
 - **Write Paste:** Toggle this key on if you want controls automatically placed in Write mode when pasting from one channel to another.
 - **Common Macros/Mixer Macros:** Use this key to choose whether the 14 macro quick keys remain the same (common) for both Edit and Mix modes, or if they change to macros 1-14 for Edit mode and 15-28 for Mix mode.
 - **Mode Jump/Wind:** This key toggles between Jump and Wind modes for the Rewind and Fast Forward keys above the jog wheel.
 - **Mixer Follows/Mixer Link:** Use this key to toggle the mixer between Follows and Link modes. When Mixer Link is toggled on, the mixer updates to show selected tracks in the Timeline. (Corresponding Resolve Preference > User > Fairlight.)
 - **Always Jog:** When this key is toggled On, any movement of the jog wheel will cause the transport to switch to Jog. Always Jog affects the wheel when the transport is not in motion and does not override Shuttle, Scroll, or Record operations.
 - **Trim from 0:** Toggles on Trim from Unity (0). You can use this in Mix mode while trimming fader automation. When toggled on, if automation is set to trim, faders armed to write will rest at unity where they can be manually adjusted from that position to trim the existing automation curve.
 - **Shuttle Fixed/Shuttle Free:** This key toggles between Fixed or Free Jog Shuttle mode.
 - **Jump/Wind:** This key toggles between Jump and Wind modes for the Rewind and Fast Forward keys above the jog wheel.
 - **Icon Buttons/Text Only:** Use this key to toggle the picture keys between Icon and Text or Text only.
 - **ALT Layout:** Latch this key to switch from the Normal layout to a new alternative text-only keyboard layout. This new Alt text-picture key layout shows keys that are relevant to the current task, with keys grouped toward the middle and lower rows of the keyboard for easy access. In this layout, the Editor Mode keys are located in the center of the the lower two rows of the picture keyboard. They are easy to spot with white text labels and a white line at the bottom of each mode key. The alternative layout also utilizes the six soft menu picture keys to the left of the jog/shuttle wheel for toolset group keys based on the current Editor mode and task at hand.

To return to the normal layout of the picture keyboard, do the following:

- 1 Press the white SETUP mode key, if necessary.
- 2 Press the yellow UTILS (Utilities) key. To reveal the Utilities menu options keys in the row above the UTILS key. The yellow tag in the upper-left corner of the UTILS key indicates it is a menu key.
- 3 Press the orange ALT LAYOUT menu options key to return to the normal layout.



Alt Layout with the SETUP mode key latched and the UTILS menu key on the far right unlatched



Alt Layout with the UTILS menu key latched and subsequent menu options keys in the row above including the latched Alt Layout key

NOTE: You'll find pictures of each of the Alt Layout toolsets later in this chapter.

Additional enhanced features only available in the Fairlight Audio Editor:

- **Call Follows key:** In addition to selecting a track, there are other criteria for making a track active and “calling” its information into the Editor screen and corresponding Channel Control bay if you are on a Fairlight Audio Editor connected to a Fairlight console. These Call Follows menu options depend on the physical buttons, touch-sensitive knobs, and faders on the Fairlight console. The Call Follows menu key offers five Call Option keys that can be used alone or in combination to determine which track or master bus is active:
 - **Current Track:** When toggled on, the most recently selected track is the active track.
 - **Fader Touch:** When toggled on, touching a fader on the Fader panel makes it active.

- **Pan Touch:** When toggled on, touching the Pan knob on the Fader panel makes it the active track.
- **Inline Touch:** When toggled on, touching any touch sensitive knob on the Channel Control panel, while set to Inline mode, calls that track and makes it active.
- **Solo Button:** Latching the Solo button on the Fader panel makes it active. Using a mouse or the Solo button on the Fairlight Audio Editor does not “call” the track active. Only the Solo button on the Fairlight Fader Control panel works in this scenario.
- **Undo Editor/Undo All:** This key is a matter of operator preference. When set to the default (unlatched), Undo Editor, tasks performed in Mix mode, including recording and editing automation data, will not be undoable. You can, however, simply record new mixing data to override the previous data as needed. Latching this key enables the Undo All mode, which in turn will undo all actions including automation applied in Mix mode.
- **CTI Fixed/Moving:** This key lets you choose whether the playhead (CTI) moves across the Timeline, or is fixed in place with the Timeline scrolling past.
- **Preview Track/Mon:** This key determines where preview monitoring goes when auditioning a sound and comes in handy when you need to preview a clip in the Media Pool or Sound Library. When toggled to Preview Track, you will put the track in Thru mode so it works like a live mic input and the sound you preview will be subject to the track’s fader levels, solo or mute state, and any processing applied to the track. If toggled to Preview Mon, the sound goes directly to the monitors without any processing or controls via the track’s channel strip in the mixer or console.
- **Normal Solo/Solo Follows:** This lets you customize how the Solo commands work. Normal Solo/Solo Follows is a bypass toggle for the Call Follows, Solo Button option. If the Call Follows, Solo Button menu options key is latched, and the Normal Solo/Solo Follows key is latched, soloing a track in the Audio Editor or Channel Fader panel “calls” that track’s information into the Editor display on the Audio Editor, and the Channel display in a Fairlight Console Channel bay. Unlatching the Normal Solo/Solo Follows key bypasses the Solo Call feature and returns Solo functionality to Normal Solo behavior, as the name suggests.

Using the Playhead as a Sync Point indicator to sync sound to picture using Video Online/Offline key:

- 1 With the Video Online/Offline key latched on, move the Playhead to the desired frame in the Timeline. For this example, let’s make it the frame where a door slams closed in the Viewer.
- 2 Unlatch the Video Online/Offline key so that it is offline.
- 3 Move the playhead to another location in the Timeline where there is a door closing sound effect that you’d like to copy.
- 4 Select the track with the clip you want to copy, and move the playhead over the frame that you want to sync with the door closing frame.
- 5 In Edit mode, press the Copy Clip key.
- 6 Latch the Video Online/Offline key so that it is Online. The playhead jumps to the previous location using the playhead as a sync point to match the door closing audio clip to the video frame of the door closing.
- 7 If necessary, press the Track Selection key for the track where you wish to paste the synced clip.
- 8 Press the Enter key to paste the clip.

Record Mode Toolset

The Record mode toolset is where you do your recording and offers specialized toolsets for both Manual and ADR recording. There are keys for every recording feature available on the Fairlight page including keys to open and close the Patch Input/Output window and ADR panels as well as rate takes without needing your mouse. Latch the ADR List, ADR Record or ADR Setup keys to open the associated panels on the computer screen. When either the ADR List or ADR Record keys are latched, you'll see picture keys for each interface button in the associated workflows. For example, latching the ADR Record key reveals a set of seven specialized keys for ADR Recording, including Previous Cue, Next Cue, Previous Take, Next Take, Rehearse Cue, Record Cue, and Play Cue. These keys work exactly the same as using a mouse and keyboard on the ADR Record panel in the Fairlight page interface.

The Fairlight Audio Editor includes a special set of Manual recording options that are only available on the Editor. These options use either playhead, clip, or range boundaries, as well as user-defined pre-roll and post-roll that can be set in the User Preferences, Editing panel.

NOTE: When recording in the Fairlight page, tracks must be armed before recording, and only tracks with inputs patched to them can be armed. Luckily, there is a key in the Record Mode toolset for opening the Patch Input/Output window. Use a momentary press on the Record key and Latch a Track Selection Key to arm that track.



Record mode default toolset

Record Mode Manual Recording special toolset keys include:

- **Record Here:** Playhead goes back the pre-roll duration, then punches into Record at the location where you issued the command. This can be useful when you zoom in to find the exact timecode position where you want to punch in to record, then simply issue this command by pressing the Record Here key and the system does everything for you.
- **Record Range:** The playhead includes a pre-roll and punches into Record at the Range In point, and then punches out at the Range Out point.
- **Record Clip:** After pre-roll, the playhead punches in and out to match the duration of the clip under the playhead on the selected track. If no clip is beneath the playhead, the transport moves forward to the next clip in the track and records there.
- **Record Again:** Pressing this key repeats the last recording you made, both entry and exit, whether it was manually or automatically punched in.

- **Punch In Again:** The system pre-rolls, then enters record at the exact same place as last time, whether it was manually or automatically activated. When entering this record operation, you still need to manually punch out. This allows you to get the same start point for recording but with a manual exit.
- **Record Head:** Pre-rolls, then starts recording at the head of the first clip to come beneath the playhead in the selected track. When entering this record operation, you still need to manually punch out.

Monitor Mode Toolset

As the name suggests, this mode is for setting up your monitor system. In most cases, this is set up at installation, but there are also controls for setting up the monitors for a particular session and quickly switching between different sources, including external sources, speaker sets, and surround formats. You can even mute any of the current speakers by latching its associated picture key marked with a Speaker icon.



Monitor mode default keys showing Control Room monitoring

Monitor mode keys for enhanced features only available in the Fairlight Audio Editor:

- **C/R / Studio toggle:** This key toggles the Monitor mode keys between Control Room (C/R) and Studio monitoring keys.
- **Phase:** Hold this key and press any speaker button to toggle its phase.
- **Alt Source:** Use this key to toggle between the Main system bus and the most recently selected Alternative source. The standard monitoring source is the Main system bus. However, you can choose many other sources, including other system buses or external sources, such as a CD player. The system remembers the last non-standard source that you chose as the Alternative source.
- **Mono Comp:** If your current speaker set is not mono, you can press this button to monitor playback in mono.
- **Stereo Comp:** If the current speaker format is not stereo, you can press this key to monitor the playback in stereo.

Macros Mode Toolset

Macros are programmable keys where you can record sequences of keystrokes. The Macro mode toolset includes 30 programmable Macro keys, as well as Delete, Rename, and Record keys for recording and managing your macros. The first 14 Macro keys are also assigned to the Macro quick-

keys at the top of the Audio Editor's display (Pad). Macros can record any keystroke on the Fairlight Audio Editor, including a momentary press to enter a different mode and keypresses in that mode during the momentary press. For example, it is common, when recording a macro, that you start in the mode with the first key you want to record, then momentary-press the Macro mode key to enter Macro mode just long enough to start recording the macro. Upon releasing the Macro mode key, the first key you press on the original mode will be the first one recorded.

The most important thing to remember when recording macros is that they are reliable once created, but have no context except what you program. It's a good idea to think of the starting and ending context for your macro prior to recording. For example, if the macro requires moving clips from one track to an empty track, make sure you create the new track before executing the macro. If the macro uses jump keys, make sure you have them set up ahead of time and so on. It is up to the user to remember a starting point and ending point, if relevant. Once a macro has been recorded, the associated quick key at the top of the Editor lights up to show that it is available as a macro.

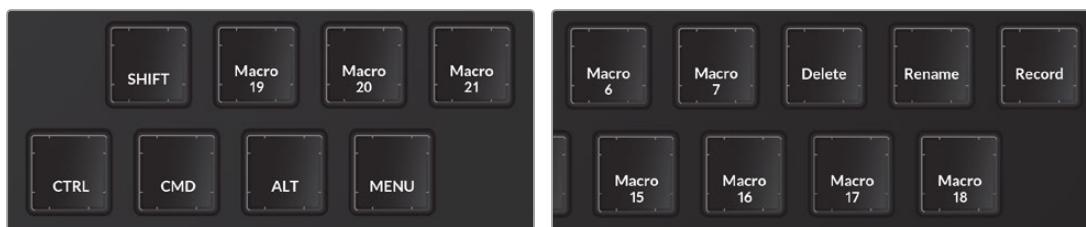


Macro mode keys

NOTE: To prevent accidentally recording, renaming or deleting a Macro key, the Macro action keys require a momentary press plus a numbered Macro key.

Macro Mode action keys:

- **Delete:** Press and hold this key and press a Macro key to delete the macro.
- **Rename:** Press and hold this key and press a Macro key to open the User Macros dialog and rename the macro.
- **Record:** Press and hold this key and press a numbered Macro key to record. Press Control and the Menu modifier key changes to Menu (rec) when recording a macro and Stop Recording when you press the Control modifier key while recording a macro.



Standard modifier keys in Macros mode and Macros action keys, including Delete, Rename, and Record



Menu becomes Menu Record key during macro recording and Stop Record when Control key is pressed during macro recording

Recording a Macro:

- 1 Set up the Editor for whatever steps you plan to record in the Macro and latch that mode.
- 2 Momentarily press the Macros mode key to enter that mode temporarily.
- 3 Do not release the Macros key.
- 4 With the other hand, in the Macro mode toolset, momentarily press the Record key and the numbered Macro key that you want to record. Release the Record and numbered Macro key.
- 5 Release the Macros mode key to return to the latched Editor mode.
- 6 Press the keys one at a time as needed to complete the steps that you want to record to the macro.
- 7 Stop playback, if necessary.
- 8 Press the Control key and press the Stop Recording key in the modifiers section of the keyboard.

NOTE: You can take as long as you need to record a macro, and if you make a mistake you can either delete the macro or re-record it using the Delete or Record keys.

Example of recording a simple macro to move a clip from one track to the track below:

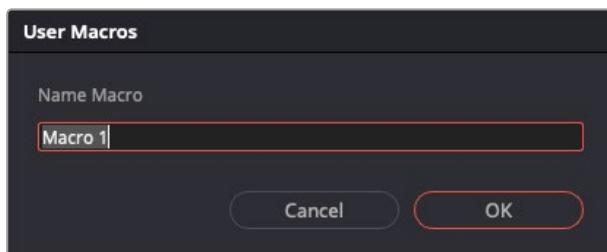
- 1 Prepare the Editor for recording the first macro. In this case, press the Edit mode key and latch the A1 track selection key to select that track. Move the playhead over the first clip in the track.
- 2 Momentary press the Macros key with the left hand. Do not release the Macros mode key.
- 3 In the Macros toolset, press the Record key and the Macro 1 key, to initiate recording of the Macros 1 key. Release both keys. The Macros keys disappear from view in the Macros toolset.
- 4 Release the momentary press on the Macros key to return to the Edit mode. The next keypress will be the first recorded to the Macro 1.
- 5 Press the Cut Clip key to cut the clip on the selected track beneath the playhead.
- 6 Press the Down key to the left of the jog wheel to move the track selection, and the shadow of the clip that was cut, down one track.
- 7 Press the Enter key to paste the clip.
- 8 Press the Up key next to the jog wheel to move the selection back up to the A1 track.
- 9 Press the Control modifier to change the Menu key to a Recording Stop key. Press the Recording Stop key.

From this point forward, pressing the Macro 1 key in the Macros Mode toolset, or the Macros 1 quick key at the top of the Editor will perform the macro of cutting a clip on one selected track and moving it to the track below then returning to the original track. With this macro, you could easily use jump keys to move down the Timeline a clip at a time, and move any clips that need to go to the A2 track with the press of the Macro 1 key.

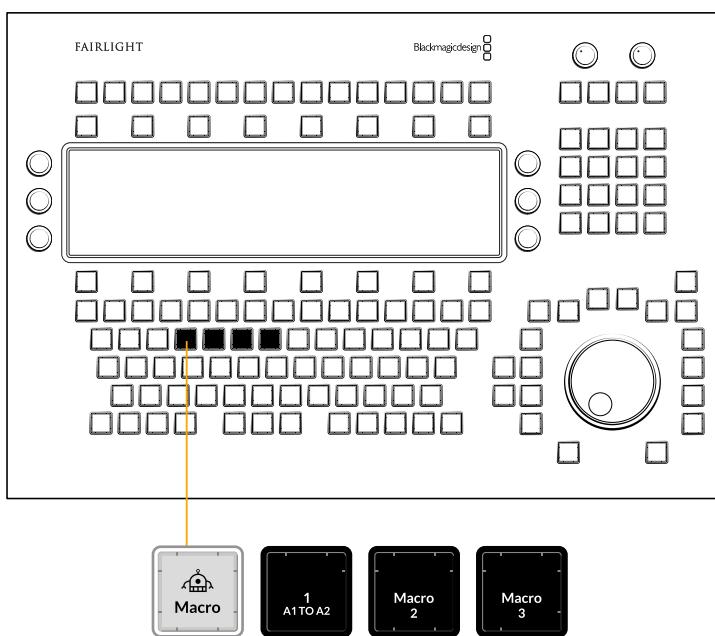
NOTE: You could also use this same macro to move a clip from any selected track to the track below because it contains the Up and Down arrow keys instead of specified track selection keys. Additionally, you could take this macro idea to a whole new level and include jump keys and fades at the edges of the clips as you edit.

Renaming a Macro key

- 1 Enter the Macros mode toolset.
- 2 Long-press the Rename key and press the Macro key that you want to rename.
- 3 In this case Macro 1. Release both keys.
- 4 The picture keyboard changes to QWERTY keys and the User Macros dialog opens on the computer screen.
- 5 Type a new name for the Macro and press Return.
- 6 The Macro is named in the Macro mode keys.



User Macros dialog on Computer screen



Named Macro 1 in the Macros Mode keys

TIP: If you are going to name your macros, it's a good idea to give them a brief but literal name to help you remember the macro's function. In the above example, the macro was named A1 to A2 because it was designed to move a clip from the A1 track to the A2 track.

Mix Mode Toolset

Whether you are using the Fairlight Audio Editor with your computer, or as part of a Fairlight Console, the Editor's Mix mode offers easy access to a powerful array of mixing and automation tools. Here you can copy and paste EQ, Dynamics, Aux, Path, Plugins or all of the above to other tracks and buses as well as automate any parameter. The heart of the Mix mode toolset is the Mix On/Off key. Latching Mix On brings all of Fairlight's powerful automation tools and menu options to the picture keyboard so you can control every aspect of your automation without ever reaching for the mouse. If you are familiar with Fairlight's mixing and automation tools in DaVinci Resolve, you'll have no trouble finding your way around this toolset because there is a picture key for every switch, toggle, menu, and submenu option available in the Fairlight page's robust automation toolset.

The functionality of each specialized key is exactly the same as using the software alone. However, the advantage of mixing with the Fairlight Audio Editor or a Fairlight Console is that you'll have physical controls including touch-sensitive knobs for precision automation recording and mixing maneuvers without the distraction of a mouse and menus.

NOTE: For a detailed rundown of the Fairlight Automation tools and features, please refer to Chapter 174, "Automation Recording."



Mix Mode keys with Mix On latched; the automation toolset showing and Copy/Paste unlatched

The Mix Mode automation keys are organized and grouped as action keys, toggles and menus with related submenu keys with the same tools and menu choices that you'll find on the Fairlight page and Fairlight menu in DaVinci Resolve.

Mix Mode toolset toggles, groups, and menu keys:

- **Copy/Paste:** This key automatically toggles on when automation is turned off. You can manually latch this key while the automation toolset is showing. When latched, the Copy/Paste key reveals the Copy and Paste toolset group.

- **Copy and Paste Toolset Group:** When the Mix On key is unlatched, the Copy/Paste key latches, and you will see a Copy key next to a toolset with six paste action keys, including Paste EQ, Paste DYN, Paste AUX, Paste PATH, Paste PLUGS, and Paste ALL. These keys are all used to copy attributes from the active track and paste them on a selected track. To use these keys, press the Copy key to copy all of the track attributes for the active track. Select another track and choose the Paste action key that corresponds with the attributes you want to paste to the newly selected track.
- **Mix ON:** This key toggles on or off the Automation toolset. When toggled on, the Copy/Paste key toggles off and the Copy and Paste toolset group switches to the automation specific toolset such as the Mix, Punch Menu, and Preview menu keys.
- **Automation Menu keys:** Enable, Mix list, Mix Menu, Punch Menu, and Preview Menu all reveal a set of submenu option keys when latched. The subsequent option keys offer the exact same options available on the Fairlight page interface. For example, latching the Enable menu key reveals ten option keys that represent each of the ten Enable buttons on the Fairlight page Automation toolbar, in the exact order that they appear onscreen. The Enable option keys are as follows from left to right: Write FADER, Write MUTE, Write PAN, Write EQ, Write COMP, Write LIMITER, Write AUX, Write PLUGINS, Write MISC, including a dedicated All button.
- **Open/Close GUI window keys:** The Patch, Mix List, and Presets keys open and close the corresponding windows on the computer screen.
- **Toggles:** The Touch and @Stop keys toggle between the different Touch and Stop automation modes when toggled. The Touch toggles between OFF, LATCH, and SNAP while the @Stop key toggles between RETURN, EVENT, and HOLD.
- **Preview Menu:** Switches the Automation controls into Preview mode for auditioning settings without writing new automation data and offers Preview menu option keys including; Fill Range, Glide Range, Punch In, and Punch Out.
- **Safe Menu:** This automation option provides the ability to specify an active automation zone with Active In and Active Out keys where the system does not receive timecode automation outside of the specified range. When Safe automation mode is active, automation Read and Write functions are only available within the active range and are disabled outside of the designated active range.
- **Write Quick Keys:** Write FADER, Write MUTE, Write PAN. These keys can be used to quickly enable the three most common Automation parameters.

Edit Mode Toolset

If you're read the previous Fairlight chapters, you're already familiar with the Audio Editing tools and menu options. The Edit mode toolset includes over twenty specialized picture keys for adding, moving, editing, and trimming clips in the Timeline. The keys represent all of the audio editing options available in the Fairlight page via the Edit and Trim menus as well as a handful of tools that are only available in the Audio Editor. You'll also find keys to open, preview, and edit clips from the Sound Library and Media Pool.

Fairlight audio editing is by nature fast and fluid, even when you are working with the software and computer alone. Where the Fairlight Audio Editor enhances the process is that with the combination of the jog wheel and Edit mode action keys, you can move and edit clips at incredible speeds and even edit clips on the fly without ever picking up your hands. In fact, the Fairlight Audio Editor is designed for two-handed operations. The added functionality of two-handed workflows really comes into play when working in the Edit mode.

EXAMPLE: With your left hand, you can easily select tracks and press action keys, while you use your right hand to drive the jog wheel controls and press the Enter key to paste material that its copied to the clipboard.

The Edit mode action keys work off of two principals: removing material you don't want to keep in the Timeline, or moving material to another location. To remove material, you use tools that erase or trim. To move material, you use the Clipboard tools that cut or copy and therefore store the material in memory to be pasted elsewhere. When you cut or copy material, a semi-transparent version of the Clipboard clip appears in the Timeline and can be moved to another track or location and pasted. Another consideration when editing is to determine if you are modifying the head, tail, whole clip, or a range containing only part of a clip or multiple clips. All audio edits are non-destructive and reversible with the Undo key.

NOTE: For more details about the fundamentals of editing audio clips in the Fairlight page, please refer to Chapter 171, "Editing Basics in the Fairlight Page."



Edit mode keys

Default Edit mode actions and associated keys include:

- **Cut:** Cut Head, Cut Clip, Cut Tail keys all cut the material based on the selected track, clip and playhead position and place the removed material in the clipboard for pasting with the Enter key. For more fluid editing, hold down a Cut key, such as Cut Tail, and use the jog wheel to move the cut portion of the clip to a new location, then release the Cut Tail key to automatically paste the cut clip in the new position.
- **Copy:** Copy Head, Copy Clip, Copy Tail keys all copy the material based on the selected track, clip and playhead position and place the copied material in the clipboard for pasting with the Enter key.
- **Trim:** Trim Head, Trim Tail uses the playhead's position to remove the current clip's head or tail. You can also press and hold Trim Head or Trim Tail while using the jog wheel to extend either the head or tail of the current clip. While doing this, you see the full waveform the clip you're trimming as you turn the jog wheel, but when you release the Trim Head or Trim Tail button, the Head or Tail of the selected clip appears trimmed at the current frame at the playhead.
- **Split:** The Split key splits the clip at the playhead position creating a new edit point between two clips.

- **Fade:** The Fade Head and Fade Tail keys add fades respectively from the playhead to the head or tail of a clip.
- **Erase:** Erase clip deletes the clip from the Timeline.
- **Batch Fades:** Long-press this key to open the Batch Fades Settings window or press to execute Batch Fades for the current audio clip or range selection.

NOTE: For a detailed rundown of the Batch Fades Settings window, see *Chapter 171, "Editing Basics in the Fairlight Page."*

Edit mode actions when Range is active:

- **Cut Range:** Use this key to cut all clips and partial clips within the range on the selected track or tracks. The Cut Range key replaces the Cut Clip key when Range is toggled on. This cuts clips within the range on all selected tracks.
- **Copy Range:** Use this key to copy all clips and partial clips within the range on the selected track or tracks. The Copy Range key replaces the Copy Clip key when Range is toggled on. This copies clips on all selected tracks within the range.
- **Split Range:** This key splits any clips lying across the range boundaries into two pieces at the range In Point and Range Out Point. This affects clips at the range boundaries on selected tracks.
- **Erase Range:** Erase Range deletes the range from the Timeline. This Erase Range key replaces the Erase Clip key when Range is toggled on.

NOTE: For ease of use and quick mastery, the Edit mode action keys are logically grouped in pairs or trios so that keys involving the head of a clip are first and tails are last. For example, the Cut Head, Cut Clip, and Cut Tails keys are grouped together as a trio. Placing three fingers over those keys make it easy to remember the first key is the head, middle key is the full clip, and last key is the tail.

In addition to the default Edit mode action keys, there is also a set of refinement action keys that can be used to finesse edits, fades, and clip positions. The refinement action keys require the Control modifier key as well as the jog wheel in most cases. These refinement action keys are logically placed for quick decisions so you can first execute an edit and then refine it without lifting your left hand or searching for a refinement key.

Control modifier-based editing refinement actions and associated keys include:

- **Erase:** Erase Head and Erase Tail keys appear on the same keys as Cut Head and Cut Tail so that you can quickly choose between a cut, which keeps the material in the clipboard and erasure of the material, with the touch of your left Pinky finger on the Control key.
- **Fade:** Head X-Level and Tail X-Level keys appear on the Fade Head and Fade tail keys so that you can first add a fade, then press Control and use the same key to refine the fade level with the jog wheel. Additionally, long-press SHIFT to reveal Head XPoint and Tail XPoint that can be changed with the jog wheel or long-press CTRL + SHIFT to use the jog wheel to refine Head Shape and Tail Shape.

- **Slip:** Slip Head, Slip Clip, and Slip Tail keys are located on the same keys as Copy Head, Copy Clip, and Copy Tail. That way you can seamlessly copy, move, and paste material to a new location, then hold the Control key while pressing the respective Slip key, and turn the jog wheel to refine the Head, Clip position or Tail based on the jog movement of the playhead.
- **Trim:** The Trim Clip refinement tool shares a key with the Split Clip key so that you can split a clip at the playhead position, then hold Control and the same key while using the jog wheel to refine the position of the edit point created by the split.
- **Clip Level:** This key plus the jog wheel and the Control modifier key adjusts the Display level of the selected clip's waveform.
- **Jog Wheel:** To place the playhead (CTI) at either the In or Out point of a range, use Control plus the jog wheel. Hold Control while turning the jog wheel to the left to move the playhead to the In point. Hold Control while turning the jog wheel to the right to move the playhead to the Out point.

Edit mode keys for enhanced features only available in the Fairlight Audio Editor:

The Edit mode tools work exactly as expected if you are familiar with the Fairlight page in DaVinci Resolve. There are, however, a few specialized keys that don't have counterpart tools in the Fairlight page. These unique tools perform valuable time-saving tasks.

- **Clip Level:** This key is both a Menu and Jog Wheel modifier key. Hold the Clip Level key to reveal seven option keys to raise or lower the selected clip's volume up +/- 3 dB. Incremental menu options keys from left to right include: -3dB, -2dB, -1dB, 0dB, +1dB, +2dB, +3dB. As a Jog Wheel modifier key, hold the Clip Level key with the left hand and turn the jog wheel with the right hand to raise or lower the clip's volume level dynamically based on the amount and direction that you turn the wheel. This can be performed on the fly during playback, so you can dial up or down the volume level of any clip on the selected track as the playhead passes over the clip. Clip level changes can also be applied to multiple clips on multiple selected tracks simultaneously.

NOTE: At the time of this printing, The Edit page in DaVinci Resolve includes a Clip menu option and keyboard shortcuts for incremental decibel changes, however there is no comparable shortcut, or menu in the Fairlight page.

- **Reverse Clip:** This key is available as one of the Clip Menu action keys. When pressed, this key reverses the clip beneath the playhead on the selected track. This creative sound design tool is also available in the Record mode Clip Menu toolset.
- **Range Menu Keys:** A momentary-press on the Range key reveals six invaluable Range-defined tools for speeding up your tasks. Although they are also available in the Record and Mix mode toolsets, you will primarily use them in Edit mode.
- **Copy Segment:** This action key copies all timeline material within a marked range.
- **Paste Segment:** This key pastes a copied segment to a new timeline location based on the playhead position.
- **Previous Gap:** Use this key to extend a range by moving the range In Point to the previous gap in the selected track or tracks.
- **Next Gap:** Use this key to extend a range by moving the range Out Point to the next gap in the selected track or tracks.

- **Fill:** Fills the current range on a track from end to end with the clipboard clip. Without the need to cut, copy and paste, Fill automatically duplicates the clipboard clip, with a slight overlap and fade to stitch together background noise or room tone within the marked range.
- **B/F Fill:** Back/Front Fill works exactly the same as Fill, except that it reverses the audio in every second copy of the clipboard used for filling. Alternating the direction of the stitched clips is useful for creating a seamless background sound because the waveform is continuous.

Alternate Picture Key Toolsets

In the Alternate picture key layout mode, all of the picture keys are text only, with the Editor mode keys arranged in the lower center white text. The menu keys are easy to spot with yellow text and a mark in the upper left corner. Alternate Edit, Monitor, and Mix mode toolsets include action keys in the six soft keys to the left of the jog wheel for quick access. For example, in Edit mode, the Cut, Copy, Erase, Fade, Nudge, and Trim action keys are all located in the upper-left corner of the picture keyboard, while the action keys associated with the active action key appear in the picture keys near the jog wheel. For example, if the Copy action key is latched, the Copy Clip, Copy Head, and Copy Tails keys are available near the jog wheel. If you latch the Cut action key, the middle keys near the jog wheel change to Cut Clip, Cut Head, and Cut Tail.

Alternate picture key toolsets include the same keys as the default normal layout. The difference is the location of the keys, how they are grouped, and the additional usage of the picture keys near the jog wheel.



Alternate Macro toolset



Alternate Setup toolset



Alternate Record toolset



Alternate Monitor toolset with Phase, Main/Near Speaker selection, and Alt Source keys available near the jog wheel



Alternate Mixer toolset with Mix On unlatched, Copy/Paste latched, and Copy/Paste keys available near the jog wheel



Alternate Mixer toolset with Mix On latched and Mix automation keys available near the jog wheel



Alternate Editor toolset with Copy latched and Copy action keys available near the jog wheel

TIP: One way to get to know your way around the Audio Editor keyboard is to start with knowing how to perform a task in the Fairlight page using a mouse and standard keyboard. Then, consider which Editor mode category the task belongs to, and find the associated keys from there. Making the transition from mouse and keyboard to the Audio Editor is a journey of discovery where you will find numerous ways to execute different tasks, shortcut keys and advanced controls and options that can increase your speed and productivity exponentially the longer you use it.

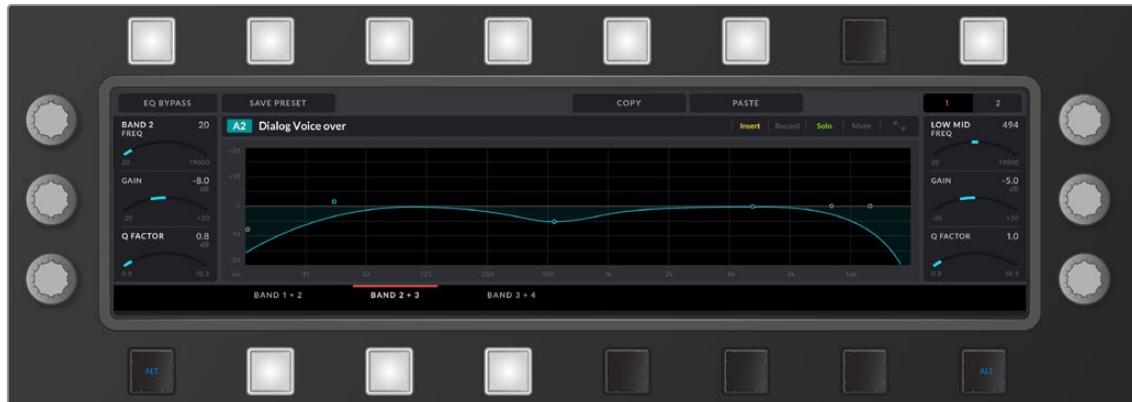
Editor Screen with Soft Controls

The Editor screen, located above the picture keyboard, displays all signal processing and mixing information related to the most-recently-selected (active) track or master bus. It also displays labels and visual feedback for the soft keys and knobs that surround the screen. Additionally, the ALT key below the screen extends its functionality with an alternative set of parameters when necessary. This is where you can quickly view and adjust various mixing parameters associated with the active track or master bus. Whether you select a track manually with a mouse click, press the associated Track Selection key on the Audio Editor, or latch a Channel Select button on the Fairlight Channel Control panel, the most-recently-selected track's parameters appear in the Editor screen.

These parameters include Level and Pan, EQ, Dynamics and AUX, and Plugin parameters that correspond with the active track or bus. The graphical display for signal processing remains the same in the Editor screen for nearly all Editor modes and types of signal processing, except for Monitor mode and Aux signal processing.

As you learn your way around the Fairlight Audio Editor you'll soon find that glancing at the Editor screen is akin to glancing at your dashboard while you drive your car. Following this example, your primary computer screen is like your windshield where you can always see what is happening as you drive the Fairlight Console or Audio Editor. However, like a dashboard, you can glance at the Editor screen at any time to see which track or master bus is selected, as well as the current signal processing settings. Also, like your car's dashboard, you can reach out and change settings for any of the interactive graphical parameters by simply choosing that element and modifying the adjacent controls.

At this time there are five different Editor Screen layouts that you will encounter while you work with the Fairlight Audio Editor, including Clip EQ, Standard Mixing, Plugin, Aux sends, and Monitor mode layouts.



The Clip EQ layout gives you soft menu controls of the 4-Band EQ parameters for the selected clip when you latch the Clip EQ key. The Clip EQ key is one of the Clip Menu option keys available in the Record and Edit mode toolsets. Here you have all the same EQ controls that are available in the Clip Inspector in DaVinci Resolve. Along the top of the second page of Clip EQ controls (shown above), you'll find new Clip EQ preset options that are not currently available in the Fairlight page UI. These options include; Save Preset, Apply Preset, Copy, and Paste.



Standard Mixing layout used in all Editor modes, except Monitor, or when the Aux controls are showing. At a glance you can see that the Pan controls are active based on the illuminated soft button in the bottom row with the bright red line over the Pan label adjacent to the latched button.



Plugin layout used to control first plugin on the selected track and is available in all Editor modes, except Monitor mode and when Aux controls are showing. The Plugin Editor screen controls include a three page layout. Page 1 provides the Insert IN toggle to bypass the plugin. Page 2, shown above, has toggle options to Reset the plugin as well as options to Save, Load, and Apply presets, Automate, and Lock the plugin. Page 3 offers Mapping mode where the user can map specific plugin parameters to the six Editor rotary knobs.



Aux layout showing send levels and panning for up to 24 Aux channels simultaneously. In this example, the sends for Aux 1 and Aux 3 are enabled (green) for the active track, while Aux 2 has been disabled for this track. The soft buttons along the top enable the different Aux channels for the active track. Red text over black labels indicate which Aux channels and soft buttons are toggled On.



Monitoring mode layout with visual feedback for Dim and Fixed levels, Control Room, Loudness, and Studio meters, as well as a graphical representation of the speaker configuration and listening environment.

Visual Feedback between Soft Controls and the Editor Screen

The Editor screen offers highly visual feedback that is easy to follow and corresponds with the identical controls in the Fairlight page, as well as the visual feedback on the Channel bay if you are working with a Fairlight Console. When looking at the soft buttons and touch-sensitive knobs, here are some guidelines to help you recognize their current state and options:

- Soft buttons and knobs around the Editor screen directly control the closest on-screen parameter.
- The soft buttons above and below the screen have three visual states; Bright, dim and off.
- At a glance all soft buttons with adjacent controls are illuminated (dim), while soft buttons without controls are black (off).
- The upper row of soft buttons are toggles that either toggle a parameter On/Off or toggle between options, such as the type of curve for EQ filtering. The last soft button on the top row toggles between pages of controls.
- Soft buttons above the Editor screen brighten when active or latched on, and the corresponding soft menu control onscreen shows in black with red text.
- Soft buttons below the Editor screen display alternative pages of controls assigned to the left and right knobs.

- It is easy to identify which page of controls is active because the latched soft button below the Edit screen is illuminated along with the adjacent label that is also marked with a bright red line.
- When you touch one of the knobs to adjust the current settings, the background of the corresponding visual feedback onscreen darkens.
- You can reset any of the parameters controlled by a touch-sensitive knob by pressing the Control key then touching the knob.
- Hold Shift while turning a knob for fine incremental control.
- The first and last soft buttons on the bottom row are modifier keys that offers momentary control of additional parameters for the controls for the knobs when available. For example, when the Aux controls are shown in the Editor screen, the knobs control the send level. While, a momentary press on the modifier soft button changes the knob controls to the Aux channel Pan settings.



Visual cues, like the red line over the illuminated soft button below the screen and the darkened parameter control next to the active knob on the left of the screen, indicate which EQ parameters are currently assigned to the control knobs, as well as which touch-sensitive knob is in use

Macro Quick Keys

The top row of the Fairlight Audio Editor is dedicated to the Macros quick keys. Here you'll find Macro quick keys for triggering each of the first 14 programmed macros. Once a Macro key has been recorded in the Macro mode layout, the associated Macro quick key illuminates to show it can be used to trigger the corresponding macro. These are a fast way to use macros as you work, without switching to the Macro mode toolset.



Escape and 14 Macro quick keys at the top of the Fairlight Audio Editor for the first 14 macros

Chapter 183

Fairlight Studio Utility

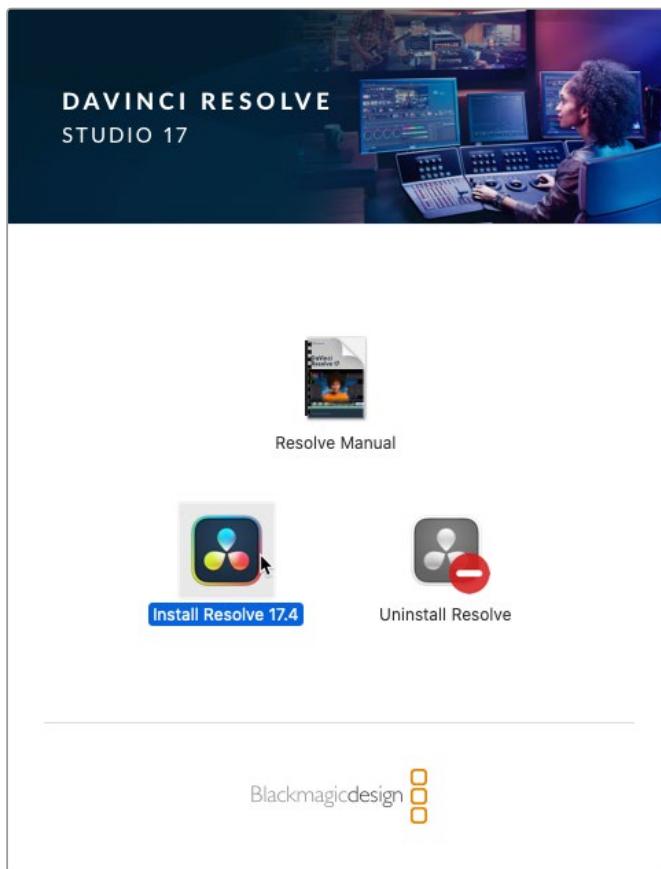
To configure your Fairlight console for your studio, you'll need to use the Fairlight Studio Utility. This utility is specifically designed to connect multiple Fairlight panels as a single studio console.

Contents

Configuring the Fairlight Panels	3924
DaVinci Control Panel Setup	3926
Changing Network Settings	3927
Fairlight Studio Utility	3928
Selecting your Fairlight Console in DaVinci Resolve	3931

Configuring the Fairlight Panels

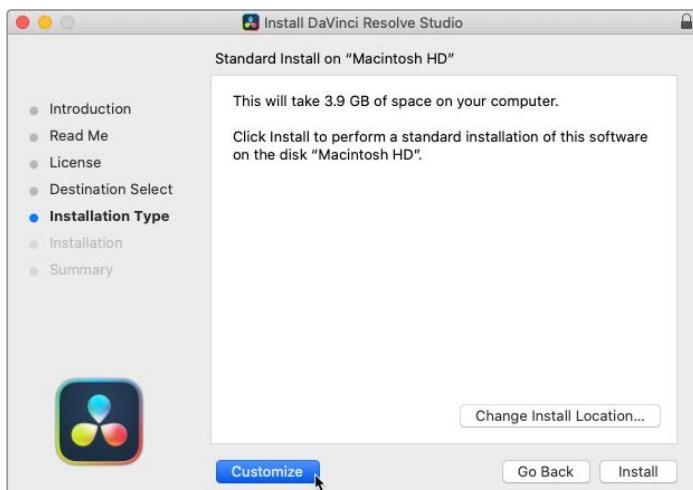
To configure your Fairlight console for your studio there are two utilities that are included in the DaVinci Resolve installer. The utilities are called Fairlight Studio Utility and DaVinci Control Panels Setup Utility.



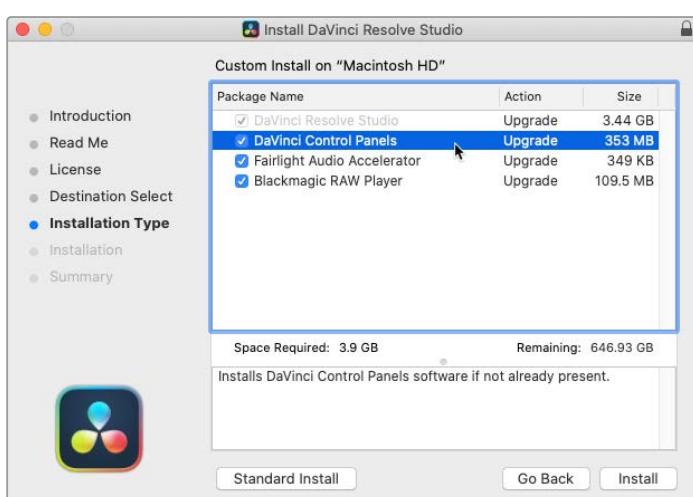
DaVinci Resolve Installation

To connect a single panel unit, such as the Fairlight Desktop Console or Fairlight Desktop Audio Editor, to your DaVinci Resolve system you only need to the DaVinci Control Panels Setup Utility. This utility is also used for updating firmware on all DaVinci Resolve Control Panels, including desktop and multi-panel consoles. If a DaVinci Resolve update includes a control panel firmware update, you'll be notified as such upon launch and directed to perform the update for each panel via the DaVinci Control Panels Setup Utility.

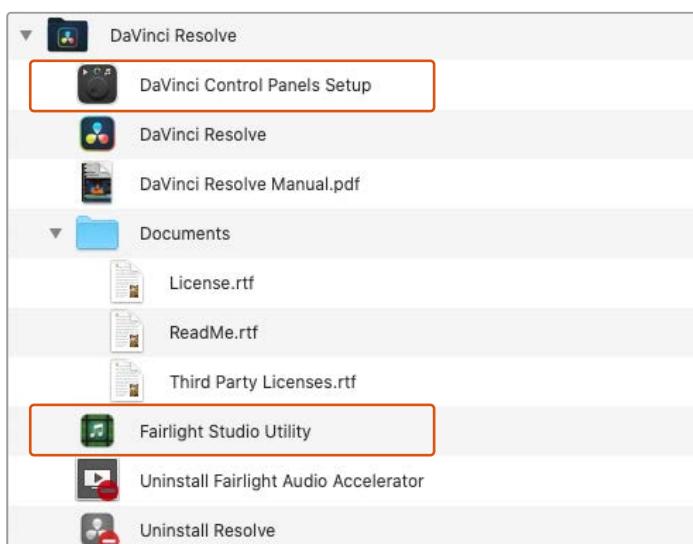
To set up and connect a multi-panel console, such as a 2-bay Fairlight console, you'll need to use the Fairlight Studio Utility. To install DaVinci Resolve, launch the DaVinci Resolve Installer and follow the onscreen prompts. When the installation reaches the Installation Type page, choose Custom install and be sure to select DaVinci Control Panels in the custom Install options.



Customize install



Install DaVinci Control Panels



DaVinci Control Panels Setup and Fairlight Studio Utilities installed

Updating your Fairlight Panels' Firmware

It's a good idea to regularly check our website for new software updates.

When a new version of DaVinci Resolve is installed, you may be prompted to update your panels' firmware. To update the firmware for each control panel in the DaVinci Control Panel update, select each panel in the home page, click the Update button and follow the prompts to update each panel.

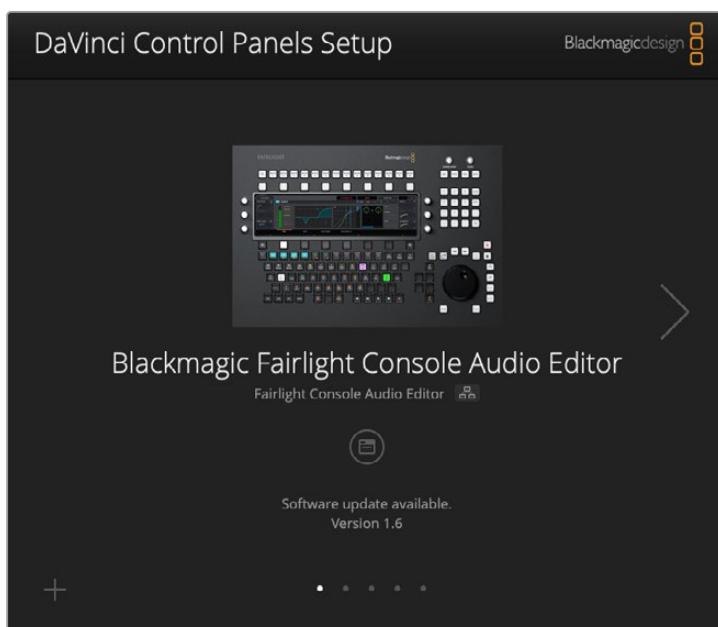
DaVinci Control Panel Setup

DaVinci Control Panel Setup Utility can be connected to the Fairlight panels via USB or Ethernet using DHCP. If you are not using a DHCP server, you can set the network settings to a fixed IP address via USB. More information for changing network settings is found later in this chapter.

When configuring the Fairlight console for your studio, the first step is to name each module using the DaVinci Control Panel Setup Utility. This lets you easily identify each panel by clicking on the "identify me" checkbox.

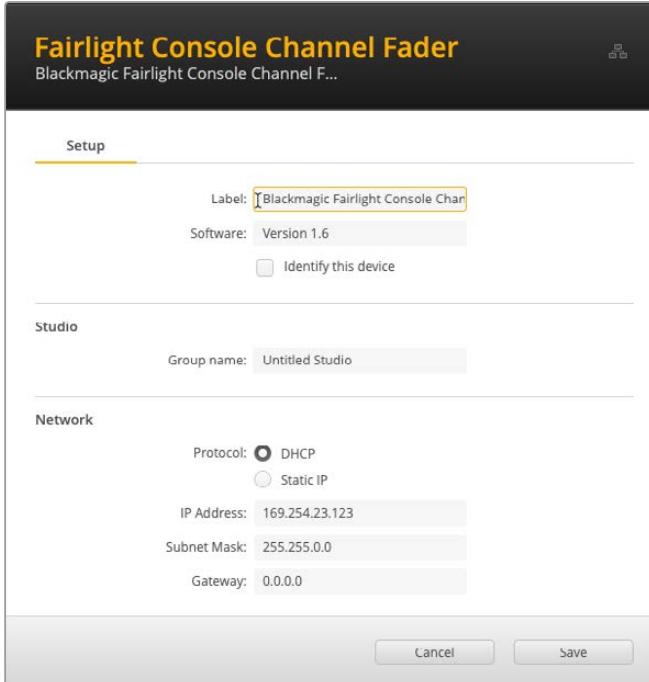
To assign a custom name to each panel:

- 1 Launch the DaVinci Control Panel Setup Utility.



The currently selected panel will be visible on the setup utility home screen. Navigate to each installed unit by clicking on the arrows on each side of the home screen.

- 2 Select a panel on the home screen and click on the Settings icon. You can also click the panel's image to open the setup window.
- 3 In the Setup panel under Label, you will see the Label: text box that identifies the current panel by name, starting with "Blackmagic" and followed by the default panel name, such as "Fairlight Console Channel Fader."



Default panel names always start with 'Blackmagic.'

- 4 Change the name in the text box and click Save. You can visually identify each modular panel installed in your console by clicking on the 'identify' checkbox. This will illuminate features on the panel.

DaVinci Control Panel Setup controls include the following:

- **Setup:** These settings include Label, Software version, and the Identify this device checkbox.
- **Studio:** Displays the Group name of the multi-panel studio.
- **Network:** Use these settings to manually change the settings. When changing network settings, you will need to connect the panel to your computer via USB.
- **Display:** Changes the brightness of the Fairlight panel's LCDs, or the brightness of the LCD monitor. Drag the slider to decrease or increase the brightness.

Changing Network Settings

If you need to change the network settings for each module manually, you can change the setting in the Network settings of the DaVinci Control Panels Setup utility. When changing network settings, you will need to connect the panel to your computer via USB.

To change network settings:

- 1 Open the DaVinci Control Panels Setup utility. Click on the Fairlight panel icon displayed on the home page to open the settings for that panel.
- 2 In the Network settings, choose either DHCP or Static IP, depending on your network.
- 3 Type a new address in the IP address, Subnet Mask, and Gateway text boxes as needed.
When the IP address is set correctly, the panel will be accessible on your network.

Repeat the same process for each Fairlight panel via USB.

NOTE: For more information about the DaVinci Control Panel Setup Utility, see *Chapter 5, “DaVinci Control Panels Setup.”*

Fairlight Studio Utility

This utility is used to add Fairlight panels to a user-defined Fairlight console configuration. Once the multi-panel console is configured, you can name it and connect it as a single studio unit to your DaVinci Resolve System.

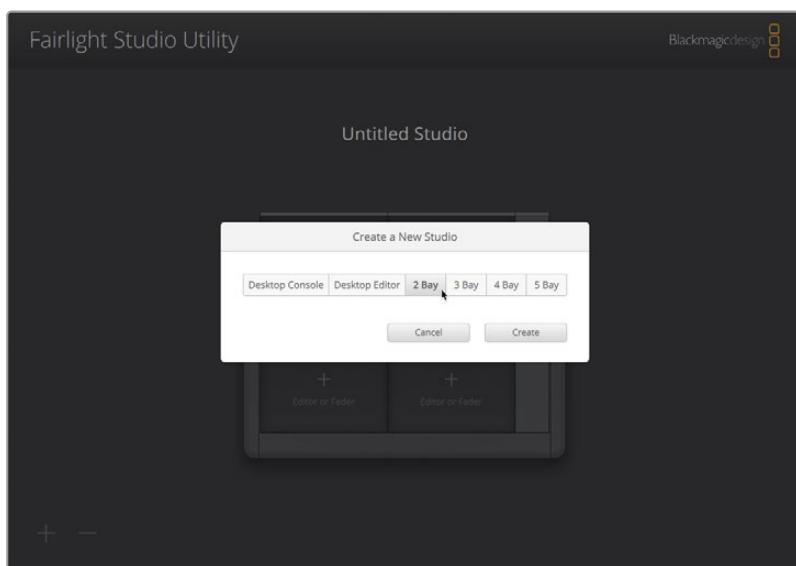
After setting up your Fairlight panels in the DaVinci Control Setup utility, assign each module to your Fairlight Console using the Fairlight Studio Utility. This configures your console as a studio, telling DaVinci Resolve exactly where each panel is in your Fairlight console so the Fairlight page can control them all properly and display their controls on the appropriate LCD monitors.

Stand alone panels, such as the Fairlight Desktop Console or the Fairlight Audio Editor, do not need to be added to a studio configuration to be selected by DaVinci Resolve. If you have only a Desktop Audio Editor or Desktop Console in your studio, go to the next section, “Selecting your Fairlight Console in DaVinci Resolve,” and follow the instructions there to select the editor in DaVinci Resolve.

When using the Fairlight Studio Utility for the first time, you will choose the type of studio console, then add the connected panels to the console in the utility.

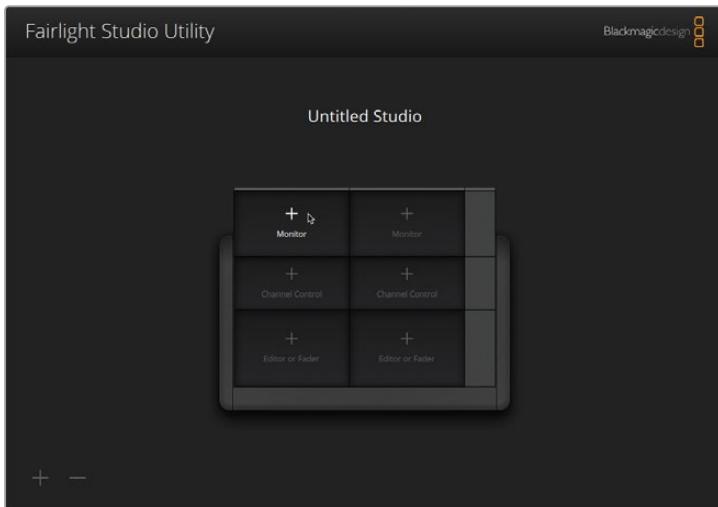
To set up a Fairlight Console for each studio:

- 1 Launch the Fairlight Studio Utility.
- 2 Select the number of bays in your Fairlight console and click Next. This will open a configuration screen where panels are assigned to the corresponding chassis slots in each bay.

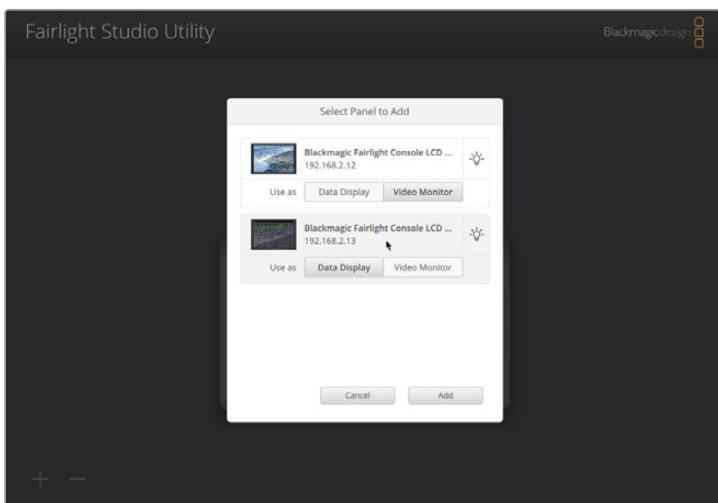


Choose the type of studio

- 3** In the configuration screen, click on the top left slot to assign a Fairlight Console LCD Monitor. From the list of modules, select the desired monitor for the corresponding slot by clicking on its icon.

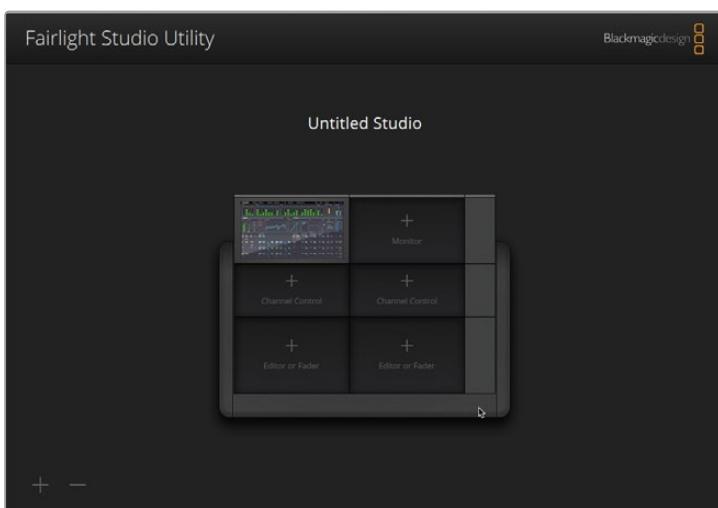


Click the empty slot to see a list of available panels



Choose the type of console

- 4** Click Add.



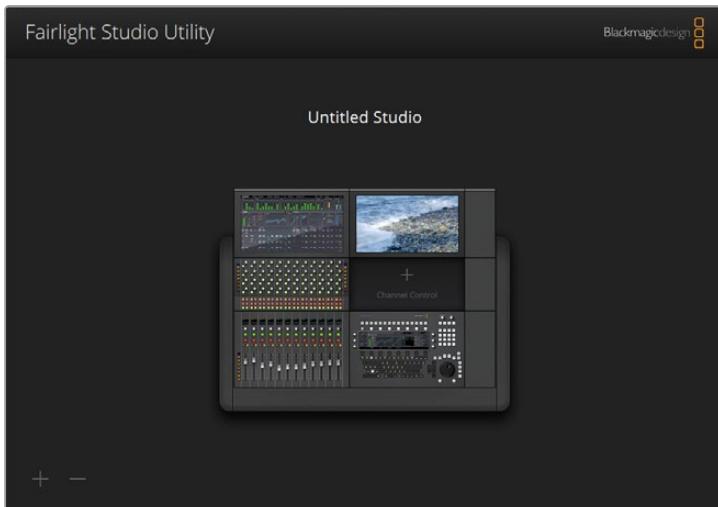
LCD Monitor is added to the console in the Fairlight Studio Utility

The panel will be assigned to the corresponding slot on your Fairlight console. You can now follow the same procedure to assign all the other panels to the corresponding positions in the configuration utility. If you select the wrong module by mistake, all you need to do is click on the module in the group to reveal its options, and then click the 'X' icon to remove it.

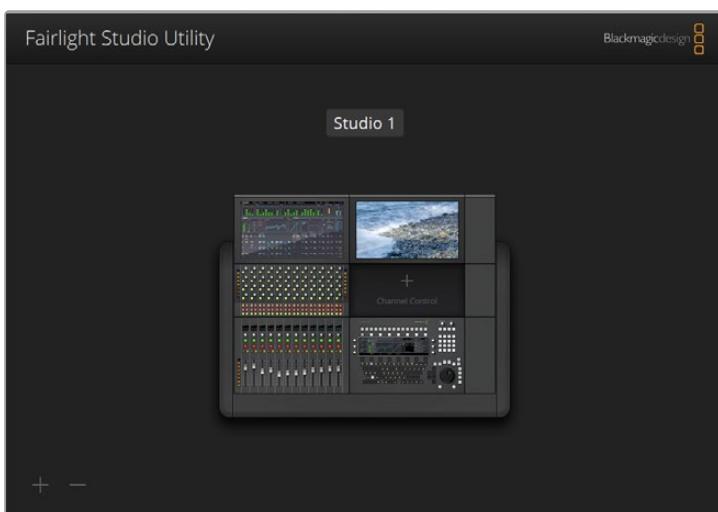
As you configure each panel, you can confirm it corresponds to the correct position in the console by clicking on the panel in the group to reveal its options, and then clicking the Light Bulb icon.

Your Fairlight console is now configured as a studio and you can change the name of the studio by clicking in the Untitled Studio text box, typing a new name, and pressing the Return key to confirm. This makes it easier to identify each studio if you have multiple studios installed in your facility.

Each panel can be identified by the custom name you entered when labeling the panel in the DaVinci Control Panel Setup utility. You can also click on the Light Bulb icon for each panel to visually identify it. When clicking on the light bulb, features will illuminate on the relevant panel.



Untitled Studio



User defined name set to Studio 1

NOTE: You can change the Group Name of a multi-panel console at any time in the name field of the Fairlight Studio Utility.

Selecting your Fairlight Console in DaVinci Resolve

Once your Fairlight Console is set up, you can select it in the DaVinci Resolve System Preferences, Control Panels settings.

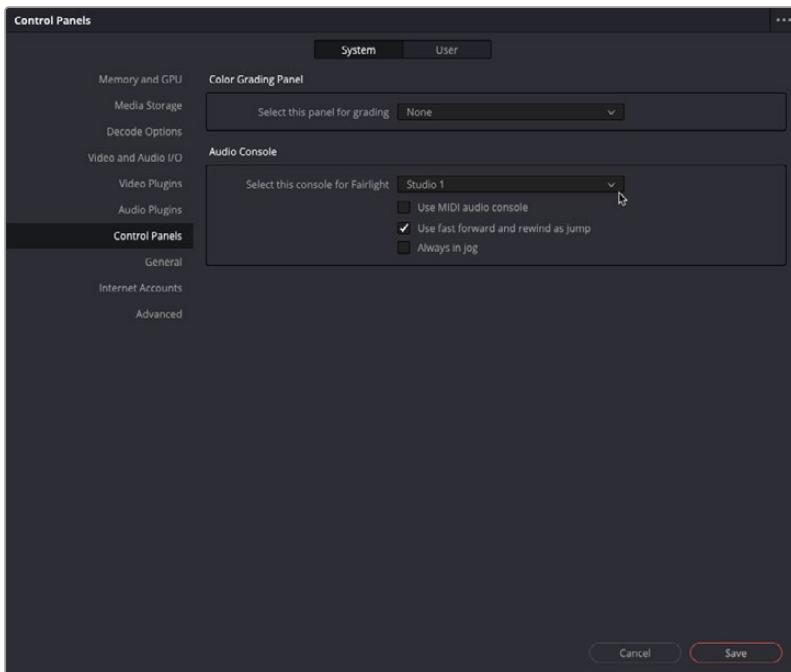
To select a Fairlight Console in DaVinci Resolve:

- 1 Launch DaVinci Resolve.
- 2 In the menu bar at the top of the screen, select DaVinci Resolve > Preferences.



DaVinci Resolve Preferences menu

- 3 In the Control Panels menu, choose the Fairlight Console from the 'Select this console for Fairlight' drop-down menu.



Studio 1 console selected in the Control Panels Audio Console settings in the DaVinci Resolve System Preferences

- 4 Click Save.
- The preferences window will close. Your console is ready to use with DaVinci Resolve.
- 5 Restart DaVinci Resolve, if necessary, to use the Fairlight Console.

Chapter 184

Modular Fairlight Consoles

The modular Fairlight consoles make it easier to perform audio editing, recording, and mixing tasks by providing professional audio controls for nearly every function and feature in the DaVinci Resolve Fairlight page.

Additionally, using a Fairlight console to control the Fairlight page is vastly more efficient and ergonomic than working with a traditional mouse and keyboard. This is especially important when your audio post-production job requires long hours doing complex, focused, and often repetitive work.

This chapter covers details about the different modular Fairlight console components, the available console configurations, and how they work with DaVinci Resolve.

NOTE: To set up a modular Fairlight console to work with your DaVinci Resolve system, you first must perform a custom installation of DaVinci Resolve and check the box to include the Fairlight Control Panels utility.

For complete setup and installation instructions, refer to the Fairlight Console Assembly Instruction Manual. DaVinci Resolve 17.2.1 requires a firmware update for each of the modular panels. See instructions for updating the firmware via the Fairlight Control Panels utility at the end of this chapter.

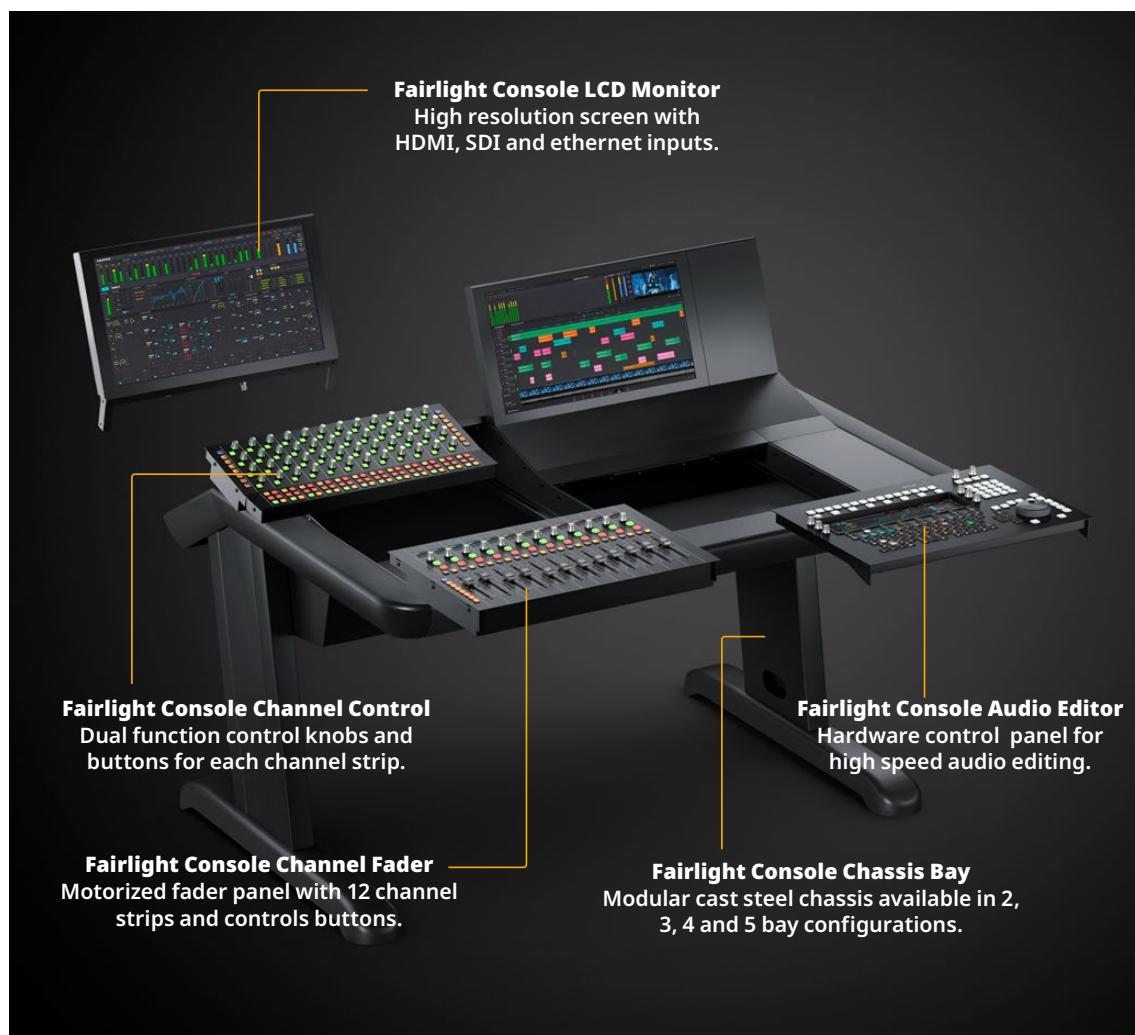
Contents

About the Fairlight Console Components	3933	LCD Fader Channel Display	3952
Fairlight Console Audio Editor	3938	Rotary Knob	3953
Channel Control Modes	3938	Fader Channel Control Buttons	3953
Fairlight Console Channel Control	3942	Touch-Sensitive Faders	3954
Channel Control Buttons and Channel Control Knobs	3948	Fader Bank Display Buttons	3955
In-Line Channel Extension Buttons	3950	Fairlight LCD Monitors	3964
Fairlight Console Channel Fader	3952	Fairlight Console Configurations	3965
		Additional Fairlight Hardware	3966
		Performing Firmware Updates	3967

About the Fairlight Console Components

Fairlight consoles are a modular design that let you build your console to suit your production requirements. Within each console, four different Fairlight console components work together as Fairlight page control panels in a stand-alone chassis. These modular console components are either channel bay panels or audio-editing bay panels, and are paired with an adjoining Fairlight LCD Monitor component. The channel bay components work in tandem to control specific parameters on tracks, buses, and mains and include the Fairlight Console Channel Control, the Fairlight Console Channel Fader, and the Fairlight Console LCD Monitor that is used as a dedicated channel control screen. The audio editing bay components consist of the Fairlight Audio Editor and adjacent Fairlight Console LCD Monitor, which mirrors your computer screen and displays the DaVinci Resolve interface.

Four different Fairlight console configurations range in size from 2-bay to 5-bay, with each bay spanning the width of a console module. The primary difference between the Fairlight consoles is the number of channel bays they contain. For example, a standard Fairlight console 2-bay comes with one set of channel bay panels plus one set of audio editing bay panels for a total of three control panels and two LCD screens, while a standard 5-bay console includes enough panels to fill four channel bays and one editing bay for a total of nine control panels and five LCD screens.



Because you will still need to control your computer and other software functions from the console, it is also important to have a wireless keyboard and mouse within reach. To accommodate wireless computer controls, Fairlight consoles include a Channel Control Blank and an Infill module. The Channel Control Blank fits in the Channel Control slot between the Audio Editor and editing LCD monitor, and easily holds a full-sized wireless computer keyboard. The Fairlight console Infill module provides a convenient flat surface for a wireless mouse, track-pad, or notebook. You can place the Infill module at the left or right of any bay within the console chassis. The most common Infill position is on the right side of the audio editing bay; however, a left-handed sound designer may prefer to place the Infill set on the left side of the editing controls.



Fairlight Console 2, 3, 4 and 5-bay

Each self-contained modular console is designed to meet the demands of modern work flow ergonomics and ease of use so that audio editors, sound designers, and re-recording mixers can quickly and accurately complete both simple and highly complex audio post-production tasks with minimal fatigue.



Standard Fairlight Console 2-bay

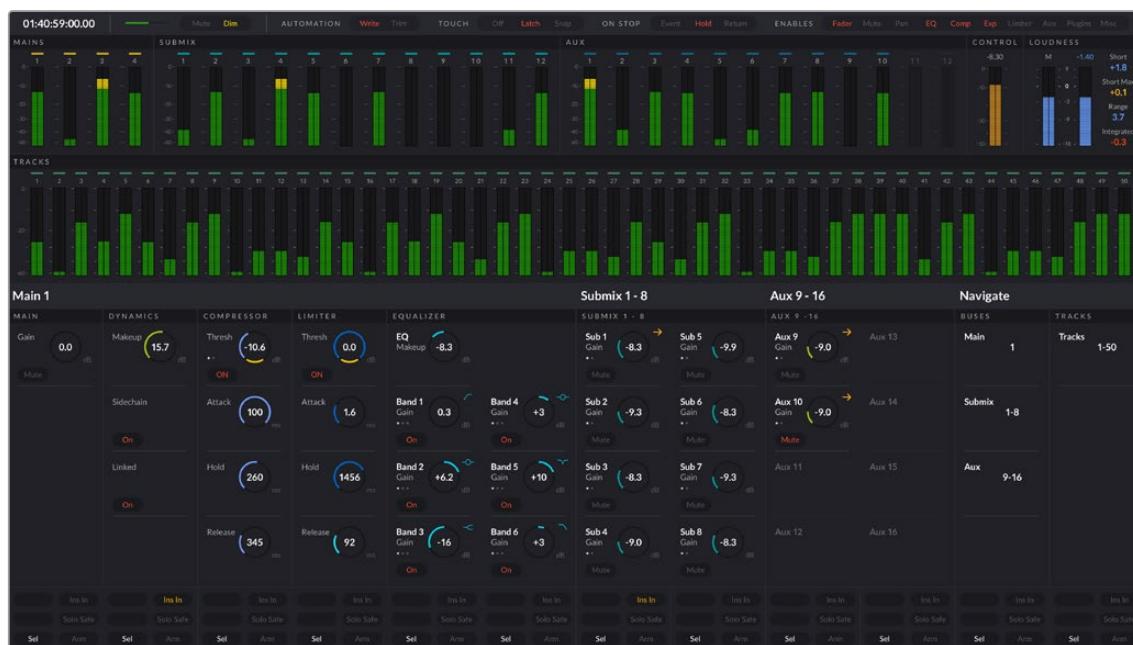
This chapter provides details and functions descriptions of each console component and should be read in conjunction with the previous Fairlight chapters to get the best from your console.

For professional sound editors working on tight deadlines, the Fairlight Audio Editor, gives you quick access controls for high speed, precision audio editing. This dedicated Fairlight editing control panel is available in either desktop or console models. It's easy to learn and master with a variety of highly visual, intuitive controls including touch-sensitive control knobs, macro buttons, LCD editor screen, number pad, electronic clutch-action shuttle, and a full keyboard with multi-functioning keys.



Fairlight Audio Editor

For high-resolution viewing of your DaVinci Resolve interface as well as channel controls, meters, video, and more, you'll use the Fairlight Console LCD Monitor. These custom designed LCD monitors fit perfectly at the top of each console bay to form a bridge of screens at just the right angle for comfortable viewing while you work. Each modular LCD monitor includes switchable inputs from console screen to HDMI or SDI inputs for flexible display of plugins and reference video.



Fairlight Console LCD Monitor displaying the Master mode



Fairlight Console LCD Monitor displaying the DaVinci Resolve UI

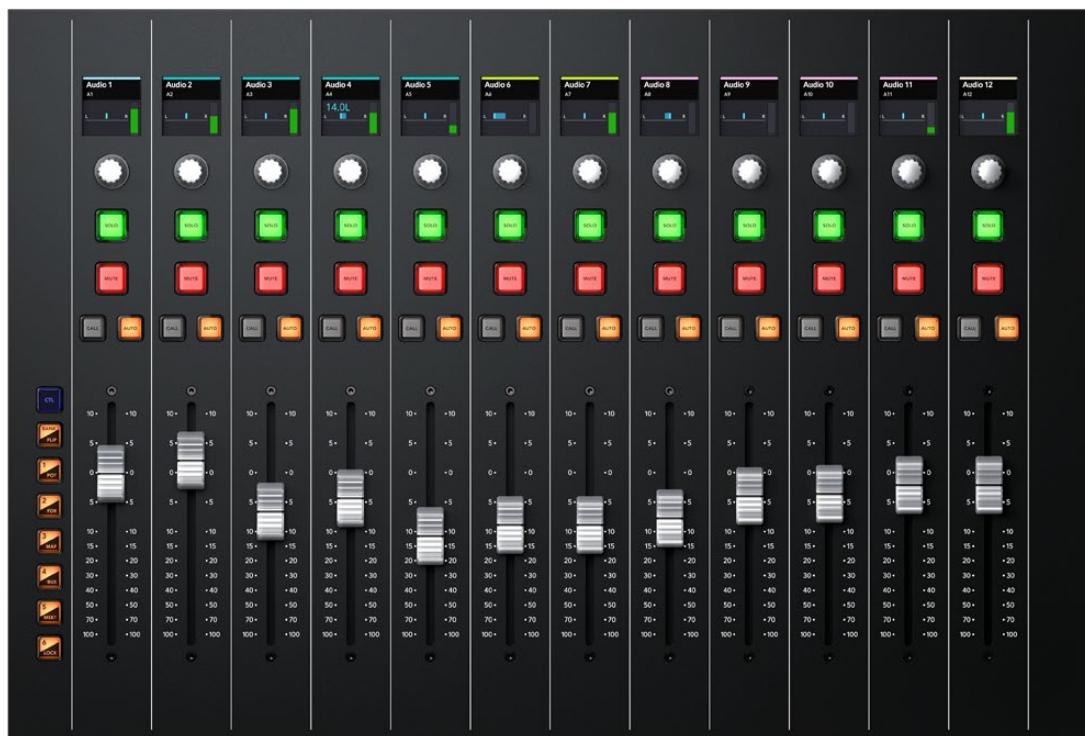
The Fairlight Console Channel Control is a multi-functional panel that works in conjunction with the Fairlight Console Channel Fader and LCD Monitor to provide 12 groups of touch-sensitive control knobs, buttons, and visual feedback for each of the 12 fader channels. These controls offer instant access to the parameters available in the DaVinci Resolve Fairlight page Mixer.



Fairlight Console LCD Monitor



Fairlight Console Channel Control



Fairlight Audio Console Fader Control

For precision recording, mixing, and mastering, the Fairlight Console Channel Fader module offers 12 touch-sensitive motorized faders and Pan knobs with corresponding Fader Channel Control buttons, automation controls, and bank buttons for mapping tracks and buses to the 12 faders.

Fairlight Console Audio Editor

The legendary Fairlight Console Audio Editor lets you quickly navigate large projects and precisely edit audio much faster than using a regular mouse and keyboard. The Fairlight Console Audio Editor has an identical feature set and controls as the Fairlight Desktop Audio Editor. The difference is that the Console Audio Editor is connected to all the console's control panels, so recording, playback, and editing functions are reflected on the corresponding channel bays and vice versa. For example, if a track is called in the Fader Panel, it is also loaded in the Audio Editor's built-in display. Another example is if a track button is selected in the Audio Editor, the track is also selected in the Fairlight Page interface on the Editing LCD monitor, and the corresponding selection button shows active in the In-Line Channel Control Extension buttons as well as the Channel Control LCD monitor. A Fairlight Desktop Audio Editor can also be connected to a Fairlight console that does not include an Audio Editing bay.

For details on the Fairlight Console Audio Editor's features and functions, see *Chapter 181, "Using the Fairlight Desktop Console."*

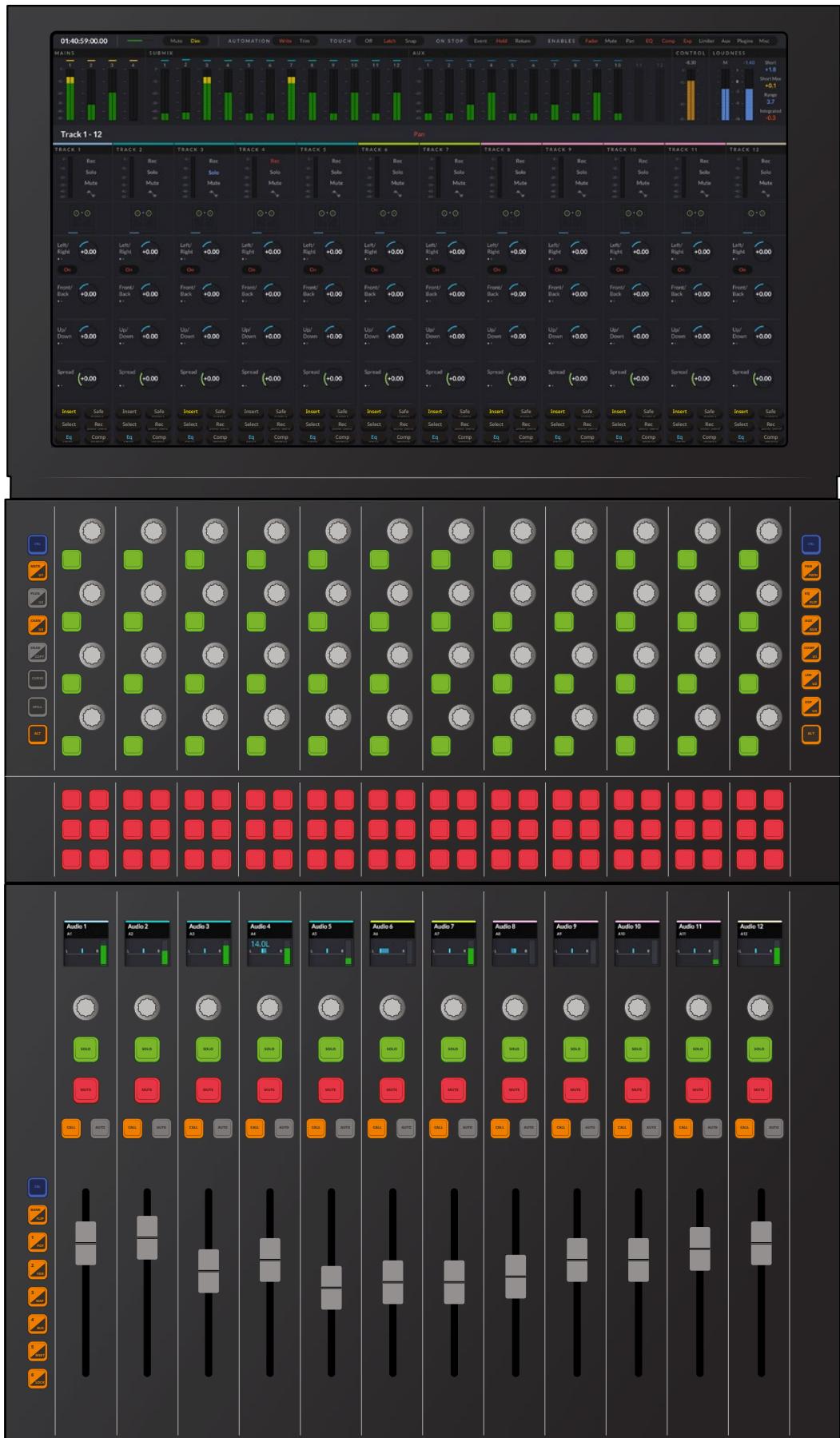


Fairlight Console Audio Editor

Although the three channel bay components are separate modules, they work together in tandem as a single multifaceted unit to display and control various channel parameters. The Channel Fader panel offers traditional channel mixing controls, while the multi functional Channel Control panel focuses on controlling specific parameters as needed as well as how they are displayed on the Channel LCD monitor.

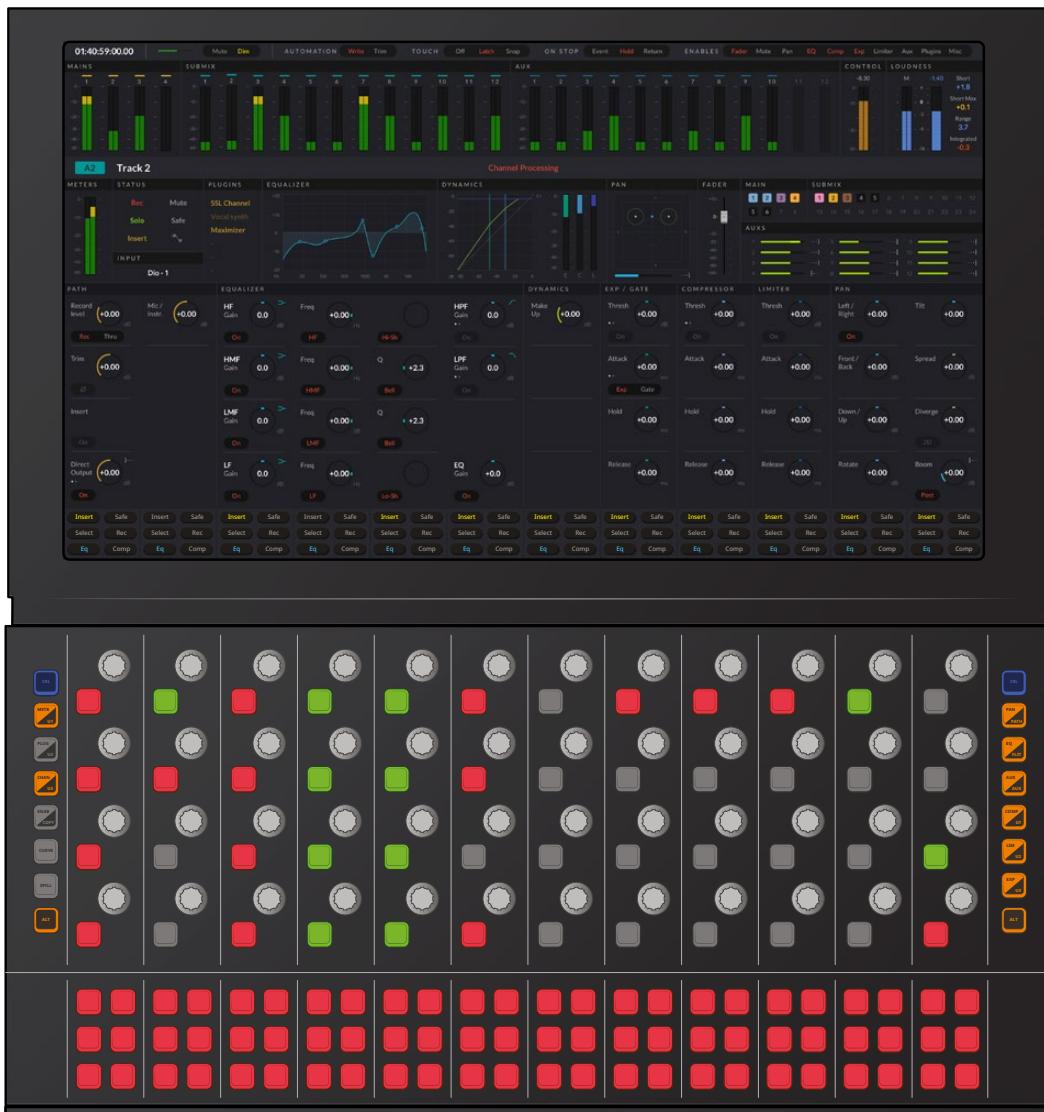
Channel Control Modes

Within a Fairlight channel bay, the Channel Control panel works in three distinct channel control modes. These modes, in turn, change the functions of the multipurpose channel control knobs and buttons as well as the corresponding display in the LCD module:



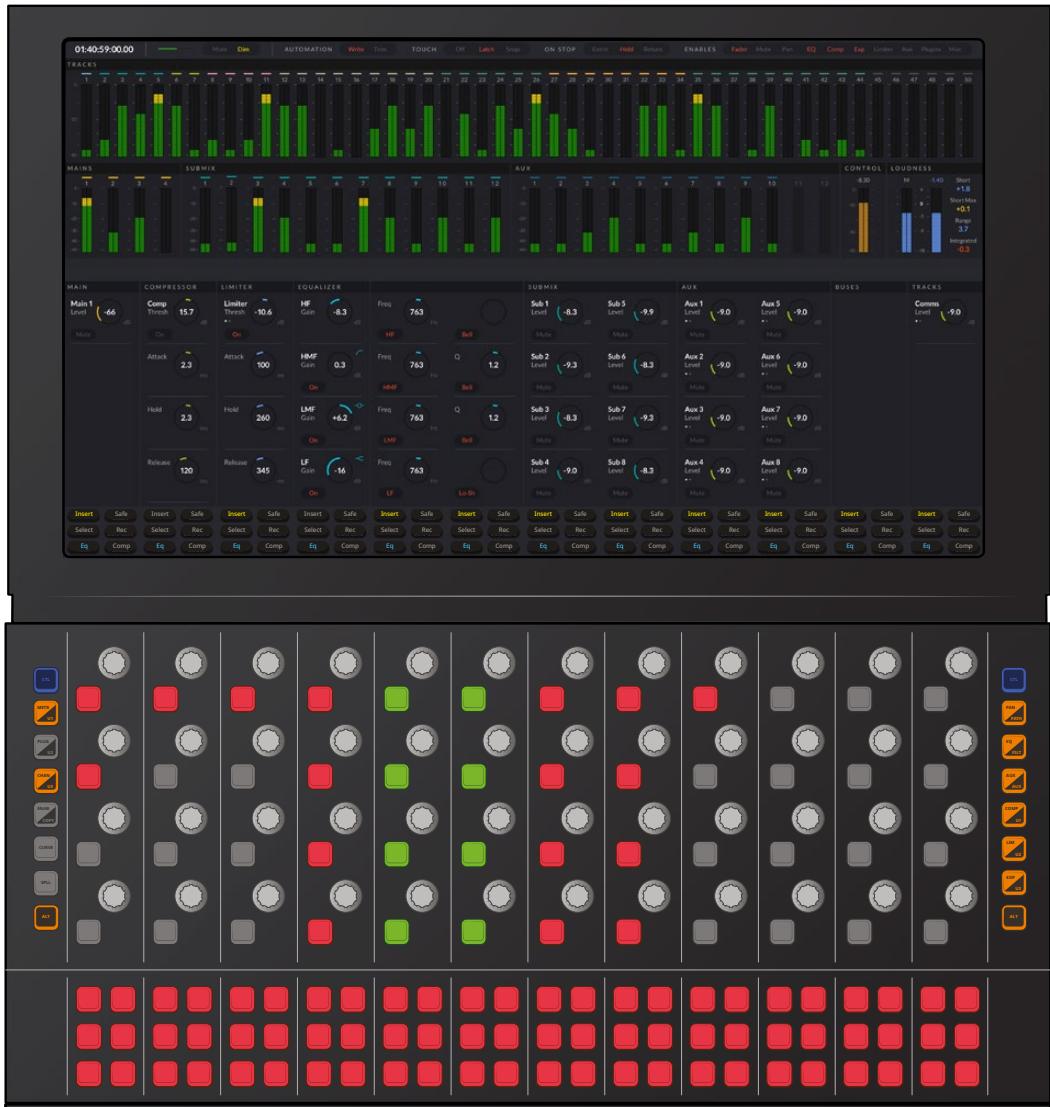
Channel Control components set to In-Line mode

- **In-line:** This mode effectively separates the knobs and buttons on the channel control module into 12 groups that line up vertically with the 12 faders on the channel fader control. As the name suggests, in-line mode shows each set of parameters in a line that continues from the fader channels up through the channel controls and into the display on the LCD monitor. In-line Display buttons on the right side of the Channel Control panel determine which in-line parameters are shown. This mode is common in live recording so that the operator can easily see and control parameters of multiple microphone inputs simultaneously.



Channel Control components in Channel mode

- **Channel:** Use Channel mode to control up to 192 parameters on one channel. In channel mode, the 12 groups of controls on the channel control module are used collectively to adjust parameters for a specific channel from left to right as displayed on the LCD Monitor. In Channel mode, there are several ways to choose which channel is displayed, including the Channel Call buttons on the Channel Fader panel, the Channel Select buttons on Channel Control panel, the Call Follows menu, the edit controller, or by selecting a track in the Fairlight page Timeline or Mixer. This is the most common channel control mode in audio post production, as it provides quick access to all parameter controls for a specific track.



Channel Control components in Master mode

- **Master:** This mode utilizes all channel controls to adjust parameters for the buses and main output. In Master mode, the 12 groups of controls on the channel control panel adjust the adjacent main output parameters displayed on the LCD. The channel controls in Master mode are organized from left to right in order of processing. Master mode is commonly used while mixing and mastering soundtracks.

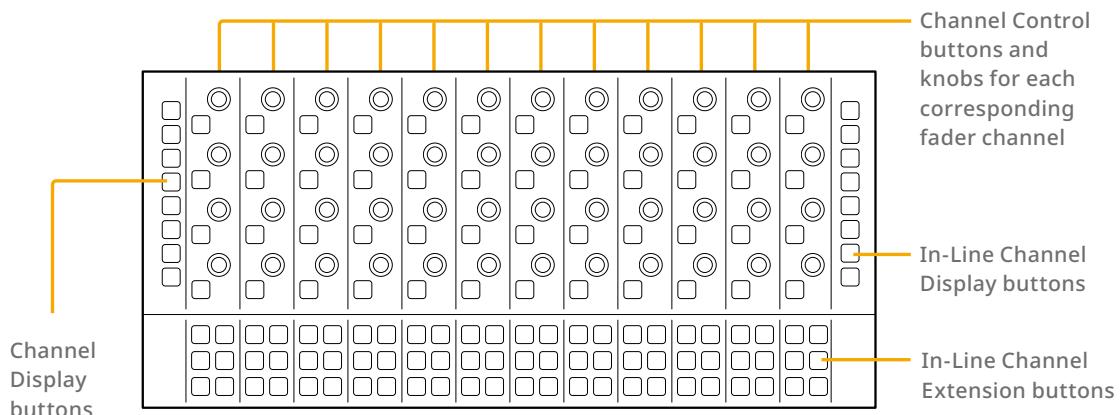
Fairlight Console Channel Control

The secret to managing high track counts for large projects is the Fairlight Console Channel Control because it provides instant knob-per-function access to channel parameters along with real-time high resolution visual feedback on-screen. The Fairlight Console Channel Control module fits directly below the LCD monitor so that you can always see the graphical representation of each parameter as it is modified with the adjacent channel controls. There are four types of channel controls organized in three areas of the panel.

On the far left and right sides of the panel, you'll find dual-function Channel Display buttons that determine the current channel control mode and which parameters are displayed on the LCD monitor.

The middle of the panel contains 12 groups of multi functional Channel Control buttons and knobs that align with the 12 faders on the Channel Fader panel. The knobs are used to adjust parameter values, while the control buttons act as toggles, On/Off, or In/Out switches for active parameters.

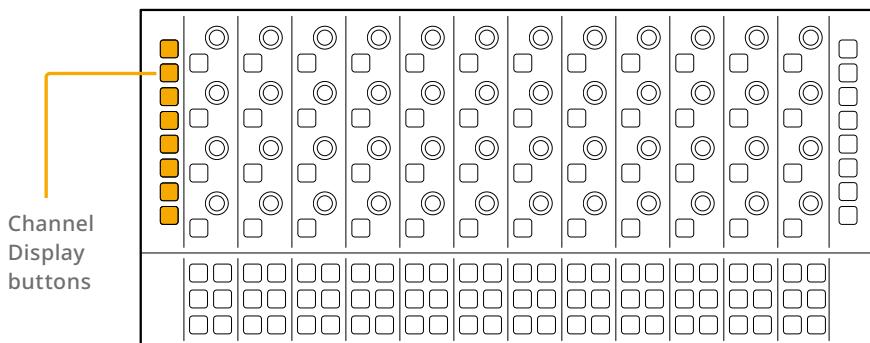
The fourth type of controls are the In-Line Channel Extension Buttons, which are arranged in groups of six below each of the 12 channel control groups. Here you'll find dedicated channel-specific buttons for functions available in the Fairlight page Mixer and Timeline track headers.



The primary display controls for the channel control components are the dual-function channel display buttons located on the left and right sides of the Channel Control panel. These bi-colored LED buttons determine the channel mode and current parameters displayed on-screen. There are a total of 16 display buttons split evenly into groups of eight buttons on each side of the panel. On the left side of the panel, you'll find eight channel display buttons used to select the channel control mode as well as display plugins and automaton parameters; while the display buttons on the right side of the panel are used to show the in-line channel parameters found in the Fairlight page Mixer, such as Pan, EQ, and Dynamics. The top and bottom display buttons are identical on both sides of the panel to provide easy access to the CTL (control) and ALT (alternate) functions for selecting secondary display features, resetting parameters to default values, and showing alternate controls in the LCD.

The default color for all display buttons is yellow, except for the Control button, which is always blue. When the Control button is pressed, inactive display buttons with secondary functions turn blue or purple. Active display buttons remain in their active state color until another display button is selected. For example, if a secondary function is selected, that display button remains purple as long as it is active, while the other display buttons return to yellow when the Control button is released.

Left side of panel, Channel display buttons from top to bottom:



CTL: This display button is the same as the Control modifier key on the computer keyboard and can be used to switch to the secondary functions for the dual-function display buttons below. The handy blue color makes it easy to locate and use as needed, to switch inactive display buttons to their secondary functions. Additionally, holding the Control button while touching one of the knobs or faders will reset any of the touch-sensitive controls to their default values. For example, holding the Control button while touching a fader or Aux send knob resets the value to 0 dB and is the Fairlight Console Control equivalent to double-clicking the mouse on a fader or knob in the Fairlight page GUI.

There are a total of three conveniently located Control buttons on a Channel Control bay; two on the Channel Control panel, and one on the Channel Fader panel.



MSTR/U1: This button is used to set the channel controls to Master mode which displays all the system bus controls for the Main output bus on the LCD monitor, while all the adjacent channel control buttons and knobs are dedicated to controlling the busing parameters as displayed. The secondary U1 function is not implemented in this version of the software.



PLUG/U2: Use this button to show active plugins on the LCD monitor and allocate controls for the plugin parameters to the corresponding channel controls. The Plug function as well as the secondary U2 function are not implemented in this version of the software.



CHAN/U3: To change the channel controls display mode to Channel mode, use this button. Once in Channel mode the channel control buttons and knobs control the parameters for a single channel. Use Control + CHAN to get to the channel's Aux Sends. If multiple channels are selected, you'll see parameters for the last track selected or called. In this version of the software, the secondary U3 function is not implemented.



ENAB/COPY: To quickly enable parameters for automation, you can hold this button and touch any channel control button, knob, or fader. The alternative function, COPY, is used to copy parameters between channels by simply touching the control knob or fader where you'd like to copy the specific parameter values. At the time of this writing, these functions are not yet implemented.



CURVE: When you want to display a parameter's automation curves on the active track in the Timeline, hold this button and touch any channel control or the fader, mute, or pan pot on the Channel Fader panel.

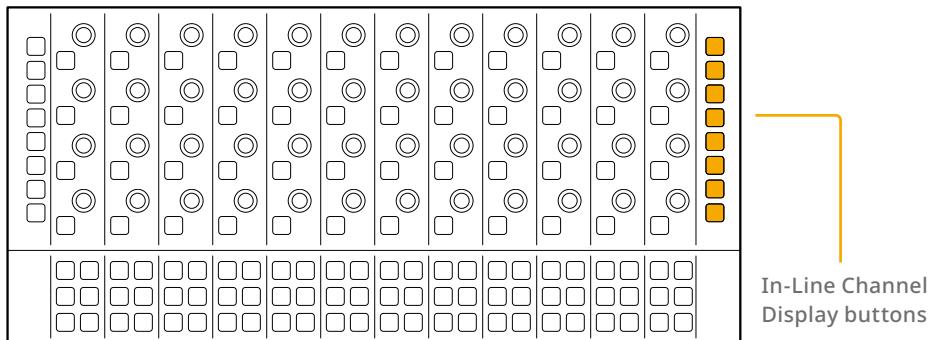


SPLL: SPLL is not used in this version of the software.



ALT: To access additional display button options or alternate parameter controls on any channel control, use this modifier button.

Right side of panel, In-Line Channel display buttons from top to bottom:



CTL: Use this button to select the secondary functions for the dual-function display buttons below. Also, holding the Control button while touching one of the knobs or faders will reset any of the touch-sensitive controls to their default values. This is one of three identical Control buttons on the channel control components set, and it works the same as pressing the Control modifier key on a computer keyboard.



PAN/PATH: This button displays all the in-line surround panning controls including Left/Right, Front/Back, Down/Up, and Spread. Press the ALT display button to see the alternate Rotate, Tilt, Divergence, and LFE controls. Hold the Control button and press the PAN/PATH button to display the Path setting controls, including Record level, Trim, Insert, and Direct Out. Press ALT while the PATH controls are active to see the alternate Path controls: Mic Gain, Group, and the Direct Output Pre/Post fader switch. These Path settings are the same as the controls in the Path Settings window available via the Track Input drop-down menu on the Fairlight page Mixer.



EQ/FILT: To control the In-Line channel parametric Equalizer (EQ), use this button without a modifier to display four frequency bands, including High Frequencies (HF), High-Middle Frequencies (HMF), Low-Middle Frequencies (LMF), and Low Frequencies (LF). Press the ALT button for Gain control of each of the four bands. Use the Control key for the secondary button function to display and modify the two channel filters for High-pass, Low-pass, High-shelf or Low-shelf filtering. While in EQ/FILT In-Line display mode, the Channel Control touch-sensitive knobs are used to sweep Frequencies or Gain, and the Channel Control buttons toggle between Bell, Notch, High Pass Filter (HPF), Low Pass Filter (LPF), High Shelf (Hi-Sh), and Low Shelf (Lo-Sh) filtering curves. The functionality of EQ/ FILT works the same as using the Channel EQ window available on the Fairlight page Mixer.



AUX/AUX: This button displays in-line controls for Aux sends 1 to 16 in sequential groups of 4 Aux buses at a time. You can toggle between Aux 1-4 and 5-8 by pressing the Aux key again. Hold Control while this button is active to display controls for Aux sends 9 to 16. Pressing the Aux key while holding Control will toggle between Aux 9-12 or 13-16. Press the ALT button for the alternate Pre/Post fader controls for the Aux send.



COMP/U1: This is for In-Line Dynamics controls for the Compressor, including: Threshold, Attack, Hold, and Release. Use this button without a modifier. Press the ALT button for the alternate Ratio controls. Hold Control and press any of the dynamics display buttons: COMP, LIM, or EXP to access the Makeup gain controls. The secondary U1 function is not implemented in this version of the software.



LIM/U2: To display the In-Line Limiter controls, use this button. Without a modifier, you'll see the limiter controls, including Threshold, Attack, Hold, and Release. Hold Control and press LIM to access the Makeup gain controls. The secondary U2 function is not implemented in this version of the software.

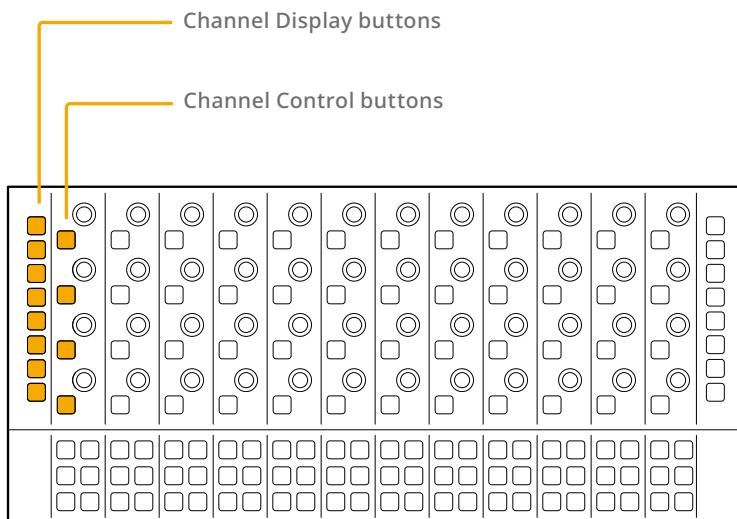


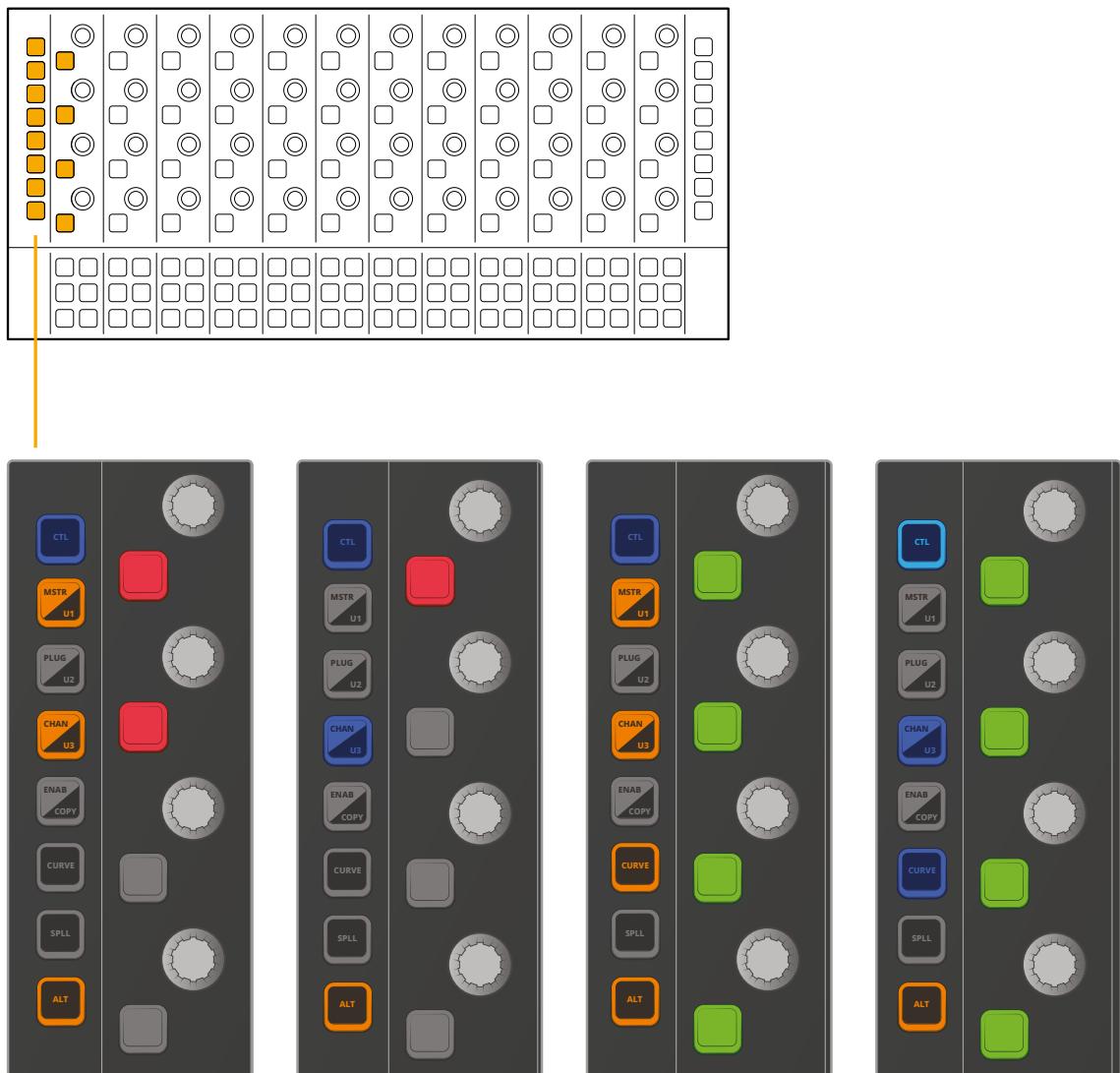
EXP/U3: This display button is for the in-line Expander/Gate controls. The unmodified Expander controls include Threshold, Attack, Hold, and Release. Press the ALT button to switch to the alternate Gate controls, including Ratio, Range, Hold, and Release. Hold Control and press EXP/U3 to access the Makeup gain controls. The secondary U3 feature is not implemented in this version of the software.



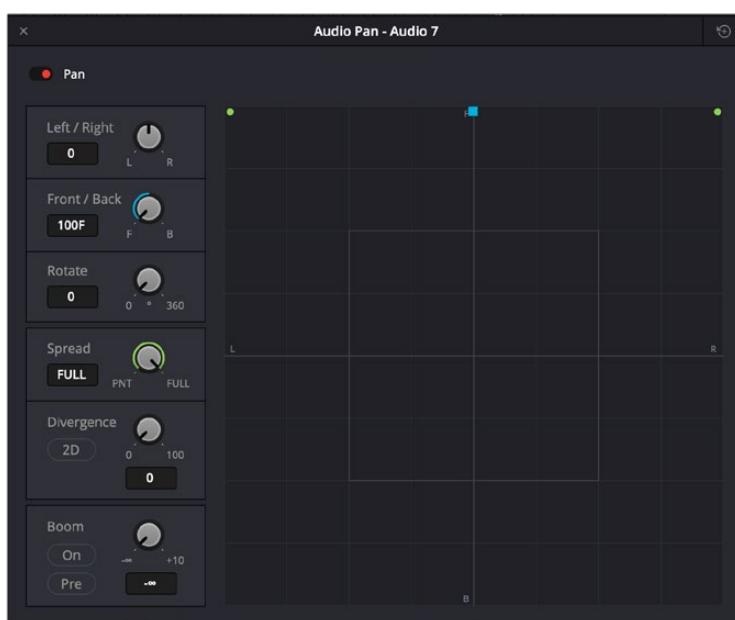
ALT: This is the alternate option modifier button and functions the same as the ALT/Option key on the computer keyboard. To access additional display button options or an alternate control on any channel control, use this button.

NOTE: Non-functioning Channel Display buttons, such as PLUG and ENAB, remain unlit. These buttons will be operational in future software updates.





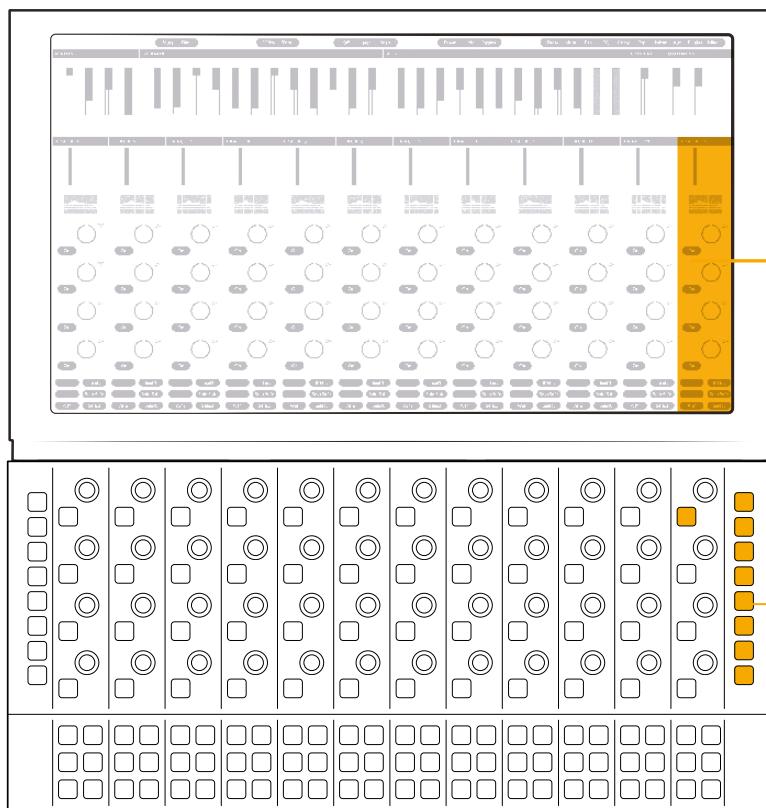
The left-side Channel Display buttons without modifiers and with Control button pressed to show secondary functions



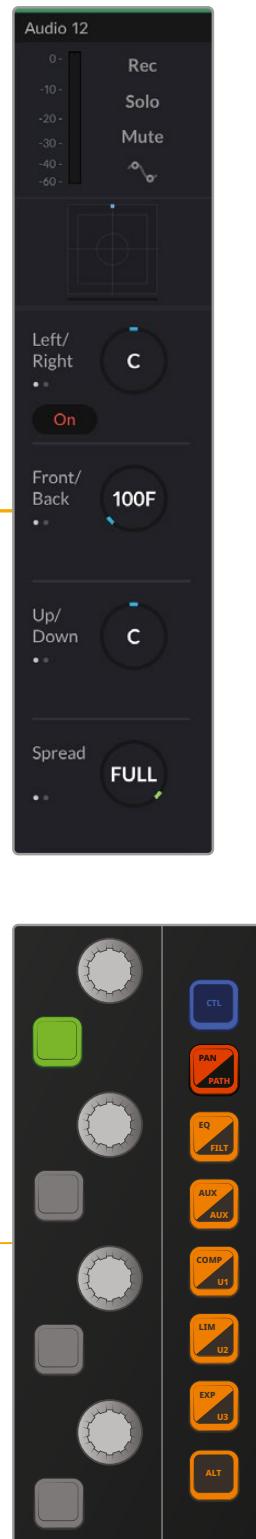
Pan Settings window in the Fairlight page interface, available in the Mixer



Path Settings window in the Fairlight page interface,
available in the Mixer, Input drop-down menu



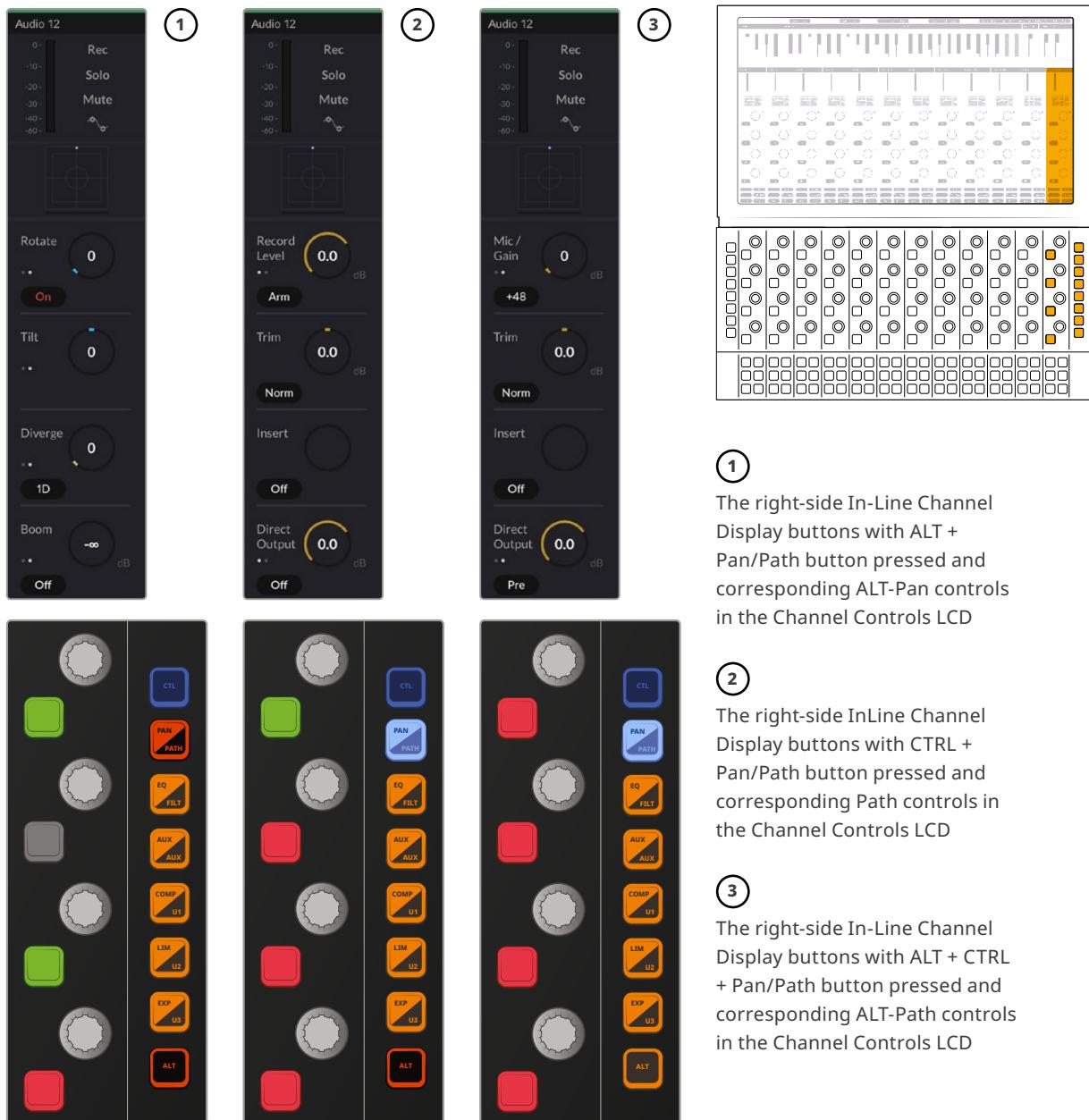
The right-side In-Line Channel Display buttons
with Pan/Path button pressed and corresponding
Pan controls in the Channel Control LCD



Channel Control Buttons and Channel Control Knobs

Spanning the middle of the Channel Control panel, you'll find 12 parallel groups of multi functional channel controls that align with the 12 faders on the Channel Fader panel. Within each of the 12 groups are four highly visible LED buttons and four touch-sensitive rotary knobs. If you touch knobs with Control held this will reset the value, and if you turn a knob with Shift held you will have fine control for the parameter.

Since the functions of these buttons and knobs change based on the channel display mode and selected channel and active parameters, these "soft" controls remain unlabeled, and are identified by the corresponding controls on an adjacent LCD monitor. Additionally, each channel control button is illuminated with bi-colored LEDs to make it easy to identify active buttons, parameters, and groups of controls at a glance.



1
The right-side In-Line Channel Display buttons with ALT + Pan/Path button pressed and corresponding ALT-Pan controls in the Channel Controls LCD

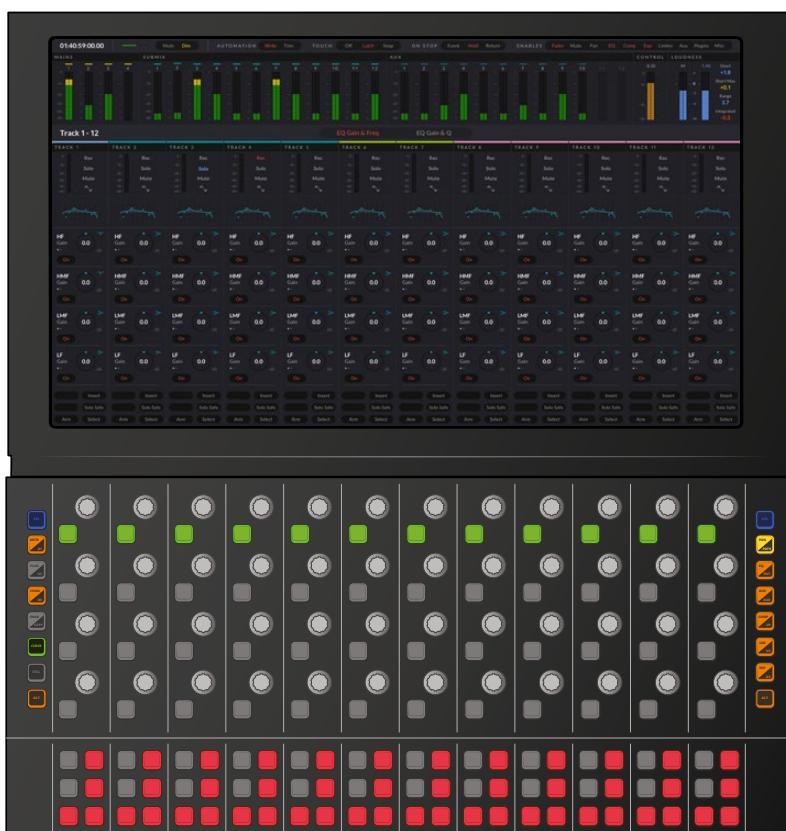
2
The right-side InLine Channel Display buttons with CTRL + Pan/Path button pressed and corresponding Path controls in the Channel Controls LCD

3
The right-side In-Line Channel Display buttons with ALT + CTRL + Pan/Path button pressed and corresponding ALT-Path controls in the Channel Controls LCD



In-line EQ display mode showing four red In/Out toggle switches and four dial controls on each channel

Channel Control buttons appear red or green when they are matched to a parameter on the Channel LCD monitor, and can be used as either toggles, On/Off, or In/Out switches for the adjacent parameter on-screen. Similar parameters will all have the same colored buttons while the Channel Controls are set to In-Line mode. However, in Channel or Master display mode, you'll see alternating rows or groups of red or green buttons to separate the different parameter groups as shown on the Channel display.



In-line Pan display mode showing one green In/Out toggle switch and four dial controls for each channel



Channel display mode showing alternating colored buttons to separate parameter groups and unlit buttons where there are no matching on-screen parameters

Additionally, Channel Control buttons brighten to show that they have been pressed, or remain unlit and therefore without color when there is no corresponding parameter with a switch in the current channel display mode.

In-Line Channel Extension Buttons

Along the bottom of the Channel Control panel are 12 groups of six In-Line Channel Control Extension buttons that match the buttons at the bottom of the Channel LCD Monitor. These dedicated LED buttons are toggle switches for channel-specific controls like Insert, Select, Solo Safe, and Arm. In-Line Channel Control Extension buttons are always available, regardless of the channel control mode, and correspond with similar functions in the Mixer or Timeline track headers on the Fairlight page.



In-Line Channel Extension buttons, clockwise from the top left:

Insert

Insert: Insert In enables routing of up to six VST plugins or one hardware effect per channel from Blackmagic Design's Fairlight audio interface hardware to outboard effects boxes and back again. This button can be toggled to enable/disable insert routing.

Safe

Safe: This button toggles on Solo Safe mode the same as Command-Option-clicking a Solo button on the Fairlight page. Tracks set to Solo Safe will always play, even if Solo is enabled for other tracks, and are easily identified by the blue-highlighted Solo button.

Rec

Rec: Arms the track for recording. This is the same as clicking the Arm button [R] on the corresponding Timeline track header or Mixer channel strip on the Fairlight page Timeline. Tracks must be patched to a microphone or another source input prior to arming.

Comp

Comp: Toggles on or off the channel compression.

Eq

Eq: Toggles on or off channel EQ.

Select

Select: This button selects a channel in the Fairlight Console Channel Control bay and is the same as clicking a Timeline track header or channel strip in the Mixer on the Fairlight page. You can select multiple tracks by pressing additional Channel Select buttons.



In-line Channel Extension buttons displayed at the bottom of the Channel LCD

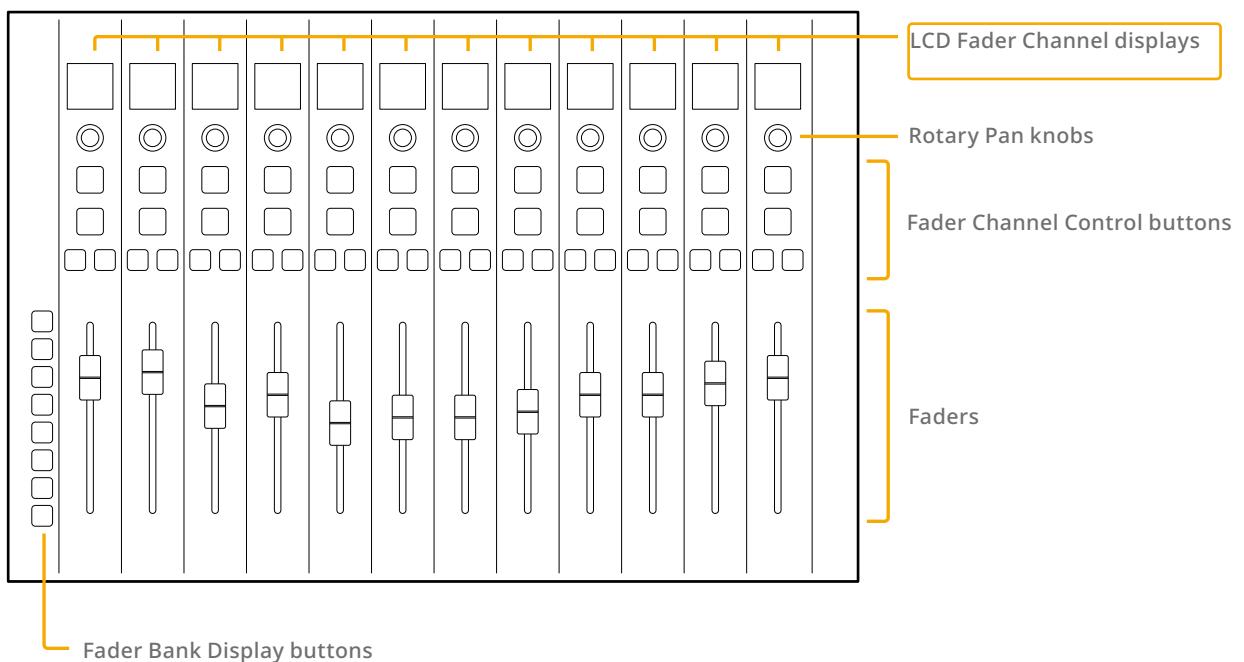


In-line Channel Extension buttons that represent the physical switches for the corresponding buttons on the LCD above

NOTE: You can only have a Channel Control panel for a bay that also has the Channel fader and Channel LCD monitor.

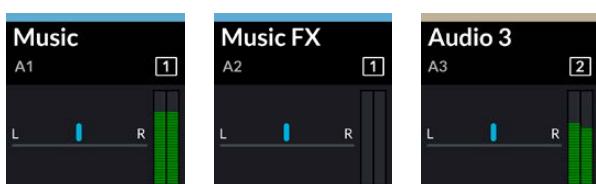
Fairlight Console Channel Fader

In addition to 12 Channel strips complete with designated control buttons, touch-sensitive faders, and pan knobs, the Fairlight Console Channel Fader panel includes an LCD display of channel information and eight display buttons for bank selection and mapping of up to 144 tracks and buses to the 12 faders. The Fairlight Console Channel Fader panel works in tandem with DaVinci Resolve and the Fairlight Channel Control module for completing professional audio post-production work flows using traditional mixing controls.



LCD Fader Channel Display

At the top of each channel strip you'll find a high-resolution color display that shows the track name, track color, level, and pan status. If the channel is part of a VCA group, the VCA group number appears above the meters. The information displayed for each track directly correlates with the Fairlight page Mixer and track headers.



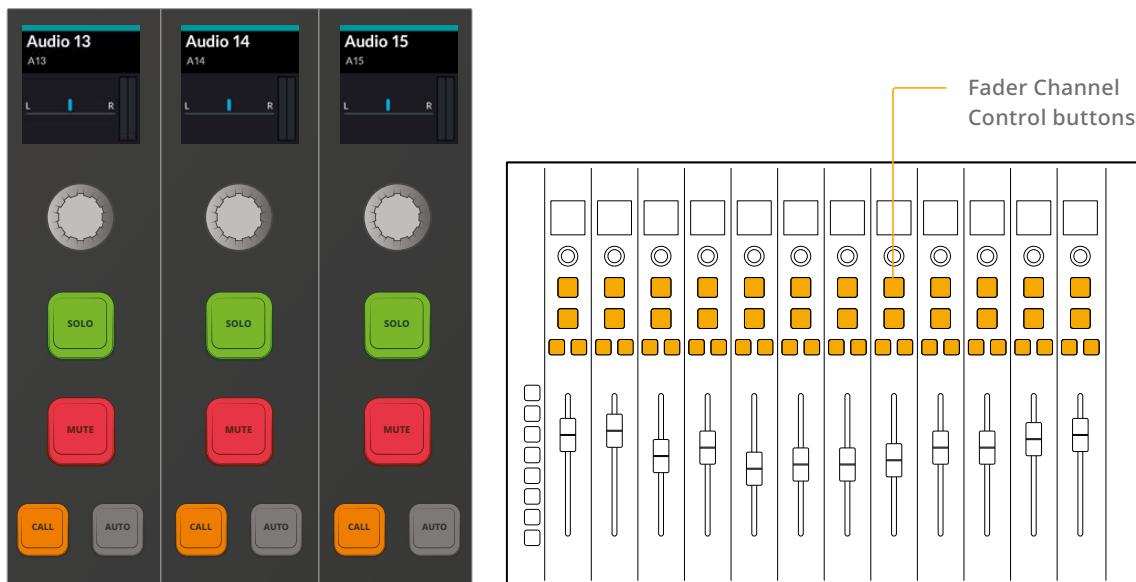
LCD Fader Channel Displays showing track name, number, color, pan status, level meters, and VCA group number.

Rotary Knob

Below the LCD display on each channel strip you'll find the touch-sensitive rotary knob designated as the panoramic potentiometer, or pan pot for short. This versatile dial control is assigned to Left-Right track panning by default, but may also be assigned to other parameters. Press the Control button while you press and release the 2/FDR button to use the rotary knob to control the last-used alternate parameter. This is especially usefully during automation or complex mixing procedures when you need to keep alternative parameters, like the Ratio for your Compressor, within easy reach of the faders. Like all touch-sensitive controls on the Fairlight console components, holding the Control button and touching the knob resets the parameter to the default value, and if you turn the knob with Shift held you'll have fine control.

Fader Channel Control Buttons

Each channel strip includes four dedicated control buttons for common channel-specific mixing functions. These brightly colored LED buttons are easy to read, logically placed above each fader, and can be used independently or in combination with other channels.



LCD Fader Channel Display, Fader Pan knobs, and Fader Channel control buttons.



SOLO: Use this button to select only this channel for playback. Multiple tracks can be soloed simultaneously to isolate selective tracks for playback while all non-soloed tracks will be muted. Pressing Solo while holding the Control button clears all soloed track buttons, and pressing Control again restores soloed tracks. Solo buttons on the Channel Fader panel correspond with the Solo buttons on the Fairlight page Mixer and track headers.



MUTE: This button turns the channel off and on for playback. Mute buttons on the Channel Fader panel correspond with the Mute buttons on the Fairlight page Mixer and track headers.



CALL: As the name suggests, the Channel Call button simply calls up a track's parameters in the Channel Control panel and LCD monitor while in Channel display mode. Additionally, the Channel Call button loads the channel into the built-in Audio Editor display, regardless of the channel control mode. Using the Channel Call button is a fast way to work with a channel's parameters, plus you can quickly press other Call buttons to change focus from track to track for detailed comparison and control. Channel Call on the Fader Panel is similar to the Select button at the bottom of the Channel Control panel; the difference is that the Select button also selects the track in the Fairlight page Timeline and Mixer, which enables additional editing options. Using the Call button while tracks are selected does not change the state of the selected tracks. Call buttons are also used for manually mapping banks of channel faders and spilling the member tracks of a master bus to nearby faders.

Call buttons tally on or off when pressed and change color based on the current task as follows:



Yellow Call buttons: The default color and indicate standard call functionality. When the Call buttons are yellow, only one Call button can be tallied on at a time.



Red Call buttons: Appear when fader mapping is engaged. Auto fader mapping, automatically maps faders to groups of 12 channels in sequential order. When in manual fader mapping mode, you can use the red Call buttons in the Fader panel, or the track selection keys showing in the picture keyboard to manually assign channels to the 12 faders for each fader bank.



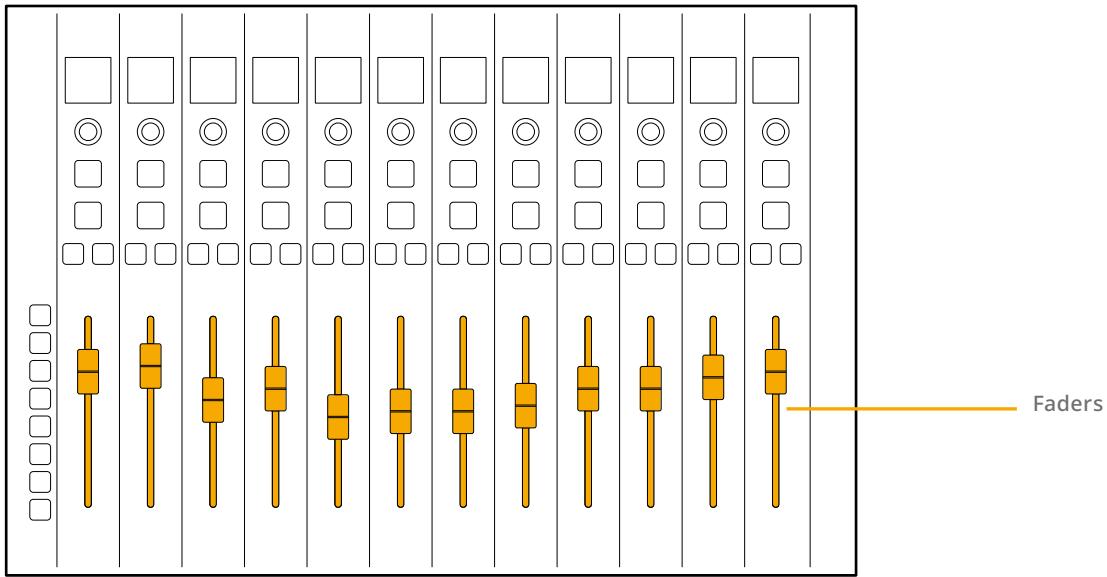
Green Call buttons: Indicate master buses and VCA groups in the current fader bank when using the Fader Spill function or isolated fader channels with locked positions when fader lock is active. If fader spill is active, pressing a green Call button spills the member channels of a bus or VCA group to the neighboring faders according to the Fader Spill option keys in the Setup mode layout on the Audio Editor. Call buttons for locked channels also turn green when engaging the fader lock feature that isolates any fader in the current fader bank by holding Control and the 6/LOCK Fader Control Display button and pressing a call button in the active bank.



AUTO: When automation controls are active, the AUTO button arms this channel for automation, preview, write, and trim. Like the Solo and Mute buttons, the Auto button on the Fader Panel corresponds with the Auto buttons on the Fairlight page Mixer and track headers. Automation buttons turn amber when automation is active.

Touch-Sensitive Faders

The bottom-half of the Fader Panel comprises 12 touch-sensitive motorized faders that offer precision gain controls for 12 signal paths. These faders correspond with faders on the Fairlight page Mixer, and can be mapped to 12 different fader banks using the Bank Display buttons located on the left side of the Fader Panel. Additionally, each 100mm fader can be assigned to control other channel parameters like send levels, channel trim, or record levels. Holding the Control button while touching a fader resets it to the default position, which is 0 dB.

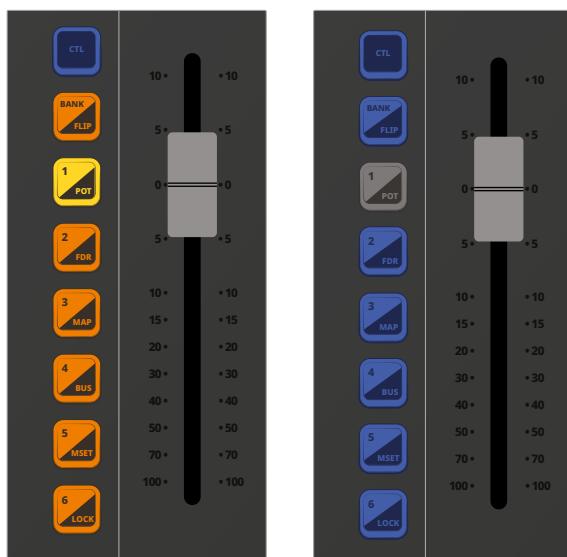


Fader Bank Display Buttons

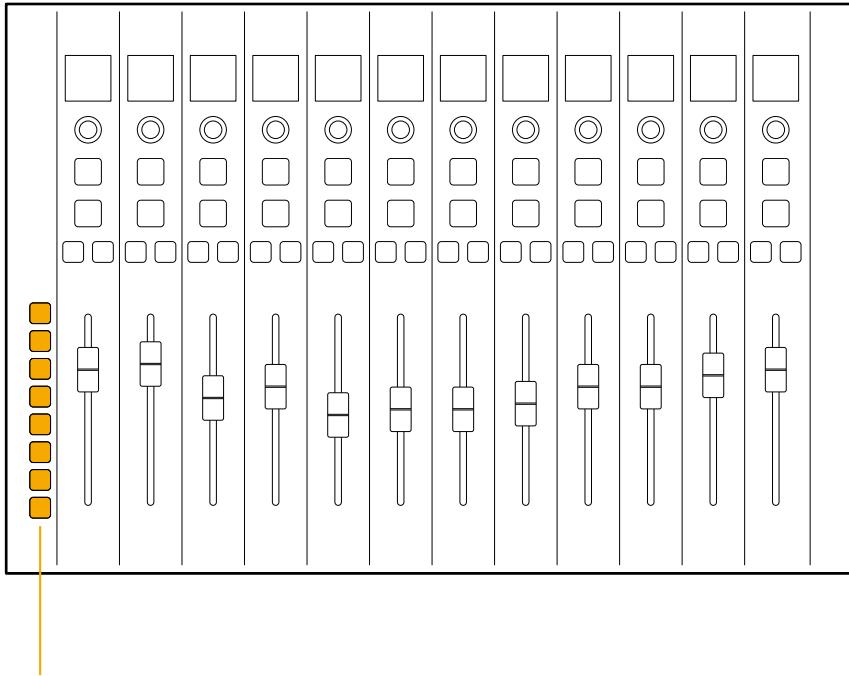
On the left side of the Channel Fader module are seven multicolored LED Bank Display buttons that are used to display, map, bus, set, and lock banks of channels to the 12 faders on the panel. The top two buttons are CTL (control) and BANK, which are modifier buttons used to access secondary button functions or additional fader banks for the subsequent numbered Fader Bank Display buttons.

Each of the six numbered Fader Bank Display buttons serve three functions, including load a primary fader bank, load an additional fader bank when pressed with the Bank modifier button, or perform a secondary function when the Control button is pressed. You can easily identify the blue Control button at the top of the Fader Bank Display buttons, while the other seven buttons are yellow in their normal state, and blue or purple when the secondary function is selected via the Control button.

With the Fader Bank Display buttons, you can map each of the 12 fader banks with 12 different faders to control a total of 144 tracks and buses to the 12 faders. The more Fairlight Console Channel Fader panels you have in your console, the more faders and tracks you can control. For example, the Fairlight Console 5.bay, is designed for high-end mixing and mastering with four Fader Panels to control up to 576 channels and busses at a time.



Fader Bank display buttons and touch-sensitive fader with Bank 1 selected, and with the secondary button functions available while the Control button is pressed.



Fader Bank Display buttons

Fader Bank Display Buttons from top to bottom:



CTL: This button selects secondary functions for the seven display buttons below and works the same as the Control key on the computer keyboard or the two identical Control display buttons on the Channel Control panel.



BANK/FLIP: You can use the Bank button to switch between the primary fader set for each of the numbered bank buttons labeled 1 to 6, or the additional fader set for the same numbered buttons to show banks 7 to 12. Without a modifier, the Bank button is yellow along with the numbered bank buttons below. When pressed, the yellow Bank button brightens to indicate that it is latched, and the active numbered bank button also brightens to indicate which additional fader set has been loaded. The secondary FLIP function, via the Control button, is used to spill the member tracks of a master bus or VCA group to the neighboring faders.



1/POT: The 1 button chooses Fader Set 1 without a modifier or Fader Set 7 when selected with the Bank button. The alternate POT function for this button has not been implemented.



2/FDR: The 2 button chooses Fader Set 2 without a modifier or Fader Set 8 when selected with the Bank button. Pressing and releasing the 2/FDR button while Control is pressed toggles between normal mode where the fader controls channel level, and secondary mode where the fader controls the last-used alternative parameter.



3/MAP: The 3 button chooses Fader Set 3 without a modifier or Fader Set 9 when selected with the Bank button. If Control is pressed, the 3/MAP button enters the secondary Fader Mapping tool for the current fader set on the Audio Editor.



4/BUS: The 4 button chooses Fader Set 4 without a modifier or Fader Set 10 when selected with the Bank button. Pressing Control along with the 4/BUS button toggles the secondary Bus mode on and off. When Bus mode is on, the system puts all used buses on as many faders as needed to accommodate all non-zero format buses. Pressing a Fader Bank display button from 1 to 6 returns control to the appropriate fader set.



5/MSET: The 5 button chooses Fader Set 5 without a modifier or Fader Set 11 when selected with the Bank button. The MSET function has not been implemented.



6/LOCK: The 6 button chooses Fader Set 6 without a modifier or Fader Set 12 when selected with the Bank button. Hold Control plus the 6/LOCK button to engage the lock setup. When active, you can press the call button for any track or bus fader in the current fader bank to "lock" that fader channel position on the Fader panel. While lock setup is active, call buttons tally green to indicate that channel has an isolated (locked) fader. You can lock/isolate up to 12 faders per fader panel. To unlock faders, hold Control-6/LOCK and unlatch the green call buttons.

NOTE: You can temporarily isolate faders from banking by actively touching and holding an individual fader or group of faders while changing fader banks. These "Sticky" faders will be cleared from isolation when the user changes fader banks without holding the fader.

Manually mapping faders to banks:

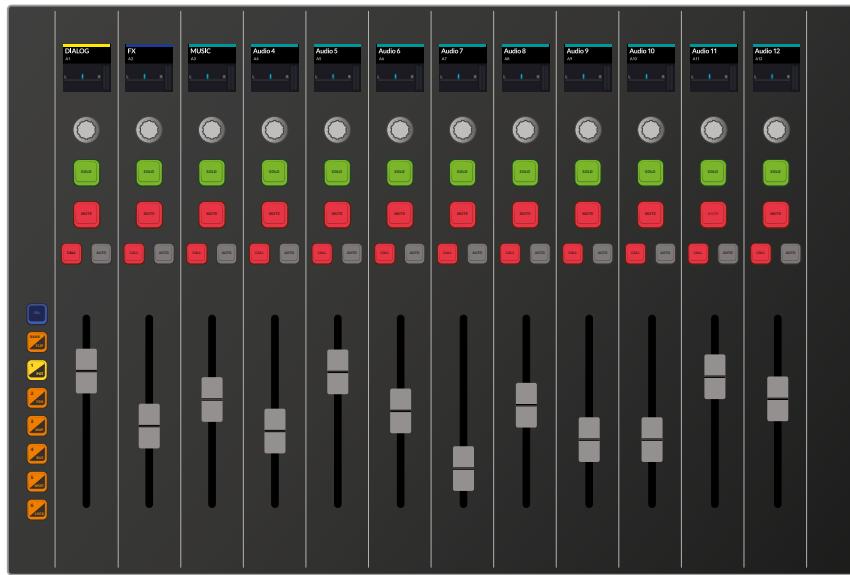
- 1 In the Fader Bank Display buttons, press CTRL and the 3/Map key to enter fader mapping mode. You'll know that you entered bank mapping mode because all of the Call buttons turn red. The bank mapping is set to Auto mode by default, which automatically maps channels to faders in sequential order in groups of 12 up to 144. When you enter channel mapping mode, the top four rows of picture keys in the Audio Editor change to track selection keys, while the bottom row of picture keys shows the following dedicated channel mapping function keys:
 - **Exit:** Exits the channel mapping mode.
 - **Delete:** Deletes the channel assigned to the active channel indicated by the tallied red Call button.
 - **Blank:** Leaves a blank fader bank beneath the active red Call button. This is useful for adding a space between groups of similar tracks such as dialogue, background sound effects, and music.
 - **Insert:** As the name suggests, this key inserts an unassigned fader in the position of the active red Call button.
- 2 In the bottom row of the picture keyboard, press the first key (MODE:Auto/MODE:Manual) to toggle the fader mapping to Manual mode.

- 3 Press the red Call button on the fader you would like to assign, then choose a channel from the track selection buttons on the adjacent picture keys in the Audio Editor. Once you assign a track or bus to a fader, the next fader to the right becomes active with a red tallied Call button so that you can continue assigning faders sequentially. This automatic call selection also applies to the Delete, Blank, and Insert manual mapping functions.
- 4 Select up to 12 track selection keys to assign to the current fader bank. Use the Bank display buttons to manually assign additional banks as needed.
- 5 When you are finished mapping tracks to faders, press the Exit button in the bottom row of picture keys. Once you exit manual mapping mode, the picture keyboard layout returns to the current mode.

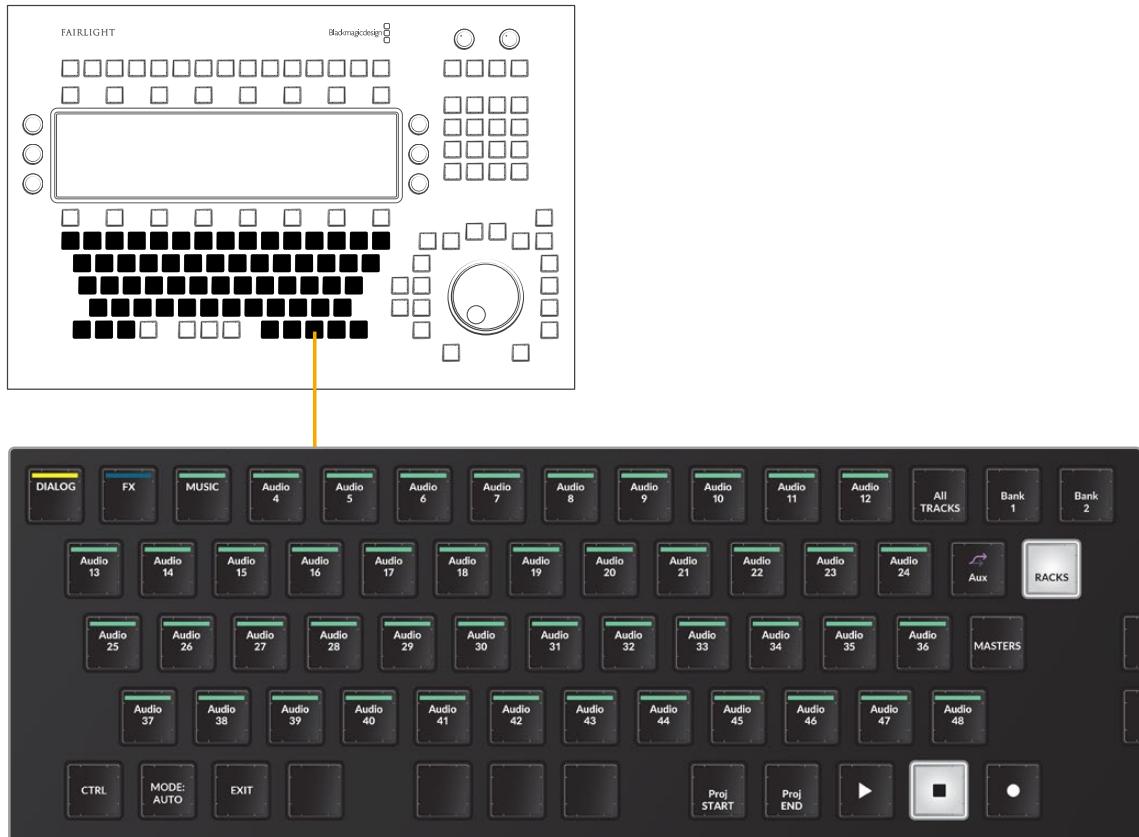
Example of Fader Bank 1 in Auto Mapping Mode



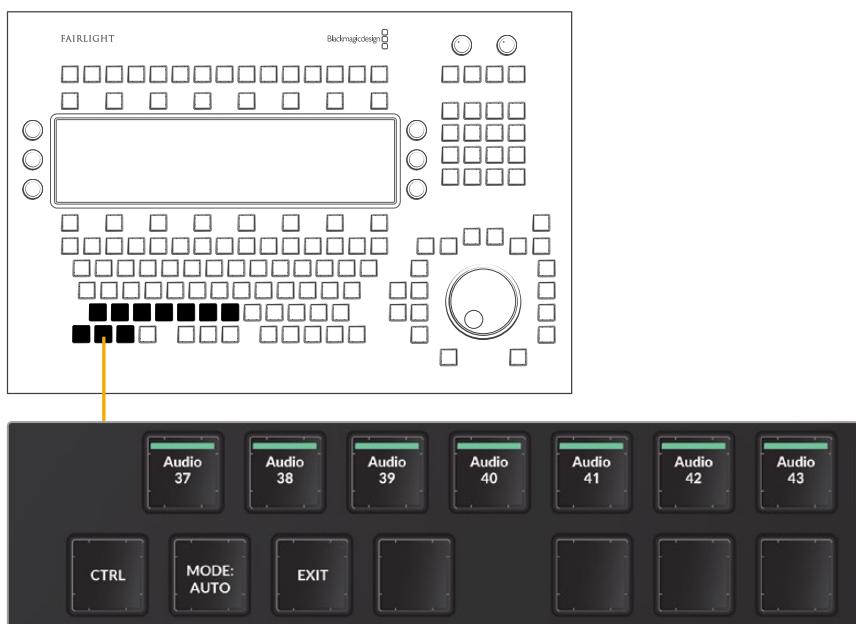
Fader Bank 1 in
Auto mapping mode
showing sequential
tracks 1-12



Fader Bank 1 in
Auto mapping mode
showing sequential
tracks 1-12 with
red Call buttons
to indicate bank
mapping mode is
engaged and the
first fader channel's
Call button is active

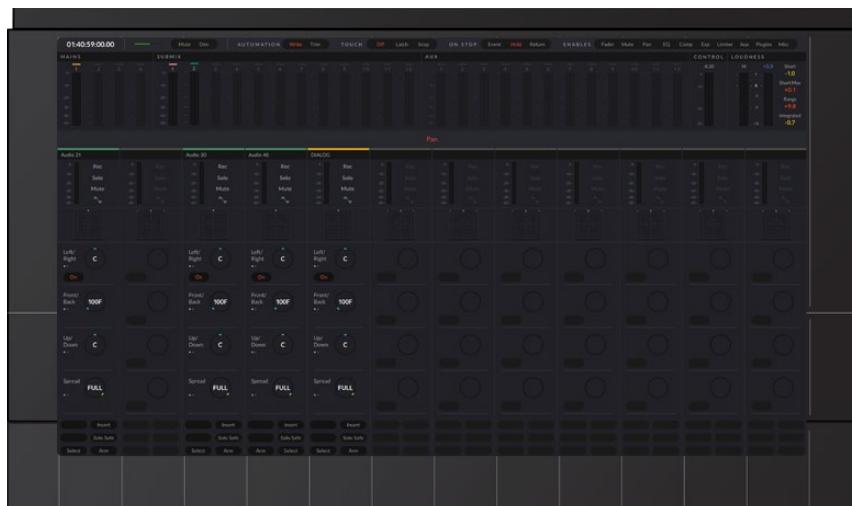


Picture keyboard in Auto Fader Bank mapping mode



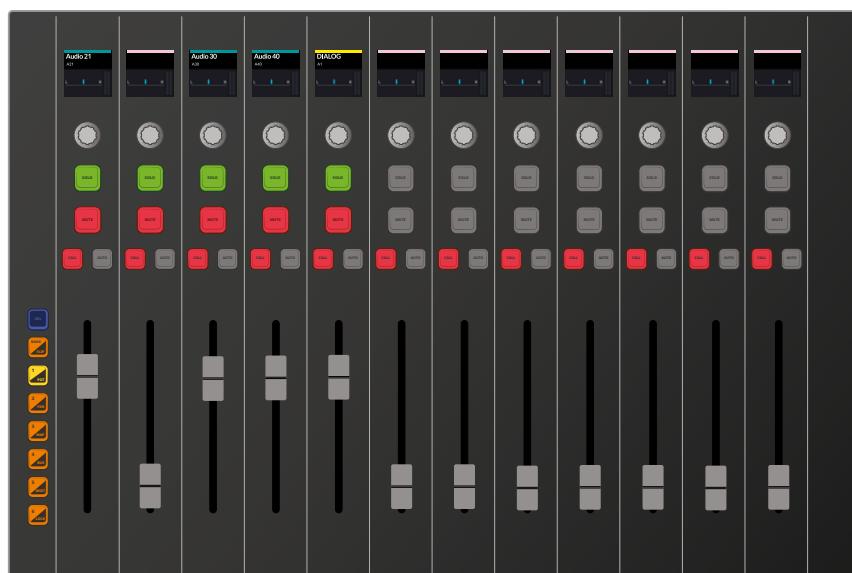
Auto Fader Bank mapping action keys in the lower left corner of the picture keyboard

Example of Fader Bank 1 in Manual Mapping Mode



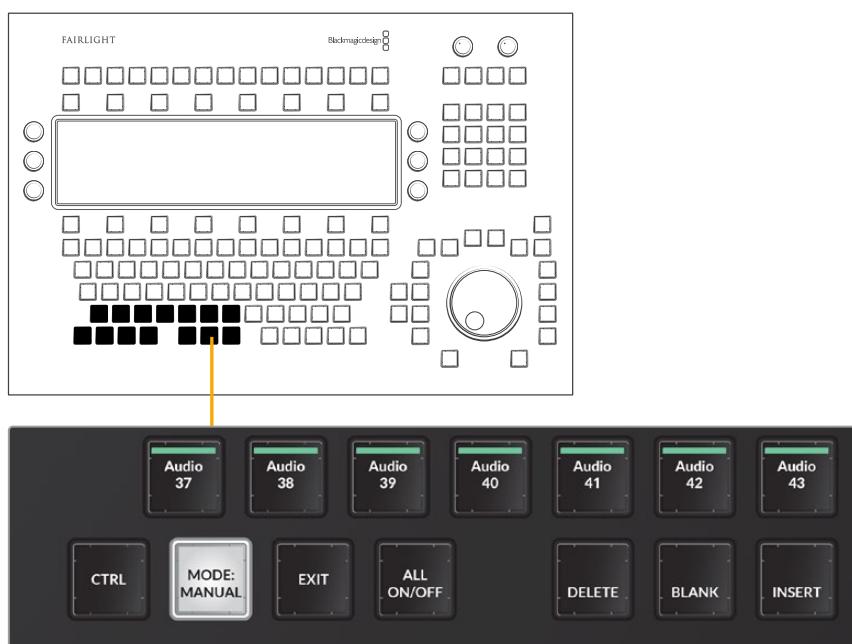
Fader Bank 1 in Manual mapping mode showing the custom mapping:

A21, blank, A30, A40, and DIALOG to the first five tracks



Fader Bank 1 in Manual mapping mode showing custom mapping:

A21, blank, A30, A40, and DIALOG mapped to the first five faders; red Call buttons indicate bank mapping is engaged, with the first fader's Call button active



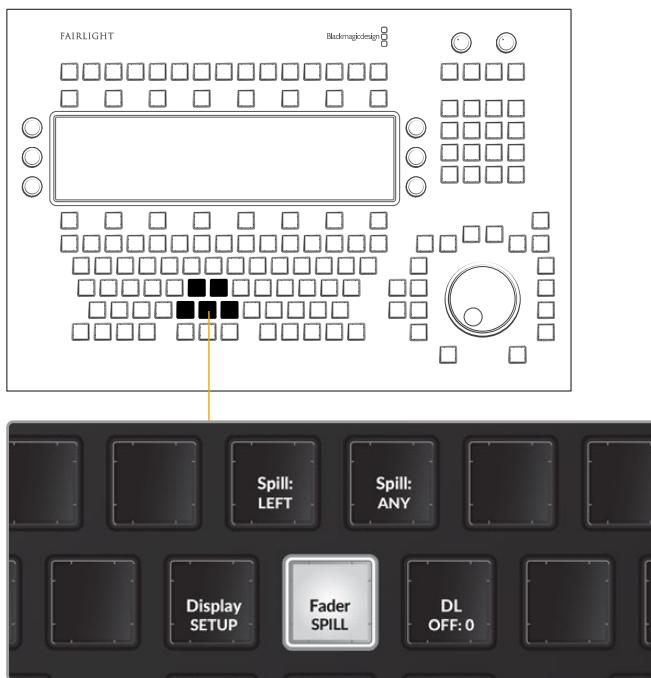
Manual Fader Bank mapping action keys in the bottom row of the picture keyboard

Spilling bus member tracks to nearby faders:

- 1 In the Fader Bank Display buttons, select a fader bank that contains at least one bus. Buses include main, submix, Aux buses, and VCA groups.
- 2 Momentarily press and hold the Bank/Flip key to change the yellow Call buttons to green Call buttons on the bus fader channels.
- 3 Press the green Call button for the bus fader you wish to spill to the neighboring faders. Once spilled, the Bank/Flip button turns purple to indicate that the current fader bank is displaying spilled faders for the active bus.
- 4 To modify the fader spill direction or type of fader that is temporarily remapped, use the Fader Spill options keys available in the Setup mode picture key toolset.

Fader Spill option keys include:

- **Fader Spill:** Use this menu key to reveal two menu Spill option keys that determine the type of fader channel and direction in which member tracks are temporarily mapped to the adjoining faders on the Fairlight Channel Fader panel.
- **Spill Left/Spill Right:** This menu options key toggles between Spill:Left and Spill:Right, which in turn dictates whether the member tracks of a bus are assigned to neighboring faders to the left or right of a bus when Spill is engaged in the Channel Fader panel.
- **Spill Any/Spill Tracks:** When in the default (unlatched) state the Spill:Any menu option allows member tracks of a bus to be spilled to the nearest faders to the left or right, including faders assigned to Master buses and VCA groups. When latched to the Spill:Tracks option, member tracks of a bus spill either left or right starting with the nearest track fader in the designated direction. This option is useful if you need to maintain fader control of your buses while you spill their constituent tracks to the nearest track faders.



Fader Spill and Fader Spill option keys available in Setup Mode toolset on the Audio Editor Picture keys



Fader Bank 5 with Main 1, Sub 1, and Sub 2 buses assigned to the last three faders; yellow Call buttons indicate standard channel bank display



Bank/Flip Bank Display Button momentarily held to display the buses within the active track; these buses (in the right 3 channels) can be easily identified by the green Call buttons



Channel LCD displays Sub 2 bus, including A8, A10, A11, and A12, spilled on the nearest tracks to the left of the Sub 2 bus



Purple Bank/Flip button indicates there is a spilled bus in the current bank. In this case, Bank 5 is showing, with Sub 2 spilled to the left of the other buses, and includes A8, A10, A11, and A12 as the member tracks that comprise Sub 2.

NOTE: While a bus fader is spilled, you may still use the standard bank display buttons to display any of the other banks normally.

To un-spill a bus fader:

- 1 In the Fader Bank Display buttons, press the Bank button that contains the spilled bus.
- 2 Momentarily hold the Bank/Flip button to reveal green Call buttons for the bus faders. The spilled fader's green Call button will be tallied on.
- 3 Press the active green Call button to un-spill the fader.

NOTE: You can only spill bus member tracks to faders within the same fader bank. Use the Fader Spill option keys in the Audio Editor Setup mode toolset to spill either left or right within the current bank of 12 faders. Additionally, if you press the Bank/Flip button on a bank without any bus faders, you will not see any green Call buttons or subsequent bus faders to spill.



Sub 2 bus with active (tallied) green Call button, which indicates it has been spilled to neighboring faders

Fairlight LCD Monitors

Standard Fairlight consoles include one high-resolution 1920 x 1080 Fairlight LCD Monitor for each bay. These custom designed LCD monitors align perfectly along the top of the console, forming an embedded eye-level monitor bridge that spans the width of the console.



Fairlight LCD Monitor

Each Fairlight LCD Monitor is paired with either Channel Control modules as a dedicated channel control display, or the Audio Editing module as a dedicated DaVinci Resolve GUI edit screen. Additionally, the switchable HDMI and SDI inputs on the back of each screen allow flexible display of plugins and reference video.



Fairlight Console 3-bay with three Fairlight LCD monitors forming a display bridge across the top of the console

Fairlight Console Configurations

The Fairlight console can be purchased with all the standard panels as a bundle, or customized to meet specialized production requirements. With the Fairlight console's unique modular design, you always get the flexibility to place the Audio Editor, Infill module, and Channel Component sets, in whichever order works best for you.

Each bundled console includes a console chassis ranging in size from 2-bay to 5-bay, an LCD Monitor component for each bay, one Fairlight Audio Editor, and a set of Fairlight Channel bay components for each additional bay. For custom configurations, you choose the chassis size, and then purchase the console components individually.

Before purchasing a console, it is important to consider the size of your workspace as well as your current and future audio post-production needs. For example, if you have a mid-sized mixing stage and are primarily working on short-form projects like commercials and trailers, a standard Fairlight Console 3-bay may work well. However, if you have the room, a customized Fairlight Console 4-bay chassis may work better in the long run because you'll also have room to grow in the future for larger feature-length productions. Plus, empty console bays can be filled with custom machined Fairlight Console Blanks that add valuable flat surface space for assistant audio editors and mixers.



Standard Fairlight Console 3-bay

Additionally, you can add a Fairlight Console LCD Monitor in the 4th bay to display video playback or plugins, and even add a Fairlight Channel Rack Kit to the channel section to mount standard 19-inch equipment such as the Fairlight Audio Interface or Blackmagic Design Smart View duo to your bay.

NOTE: For more information about the Fairlight Console Chassis, bundles, and hardware options, go to the Fairlight Console page on the Blackmagic Design website. <https://www.blackmagicdesign.com/products/davinciresolve/>

Additional Fairlight Hardware

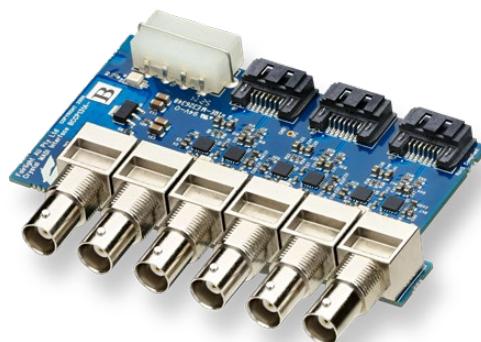
To effectively connect to and operate a Fairlight console with DaVinci Resolve Studio, you'll also need a supported audio interface and PCIe audio card. If you are using a Mac or PC without a PCIe slot, you'll also need an expansion box to connect the PCIe card to your computer, and a supported audio interface. You can use 3rd-party devices or purchase the Fairlight products designed specifically for the Fairlight consoles, including, the Fairlight PCIe Audio Accelerator, Fairlight Audio Interface and the Fairlight PCIe MADI Upgrade.



Fairlight Audio Interface



Fairlight PCIe Audio Accelerator



Fairlight PCIe MADI Upgrade



Fairlight HDMI Monitor Interface

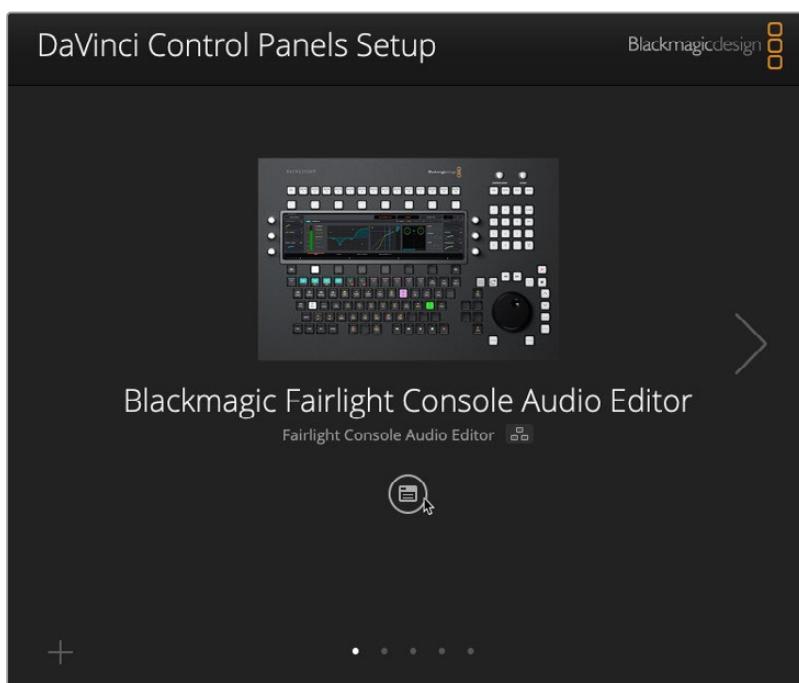
NOTE: For more information about the Fairlight PCIe Audio Accelerator, Fairlight Audio Interface and the Fairlight PCIe MADI Upgrade, go to the Fairlight Console page on the Blackmagic Design website. www.blackmagicdesign.com/products/davinciresolve/

Performing Firmware Updates

Some DaVinci Resolve updates, such as 17.2.1, require firmware updates to implement the improvements to the Fairlight panels. Users can update all of their Fairlight Console panels in a matter of minutes via the DaVinci Control Panels Setup utility.

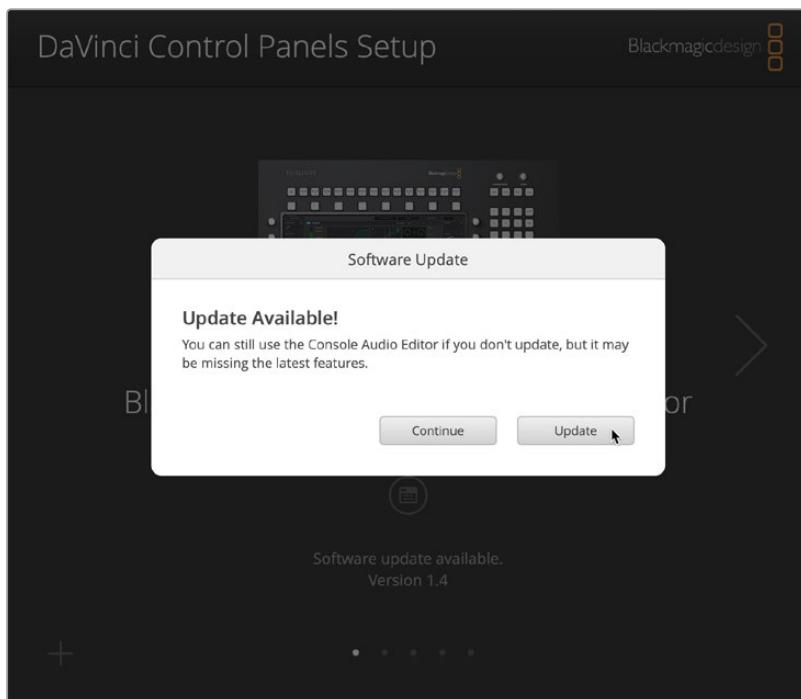
Updating firmware on a 2-bay modular console:

- 1 Quit DaVinci Resolve, if necessary.
- 2 Open the DaVinci Control Panels Setup utility.
- 3 In the DaVinci Control Panels Setup Utility, select a panel.
- 4 Click the circled icon below the panel name.



NOTE: If you are working with the Fairlight Desktop Console or Desktop Fairlight Audio Editor there will only be one panel from which to choose.

- 5** If there is a firmware update available, you will see an update dialog.



Firmware Update Available dialog

- 6** Click Update to install the updated firmware on that panel.
- 7** Once the update is complete, click Done.
- 8** Repeat this firmware update process for each control panel connected to your system.
- 9** When all of your panels are updated, close the DaVinci Control Panels Setup.
- 10** Open DaVinci Resolve.

NOTE: To use DaVinci Control Panels Setup utility for the first time, you need to perform a custom install of the latest version of DaVinci Resolve, and in the custom settings, check the option to install the DaVinci Control Panels utility. Once installed, you can select any panel connected to your system and perform network setup and firmware updates.