



PART 12

Fairlight

Chapter 149

Using the Fairlight Page

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.

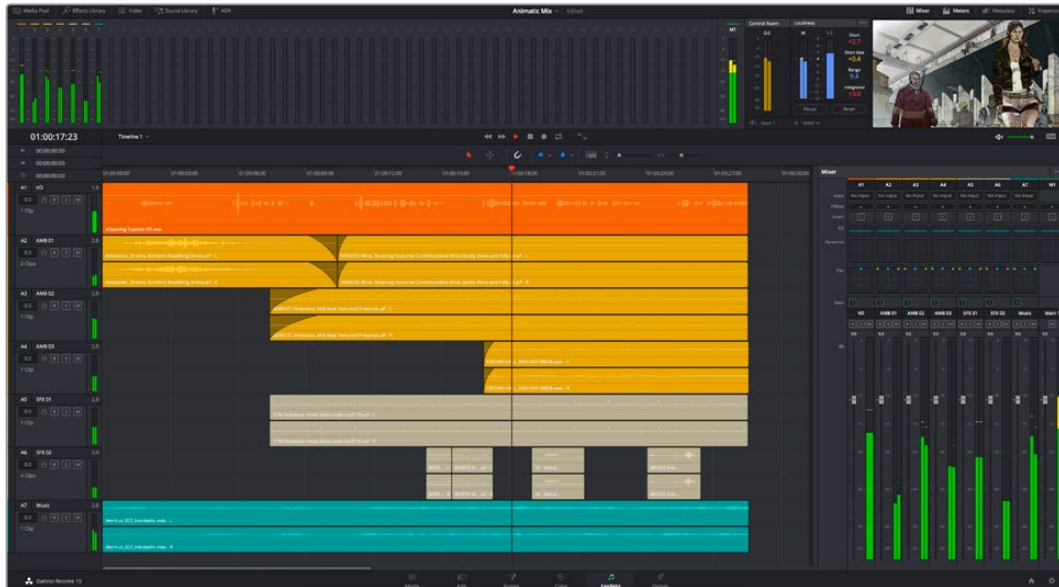
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The Fairlight Page User Interface

In single monitor mode, the Fairlight page is an optimized look at the audio tracks of your project, with an expanded mixer and custom monitoring controls that make it easy to evaluate and adjust the levels of your program in order to create a smooth and harmonious mix.



Audio 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:

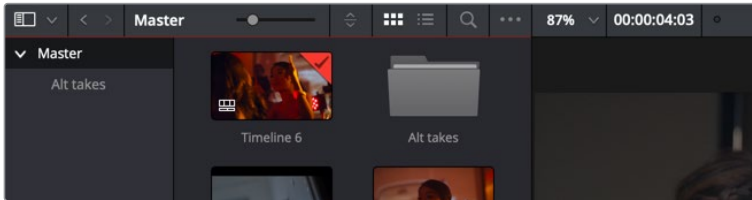


The Interface toolbar

- **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 VST and other audio effects to clips in the Timeline.
- **Index:** Shows and hides the Index and its Tracks and Markers panels. The 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, so that it's easy to browse through your markers all at once to quickly find the information you need.
- **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 a harmonious mix.
- **Monitoring:** Shows and hides the Monitoring audio meters and viewer at the top of the Fairlight page.
- **Inspector:** Show and hides the Inspector, from which you can edit different clip attributes.
- **Metadata:** Shows and hides the clip metadata inspector.

Showing Which Panel Has Focus

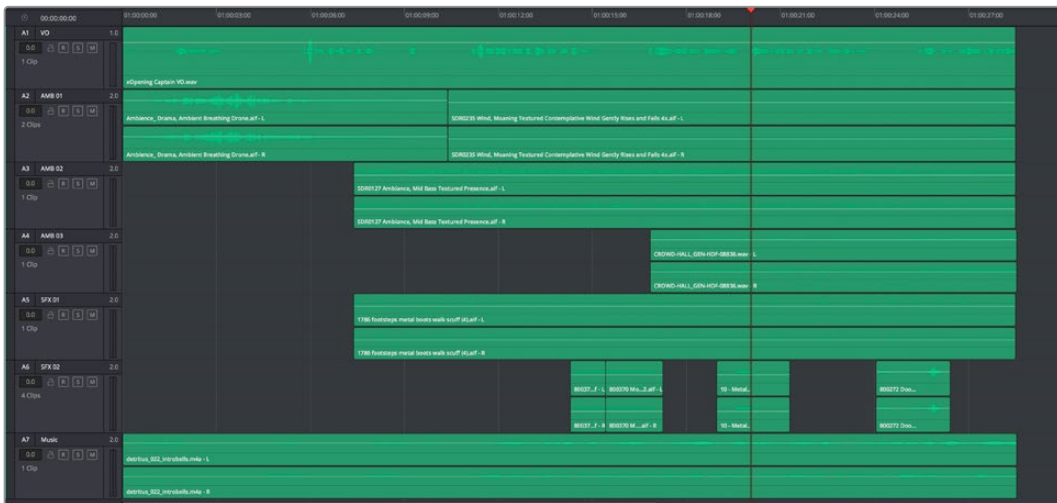
Whenever you click somewhere on the DaVinci Resolve interface using the pointer, or use a keyboard shortcut to “select” a particular panel (such as in the Edit page), you give that panel of the user interface “focus.” A panel with focus will capture specific keyboard shortcuts to do something within that panel, as opposed to doing something elsewhere in the interface. A highlight appears at the top edge to show you which panel has focus so that you can keep track of which part of the current page is taking precedence, and you can switch focus as necessary to do what you need to do.



The focus indicator shown at the top edge of the Media Pool, shown next to a Viewer that doesn't have focus

The Audio Timeline

The heart of the Fairlight page, the Audio Timeline presents the audio channels and tracks of the currently selected Timeline differently than the Edit page does, in a one-channel-per-track format that's optimized for audio mixing and sweetening. The Audio page Timeline cannot be closed.

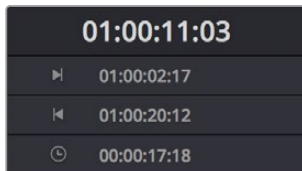


The Audio page timeline

Controls in the Audio Timeline

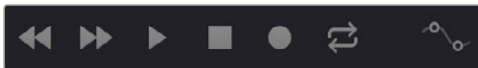
The Audio Timeline has the following controls.

- **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.



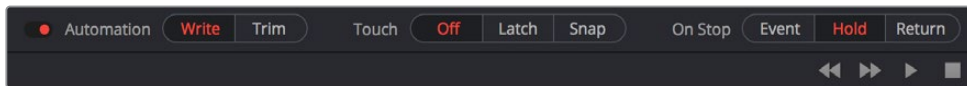
Timecode fields and Range buttons in the Fairlight page

- **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, and Loop.



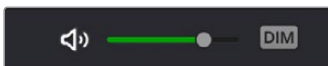
Fairlight page transport controls

- **Automation toolbar:** Clicking this button opens a secondary toolbar with all the controls you need to configure the recording of mixer automation.



Fairlight page automation toolbar

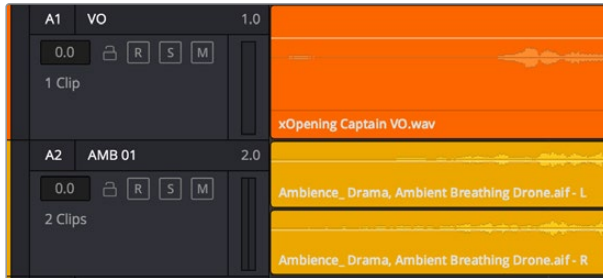
- **Monitoring controls:** At the far right of the transport controls, a set of three monitoring controls let you quickly control the output volume of your mix. An audio Enable/Disable button lets you mute audio playback, while a slider lets you change the volume, and a DIM button lets you temporarily duck 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. Dim and Mute commands are also available from the Fairlight menu.



The monitoring controls

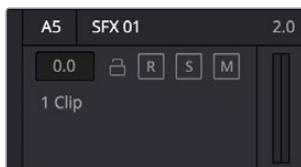
- **Timeline Ruler:** The Timeline Ruler shows the program's timecode. The playhead indicates the current frame and sample where you're working in the Timeline, and the playhead has a handle that appears within the Timeline Ruler. Dragging within the Timeline Ruler moves the playhead. When you add markers 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 largest timecode display at the upper left-hand display 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, or Adaptive (1–24 channels). All audio clips that have been edited into the Timeline appear within each track, with the recorded channels within each clip 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 has a single lane for the mono audio within it, and track A2 has two lanes to accommodate stereo audio

- **Track header:** The track header contains different controls for selecting, locking/unlocking, and soloing/muting tracks. Each track header also lists how many clips appear on that track. The track header contains the following five controls, from left to right:



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 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 Command-clicking in the track header of multiple tracks to select them, and then right-clicking one of the selected track headers and choosing 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, and adaptive.
- **Fader value:** A field displays the current fader setting at the position of the playhead, in dB.
- **Lock Track button:** Light gray when turned on, dark gray when turned off. When a track is locked, clips can’t be replaced, moved, or otherwise edited, although clips on locked tracks can be graded.

- **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 neither monitored nor output. This affects rendering, so if one or more tracks are muted, they won't be output or rendered.
 - **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 you scroll horizontally, you also move the playhead. You may also scroll vertically using the scroll wheel (or other scroll control) of your mouse or other pointing device. You may 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, and Extra Large. 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.



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 unity. 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:

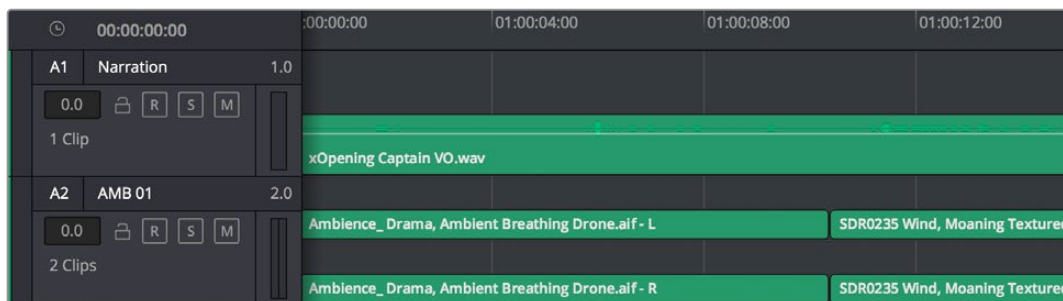
Hold down Command-Option, and roll the scroll wheel or control up or down to resize all waveforms in all tracks.

You can also use commands that are accessed by right-clicking any track on the Timeline and choosing a command from the Track Waveform Zoom submenu of the contextual menu. You can also select multiple tracks and resize their waveforms all at once. There are three sets of commands:

- Reset Zoom All/Selected Tracks
- Zoom In All/Selected Tracks
- Zoom Out All/Selected Tracks

Track 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.



Turning on track layers opens up space to edit more audio into each track

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 enabled for audio tracks on the Edit page as well.

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.

To switch timelines, do one of the following:

- In the Edit 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

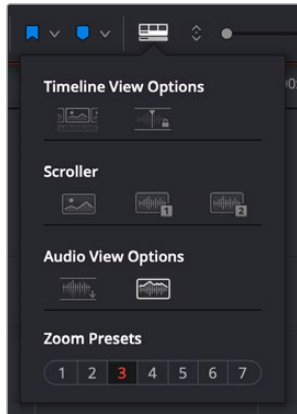
The Toolbar has buttons that let you choose modes of functionality and other buttons that let you execute commands such as placing markers and flags.



Buttons in the Fairlight Page toolbar

- **Normal Edit 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.
- **Region Selection mode:** An editing mode in which you can select partial regions of one or more clips for partial editing. While this mode can be used with the pointer, 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.
- **Edit Selection mode:** An editing mode that's optimized for pointer-based editing in the GUI. Multiple selection and editing functions may be accessed by clicking or dragging on different regions of audio clips in the Timeline. Additionally, an important aspect of working in Edit Selection mode is that this is the only mode that lets you edit the Timeline during playback, which you can't do in Selection and Range modes.
- **Add Cut:** 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. A drop-down menu lets you choose how to use snapping to quantize clip position, to Bars, Beats, Divisions, Tics, or via Smart snapping.
- **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.
- **Timeline View Options drop-down menu:** Contains a variety of controls with which to customize the display of clips in the Timeline:
 - **Timeline View Options:** The left button lets you display or hide the video tracks in the current timeline, for use as a reference while you work. The right 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.
 - **Scroller:** Three buttons let you turn on one video and two audio scrollers, which act as scroll bars and zoomed-in visual references for the video and audio media immediately surrounding the playhead.

- **Audio View Options:** The left 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. The right 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.
- **Zoom Presets:** These buttons let you choose from one of 7 zoom levels.

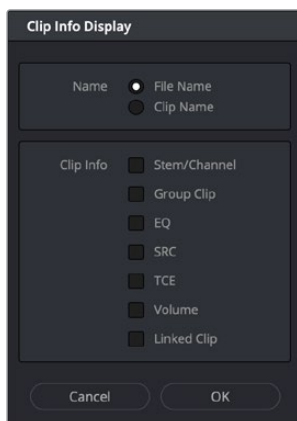


Selecting the Audio Timeline View options

- **Zoom Height slider:** Lets you change the height of all tracks and clips in the Timeline at once. You can also zoom the height of timeline tracks by pressing the Command key while using the scroll control of your pointer, if it has such a control. The scroll wheel of a mouse is most common.
- **Zoom Width slider:** Lets you shrink or expand the width of the contents of the Timeline. You can also control the width of the contents of the Timeline using the scroll control of your pointer, if it has such a control. The scroll wheel of a mouse is most common.

Customizing Clip Display in the Timeline

Choose Fairlight > View Clip Info Display to open a dialog with which you can customize what information is shown at the bottom of each clip in the Timeline. This dialog has options for viewing the clip name versus the display name, and for choosing from among a variety of metadata that you might want available as you work.



Selecting the audio clip view options

Customizing the Timeline's Display

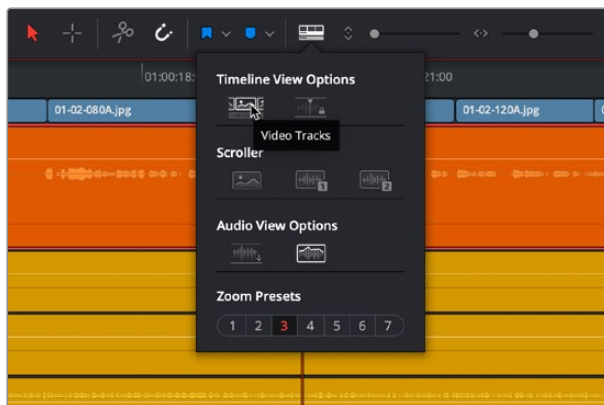
There are a variety of ways you can customize the Timeline to better see what you're working on.

Fixed Playhead Mode

Turning on the Fixed Playhead mode in the Timeline View Options drop-down menu, or choosing View > Show Fixed Playhead, puts the Fairlight timeline into an audio-centric mode where 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.

Visible Video Tracks

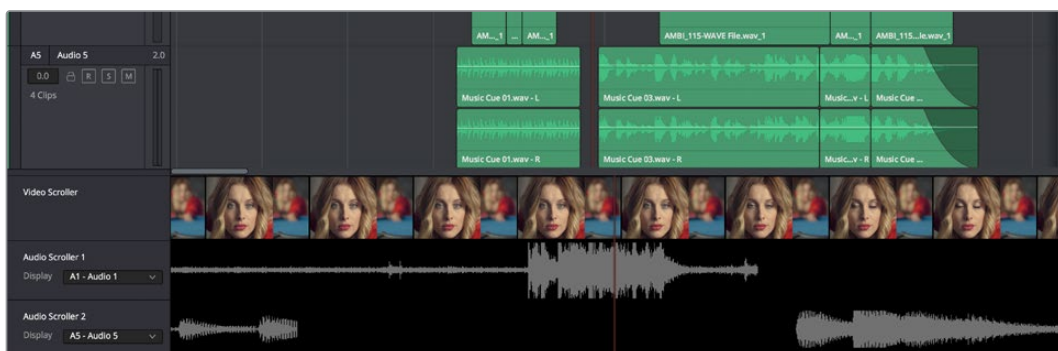
A checkbox in the Timeline View Options drop-down menu of the toolbar lets you display small versions of the video tracks in the Fairlight timeline, for reference. These video tracks are uneditable; they're simply there so you can see which audio clips correspond to which video items, and so they can be used as snapping targets for positioning audio.



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. You choose which track populates an Audio Scroller via a drop-down menu in the Timeline header.



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

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.

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. At Medium and High, you get a progressively abbreviated film strip that lets you zoom 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, set levels and record automation, pan stereo and surround 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. 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 Main and Sub (submix) you've created to bus the mixed audio tracks to whatever set of output tracks you want to expose.



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

- **Track color:** Each track can be differently color-coded, 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, patch buses, and configure the input settings of audio signals routed through Blackmagic hardware interfaces.
- **Effects:** 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 custom controls, and deleting that effect.
- **Insert:** Enables the routing of effects from Blackmagic audio interface hardware to outboard effects boxes and back again. This button can be toggled to enable/disable such routing.
- **EQ:** Double-clicking exposes a four-band parametric equalizer with additional Hi and Lo 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. 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.



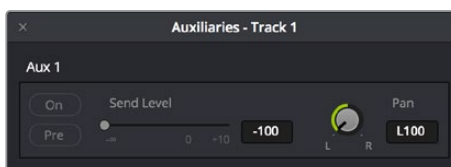
The channel strip EQ window

- **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

- **Aux:** Lets you route that track's channels through an Aux send bus. Each Aux bar corresponds to a specific Aux bus that you created. Double-clicking any of these bars opens up the Auxiliaries window, with which you can enable or disable auxiliaries, set each one to be routed Pre the channel strip or Post the channel strip (the default), and set the Send level and Pan value.



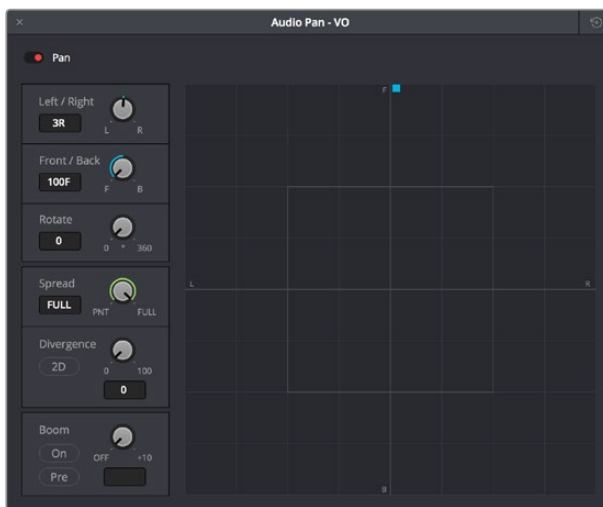
The Auxiliaries control window

Whatever level you set an Aux bus will be shown in the bar that represents that Aux bus in the Mixer's channel strip.



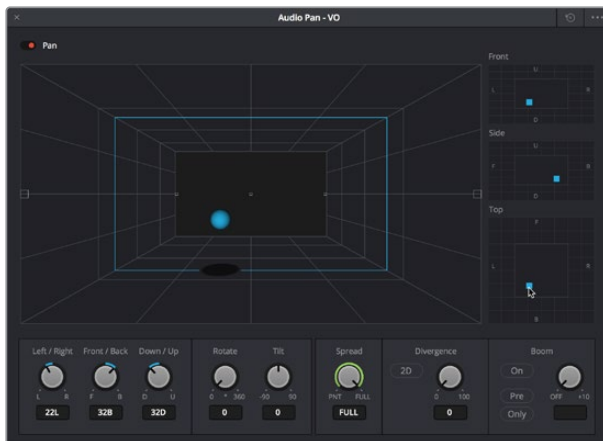
The Auxiliaries levels shown in the channel strip of the Mixer

- **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 Auro 3D and NHK 22.2 (more information about specific support for these and other formats will come later).



The 3D Pan window

- **Main:** These buttons let you assign a track or Sub's channels to one or more of the main buses.
- **Submix:** These buttons let you assign that track's channels to one or more submix buses.
- **Track name:** This mirrors the track name found in the header controls of the Timeline. If you customize a track's name in the Timeline, that name appears here.
- **dB:** Shows you the volume, in decibels, that track is currently set to.
- **Arm, Solo, and Mute buttons:** Identical to the controls found in the track header controls of each timeline audio track. Arm lets you enable a track to be recorded onto. 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.
- **Fader:** Each track's vertical faders let you adjust the volume of that track, and perform automation recording.

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 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. 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, in which all Mains, Subs, and Aux buses appear, separated by type, and each displaying the number of meters that corresponds to that track's audio mapping. 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. These meters let you keep track of the integrated loudness of the overall mix, which is the standard to which all contemporary mixing specifications refer when describing the deliverables you're expected to provide to the client.

Viewer

A small viewer to the left of the Monitoring panel shows the frame of video at the position of the playhead. The only available control is a button in the lower right-hand corner that lets you expand the Viewer into its own floating window.

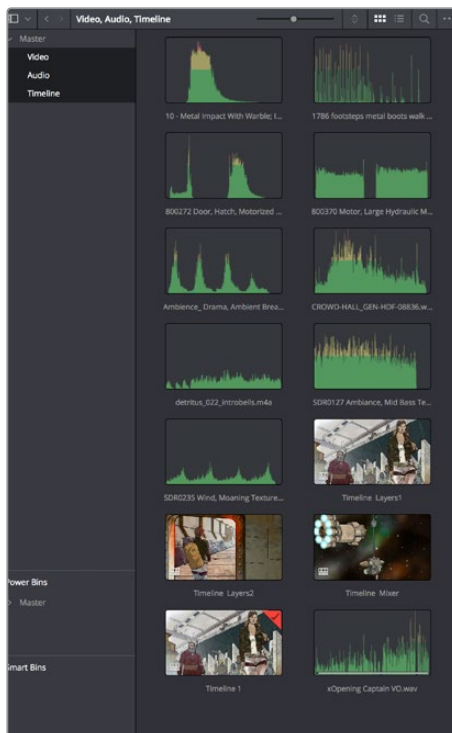


The Monitoring panel

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 are stored in the Media Pool as well, for future use. The Media Pool is also mirrored on the Media and Edit pages, and contains all of the video clips and timelines within that project.

The Bin list at the left shows a hierarchical list of bins used for organizing your media, which is also 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, or EDL file you import appears 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 Icon 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 Name, Reel Name, different timecode streams, Description, Comments, Keyword, Shot, Scene, Take, Angle, Circled, Start KeyKode, Flags, and Usage.

For more information on using the myriad features of the Media Pool, see Chapter 11, "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 Edit or Fairlight pages and you need to quickly import a few clips for immediate use, you can do so in a couple of different ways.

To 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.

To use the Import Media command in the Fairlight page Media Pool:

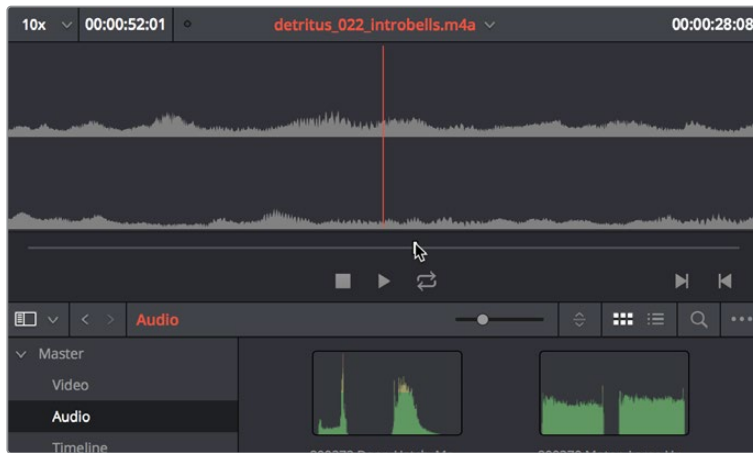
- 1 With the Fairlight page open, right-click anywhere in the Media Pool, and choose Import Media.
- 2 Use the Import dialog to select one or more clips to import, and click Open.

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 11, "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.



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.

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 View menu (View > Show Smart Bins, View > 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 a Russian dolls nest of bins 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. These are also manually populated bins, but these bins are shared among all of the projects in your current database, 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. 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 are procedurally populated bins, meaning that custom rules employing metadata are used to dynamically filter the contents of the Media Pool whenever you select a Smart Bin. This makes Smart Bins fast ways of organizing the contents of projects for which you (or an assistant) has taken the time to add metadata to your clips using the Metadata Editor, adding Scene, Shot, and Take information, keywords, comments and description text, and myriad other pieces of information to make it faster to find what you're looking for when you need it. To create a new Smart Bin, show the Smart Bin area of the Bin list (if necessary), 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, and click Create Smart Bin.

Showing Bins in Separate Windows

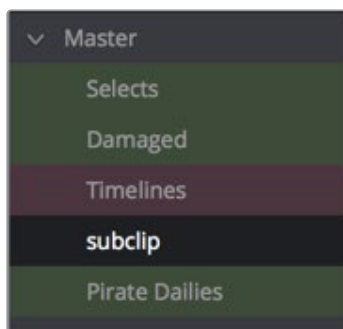
If you right-click a bin in the Bin list, you can choose “Open As New Window” to open that bin into its own window. Each window is its own Media Pool, complete with its own Bin list, Power Bins and Smart Bins lists, and display controls.

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

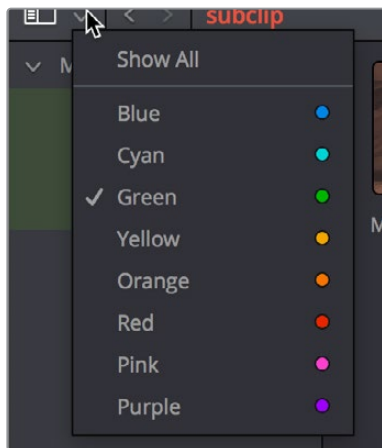
If you're working on a project that has a lot of bins, you can apply color tags to identify particular bins with one of eight colors. Tagging bins is as easy as right-clicking any bin and choosing the color you want from the Color Tag submenu.

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

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.



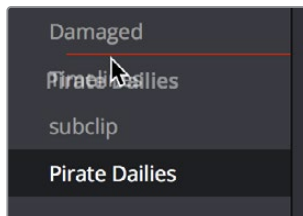
Using Color Tag filtering to isolate the red bins

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, or 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, an orange line indicates the new position that bin will occupy when dropped.

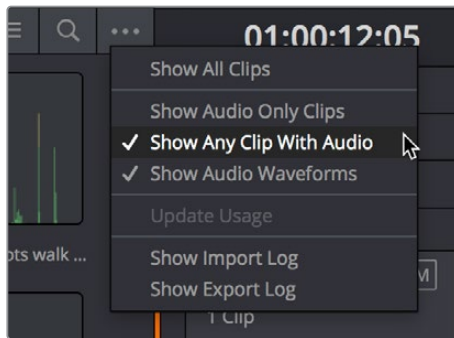


Dragging a bin to a new position in the Bin list in User Sort mode

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 and 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 in the Fairlight page has one additional feature: the ability to filter out audio-only clips, or clips with audio, in the currently selected bin. This makes it easy for you to find audio clips that you're looking for, which are hidden along with lots of video clips in the same 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.



The Media Pool filter options in the option menu

Searching for Content in the Media Pool

An optional Search field can be opened at the top of the Media Pool that lets you quickly find clips by name, partial name, or any of a wide variety of Media Pool metadata.

To search for a clip by name:

- 1 Select which bin or bins you want to search.
- 2 Click the magnifying glass button at the upper right-hand corner of the Media Pool.
- 3 Choose the particular column of information you want to search (or All Fields to search all columns) using the Filter by pop-up menu. Only selected bins will be searched.
- 4 Type your search string into the Search field that appears. A few letters should be enough to isolate only those clips that have that character string within their name. To show all clips again, click the cancel button at the right of the search field.

TIP: Smart Bins are essentially multi-criteria search operations that scope the entire project at once and are saved for future use.

Taking Advantage of the Media Pool's Usage Column

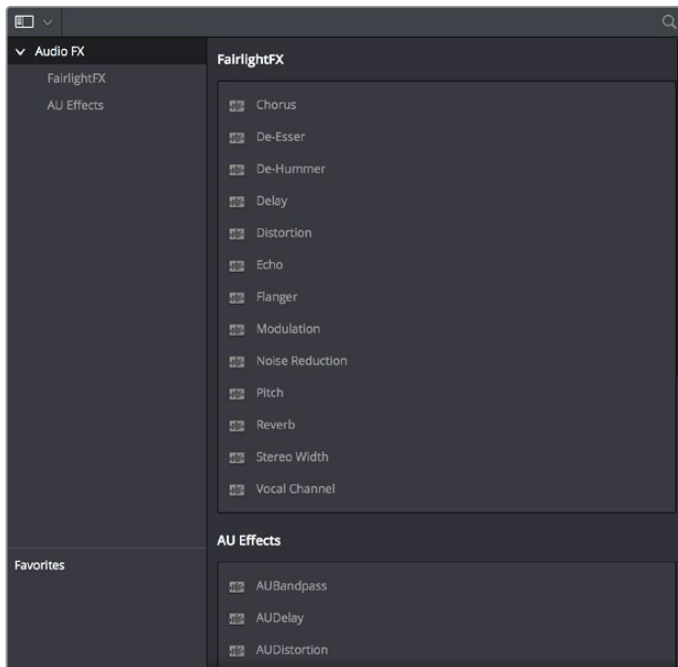
In List view, the Usage column does not automatically update to show how many times a particular clip has been used. However, you can manually update this metadata by right-clicking within the Media Pool and choosing Update Usage Data from the contextual menu that appears. Afterwards, each clip will display how many times it's been used in this column. Clips that have not been used yet display an x.

Effects Library

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

- FairlightFX 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 plug-ins.
- On macOS, DaVinci Resolve supports Audio Unit (AU) audio plug-ins.

Once you install third-party effects on your workstation, they appear in this panel of the Effects Library alongside the FairlightFX that are always available. Audio plug-ins let you apply effects to 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.

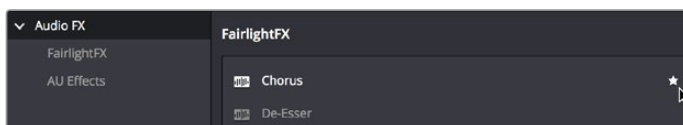


The Effects Library

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

You can click on the far right of any transition, title, or generator to flag that effect 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.



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

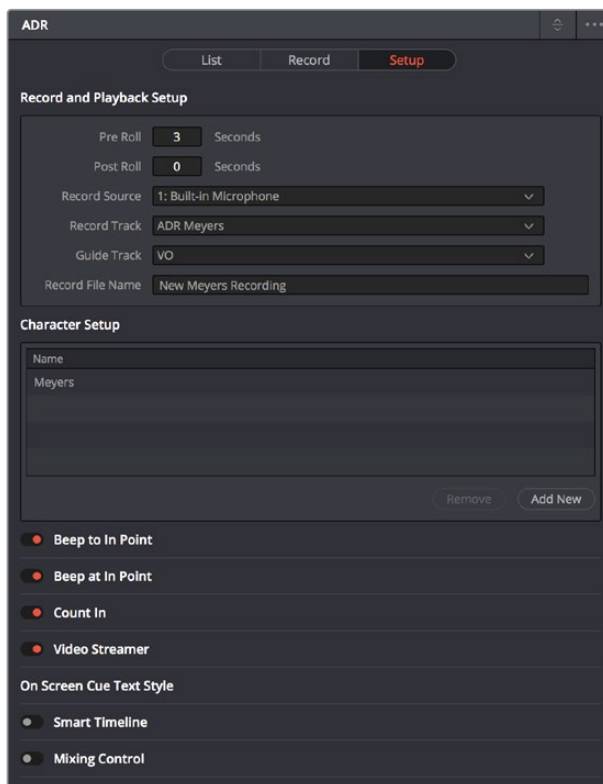
ADR

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 cue list management, industry-standard audio beeps and visual cues, and sophisticated take management with star ratings and layered take organization help you manage the resulting recordings to use the best parts of each take in your program.

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

The Setup Panel

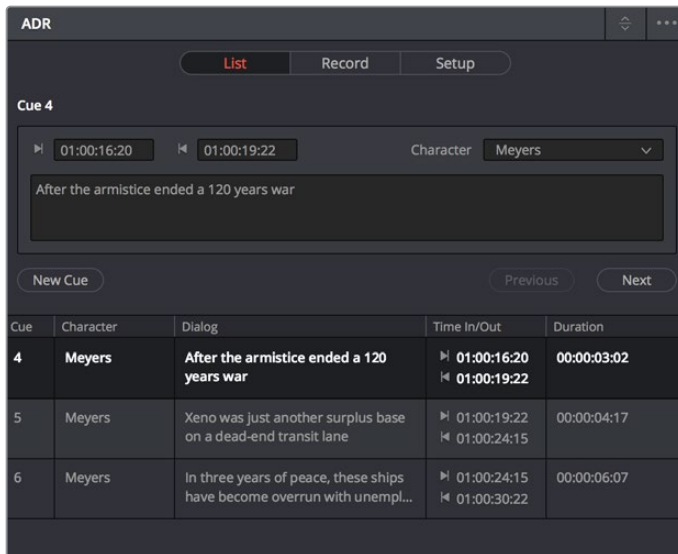
As its name implies, the Setup panel is where you configure your ADR session. It presents the controls letting you set up which audio input you want to use and what tracks to listen and record to, as well as preferences governing what the actors will see on the display you output video to, to help them keep their performance in sync.



The Setup panel of the ADR interface

The List Panel

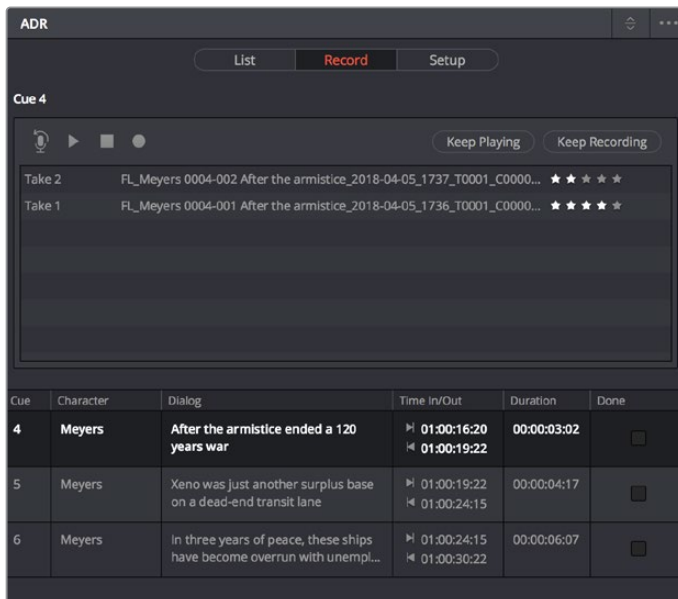
This is where you create a list of cues you need to re-record, either from within the Fairlight page, or imported from a .csv file that someone provides you. It presents controls for adding, editing, importing, and exporting cues that you want to record.



The List 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.

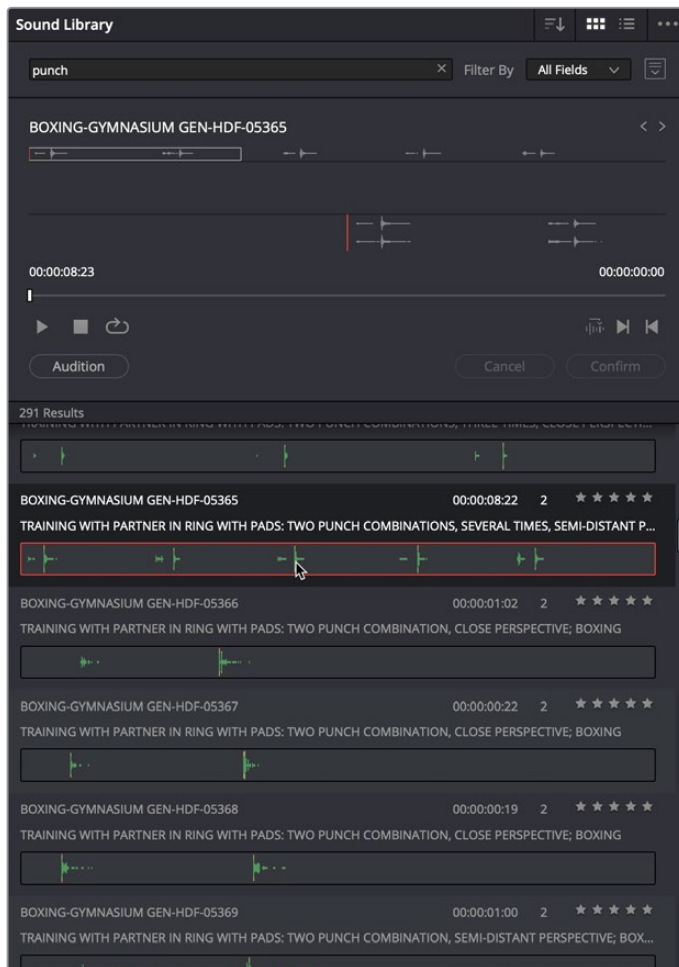


The Record panel of the ADR Interface

For more information on using the VO panel, see Chapter 153, “ADR (Automated Dialog Replacement).”

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 a SAN you're connected to. 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 database (or another database 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.

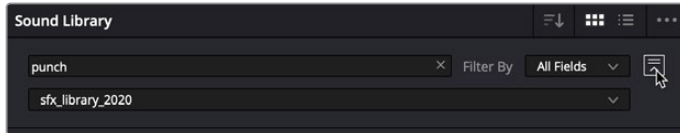


The Sound Library panel

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, from <https://www.blackmagicdesign.com/support/family/davinci-resolve-and-fusion>. The Fairlight sound library features everything from atmospheric ambient sounds to foley sounds such as foot steps, explosions, hits, effects, and more. This free sound library is designed to work with the Fairlight foley sampler, 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 database to use for searching (and cataloging) sound effects collections. Each PostgreSQL database can have a different catalog.



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 Postgres database 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 PostgreSQL-based project database you created to save the resulting metadata analysis to, using the Library drop-down menu that appears. The current database is selected by default. If you're working within a disk database instead, the top compatible PostgreSQL database 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.

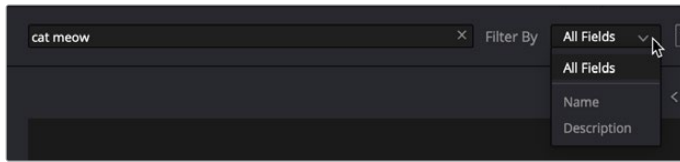
Display Controls and the Search Field

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 database 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. In lower caps, and, or, and not will be treated as search terms.

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 you instead type:

door*close

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.

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.
- **Zoom control:** Controls the zoom level of the Playthrough waveform.
- **Duration field:** Shows the duration of the current clip, or of the section of the clip marked with In and Out points.
- **Playhead timecode field:** The timecode of the playhead's position.

- **Navigation waveform:** The waveform of the entire sound effect appears here, making it easy to jump to different parts of the selected clip. All channels are summed together in this display.
- **Playthrough waveform:** 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 scrub around the clip.
- **Transport controls:** Stop, play, 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 which frame of the sound effect you want to use to sync to a frame of the Timeline when you audition. In and Out points let you mark how much 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 appears at the position of the playhead in the currently selected Timeline track. 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.

Auditioning clips you’ve found in the Timeline:

- 1 Select a sound effect clip you’ve found from the list that you want to audition in the Timeline.
- 2 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 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 align the sync mark you set in Step 2.
- 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.

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.

- **File Name:** The name of that sound effect file in the storage system.
- **Duration:** The duration of that sound effect file.
- **Channel Mapping:** 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.
- **Embedded Metadata:** Any metadata that's embedded within the files of professionally created sound effect libraries appears here.
- **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:

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.

#	Reel	V	C	Dur	Source In	Source Out	Record In	Record Out	Name	Comment
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...		
11	A6	C		00:00:00:06	00:00:02:15	01:00:24:01	01:00:26:10	800272 Door, ...		

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, and a numbered VCA group that it belongs to. 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, and rearrange them (by dragging one or more rows up and down this list).

#	Name	Track Controls	Format	Group
A1	VO	R S M	1.0	0
A2	AMB 01	R S M	2.0	0
A3	AMB 02	R S M	2.0	0
A4	AMB 03	R S M	2.0	0
A5	SFX 01	R S M	2.0	0
A6	SFX 02	R S M	2.0	0
A7	Music	R S M	2.0	0

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

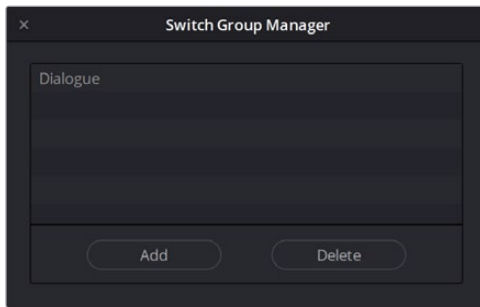
If you have MPEG-H enabled for immersive audio authoring, additional columns appear in this panel.

#	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

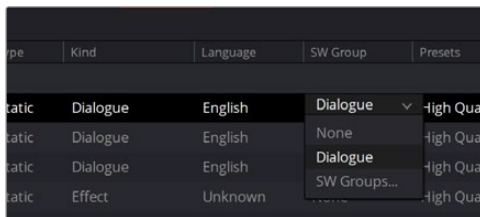
These columns include:

- **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.
- **SW 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 an 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 SW 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.



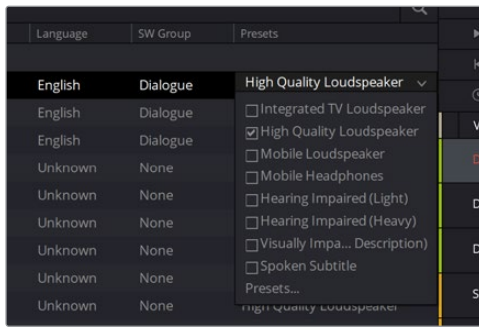
The drop-down in the SW Group column

- **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.

#	Frame	Name	Start TC	End TC	Duration	Color	Notes
1		Marker 1	01:00:02:03	01:00:02:04	00:00:00:01	Blue	
2		Marker 2	01:00:03:23	01:00:04:00	00:00:00:01	Blue	
3		Marker 3	01:00:08:13	01:00:08:14	00:00:00:01	Blue	
4		Marker 4	01:00:12:03	01:00:12:04	00:00:00:01	Blue	
5		Marker 5	01:00:16:05	01:00:16:06	00:00:00:01	Blue	
6		Marker 6	01:00:19:17	01:00:19:18	00:00:00:01	Blue	
7		Marker 7	01:00:24:10	01:00:24:11	00:00:00:01	Blue	

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.

Metadata Editor

Lets you view and edit the metadata of selected clips in the Fairlight page.

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 Tone Settings. This opens the Test Tone 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 dial:** Sets a custom frequency of oscillating tone, from 20 Hz to 10kHz. Defaults to 1kHz.
- **Frequency buttons:** Lets you quickly select 100, 440, 1K, or 2K preset tones, or a continuous rising sweep of frequencies from 1 Hz to 15kHz.
- **Level dial:** Sets the output level for the tone or noise, from –50dB to +10dB. Defaults to –15 dB.
- **Frequency presets:** Four buttons let you choose from four commonly used tones: 100 Hz, 440 Hz, 1 kHz, and 2 kHz.
- **Noise type buttons:** Two buttons let you choose from White noise or Pink noise.

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.
- 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 immediately rise to 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.

Pro Tools AAF Import

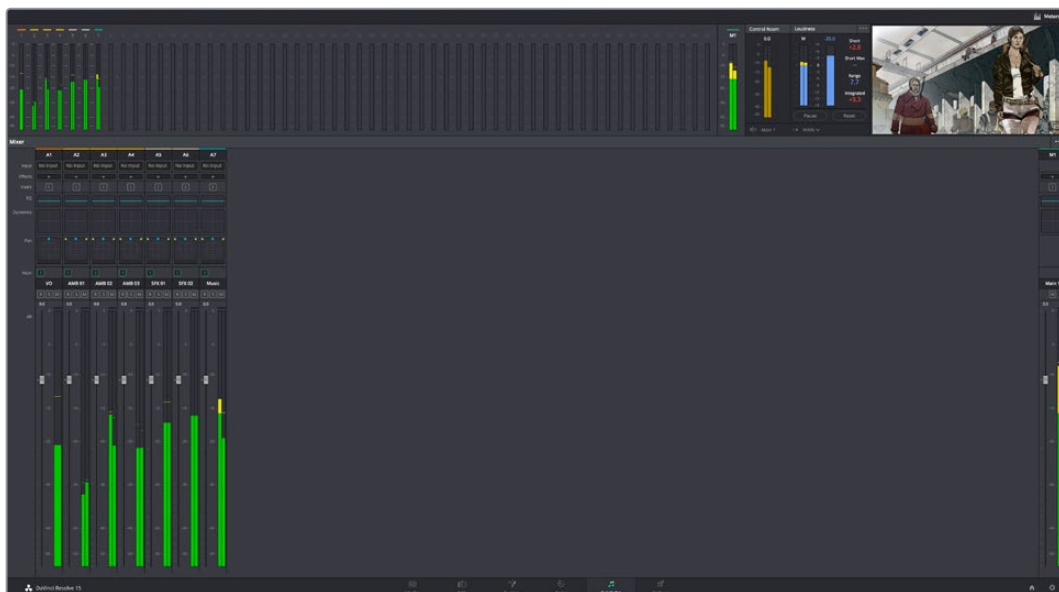
As of DaVinci Resolve 16, you can import AAF projects and media from Pro Tools, enabling you to move an audio project from a Pro Tools workstation to a Fairlight workstation. AAF import supports the import of embedded audio and track automation. To do so choose File > Import Timeline > Import AAF/EDL/XML.

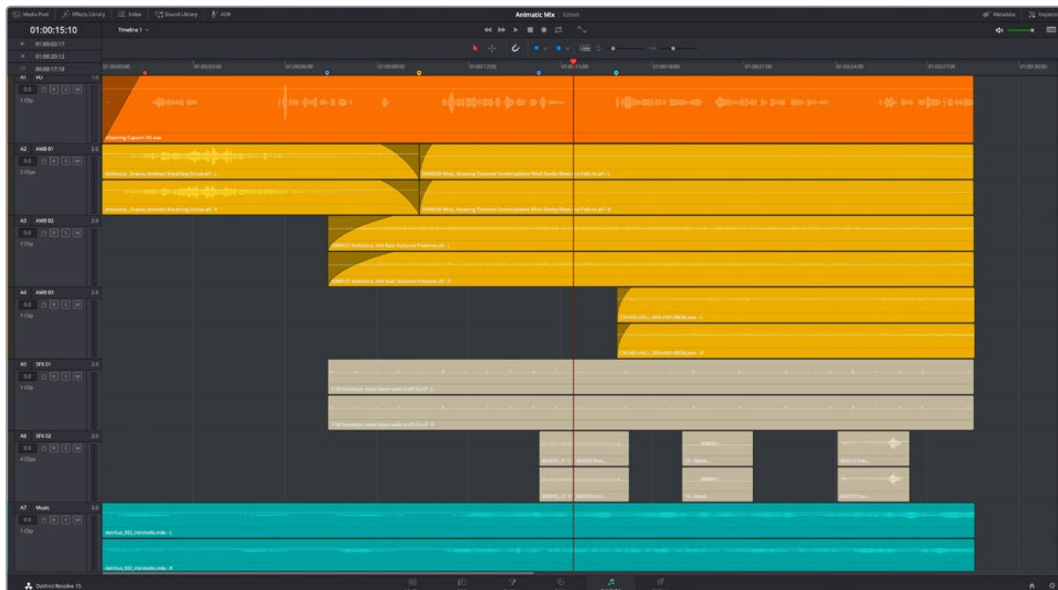
Dual Monitor Layout

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 > (Monitor Name), 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.

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:

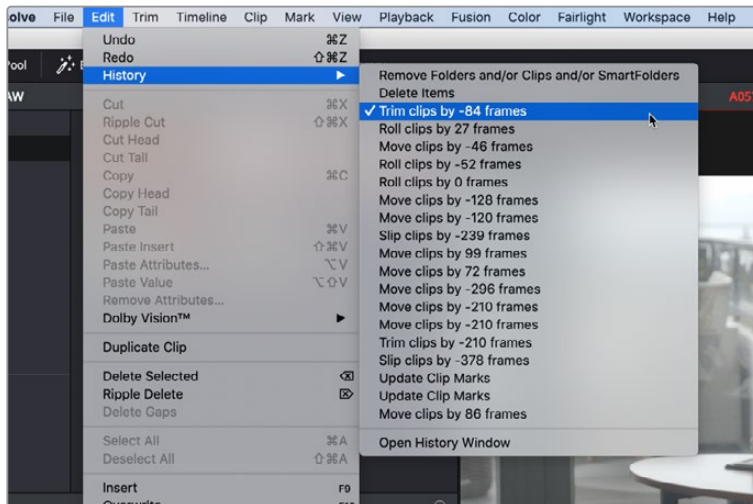
- Choose Edit > Undo (Command-Z) to undo the previous change.
- Choose Edit > Redo (Shift-Command-Z) to redo to the next change.
- On the DaVinci control panel, press the UNDO and REDO buttons on the T-bar panel.

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. At the time of this writing, this only works for multiple undo steps in the Media, Cut, Edit, and Fairlight pages.

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.

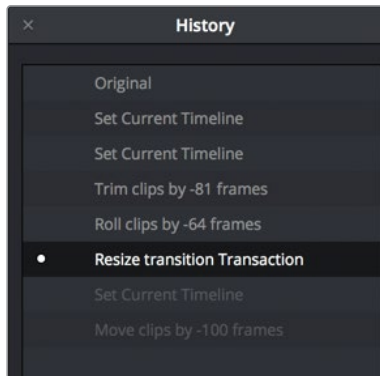


The History submenu, which lets you undo several steps at once

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 150

Setting Up Tracks, Buses, 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 all of the audio tracks and buses you're going to need, including submixes and mains that route and combine the audio being output. This chapter covers how to create audio tracks, and how to use buses to manage your mixes in the most efficient possible way.

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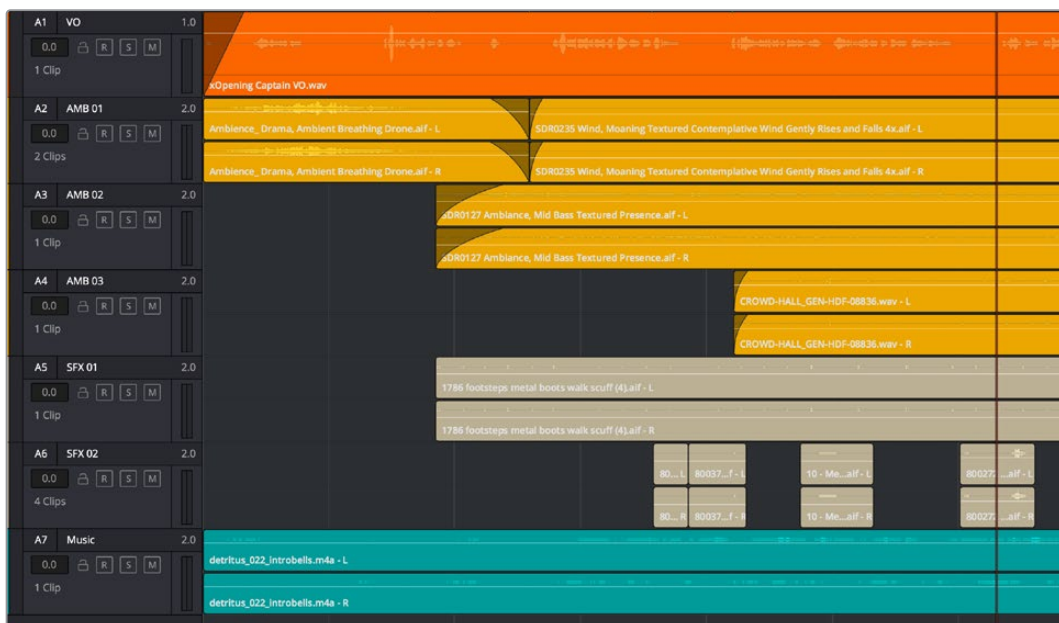
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Audio Tracks

Each audio track in a 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, LCRS, 5.1 surround, or 7.1 surround, so that multiple audio channels within the clips on that track can 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 have been designed to contain multiple channels of clip audio within a single track, but how those individual audio channels are displayed depends on the page. The Edit page hides these individual audio channels, displaying only a single clip in the timeline to make it easier to edit multi-channel sources without needing to manage a huge number of tracks. However, the Fairlight page has a unique track and lane system for displaying audio.

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 expose each individual channel of clip audio for editing and mixing.



(Top) Stereo audio in the Edit page represented by a single track; (Bottom) The same stereo audio in the Fairlight page shows the two lanes that correspond to each of the stereo audio tracks

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 the audio bus, which lets you combine multiple audio tracks in different ways.

What Is a Bus?

In audio postproduction, a bus is essentially a destination channel to which you can route multiple audio feeds (typically the audio tracks of the Timeline) so they are mixed together into a single signal that can be controlled via a single channel strip. For example, by default a single bus called a Main (named Main 1) combines the levels of every clip edited onto every track of a timeline into the signal that's output to your speakers.

Mains are one kind of bus, but there are other kinds of buses with which you can organize the output of tracks in a timeline. For example, if you have five audio tracks into which have been edited all of the dialog audio clips for a particular program, you can route the output of all five dialog tracks to a Submix bus, which combines them so that the combined levels from all dialog tracks can be adjusted (or mixed) using a single set of controls.

Ultimately, you'll use multiple levels of buses to mix programs in an organized fashion. For example, individual tracks can be routed to Submix buses, as described above. Then, multiple Submixes can be routed to one or more Mains. For example, you could have four submix buses, one for German dialog, one for English dialog, one for Music, and one for Effects. You could route the German, Music, and Effects submix buses to Main 1 to output the German version of the program, and route the English, Music, and Effects submix buses to Main 2 to output the English language version of the program.

Audio tracks from the Timeline are routed to buses via each channel strip's multiformat surround panner, so buses are configured to accommodate specific audio formats such as mono, stereo, LCRS, 5.1 surround, or 7.1 surround.

Types of Buses

There are four types of buses in DaVinci Resolve.

Mains

Main buses are typically the primary output of a program; each new project you create starts out with a single Main called M1, to which all tracks are routed by default. You can add additional Mains, and you can use them however you like, as either full or partial mixes of the program you're working on. Mains can be directly output in the deliver page.

Sub (Submix)

Sub buses are often the means by which multiple tracks of audio that belong to the same category (dialog, music, effects, ambience, and so on) are combined together so that everything in that category can be mixed as a single audio signal. Multiple Sub buses can be themselves routed to Main buses, or they can be directly output in the deliver page.

Aux (Auxillary)

Each channel strip includes the ability to expose up to 12 auxiliary bus sends, which are typically used to route audio to software or hardware effects of some kind. Typically, an audio signal is sent to the effect (or hardware) applied to that bus and then is routed back to the channel it came from. Auxiliary send signals can be connected either immediately before or after a channel strip's fader, based on a Pre setting. Each auxiliary bus can also be configured to accommodate specific audio formats such as stereo, LCRS, 5.1 surround, or 7.1 surround.

Multi Track

Multitrack buses provide bus paths for combining feeds that you want to re-record to disk, or route to other I/O.

Buses in Nested Timelines

When you nest a timeline inside of another timeline that has buses set up for mixing in the Fairlight page, all Sub and Aux routings work as intended within the nested timeline, which exposes all channels of Main 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.

Exposing Bus Tracks in the Timeline

You can expose any bus, including Mains, Subs, and Aux buses, as a track in the Timeline. This makes it possible to view and edit automation that's applied to parameters on that bus.

To show a bus in the Timeline:

- 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.
- 3 You can choose any automation curve you want to view by choosing it from the drop-down menu in the track header controls.

Controlling Signal Flow

The process of setting yourself up for editing and mixing in the Fairlight page involves:

- First, customizing the tracks of the timeline to be organized and configured as required.
- Second, creating the buses you need in order to organize your signal flow.
- Third, patching the tracks to Subs, and the Subs to Mains, in order to create the signal flow you need.

Managing Audio Tracks

When you're getting ready to record or edit audio clips into the Fairlight Timeline, you need to make sure you've got enough tracks to do the job. The following procedures cover the different methods available for adding, removing, and rearranging tracks as you work. These commands are all available via the contextual menu that appears when you right-click anywhere in the Timeline header area (the header of the Timeline is the area to the left where each track's various buttons and controls are located).

Defining Timeline Audio Track Channels at Creation

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, Center, Right, Left Surround, Right Surround, and LFE. For cinema distribution these tracks are ordered Left, Right, Center, LFE, Surround Left, and Surround Right.
- **7.1:** Holds the eight channels corresponding to a 7.1 surround mix, for a total of eight lanes. For broadcast, SMPTE specifies Left, Center, Right, Left Surround, Right Surround, LFE, Back Surround Left, and Back Surround Right. For cinema distribution these tracks are ordered Left, Right, Center, LFE, Left Surround, Right Surround, Back Left Surround, and Back Right Surround.
- **Adaptive:** Capable of holding up to 24 audio channels, which would display up to 24 lanes 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.

Creating Tracks

There are two commands with which to create new audio tracks, and both are in the contextual menu found by right-clicking within 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, of a type and at a position you designate using the Add Tracks dialog.

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.

Changing How Many Channels an Audio Track Has

If you had set up your timeline with one kind of audio track, but you discover you actually need a different kind, you can change any audio track's type 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.

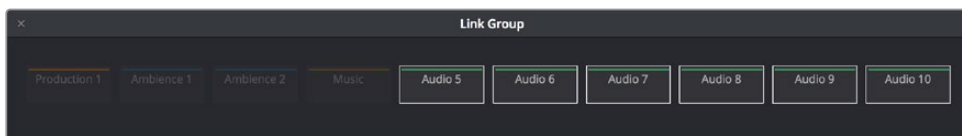
Linked Groups of Mono Tracks

Linked groups are an organizational construct that you can create using mono tracks (other kinds of tracks such as stereo, 5.1, 7.1, or Adaptive cannot be used in a Linked Group). Unlike a multi-channel track with lanes, a linked group of mono tracks functions as five independently editable tracks in the Timeline. However, each track is mapped just like an audio channel using one of the standard multi-channel mappings (stereo, 5.1, 7.1, Adaptive), and linked groups of mono tracks are mixed using only a single channel strip.

Linked groups are extremely useful when you've been given a set of six independent audio files that need to be assembled as a single surround mix, or when you have surround channels that need to be specifically re-edited on a channel by channel basis.

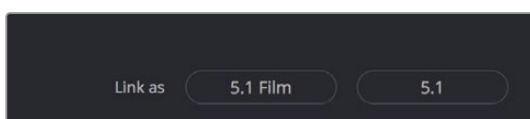
To create a Linked Group from individual mono tracks:

- 1 Create two or more Mono audio tracks that you want to group together. If you need to create a linked 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 channel mapped tracks are disabled, since they can't be linked). Click to enable the button of every track you want to include in the group you're about to create. Which mappings are available to use for creating your group depends on how many tracks you've selected.



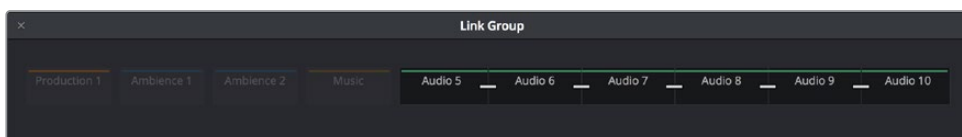
Selecting six tracks to use for creating a link group

- 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

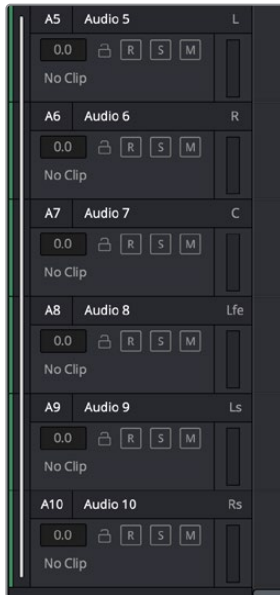
Afterwards, the tracks you selected should turn into a single block, showing they've been linked.



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

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

Once you've created a linked 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 surround channel, L, R, C, Lfe, Ls, Rs, and so on. At this point, you can edit each channel of a surround mix into the appropriate track.



Tracks in a Linked Group are labeled to identify which track corresponds to which surround channel

If you've edited a multi-channel audio clip onto a multi-channel track, you can convert that track and its contents into a Linked Group of mono tracks, each of which contains a single clip for that track's channel. This can be useful if you've been delivered 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 multi-channel timeline:

Right-click the track header of a multi-channel 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.

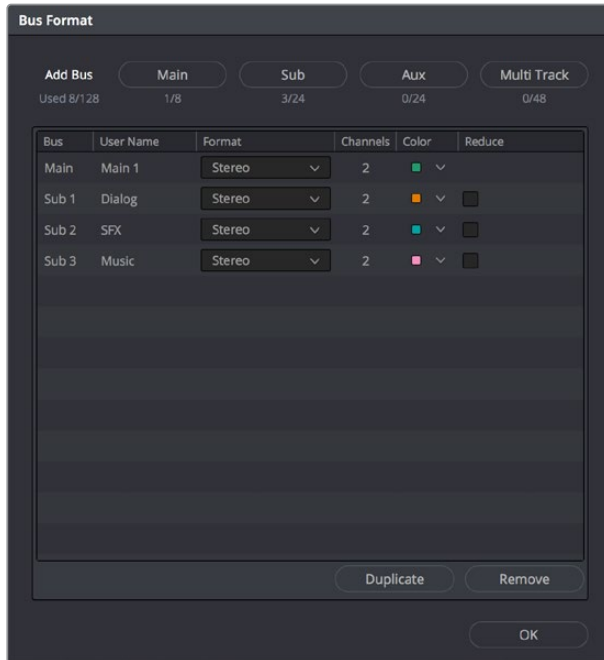
If necessary, you can also unlink a linked group to turn it back into independent mono tracks.

To unlink a Linked Group:

- 1 Choose Fairlight > Link Group.
- 2 When the Link Group dialog appears, select the Linked Group you want to unlink.
- 3 Click Unlink.
- 4 Close the Link Group window when you're finished.

Creating Buses

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



The Bus Format window lets you add buses to the mixer

Four buttons at the top of the window let you create any type of bus Fairlight supports. Creating a new bus, whether it's a Main, Sub, Aux, or Multi Track, adds the new bus to the list that appears below.

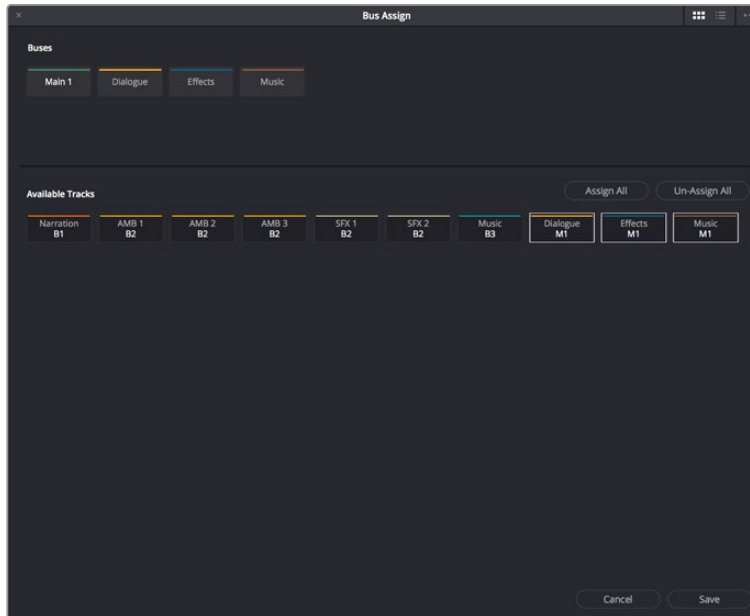
The Bus list lets you rename the bus, choose the format of each bus (a drop-down menu appears in the Format column of each entry of the list), and color-code each bus (a Color drop-down lets you choose that bus's color). Simply click any item on the Bus list to select it, and choose different options 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 two additional buttons that let you Duplicate or Remove selected Buses. When you're done modifying the available buses, you can click OK to accept the change and close the Bus Format window, Cancel to close the window (although any buses you've made remain in place), or Bus Assign to open the Bus Assign window.

NOTE: Text at the upper left-hand corner of the window lets you know how many buses you're using out of how many your workstation will support.

Assigning Buses

Once you've created one or more buses, you'll want to assign different tracks to specific buses, and different Subs to specific Mains. This is accomplished in the Bus Assign window, which you can open by choosing Fairlight > Bus Assign, or by clicking the Bus Assign button in the Bus Format window.

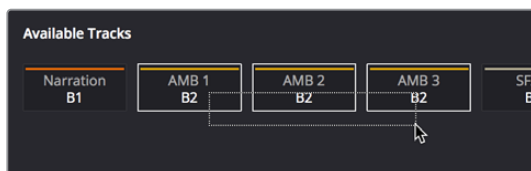


The Bus Assign window lets you choose which tracks are connected to which buses, and which buses are connected to which mains

The top shows all of the available Main, Sub, and Multi Track buses, while the bottom shows all available tracks, Sub buses, and Aux buses. The Bus Assign window defaults to Icon view, in which each Bus and Track is shown as a button, but it can be switched to List view, in which the Available Tracks section is shown as a list.

Methods of making bus assignments:

- **To assign specific tracks to a bus:** Click a button in the Buses section to select that bus, and then either click or drag a bounding box over all the available tracks that you want to assign to that bus. Once assigned, the Available Tracks buttons display which Bus they've been assigned to.



Assigning multiple tracks to a bus by dragging a bounding box

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

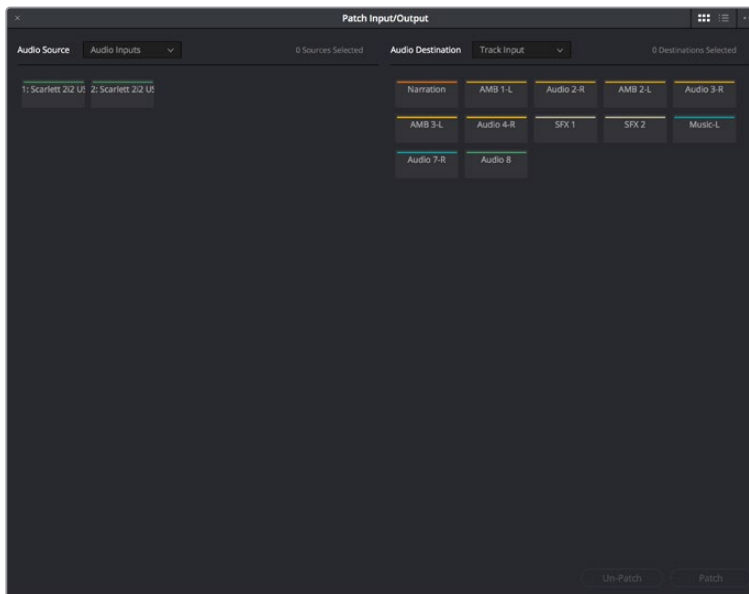
When you're done making bus assignments, click Save.

Patching Signal Paths

While bus creation and assignment is a straightforward way of creating a cascade of routing from tracks to Subs to Mains, sometimes you need to create more specific signal paths. For example, if you need to record audio to a track, you need to patch the audio input you want to record from to the track you want to record to. This, and many other scenarios, are accomplished using the Patch Input/Output window.

Using the Patch Input/Output Window

Choosing Fairlight > Patch Input/Output opens the Patch Input/Output window, which can be displayed in either Icon or List view. This window is split into two halves, with the left half containing whichever Audio Source controls you choose, and the right half containing whichever Audio Destinations you choose. In the following screenshot, the Audio Inputs from a Scarlett2i2 USB audio interface are shown, while the available Track Inputs are shown to the right.



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

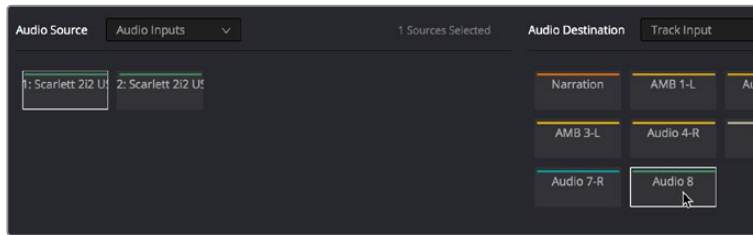
Creating a Patch

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.

To patch a source to a destination:

- 1 Choose a type of source from the Audio Source drop-down menu at the upper left-hand side of the window.
- 2 Click the button or list item of the source you want to patch on the left side of the Patch Input/Output window.
- 3 Choose a destination from the Audio Destination drop-down menu at the upper right-hand side of the window.

- 4 Click the button or list item of the destination you want to patch on the right side.



A selected audio source and audio destination pair

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

Choosing Audio Source and Destination Controls

The Audio Source and Destination drop-down menus let you choose different categories of source and destination controls to patch together.

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 Repr:** 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 buses to the tracks of your mix. Each option in this menu makes the Patch Input/Output window appear with different Audio Source and Audio 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.

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 buses 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 Path Settings window showing audio inputs and track inputs

These parameters control the following:

- **Mic/Instr.:** Adjusts the Mic/Instrument level for this source, from 0 to 100 dB.
 - **On:** Enables Microphone/Instrument level for this source.
 - **48V:** Enables phantom power for that input.
- **Record Level:** Controls the level going to the disk before recording. It does not affect the track when in Thru mode.
 - **Rec:** Enabling this button makes this track ready to record. Only turn this on if there is an audio source patched to the current track.
 - **Thru:** When on, this makes the affected track into the equivalent to a live feed. When enabled, this track will monitor its input, but will not respond to a record command. Only turn this on if there is an audio source patched to the current track.
- **Trim:** This parameter controls the level as the channel enters the mixer. For timeline tracks, this controls the signal coming from disk, and does not affect any current levels being recorded.
- **Direct Output:** Controls the level going from this channel to the direct output.
 - **On:** Toggles direct output on and off.
 - **Pre:** Toggles the direct output to connect either pre or post the main channel fader.
- **Insert:** Controls the insert return only. When enabled, the channel connects to its insert return, otherwise the Channel connects to the straight-through path. The insert send, on the other hand, is always active (though it must be patched somewhere before it can be heard).

NOTE: Insert sends and returns are only audible if patched to physical outputs or inputs, or to other paths. Sends can be sent to the input of any path in the system, and returns can come from the output or send of any path. This is done in the Patch I/O screen (press the Patch I/O button).

Chapter 151

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 get around the Fairlight version of the Timeline.

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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 152, "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 157, "Automation Recording."

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.

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

As of Resolve 15, 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 Selection 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, you can use a bounding box to select multiple tracks.
- **In Range Selection or Edit Selection 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.

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. Zooming is always centered on the position of the playhead.
- **Pressing Command-Equal (=) and Command-Minus (-):** Command-Equal (also referred to as Command-Plus) and Command-Minus let you zoom horizontally into the Timeline. Zooming is always centered on the position of the playhead.
- **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.
- **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.

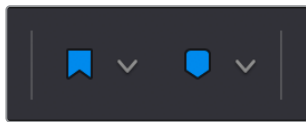
Scrolling Through the Timeline

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 tic 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.

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.

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 31, "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 152

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.

This chapter covers the somewhat brief basics of audio recording in the Fairlight page. Keep in mind that this is a work in progress, and that the comprehensive recording capabilities of earlier versions of Fairlight will be migrating into DaVinci Resolve as time passes.

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Setting Up to Record

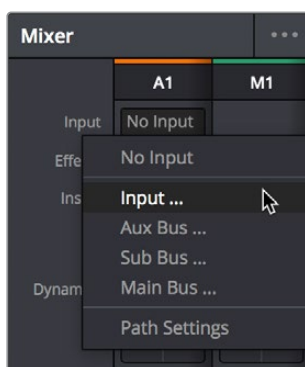
Depending on how your workstation is set up, it's possible to simultaneously record to multiple tracks in the Fairlight page at once. How many tracks you can record to depend entirely on what hardware you have available. This section describes the process of recording to tracks in the Fairlight page.

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:

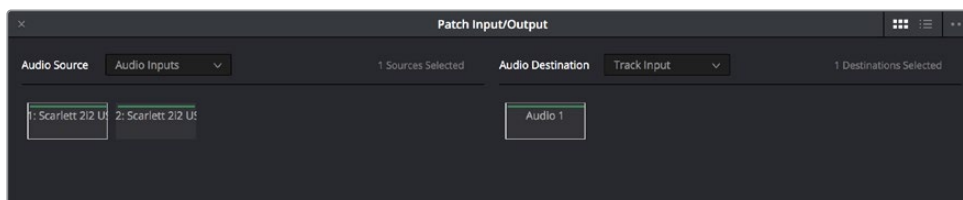
- Choose Fairlight > Patch Input/Output.
- Click the Input menu at the top of the channel strip of the track you want to record to, and choose Input.



The Input pop-up 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 Audio Source menu is set to Audio Inputs, and the Audio 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 1 of the Scarlett 2i2 is being connected to Audio 1, which is the only track in the timeline.



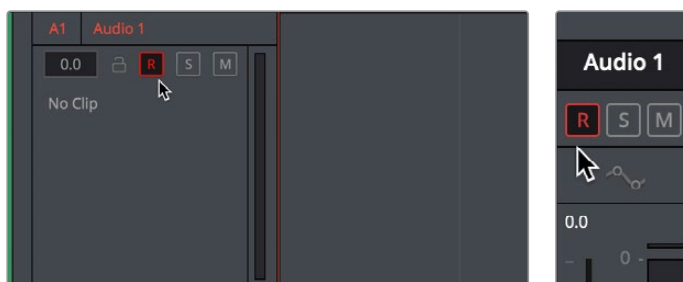
Selecting a source and a destination to patch

- 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 two available audio sources, but there's only a microphone connected to the first channel, so that's the only one being connected.
- 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.

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 you want to save these recordings by opening the Capture and Playback panel of the Project Settings and using 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.

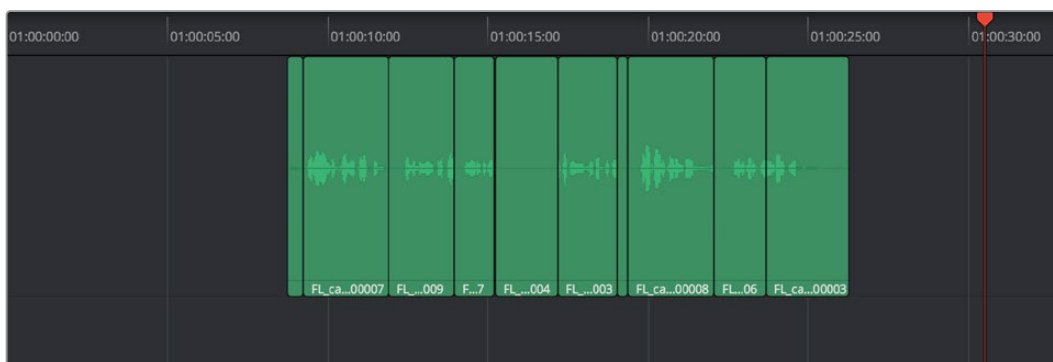
To stop recording, do one of the following:

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

Recording and Editing Multiple Takes Using Layering

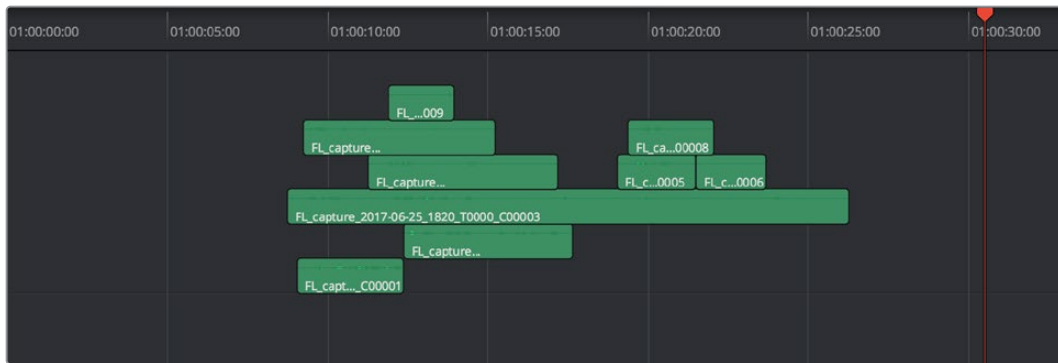
There are two ways you can record multiple takes. You can either record them one after the other, sequentially, and then edit them later. However, you also have the ability to record multiple takes to the same region of the timeline, one on top of another, while at the same time preserving every take 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 148, "Editing Basics in the Fairlight Page."

Recording VSTi Instruments

DaVinci Resolve 15 introduced support for VSTi instruments working with connected MIDI controllers to trigger instrument sounds that can be recorded live on audio tracks of the Timeline. This is intended to be used for loading a VSTi sampler with foley sounds such as footsteps or punches, 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.

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.

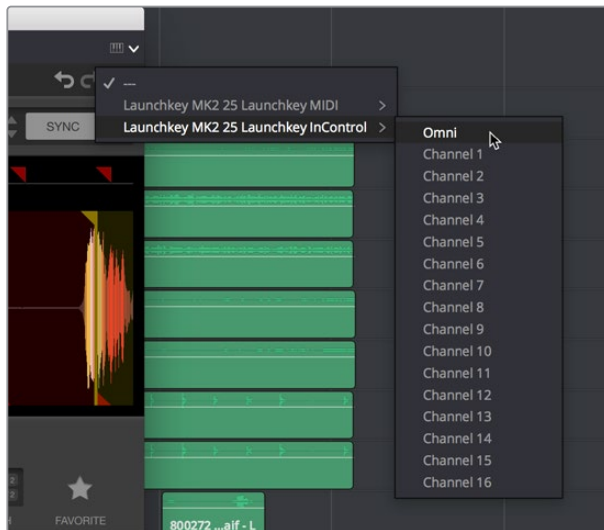
For more information on setting up MIDI on different systems, see the DaVinci Resolve Configuration Guide, available on the web from the Blackmagic Design support page at <https://www.blackmagicdesign.com/support/family/davinci-resolve-and-fusion>.

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

- 1 Open DaVinci Resolve 15.
- 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 plug-in 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 pop-up menu to Track Direct and the Destination pop-up 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 plug-in 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 pop-up 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 153

ADR

(Automated Dialog Replacement)

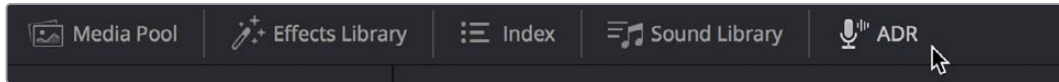
The Fairlight page of DaVinci Resolve has a sophisticated interface for doing ADR, or automated dialog replacement, in a structured and straightforward manner. Simple, yet powerful, the ADR panel incorporates Cue list management, industry-standard audio beeps and visual cues, and sophisticated take management 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.

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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

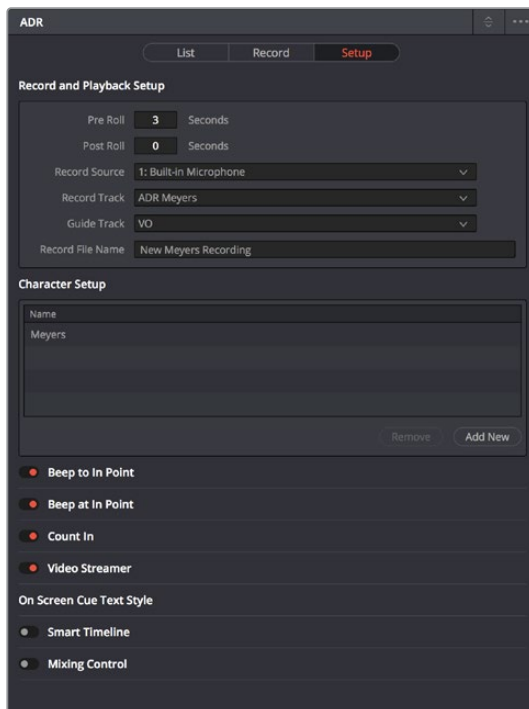
It's an old joke that ADR isn't really automatic, but the Fairlight page aims to give you all the help it can to make this a structured and straightforward process. Simple, but powerful, Cue list management lets you efficiently assemble a re-recording plan. Industry-standard audio beeps and visual cues 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 Record panel, a List 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.



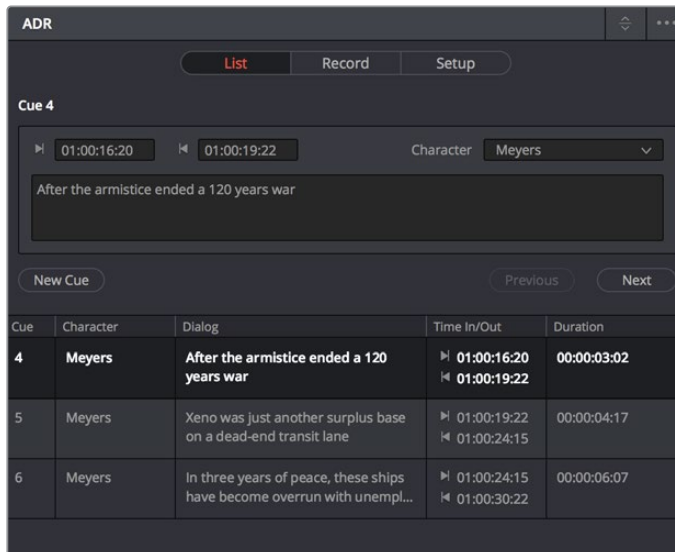
The Setup panel of the ADR interface

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.



The List panel of the ADR interface

This panel presents the following controls:

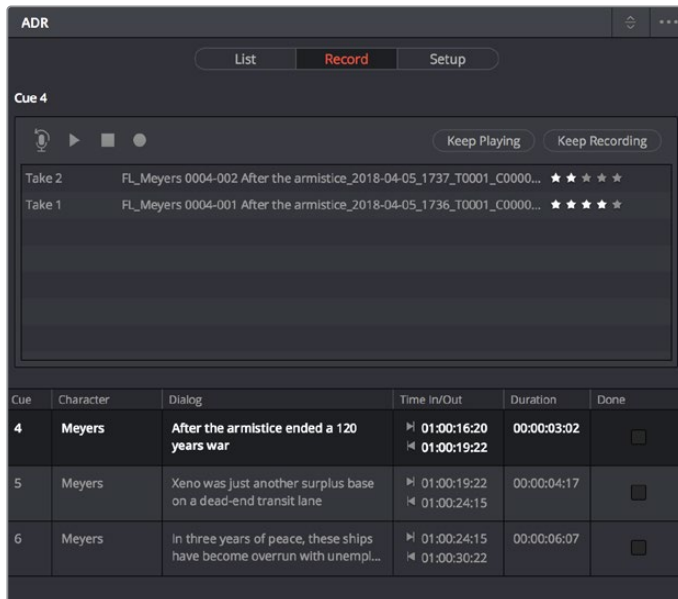
- **Cue editing controls:** Displays the data for the currently selected cue (or a cue that was just created). In and Out timecode fields store the Timeline In and Out points that were set when the cue was created but can be manually edited for fine tuning. A Character drop-down menu lets you choose 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.
- 7 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.

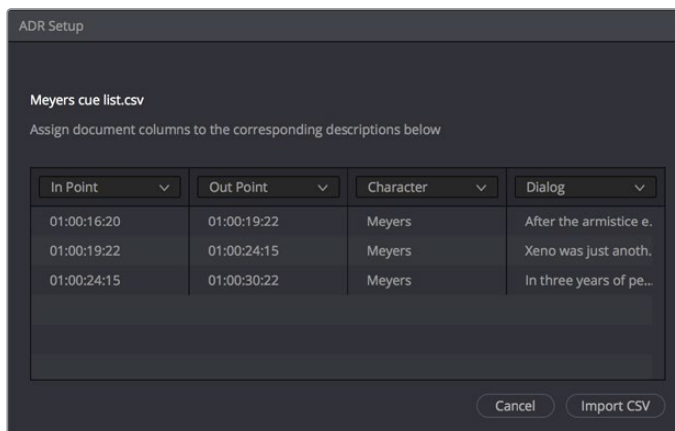
Importing Cues

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.

Chapter 154

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.

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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.

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 152, “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

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 to 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.

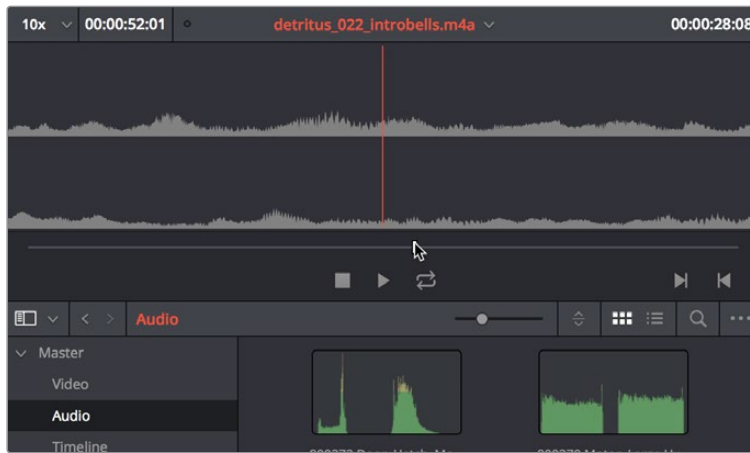
However, if you turn Layered Audio Editing on, then incoming clips do not overwrite overlapping clips in the Timeline; instead, they’re layered within that track, such that the incoming audio clip takes precedence over what was previously there, but overlapping audio segments that were previously in 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

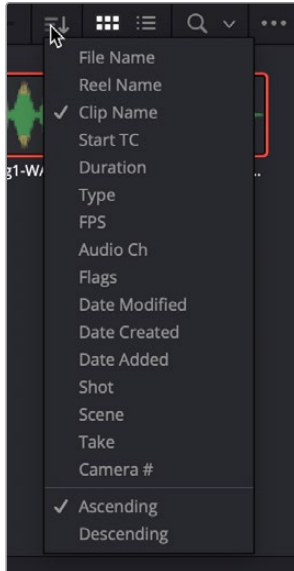
You can show the Media Pool in the Fairlight page, and edit audio clips into the Timeline in their entirety by dragging and dropping individual clips onto whichever audio track you want them to appear. You can drag any clip onto any track, regardless of whether or not the channels of the clip match the 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.



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

- 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.

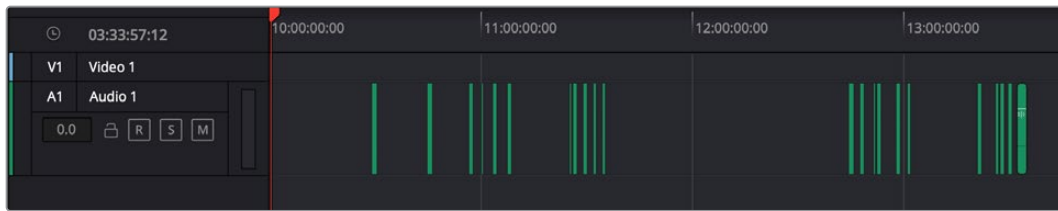
The clip(s) you drag overwrite whatever other clips they overlap in the Timeline. Multiple clips dragged from the Media Pool will be edited in the order in which they're sorted in the Media Pool, using each clip's In and Out points.

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.

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.



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

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:

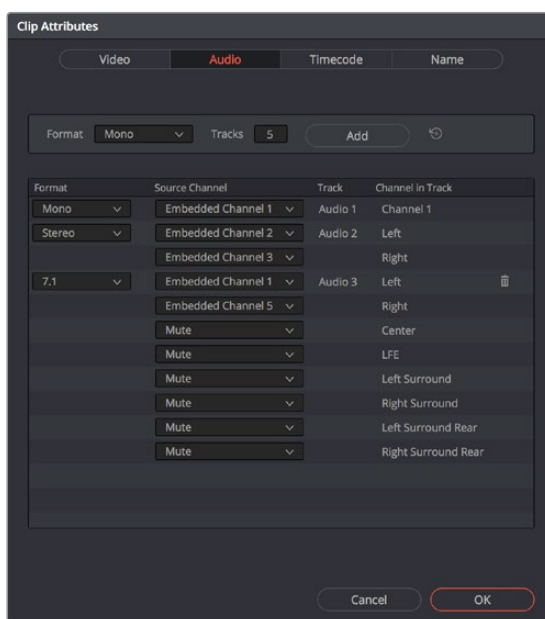
- 1 Select the Media Pool clips you want to edit into the Timeline by dragging a bounding box, Command-dragging multiple bounding boxes over different sets of clips, by Shift-clicking a range of clips, or by Command-clicking individual non-contiguous clips.
- 2 Command-drag the selected clips into a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

Support for Mixed Audio Track Formats from Source Clips

As of DaVinci Resolve 15, there is support for 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.

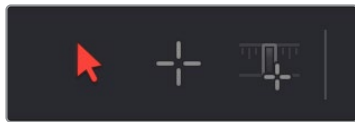
The Audio panel of Clip Attributes now has controls over what format (Mono, Stereo, 5.1, 7.1, Adaptive) the channels embedded within a particular audio track should be configured as. This means you can set up clips with multiple tracks, each one using different formats of audio employing different combinations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



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

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 Selection mode, the Range mode, and the Edit Selection 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 Selection and Range Selection tools seen in the toolbar

Why Are There Three Edit Modes?

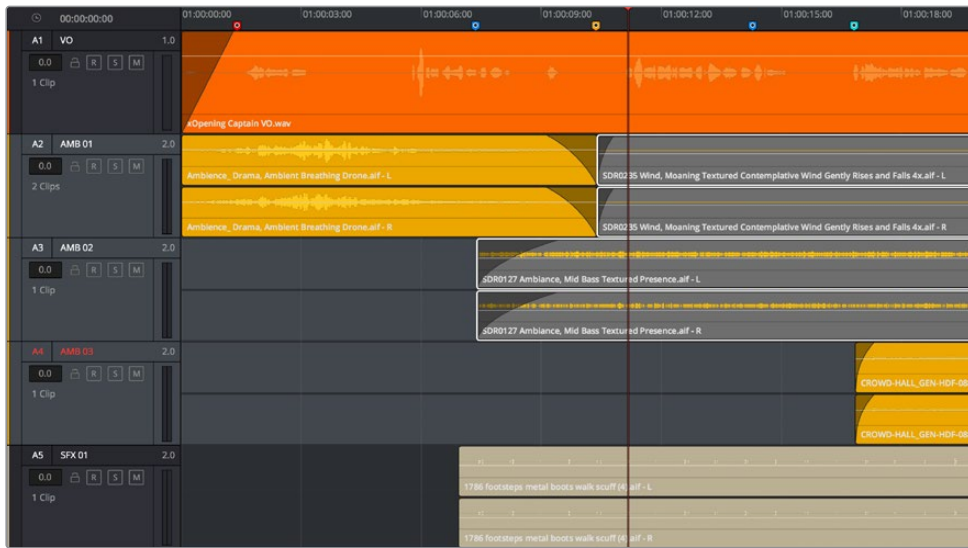
While the Selection and Range modes can also be used with the pointer, they're really designed to enable automatic selections based on the position of the playhead. This is accomplished when using either the Fairlight Editing console or keyboard shortcuts to control Timeline transport, while specific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

The Edit Selection 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 or the Fairlight Editing panel, in Selection and Range Selection 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 Selection 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 Edit Selection mode will also select the tracks those clips are on.

TIP: Selecting tracks in the Fairlight page is analogous to using the Auto Select controls in the Edit page Timeline, which define which clips on which tracks will be automatically selected whenever you set In and Out points in the Timeline.

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 Selection 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 Selection 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 Selection 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 Selection 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 Selection Mode

Selection 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. Selection 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 selected in gray, 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 that overrides the gray automatic 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.

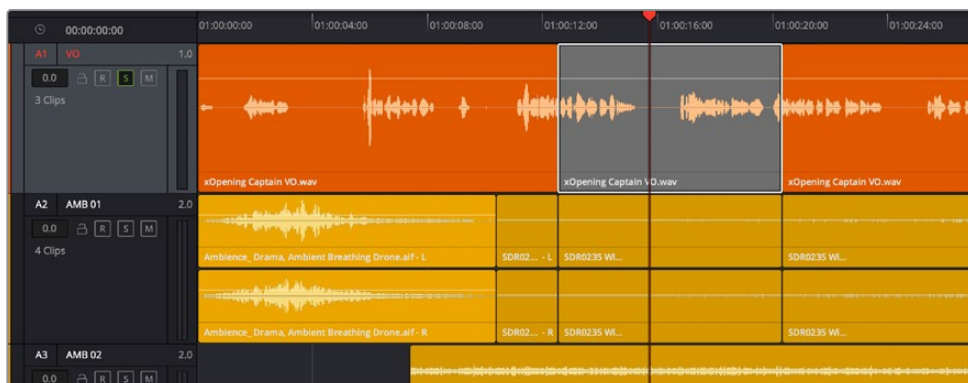
To choose Selection mode:

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

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

- 1 Press A to enter Selection 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 gray. Intersecting clips on unselected tracks are not selected.



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

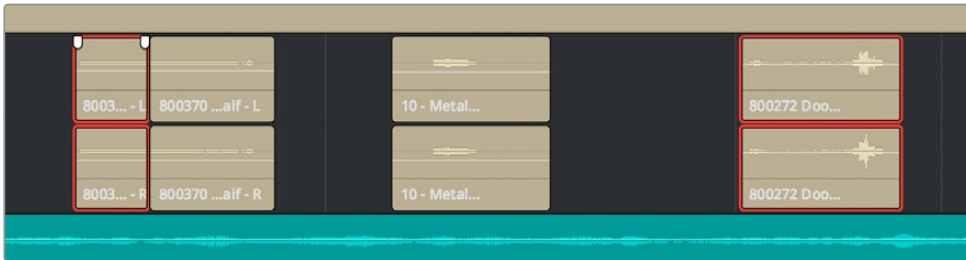
Methods of selecting clips using the pointer in Selection mode:

- Click any clip to select it.



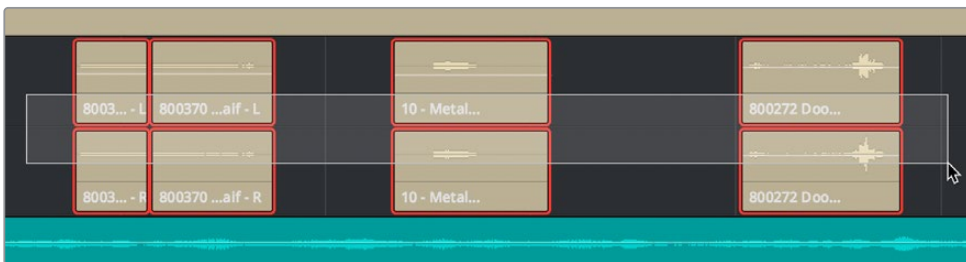
Click a clip to select it

- 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 Selection Mode

Range Selection 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:** Any clip on a selected track that intersects the playhead will be automatically highlighted in gray. 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 you set In and Out points:** Partial regions of all clips on all selected tracks between the In and Out points will be highlighted in gray. 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.

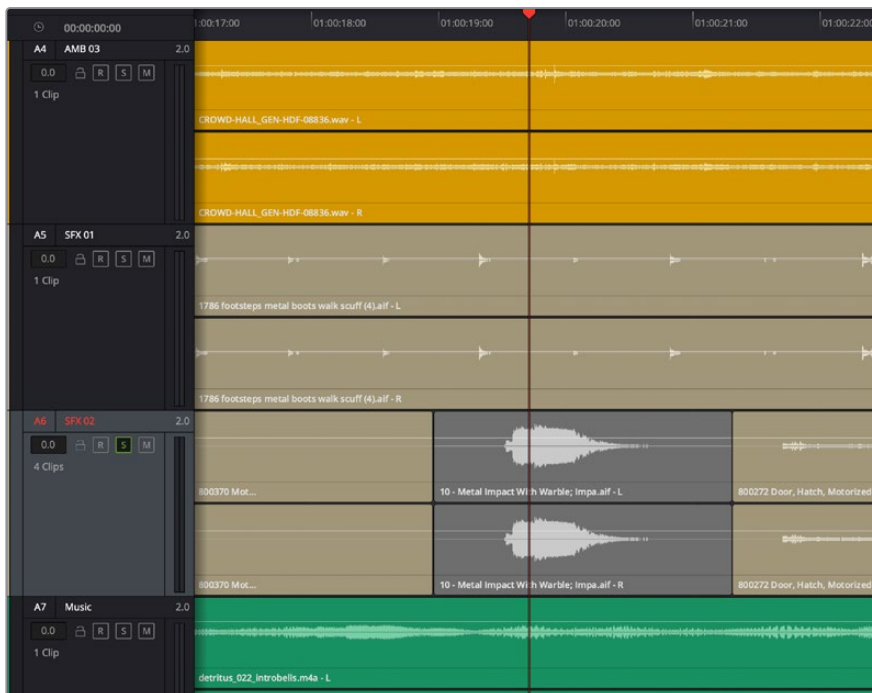
To choose Range Selection mode:

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

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

- 1 Press R to enter Range Selection 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.

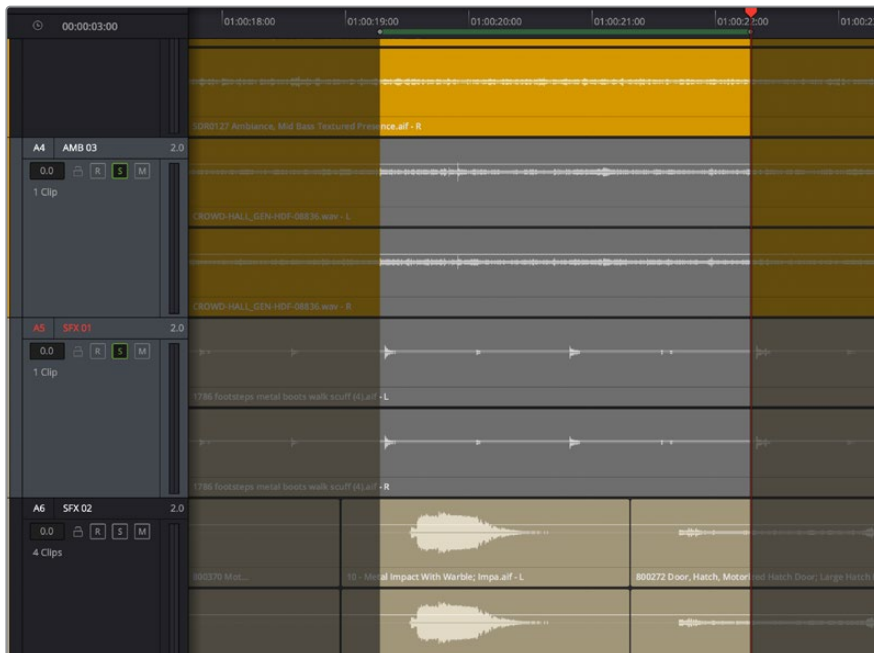


Clips intersecting the playhead on a selected track in Range Selection mode are automatically selected

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

- 1 Press R to enter Range Selection 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.

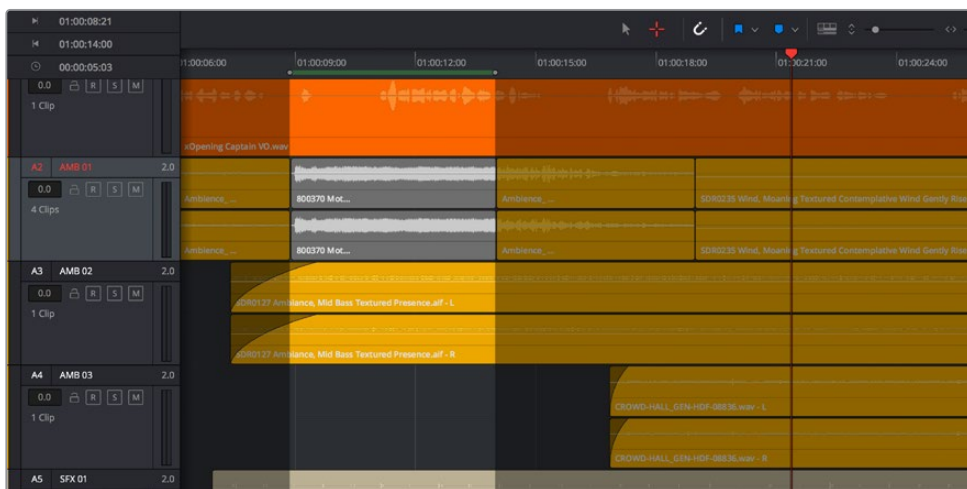
All clip segments that fall within the range of your In and Out points on selected tracks will be selected.



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

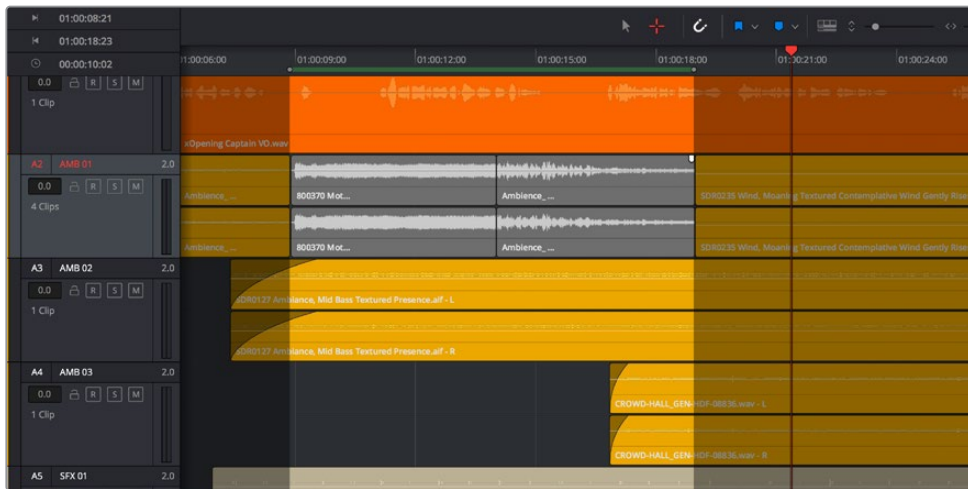
Methods of selecting clips in Range Selection mode via clicking and dragging:

- **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.



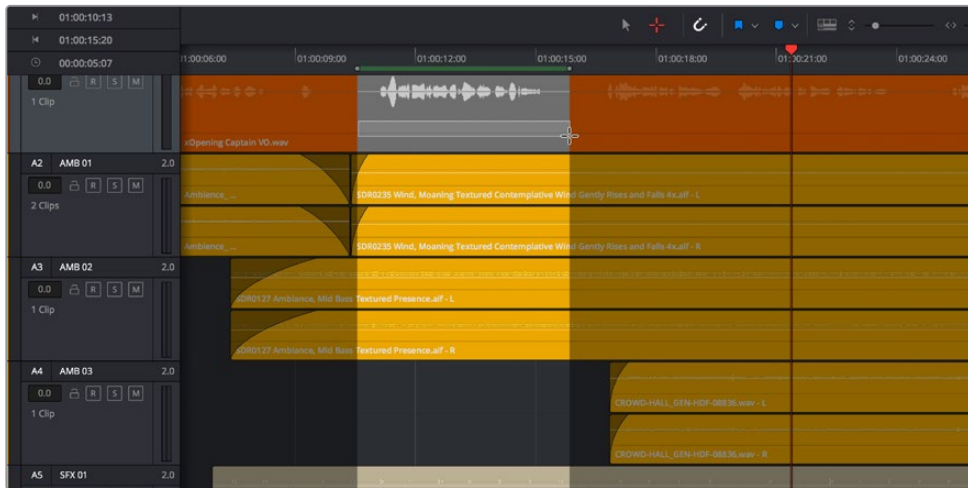
Click to select a single clip as well as the track it's on

- **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.



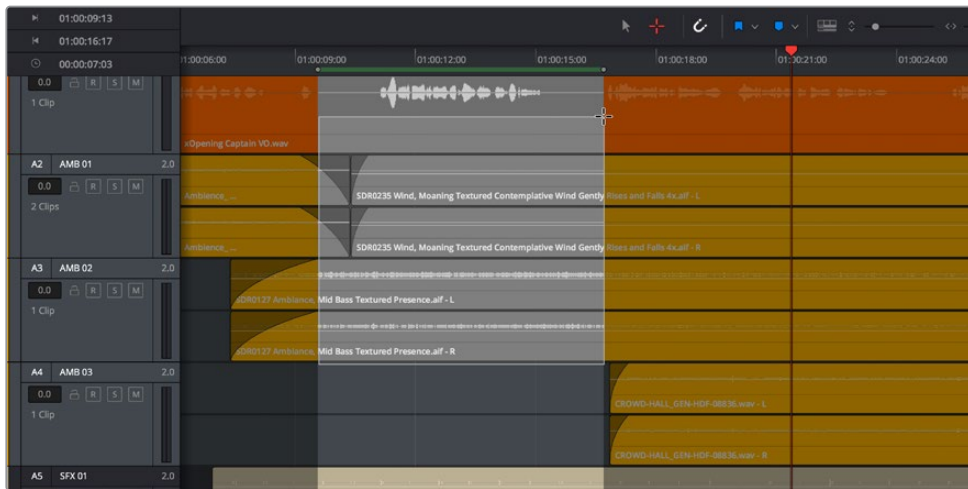
Range selection by Command-clicking multiple clips

- **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.



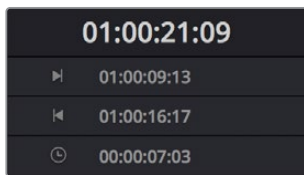
Ranged selection within a clip using a bounding box

- **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 Selection 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 Edit Selection Mode

Edit Selection mode 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 Edit Selection mode is that this is the only mode that lets you edit the Timeline during playback, which you can't do in Selection 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.

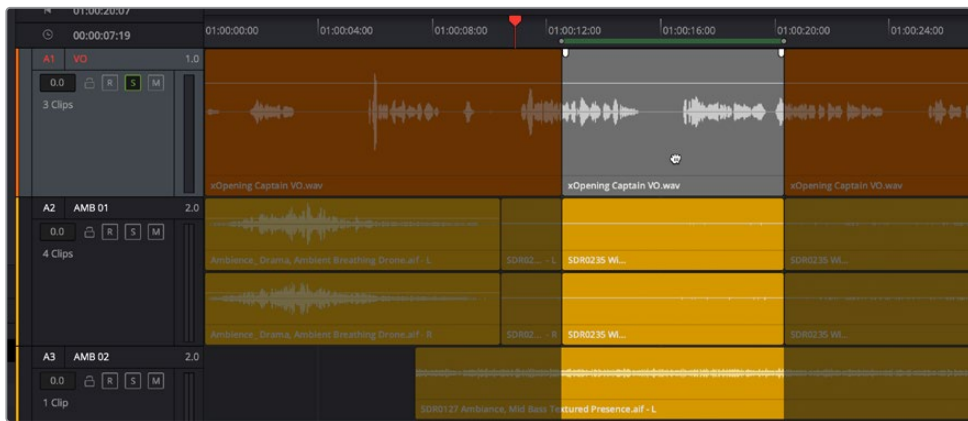
- **If tracks have been selected:** Any clip on a selected track that intersects the playhead will be automatically highlighted in gray. Clips on de-selected tracks will be ignored. Dragging a crosshairs over one or more clips with the pointer overrides all automatic selections and selects the regions 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 Selection mode:

- Click the Edit Selection tool (the crosshairs at the bottom of a track) in the toolbar.
- Choose Trim > Edit Selection Mode.
- This mode has no keyboard shortcut at this time.

To select an entire clip using the hand tool of the Edit Selection 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.

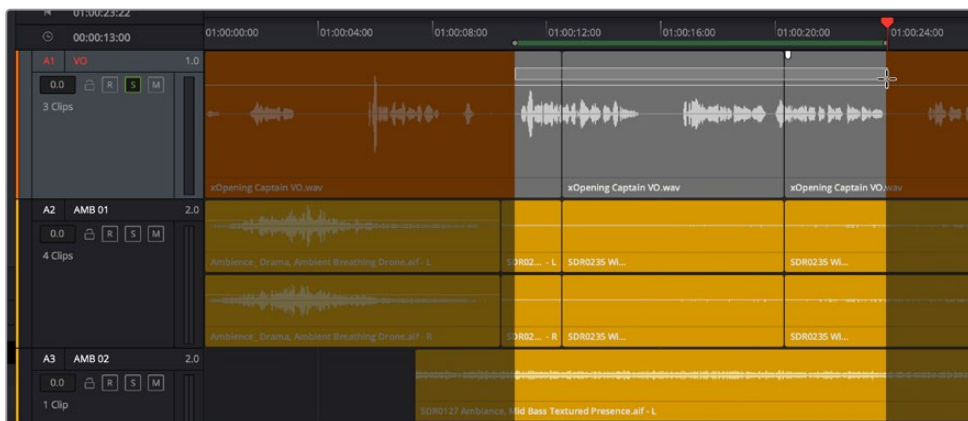


Clicking the bottom half of a clip to select that clip in Edit Selection mode

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

To select a range using the crosshairs tool of the Edit Selection mode:

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

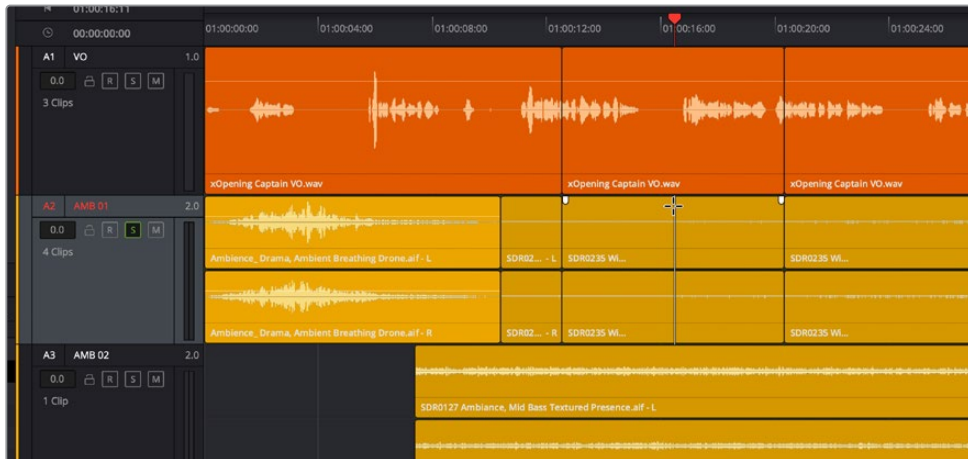


Dragging within the top half of a clip to select a region in Edit Selection mode

- Using the crosshairs, you can also Command-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.

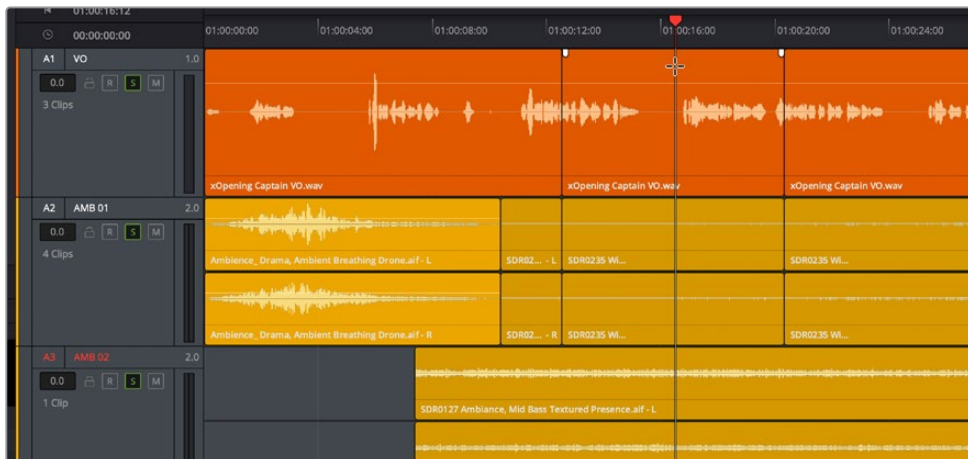
To select a single frame using the Crosshairs tool of the Edit Selection mode:

- Move the pointer to the top half of a clip until a cross-hairs 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 crosshairs, 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 discontinuous 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 Edit Selection mode:

- Once you've made a selection of one or more clips or regions using the Hand or Crosshairs tool of the Edit Selection 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 Edit Selection 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 You Don't Want to Change

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 locked clips 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 Selection or Range Selection 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.

NOTE: Clips cannot be joined as of the time of this writing.

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 Selection or Range mode, or on the bottom of Edit Selection 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're 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

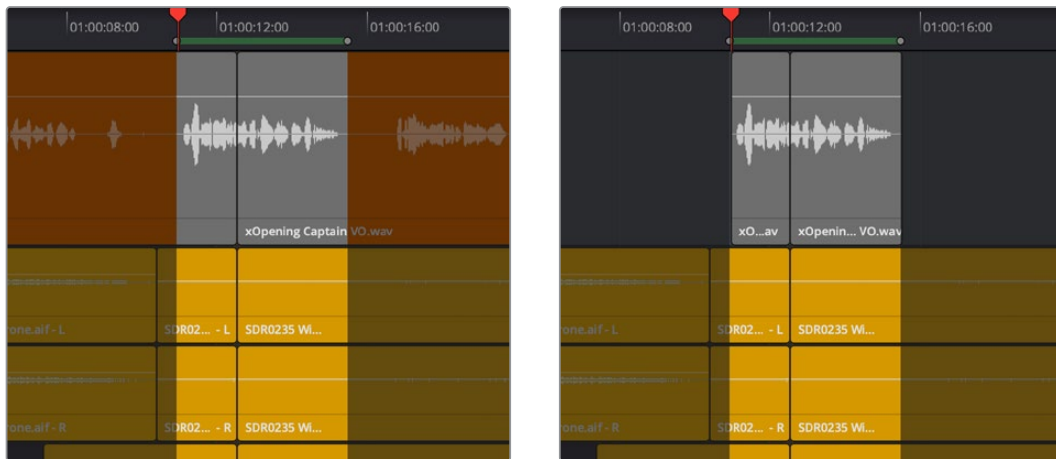
The Trim > Trim Start (Shift-]) and Trim End (Shift-]) commands let you move the In or Out point of all clips that intersect the playhead as either a ripple operation (in Trim mode) or a resize operation (in Selection mode). You do not need to make a selection to use Trim Start and Trim End, making these 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 to Selection 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 (Sliding) and Overwriting Clips

Formerly called slipping in previous versions of Fairlight, sliding refers to moving a clip to the left or right in the Timeline, changing the timing of that clip's position in the edit.

To move or slide 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 Edit Selection 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 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.

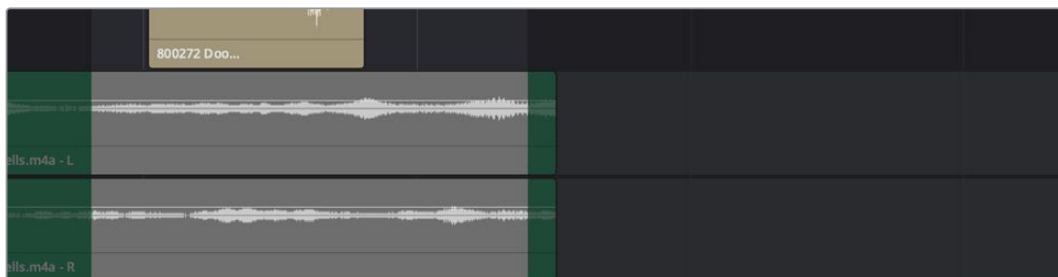
Slipping

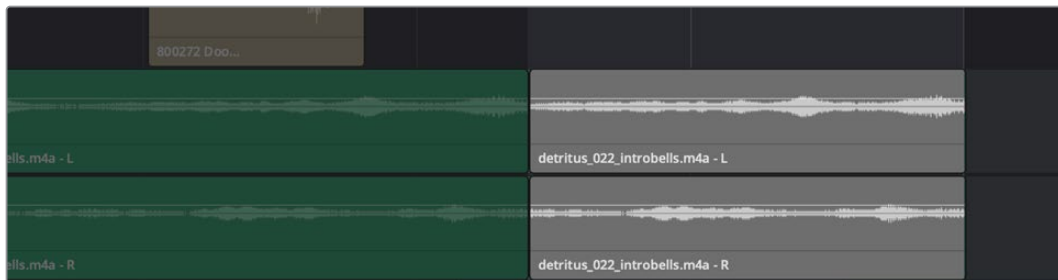
Formerly called resyncing, slipping an audio clip keeps that clip in the same place in the Timeline while changing the range of media that appears in that spot. Slip edits do not change the duration of the overall Timeline, and they don't move the clip's position relative to the other clips in the Timeline.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

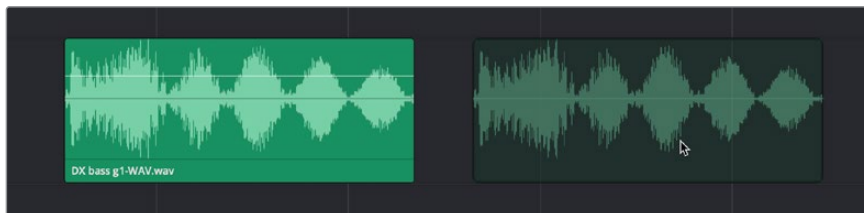
The Duplicate Selection command duplicates one or more selected clips, placing the duplicates immediately after the Out point of the selection. If you're duplicating a region of a clip with tails, or a clip that's in between other clips, the duplicated selection will overwrite whatever is to the right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





Using the Duplicate Selection command to duplicate a selected region

You can also 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.

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 clip(s) or clip region(s) that you can select, in either Selection or Range Selection modes by pressing the Delete or Forward Delete keys, or by right-clicking a clip and choosing Delete Selected from the contextual menu. In the Fairlight page, deleting anything leaves a gap. You can not ripple delete anything.

Cut, Copy, and Paste

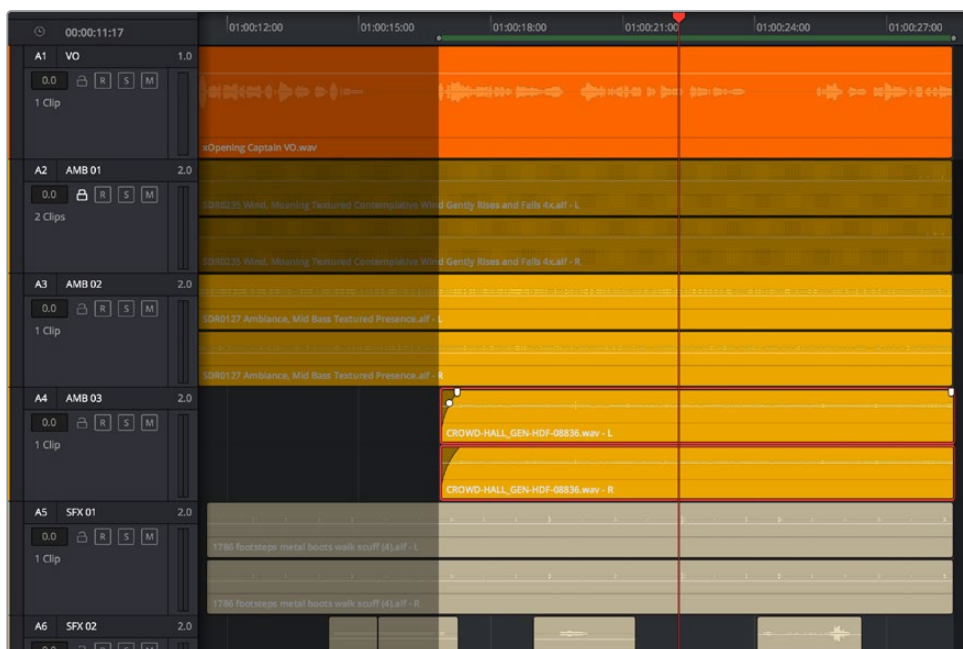
The Fairlight page has a unique copy and paste methodology that takes advantage of the “ghost” overlays that are used for the waveforms of selected audio clips. This method makes it easy to copy and paste clips using keyboard shortcuts and the JKL keys.

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:

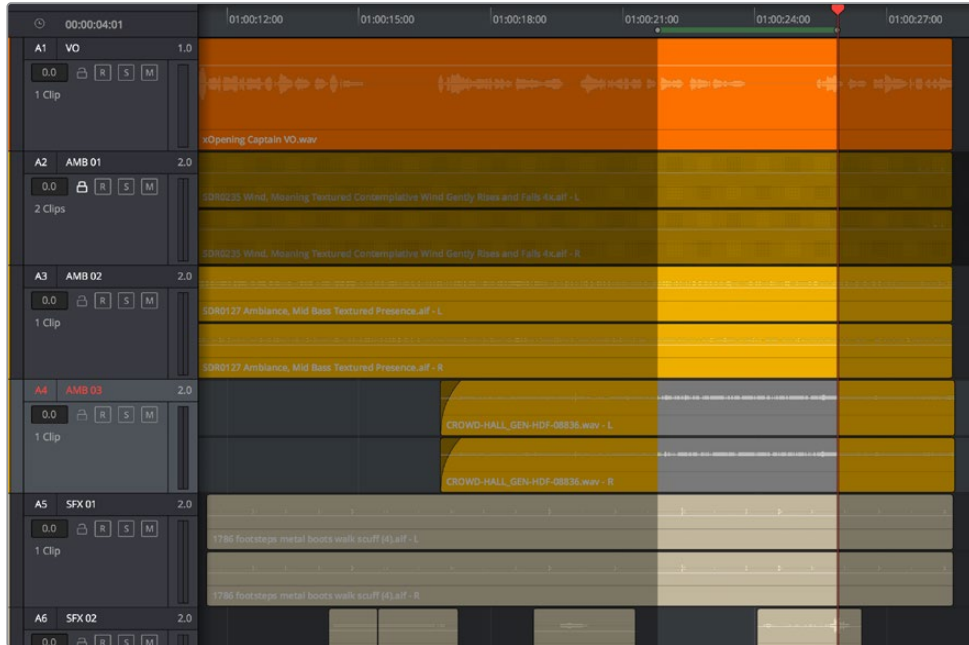
- 1 If you’re cutting or copying a whole clip, then choose either the Selection (press A) or Range Selection (press T) mode. If you’re cutting or copying part of a clip, then make sure you’re in Range Selection mode (press T).
- 2 To use the playhead to make a clip selection, select the track that contains 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

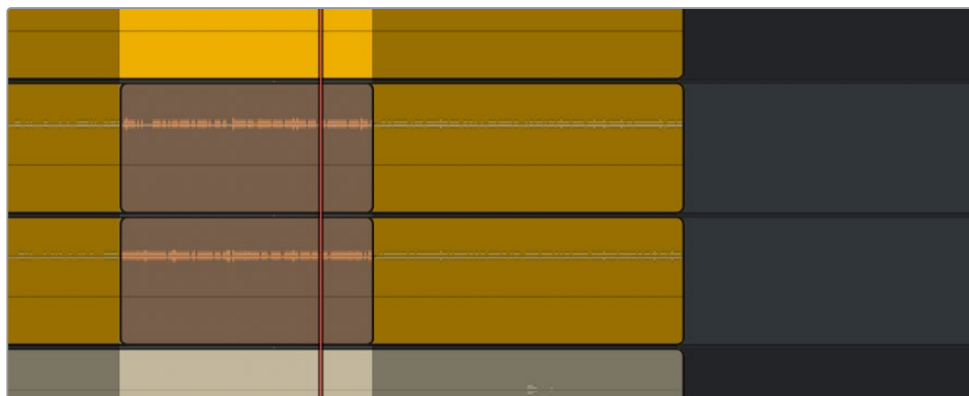
- 3 Do one of the following:
 - a To cut or copy a whole clip, move the playhead so that it intersects the clip you want to cut or copy. If the playhead intersects a clip on a selected track, that clip should become selected. You should note that even if you use the mouse to select a clip without selecting 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 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

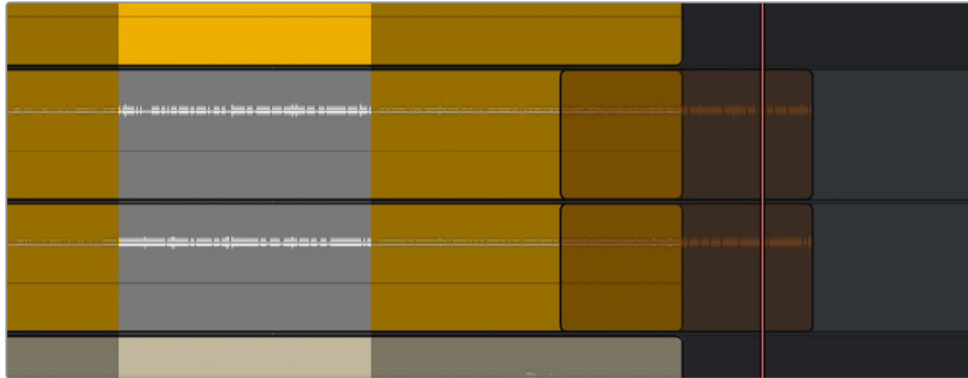
- 4 Making sure the playhead is over the section of the waveform that you want to use as the frame to move the clip by, press Command-X to cut or Command-C to copy that clip (you can also right-click a clip and choose Copy or Cut). That clip will immediately become highlighted.



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.

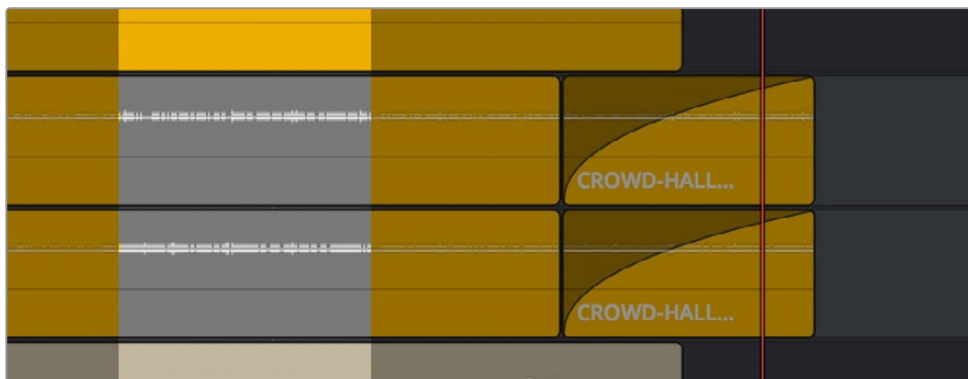
- b If you want to move the cut or copied clip to another track, use the Control-Option-Up or Down Arrow key shortcuts to change the selected track; the ghost clip will move along with change in track selection.



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.

- 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.



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:

- 1 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.
- 2 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.

- 3 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.
- 4 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.
- 5 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 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.

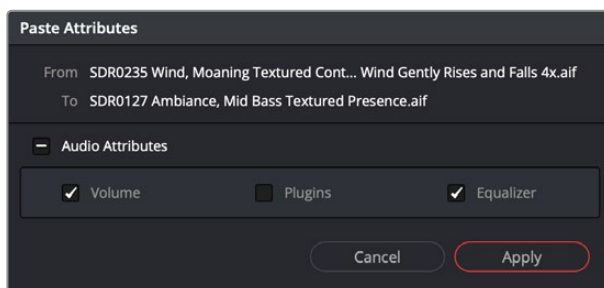
- 6 When the clip is positioned where you want it, press Command-V to paste the clip at the position you've chosen (you can also right-click a track and choose Paste from the contextual menu). The clip becomes solid, and you're finished.

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.

Copying and Pasting Clip Attributes

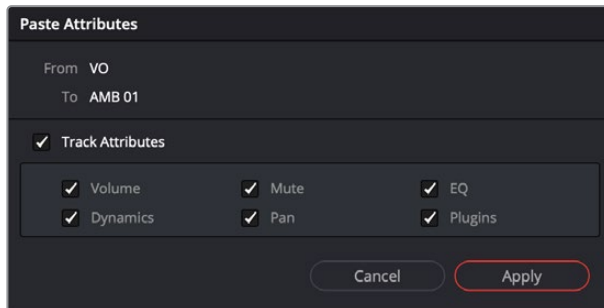
For clips, this works as simply as copying a clip, then selecting one or more audio clips and right-clicking another clip and choosing Paste Attributes from the contextual menu. A dialog appears letting you choose which audio attributes you want to paste before clicking Apply.



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.



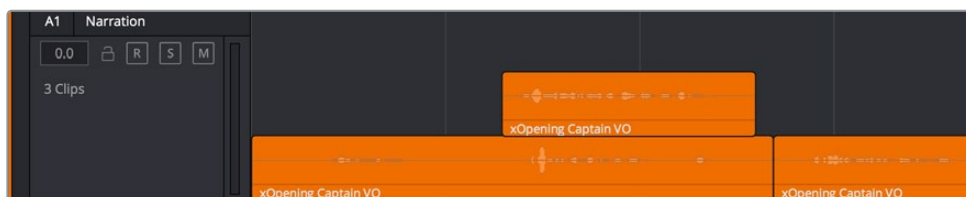
The Paste Attributes dialog in the Fairlight page, used to copy attributes from one track to another

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.

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.

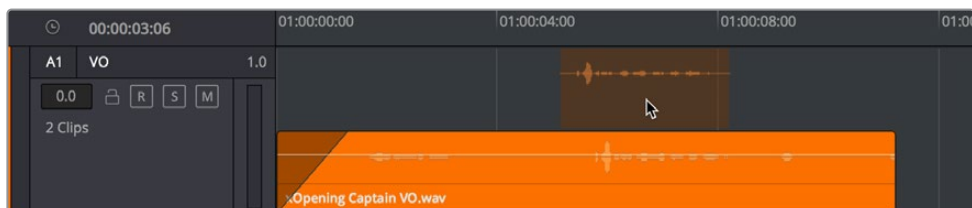
TIP: Track layering can be used on the Edit page as well.

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.

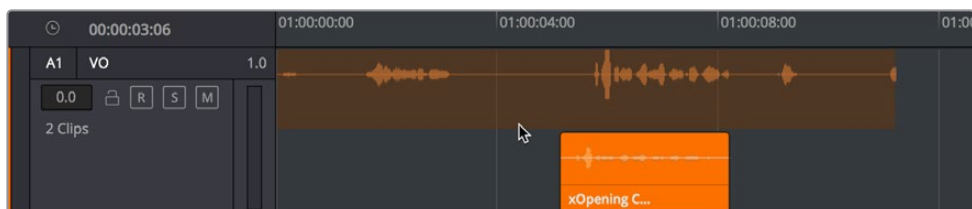
To view audio layering:

- 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.

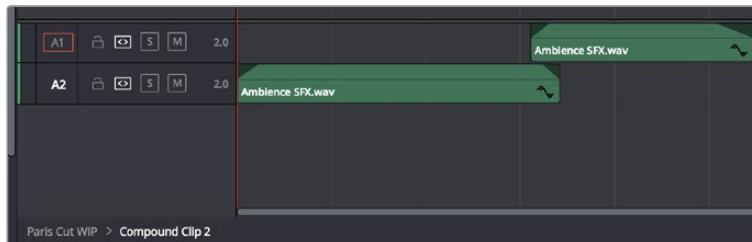


Hiding layers makes all audio layers appear on a single track, as if the top clips are overwriting what's underneath, except the muted material underneath is preserved

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.

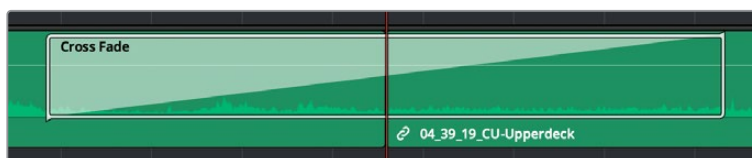


Opening an audio compound clip; note the path control at the bottom left of the Timeline

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 $+3\text{dB}$ 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.

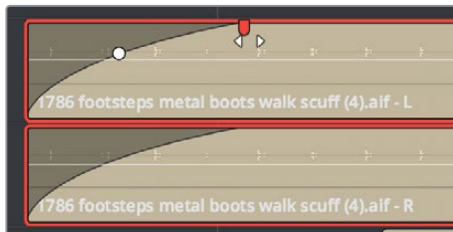
Using Fades

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

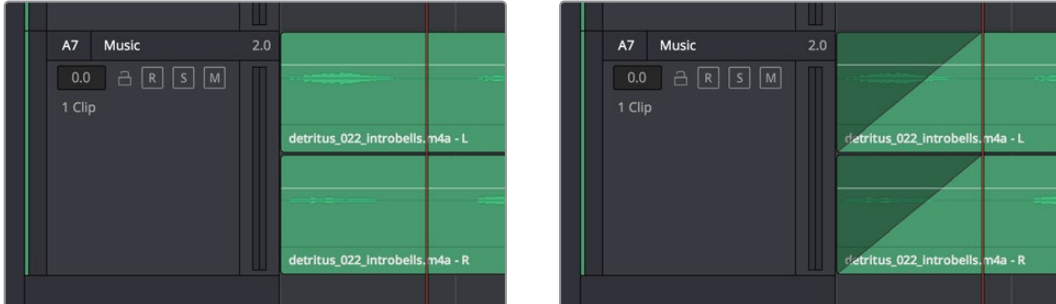
Once you've created a fade effect, you can adjust the curve of the fade by dragging the handle that appears right on top of the fader curve. Dragging the handle up and down affects the angle of the curve, and dragging the handle left and right affects the shape of the curve. In this way, you can create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



Adjusting the curve of the fade

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.



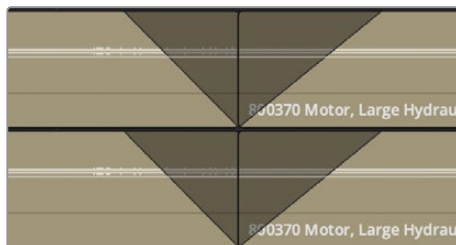
(Left) Placing the playhead where you want a fade in to end, (Right) Using Fade In to Playhead

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.

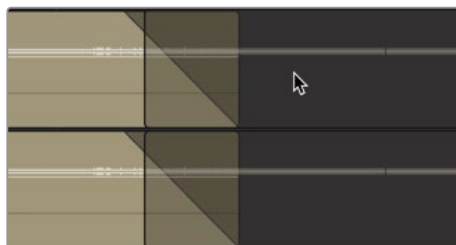
To create a crossfade by overlapping two clips together:

- 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.



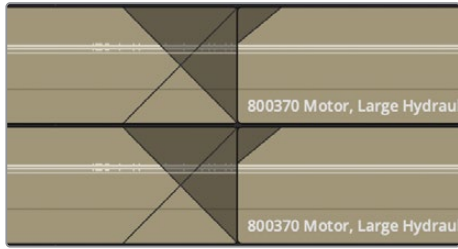
Adding fades to adjacent clips

- 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

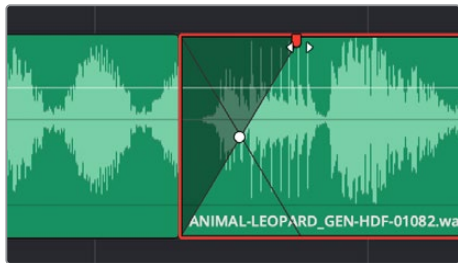
- Drop the clip. The overlapping fades will both be preserved thanks to clip layering, and a crossfade will appear in the Timeline.



The resulting crossfade

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

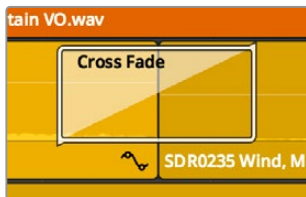
Drag a fader handle at the beginning or end of a clip that's layered, and a crossfade will automatically appear.



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

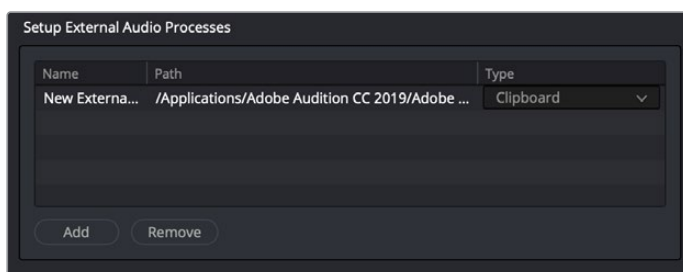
You can right-click any clip in the Timeline and choose Find in Media Pool to automatically select that clip in the Media Pool, for instances where you might want to edit another copy of that clip somewhere else in the Timeline, or re-edit another segment from that clip into the same area.

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 Plug-ins 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 Plug-ins 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:

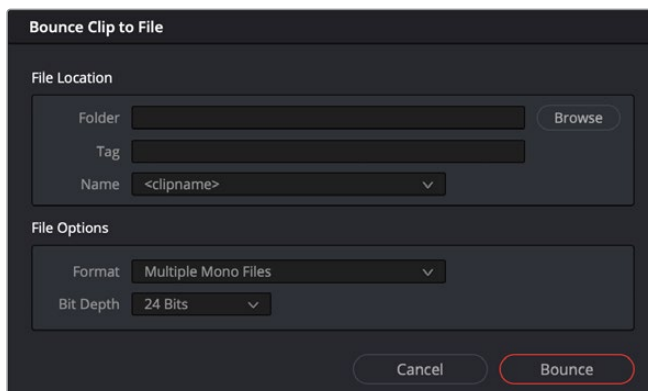
- **Command Line:** As a command line parameter, if your audio application is able to be run from the Terminal.
- **Clipboard:** By placing the path to the bounced file in the clipboard, so you can paste it into the application which has been automatically launched, or import it via a File > Open dialog.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

Bouncing Audio Clips to External Files

For any workflow where you need to write clips from the Timeline to external files without whatever levels, EQ, dynamics, filters, or other filters have been applied in the Fairlight page, you can use the Bounce Clips to Files command.

To bounce clips to external files:

- 1 Select one or more clips in the Timeline.
- 2 Right-click one of the selected files and choose Bounce Clips to Files from the contextual menu.
- 3 When the Bounce Clip to File dialog appears, do the following:
 - a. Click Browse to choose a location to save the bounced audio files.
 - b. (Optional) Enter a tag and one of the various Name options.
 - c. Choose a Format and Bit Depth for the bounced clips.



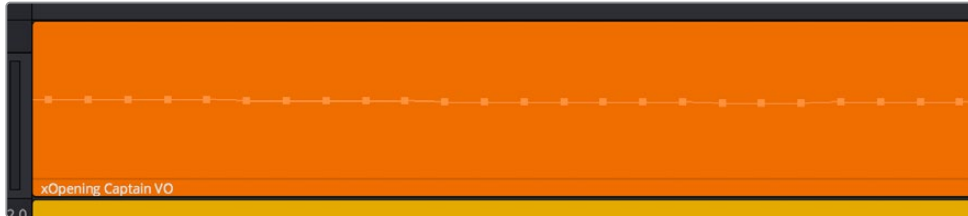
The dialog that lets you choose options for bouncing clips to files

- 4 Click Bounce.

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.



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.

Chapter 155

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. 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.

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Audio Settings in the Inspector

Each selected clip, and each selected Main, Submix, or Auxiliary bus channel strip in the Mixer exposes some simple audio-related parameters in the Audio panel of the Inspector.

- **Clip Volume:** Each clip has a single volume control, which corresponds to the volume overlay over each audio clip.
- **Clip Pan:** (Only exposed for clips) A simple Pan slider that controls stereo panning.
- **Clip 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.
- **Clip 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.
- **Audio Effects:** If you've applied any FairlightFX, VST plug-ins, or Audio Unit plug-ins, those controls will also appear in the Inspector. For more information, see Chapter 158, "Audio Effects."

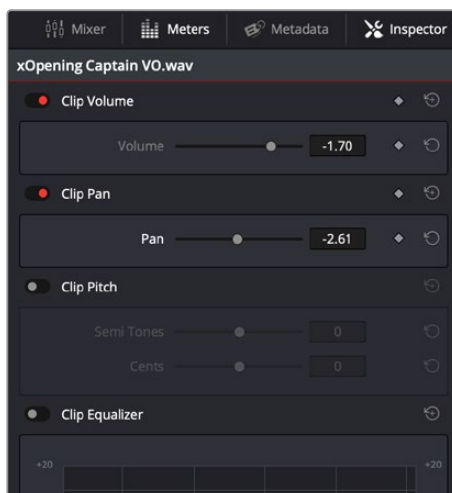
Additionally, when you apply other audio plug-ins from the Audio FX panel of the Effects Library, additional parameters and controls are exposed (covered towards the end of this chapter).

Making Adjustments in the Inspector

Clip-specific Volume, Pan, Pitch, and Equalization are adjusted and can be 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 plug-ins 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.

Making Simple Adjustments

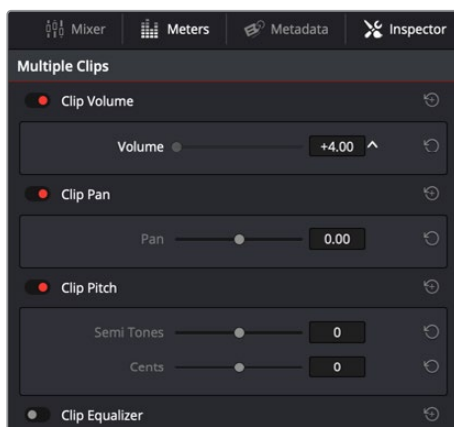
Every group of controls in the Inspector largely consists of sliders, checkboxes, drop-down menus, buttons, and the occasional custom control.

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:

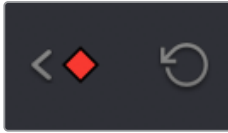
- If you want to make a relative adjustment to all selected clips while keeping their original offsets from one another, then drag the virtual slider in the parameter field which will display a + or – before however many units your adjustment is.
- However, if you want to set all selected clips to the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

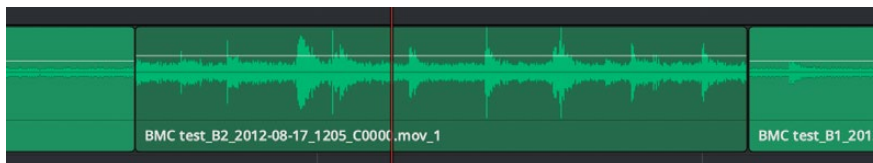
- **To disable or enable a single parameter's keyframed effect:** In the Timeline, click the toggle control at the left of a parameter's keyframe track. Orange means that track's enabled. Gray is disabled.
- **To disable or enable a group of parameters in the Inspector:** Click the toggle control at 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 154, "Editing Basics in the Fairlight Page."

Seeing Effects in the Timeline

When you adjust any clip's Inspector controls, or add any kind of plug-in to a clip in the Timeline, be it an adjustment in the Inspector or a plug-in you've applied, clips with that effect applied appear a darker shade of whatever color they are. Removing all effects from a clip (for example, using the Remove Attributes command) returns that clip to its original color. This makes it easy to see, at a glance, which clips have effects, and which clips don't.



A closeup of the Timeline with a darker clip with effects between two other regularly-colored clips without effects

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.



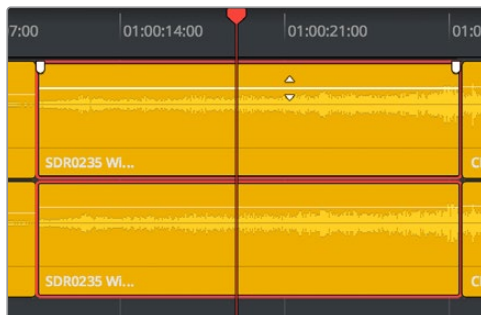
The Volume parameters available for audio clips in the Inspector

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 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.

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 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.
- **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 discontinuous 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.

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.

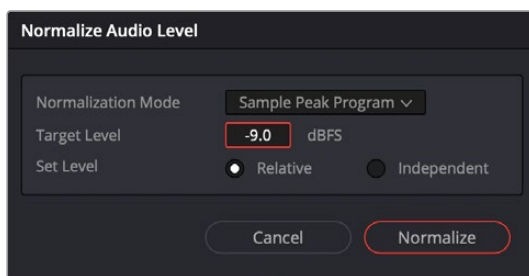
The various loudness options are designed to analyze an audio signal based on its perceived loudness to the listener, which results in a more accurate automatic balancing of different clips' audio levels to one another, regardless of transient peaks occurring throughout different clips.

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

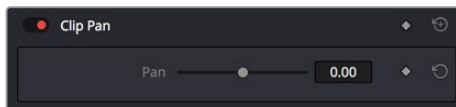
- 2 Choose the Normalization Mode you want to use. You can choose among a variety of standardized loudness measurement algorithms, or Sample Peak, or True Peak.
- 3 Choose the reference level that you want to set the peak volume of the selected clips to match, in dBFS.

- 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 160, “Audio Meters and Audio Monitoring.”

Clip Pan

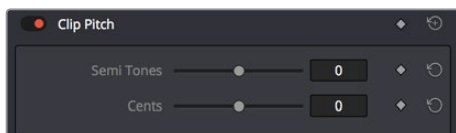
Each audio clip in the Timeline has a simple stereo Pan control that lets you pan that clip. While most professional mixes will restrict panning to the more robust panner found in the Fairlight page Mixer, this simple clip-based Pan control is useful for editors of visuals working in the Edit page to 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.



Clip Pan Control

Clip Pitch Controls

Each audio clip in the Timeline has Clip Pitch controls that let 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 an octave).

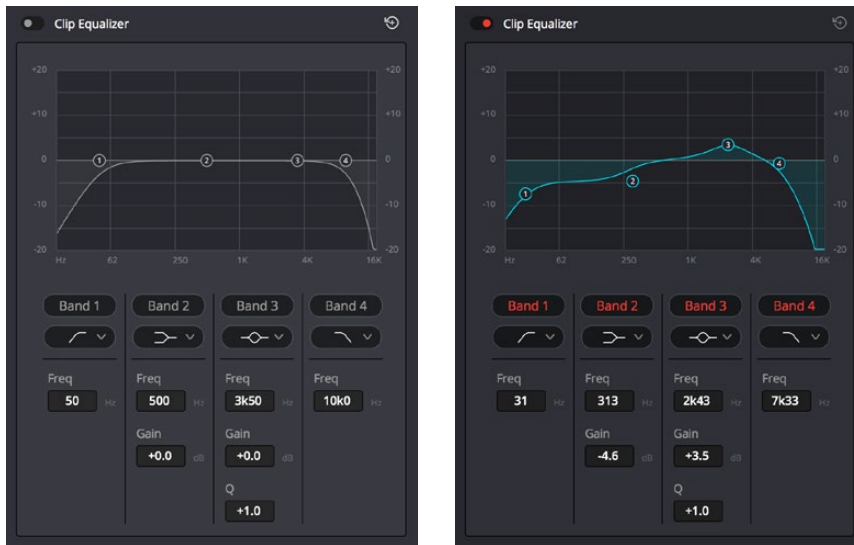


Clip Pitch control in the Inspector

Clip EQ

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 EQ button displays the equalization curve that's being applied. This indicator cannot be adjusted; you must open the EQ window to make modifications.



The channel strip's EQ indicator, (Left) EQ is at detent, (Right) EQ is adjusted

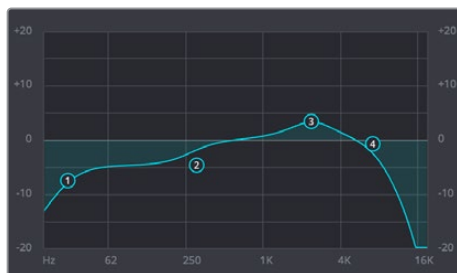
Master EQ Controls

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.

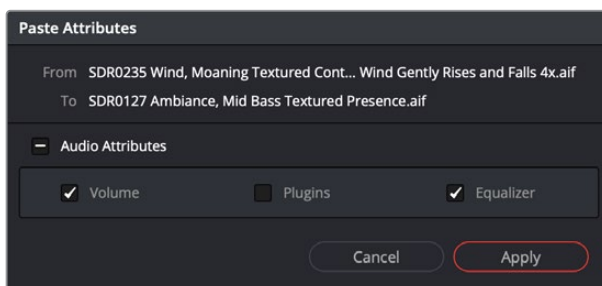
- **Band enable button:** Turns each band of EQ on and off.
- **Band filter type:** Bands 1 and 4 can be switched among four specific filtering options for processing the lowest or highest frequencies in the signal. These include (from top to bottom) Hi-Shelf, Hi-Pass, Bell, Notch, Lo-Pass, and Lo-Shelf. 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.

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

Chapter 156

Mixing in the Fairlight Page

The Mixer is the spider at the center of the web that is the Fairlight page, and provides the primary tools you'll use to mix the various audio tracks of your program into a harmonious whole using EQ, Dynamics, Panning, level control, and VST and Audio Units audio effects of all kinds, all with full automation, to hone your sound and balance each track's elements with the others. This chapter focuses on explaining the various functions of the Mixer so you can harness its power for yourself.

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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 busing, see Chapter 150, “Setting Up Tracks, Buses, and Patching.”
- For more information about recording audio, see Chapter 152, “Recording.”
- For more information about recording automation, see Chapter 157, “Automation Recording.”

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, and mute and solo tracks. 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 bus labeled M1 that combines all these tracks into an overall mix.



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

Tracks and Buses

Once you start creating buses, the Audio Mixer exposes two sets of channel strips. The left-most 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 Main, Sub (submix), and Aux (auxiliary) bus that you've created.



The Audio Mixer is divided into two sections, one for tracks (at left) and one for buses (at right)

If you have more tracks and buses 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 buses you want to see next to one another.

Each audio track's channel strip has a set of Main and Sub 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.

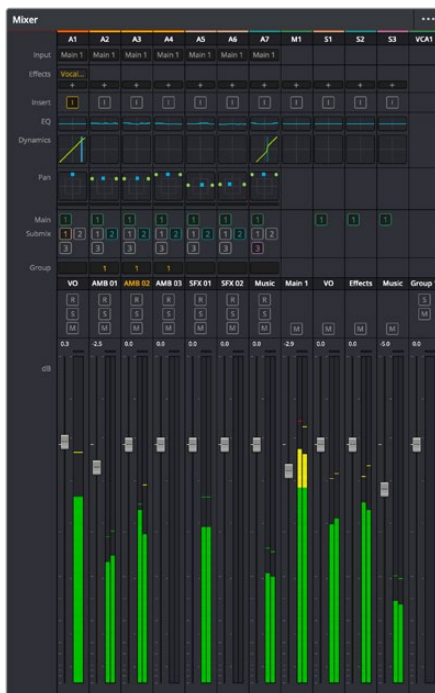


Main and Submix buttons let you assign tracks to buses, and buses to other buses

Customizing the Onscreen Mixer Controls

The Option menu at the upper right-hand corner of the Mixer provides a number of different options for customizing the look of the Mixer, as well as which controls are shown or hidden.

First, you have the options of showing the Full Track Mixer or the Small Track Mixer. 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 lets you have many more channel strips onscreen at one time, for those times where you're doing incredibly ambitious mixes.



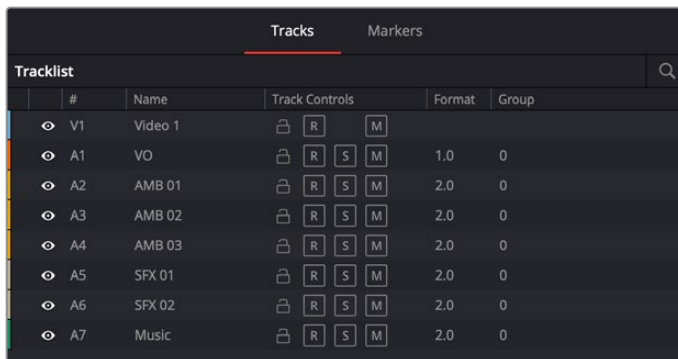
The Small Track Mixer view

Second, there's an option to Show Labels, which are the control names listed in a column to the 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 layout of the Mixer, hiding these will give you a bit more room to work with for another channel strip or two.

Third, there's a set of options that let you toggle the visibility of specific channel strip controls, so you can hide controls you know you're not going to be using, or that you've used but no longer need to adjust or want to protect from accidental adjustment by a wandering mouse or pen.

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, and Group 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 channel assignment.



The Tracks panel of the Index hiding tracks 1–4 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. To quickly show or hide a number of tracks, you can click and drag up or down over the eyeball button of each track for which you want to reverse 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

You can also 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

Finally, you can rearrange tracks using 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 drop it. You can even select a contiguous series of tracks and drag them all to a new position in the Timeline at once.

Reassigning Channel Mappings

Select one or more tracks, then right click one of the selected tracks and choose a channel assignment from the Change Track Type to submenu of the contextual menu.

Selecting Channel Strips and Tracks

When you select a track in the Timeline, you also select that track's accompanying channel strip, and vice versa. It's possible to select multiple tracks in the Timeline and thereby select multiple channel strips, but you can also Command-click to select multiple channel strips in order to select multiple tracks.

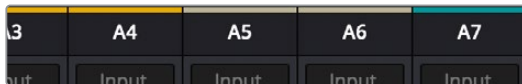


Selecting multiple channel strips results in the selection of multiple tracks

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.
- **Track number:** The number of the timeline audio track corresponding to each channel strip appears here.



The track color and track number appear at the top of each channel strip

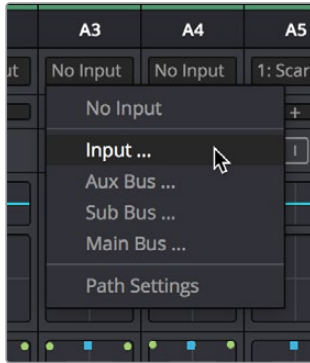
- **Track name:** This mirrors the track name found in the header controls of the timeline. If you customize an audio track's name in the timeline, that name appears here.



Each track's name appears between the assignment buttons and the arm/solo/mute buttons

Input

A drop-down menu that lets you patch inputs, patch buses, and configure the input settings of audio signals routed through Blackmagic hardware interfaces.



The Input drop-down menu provides shortcuts for patching different buses using the Patch Input/Output window

For more information on using the options of the insert menu, see Chapter 144, “Setting Up Tracks, Buses, and Patching.”

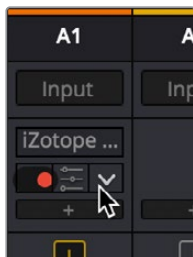
Effects

When you apply VST or Audio Unit effects to a track from the Effects Library, those effects appear here. Clicking the Plus button opens a drop-down menu with which you can apply any VST or AU effects installed on your machine to that track.



Moving the pointer over the plus to add effects

Hovering the mouse over any listed effect reveals controls for enabling/disabling each effect, opening an effect’s custom controls, and deleting that effect.



Moving the pointer over an effect reveals controls for that effect

For more information on using audio effects, see Chapter 152, “Audio Effects.”

Insert

Enables the routing of effects from Blackmagic audio interface hardware to outboard effects boxes and back again. This button can be toggled to enable/disable such routing.

EQ

Double-clicking exposes a four-band parametric equalizer with additional Hi and Lo 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. 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 button displays the equalization curve that's being applied. This indicator cannot be adjusted, you must open the EQ window to make modifications.



The channel strip's EQ indicator, (Left) EQ is adjusted, (Right) EQ is detent

Master EQ Controls

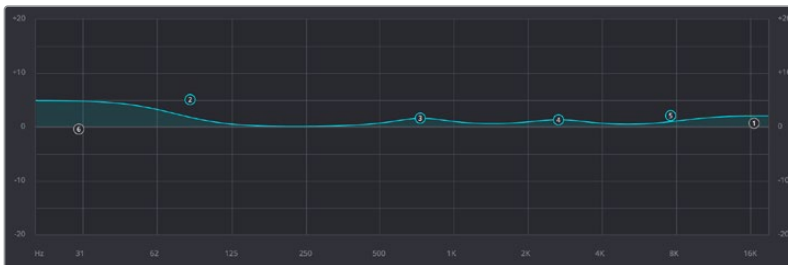
The Equalizer window has the following overall controls:

- **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.

- **Equalizer Type:** Changes the EQ control functionality to emulate different EQ characteristics from “classic” mixing consoles. There are four options:
 - **Earth:** (Default) Native Fairlight controls
 - **Air:** Emulates the SSL 4K
 - **Ice:** Emulates the Neve V
 - **Fire:** Emulates the Focusrite
- **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.

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.

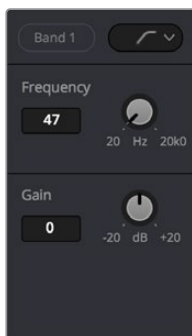


The EQ graph with user-draggable handles

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 6

The outer two sets of band controls let you make high-pass and low-pass adjustments, if necessary. They’re off by default.



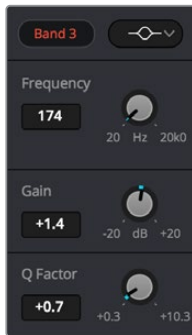
The Band 1 and 6 controls

- **Band enable button:** Turns each band of EQ on and off.
- **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) Hi-Shelf, Hi-Pass, Lo-Pass, and Lo-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.

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.



The Band 3 controls

- **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

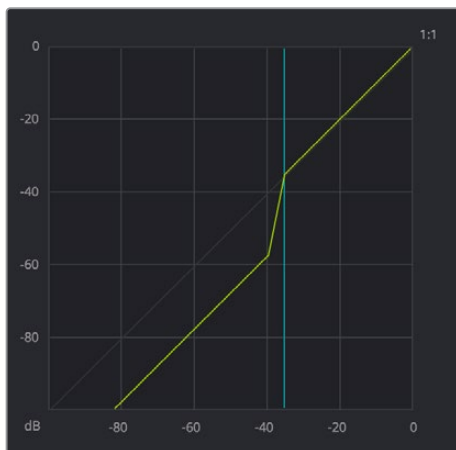
Dynamics

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.



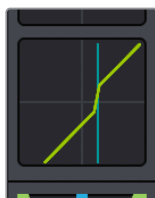
The channel strip Dynamics control window

When you enable whatever combination of dynamics controls you need for that track, the dynamics graph updates with curves that show you how the signal is being affected by the Expander or Gate, Compressor, and/or Limiter settings that are being applied.



The dynamics graph shows how the signal is being affected by the current settings

With these dynamics enabled, the Dynamics button on the channel strip displays these curves, so you know what's happening to that channel. This indicator cannot be adjusted, you must open the Dynamics window to make modifications.



The channel strip's Dynamics indicator, (Left) Dynamics at detent, (Right) Dynamics adjusted

Master Dynamics Controls

The Dynamics window contains the following overall controls at the top of the window:

- **Reset button:** Resets all controls of the EQ window to their defaults.
- **Make Up fader:** A post-Dynamics level control that lets you boost the signal to compensate for dynamics settings that have lowered the level.

Expander/Gate

The first of three sets of dynamics parameters, these 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 a certain level threshold in order to reduce or eliminate noise in quiet parts of a recording.

- **Expander:** A button that lets you enable these controls and switch them to perform expansion.
 - **Threshold:** Sets the signal level below which gain reduction occurs. Defaults to -35dB . The range is from -50 to 0dB .
 - **Range:** Unused for expansion.
 - **Ratio:** Sets the gain reduction ratio (input to output) that's applied to signals which fall below the threshold level. Defaults to 1:1.1. The range is 1.0:1 to 10:1.
 - **Attack:** Adjusts how quickly the sidechain detector applies expansion when a signal exceeds the threshold. Defaults to 1.4mS (milliseconds). The range is 0 to 100mS.
 - **Hold:** Keeps dynamics from being triggered again until a certain amount of time has passed, in mS. Defaults to 0mS. The range is from 0 to 4000mS.
 - **Release:** Adjusts how quickly or gradually the sidechain detector stops applying dynamics when a signal goes back below the threshold. Defaults to 93mS. The range is 0.03 to 4.03mS.
- **Gate:** A button that lets you enable these controls and switch them to perform gating.
 - **Threshold:** Sets the signal level below which gain reduction occurs. The range is from -50 to 0dB .
 - **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. The range is from 0 to 60.2dB.
 - **Ratio:** Unused for gate.
 - **Attack:** Adjusts how quickly the sidechain detector applies gating when a signal exceeds the threshold. Defaults to 1.4mS. The range is 0 to 100mS.
 - **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 4000mS.
 - **Release:** Adjusts how quickly or gradually the sidechain detector stops applying dynamics when a signal goes back below the threshold. Defaults to 93mS. The range is 0.03 to 4.03mS.

Compressor

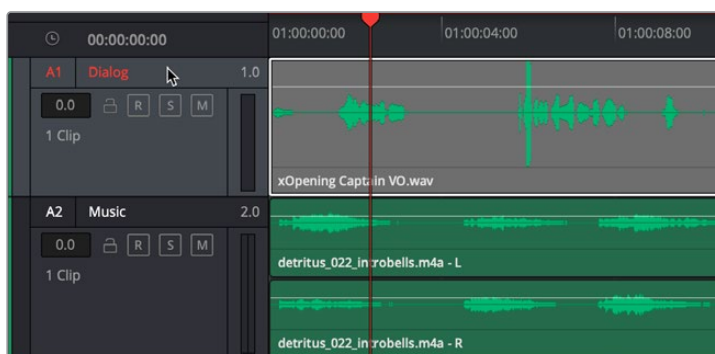
The second set of dynamics parameters let you apply compression, which detects the envelope of an audio signal in order to automatically change its level. Typically used to detect and reduce the peaks of an audio signal so that the overall level can be boosted without clipping, thus reducing the dynamic range of a given signal. 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.

- **Compressor:** A button that lets you enable compression.
 - **Threshold:** Sets the signal level above which compression is applied. The default is -15dB . The range is -50 to 0dB .
 - **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.
 - **Attack:** Adjusts how quickly the sidechain detector applies compression when a signal exceeds the threshold. The default is 1.4mS (milliseconds). The range is 0 to 100mS.
 - **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 0mS. The range is from 0 to 4000mS.
 - **Release:** Adjusts how quickly or gradually the sidechain detector stops applying dynamics when a signal goes back below the threshold. The default is 93mS. The range is 0.03 to 4000mS.
- **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 dialog, 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 the currently selected track. If there are no tracks with Send enabled, then the current track is compressed as usual, using itself as the sidechain.

The following procedure shows how to set up a Compressor to automatically attenuate, or “duck” a music track whenever someone speaks in clips on one or more other tracks of the Timeline.

To use sidechain compression to automatically “duck” music in the presence of dialog on other tracks:

- 1 Edit dialog 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 dialog to select that track, and then double-click the Dynamics indicator on the channel strip 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 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.
- 4 If you have multiple tracks with dialog, you can repeat steps 2-3 for each so that the output levels of all dialog are sent to the sidechain.



Turning on Send in the Compressor of a track with dialog

- 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 automatically feed all "sent" levels 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 set to Listen.
- 7 At this point, you need to lower the Threshold and raise the Ratio controls to the appropriate levels so that as dialog is heard, the music is compressed to be less loud. You may also want to raise Hold so this gain reduction doesn't fluctuate too wildly, and raise Release so the volume adjustment doesn't end too abruptly.



Turning on Listen in the Compressor of a track with music

If you've set this up correctly, then during playback the Sidechain meter should show the levels of the dialog tracks with Send enabled, and the Gain Reduction meter should show you how much the gain of the music track is being reduced when triggered by the dialog 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 set how quickly gain reduction responds to changes in the Sidechain level (as defined by the Send levels).

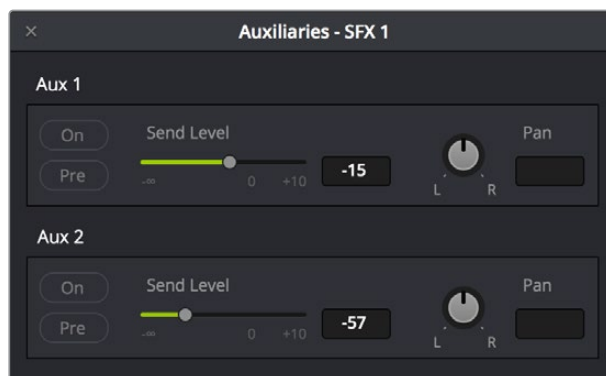
Limiters

The third set of dynamics parameters let you apply limiting, which imposes a hard limit on the maximum level allowed for a particular signal.

- **Limiters:** A button that lets you enable Limiting.
 - **Threshold:** Sets the maximum allowable output level. The default is -21dB . The range is from -50 to 0dB .
 - **Attack:** Adjusts the attack rate time constant of the sidechain detector. The default is 0.71mS . The range is 0 to 100mS .
 - **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 4000mS .
 - **Release:** Adjusts how quickly the sidechain detector stops applying dynamics when a signal goes back below the threshold. The default is 90mS . The range is 0.03 to 4.03mS .

Aux

Lets you route that track's channels through an Aux send bus. Each Aux bar corresponds to a specific Aux bus that you created. Double-clicking any of these bars opens up the Auxiliaries window, with which you can enable or disable auxiliaries, set each one to be routed pre the channel strip or post the channel strip (the default), and set the send level and pan value for each Aux bus. The controls for multiple Aux buses appear stacked within a single window.



The Auxiliaries control window for a mix with two Aux Buses

Each Aux bus you create exposes the following controls in the Auxiliaries window:

- **On:** Turns that Aux send on or off.
- **Pre:** Switches that Aux send to be processed either pre or post fader. Turning this button on enables that track to send levels to the Aux bus before level adjustments on that track are applied. One common use of this is to enable a plug-in applied by the

Aux bus to continue to produce a “wet” version of that track’s audio while the mixing level is set all the way down, while raising the mixing level up mixes a “dry” version of the audio track against the “wet” levels produced by the Aux bus effect. For example, with Pre turned on you could slowly mix fade the original track level up over time over an Aux bus with a Delay effect to create the illusion that the echos of someone talking down a long hallway are giving way to a character’s own voice as they walk closer to the microphone.

- **Send Level:** Adjusts the amount of signal sent from the selected feed to the auxiliary bus. The range is OFF to +10dB.
- **Pan:** Provides panning across stereo Aux bus destinations.

The level to which you set an Aux bus will be shown within the bar that represents that Aux bus in the Mixer’s channel strip.



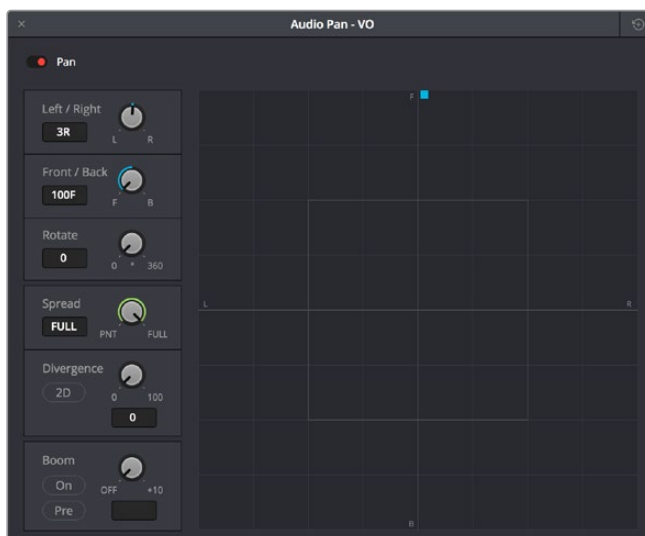
The Auxiliaries levels shown in the channel strip of the Mixer

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

A Pan control that’s compatible with stereo and surround panning. You can drag the panning handle within this control to adjust panning for stereo or surround mixing, or you can double-click this control to expose a large 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. You can either adjust panning using the graphical Pan control, or you can adjust specific panner characteristics using the controls to the left.



The Pan control window

When a channel strip's Pan control is enabled, the Pan area displays the panning that's being applied. Unlike the EQ or Dynamics controls, you can adjust a channel's panning by dragging the handles that appear within this small area of the channel strip.



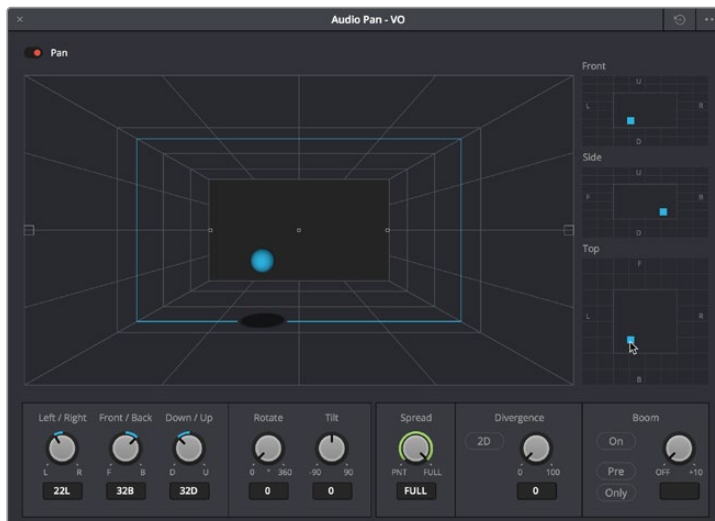
The channel strip's Pan indicator

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 what speaker format you're mixing to. At its simplest, accommodates stereo output.
- **Front/Back:** 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:** Simultaneously adjusts the left/right and front/back pan controls in order to rotate a surround mix about the centre of the room.
- **Spread:** Only available when a linked group of mono tracks is selected. Spread adjusts the perceived size of a surround mix.
- **Divergence:** Spreads the signal for an individual feed across more of the adjacent loudspeakers, making the perceived size of the sound source larger.
- **Boom:** The send level of that track to the LFE part of the mix.
 - **On:** Enables this functionality.
 - **Pre:** Lets you adjust the “dry” part of the signal separately from the “wet” part of the signal when effects are applied.

The 3D Audio Pan Controls

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 Auro 3D and NHK 22.2 (more information about specific support for these and other formats will come later).



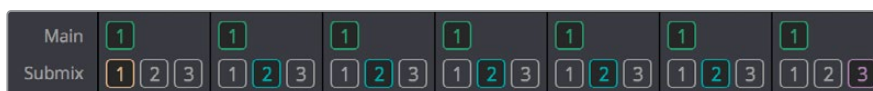
The 3D Pan window

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:** Only available when a linked group is selected. Spread adjusts the perceived size of a surround mix.
- **Divergence:** Spreads, or bleeds, the signal of an individual feed across the adjacent loudspeakers, making the perceived size of the sound source larger. 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 of that track to the LFE part of the mix. An On button enables this functionality, while a Pre button lets you adjust the “dry” part of the signal separately from the “wet” part of the signal when effects are applied.

Bus Assignment Buttons

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 buses.

Fader Groups (VCA Groups)

You can assign multiple faders to a Fader Group, also referred to as “VCA group,” which is controlled by a dedicated group channel strip that appears at the right of the mixer. Fader Groups let you simultaneously adjust multiple faders using one group fader, for instances where that will help you manage the levels of complex collections of audio tracks.

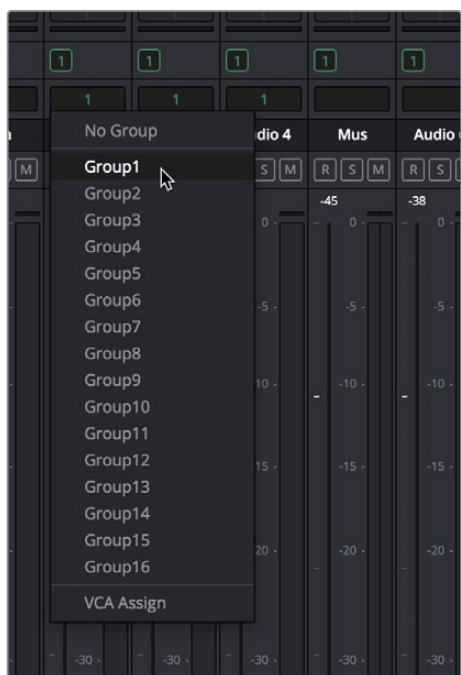
The controls for doing this are found in the Group label area of each control strip, which also display which group each fader has been assigned to.



Group Labels in each control strip, above the control strip label

Making Fader Group Assignments

You can assign any fader to one of 16 groups by right-clicking the group label area and choosing a group from the drop-down that appears. If a fader is already assigned to a group, you can choose “No Group” to remove it.



Right-clicking a Group Label reveals a drop-down menu that lets you assign faders to or remove faders from groups

Using Fader Groups

Once you've assigned multiple faders to a group, a dedicated channel strip for that group appears. Making adjustments to the group 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 Group 1 fader also adjusts the faders for Audio 1, 3, and 4 that are assigned to that group

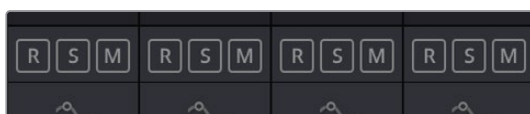
While in a group, you can still move the faders of each individual channel strip independently to make relative adjustments. Channel strip faders only move together when you adjust the group fader, and while the group fader is being moved, each individual fader's relative offset from other faders in that group is maintained, as seen in the previous screenshot, where the Group 1 fader is moving the faders in tracks Audio 2, 3, and 4, but each individual channel strip fader in this group is offset from the others.

Recording Fader Automation for Groups

You can record automation data to the group fader, and all faders in that 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.

Arm, Solo, and Mute Buttons

Identical to the controls found in the track header controls of each timeline audio track.



The channel strip's Arm, Solo, and Mute buttons

- **Record Arm:** (highlights red when enabled) Lets you enable a track to be recorded onto.
- **Solo:** (highlights green for Solo, blue for Solo Safe) Lets you mute all other tracks in order to play a track you need to focus on in isolation. If solo is enabled for multiple tracks, all soloed tracks will play, and all non-soloed tracks will be muted. This affects rendering, so if one or more tracks are soloed, the muted tracks won't be output or rendered.
 - **Solo Safe:** Command-Option-click a Solo button to put it into “Solo Safe” mode. Tracks set to Solo Safe, in which the Solo button is highlighted in blue, always play even if Solo is enabled for other tracks. This is good for tracks you want to continue listening to for reference even as you solo other specific tracks you want to pay more attention to.
- **Mute:** (highlights orange when enabled) Turning on Mute disables audio playback from that track. This affects rendering, so if one or more tracks are muted, they won't be output or rendered.

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 using your mouse, or using the physical fader of your Fairlight console. If you're working with a console, then the onscreen faders serve as a visual reference of what levels are set.



The fader area

- **dB:** Shows you 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 levels automation, and they turn green when automation has been recorded for that track.

Methods of adjusting channel faders:

- **To change the level of that channel with the mouse:** Click and drag any fader up or down.
- **To reset the level of that channel to 0 dB:** Double-click a fader's handle. This does not work after you've recorded automation for a track.

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 that's written to the directory location specified by the "Save clips to" field of the Capture and Playback panel of the Project Settings.

There are two commands available for bouncing audio on the Fairlight page when you hit the wall with how many tracks and effects you can mix in real time.

- 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 live effects is still available as the bottom of the stack of layered audio on that track, and turning View > Show Audio Track Layers on will show this. The bounced audio is a new audio media file that's written to the directory location specified by the "Save clips to" field of the Capture and Playback panel of the Project Settings.

To use Bounce Mix to Track:

- 1 Choose Timeline > Bounce Mix to Track. The Bounce Mix to Track window appears, showing each main, submix, and auxiliary that's 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 "Save clips to" field of the Capture and Playback panel of the Project Settings.

TIP: There's also a Bounce Audio Effects command in the contextual menu of audio clips in the Timeline that have audio plug-ins applied to them. For more information, see Chapter 158, "Audio Effects."

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 157

Automation Recording

The Fairlight page provides simple, flexible, and comprehensive facilities for recording and editing mix automation data. Once recorded, all feed and bus mix parameter automation can be played back in perfect synchronization with the audio, including channel parameters, bus assignments, inserts, and direct outs.

The Fairlight page is designed to allow the operator to record every static and dynamic parameter change you make in the process of balancing the mix of tracks in the timeline. Mixer adjustments may be recorded for one or multiple parameters or channels at a time. Additionally, more adjustments may be added with each automation recording pass, which lets you create 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 156, “Mixing in the Fairlight Page.”

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Automation Recording

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 EQ, Dynamics, and Pan windows, thereby enabling you to record automation for the various audio effects that you've applied to a track.

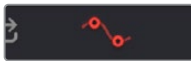
Recording automation refers to creating high-fidelity data that records changes you make to onscreen controls and/or Fairlight console controls, in real time as the Timeline plays, that will then control how those parameters will play back. In this way, you can create a dynamic mix where different audio level, pan, and EQ, dynamics, and other audio filter settings change over time to fade swells of music up and down, pan the sound effect of a car driving by from the left to the right speaker, or slowly increase the strength of a reverb effect applied to foley footsteps as a character walks into a long, dark cavern.

What You Can Automate

You can record automation for nearly every control in the mixer for channel strips corresponding to individual tracks, track groups, or busses, including the fader. Additionally, you can record automation for controls found in audio plug-ins that you use in your mix.

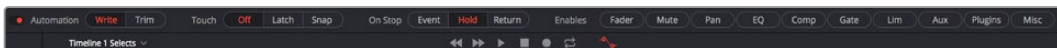
Automation Controls

The automation button, to the right of the transport controls, lets you show and hide the Automation toolbar.



Clicking the Automation button displays the automation toolbar

The Automation toolbar has buttons for each option that's available for preparing to record automation in your mix.



Options found in the Automation toolbar

The Automation toolbar displays the following options:

- **Automation:** Controls how automation data is recorded.
 - **Write:** Records absolute changes to control automation.
 - **Trim:** Records relative changes to control automation in order to increase or reduce levels that have already been recorded.
- **Touch:** Defines what happens when you first adjust an automatable control.
 - **Off:** No automation is recorded.
 - **Latch:** Automation is recorded once you begin moving a control and continues recording after you release the control.
 - **Snap:** Automation is recorded once you begin moving a control and stops recording after you release the control; there is a brief interpolation from the last level you set to the prior recorded level.

- **On Stop:** Defines what happens when you release an automatable control.
 - **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.
 - **Aux:** Automates the Auxiliary controls in the Auxiliaries window.
 - **Plug-ins:** Automates all plug-ins.
 - **Misc:** Automates the parameters of VST and Audio Unit plugins.

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.
 - 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, third-party or Fairlight audio control panel), and make whatever adjustments you want to the controls for which you've enabled automation recording. 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

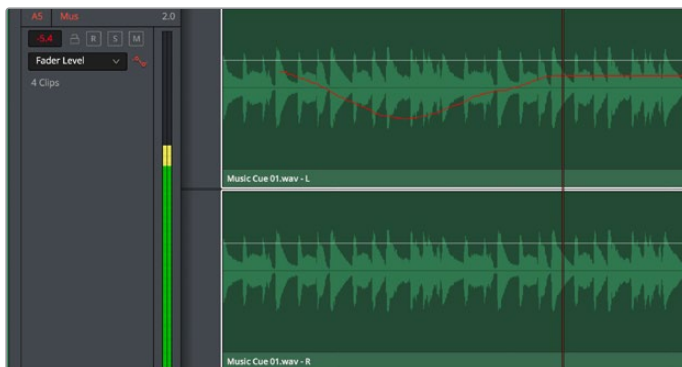
You can use the following steps to record automated changes to controls in specifically armed control strips:

- 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 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

- 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, third-party or Fairlight 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.



Automation being displayed while it's recorded

- 5 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. 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 the user is trying to adjust in the targeted section. As soon as the user is 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 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 "Punch In" menu item.
- Dropping in manually with the In key on the Fairlight controller.
- Automatically using the Active In and Out points on the Fairlight controller.

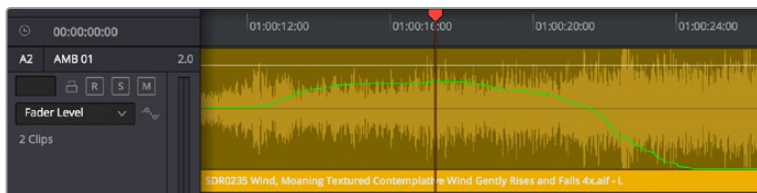
Once enabled for Preview, parameters remain in that state regardless of transport starts and stops. This is different from putting mix items into WRITE, which must be done again after each transport stop.

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.

Viewing Automation in the Timeline

Once you've recorded automation keyframes for a particular parameter, they can be made visible in an automation graph in the Timeline. While the automation controls are visible, an additional pair of controls appear in the header of each audio track. A drop-down lets you choose which automation waveform to view, with options for Fader, Mute, Pan, EQ, Compressor, limiter, Aux, and Plugins controls.

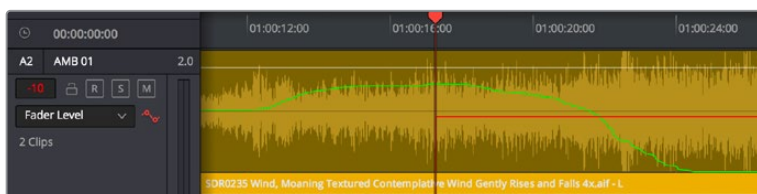


Mixing automation for the Fader shown in the Timeline

At the time of this writing, automation data cannot be cut, copied, or pasted.

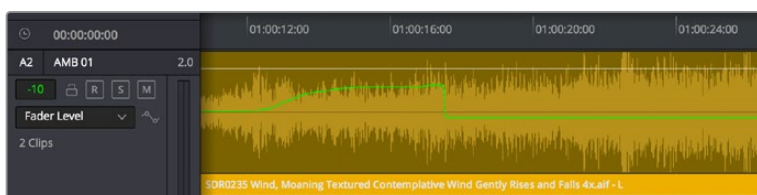
Overwriting Automation

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

Editing Automation

When the automation toolbar is displayed, two additional tools appear in the regular toolbar. From left to right, these are the Pencil and the Select Range tools. These tools let you edit automation in different ways.

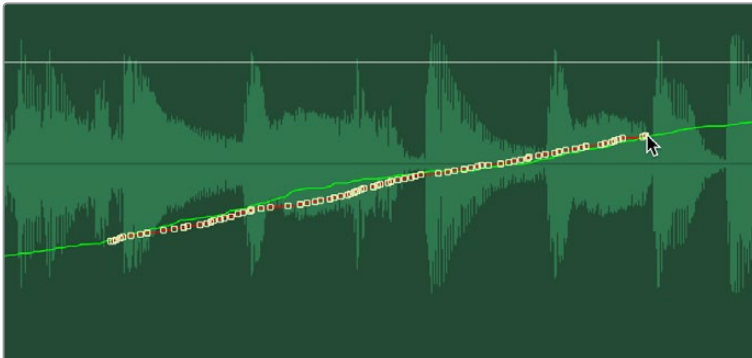


The Pencil and Select Range tools appear when you open the Automation toolbar

Drawing Automation Keyframes

You can use the pencil tool to literally draw new automation curves in the Timeline for whichever parameter's automation data is visible. This can be a good way to smooth out ragged sections of automation without needing to re-record everything you did.

Simply click the Pencil tool, choose the automation data you want to edit in a track of the Timeline using the drop-down menu in the track header, and then click and drag to draw a new curve. While you're drawing, the new curve appears in red, while the old curve appears in green, to help you see what you're doing. When you're finished, release the pointer button and the automation curve will be redrawn.



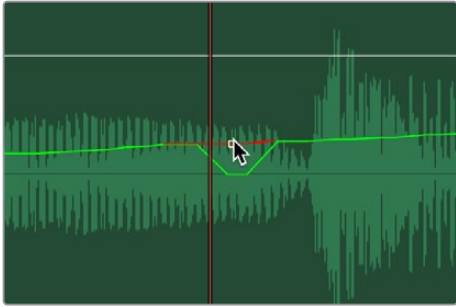
Using the Pencil tool to smooth out a section of automation

Adjusting and Deleting Automation Keyframes

The Select Range tool lets you adjust automation in two different ways.

Adjusting Individual Keyframes

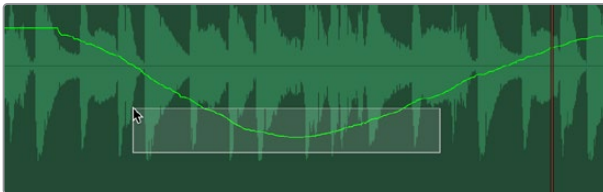
Using the Select Range tool, you can click and drag any automation keyframe up or down and left or right (bounded by its neighboring keyframes) to adjust it directly. When zoomed in, this can be an effective way of making minute adjustments to troublesome keyframes. The segment of automation affected by the keyframe you're dragging appears red to show you the new curve you're creating, while the previously recorded curve remains green. When you release the pointer button, the new shape will be drawn.



Using the Select Range tool to adjust an automation keyframe

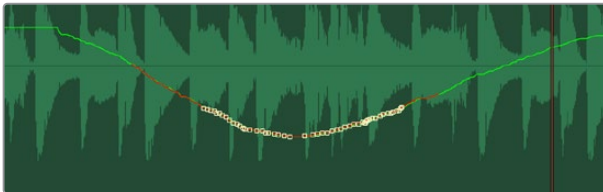
Adjusting and Deleting Multiple Keyframes

You can also use the Select Range tool to drag a bounding box to select multiple keyframes, in preparation for moving them or deleting them.



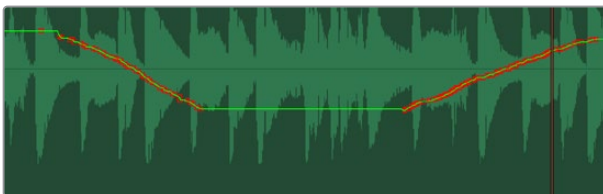
Dragging a bounding box over a section of automation using the Select Range tool

Once you release the box, that section of keyframes becomes highlighted.



Multiple automation keyframes selected

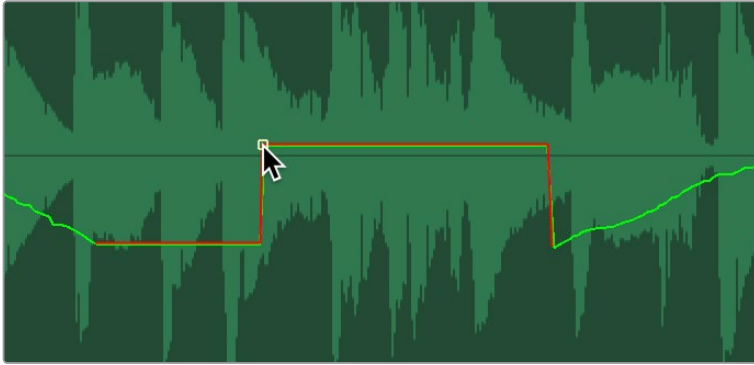
Once it's highlighted, you can drag the selection to move it, or you can press the Delete key to delete it. The remaining section of the curve flattens out to fit the first and last keyframe of the selection.



The newly flattened section of the automation curve after deleting the selected keyframes

Adding New Keyframes

You can also use the Select Range tool to add new keyframes to an automation curve. However, these are not Bezier keyframes, so they only let you create a single level adjustment at that frame. If you make a large adjustment with only a single new keyframe, you'll end up with a squared off section of automation. For this reason, adding new keyframes should only be done when making small adjustments, unless you intend to create an abrupt change.



Adding and adjusting a keyframe using the Select Range tool, exaggerated for print

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.



Green controls show which ones have recorded automation during playback

Chapter 158

Audio Effects

Audio plug-ins 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.

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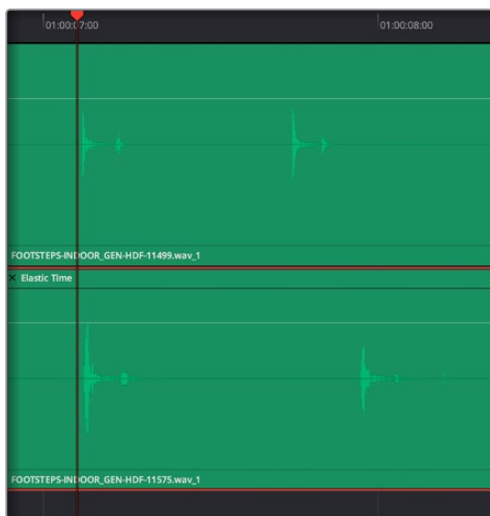
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Elastic Wave Audio Retiming

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.

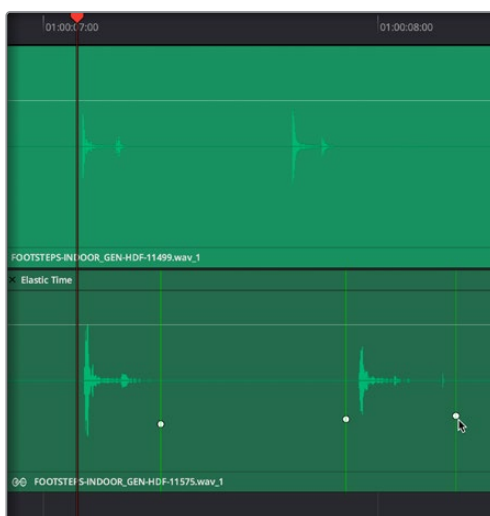
To use Elastic Wave retiming on an audio clip:

- 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.



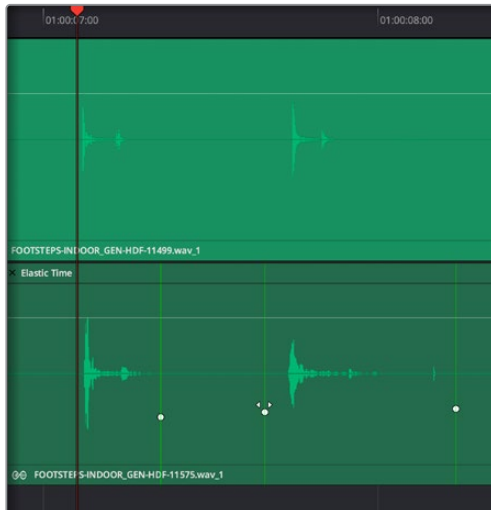
Enabling Elastic Wave

- 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

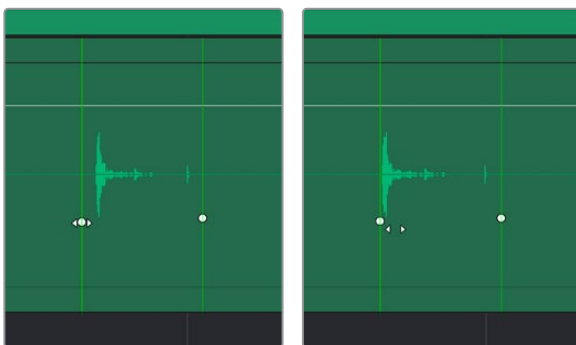
- 4 Dragging the speed keyframe to the left or right speeds up the audio on one side of the keyframe and slows down the audio on the other side of the keyframe, from that keyframe to the neighboring keyframes applied to that clip. Using an audio clip's waveform as your guide, you can use multiple speed 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

- 6 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 keyframes:** 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.

About Audio Plug-Ins

Single or multiple plug-ins can be applied to clips and to tracks. A total of 96 mono channels of plug-ins can be applied (a stereo plug-in uses two of these channels, a 5.1-aware plug-in six channels, and so on). Plug-ins are accessed via each track's control strip, or via the Inspector which provides access to both clip and track plug-ins.

FairlightFX

FairlightFX are a DaVinci Resolve-specific audio plug-in 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 plug-in standard created by Steinberg. The VST standard allows third-party developers to create VST plug-ins for use within VST host applications, or to create VST host applications themselves. The VST plug-in standard is the most widespread audio plug-in standard in use today, with thousands of available plug-ins 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.

As of this writing, DaVinci Resolve supports VST version 2.4. VST effects are available on macOS and Windows workstations, but not on Linux.

VST Effects versus VST Instruments (VSTi)

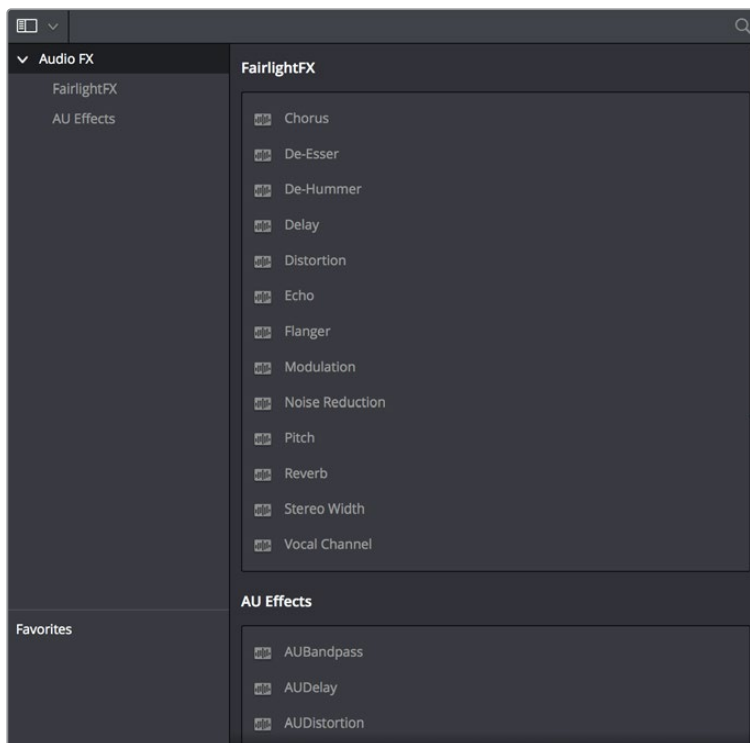
A VST effect is a type of VST plug-in that is used to process audio. A VST effect might be a Reverb, Compressor, or EQ. VST Instruments are typically used to synthesize sound or play back sampled audio. VSTs have rapidly replaced hardware synthesizers and dedicated samplers due to their flexibility, repeatability, and low cost.

Audio Units

Audio Units are an audio plug-in 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.

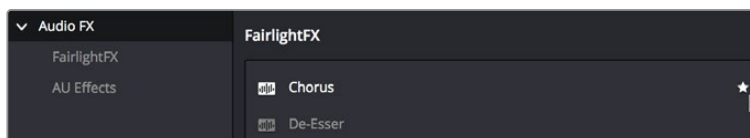
Using Audio Plug-Ins

FairlightFX 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 plug-ins 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.



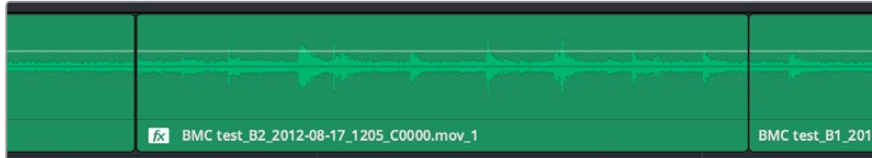
Stars indicate a flagged favorite effect; all favorites are currently filtered

Audio plug-ins 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 plug-ins to clips on the Fairlight page:

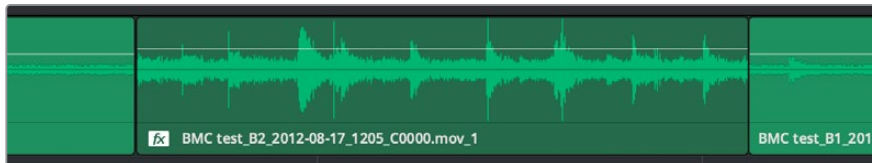
- **To apply an audio filter to a clip:** Drag any filter from the Audio FX panel of the Effects Library onto the clip in the Timeline you want to apply it to.
- **To apply an audio filter to multiple clips:** Select all of the clips you want to apply an audio filter to, then drag any filter from the Audio FX panel of the Effects Library onto any of the selected clips.

When you apply an audio plug-in 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 plug-ins applied appear with a badge

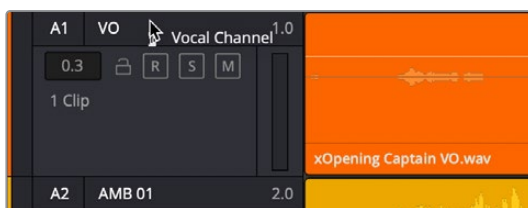
Also, when you apply any kind of an effect to a clip in the Timeline, be it an adjustment in the Inspector or a plug-in you've applied, clips with that effect applied appear a darker shade of whatever color they are. Removing all effects from a clip (for example, using the Remove Attributes command) returns that clip to its original color. This makes it easy to see, at a glance, which clips have effects, and which clips don't.



A closeup of the Timeline with a darker clip with effects between two other regularly-colored clips without effects

Methods of applying audio plug-ins 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.



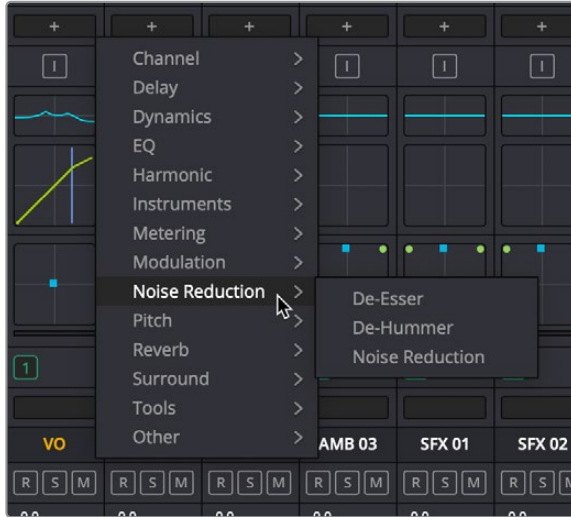
Applying an audio filter to a whole track via the Timeline

- **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.



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 plug-ins panel of the DaVinci Resolve System Preferences window. All plug-ins on a workstation are shown in the Available Plug-ins 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 plug-ins:

- Select that clip and open the Inspector. All audio plug-ins applied to that clip appear under the volume and pan controls, with that filter's controls appearing directly in the inspector.

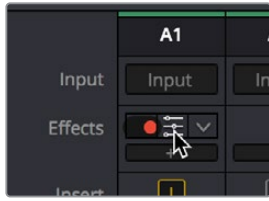
To edit a track's audio plug-ins, do one of the following:

- 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.



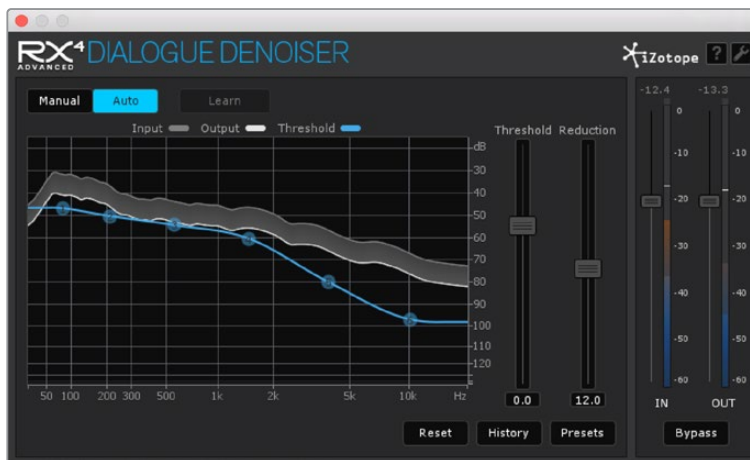
The custom UI button for audio plug-ins in the Inspector

- 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 plug-ins in the Mixer

Nearly all FairlightFX, VST, and Audio Unit audio plug-ins 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 RX4

Methods of working with audio plug-ins 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 plug-ins can also be keyframed or automated just like volume and pan settings, to create dynamic audio effects that change over time.

Applying Audio Plug-Ins to Buses

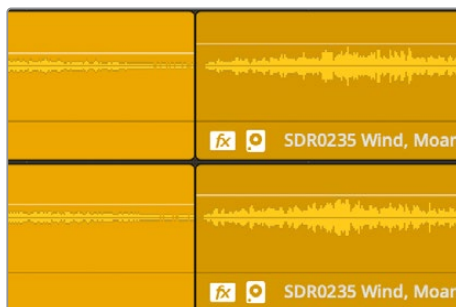
You can apply audio plug-ins to Main and Sub buses just like any other track, with which to apply any audio mastering effects operations you require to individual submixes, or even to an entire main.

Dealing With Processor Intensive Plug-Ins

As you apply more and more plug-ins 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 Plug-Ins

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 plug-in 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 plug-in 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 plug-in 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 be continue to be cached (and re-cached if you change the plug-in'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.

Bouncing Audio Clips With Plug-Ins

Another way of easing the burden of audio clip effects on your system is to bounce 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 plug-in applied and choose Bounce Audio Effects. If you right-click one of multiple selected clips, you’ll Bounce Audio Effects for each selected clip all at once. After bouncing an audio clip with effects, the original clip will be muted.

Bounced 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 plug-in effect applied, and you can unmute it, move it back up to the top, edit the effect, and bounce another version of the clip, which appears as the topmost layer.

Chapter 159

FairlightFX

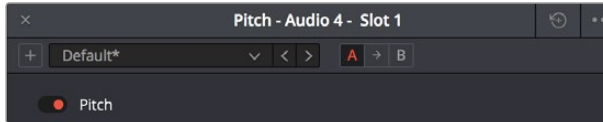
FairlightFX are a DaVinci Resolve-specific audio plug-in format that runs natively on macOS, Windows, and Linux, providing high-quality audio effects with professional features to all DaVinci Resolve users on all platforms. Thirteen new audio plug-ins that can be used both in the Edit and the Fairlight page include a wide variety of plug-ins for repairing faulty audio, creating effects, and simulating spaces. This chapter explains what they do and how to use them.

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Common Controls For All FairlightFX

Before going into the specific controls of each FairlightFX plug-in, there are some common controls that all plug-ins share, found at the top of the custom GUI window for each plug-in.



Common controls for all FairlightFX

- **Presets:** A cluster of controls that let you recall and save presets specific to each plug-in.
 - **Add Preset button:** Click this button to save the current settings of the FairlightFX you're using. A dialog lets you enter a Preset name and click OK.
 - **Preset drop-down menu:** All presets for the currently open plug-in 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 plug-in. The A and B buttons let you create two sets of adjustments for that plug-in, 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 plug-in to their default settings.

Chorus

An effects plug-in. 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 plug-in, giving you a visualization of the kind of warble or tremolo that will be added to the signal as you make adjustments.



The Chorus FairlightFX

Chorus has the following controls:

- **Bypass:** Toggles this plug-in 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.
- **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: Sine (smooth oscillations), Triangle (sudden oscillations), Saw1, Saw2 (jerky oscillations), Square (hard stops between oscillations), and 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.
 - **Bleed (Hz):** Amount of feedback which bleeds into the opposite channel (Stereo mode only).
- **Output:** Controls for adjusting the final output from this plug-in.
 - **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 plug-in 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 dialog 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 FairlightFX

The De-Esser has the following controls:

- **Bypass:** Toggles this plug-in on and off.
- **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.
 - **Relaxed:** Equivalent to a slow attack.
 - **Fast:** Equivalent to a fast attack.
 - **Pre-emptive:** A "lookahead" mode.

De-Hummer

A repair plug-in 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 plug-in's controls.



The De-Hummer FairlightFX

De-Hummer has the following controls:

- **Bypass:** Toggles this plug-in on and off.
- **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 plug-in. 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 plug-in on each channel, and an Output meter displays the output level of the resulting signal.



The Delay FairlightFX

Delay has the following controls:

- **Bypass:** Toggles this plug-in on and off.
- **Input mode:** (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 plug-in 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 Bleed:** Adjusts the proportion of signal from Left and Right channel feedback which feeds into the opposite channel. When the Delay plug-in is inserted on a Mono channel, Stereo Bleed control does not appear.
- **Output:** Controls for adjusting the final output from this plug-in.
 - **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.

Dialog Processor

The Dialog Processor chains together six different common audio processing operations inside of a single plug-in, each tuned to the specific needs of making adjustments to improve human speech. The specialized De-Rumble, De-Pop, De-Ess, Comp(ressor), Expander, and Excite controls each have a streamlined set of controls tailored to speeding up the types of common adjustments every dialog track uses.



The Dialog Processor plug-in

Distortion

An effects plug-in. 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 plug-in includes soft tube emulation in the output stage.

An animated graph shows the results of adjusting the Distortion parameters of this plug-in, 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 FairlightFX

Distortion has the following controls:

- **Bypass:** Toggles this plug-in 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 plug-in.
 - **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 plug-in. A classic Echo effect, simulating the fate of the cursed Oread from Greek mythology. 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 plug-in on each channel, and an Output meter displays the output level of the resulting signal.



The Echo FairlightFX

Echo has the following controls:

- **Bypass:** Toggles this plug-in 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.
- **Filters:** Alters the proportion of frequencies that are included in the delay effect. When the Delay plug-in 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 plug-in 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 RightChannel.
- **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 LeftChannel.
- **Output:** Controls for adjusting the final output from this plug-in.
 - **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 plug-in, 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 plug-in, giving you a visualization of the kind of warble that will be added to the signal as you make adjustments.



The Flanger FairlightFX

The Flanger has the following controls:

- **Bypass:** Toggles this plug-in 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 rate). 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.
 - **LPF Filter (Hz):** Lets you filter the range of frequencies that will affect the feedback signal.

- **Output:** Controls for adjusting the final output from this plug-in.
 - **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 new plug-in has also 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 you want to record sound effects or instruments to.
- 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 plug-in, 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.

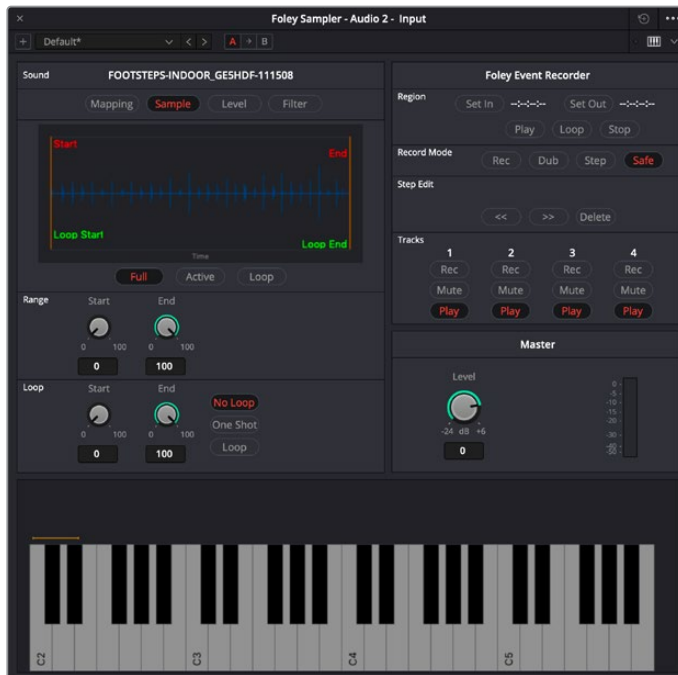
Adding Sound Effects

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 choose

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.

If you want to see the sound’s waveform, you can 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.

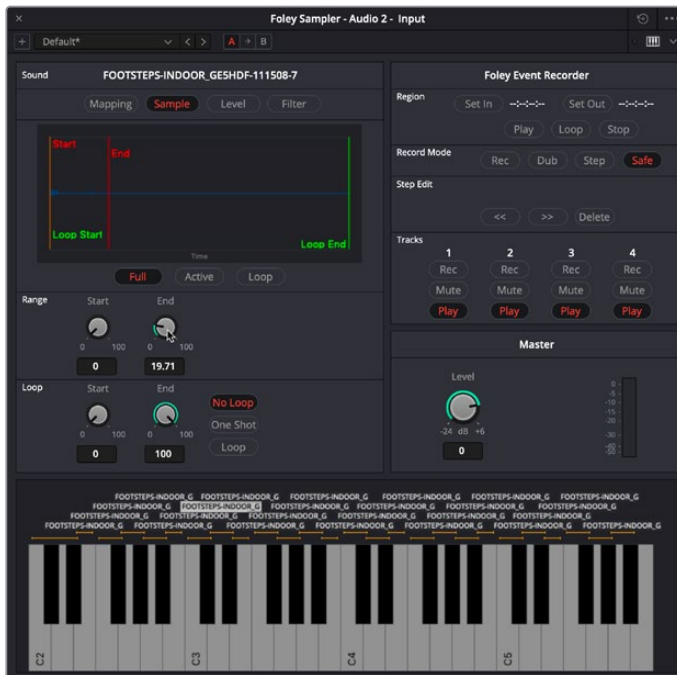


A footsteps recording loaded into the Foley Sampler

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.

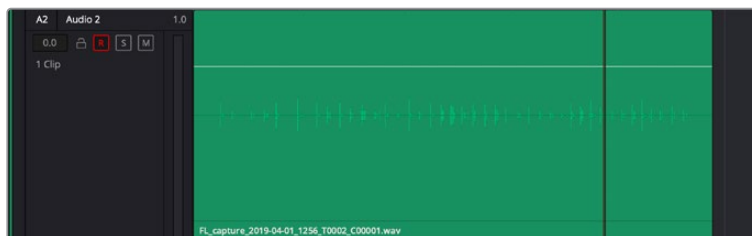
TIP: If a sample or slice is set to loop, you can press the Control key and click a key on the virtual keyboard to initiate looping, so you can hear these adjustments as you're making them.

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.

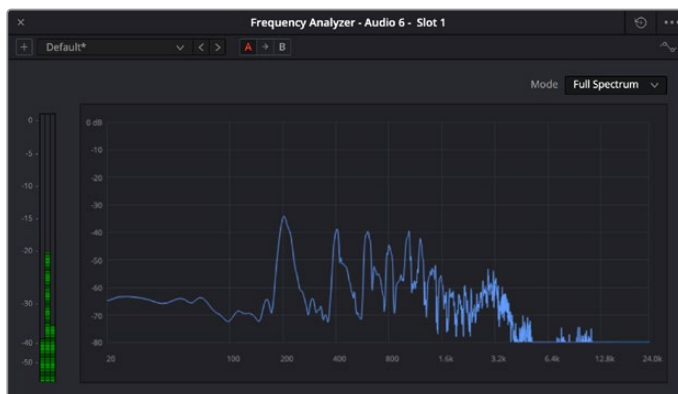
You should now have a recorded clip containing the sound effects you played, in sync to the picture. If they're a bit out of sync, you can always use the Elastic Wave audio retiming controls to tighten the sync without re-recording everything.



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 drop-down lets you choose to see the full audible spectrum, or to restrict the visualization to low, medium, or high frequencies.



The Frequency Analyzer plug-in

LFE

A low-pass filter that you can apply to a main that's in a surround sound format, to feed low-frequency sound to an LFE channel as part of a surround sound mix. If there is no LFE channel available, this plug-in does nothing. 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.



The LFE plug-in

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 plug-in.

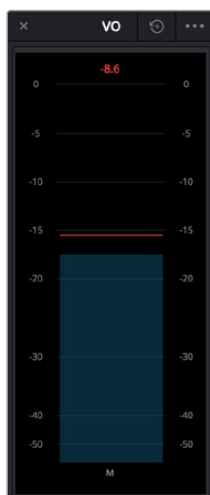


The Limiter plug-in

Meter

A sample peak processing meter that's useful for temporarily adding a meter to a specific track, 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 Meter FairlightFX

Meter has the following controls, all located in the option menu:

- **Width:** Lets you resize the width of the meter window. Options are: Narrow, Normal, and Wide.
- **Height:** Lets you resize the height of the meter window. Options are: Small, Medium, and Large.
- **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.

Modulation

An effect plug-in. General purpose modulation plug-in 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 additional Rotation controls, simple Tremelo 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 FairlightFX

Modulation has the following controls:

- **Bypass:** Toggles this plug-in 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 (%):** Controls the amount of Frequency Modulation that's applied, intensifying or easing off the effect.
 - **Phase:** Since each of the four primary effects within this plug-in 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.
 - **Level:** Lets you set 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 plug-in 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:** Amount of Amplitude modulation applied. (Disabled in Ring Modulation Mode.)
 - **Phase:** Since each of the four primary effects within this plug-in 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.
 - **Depth:** Amount of Rotation applied.
 - **Phase:** Since each of the four primary effects within this plug-in 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).
 - **Offset:** Start offset of rotation in order to further place the signal in space.

- **Output:** Controls for adjusting the final output from this plug-in.
 - **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.

Noise Reduction

A repair plug-in designed to reduce a wide variety of noise in all kinds of recordings. Based on spectral subtraction, it's able to automatically detect noise in sections of dialog, or it can be used manually by “learning” a section of noise that can be subsequently extracted from the signal. 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.



The Noise Reduction FairlightFX in action

Noise Reduction has the following controls:

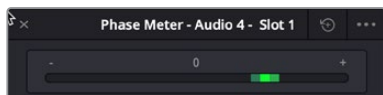
- **Bypass:** Toggles this plug-in on and off.
- **Auto Speech Mode/Manual radio buttons:** These buttons toggle the overall functionality of the Noise Reduction plug-in between two modes:
 - **Auto Speech Mode:** Specifically designed for human speech/dialog, applying dialog extraction to the incoming signal to dynamically detect the noise profile outside of the detected speech. As a result, Auto Speech Mode does not require an initial a “learn” pass, and adapts itself better to noise that changes over time.
 - **Manual Mode:** Enables the Learn button, as this mode requires the user to locate a section of the audio recording that is only noise that the plug-in can analyze. To initiate this analysis, position the playhead at the beginning of a section of the recording that is only noise, click the Learn button so it's highlighted, and play forward through the noise, stopping before any sound you want to preserve is reached, and clicking the Learn button to turn it back off. A noise profile is generated (shown in Purple on the graph), which is subsequently extracted from the remaining signal.
- **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 dialog 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.
- **Makeup Gain:** 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 AAC or MP3.

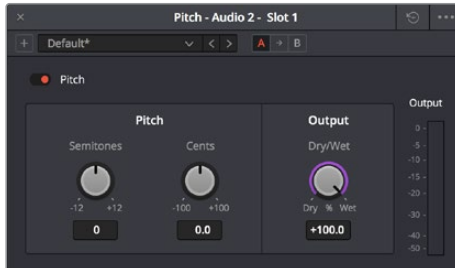
The Phase Meter plug-in is a visual meter that lets you evaluate whether or not a signal is in phase and is meant to be applied to a bus so you may evaluate the phase of a mix and correct whatever problems may be occurring. The position of a green dot within a horizontal meter indicates the phase of 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 plug-in

Pitch

An effects plug-in. Shifts audio pitch without altering clip speed.



The Pitch FairlightFX

Pitch has the following controls:

- **Bypass:** Toggles this plug-in 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 plug-in, capable of recreating multichannel reverberation corresponding to rooms of different sizes, adjustable via a graphical 3D cube control. This plug-in lets you take a “dry” recording and make it sound as if it’s within a grand cathedral, an empty room, or a tiled bathroom.

To understand this plug-in’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 FairlightFX

- **Reverb has the following controls:**
- **Bypass:** Toggles this plug-in 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 meters².
- **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**
 - **Low Frequency**
 - **High Gain**
 - **High Frequency**

- **Reverb Tone:** Four post equalization controls modify the tone of the reverb tail to suit a particular room's characteristics.
 - **Reverb Tail Low Gain**
 - **Reverb Tail Low Frequency**
 - **Reverb Tail High Gain**
 - **Reverb Tail High Frequency**
- **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 plug-in 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 plug-in 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 FairlightFX

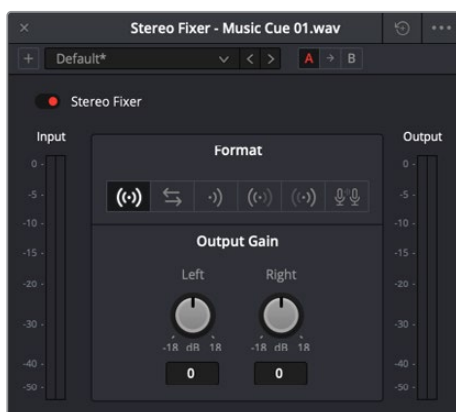
- **Threshold:** Introduces input gain to the signal prior to hitting the clipper, forcing audio peaks over the threshold by that amount. As such, it will drive the saturation and distortion.
- **Shape:** The shape of the clipper can be varied to change the character of the soft clipper from full soft-clipping (all the way right, where the peaks are rounded) to full hard-clipping (all the way left, where the peaks are squared off).
- **Audio Level:** Lets you adjust the output gain to compensate for signal lost during soft clipping, if necessary.

Stereo Fixer

A simple plug-in 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 plug-in can also be used as a “Mid/Side” decoder, for recordings that were made using this microphone technique.

This plug-in is for stereo clips only.



The Stereo Fixer FairlightFX

- **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 plug-in 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 plug-ins 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 plug-in that increases or reduces the spread of a stereo signal in order to widen or reduce the separation between channels. If this plug-in 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 FairlightFX 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.

Vocal Channel

An enhancement plug-in 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 plug-in.



The Vocal Channel FairlightFX

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.
- **Compressor:**
 - **Thres (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.

Chapter 160

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 buses, 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.

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The Monitoring Panel

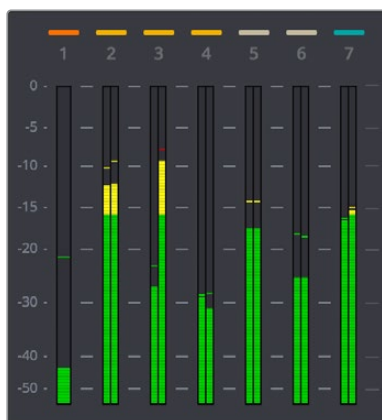
Turning on the meters in the UI toolbar displays the Monitoring panel that runs along the top of the Fairlight page, which shows all of the audio meters that correspond to the tracks in the Timeline, as well as the Bus meters that correspond to the Mains, Subs, and Aux buses of your mix, the Control Room meters, and a video viewer.



The Monitoring panel

Track Meters and Monitoring Controls

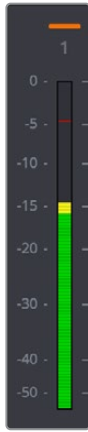
At left, a row of audio meters corresponds to the channel strips of the Mixer, one meter for every audio track in the timeline. Each track displays the number of meters that corresponds to that track's audio mapping, with mono tracks having a single audio meter, stereo tracks having two, 5.1 tracks having six, and so on.



Track audio meters with different numbers of meters depending on that track's audio mapping

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 as the loudness meters discussed later in this section.

Each meter bar is color coded to indicate two different thresholds of sound level, from low (green) to high (yellow) to very high (red).



The peak meter at top

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.

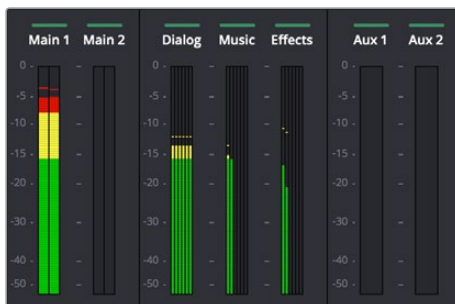
Using Post Fader or Track Source Meters

The Track Meters setting in the General Options of the Project Settings lets you choose how meters in the Fairlight page display their audio analysis. There are two options:

- **Post Fader:** Meters always display the level of each clip's signal after whatever fader adjustments have taken place. Fading a track's level down diminishes the visible level of that audio signal in the meter. This setting is good if you prefer a visual indication of the relative levels you've set your various audio tracks to, which is a very NLE-oriented behavior.
- **Track Source:** Meters always use the volume levels of the audio clips in that track, even if you've lowered the level using the sliders. If you've keyframed a clip's volume, that change will be reflected by the audio meters, even though fader changes are not. Viewing meters this way means you can always see how much level is available to clips in your mix regardless of what the current fader levels are set to, in the event you want to keep track of audio you want to bring back into the mix later on. This is a very DAW-oriented behavior.

Bus Meters

To the right of the track meters are the bus meters, in which all Mains, Subs, and Aux buses appear, separated by type, and each displaying the number of meters that corresponds to that track's audio mapping. This way you can see the sum of all tracks that have been routed to a particular bus.

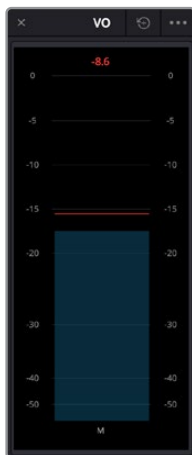


Bus meters for the Mains, Subs, and Aux buses

Meter Plug-in

There is a Meter plug-in available for temporarily adding a meter to a specific track, 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 159, "FairlightFX."



The Meter FairlightFX

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.

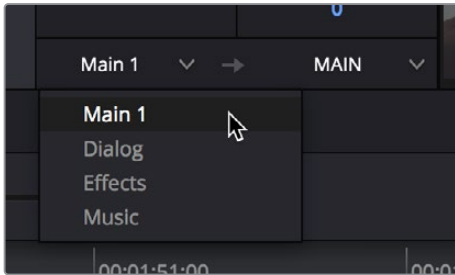


The Control Room meters (at left), and Loudness meters (at right)

Monitoring Menus

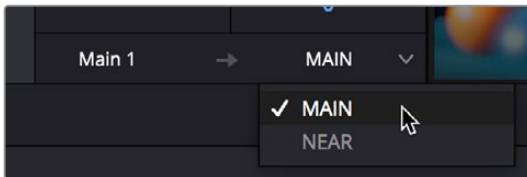
The monitoring menus determine which bus gets analyzed by the compound meters. When the compound meters are displayed, the Monitoring drop-down menu that otherwise appears to the left of the monitoring controls in the Transport toolbar instead moves to a position underneath the Loudness meters.

This drop-down menu lets you choose which bus you want to monitor as you work. You can choose one of your mains, or you can choose a Sub or an Aux that you want to focus on for more detailed work.



The monitoring menu lets you choose which bus you want to monitor while working

The next drop-down menu to the right lets you choose one of the available sets of speakers once you've configured them in the Video and Audio I/O panel of the System Preferences. This gives you the flexibility to quickly listen to 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 3, "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.

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. These meters let you analyze the "integrated loudness" of the overall mix, which is the standard to which all contemporary mixing specifications refer when describing the deliverables you're expected to provide to the client. 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 LU (loudness units).

What Is LU?

A value of 1 LU (loudness unit) represents the smallest difference in audio levels that humans can actually perceive. Human hearing naturally sums all channels that reach the ear, so the summed channel meter to the right in the compound meters is an analysis of the loudness you actually hear.

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

NOTE: 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.

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 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), 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.

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.
- **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.

Visualizing Loudness Monitoring

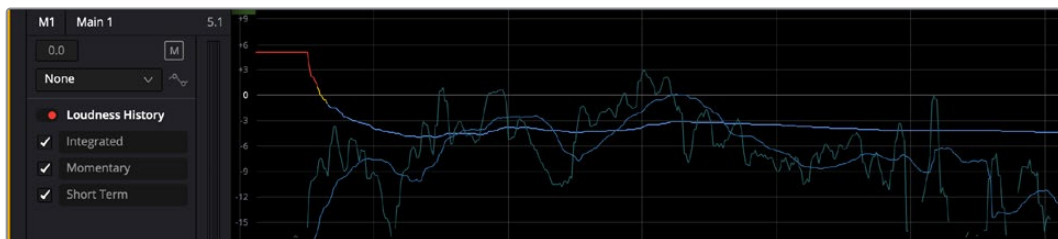
When you show the track of a Main bus in the Timeline, as long as the track is high enough (ahem, tall enough), you can show or hide a series of “Loudness History” curves to visualize the loudness analysis of the mix on that bus over the duration of the mix.

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: At the time of this writing, loudness history is only supported for Main 1.

Viewer

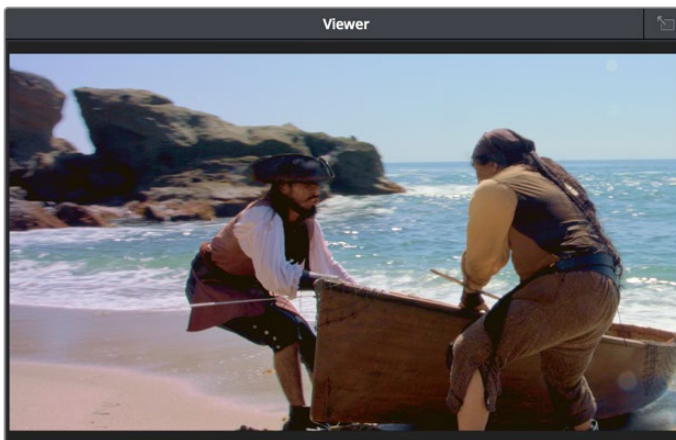
A small viewer to the left of the Monitoring panel shows the frame of video at the position of the playhead. This is the same image that's output to the external broadcast display of your workstation if you have one connected.



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

Chapter 161

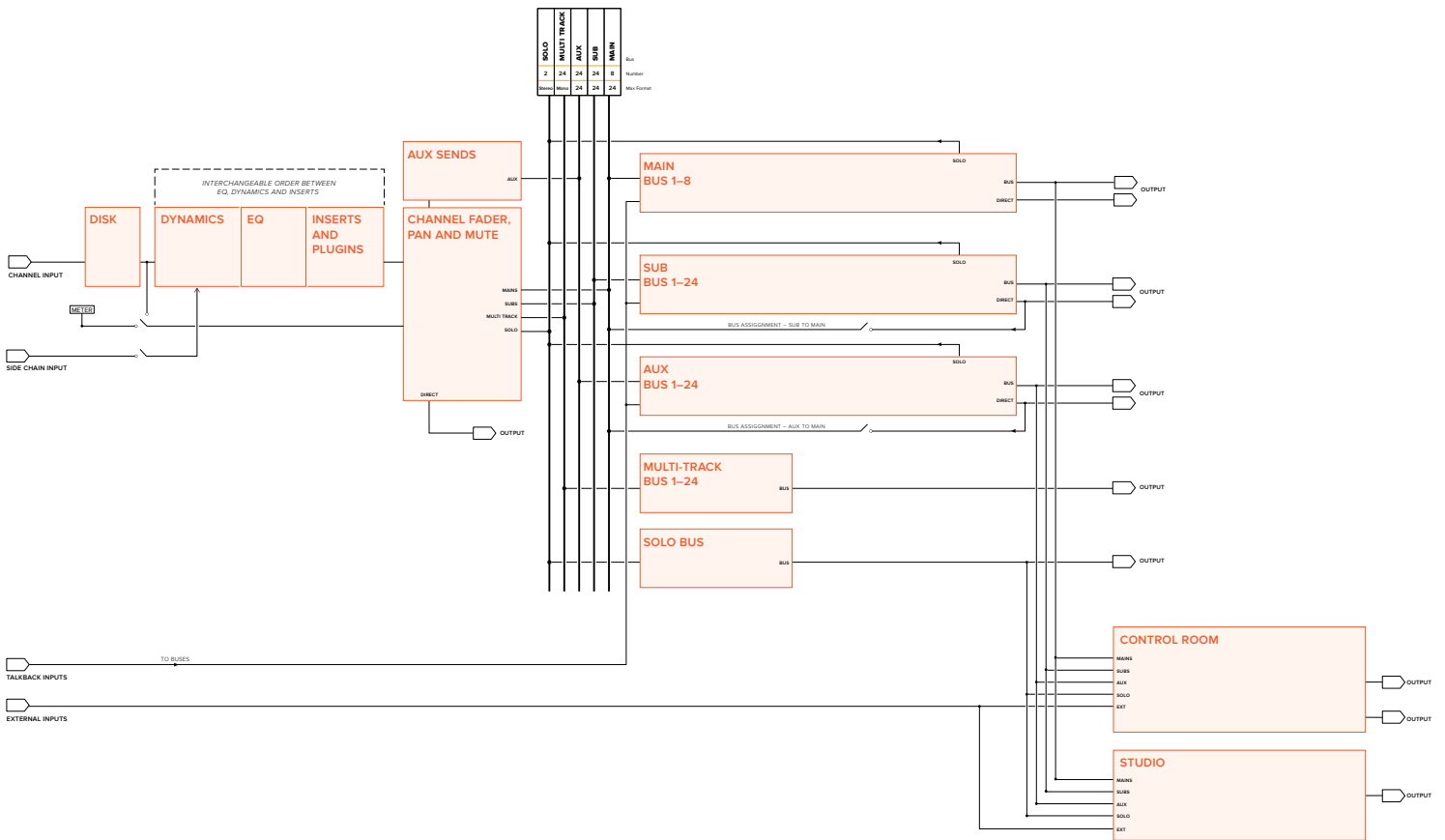
Signal Flow Diagrams

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.

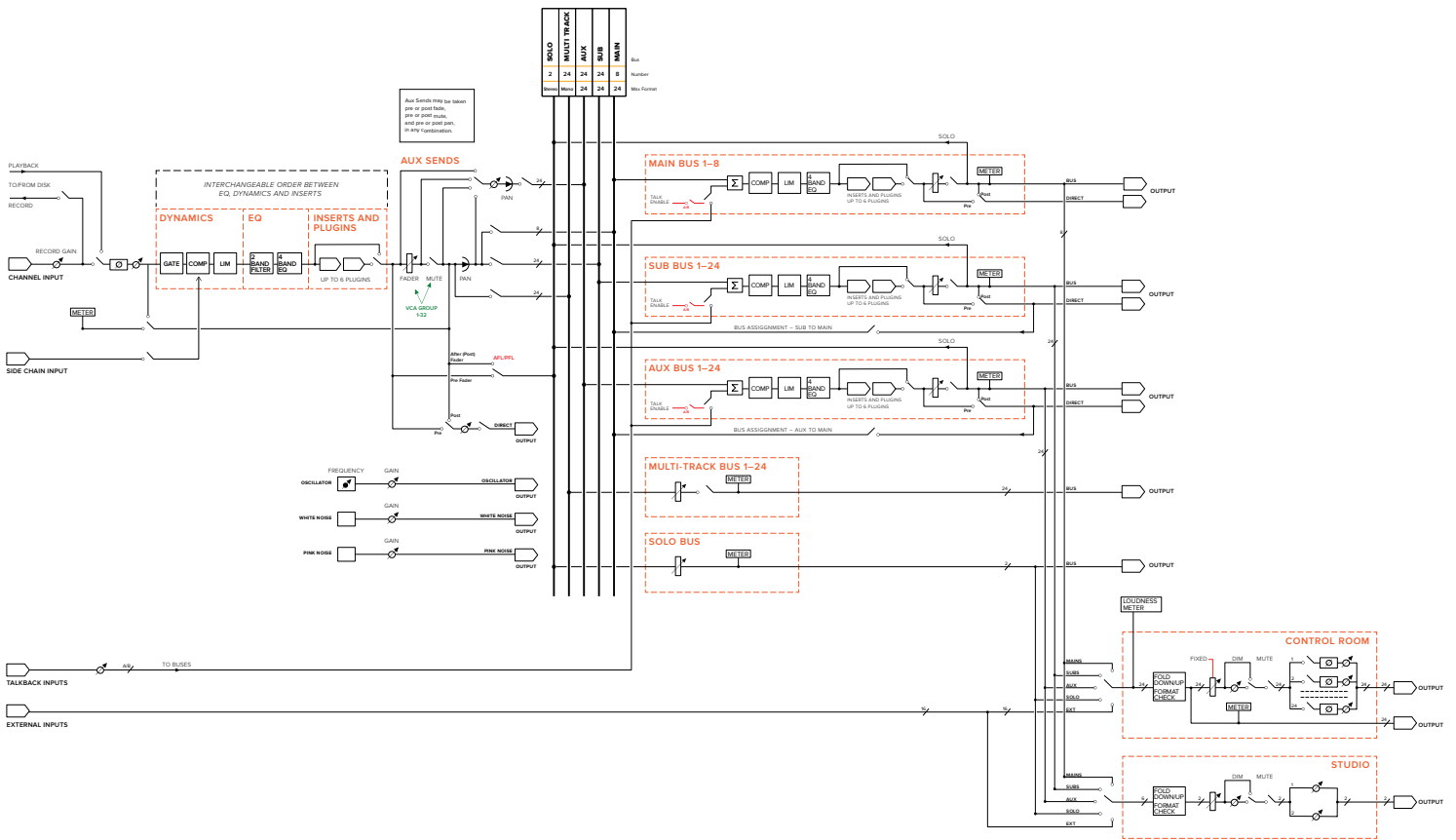
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Signal Flow Overview



Audio Processing Path



Chapter 162

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.

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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.

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.



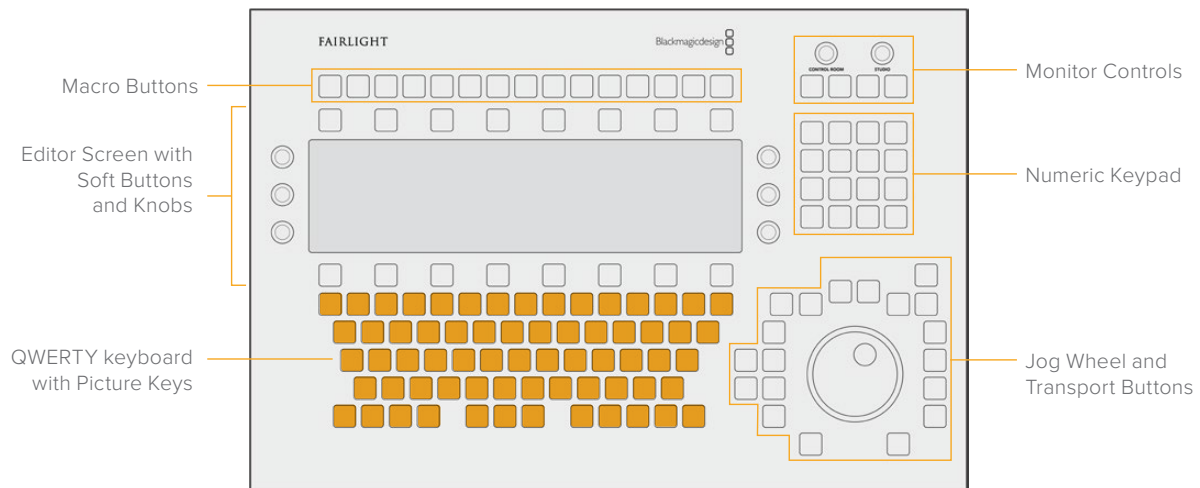
Fairlight Audio Editor

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

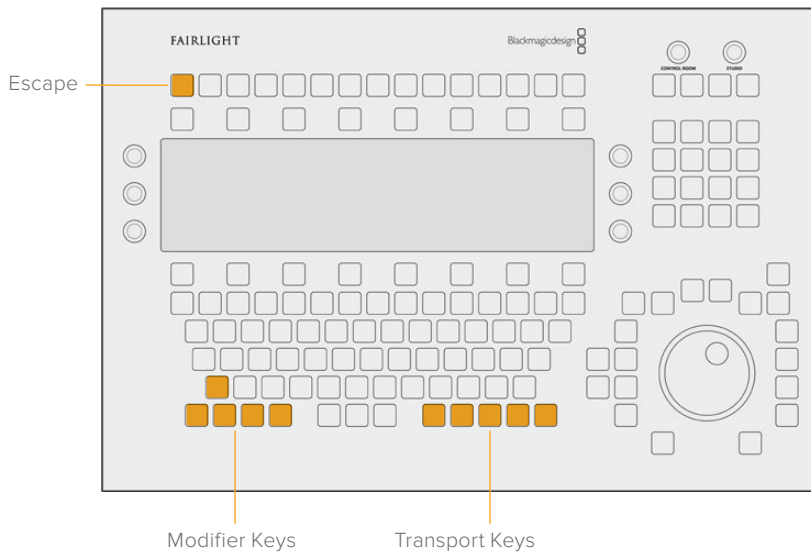
While working with the Fairlight Audio Editor, you will always have access to the standard Transport, Modifier, and Escape keys, even while using the QWERTY keyboard for entering data. The Transport and Modifier keys are located at the bottom of the keyboard, and the Escape (ESC) key is at the top row 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.

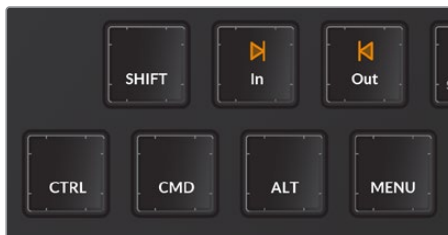
The standard modifier keys: Shift, Control, Command and Alt, work in conjunction with the QWERTY keys for default and user-defined keyboard shortcuts along with your mouse while operating other pages of DaVinci Resolve. When you are using the Fairlight Audio Editor to control the Fairlight page, the 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.



Escape key



Modifier keys: Shift, Control, Command, and ALT



Transport keys: Rewind, Fast Forward, Play, Stop, and Record



Transport keys with Control modifier engaged to reveal Project Start and Project End keys

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.

Using a long-press to open or close GUI windows:

There are five signal processing picture keys, including Pan, EQ, Dynamics, Aux, and Plug-in. 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.



Signal Processing keys: Pan, EQ, Dynamics, Aux, and Plug-in with EQ key latched



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 speed 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.

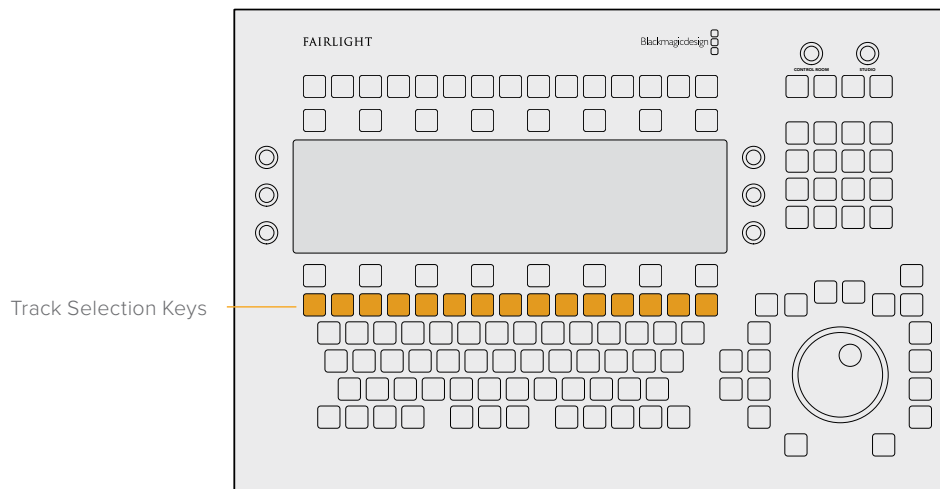
Using a momentary key press to reveal related menu option keys:

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 (^), and Page Down (v) 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 (^):** 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 (v):** 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.



Move Selected key available in Record mode and Edit mode

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.



Menu key next to Modifier keys in lower-left of keyboard; momentary-press on Menu key reveals QWERTY and DaVinci Resolve Page keys

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



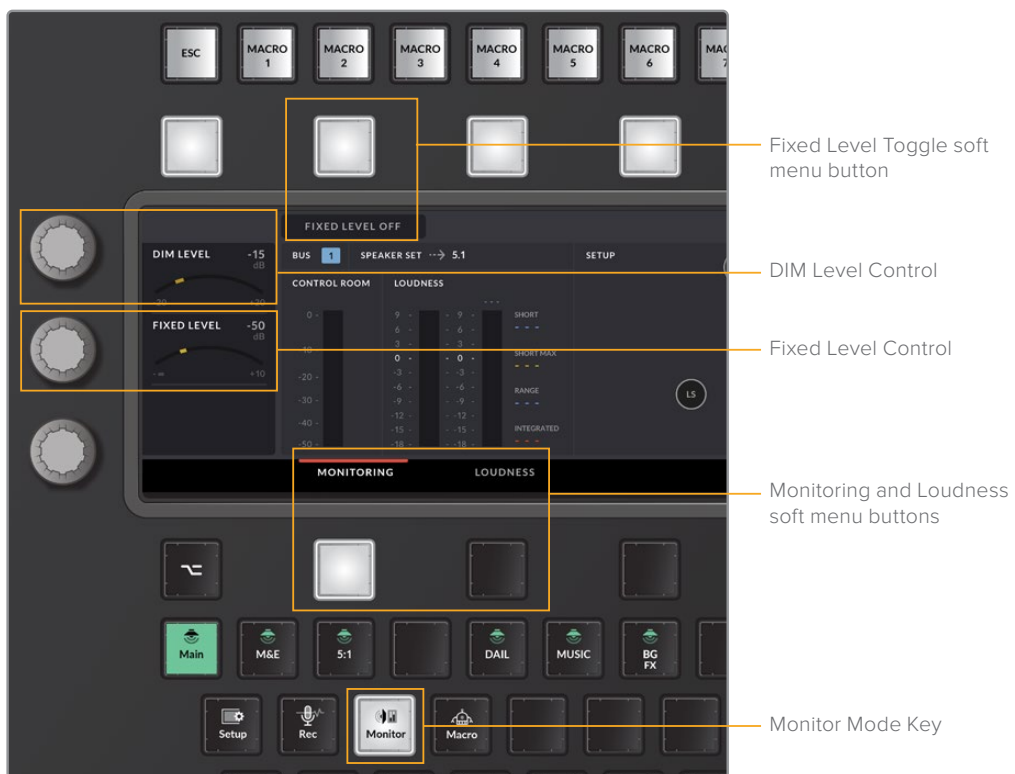
Talkback Settings window, opened or closed by pressing Control with the Talk button

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 Control Room meter in the GUI turns from green to blue.

To set and reset Fixed and Dim Control Room monitor levels:

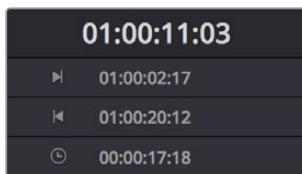
- 1 Latch or momentary-press the Monitor mode key to enter the Monitor toolset and show the Dim Level and Fixed Level controls on the left side of the Editor screen.
- 2 Use the top control knob to adjust the adjacent Dim level amount onscreen. As you turn the knob left or right, the Dim level GUI changes 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.
- 6 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 Keys:

- **Number Keys 0 to 9** : Used for entering number values and timecode entry. Timecode entry requires latching the GoTo Key first.



Numeric keypad

- **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 tallies 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.

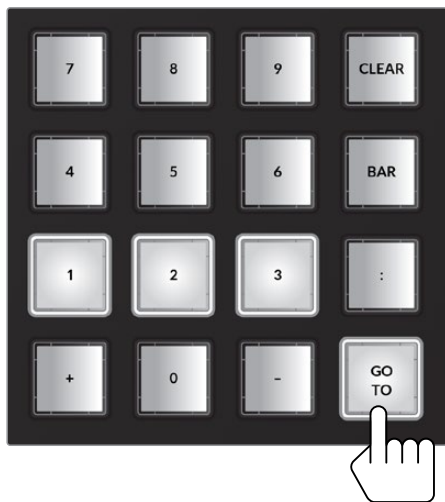
To use a locator for navigation:

- 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. 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 with Fixed keys and default Play menu and Loop 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 latching 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 effect 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.

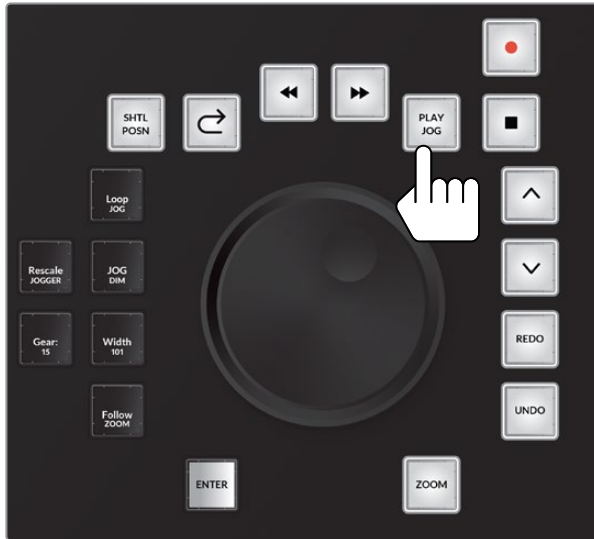
TIP: When the shuttle is set to Fixed Shuttle mode you can temporarily override the fixed setting with a long-press on the Shuttle/Position key after it is latched.

- **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 Plug-ins, 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

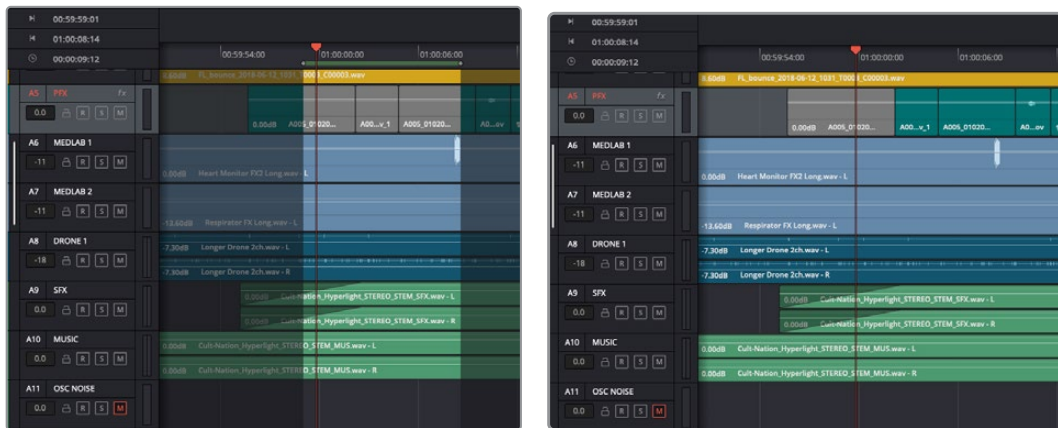
The Fairlight page in DaVinci Resolve has two prioritized selection options for recording and editing functions, both of which use track selection to determine the contents included in the selection.

- **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

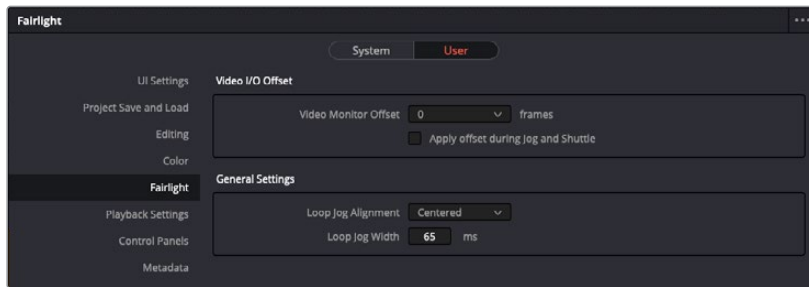
The Setup mode toolset is for the behind-the-scenes setup of operational elements that in many cases are set up when you start a project and left alone for the duration of the project. Here you'll find specialized keys for setting up the Audio Editor's functionality, toggling controls, or opening and 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 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 163, “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.

- **Editor Setup:** This menu key reveals toggle keys to customize the Editor functionality, including:
 - **Mode Jump/Wind:** This key toggles between Jump and Wind modes for the Rewind and Fast Forward keys above the jog wheel.
 - **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 in Text Only mode. To return to standard Icon and Text mode, unlatch the Text Only key in the Editor Setup menu options keys in Setup mode.



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 for 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 key to stop recording. 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:

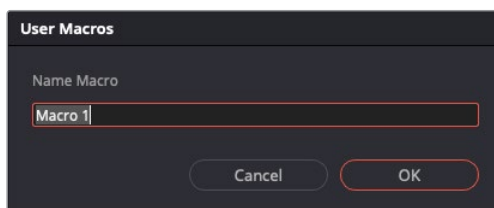
- 1 Prepare the Editor for recording the first macro. In this case, press the Edit mode key and latch the A1 track selection key to select that track. Move the playhead over the first clip in the track.
- 2 Momentary press the Macros key with the left hand. Do not release the Macros mode key.
- 3 In 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, Plug-ins 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 sub-menu 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 157, “Automation Recording.”



Default Mix Mode keys with the Mix On key unlatched and Copy/Paste latched



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:** Switches the Automation controls into Preview mode for auditioning settings without writing new automation data.
- **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've 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. For 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 154, "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.

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.

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.

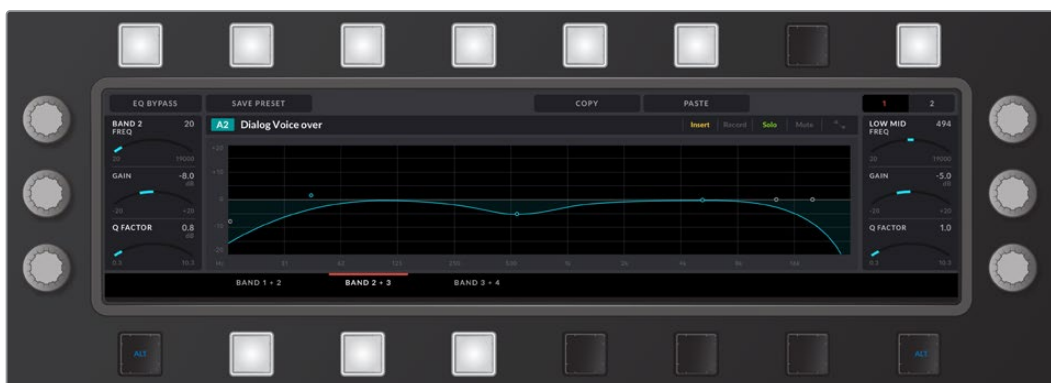
Editor Screen with Soft Controls

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 Plug-in parameters that correspond with the active track of 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, Plug-In, 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 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.



Plug-In layout used to control first plug-in on the selected track and is available in all Editor modes, except Monitor mode and when Aux controls are showing. The Plug-In Editor screen controls include a three page layout. Page 1 provides the Insert IN toggle to bypass the plug-in. Page 2, shown above, has toggle options to Reset the plug-in as well as options to Save, Load, and Apply presets, Automate, and Lock the plug-in. Page 3 offers Mapping mode where the user can map specific plug-in 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.
- 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 163

Fairlight Consoles

The 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 Fairlight Audio console to work with your DaVinci Resolve system, you first must perform a custom installation of DaVinci Resolve Studio and check the box to include the Fairlight Studio Utility. For complete setup and installation instructions, refer to the Fairlight Console Assembly Instruction Manual.

https://documents.blackmagicdesign.com/UserManuals/Fairlight_Console_Assembly_Manual.pdf?%20_v=1561618810000

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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.



Standard Fairlight Console 2-bay

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.

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.

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.



Standard Fairlight Console 5-bay

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 plug-ins and reference video.

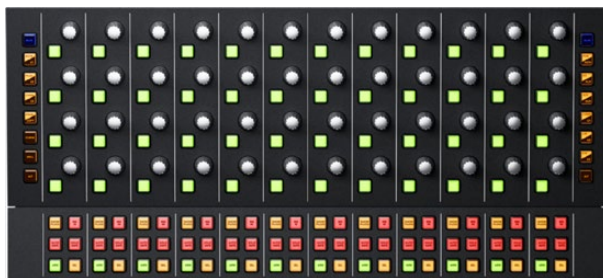


Fairlight Console LCD Monitor displaying the Master mode



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 Channel 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 Audio Console Fader Control

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.

Please refer to the previous chapter, "Using the Fairlight Desktop Audio Editor," for details on the Fairlight Console Audio Editor's features and functions.



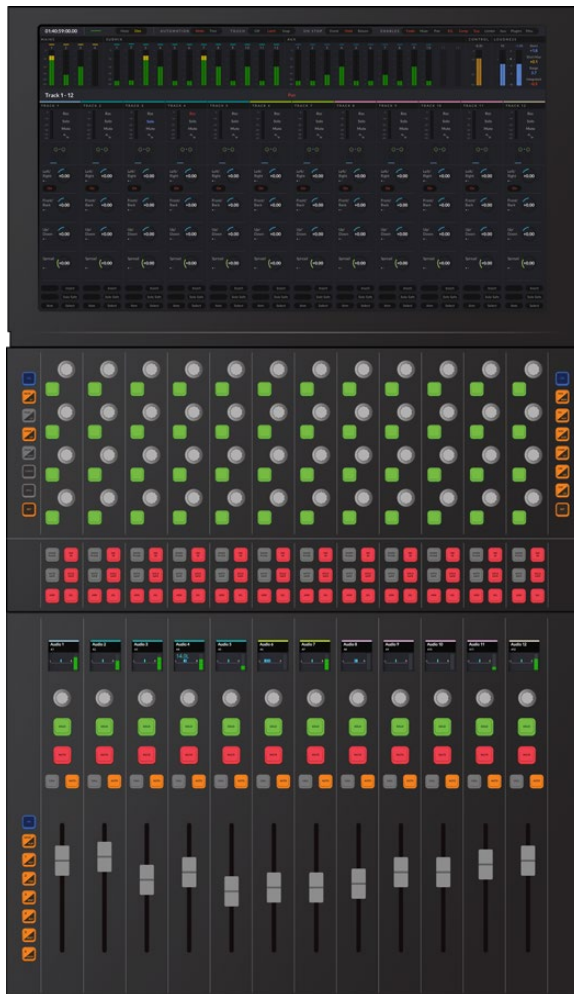
Fairlight Console Audio Editor

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:

- **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 set to In-Line 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 Channel 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.



Channel Control components in Master mode

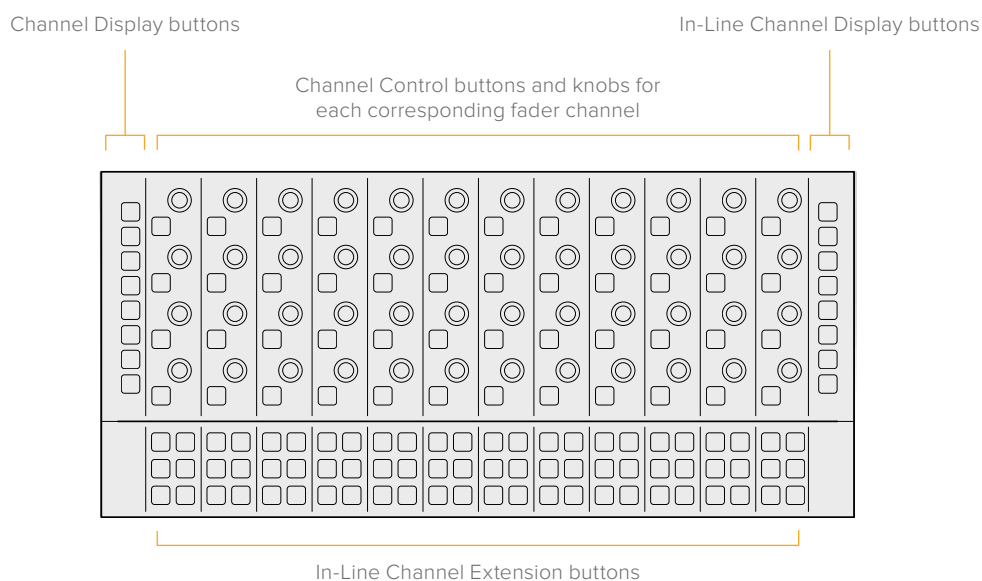
Fairlight Console Channel Control

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 plug-ins 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.

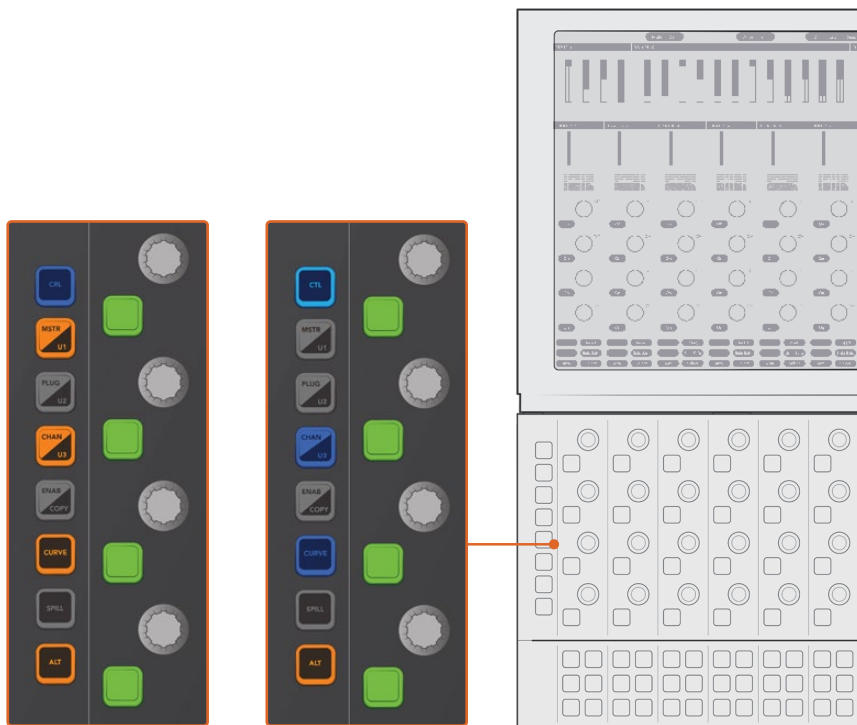
The default color for all display buttons is yellow, except for the Control button, which is always blue. When the Control button is pressed, inactive display buttons with secondary functions turn blue or purple. Active display buttons remain in their active state color until another display button is 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 plug-ins on the LCD monitor and allocate controls for the plug-in 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.

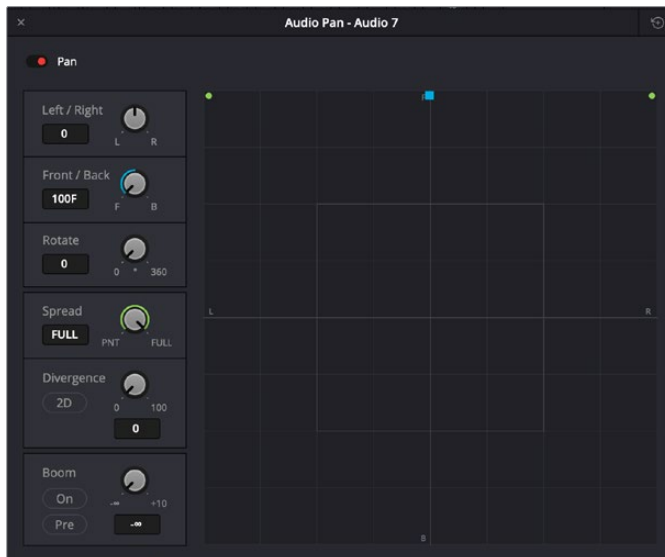
Right side of panel, In-Line Channel display buttons from top to bottom:

- **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.

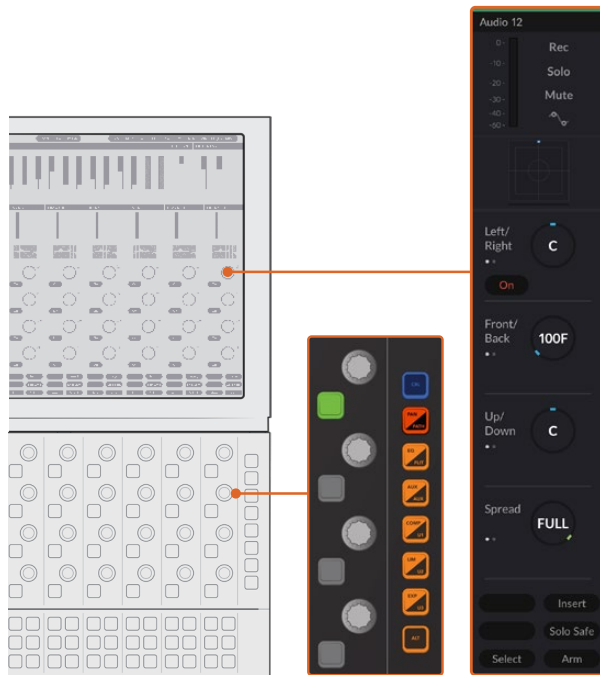


The left-side Channel Display buttons without modifiers and with Control button pressed to show secondary functions

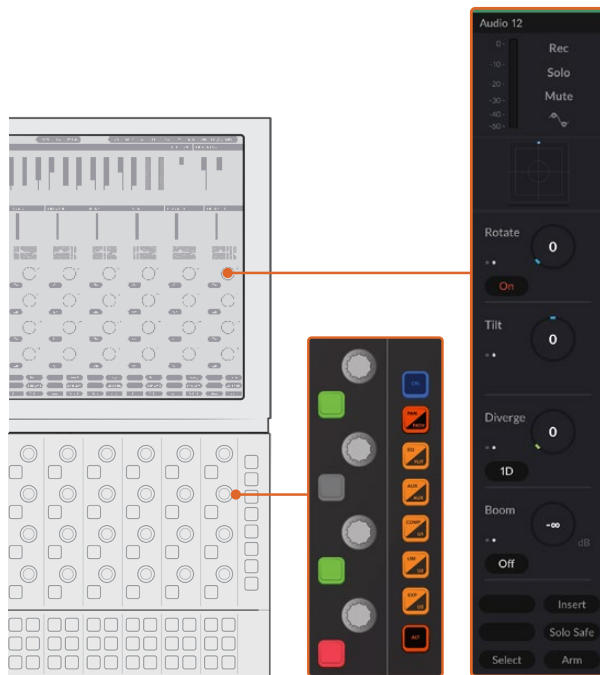
NOTE: Non-functioning Channel Display buttons, such as PLUG and ENAB, remain unlit. These buttons will be operational in future software updates.



Pan Settings window in the Fairlight page interface, available in the Mixer



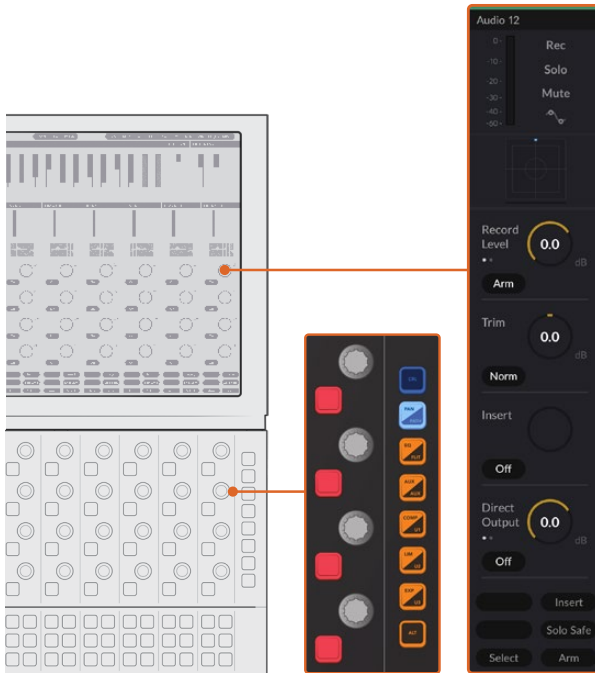
The right-side In-Line Channel Display buttons with Pan/Path button pressed and corresponding Pan controls in the Channel Control LCD



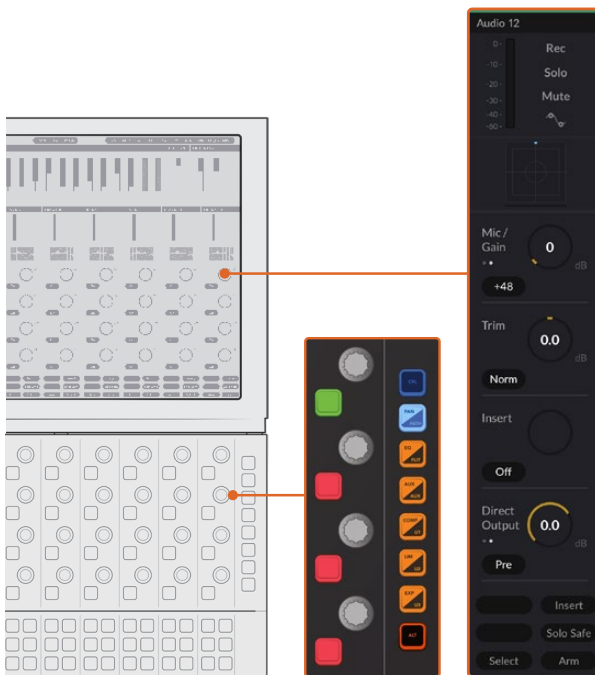
The right-side In-Line Channel Display buttons with ALT + Pan/Path button pressed and corresponding ALT-Pan controls in the Channel Controls LCD



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 CTRL + Pan/Path button pressed and corresponding Path controls in the Channel Controls LCD

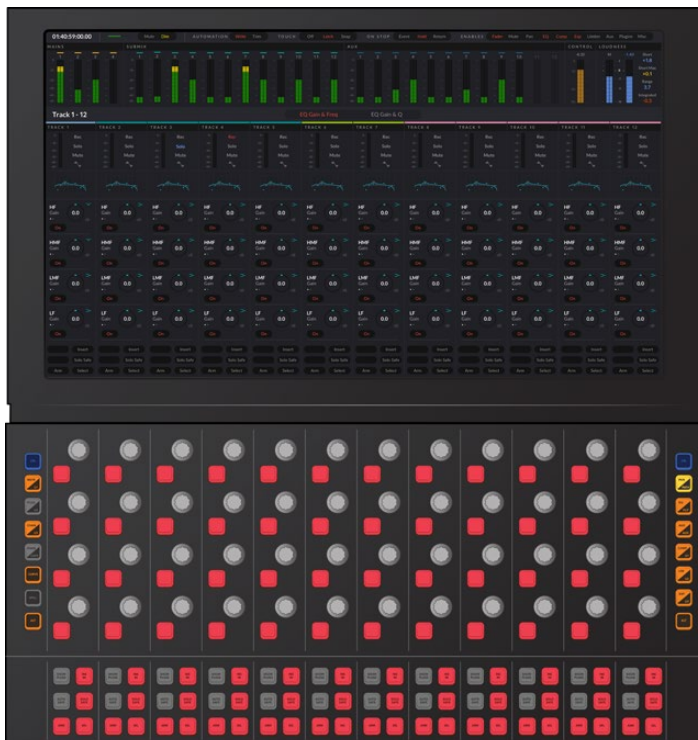


The right-side In-Line Channel Display buttons with ALT + CTRL + Pan/Path button pressed and corresponding ALT-Path controls in the Channel Controls LCD

Channel Control Buttons and Channel Control Knobs

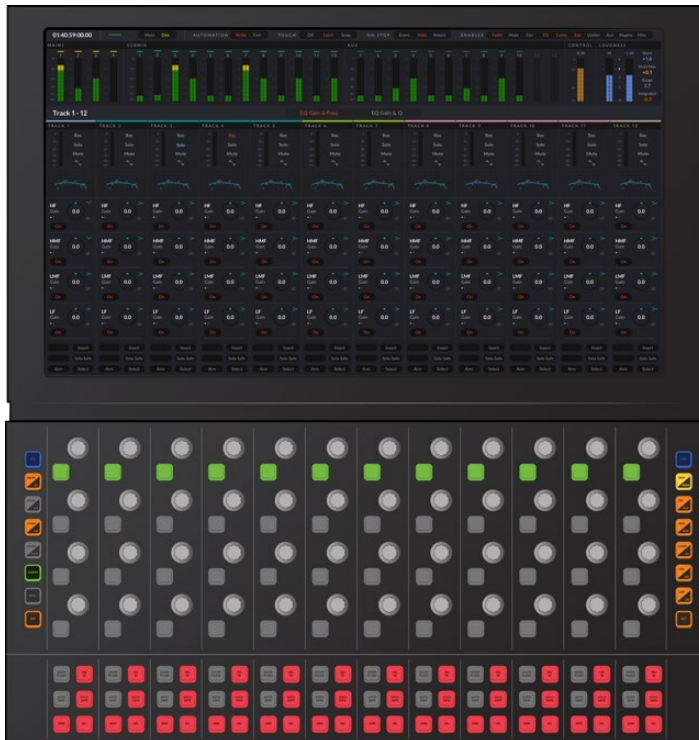
Spanning the middle of the Channel Control panel, you'll find 12 parallel groups of multi-functional channel controls that align with the 12 faders on the Channel Fader panel. Within each of the 12 groups are four highly visible LED buttons and four touch-sensitive rotary knobs. If you touch knobs with 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.



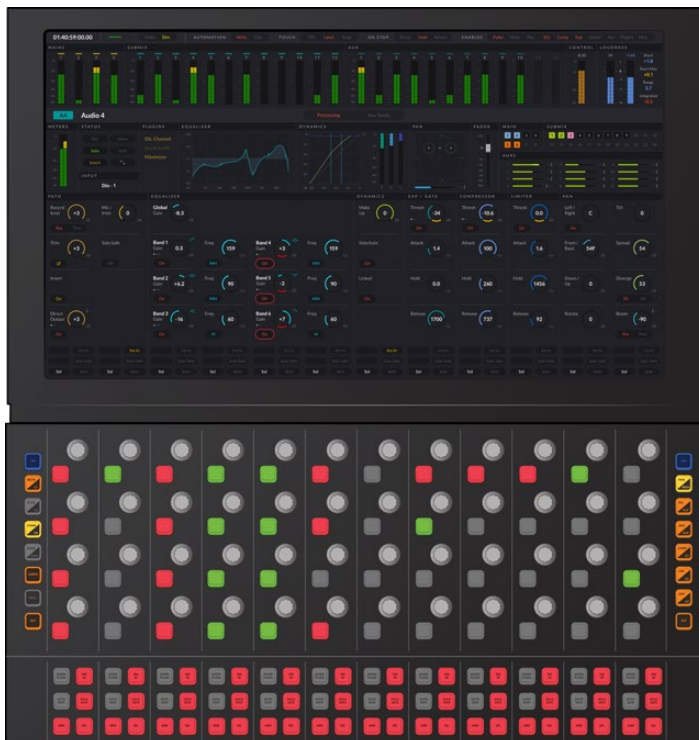
In-line EQ display mode showing four red In/Out toggle switches and four dial controls on each channel.

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.

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.



Channel display mode showing alternating colored buttons to separate parameter groups and unlit buttons where there are no matching on-screen parameters.

In-Line Channel Extension Buttons

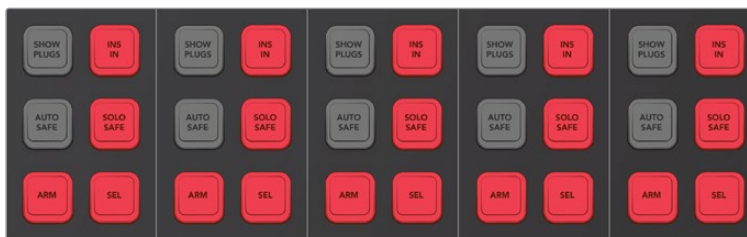
Along the bottom of the Channel Control panel are 12 groups of six In-Line Channel Control Extension buttons that match the buttons at the bottom of the Channel LCD Monitor. These dedicated LED buttons are toggle switches for channel-specific controls like Select, Solo Safe, and Arm. In-Line Channel 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 right:

- **INS IN:** Insert In enables routing of up to six VST plug-ins 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:** 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.
- **ARM:** 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.
- **SEL:** 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.
- **Middle-left button:** This is not implemented in this version of the software.
- **Upper-left button:** This is not implemented in this version of the software.



In-line Channel Extension buttons displayed at the bottom of the Channel LCD.

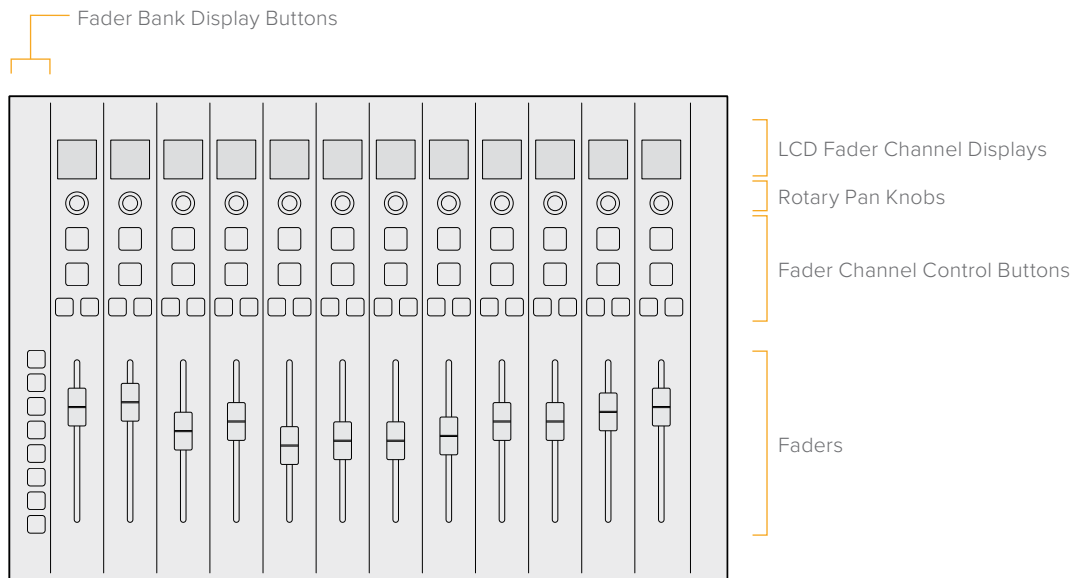


In-line Channel Extension buttons that represent the physical switches for the corresponding buttons on the LCD above.

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

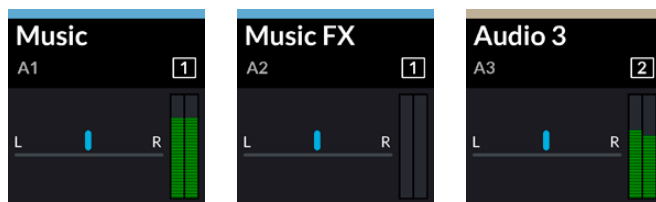
In addition to 12 Channel strips complete with designated control buttons, touch-sensitive faders, and pan knobs, the Fairlight Console Channel Fader panel includes an LCD display of channel information and eight display buttons for bank selection and mapping of up to 144 tracks and buses to the 12 faders. 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.



Fairlight Channel Fader module.

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 fade bank when using the Fader Spill function. 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.
- **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 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 involves the touch-sensitive Pan pot above the channel fader. Pressing and releasing the 1/POT button while Control is pressed toggles the knob control between normal Left/Right Pan mode and the secondary mode where the knob controls the last-used alternative parameter.
- **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. If Control is pressed, the 5 button toggles the secondary Mixer Set function on and off. While Mixer set is on, any track that is enabled for Editing is automatically allocated to a fader.
- **6/LOCK:** The 6 button chooses Fader Set 6 without a modifier or Fader Set 12 when selected with the Bank button. LOCK is not implemented in this version of the software.



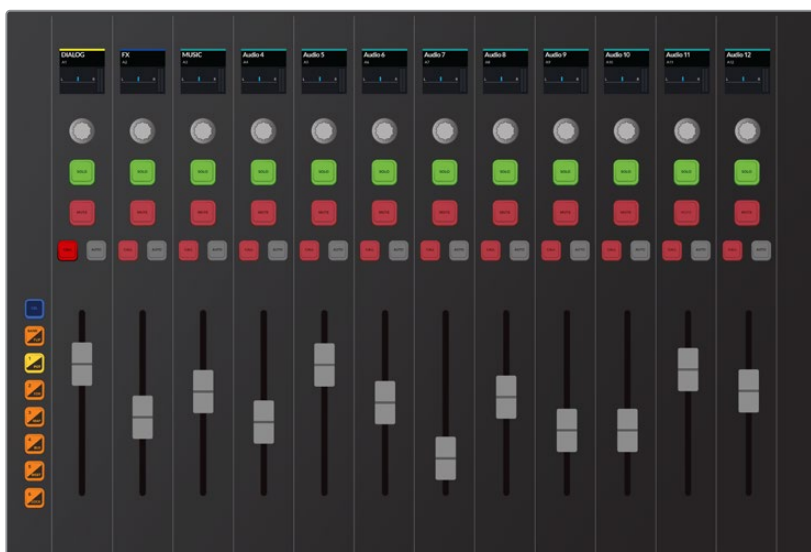
Fader Bank display buttons and touch-sensitive fader with Bank 1 selected, and with the secondary button functions available while the Control button is pressed.

Manually mapping faders to banks:

- 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.
- In the bottom row of the picture keyboard, press the first key (MODE: Auto/MODE:Manual) to toggle the fader mapping to Manual mode.
- 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.
- 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.
- 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 with red Call buttons to indicate bank mapping mode is engaged and the first fader channel's Call button is active

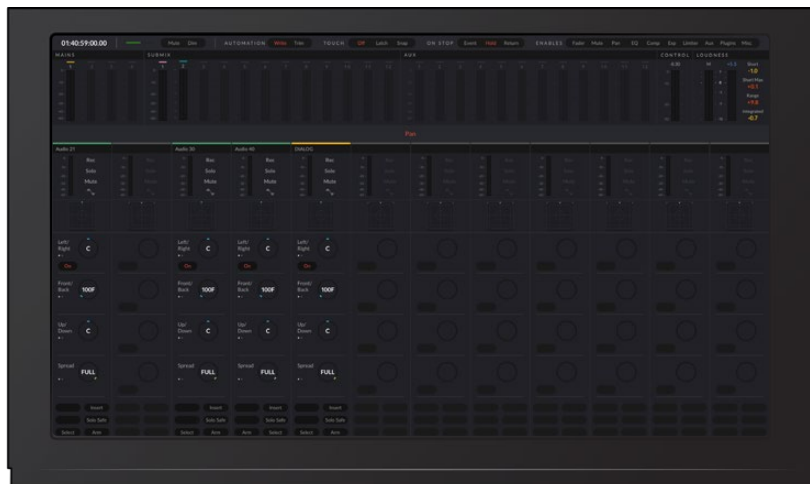


Picture keyboard in Auto Fader Bank mapping mode

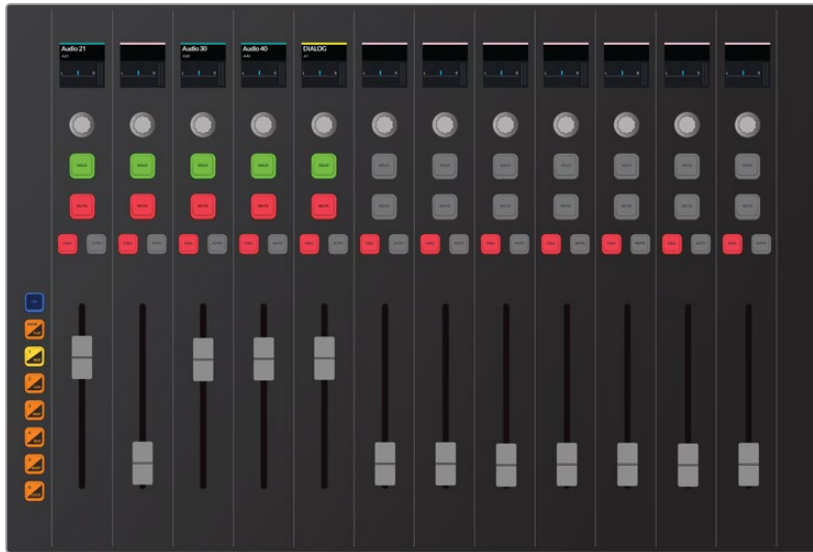


Auto Fader Bank mapping action keys in the lower left corner of the picture keyboard

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.

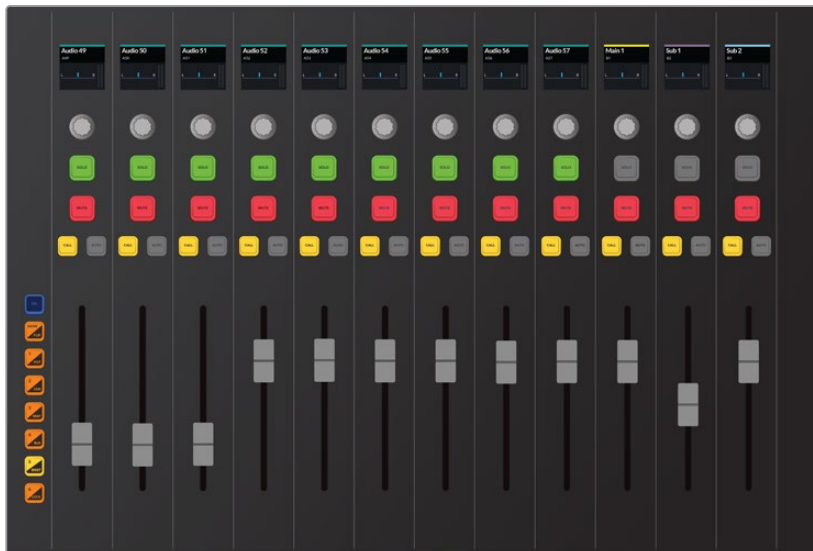
Fader Spill option keys include:

- **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.

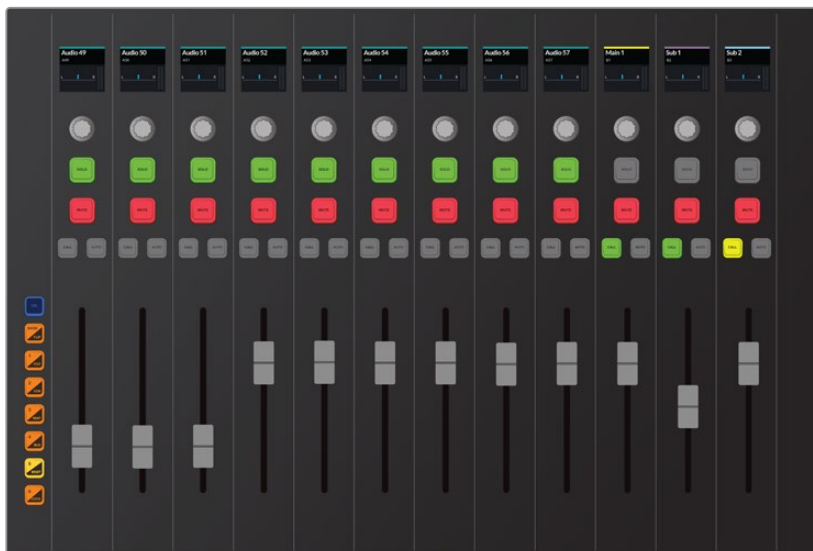
- **Spill Any/Spill Tracks:** When in the default (unlatched) state the Spill: Any menu option allows member tracks of a bus to be spilled to the nearest faders to the left or right, including faders assigned to Master buses and VCA groups. When latched to the Spill: Tracks option, member tracks of a 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



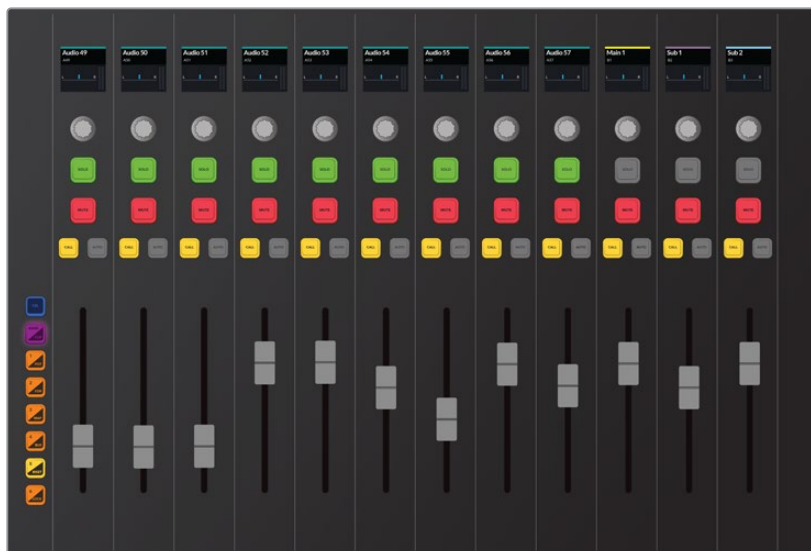
Fader Bank 5 with Main 1, Sub 1, and Sub 2 buses assigned to the last three faders; yellow Call buttons indicate standard channel bank display



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

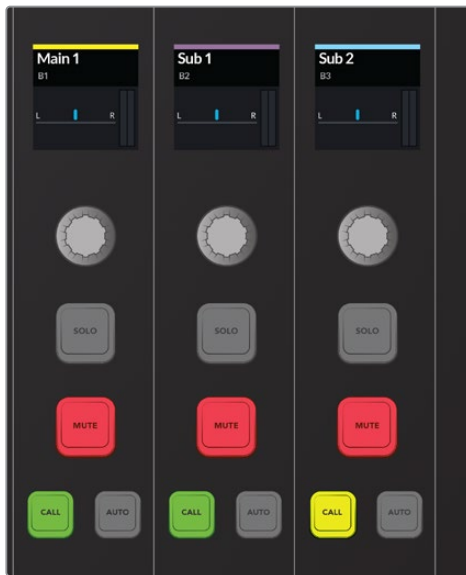


Purple Bank/Flip button indicates there is a spilled bus in the current bank. In this case, Bank 5 is showing, with Sub 2 spilled to the left of the the other buses, and includes A8, A10, A11, and A12 as the member tracks that comprise Sub 2.

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: (OR) To disengage fader spill:

- 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.



Sub 2 bus with active (tallied) green Call button, which indicates it has been spilled to neighboring faders

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.

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 plug-ins 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. Additionally, you can add a Fairlight Console LCD Monitor in the 4th bay to display video playback or plug-ins, 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.



Standard Fairlight Console 3-bay.

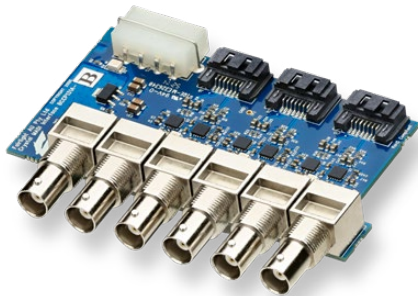
NOTE: For more information about the Fairlight Console Chassis, bundles, and hardware options, go to the Fairlight Console page on the Blackmagic Design website. <https://www.blackmagicdesign.com/products/davinciresolve/>

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 PCIe Audio Accelerator.



Fairlight PCIe MADI Upgrade.



Fairlight Audio 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/