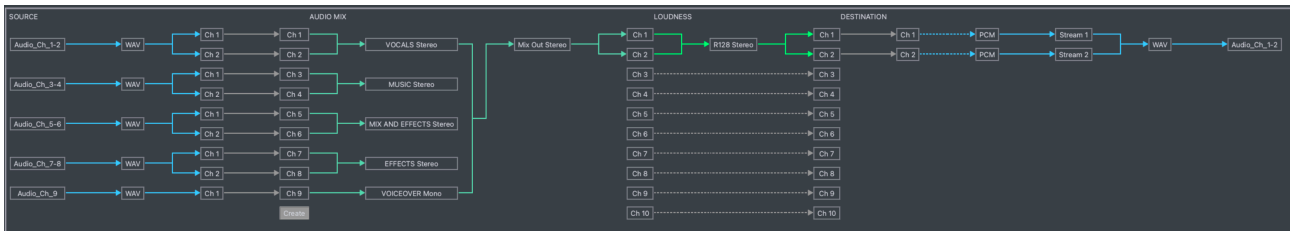
SUPPLEMENT

Emotion Systems - Audio Mix User Guide

The Audio Mix module enables automatic mixing of multiple groups of input channels into a single group of output channels, removing the need for manual handling. With configurable workflows and presets that combine mixing, channel mapping, and loudness processing, Audio Mix delivers fast, efficient processing, ideal for rapid turnaround and near-instant content delivery.

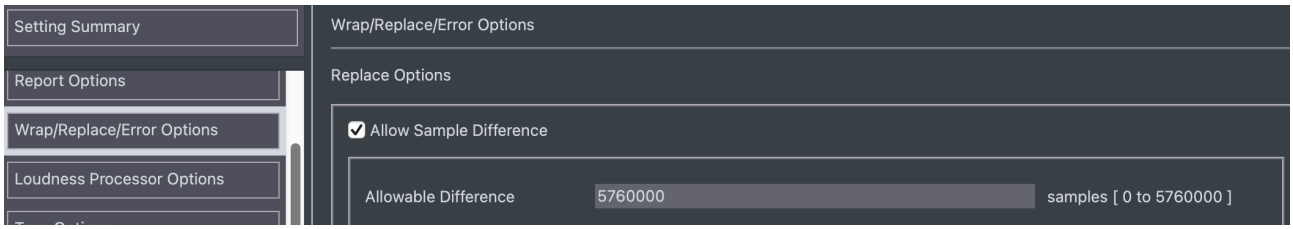
Note: It is **only** on Engine Desktop and Engine release 9.1.0 onwards.



Workflow creation steps.

1) Setup the inputs
   - File type
   - Number of Channels
   - Add additional Number of channels as required
   - Set reference time code - File Time code or samples.
     * This give the ability at adjust the Start of Media (SOM) for individual Input Sources. The first Input Source is the master reference.
   - Add Channels into Workspace if required

Note:
If you files are of a difference length the you will need to make an adjustment in the Engine Configurator/ Desktop > Advance settings.Then go to 'Wrap/Replace/Error Options'.



The Allow Sample Difference will need to be 'enabled' and will need to adjusted to allow the difference between file compared to the first Input Source. The maximum sample difference allowed is 5760000

2) Add Audio Mix from the Signal Processing
   - Select Audio Mix from the drop down
   - Configure/select an 'Audio Mix Profile'
   - Select the 'Source Channel Group',which input channel pair they are coming from, and choose what they represent within the workflow (Voice, Music,Voiceover, Effects,Mix and Effects)
   - Set the 'Output Channel Group' and what channel pairing they are in the output.
     Note: If a Source Channel Group is stereo the Output must be Stereo

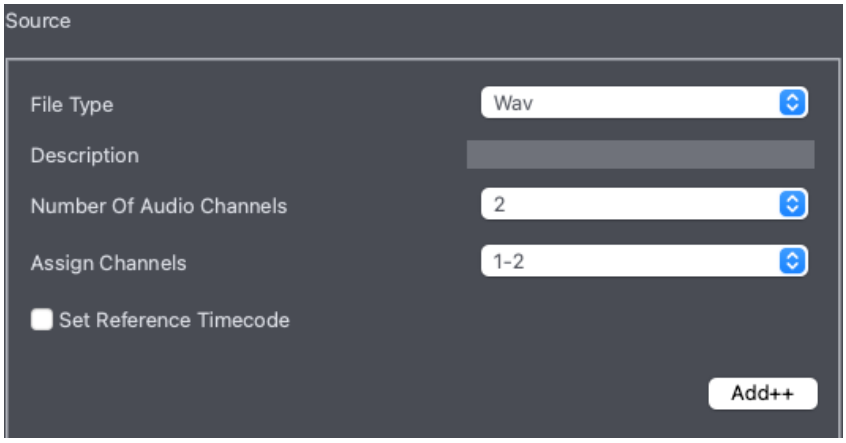
- Add additional Signal Processing such as the Loudness feature if available.

3) Complete the Destination
   - Select the output File Type (Wav, Mxf - Audio Only, Mov - Audio Only, MGA)
   - Number of output channels

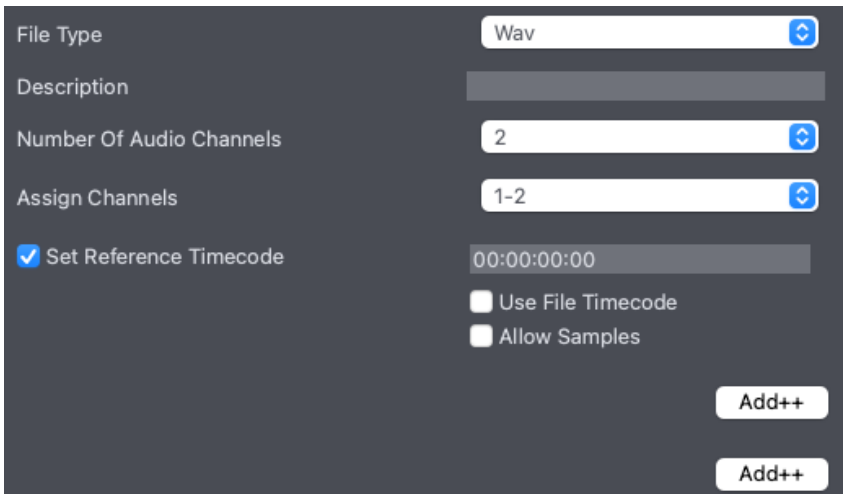
Workflow creation steps.

1) Setup the inputs
   - File type
   - Number of Channels
   - Add additional Number of channels as required
   - Set reference time code - File Time code or samples
   - Add Channels into Workspace if required

First Example is: Stereo Vocals, Stereo Music, Stereo Mix and Effects, Mono Voice Over

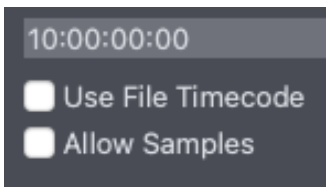


You can choose to use Timecode which can be in the Timecode with Frames or Timecode with Samples format.

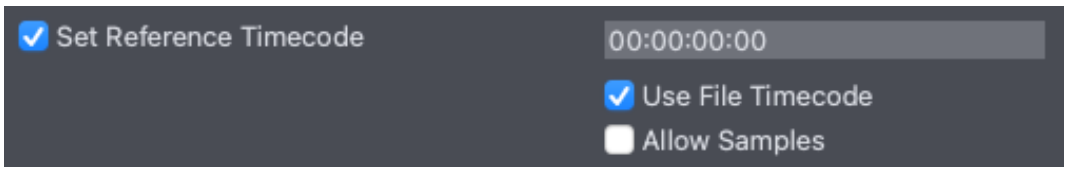


Once the 'Set Reference Timecode' is selected. By Default is is Time Code 00:00:00:00
You can set the ReferenceTime Code.

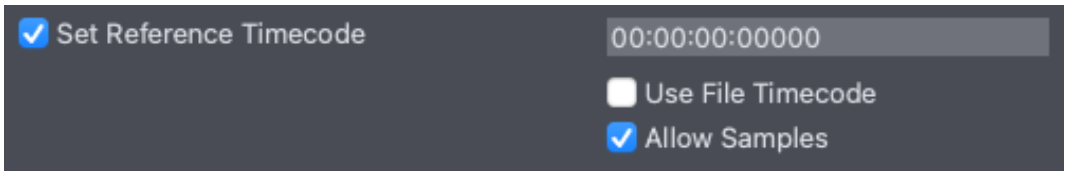
For example:



A second choice is to choose to ‘Use File Timecode’. It uses first stream with ‘Set Reference Timecode’ selected.

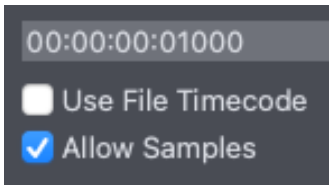


The third choice is to choose ‘Allow Samples’



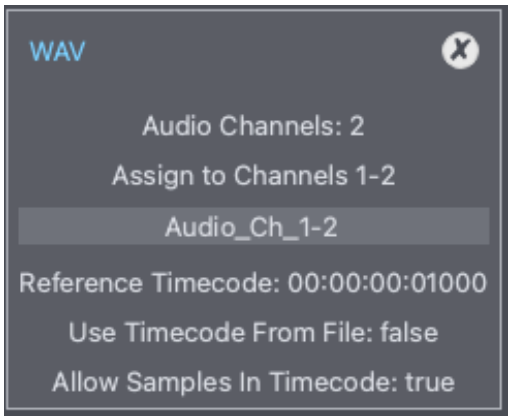
On the first stream you can set an offset say from a media Source.

For example:



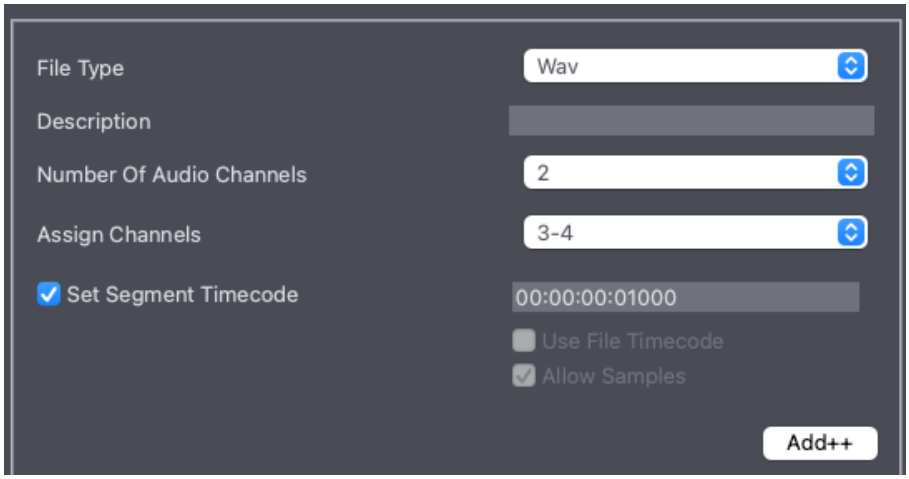
Offset the initial stream will be 1000 Samples.

Once the first stream has been chosen click on ‘Add’



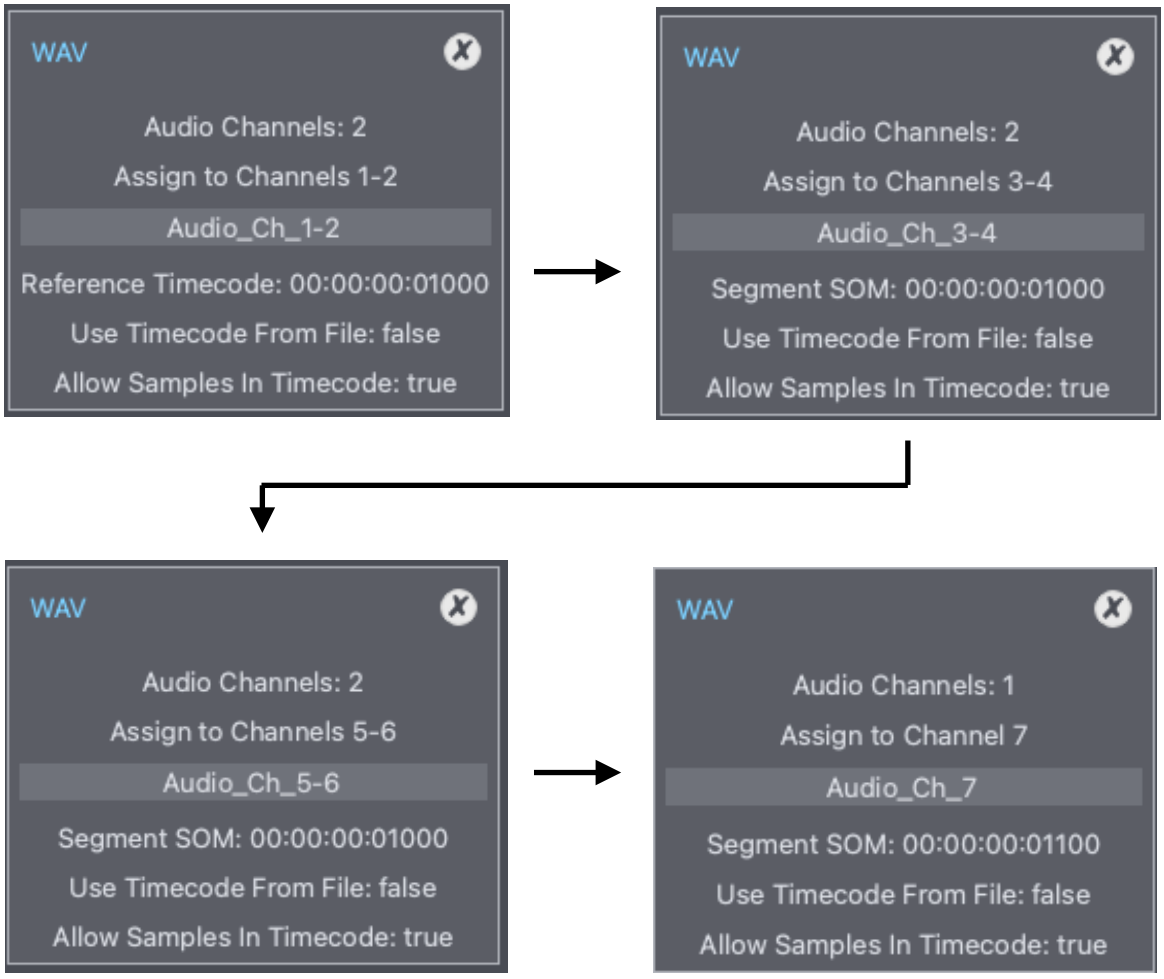
Here is an example Source Column of this stereo pair that have been added to the Source.

The next pair of channels for Channels 3-4.



Note, now you can only not select or select your Timecode start segment

Here is the summary of all the channels added to the Source of the example.



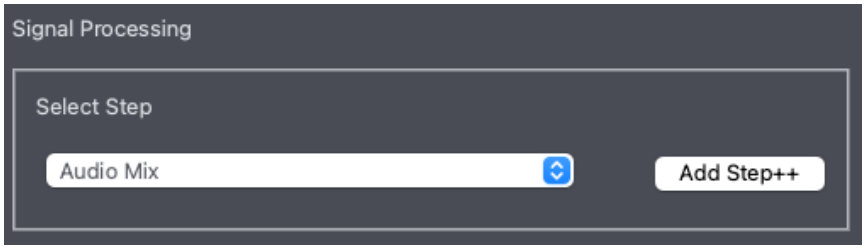
Notice I have set the start point for the Voice over to be 100 segments after the other channels sets.

IMPORTANT: The Timecode for channels set after the channels where the Timecode was initially selected must be the same or greater than the starting value if the 'Set Segment Timecode' box has been selected.

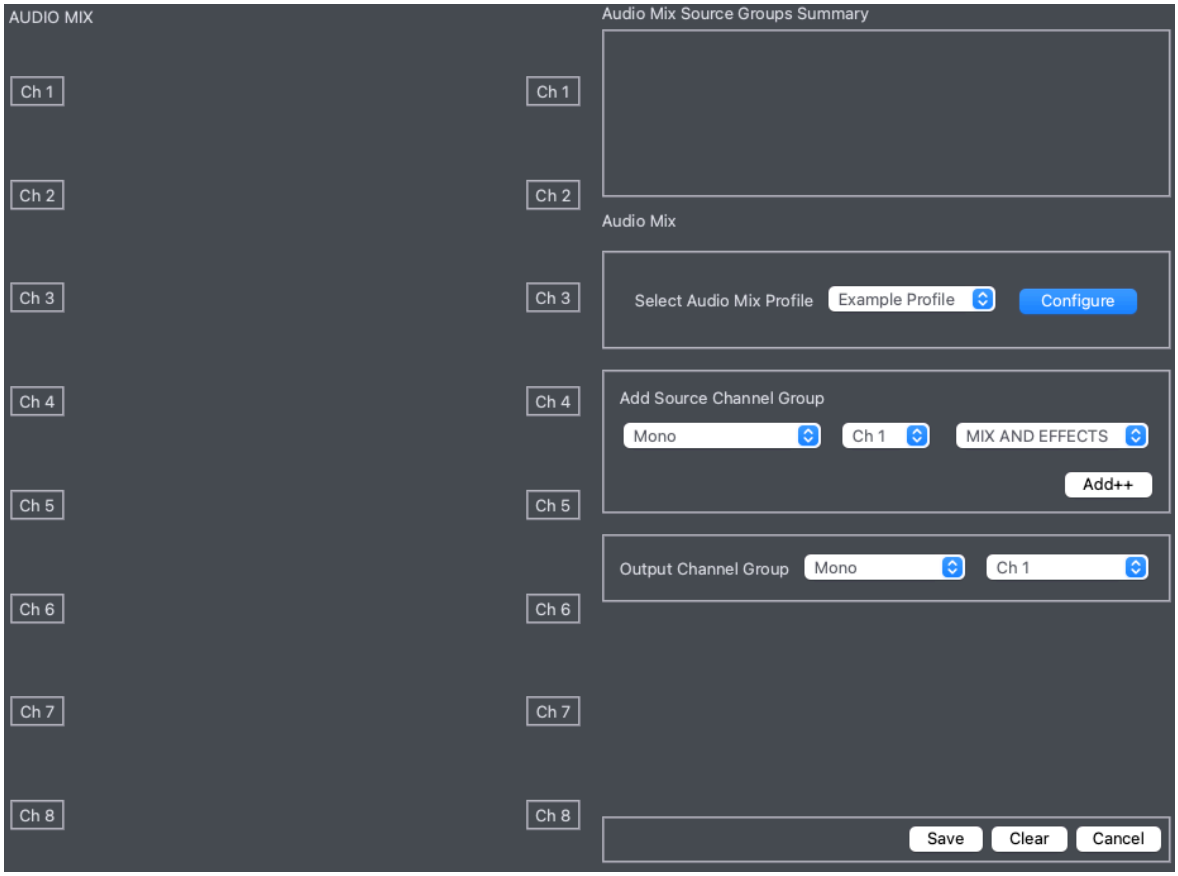
Click 'Next' once your Source is set.

2) Setup the Audio Mix

Next select ‘Audio Mix’ from the Select Step drop down



Click ‘Add Step’



In this example the Audio Mix Profile will remain as the ‘Example’ profile as this section will be covered later in the document.

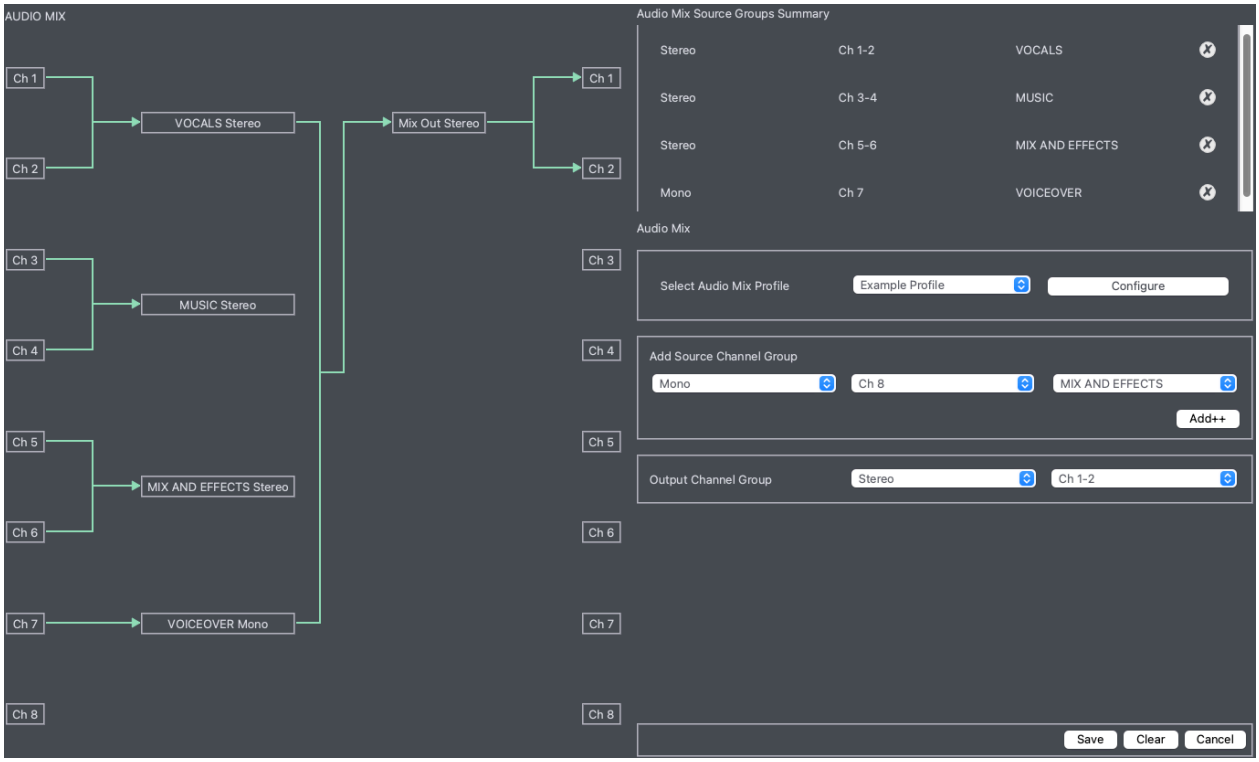
Note for Channel Groups:

• Source Channel Group(s): All Mono • Output Cannel Group: Mono or Stereo
• Source Channel Group(s): All Stereo or Mixture of Mono/Stereo • Output Cannel Group: Stereo Only

This section of the workflow allows you set the ‘Audio Mix Profile’ to set chosen ‘Source Channel Groups’ associating the channel groups to whether there are to be treated as:

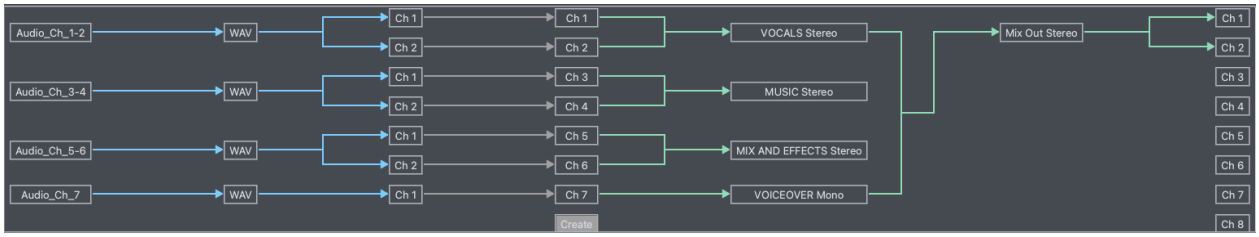
- MIX AND EFFECTS
- VOCALS
- EFFECTS
- MUSIC
- VOICEOVER

Here is the Audio Mix channel setup for my example.



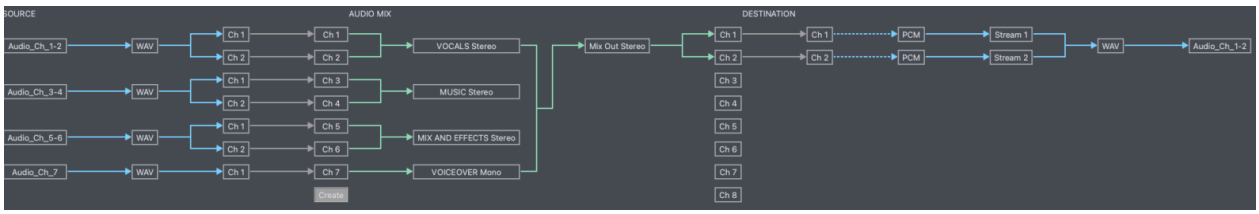
Click on ‘Save’ to continue, or correct it to suit.

This is a summary of the workflow so far.



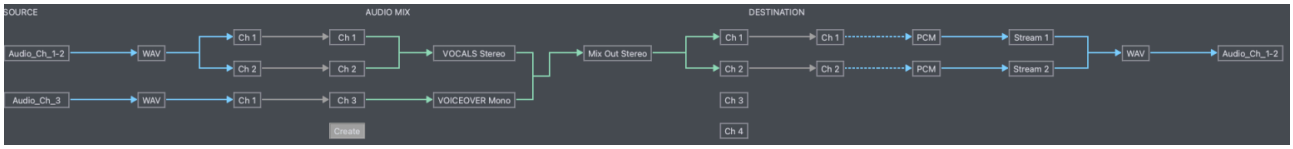
At this point you can choose to add another Signal Processing step such as ‘Loudness’ to make any correction to levels to suit your requirements, or you can click on ‘Next’ to continue.

3) Setup the Destination
Set the Output file type and number of channels



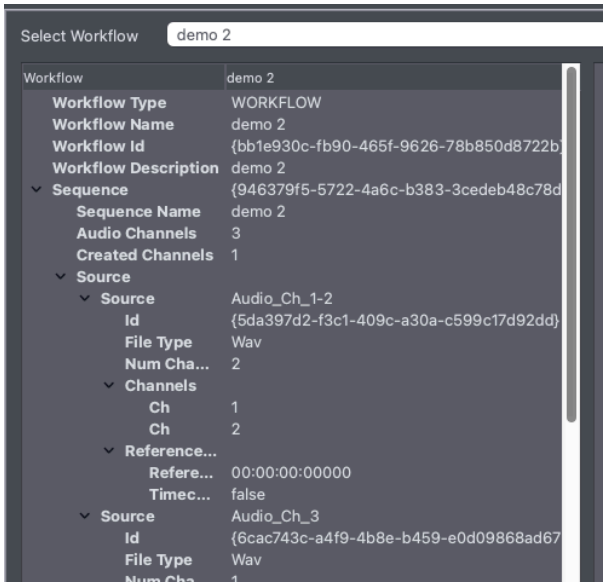
In my example output I have created a stereo WAV

Posting a Job using Engine Configurator



First select the workflow to be used.

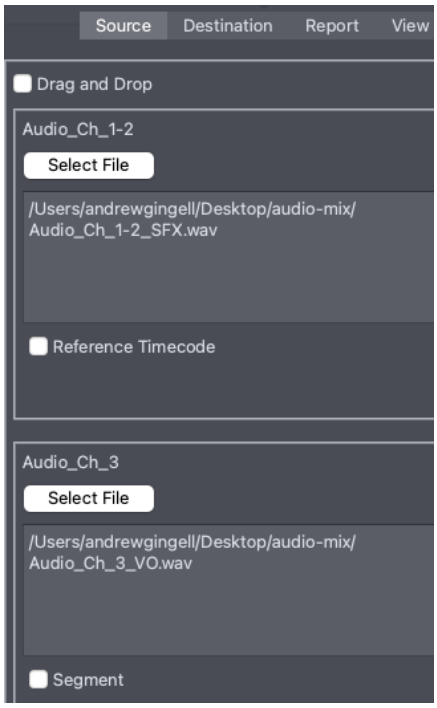
Here is a simple workflow where there is a VoiceOver a Music Stereo stream.



Workflow chosen - ‘demo 2’ which fits the criteria.

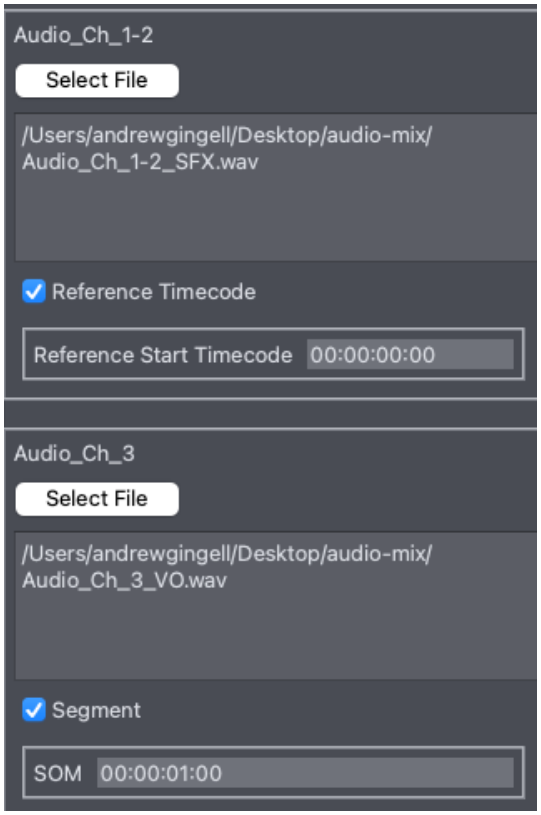
Now go to ‘Source’, then go to ‘Audio_Ch_1-2’ and browse to and select the Music source file.

Next select ‘Audio_Ch_3’ which is the Voiceover mono channel.



Now you have a choice, you can leave the ‘Reference Timecode’ unchecked, this means it will be as set by the workflow when it was created or source file.

If checked you can give it an offset in Timecode with Frames or Segments, again depending on how the workflow was created.



Here are examples for VO being offset by Timecode Frames and Segment.

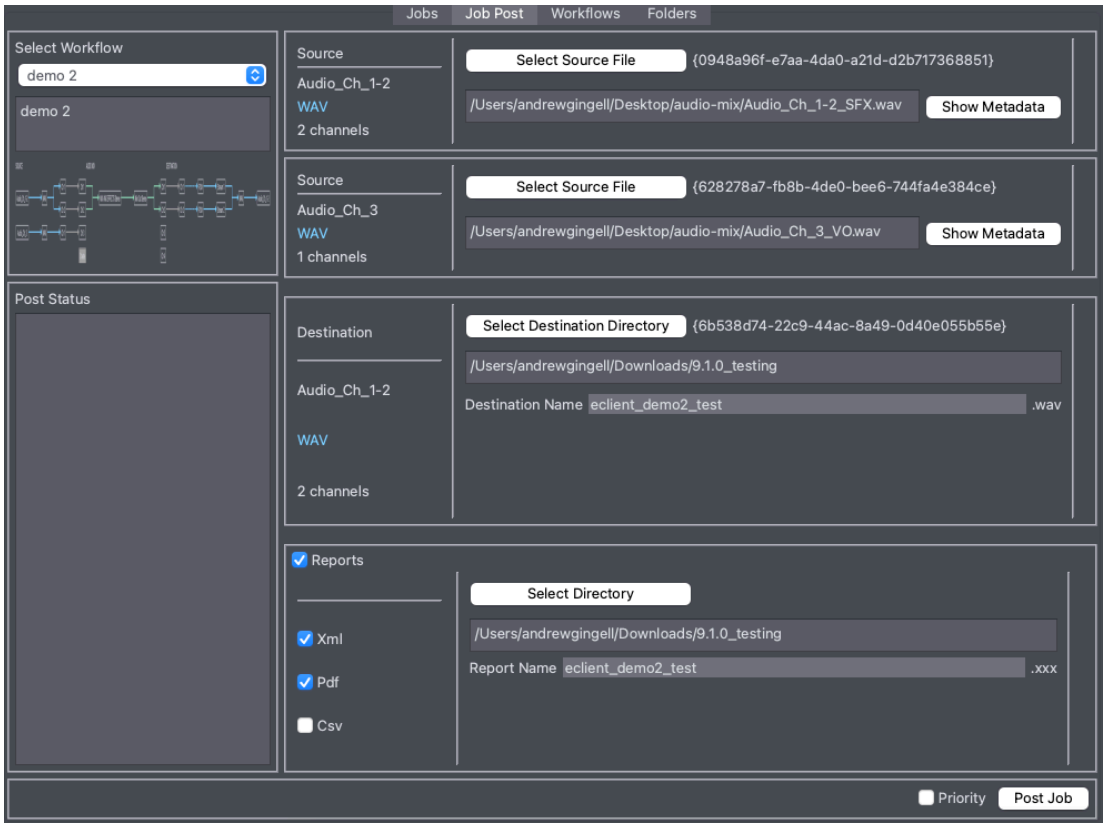
The Offset **MUST** be an equal or higher number than the first Source file.

Once the ‘Source’ configuration has been setup, set the ‘Destination’ folder and file name, and then select ‘Reports’ and configure their location and name if required.

Lastly, click ‘Process’.

Posting a job with Eclient

Open the Eclient and, as with the Engine Configurator/Desktop, select the Workflow.
My example is the same as the last section, a Stereo Music channel pair and a mono Voiceover channel.

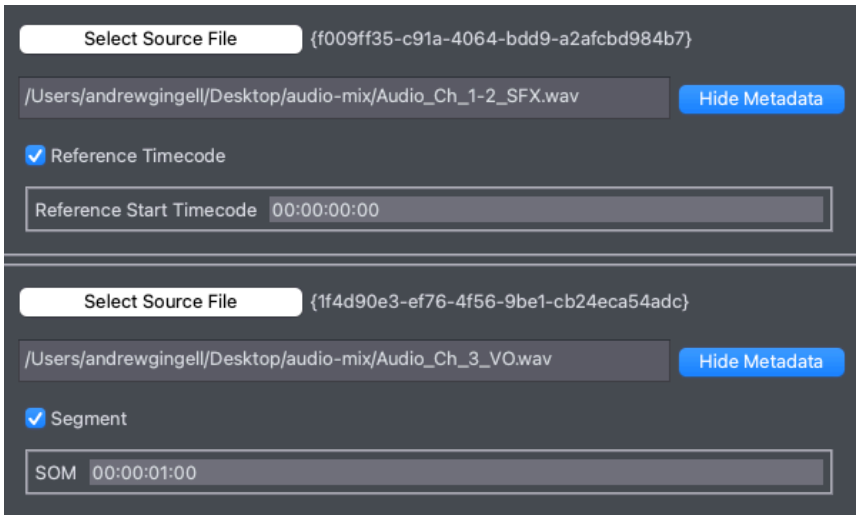


Here the screen has been populated with my source files.

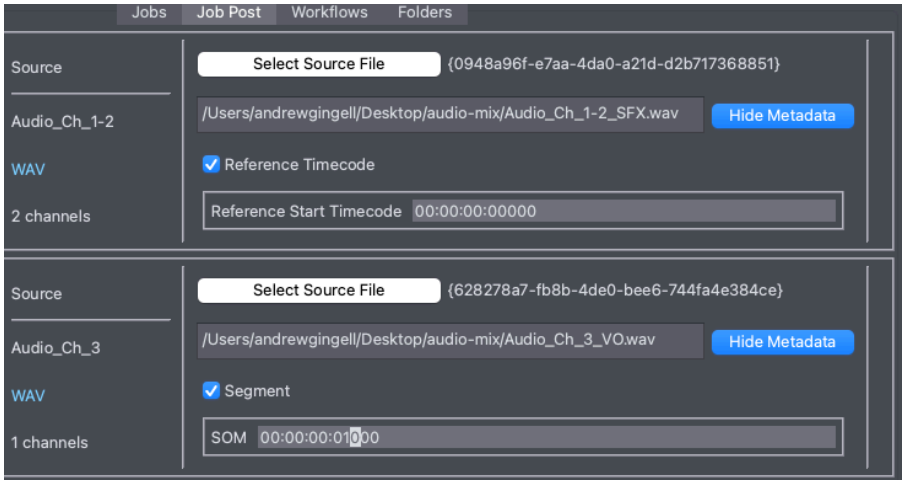
Next choice is if it's required to set the Reference Timecode and/or any channel Segment offsets.

Whats displayed will be determined on how the workflow was created.

If the Workflow is set in the Timecode using 'Frames' (HH:MM:SS:Frames) format then here is an example where the second source is starting 1 second after the first source.



If the workflow has been configured to using a Timecode with ‘Segments’ (HH:MM:SS:Segments) then here is an example where the second Source SOM is set to start after 1000 segments.



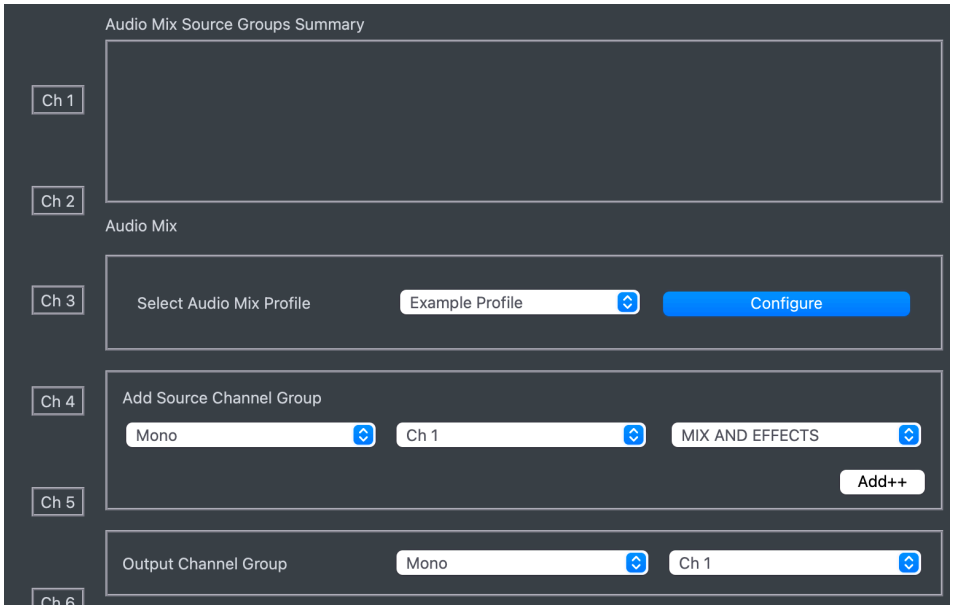
The Offset **MUST** be an equal or higher number than the first Source file.

Once the ‘Source’ configuration has been completed, set the ‘Destination’ folder and file name, and then select ‘Reports and configure their location and name if required.

Lastly click ‘Post’.

Audio Mix Profile

When opening the ‘Audio Mix’, as mentioned earlier, the user has the opportunity to personalise the ‘Audio Mix Profile’ which can be selected and applied to the Audio Mix.

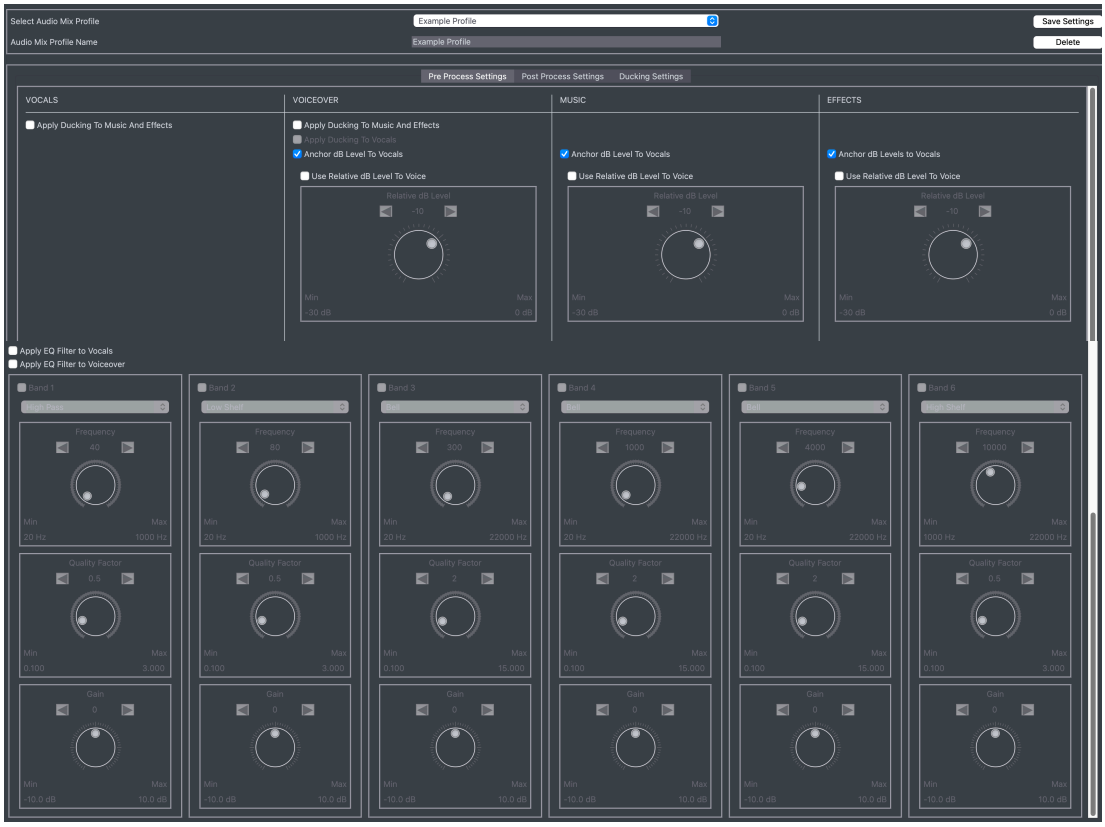


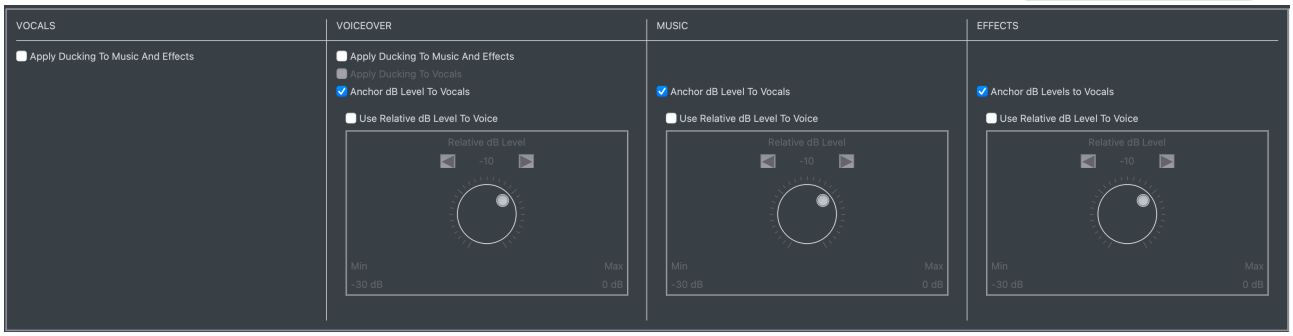
To create/adjust a profile click on ‘Configure’ in the ‘Select Audio Mix Profile’ section.

Here is the initial opening page.

Pre Process Settings:

There are two sections making up the ‘Pre Process Settings’





Here is the first section:

Vocals
- Apply Ducking to Music And Effects

Voiceover
- Apply Ducking To Music And Effects
- Apply Ducking to Vocals
- Anchor dB Level to Vocals
  - Use Relative dB Level To Voice

Music
- Anchor dB Level to Vocals
  - Use Relative dB Level To Voice

Effects
- Anchor dB Level to Vocals
  - Use Relative dB Level To Voice

Here is the second section where you can choose to apply EQ Filters to Vocals or Voiceover or both of them

Here there are two Bands selected (Low pass and High Shelf) out of the six possible.

There are three adjustments available for each of the filters.

- Frequency, Quality Factor and Gain.

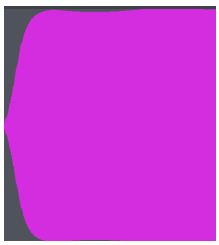
There are seven available 'Pre Process Settings' EQ filters:

- High Pass, Low Pass, Bell, High Shelf, Low Shelf, Notch, Band Pass and All Pass

Note: The Source file is a sweep 20Hz to 22KHz

- **High Pass**
  - Cuts low frequencies

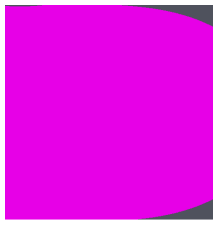
    Here the frequency set to: 100Hz



- **Low Pass**

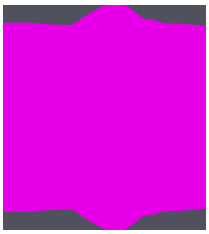
  - Cuts high frequencies

    Here the frequency set to: 12KHz



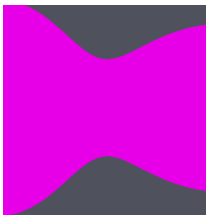
- **Bell**
  - Boosts specific band

    Frequency selected: 6KHz
    with a gain: +3dB



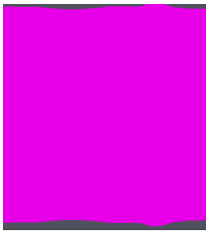
Or, cuts specific band

Frequency selected: 6KHz
with a gain: -4dB

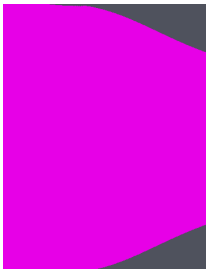


- **High Shelf**

- Boost frequencies above a point
  Chosen frequency: 8KHz
  with a gain: +6dB



- or Drops frequencies above a point
  Chosen frequency: 8KHz
  with a gain: -6dB



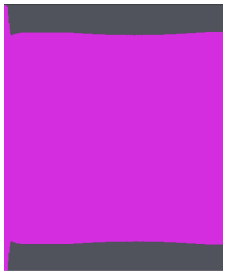
SUPPLEMENT

- **Low Shelf**

  - Boost or Drops frequencies below a point

    Chosen frequency: 250Hz

    with a gain: +6dB



  - Boost or Drops frequencies below a point

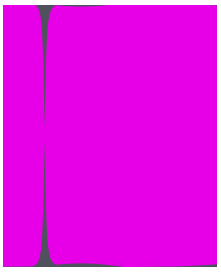
    Chosen frequency: 250Hz

    with a gain: -6dB

- **Notch**

  - Cut out a narrow frequency range

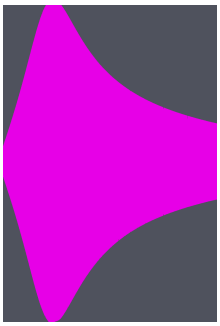
    Chosen frequency: 2KHz



- **Band Pass**

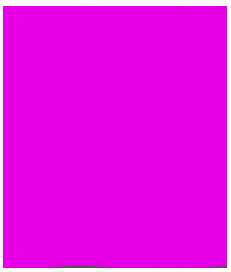
  - Allow frequency band, cut all outside

    Chosen Frequency: 2KHz



- **All Pass**

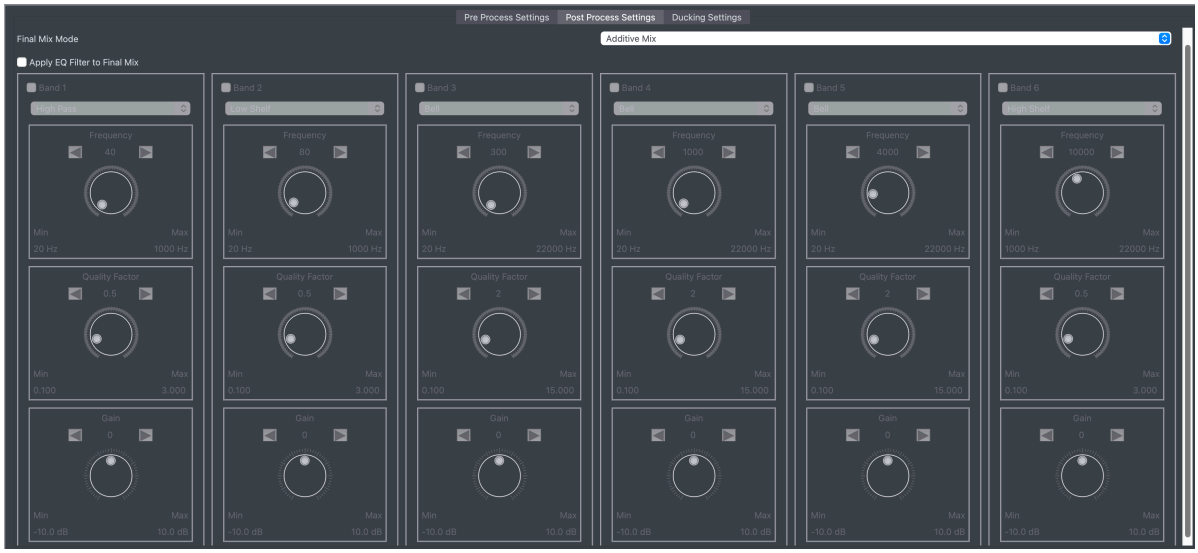
    Chosen Frequency: 2KHz



Note: Gain is **only enabled** for Bell, High Shelf and Low Shelf Filters.

Post Process Settings:

As with the 'Pre Process Settings' there is a 'Final Mix Mode' and the possibility to select up to six EQ Post band filters.



Final Mix Mode:

- Additive Mix or Balanced Mix

Apply EQ Filter to Final Mix:

- Off/On

- 'On' allows up to six Bands that are cumulative EQ Filters to be added to Final Mix.

Here there are two Bands selected (Low pass and High Shelf) out of the six possible.

There are three adjustments available for each of the filters.

- Frequency, Quality Factor and Gain.

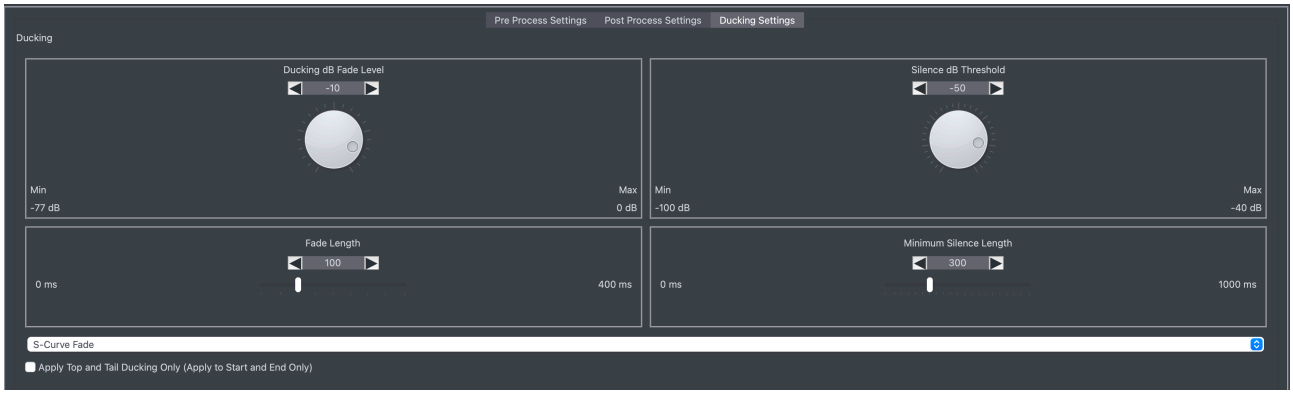
Note: Gain is **only enabled** for Bell, High Shelf and Low Shelf EQ Filters.

There are seven 'Post Process Settings' EQ filters already detailed.

- High Pass, Low Pass, Bell, High Shelf, Low Shelf, Notch, Band Pass and All Pass

Ducking Settings:

Ducking is where the vocals or VoiceOver can act as a control source, normally ducking music and effects. A VoiceOver can also duck vocals, if required, giving a layered relationship.



The setting is activated when ‘Apply Ducking to Music And Effects’ and/or ‘Apply Ducking to Vocals’ in the ‘Pre Process Settings’ are selected.

- Ducking dB Fade Level
- Silence dB Threshold
- Fade Length
- Minimum Silence Length
- S-Curve Fade or Linear Fade
- Apply Top and Tail Ducking Only

Audio Mix Profile Steps:

- First, give the ‘Audio Mix Profile’ a name.
- Next, adjust the ‘Pre Processing Settings’, ‘Post Processing Settings’ and ‘Ducking Settings’ Profile to suite your requirements from the previous details.
- Click on ‘Save Settings’