VocAlign Ultra User Guide V1.1

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VocAlign Ultra

User Guide

Manual Version 1.1

22 September 2021

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2. What is VocAlign Ultra?

Introduction to VocAlign Ultra

VocAlign Ultra is a powerful but easy-to-use plugin that can automatically match the timing and pitch of one audio signal to the timing and pitch of another audio signal.

What's New?

The main improvement over previous versions of VocAlign Project and VocAlign Pro is the addition of pitch matching and display to the toolbox, drawing on the proven and extensive technology behind Revoice Pro 4, but we've also added:

- New in VocAlign Ultra 1.1: A simpler workflow using SmartAlign to automatically align Guide and Dub audio regions.
- A library of presets to help you quickly get the right settings for a variety of jobs and signal types.
- A basic and advanced set of controls to adjust the amount and modes of timing and pitch matching.
- 3 view windows showing waveforms, pitch traces or signal energy displays.
- A movable timing Offset Display showing points of alignment in the Guide and Dub waveforms.
- Improved tools for correcting small issues: Protected Ranges and Sync Points.
- A pitch transpose control.
- A formant control for adjusting the pitch range of resonances.

What does VocAlign Ultra do?

In a nutshell, VocAlign Ultra enables dialogue editors and music producers to quickly and easily align one vocal or instrumental performance with another in the time or pitch domains, or both.

As any dubbing editor or music producer knows, lip-syncing and double tracking vocals and instruments can be a painstaking, laborious process, highly dependent on the ability of

the performer to repeat themselves accurately, and often involving many takes to get a workable final result.

With VocAlign Ultra brought into the process, you can let the artist concentrate on creating a great performance, without worrying about the detailed timing mismatches relative to the guide track or pitching imperfections. The plugin automatically and transparently applies the required amount of variable time-stretching and pitch-shifting to match the Dub to the Guide, saving studio and artist time, and delivering natural-sounding results.

Perhaps most importantly, VocAlign Ultra allows your artist to produce their best performance, free from the stressful rigidity and repetition traditionally associated with re-recording or doubling tracks.

Main Applications

VocAlign Ultra can be used for all manner of corrective and creative purposes, including:

In post production:

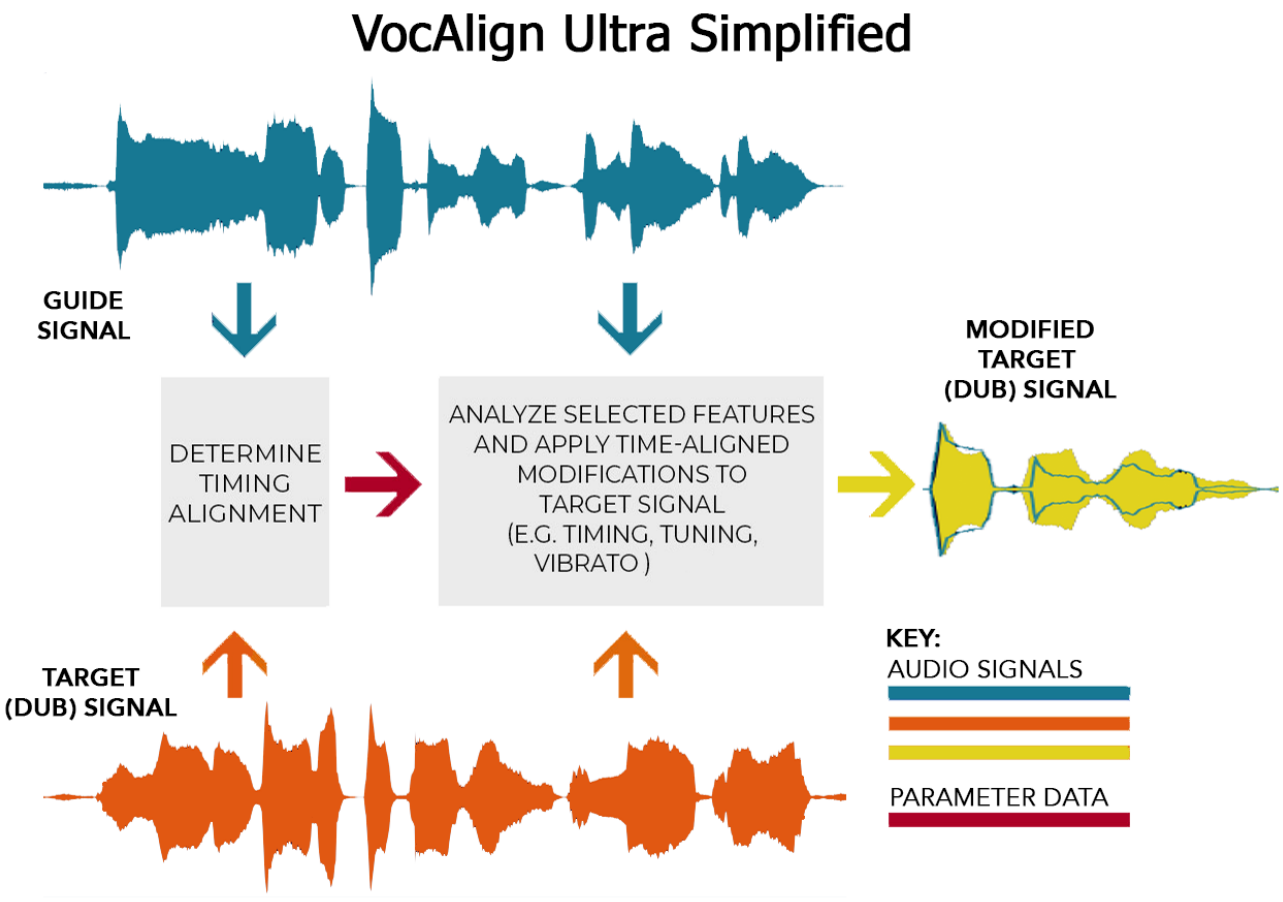
- Syncing replacement dialogue for film and video.
- Matching the pitch profile and intonation of overdubbed dialogue to the original recording.
- Tightening up lip-syncing with foreign language dubs.
- Changing the vocal timbre or even gender of an actor's performance.

In music production:

- Double-tracking vocal and instrumental parts.
- Replacing the vocals in a music video shoot with a production track, to achieve perfect lip-sync.

How does it work?

VocAlign Ultra works by applying varying amounts of time-stretching and compression to one signal – the 'Dub' – to align its energy peaks and troughs over time with those of a 'Guide' signal. It also can modify the pitch of the Dub (whether time-aligned or not) to match the pitch of the Guide.



Audio signal names are coloured to be similar to those in the VocAlign Ultra Interface.

VocAlign Ultra does its processing in three main steps:

1. VocAlign Ultra analyzes the Guide and Dub audio signals using identical spectrum analyzers to produce time-varying energy patterns and pitch maps for both signals. Also the time-varying pitch of both signals is measured.
2. Advanced pattern recognition techniques are used to compare the two energy patterns and pitch maps, and determine the best way to 'warp' the Dub's timing and pitch (if selected for matching) to align the Dub timing and pitch to the Guide signals. A the time-warping path is created to specifies the best time-distortion of the Dub for matching to the Guide according to the "Matching" tightness setting.
3. The time-warping path feeds into an audio editing processor that time-stretches and -compresses the Dub audio signal and, if selected, modify its pitch to the desired tightness, to create the Aligned version.

It is this time and pitch-aligned version of the Dub that is the processed Output, which is returned to the host DAW.

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3. General Information

3.1. Contact Information

CONTACT DETAILS

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Trademarks and notices

3.2. About this User Guide

How to Use This User Guide

This User Guide is set out to help you learn:

- How to Install and Uninstall the plug-in package
- What is in the **installed** VocAlign Ultra package?
- Which of the Plug-in Versions you can use with your DAW(s)
- How to use each Plug-in Version with your DAW (via Quick Start Guides)
- How to use VocAlign Ultra in depth
- Some Tips and Tricks for getting the best results

User Guide Structure

1. The User Guide **Contents** (on the left) provides links to the major Topics mainly described above.
2. After explaining installation and authorisation, you will need to find out which Plug-in Version appears in your DAW.

3. Then you can use the **Quick Start Guides** to follow the basic steps to use your chosen version with your DAW.
4. If your DAW is not listed, but supports VST3 or AU, then you can use one of the DAW guides most similar to yours.

Other ways to get help

Latest Information, Audio Examples, Tips and Tricks

Click this Link at the top of the page

to get the latest information plus a growing collection of sample audio, demos and tips and tricks for using VocAlign Ultra with different DAWs on the Synchro Arts website.

Tutorial videos

On-line videos are being created and updated to help users quickly understand the general and detailed operation of VocAlign Ultra.

Some helpful videos have direct links from this manual.

Also, click here to go to the Synchro Arts Videos filtered for VocAlign Ultra to see numerous explanations of how to use the application in a variety of creative situations.

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3.3. Control Devices

Input Control Devices

A range of positioning and control devices can be used with VocAlign Ultra including a **mouse** with one button, two-button mouse, Magic Mouse, track pads, track balls etc.

In this Guide, we have used the familiar terms "**LEFT CLICK**" and "**RIGHT CLICK**" which might not be appropriate for the user's control device. What is meant is this:

- **LEFT CLICK** - device operation that selects an item
- **RIGHT CLICK** - device operation that brings up a menu of selectable items in a "**short-cut**" or "**context-dependent**" pop-up window.

For detailed information on your device controls or setting it up, look in any of the following:

- **MAC and Windows System Preferences** - Mouse
- **Mac and Windows Help** for "mouse"
- Your control/pointing device in the device's User Guide

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4. Installation and Authorization

Installation and License Overview

Installation

If you have not already done so, download the macOS or Windows **VocAlign Ultra** plug-in installer from www.synchroarts.com/downloads or your DAW's specific pages.

When you open the installer on your Mac or PC, it will install the following VocAlign Ultra plug-ins:

- **AAX (Audio Suite)** for Pro Tools
- **VST3** and **VST3 (ARA**) for Cubase, Nuendo, Studio One, Ableton Live and other DAWs supporting VST3 plug-ins

and, on macOS only

- **AU** (Audio Units) and **AU (ARA)** for Logic Pro X and other DAWs supporting AU plug-ins

License Overview

VocAlign Ultra uses the iLok system described on www.iLok.com to authorise your plug-in.

- You can obtain **Trial Licenses** from www.SynchroArts.com or purchase Full (non-expiring) or rental licenses from Synchro Arts or its resellers.
- Rentals and Trial licenses will run the software fully-functional for the number of days stated in the information provided with the licence.
- The **license** includes **2 activation**s that will go into your iLok account so you can activate two locations.
- All licenses will authorise both macOS and Windows versions.

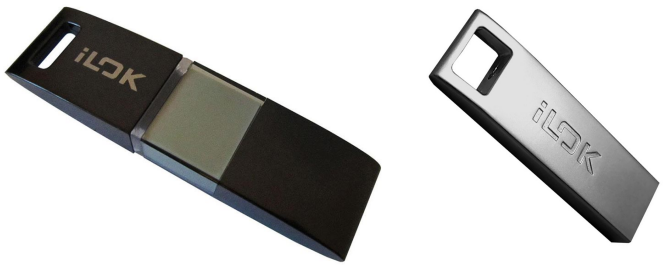
The **locations** which can be activated are:

- iLok USB Keys Version 2 or 3 (see details below)
- Machines (i.e. computers)
- iLok Cloud
- iLok Network server (for larger organisations). Contact ilok.com for details.

iLok USB Keys

You can **only** use the **iLok 2** or **iLok 3** USB Keys (pictured below).

Note: These are often referred to as simply "**iLoks**" in many user guides.



- iLok USB Keys can hold licenses for a number of protected software products.
- They can be easily moved from one computer to another to authorise iLok-licensed products.
- You can have licenses from Synchro Arts and other software vendors on the same iLok.
- iLoks can be purchased from iLok.com or from most pro-audio product vendors.

How to Authorise your VocAlign Ultra plug-in

IMPORTANT: Before you can run VocAlign Ultra, you must do all of the following (if you haven't already done so).

Skip steps 1-2 if you already have an iLok account.

1. Create a free account on www.iLok.com .
2. Go to www.iLok.com, download and install the latest **iLok License Manager** on your computer.
3. If you are using an iLok USB key, plug it into a USB port on your computer.
4. Run the **iLok License Manager** and sign in to your iLok account.
5. **If you have a License in your iLok.com account**, the License Manger will display it and let you drag its **name** to one of the three destinations mentioned above:
    - An iLok USB key that is plugged into your computer.
    - The iLok Cloud

- Your computer (machine)

6. If you don't have a License but instead have received an **iLok Activation Code** in the form:

   XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XX

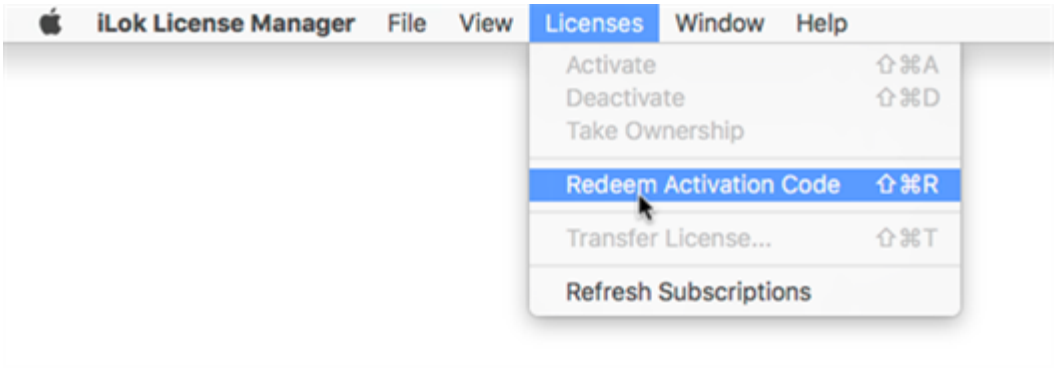
   (where X's are numbers).

   you can redeem this code in the **iLok License Manager** to obtain your licence. This is described next.

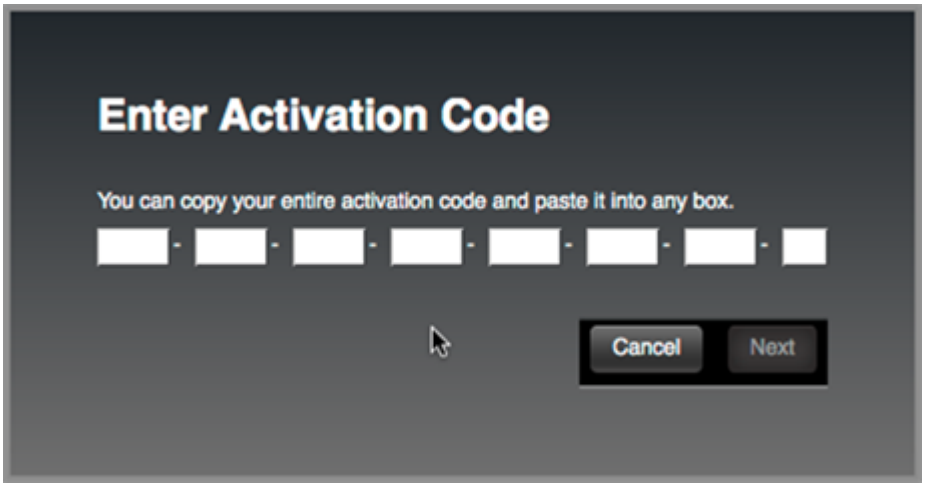
i If you already have installed a VocAlign Ultra licence in iLok cloud, or on your computer or on an iLok USB Key that is plugged into your computer, then you can run VocAlign Ultra and skip the next section on license authorization.

How to Redeem your iLok Activation Code

1. Open the 'Redeem Activation Code' window in the **iLok License Manager**.

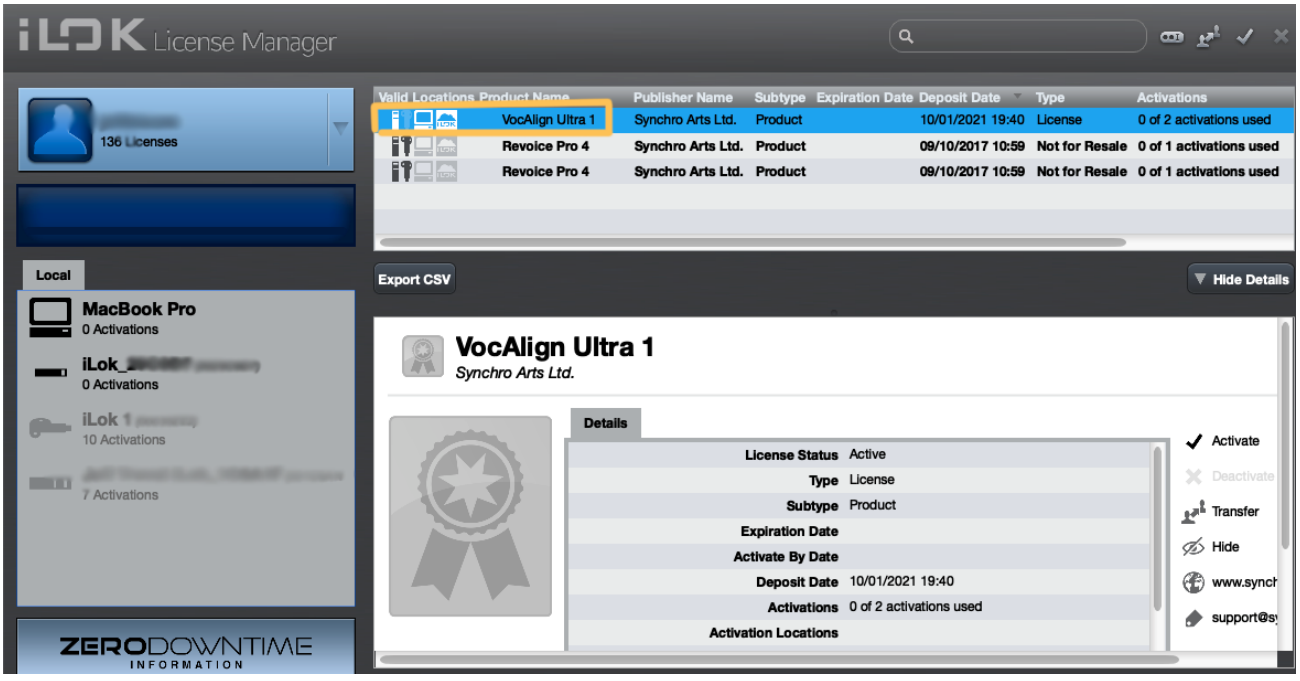


2. Enter your Activation Code as instructed.



3. If the code is recognized, you will receive a VocAlign Ultra License in the **iLok License Manager**.

4. Once you have a License in your **iLok.com account**, the License Manger will display it as **VocAlign Ultra 1** with 2 Activations available and images of the 3 possible destinations**.**



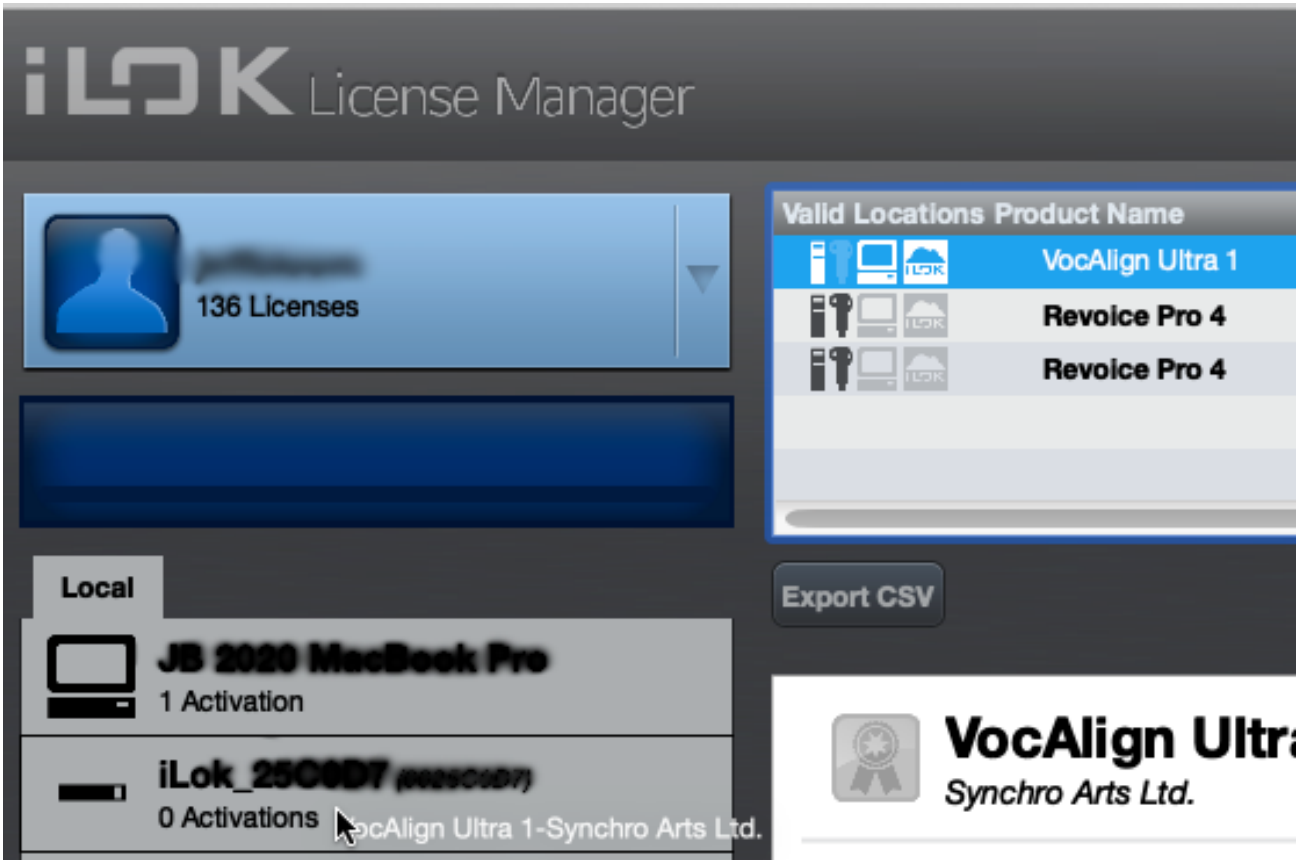
5. You can now drag the license (name) to one of the three destinations mentioned above:

ℹ Clicking a license destination below will take you to the instructions for authorising that location.

- An **iLok USB key** that is plugged into your computer with name showing.
- Your **Computer name** (machine)
- The **iLok Cloud**

Authorising using iLok USB Key

In the **iLok License Manager,** drag the VocAlign Ultra License name to the **name** of your iLok USB Key as shown in white letters below.



The License Manager will give instructions and tell you when you have successfully put the license in your iLok USB Key.
For further information on iLok, go to www.iLok.com.

Removing the iLok USB Key

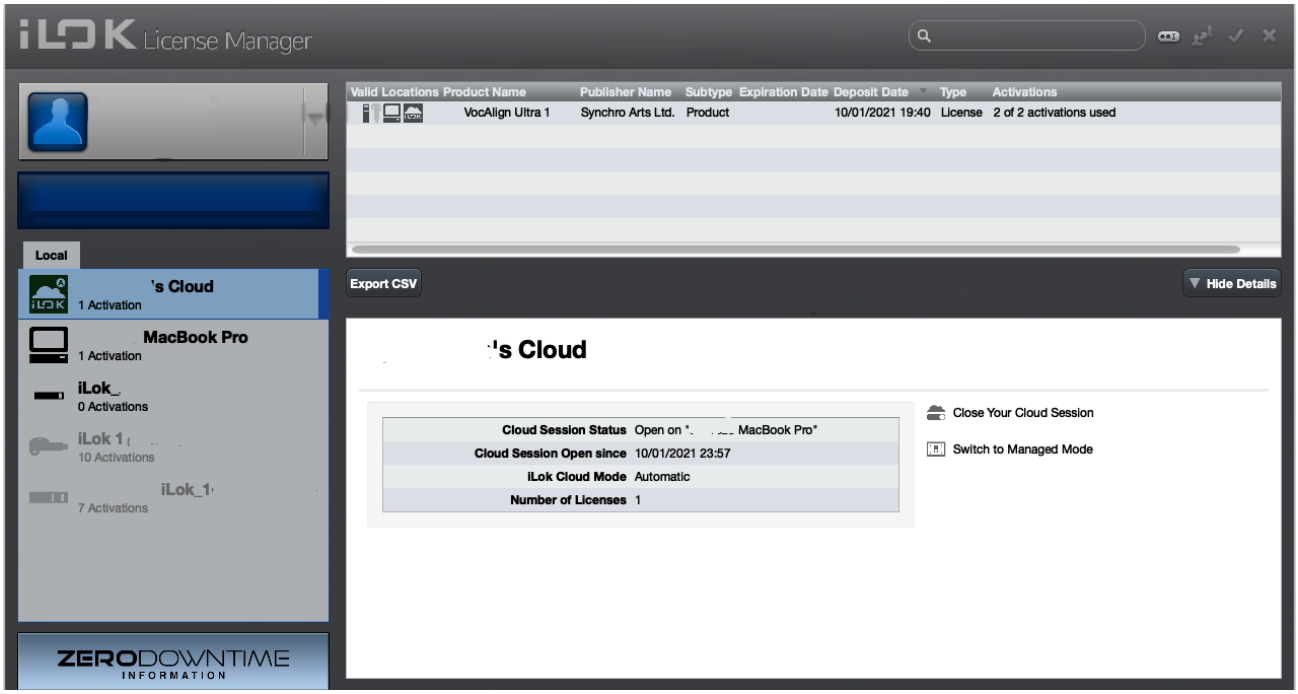
If you remove the iLok and then try to run VocAlign Ultra without the iLok inserted into your computer, you will receive a warning message. Follow the instructions in the warning to reauthorize the software.

Do **not** remove the iLok from your computer while you are using VocAlign Ultra.
If the iLok is removed VocAlign Ultra will allow you to save your session and then close.

Authorising using your Computer (Machine)

In the **iLok License Manager** Drag the VocAlign Ultra License name to the **name** of your Computer.

See image below showing an example of moving one Activation to a MacBook Pro computer.

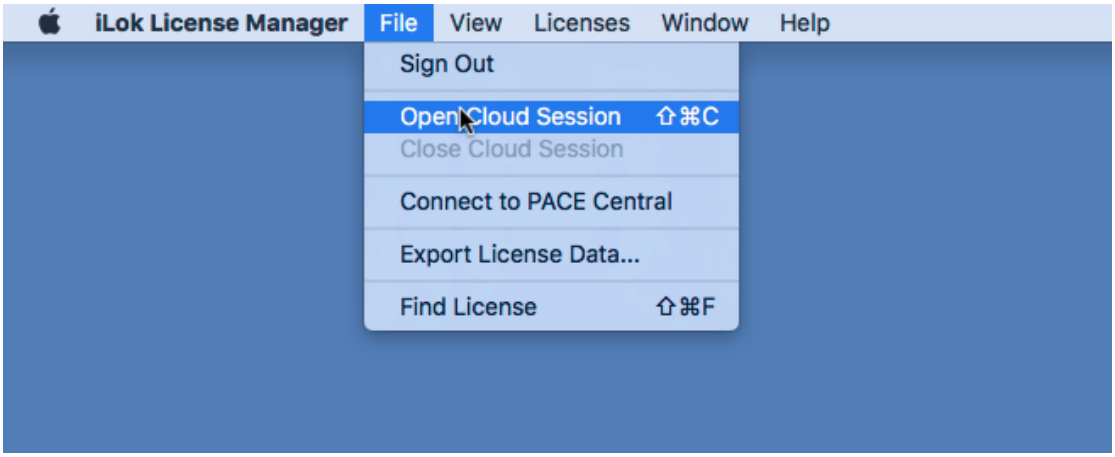


For further information on iLok, go to www.iLok.com.

Authorising using iLok Cloud

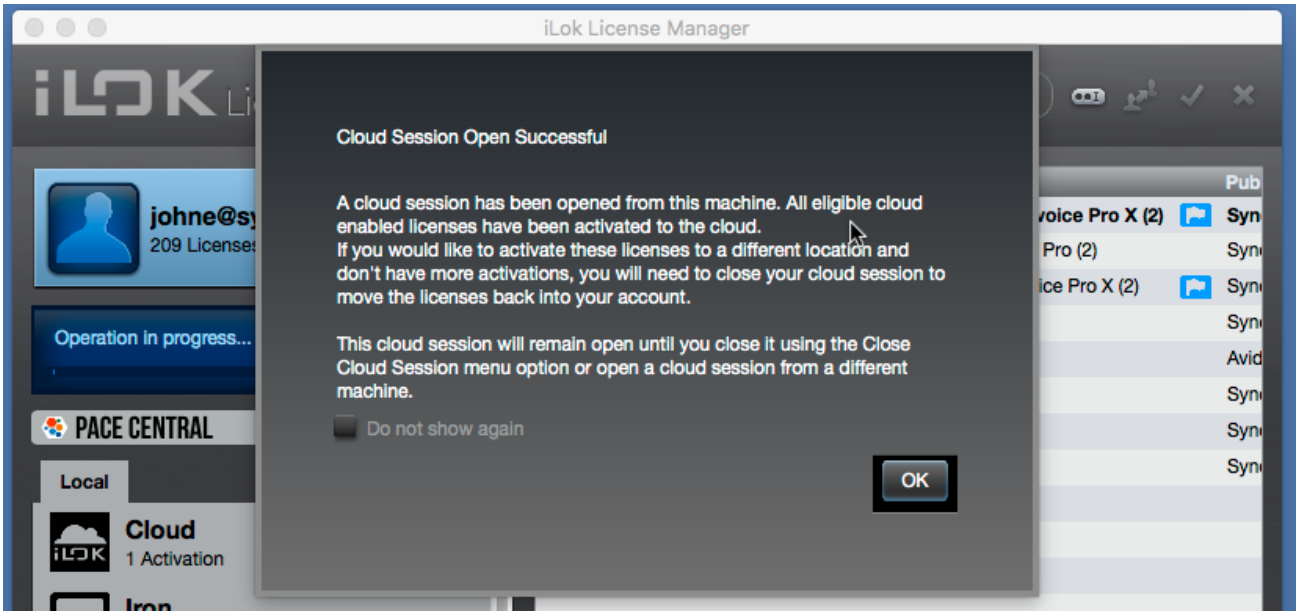
If you have already redeemed your Activation Code and your VocAlign Ultra license is available in iLok License Manager, you can launch VocAlign Ultra and Open a Cloud Session by following these steps:

- Start the **iLok License Manager** and log into your iLok account.
- Then select the menu File -> Open Cloud Session

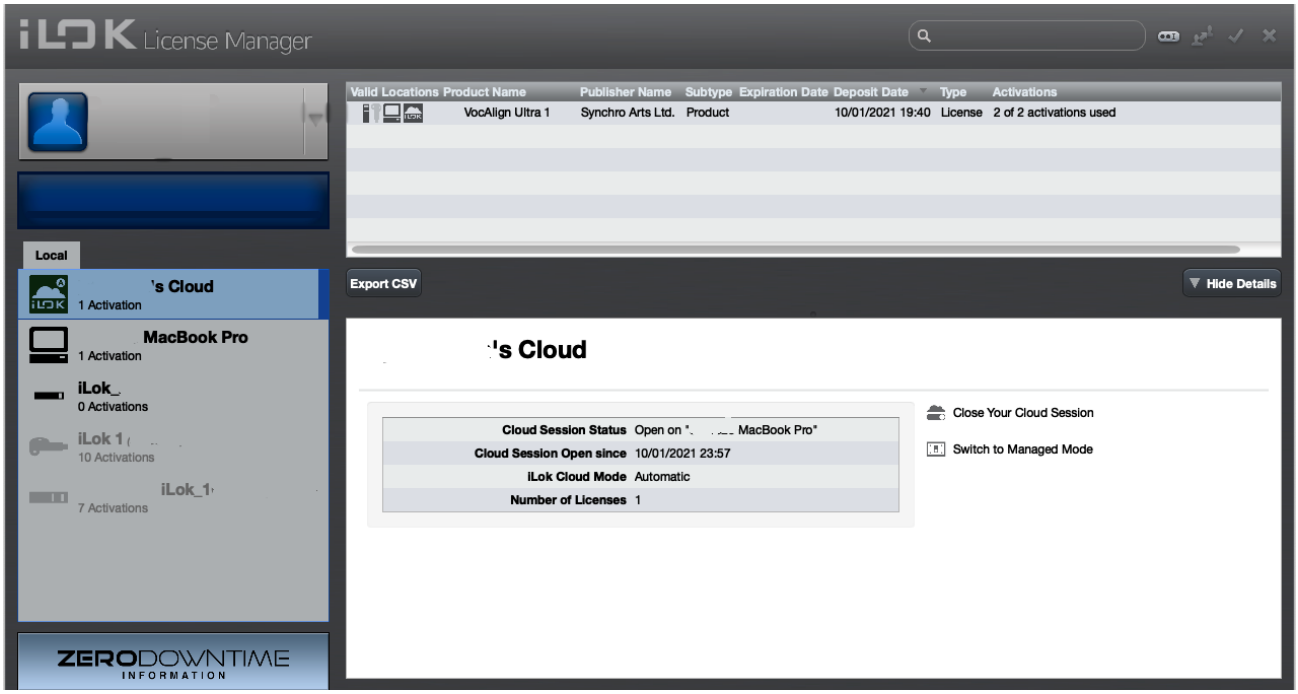


If you have a cloud session on another computer you will be warned that session will be closed.

The Cloud session should now be opened with the following message.



When you OK the screen shown above, you should see this something like this and you can now use VocAlign Ultra.



,

⚠ If you are using a iLok Cloud session and your Internet connection is lost or interrupted, VocAlign Ultra will close.

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4.1. Uninstalling

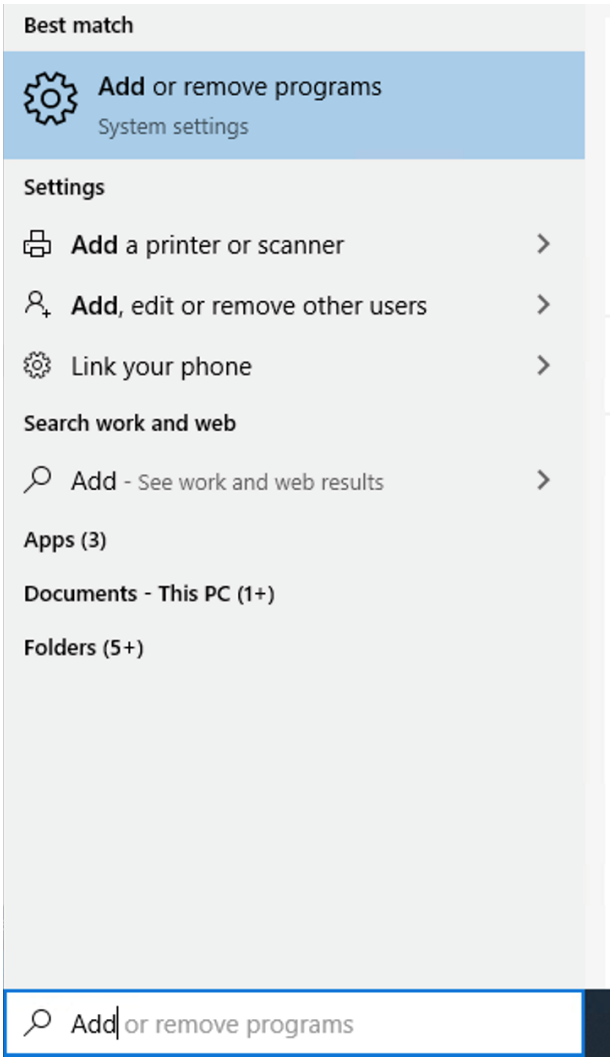
How to Un-Install the plug-ins

On macOS

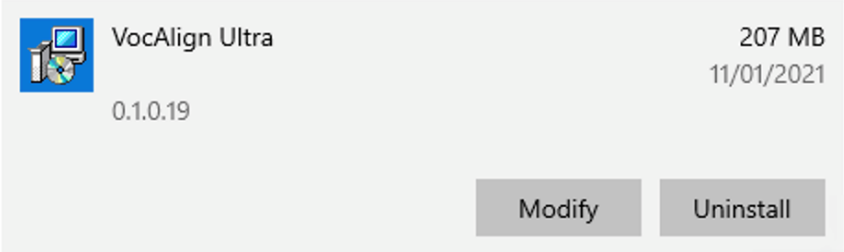
PLUG IN TYPE	Delete the following files
AAX	/Library/Application Support/Avid/Audio/Plug-Ins/VocAlignUltra.aaxplugin
AU	/Library/Audio/Plug-Ins/Components/VocAlignUltra.component
VST	/Library/Audio/Plug-Ins/VST3/VocAlignUltra.vst3

On Windows OS

1. Go to **Add or remove programs**



2. Search for **VocAlign Ultra.**



3. Select **Uninstall** and follow the instructions.

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4.2. Important File Locations

Locations of VocAlign Ultra Files

File locations in macOS

Preferences files are in

~/Library/Preferences/com.synchroarts.VocAlignUltraAAX.plist

~/Library/Preferences/com.synchroarts.VocAlignUltraAU.plist

~/Library/Preferences/com.synchroarts.VocAlignUltraVST3.plist

Default process settings are in

~/Library/Application Support/SynchroArts/VocALignUltra/UserPresets/VocAlignUltra/DefaultSettings

Recently used preset list are in

~/Library/Application Support/SynchroArts/VocALignUltra/UserPresets/VocAlignUltra/Recent.list

User presets are stored in

~/Library/Application Support/SynchroArts/VocALignUltra/UserPresets/VocAlignUltra

File locations in Windows

Preferences are stored in the registry.

User presets are stored in

%AppData%\SynchroArts\VocALignUltra\Presets

Default process settings are in

%AppData%\SynchroArts\VocALignUltra\Presets\VocAlignUltra\DefaultSettings

Recently used preset list is in

%AppData%\SynchroArts\VocALignUltra\Presets\VocAlignUltra\Recent.list

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5. VocAlign Ultra Plug-in Versions and DAWs

VocAlign Ultra Versions

The installers for macOS and Windows OS will install **all** the plug-in types below. Only some will work with your DAW.

You can see from the chart below which plug-in versions will work with your DAW.

If there are two (or more) types that will show up in your DAW, you must decide which one you want to use before you load it.
This User Guide will tell you more about the differences.

Click this link for a complete up-to-date list of Compatible DAWS.

PLUG IN TYPE	Modes	Will work with
AAX	• **AudioSuite**	• Pro Tools 11.1 and later • (Not Pro Tools 10)
AU (Audio Units)	• **AU (ARA)***	• Logic Pro 10.5.1 and later**

	• **AU**	• Logic Pro 10.0.0 and later
VST3	• **VST (ARA)***	• Studio One 4 • Cubase Pro/Nuendo • Cakewalk • Reaper • Most other DAWs supporting VST3
	• **VST**	• Studio One 4 • Cubase Pro/Nuendo • Cakewalk • Ableton Live • Most other DAWs supporting VST3

* Recommended when supported by DAW.

** Please note ARA mode will not work when using Logic Pro 10.6 on Apple Silicon (Unless you run Logic in Intel mode/Rosetta)

What are the differences between ARA Capture and VST3 or AU (Real Time Capture)?

The next two sections explain the features, benefits and issues of the two types of plug-in operation.

VST/AU ARA Plug-in Operation: Features

- Fast capture of audio
    - For short segments it will seem almost instantaneous.

- Ease of setup – in most cases DAWs make this straightforward
    - (Studio One, Cubase/Nuendo and Cakewalk in particular)
- Some Daws add ARA plugins to:
    - entire tracks (Logic , Reaper)
    - audio segments / events (Cubase, Studio One, Cakewalk etc).
    - both- Reaper can add ARA plugins to either entire tracks or individual segments.
- Transportable projects – the DAW takes care of loading and saving all ARA data.
- Integrated/dockable display in some Daws. (Studio One and Cubase/Nuendo)
- Instant replay of processed signals.
- ARA supports limited Undo/Redo (Render/Restore) if one is careful
- Control from the plug-in of the position of the DAW's playback cursor
- Captured Guides and Dubs are labelled with names from DAW.

WARNING: The time range of the processed signal using ARA is limited to the exact time range of the Dub.

For example, if the plug-in's processing generates an output that is longer than the original Dub,

the DAW will not replay the audio that comes after the original Dub segment. However, in nearly all cases this limitation does not cause any problems.

⚠ **WARNING**: VocAlign Ultra ARA plug-in must be the first plug-in in a chain of processing and there can be only one ARA plugin in a chain.

This precludes having VocAlign Ultra and any other ARA plugin (e.g., Melodyne) on the same segment of audio.

VST/AU - Realtime Capture: Features

- The capture of audio is more flexible than ARA's as the 'captured audio' can span any number of audio segments and intervening silences in the DAW.
- The length of the captured Guide will always be the same as the captured Dub.
- Instant replay of processed signals.
- The length and timing of the processed signal is not constrained by the timings of the Dub audio as it is in ARA See (6) in the ARA section above.
- DAW must support VST3 /AU sidechains
- Configuring the plug-in can be complicated. It depends on the DAW's plug-in operations:
    - The Guide track needs to be routed to the plug-in's sidechain.
    - Configuring the routing of the sidechain is simple in some DAWs (e.g., Logic, Studio One)
    - and complex in other DAWs (e.g., Reaper).
- The capture of audio happens in real time. A 30 second piece of audio takes 30 seconds to capture both Guide and Dub.
- It is usually much slower to process a project using the real time plug-in than it is to process the same project using the ARA plugin.
- Not able to integrate (dock) the plug-in's display.
- No Render and Restore is available (see note 2 below)
- Cannot reposition the DAW's playback cursor from the plug-in.
- Transportable "Realtime" projects (sessions) for VST3 DAWS but in AU DAWS (Logic Pro) the "Realtime" project is tied to your Apple computer.

- It possible to chain the real time plug-in after any other plugin, though in our case there is rarely any good reason for doing this.

Further detail

- Once you have added the Guides and Dubs to Ultra, the real time plugin and the Ara plugin work in much the same way.
- Apart from the 'Capture' buttons, all Ultra's presets and knobs will work in exactly the same way in both versions of the plugin.
- There is not much ability to control the undoing or redoing of anything in the real time plug-in from the DAW itself. For example, in Studio One using ARA you can Render and then Restore an alignment (i.e. Bounce in place/Undo bounce in Place/Redo Bounce.. /ad infinitum), whereas in the real time plug-in the 'Restore/Render' option is not available.
- You can continue to adjust the ouput audio from Ultra but not from the DAW. You can bypass the VocAlign Ultra Playback.
- Audio is in a separate file to be read and output during playback.
- ARA DAWs knows about the audio.
- You can you have both VST3 Realtime and VST3 ARA in same Studio One project as long as they are on different tracks.

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6. Using VocAlign Ultra

6.1. Operational Overview

VocAlign Ultra - Operation Overview

In this section, we describe what the interface(s) looks like and the general flow of operations you will use.

There are 3 different interfaces you might see, depending on what DAW you use and which plug-in type you are using. This will be explained in more detail later.

[Updated video 'Learn VocAlign Ultra in 7 minutes' for VocAlign 1.1 with SmartAlign workflow forthcoming]

Start with a Preset

A task-orientated library of presets covers a broad array of common usage scenarios, and often, you won't need to do anything more than **Select a preset**, to get the job done. However, you can always adjust the Match Timing and Match Pitch "tightness" controls to get a tighter or looser sounding result.

The screen below shows a VocAlign Ultra's screen with **Basic** controls showing on the right side.

Switching to **Advanced** mode, however, reveals several further controls governing the nuances of the algorithms at work in the audio editing processor, as well as a linear pitch transposition control for creative pitch-shifting.

In addition, the Formant Shift control facilitates dramatic tonal shaping and vocal 'gender' changes.

Important! Your DAW is a variable

VocAlign Ultra requires the Guide and Dub audio to be captured (imported), and the Processed audio to be exported back to the host DAW.

However, the process of getting audio into and out of the plugin varies widely between different DAWs since they have one or more standards for doing this, which includes AAX (AudioSuite), VST3, AU, and ARA 2 for VST3 and AU. See Versions and DAWs

Because of this, we provide Quick Start sections for the most popular DAWs which describe one or two methods of getting your audio into and out of VocAlign Ultra for each plug-in standard used by these main DAWs. We will also explain when these steps (or very similar) wllll sometime apply to other DAWs.

In the next sections of this Guide, we describe the operations that are universally applicable to all DAWs that can support VocAlign Ultra.

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6.2. SmartAlign Overview and What is New in 1.1

SmartAlign

SmartAlign is a new feature first included in VocAlign Ultra 1.1 that intelligently resolves the issue of aligning audio in a Dub that doesn't start or end at the same points on the timeline as the Guide. It uses the position of the Dub to **find** the matching audio in the Guide, rather than the other way round, and then **aligns** the Dub to the Guide as usual.

If you're used to the previous versions of VocAlign, you'll be all too familiar with the process of cutting out sections of long Guides in order to match them up to the start and end points of the Dub. With SmartAlign, you no longer need to do that.

Be aware, however, that SmartAlign expects each section of Dub-matching audio in Guide to start no more than 0.25s before the start of the matching audio in the Dub. In all the following examples, we'll show you to align the Dub to the Guide first with and then without SmartAlign.

Although SmartAlign might appear to be a function you would never want to turn off, because it's so new, we wanted to retain the option to let you use the original algorithm in case of unexpected results. And if your Guide and Dub audio regions start and stop at roughly the same points in your DAW anyway, SmartAlign may sometimes not be required.

However, we recommend you always keep SmartAlign ON unless there is a problem doing that.

New in VocAlign Ultra 1.1

- In Logic Pro when using the ARA version, it is no longer necessary to press start and stop before each Capture. Instead clicking any Capture button in VocAlign will automatically initiate a start and stop. You will hear a small burst of playback before VocAlign then captures the selected audio.
- Updated presets library making use of SmartAlign.

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6.3. Presets and Working in Basic Mode

Working with presets

VocAlign Ultra's preset library is organised in a task-based hierarchy that makes it easy to find the right setup for the job at hand, be it tightening up a vocal harmony, matching a voiceover artist's overdub to the original actor's dialogue, or bringing cohesion to a horn section.

A VocAlign Ultra preset is really just one particular configuration of all its parameters, made to help you complete a specific music or post-production task. The factory presets should be useful as starting points for most cases.

Of course, the specifics of your source material may well necessitate the tweaking of those parameters to some extent, so presets should be viewed as highly targeted starting points rather than 'set and forget' instant fixes. Having edited a preset to tailor it to your needs, if you want to use it again, be sure to save it as a User Preset (giving it a helpful name) so you can try it on similar material in the future.

Loading a preset

To load a preset, click the preset menu at the top of the interface

and browse through the menu structure to the preset with the name that most closely describes the source material and results you're aiming for.

The menu hierarchy is not rigid, but an example of presets for Vocal Doubles is shown below:

The heirarchy largely follows the levels described below:

- **Tier 1 – signal type**: Choose **Vocal** (sung), **Instrument** (melodic or percussive instruments) or **Dialogue** (spoken word).
- **Tier 2 – Relationship or Task**: Here's where we specify the relationship between the Guide and the Dub, from a range of options including vocal and instrumental **Doubles** and **Harmonies**, **Rap** vocals, and **Dialogue** Replacement and Inflection Transfer.

Many tasks are further divided into subcategories, such as describing different pitch ranges of source material – **Low Pitch Dub** and **High Pitch Dub**, for example. These are used to deliver better quality editing for signals or used to set controls for situations like “Dub with Gaps - SmartAlign OFF”.

- **Tier 3 – tightness**: Each task is presented at several degrees of ‘tightness’, governing how strictly the timing and pitch of the Dub are aligned with the Guide. For example, the basic **Vocal Harmony** task comes in **Slightly Loose** and **Tight Timing** options.

  Exceptions to this are the **Creative Vocal** presets, which are described in terms of upward or downward pitch and formant shift, or, simply, **Make monotone.** These unusually detailed ones are mainly included to indicate some possible options the user might find useful to know about.

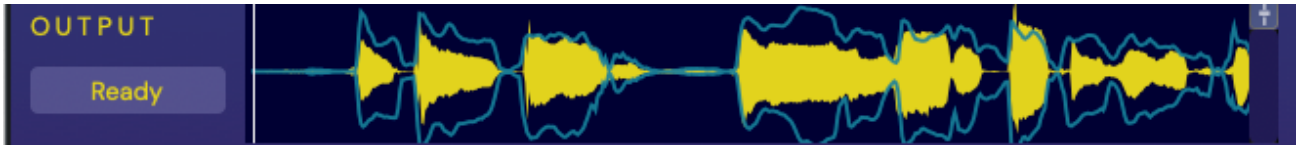
- The **Recent** folder will show the last 5 presets you have used which have their original settings when they were created (and not changed versions).
- **User** Presets **-** are where you can create and save your own presets, which would also show up in Recent after you use it.

Inspecting the Results of Processing

⚠ You need to understand **when** VocAlign Ultra automatically processes (which helps speed up your workflow):

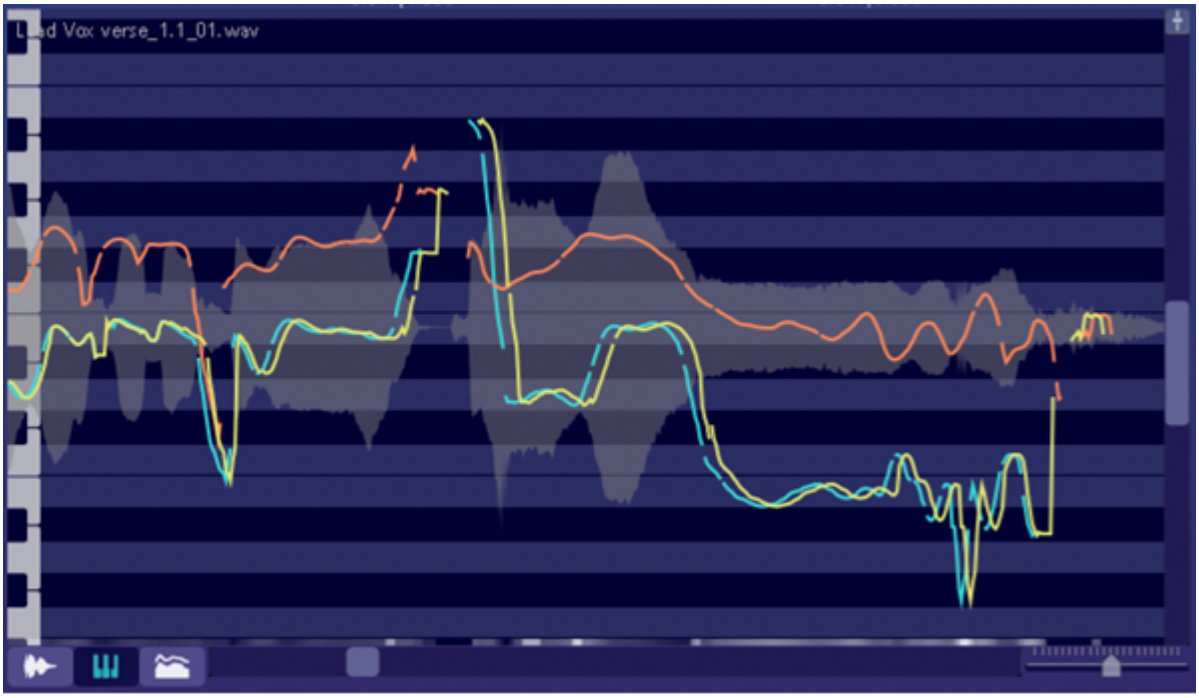
- **If there is a Guide already captured, as soon as a Dub is captured, VocAlign Ultra automatically processes the Dub with the selected preset and creates a new Output.**
- **Or, if there is a Dub present and the preset is changed, VocAlign Ultra will reprocess the Dub with the new preset setting and create a new Output.**

The Output appears in the bottom of the three default waveform views, as a solid yellow waveform overlaid with a blue outline of the Guide waveform to show time alignment of the Output relative to the Guide.



Further visual confirmation of the time and pitch alighment can be seen in the pitch view, shown against the piano keyboard note grid, with the yellow Output pitch trace alongside the blue and orange Guide and Dub pitch traces.

These pitch traces can be individually turned on or off with "eye" switches to provide a clear understanding of the changes both needed and made.



NOTE: Immediately after starting VocAlign Ultra, when the screens are empty, if you select a preset before capturing the first Guide and first Dub, you won't be able to adjust any of VocAlign Ultra's controls until a Guide and Dub have been captured. However, the selected preset will be applied automatically as soon as the Dub is captured.

The Guide and Dub aren't part of the preset, so you don't have to recapture them when you select a new preset. Changing preset with a Dub and/or Guide clip loaded reprocesses the Dub instantly according to the parameters of the new preset to create a new Output.

⚠ **WARNING**: If you are going to use a different preset on a new Guide and Dub, if you change the preset before you capture the new Guide, it will be applied to the current Dub, which you might not want to happen.

TIP: Change presets as much as you want only after you capture a new Guide, not before.

Modifying the preset

Be sure to try modifying the controls and see what happens in the timing and pitch displays as well as in the sound. You may find you need to make at least minor adjustments to the controls to make a new preset to adapt to your source material. If you do that and want to keep that preset, save it as a User Preset with a good descriptive name.

Manually Changing Control Settings

Overview

VocAlign Ultra has two versions of its right hand control panel: **Basic** and **Advanced**.

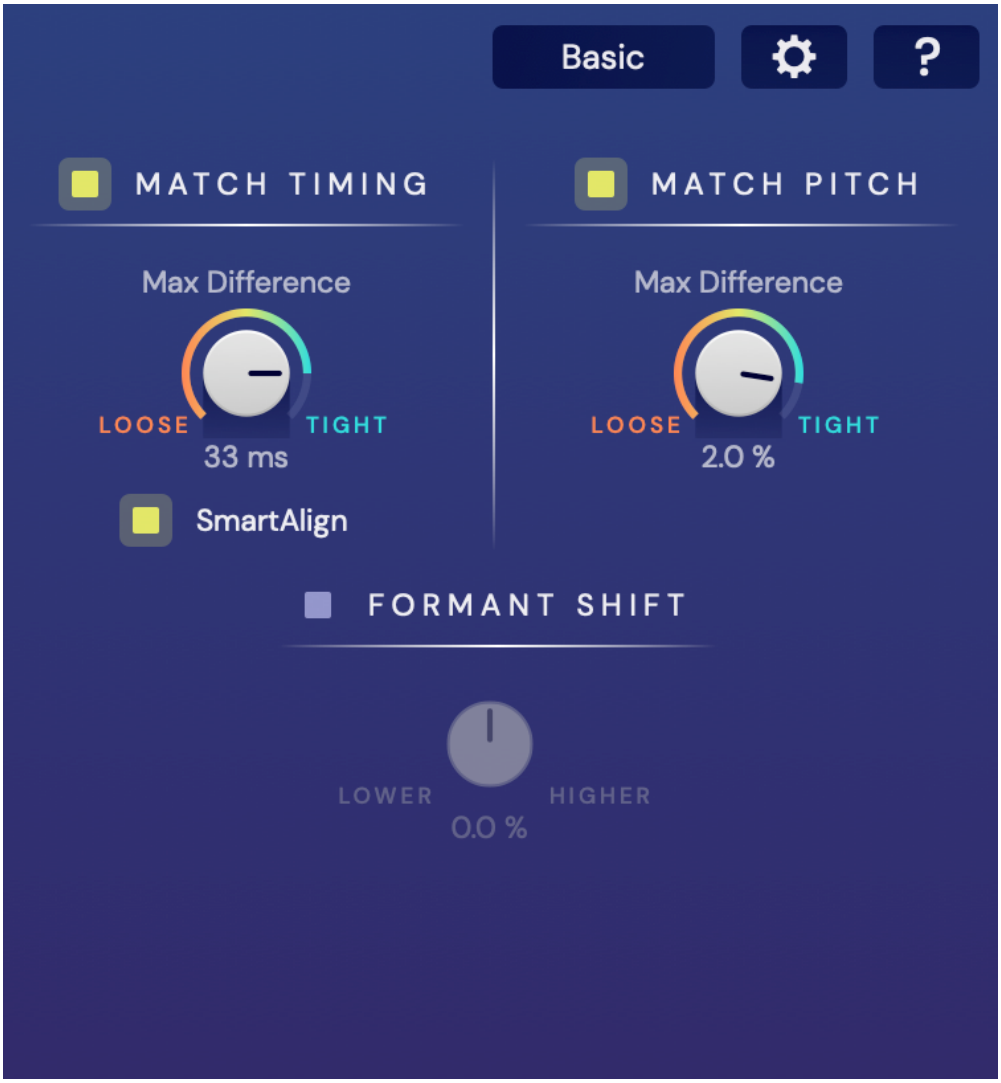
You will sometimes need to make at least minor adjustments to the controls after starting from your chosen presets' to adapt the processing better to your source material, or modify the results you hear in the Output to get a better or different results.

Often, you won't need to go beyond the default Basic control panel to get what you need.

The Advanced control panel is useful to learn more about, because everything you can change that affects the **whole** signal is shown here.

Basic Mode

Basic mode offers just three controls: Max Difference [Match Timing], Tuning Match [Match Pitch] and Formant Shift.



If MATCH TIMING is ON:

Max Difference: Determines how tightly the timing of the Dub is aligned to that of the Guide, from perfectly locked at the **Tight** (fully-clockwise) setting, to deviating by no more than 200ms at the **Loose** (fully-anticlockwise).

As you would expect, when the timing difference between similar events in the Guide and Dub is less than the Max Difference, no time alignment is applied.

NOTE: When the timing difference is set to less than TIGHT (0ms) less editing will be done and the signal will retain more of its original variations from the Dub.

If MATCH PITCH is ON:

The control under MATCH PITCH will be one of two different controls, either **Max Difference** or **Tuning Match,** depending on an Algorithm switch in the Advanced controls (which will be discussed later).

Max Difference: (Tight/Loose) sets maximum allowed offset in pitch differences.

Tuning Match: When the algorithm setting (in the Advanced control page) is **Mode 2** the Max Difference control becomes Tuning Match. Designed for use with Dubs that whose pitch is fairly close to the Guide's pitch, this aligns long term average pitch of the Dub to that of the Guide when Tight (100%) or keep the Dub average pitch when Loose (0%).

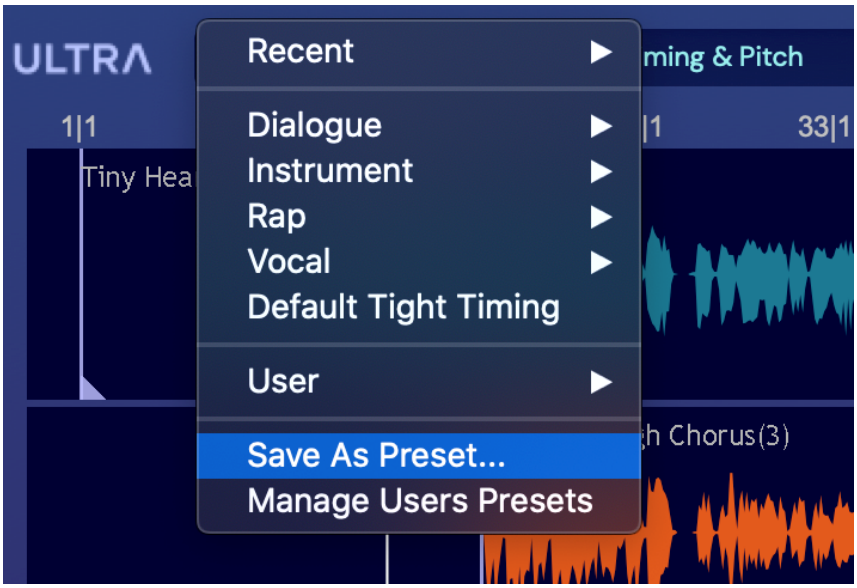
Formant Shift: If ON, at the centre (0%) the Formant knob has no effect. Twist it anticlockwise to lower the resonances' frequencies of the Dub signal, making a vocal sound more 'masculine', or clockwise to raise them, for a more 'feminine' tonal character.

The algorithms at work behind each of these three top-level parameters are more controllable in Advanced editing mode , which is discussed in depth in the section User Interface and Operation.

Saving and managing presets

To save all the current VocAlign Ultra control settings as a new preset, click the preset menu and select **Save As Preset**, then give your preset a name and click **Save**.

Selecting **Manage User Presets** from the same menu opens the user preset folder in macOS Finder or Windows Explorer, where you can rename and back up your presets.



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6.4. User Interface and Operation

Using VocAlign Ultra

Now that you're up to speed with the fundamentals of VocAlign Ultra – importing and exporting audio, loading presets and the Basic editing controls – let's get into the details, looking at preset management, the three Display switches (at the bottom of the screen), the Advanced editing controls and more.

Interface overview

The VocAlign Ultra interface is divided into two main sections.

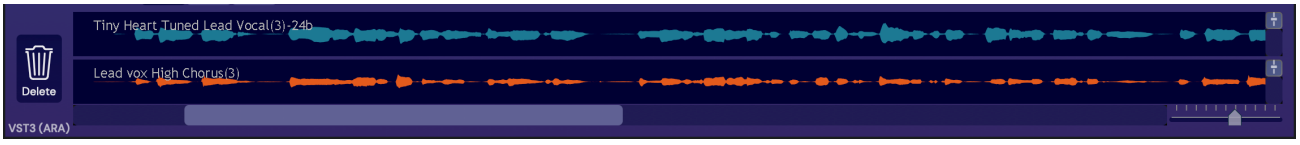
- The left-hand side contains the Guide, Dub and Output Capture/Render controls and displays.
- The right-hand side is home to the Basic and Advanced controls that guide the all-important alignment algorithms.

Note that there will be differences in the left side's Guide, Dub Capture and Output Return controls, because these depend on the way your DAW exchanges audio with

VocAlign Ultra. The three different audio capture and return methods are AAX (Audio Suite), VST and AU Realtime capture, and VST and AU ARA2 capture.

Below is the left side of the AAX interface.

Because the ARA, VST and AU versions of VocAlign Ultra support sequential capturing of multiple regions along the session timeline for independent alignment, there is an extra panel at the bottom which displays an overview of the captured Guides and Dubs along the timeline.



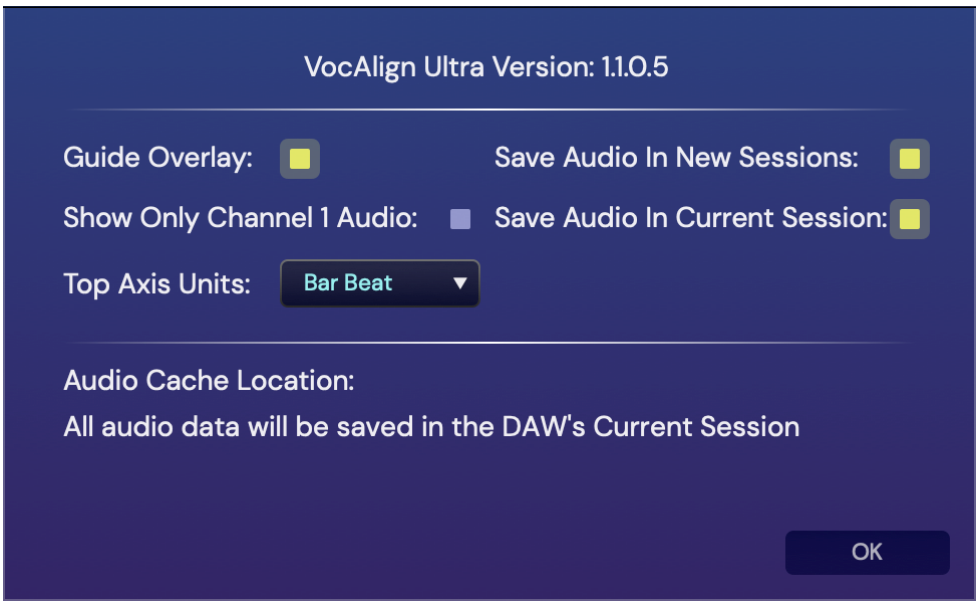
The overview shows the currently selected Guide and Dub signals in Blue and Orange, and all the not-selected regions in grey. Click anywhere in the overview to change the region selection, immediately jumping to it in the main display and updating the controls accordingly. Click the bin/trash icon at the left-hand end to clear the selected region from the plugin.

When working with multiple Guide and Dub tracks in the ARA version of VocAlign Ultra, you can select each track by right-clicking on the Guide or Dub display and mousing over Select Audio.

NOTE: In the ARA versions, clicking in the Overview (or main) displays will move the Playhead in the DAW to the clicked position. This is useful for many reasons described later.

Along the top of the interface are the preset menu, the Basic/Advanced edit mode toggle, and the Settings and Help buttons.

Clicking the Settings  will open the settings panel. It is worth noting here that you can change the top axis in VocAlign to display Bars and Beats, Time, or Samples. Select whichever best fits the current session you are working with. The rest of these options will be covered in detail in Adjusting the Automatic Time and Pitch Matching and Saving VocAlign Ultra's Audio Data.



The interface is freely resizable to suit any size or resolution of monitor by dragging the bottom right corner or sides, depending on the DAW and OS.

Below, we have compressed the width.

And below, we have compressed both the width and height.

This shows that the Basic or Advanced control panels can shrink out of sight, while the Guide, Dub and Output displays adapt their shape and size to fit the remaining defined space.

This is useful if you have a lot of tracks on the screen that you need to see and are happy to operate the plug-in with the Presets alone.

Guide, Dub and Output display modes

The display section offers three modes of visualising the Guide, Dub and Output signals, selected using the three buttons at the bottom.

From left to right these are the Waveform display, the Pitch display, and the Energy Display (similar to the main display of the previous VocAlign products).

In all three modes, the Output visualizer updates to reflect changes made to parameters as they're applied. Consistent colour coding is used throughout the three views: blue for the Guide, orange for the Dub, and yellow for the Output.

Incidentally, although you'll likely be using VocAlign Ultra with mono signals the vast majority of the time, multi-channel signals – 2-channel stereo to 7.1 surround – are also supported, with all channels stacking up in the display. Note that channel 1 (the left channel in a stereo pair, for example) is always used as the alignment source: Dub channel 1 is aligned to Guide channel 1, then all subsequent Dub channels are aligned using the same calculation. Also, only channel 1 shows the Guide outline, Protected Areas, Sync Points and red processing activity line.

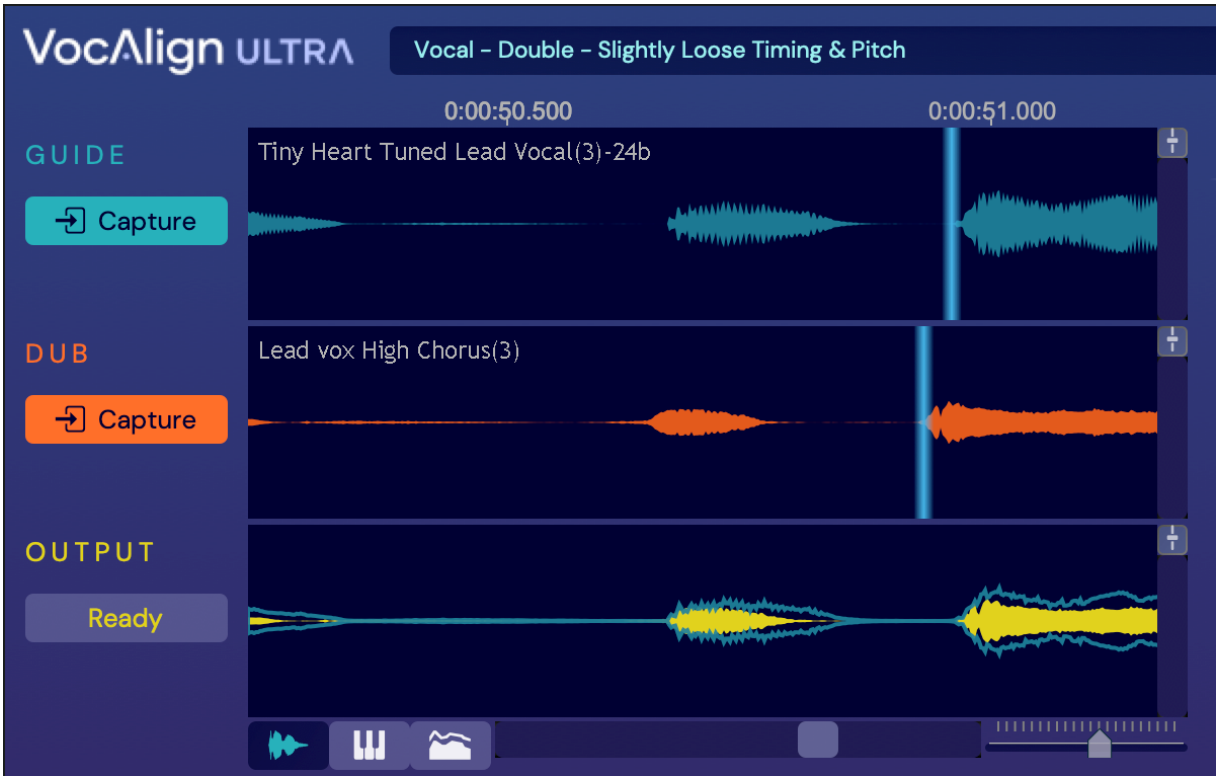
Waveform Display:

The default view shows separate waveforms for each of the three signals.

The Output waveform is overlaid with an outline of the Guide waveform, making it easy to assess the temporal alignment applied by the current parameter configuration.

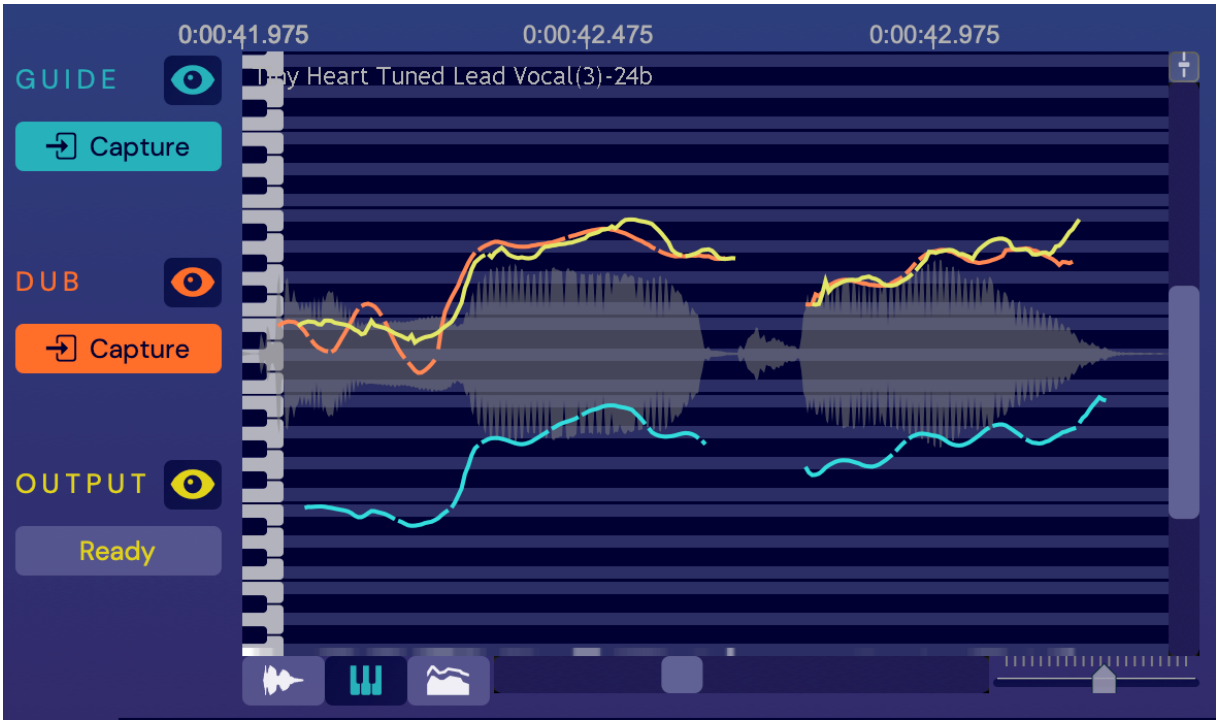
The two blue lines in the Guide and Dub tracks show the result of the "thinking" that the time matching alignment algorithm has done, by showing where a time position of features in the guide waveform match the time position of similar features in the Dub waveform. These floating blue **Offset Indicators** follow movement of the mouse

pointer over either waveform, showing the continuous mapping of the position under the pointer to its counterpart in the other waveform.



Pitch Profile Display

While the Waveform and Energy Profile views are intended for visualizing alignment in the time domain, the The Pitch Profile view – you won't be surprised to learn – provides equivalent information in the frequency domain. A piano keyboard down the left hand edge represents pitch on the Y axis. Lastly, to provide a familiar timing reference for the pitch traces, the Guide waveform is included as a grey waveform in the background



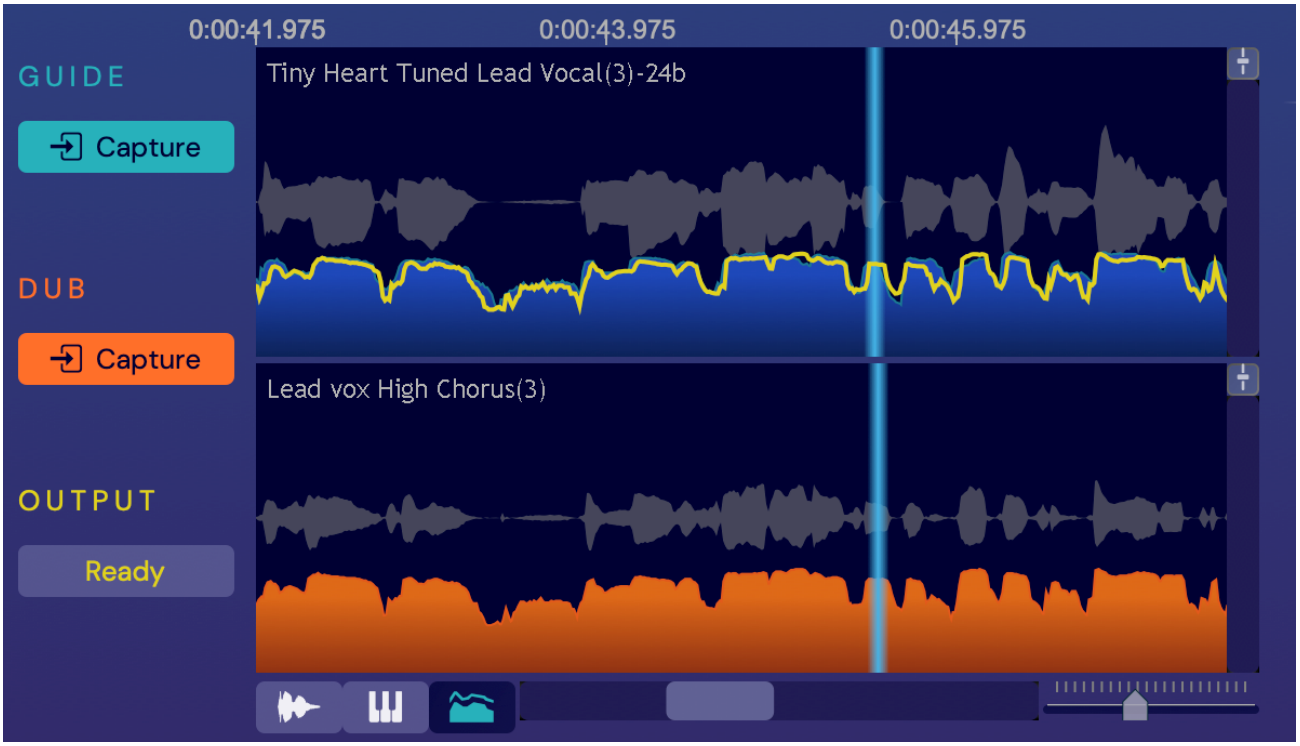
Each signal is represented in the Pitch Profile window by a line in its usual colour – blue for the Guide, orange for the Dub and yellow for the Output – that tracks its pitch progression over time.

See the Quick Start Guides for information on how to put this to use. Clicking the colour-coded 'eye' button  in the Guide, Dub or Output header toggles that signal's pitch profile line on and off.

At the very bottom of the Pitch Profile window, the greyscale **'heat map**' provides insight into the amount of processing being applied to the Dub along the timeline. This is useful for auditioning the Output, allowing you to focus your attention on the lightest areas showing the greatest changes.

Energy Profile Display

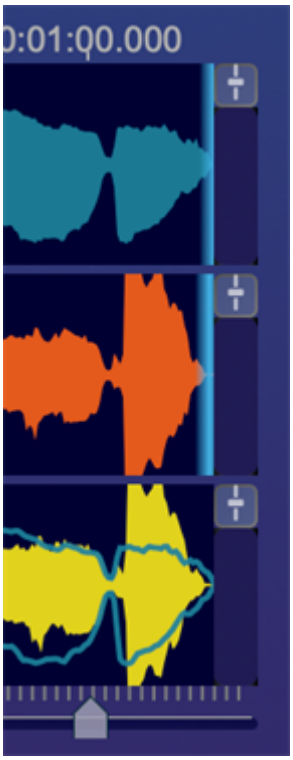
The Energy Profile view (which will be familiar to users of VocALign Pro or Project) displays the Guide and Dub as solid energy contours over time, and the Output energy as a yellow trace over the Guide. Again, the Offset Indicators show the temporal mapping of Guide to Dub, as described above.



Scrolling in the display

In all three display view modes, a horizontal scroll bar at the bottom of the display (as seen in picture above) enables horizontal scrolling; and the Pitch Profile view also allows for vertical scrolling via a vertical scrollbar on the right hand edge of the display. You can scroll with your mouse or trackpad, too.

Zooming the display



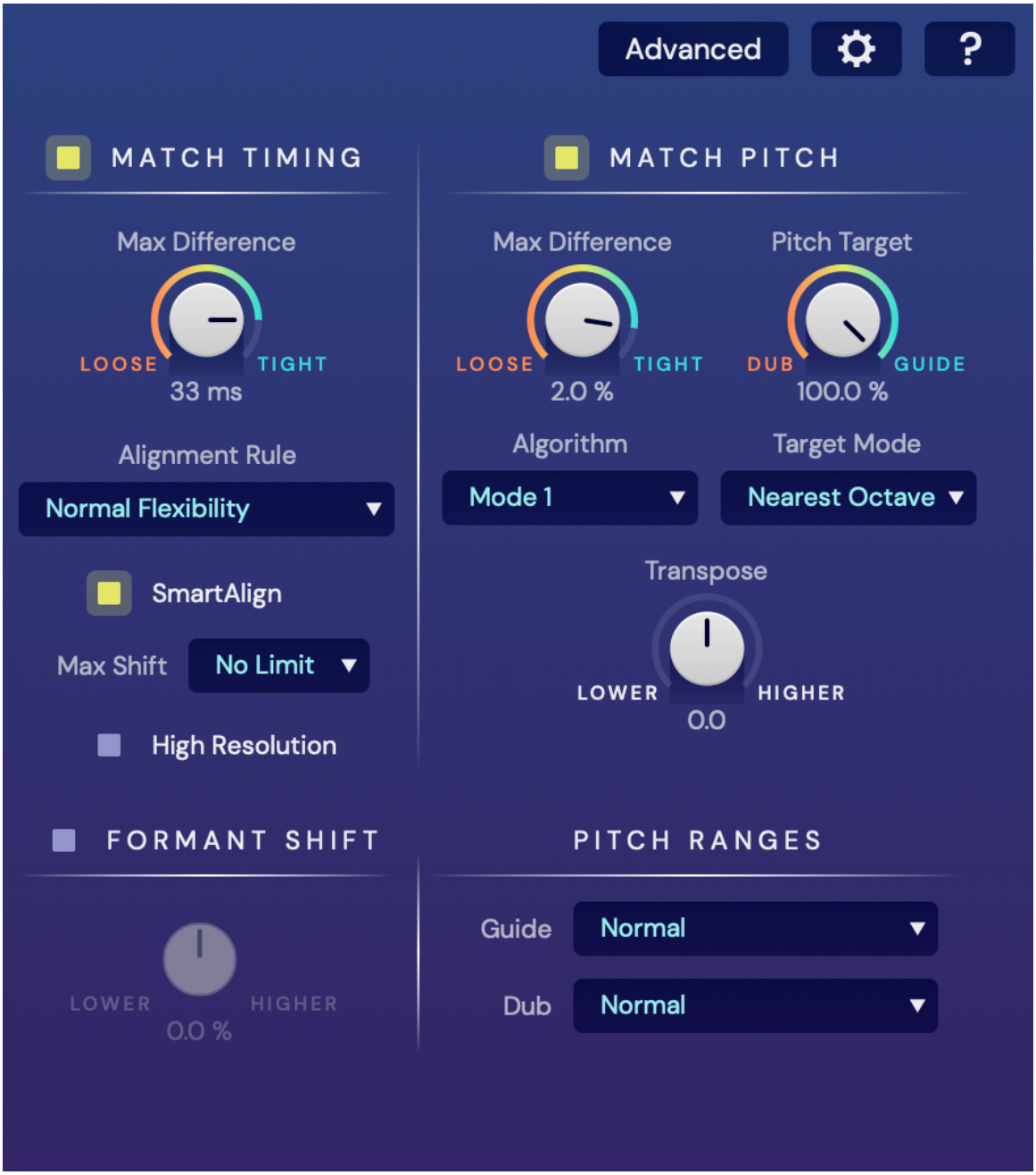
The horizontal zoom control at the bottom right of the display facilitates zooming into and out of all three views on the X axis, applied to all panes collectively.
Vertical zooming is handled on a per-pane basis, however: click the small level control icon  at the top right of any the three Waveform view panes, two Energy Profile view panes, or the Pitch Profile display to reveal the vertical zoom slider for that pane. Use the mouse wheel or drag the pop up control up and down to scale the height of the Y axis.
To zoom all waveforms or energy profiles together, hold down the Shift key when you click  and then click directly on the pop-up slider and move it up or down.

This increase in the waveform height is only visual and the gain of the audio is not affected.

Audio alignment

While you won't often need to go any deeper than the Basic editing mode to get the desired alignment of your Dub to your Guide, VocAlign Ultra's **Advanced** editing mode and other controls offer plenty of scope for manipulating the algorithms and processing when tweaking is required.

Before continuing, please refer back to the section on capturing the Guide and Dub for your particular DAW if you're not yet familiar with how to get audio into the plugin. Then, if VocAlign Ultra is in **Basic** editing mode, click the **Advanced** edit mode button to reveal the controls we're now going to explore.



Optimising the Pitch Detection accuracy for the Guide and Dub

Pitch Ranges

These menus are shown in the figure above. You can optimise VocAlign Ultra's pitch detection algorithm for specific "unnormal" source signal types by focusing its attention on higher or lower ranges. You can do this by making appropriate selections in the **Guide** and **Dub** menus.

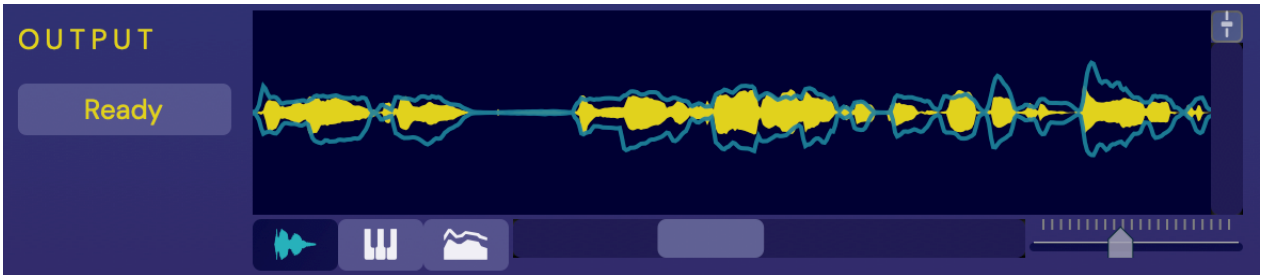
By targeting the algorithm independently to each of the two signals, you can ensure the best results possible, whether you're aligning a lead vocal with a harmony an octave above, say, or a lead guitar to a bassline.

The available ranges are explained in the next section here

How to check that the Dub is aligned with the Guide

VocAlign Ultra's three display views provide comprehensive visualisation of the Guide, Gub and Ouput signals.

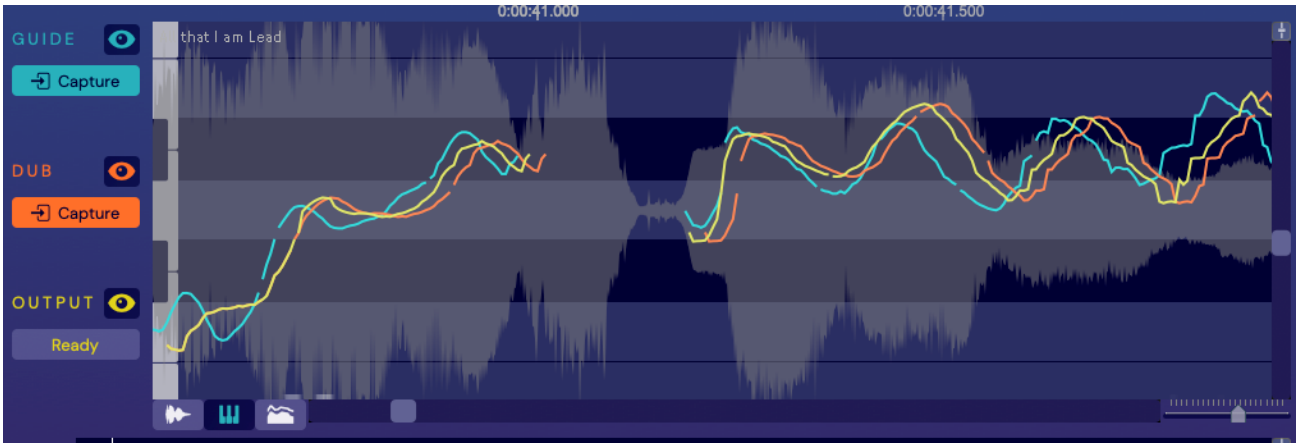
To check the timing alignment of the Dub with the Guide, focus on the Output display in the Waveform view.



This layers the Guide (blue waveform outline) and Dub (yellow solid waveform) on top of each other, giving an excellent overview of their positional relationship.

The Energy Profile is also helpful here, and offers a “legacy“ view option of alignment quality as a counterpart to the waveform display.

To check the pitch matching (which also shows the time matiching of the pitch traces), switch to the Pitch Profile view.



Here, the Guide, Dub and Output signals are shown together on a sequencer-style piano roll, with the Guide waveform in the background for timing reference and a greyscale processing heatmap at the bottom. As you raise the two Max Difference controls, you’ll see the yellow Output trace move increasingly close to the Guide trace on the X (Match Timing) and Y (Match Pitch) axes, which can make this the most effective view when working with sung vocals or melodic instrumental parts.

In the above display, it is set to slightly loose time and pitch, meaning the Output (yellow) is closer to the Guide (Blue) than the incoming Dub (red), allowing natural variations to come

through - which differences could be "dialed out" by turning the Timing and Pitch knobs towards the "Tighter" setting.

Visual references aside, of course, the best way to check the alignment of your Dub is to audition the Guide and Output signals using the Preview and Solo buttons in the AAX AudioSuite version,

or playback and the Solo controls in the host DAW in all other versions.

Start and End Markers

At both the start and end of the Guide and Dub signals, the white vertical markers with triangles at the bottom define their Start and End points, as used by the processing algorithm to work out their alignment.

If your Guide and Dub start and end at roughly the same points on the timeline, you probably won't need to touch these. However, if you have, say, a loud breath sound or cough before the vocal starts in one signal but not the other, moving that signal's Start Marker past the offending intrusion will prevent the algorithm misinterpreting it as the start of the vocal.

However, if the Dub continues beyond the end of the Guide, VocAlign Ultra will simply add the extra Dub after the Guide ends, unless you move the Dub's end marker.

If the Guides is longer than the Dub, however, you might wish to move the Guide's end marker to the end of the corresponding Dub audio, to keep the Dub from being stretched unnaturally to match the continued energy of the Guide.

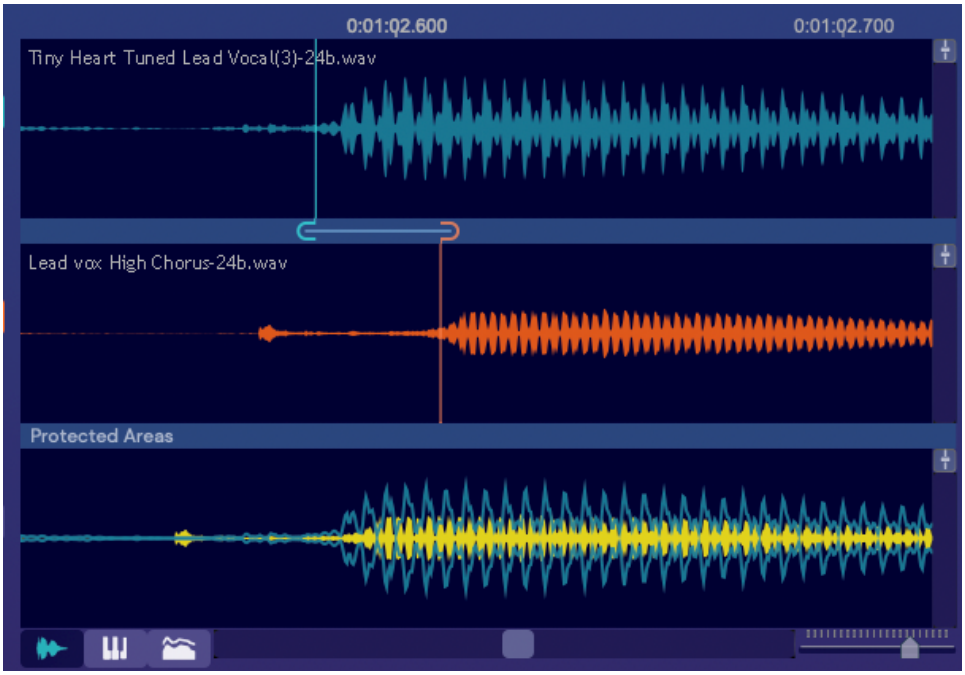
To move the Start and End Markers, drag their triangular handles or the vertical lines.

Sync Points

Although SmartAlign and the time alignment algorithm at the heart of VocAlign Ultra can be relied on to accurately match Guide and Dub signals, when some localised differences between the two signals cause mismatching of similar sounds, you can nudge specified points in the two signals towards each on the timeline other by manually adding Sync points. Automatic adding is also available, but generally that will not know what you want to fix.

To add Sync Points manually, switch to **Advanced** edit mode and click inside the **Sync Points** bar in between the Guide and Dub displays at roughly the point in the Dub that you want to alter the alignment of. Alternatively, you can right-click in the display and select **Add Sync Point**. A pair of connected Sync Point markers will appear in the Guide (blue) and Dub (orange). Drag each one to the position in their corresponding signal that you

want to align to try and ‘pin’ the Sync Point in the Dub to its paired Sync Point in the Guide, intelligently stretching and compressing the Dub on either side to maintain alignment.

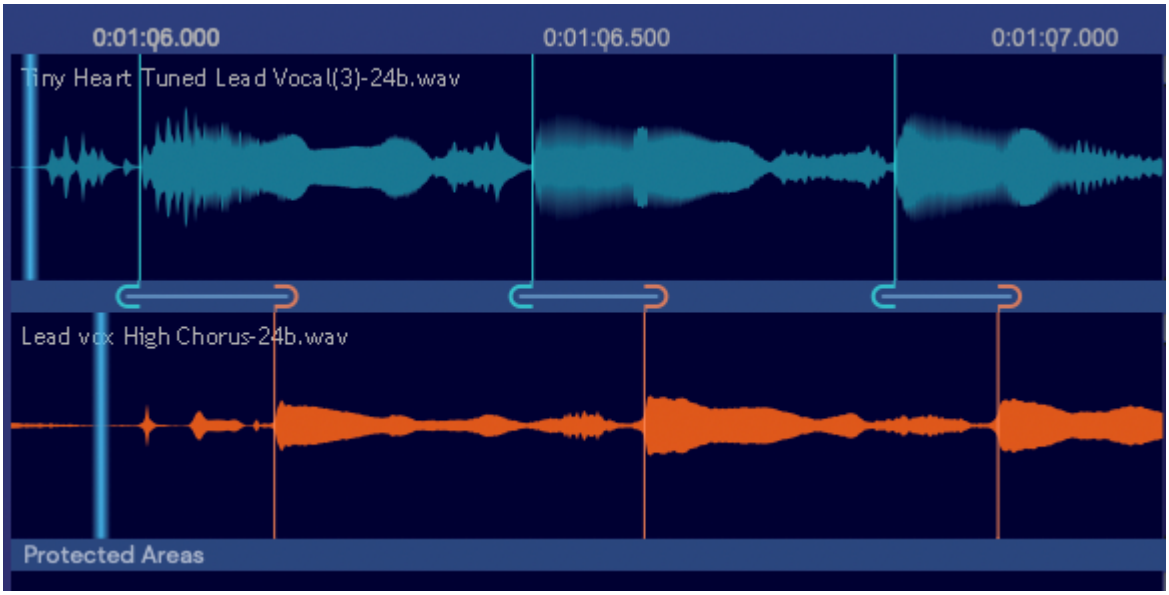


We say ‘try’, as the Sync Point alignment isn’t absolute – it’s more of a suggestion, on which the algorithm will base the decisions it continues to make. As we said, Sync Points let you influence the alignment of the Output, rather than take full ‘warping’-style control of it. Indeed, if you set Sync Points that the alignment algorithm can’t achieve without adversely affecting the audio on either side, they’ll turn red and be ignored.

Sync Points can also be created automatically: right-click in the display and select **Automatic Sync Point**. VocAlign Ultra will place Sync Points where it thinks they need to be, so if your Guide and Dub are already well matched, nothing will happen.

To delete a Sync Point, **Shift**+click it. To delete all Sync Points, right-click and select **Clear all Sync Points**.

Sync Point placement tips



- Don’t add Sync Points to silent parts of the Dub. The results will be unpredictable. Try to anchor them to a voiced part of the Dub and Guide.

- Use multiple Sync Points to force the alignment of a section of the Dub to a section of the Guide. Placing one Sync Point at the start of the section and another at the end usually works well.
- Refine the alignment further by adding more Sync Points before and after each.

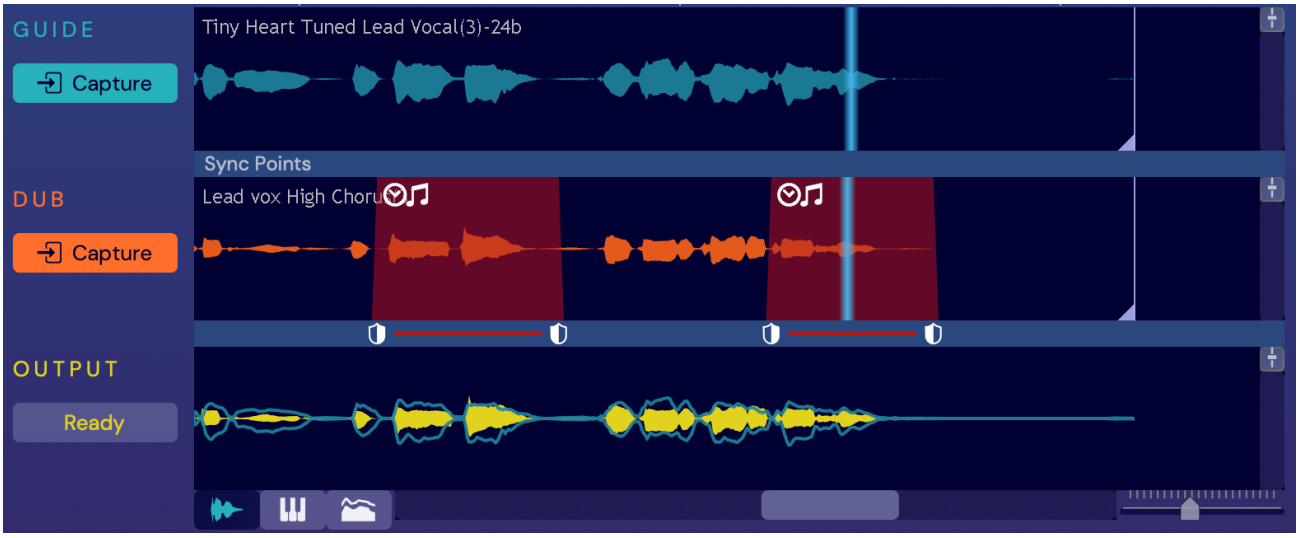
- To maximise the influence of Sync Points, set the Match Timing Alignment Rule to **Normal** or **High Flexibility**.

Protected Areas

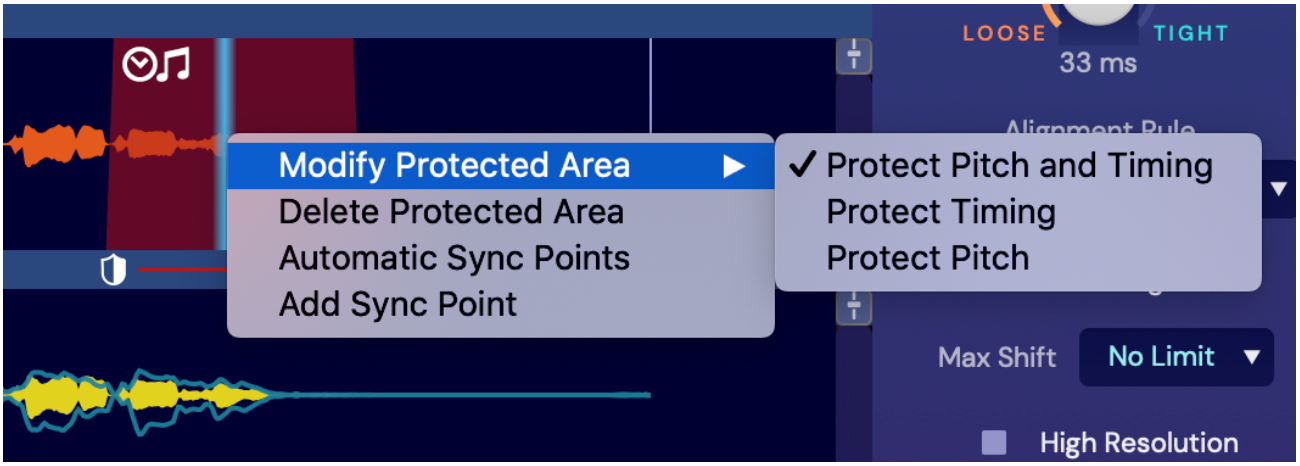
When your Dub contains one or more sections that contains different audio than the Guide and you do not want to have time or pitch matching in these areas, you can define Protected Areas, rendering them ‘immune’ to processing of the Dub's timing,

pitch or both. This is also useful if there are distracting noises in the Guide which would cause unwanted time or pitch changing.

To create a Protected Area, switch to Advanced edit mode, if you haven't already, and drag on the Protected Areas bar across the range within the Dub to be protected. The Protected Area appears as a red highlight, resizable by dragging the 'shield' handles at either end, within which no processing is applied to the Dub.



By default, a Protected Area is protected from both pitch and timing alignment changes, but this can be narrowed to pitch *or* time by right-clicking the Protected Area and selecting **Modify Protected Area** > **Protect Pitch** or **Protect Time**. The clock (time) and musical notes (pitch) icons at the top left of the Protected Area show whether it's protected from pitch, time or both.



If you zoom in to either end of a **Protect Pitch** Area, you'll see that it slopes outward. This indicates the smooth skewing of pitch alignment into and out of the Protected Area, thereby ensuring that there are no sudden and unnatural jumps in pitch when processing stops and starts.

You can also create a Protected Area by right-clicking the Dub and selecting **Add Protected Area** > **Protect Pitch and Timing**, **Protect Pitch** or **Protect Timing.**

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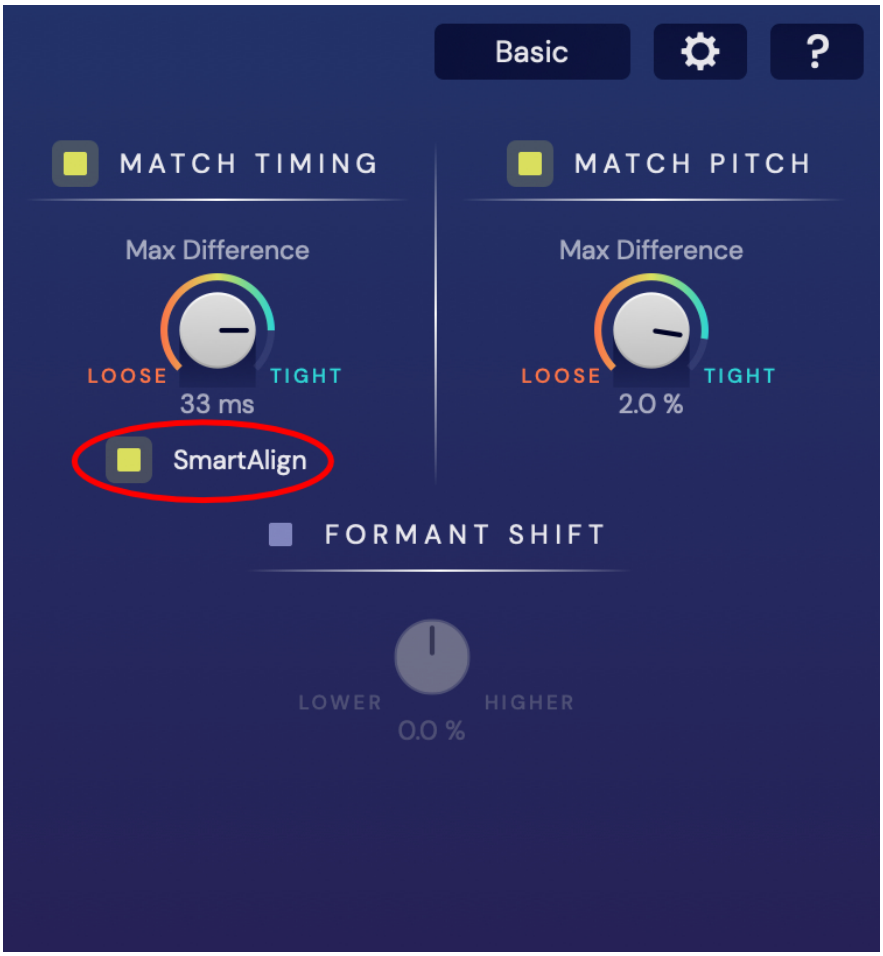
6.5. Using SmartAlign

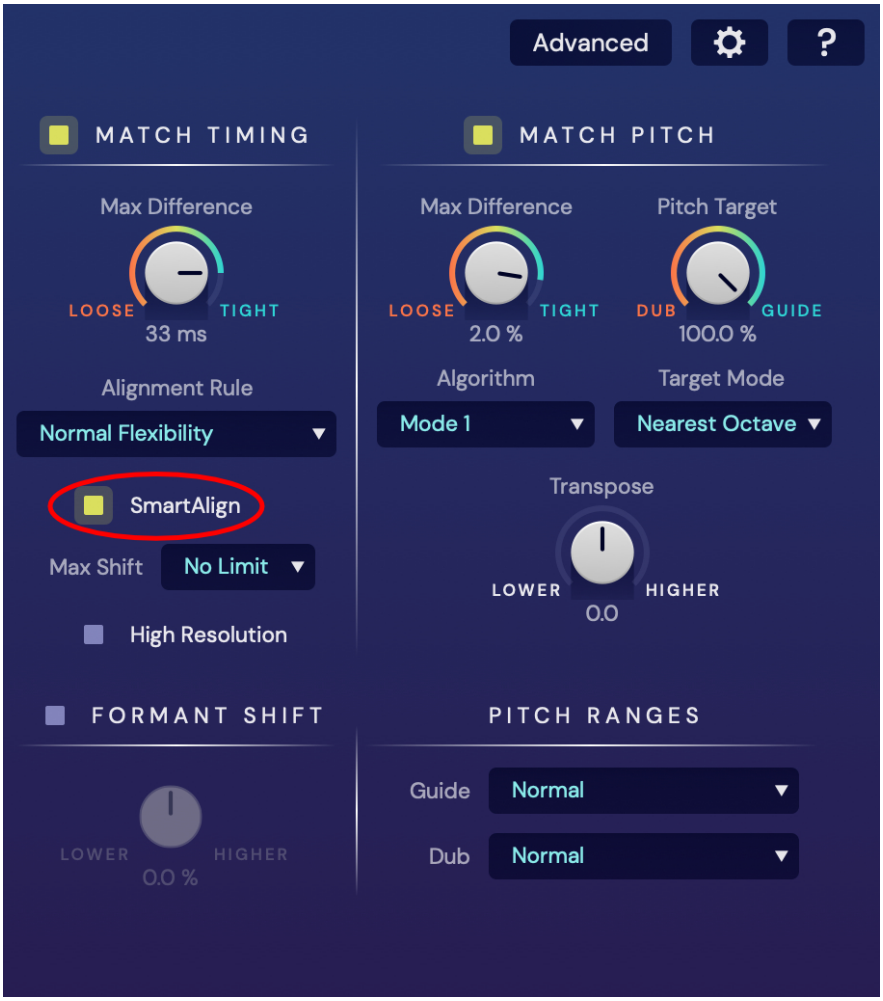
SmartAlign

VocAlign Ultra 1.1 adds SmartAlign as an option in the Match Timing section of both the Basic and Advanced modes as shown in the pictures below.

IMPORTANT NOTE: .

SmartAlign will automatically be enabled in VocAlign Ultra 1.1 in all the Presets (except in a few cases, which are identified in the preset name)





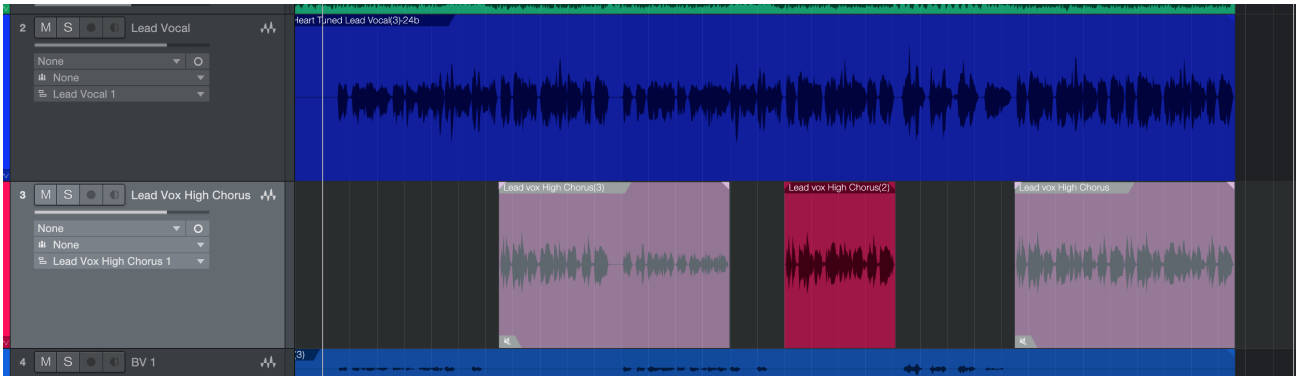
When SmartAlign is enabled, the system looks for "matchable" audio in the Dub track and then looks in the Guide track to see if there is also "matchable audio". If there is, and Match Timing and/or Match Pitch are also on, the the matchable Dubs regions will be aligned to the corresponding Guide regions. Where there are not Dub and Guide signals that can be "matched", the alignment processing will generally leave the Dub audio alone, for example, not processing long gaps of silence in either.

SmartAlign helps to avoid the need to break up longer sections into segments for processing. SmartAlign is particularly useful when working with complex vocal arrangements.

Let's walk through an example.

In the screenshot below, we can see two audio tracks labelled Lead Vocal and Lead Vox High Chorus.

Tuned Lead Vocal will be our Guide track, and *Lead Vox High Chorus* will be the track to be aligned, called the Dub track.

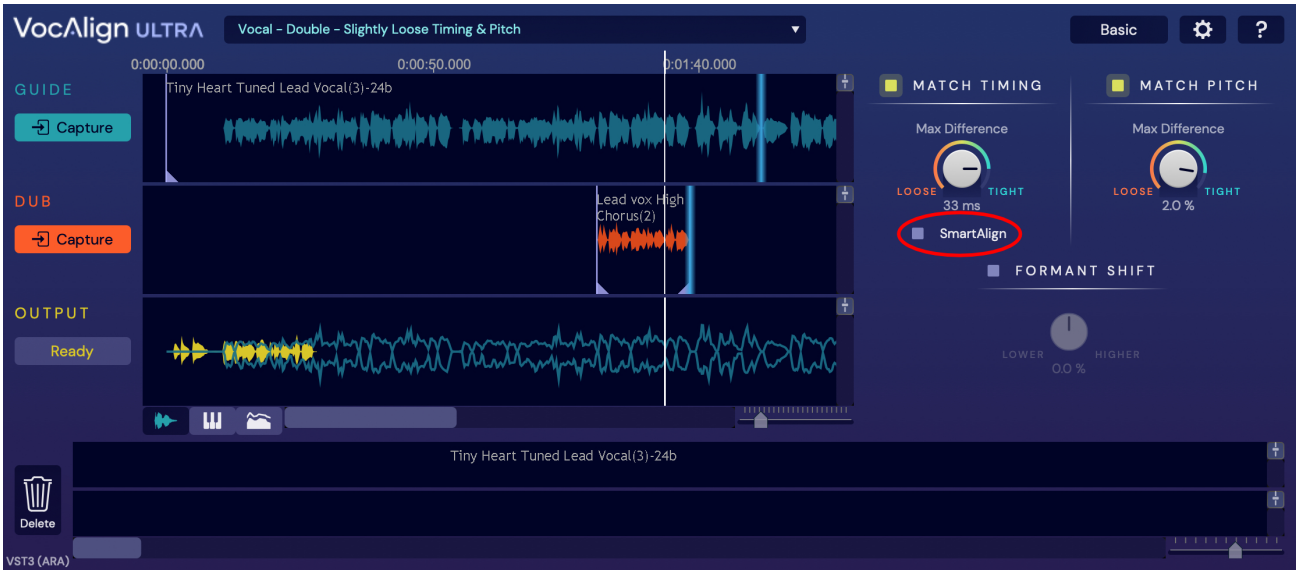


In earlier versions of VocAlign, it would be necessary to cut the Guide track (Lead Vocal) to ensure that it has roughly the same start and end time as the Dub track. This workflow is still available.
But we can now use SmartAlign to quickly work with more complex vocal arrangements without needing to cut and align segments.

First we will show capturing our Guide and Dub track's audio into VocAlign Project 5. This will be explained in detail in later chapters for different DAW interfaces.

Below you can see our Guide in blue (Lead Vocal), with our Dub track in orange (Lead Vox High Chorus) and the automatically Aligned Dub as the Output waveform in yellow correctly positioned in the timeline.

Previously, **without SmartAlign**, VocAlign would attempt to output our Dub aligned with the beginning of our Guide region.
This is shown below, where we can see the Output waveform in yellow, which is not correctly lined up with the original location of our Dub track.



Remember, SmartAlign will be ON in almost all the Factory presets available.

But if you find turning it off useful, you can save that preset as a User Preset to access for further use.

Working with Large Arrangements

With SmartAlign and the AU and VST3 **ARA versions** of VocAlign Ultra, it is possible to quickly capture multiple dubs for individual alignment.

With a SmartAlign-enabled preset chosen or SmartAlign enabled, select the audio regions you would like to work with in your DAW. Enable the VocAlign Event FX as in Step 1 above, and then with the regions still selected, click the Dub Capture button. Depending on the number of regions selected and the speed of your computer, the capture process could take a few moments. We recommend capturing less than 4 regions or 8 minutes of audio at once to if you wish to avoid longer processing times.

When working with multiple Guide and Dub tracks in the ARA version of VocAlign Ultra, you can select each track by right-clicking on the Guide or Dub display and mousing over Select Audio.

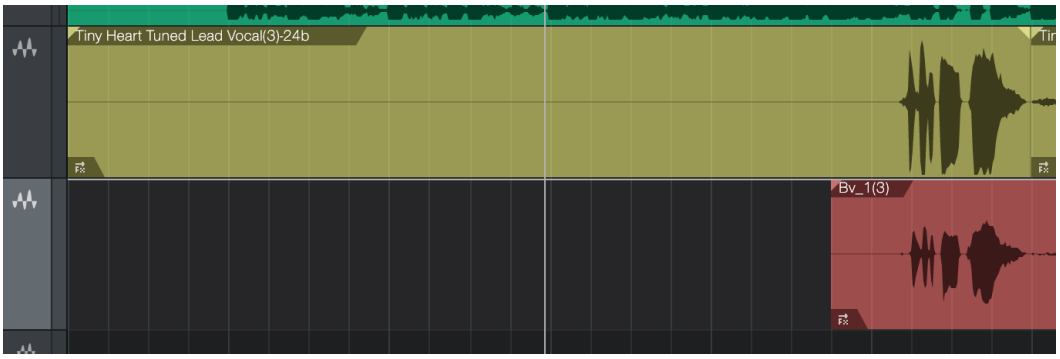
Limitations of SmartAlign

SmartAlign uses the presence of audio in your Dub to align itself to the Guide track, and although it functions very reliably, you may on occasion need to resort to the non-SmartAlign workflows outlined in this manual.

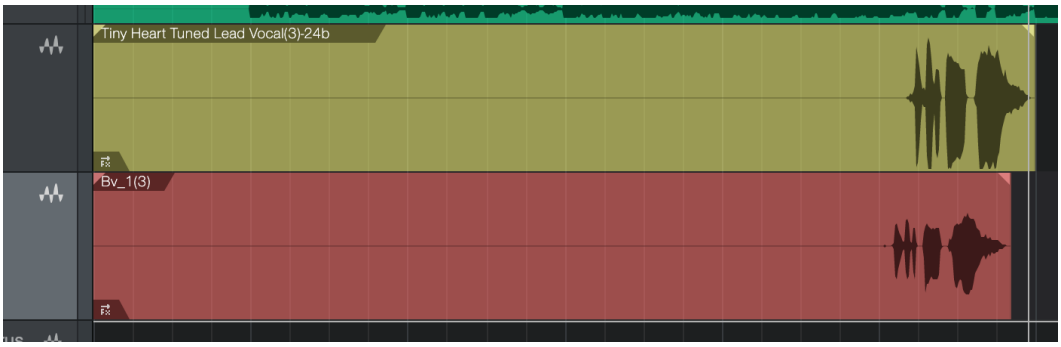
Although with the addition of SmartAlign the audio region/clip start time do not need to be the same, SmartAlign expects that the audio signal (the voice or instrument signal) present in the Guide and Dub will start within 0.25 seconds of each other.

Please see the below example, wherein yellow would be our Guide audio, and red our Dub.

In the below image, we can see that the yellow and red regions have very different start times, but the audio is fairly closely aligned. SmartAlign will be able to easily work with the below audio.



In this next image, we can see that the yellow and red regions have the same start time, but the audio signal is significantly misaligned. Because SmartAlign expects our waveforms to be within 0.25 seconds of each other, we would need to manually move the red audio waveforms to be a little bit better aligned with the yellow waveforms before continuing with VocAlign and SmartAlign.



6.6. Adjusting the Automatic Time and Pitch Matching

Capture Sequence

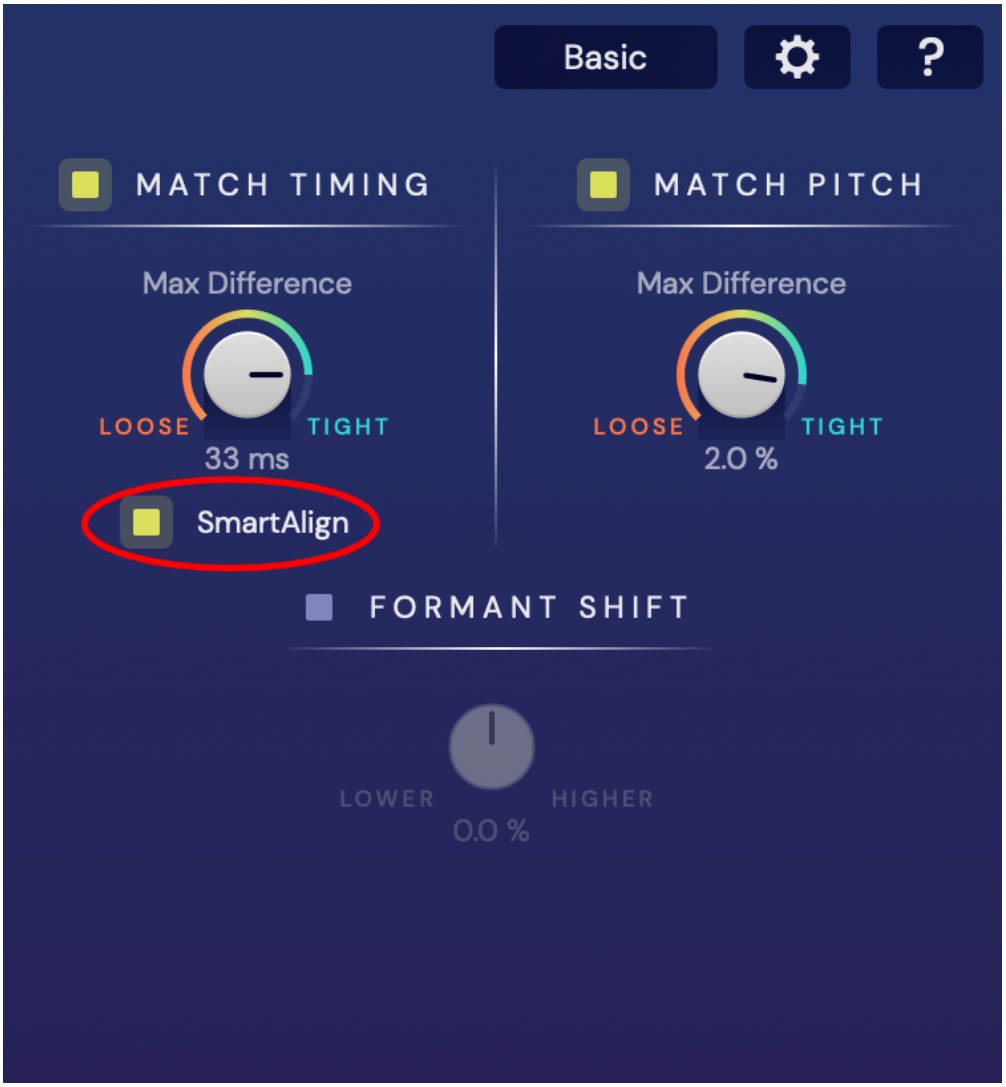
⚠ If you are going to use a different preset on a new Guide and Dub, if you change the preset before you capture the new Guide, it will be applied to the current Dub, which you might not want to happen.

Here is the safest order to do your operations:

1. Before you move on to capture a new Guide, don't change the preset!!
2. Capture your new Guide
3. Change the preset now (if you want to)
4. Capture the Dub

Basic Display

VocAlign Ultra's **Basic** edit mode gives you fundamental control of the timing and pitch alignment setup defined by the currently loaded preset, via just two knobs.



Match Timing

The **Max Difference** knob in the Max Timing section sets the size of the 'window' of allowable variation in timing between the Guide and Dub's detailed audio events, from 200ms to 0ms. In essence, the further clockwise you turn Max Difference, the tighter the alignment becomes, all the way to totally locked at the fully-clockwise 'Tight' end of the knob's range.

Below the **Max Difference** knob is the button to enable **SmartAlign**. For detailed information on SmartAlign, click here.

For typical operation, you should leave SmartAlign enabled. If you find that something is working in an unexpected way, try disabling SmartAlign and using the non-SmartAlign workflow for your DAW, as outlined in the Quick Start guides at the end of this manual.

Match Pitch

For most presets (**Mode 1**), the Match Pitch control operate just like its Match Timing equivalent, but in the pitch domain: turn it clockwise from Loose towards Tight to push the pitch profile of the Dub increasingly close to that of the Guide.

However, when a preset with the **Mode 2** suffix is loaded, the **Max Difference** knob becomes **Tuning Match**. Mode 2 presets are designed specifically for delivering smoother Ouput with vibrato-heavy Dubs, and require the Guide and Dub to be closely matched in terms of average pitch.

The **Tuning Match** control progressively matches the time-variable *average* pitch of the Dub to that of the Guide, thus achieving alignment without compromising the naturalness of the vibrato.

Formant Shift

The Formant Shift control raises or lowers only the particular harmonically related resonances defined by the size and shape of the vocal tract, enabling you to

change the timbre of a vocal without affecting its pitch. Turn it anticlockwise to make your singer or voiceover artist sound more ‘masculine’, and clockwise to make them sound more ‘feminine’.

Advanced Display

To be clear, even when the VocAlign Ultra GUI is in Basic Display mode, the Advanced mode controls are still ‘active’. We’ve just hidden them from immediate view, as the idea is to only use them when the Basic mode controls aren’t quite getting you where you need to be with your alignment.

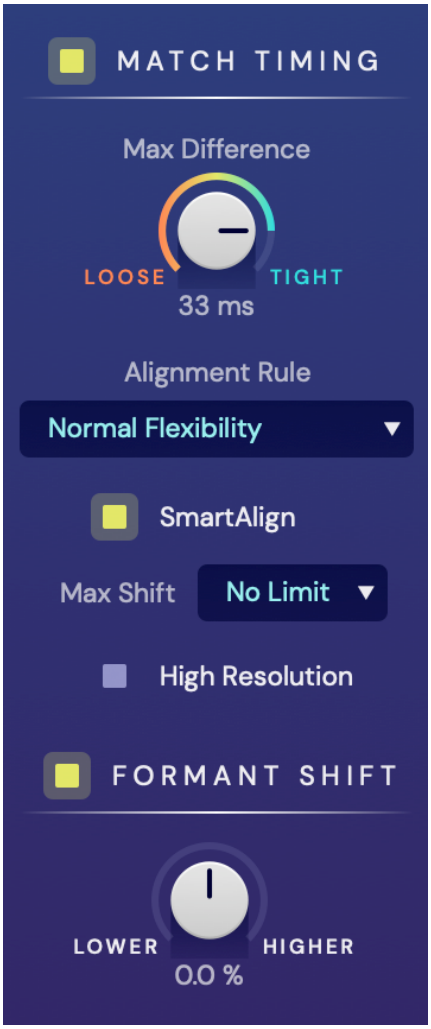
To switch to Advanced edit mode, click the Basic button, top right. The button will change to ‘Advanced’ – click it again to switch back to Basic mode.

You may have noticed by now that a VocAlign Ultra preset is a simply combination of specific settings of all the controls in the Advanced display.

The presets were created by considering the typical signals that sound editors work with. These presets have a heirarchy of names which define specific roles of the signals, tasks and desired results, which together become the name of that preset.

If you find that changing one of the controls differently from a preset gives you the Outputs you want, your new setting can be saved as a User Preset and retrieved in the future for use with similar signal types.

Match Timing Advanced controls



Alignment Rule

The selection in this drop down menu determines the amount by which the internal editing system is permitted to time stretch and compress the Dub.

- **Lowest/Low Flexibility**: The editing algorithm is only allowed to make small adjustments to the Dub, so alignment will comparatively 'loose'

- **Normal Flexibility:** This is the setting you should always try first, as it will be the most effective one in most cases.
- **High Flexibility:** The algorithm is allowed to stretch and compress the Dub much further than Normal Flexibility, resulting in comprehensive alignment at the possible expense of compromised sound quality – there's only so far an audio signal can be stretched before it starts to degrade.
- **Maximum Compression**: The algorithm is allowed to compress the aligned audio as much as required to align it, but stretching is limited to the same amount as the Normal Flexibility setting. This setting should only be used when the timing of the Dub is way off – think of it as an extreme fix for use when all else fails.
- **Maximum Expansion:** The algorithm is allowed to stretch the aligned audio as much as required to align it, but compression is limited to the same amount as the Normal Flexibility setting. Like Maximum Compression, this is a setting you'll only want to use in the most extreme cases.
- **Normal Flexibility + Pitch**: Intended for use with legato voicing, where the pitch of the Guide and Dub varies over time, but their energy doesn't. The algorithm uses pitch changes as the basis for alignment.

Max Shift

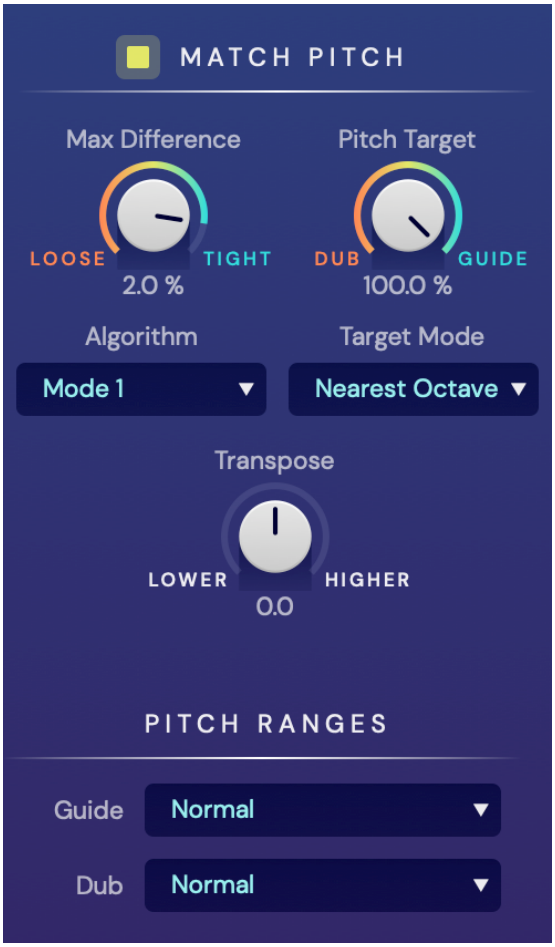
Mainly used for use with 'Dubs with Gaps" and SmartAlign OFF, the Max Shift parameter sets the maximum amount of time (from 10-150ms) that the editing algorithm is allowed to move any given point in the Dub from its original position. This

is helpful for preventing audio that starts at the end of a gap in the signal from being erroneously matched to the gapless Guide and thereby moved too far forward.

High Resolution Editing

Upsamples the audio to 384kHz for the internal editing process, preventing certain rarely encountered artifacts at the expense of additional processing time. This is mainly helpful in editing more "pure" tonal signals such as high female voices, flutes, bell sounds and so on.

Match Pitch Advanced controls



Pitch Target/Details Matching:

The **Pitch Target** control simply specifies how closely the Dub is aligned to the Guide in pitch – from 0% (Dub) to 100% (Guide).

For **Mode 2** presets, Pitch Target becomes **Details Matching**, determining how tightly short fluctuations in pitch – ie, vibrato – are aligned.

Algorithm

Switches between the 'regular' **Mode 1** editing algorithm and the vibrato-friendly **Mode 2**, as described above.

Target Mode

Only accessible in Mode 1, **Target Mode** governs the general purpose of the pitch correction used by the matching algorithm.

- **Nearest Octave**: This setting ensures that the Output Dub stays in its original range (i.e. same octave(s)) when aligned with a Guide whether it is in the same or different octave. It should be the default setting in most cases and will work with octave-apart doubles, or aligning female dialogue to male dialogue or vice versa.
- **Absolute**: The algorithm does its best to match the Guide and Dub directly, pulling the Dub's pitch to the Guide's as far from its original pitch.
- **Relative**: Imposes the pitch modulation profile of the Guide onto the Dub – when the Guide rises or falls in pitch, the Dub is made to to the same. Essentially, the Dub follows the time varying average pitch of the two signals. This one is a good choice for an actor overdubbing their own dialogue, ensuring that the original intonation pattern is maintained whether or not the pitch is higher or lower.
- **Monotone**: Included purely for creative purposes, Monotone Target Mode snaps the Dub to a single constant pitch (calculated from the average), and adjusted using the Transpose control.

Transpose

Pitch shift the Output Dub by up to 1200 cents (one octave) up or down.

Pitch Ranges

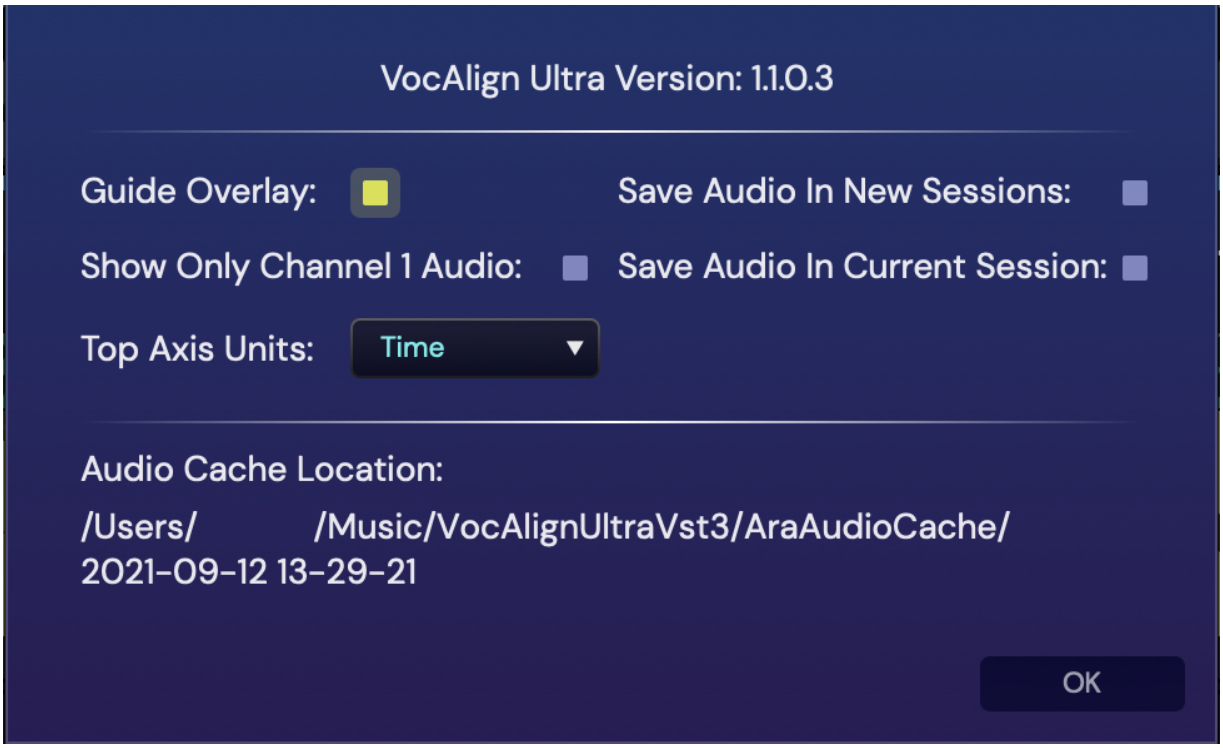
Set these two self-explanatory fields to the most appropriate option for your Guide and Dub source material to optimise the editing algorithm.

- **Normal**: The default 'general purpose' setting, for spoken word, vocals in non-extreme registers and the majority of instruments.
- **High Pitched Vocal**: Sung vocals in 'higher-than-average' registers.
- **Low Pitched Vocal:** Sung vocals in 'lower-than-average' registers.
- **High Pitched Instrument:** High-frequency-dominant instruments such as violin, flute, lead guitar, lead synth, etc.
- **Bass Instrument**: Low-end instruments such as electric and acoustic bass, cello, bass synth, etc.

Other Controls

Open Settings

Clicking the cogwheel button reveals various preferences.



- **Aligned Overlay**: Hide and reveal the Guide overlay in the Output section of the Waveform display.
- **Show Only Channel 1 Audio**: When signals of two channels or more are being aligned, activating this option hides the waveforms of all but the first channel of each signal, reducing visual clutter.
- **Top Axis Unit**: Switch the scale on the X axis of the display Waveform/Energy/Pitch Profile view display between Time and Samples or Bar/Beats in some DAWs.

Open Help

Open the online version of this User Guide and/or the Quick Start Guide for your DAW in your browser.

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6.7. Saving VocAlign Ultra's Audio Data

This Chapter is ONLY for VST3 and AU Versions of VocAlign Ultra

Overview of Saving VocAlign Ultra Audio

In this document, will use the word **Session** to mean what your DAW might refer to as a Project, Song, Session, et

When you use VocAlign Ultra it creates new audio files containing the processed audio that are used to replace the original Dub audio. So the VocAlign Ultra plug-in puts the audio first into its own directory on your hard disk, and it has connections to it so it knows where it is.

After you use this processed audio, technically there is no need to save the aligned audio to a cache, because VocAlign Ultra can always regenerate its aligned audio

output. Nonetheless, regenerating the aligned audio takes time and this means that the audio may not be ready for replay when you reopen a project.

So saving the aligned audio data allows instant replay on reopening a session and this section is about the different ways this can be done.

In addition, VocAlign Ultra VST and AU versions give you the choice to make the processed audio part of your DAW's Session audio by responding to commands like Render, Bounce to disk, Freeze etc. When you do this, your DAW will take over the audio, the connection to the audio and dealing with where it is kept and how it is saved.

In both cases, the processed audio (connected to VocAlign Ultra or rendered and connected to your DAW) must be saved somewhere known, so when you reopen your Session, everything processed will be there or be re-creatable.

This section explains that in both cases, these output audio files may become quite large and, therefore, VocAlign Ultra offers you two ways of saving them. You can choose either to:

1. Archive the audio data in the DAW's session data or
2. Save the audio in a local directory on your computer.

Each method has its own advantages and drawbacks which will be explained next.

Archiving Audio in the DAW's Session

Advantages

1. The DAW can manage VocAlign Ultra's audio data such that the DAW's filing operations such as "Save As.." or "Save to New Folder..." will all work seamlessly.

2. If you transfer your session to another computer, all VocAlign Ultra's audio will also be transferred correctly.

3. If you remove VocAlign Ultra from your session, all VocAlign Ultra's audio data will be deleted from your hard drive.

Disadvantages

1. It may take noticeably longer to save your sessions. The more audio data that VocAlign Ultra generates in a session, the longer it will take to save it in the DAW's session.
   However, for a typical session, the extra time needed to save the audio data on modern fast hard drive will be minimal.

Configuring VocAlign Ultra to Archive its Audio in the DAW's Session

To configure VocALign Ultra so that it saves its audio data in the DAW's session you are working on, you need to do the following:

1. In VocAlign Ultra, click on  to open the **Settings** window shown in Fig.1 below.
2. Click the button next to **Save Audio in Current Session** so that it ON (yellow).
3. If you would also like all future Sessions to save their data in the DAW's session, click the button next to **Save Audio in New Sessions** to be ON (yellow).
   This acts like a "preference" setting for the plug-in whenever you open in future sessions.

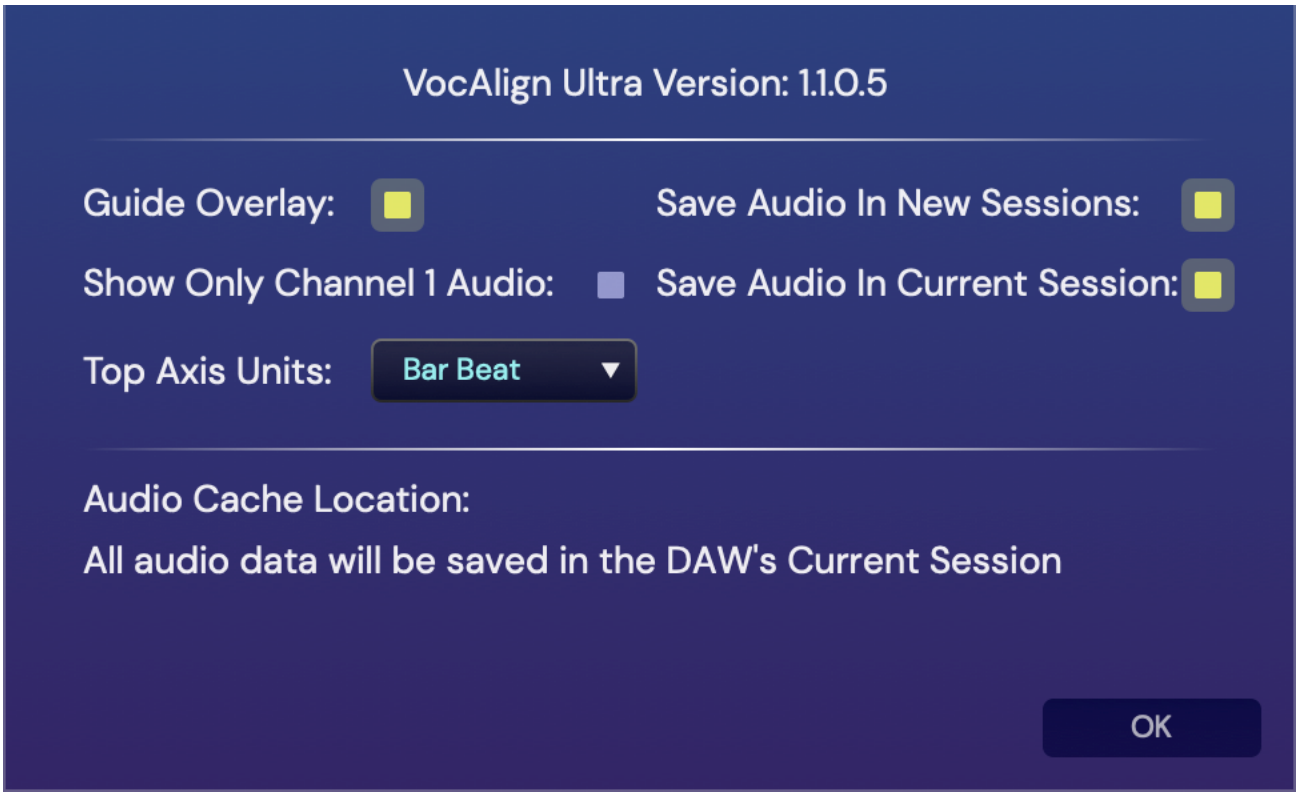

Figure 1. Configuring VocAlign Ultra to archive its audio in the DAW's session.

Further detail

While you are working in a Session, you can turn the **Save Audio in Current Session** ON or OFF anytime and that will control how that session is saved.

If the **Save Audio in New Sessions** was set ON prior to your using VocAlign Ultra, when you open VocAlign Ultra, the **Save Audio in Current Session** switch will already be ON.

⚠ The Real-Time Capture version of VocALign Ultra (AU) **cannot** save its audio in Logic Pro's project file..

Only the AU (ARA) version can do this. This means that for VocAlign Ultra (AU) you'll not be able to select the option **Save Audio in Current Session** in the settings dialogue box.

Saving Audio to a Local Directory

Advantages

1. Saving sessions is not any slower than normal.
2. If you close the DAW session and restart, the session will find the audio unless you move or delete it.

Disadvantages

1. The DAW cannot manage VocAlign Ultra's audio data. The DAW operations such as "Save As.." or "Save to New Folder..." will not generate new copies of VocAlign Ultra's Audio data if they are needed.

2. If you transfer your session to another computer, VocAlign Ultra's audio will not be transferred as well.

3. If you remove VocAlign Ultra from your session, all VocAlign Ultra's audio data will still remain on your hard drive.

Configuring VocAlign Ultra to Save its Audio to a Local Directory

To configure VocALign Ultra so that it saves its audio data to a local directory, you need to do the following:

1. In VocAlign Ultra, click on  to open the **Settings** window shown in Fig.2 below.
2. Turn OFF the **Save Audio in Current Session** switch if it is already ON.
3. If you would like all future Sessions you create to save their audio to a local directory, you need to make sure that **Save Audio in New Session** is also OFF.

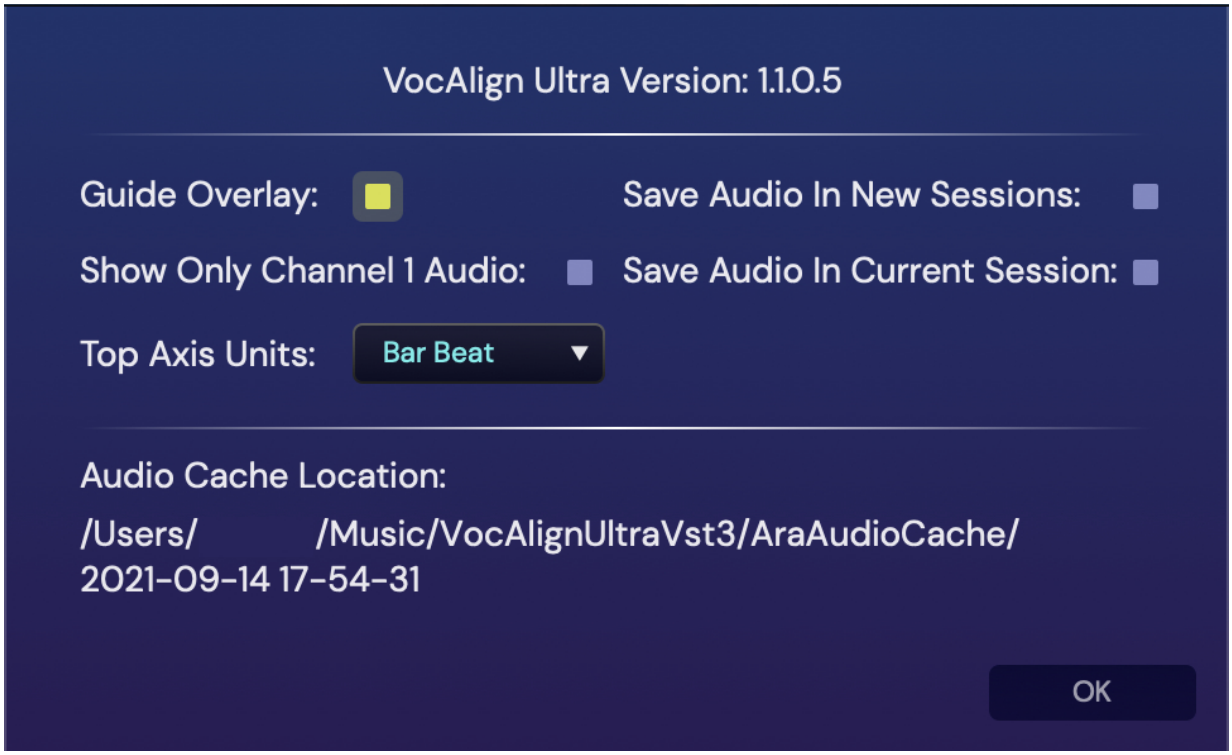

Figure 2. Configuring VocAlign Ultra to save its audio to a local directory.

Please Note:

- If you are using Logic Pro, only the AU (ARA) version of VocAlign Ultra (AU) can archive its audio data in Logic Pro's session.
- The Real-time Capture AU version of VocAlign Ultra will always save its audio data to the local directory.
- This restriction does **not** apply to the VST3 version of the plug-in.

Location of VocAlign Ultra's Local Directories

You can configure VocALign Ultra to save its audio to a local directory on your hard drive. The location this directory depends on both which version of VocAlign Ultra and which operating system you are using:

VocAlign Ultra (VST)

MacOS

The local directory's location is: "/Users/*CurrentUser*/Music/VocAlignUltraVst3/.."

Windows 10

The local directory's location is:
"*DriveLetter*:\Users*CurrentUser*\Documents\VocAlignUltraVst3\.."

VocAlign Ultra (AU)

The local directory's location is: "/Users/*CurrentUser*/Music/VocAlignUltraAU/.."

Structure of VocAlign Ultra's Local Directory

VocAlign Ultra will save audio data to its local directory when you have chosen ***not*** to save the audio data in the DAW's session.

Note that the User cannot change this directory location.

VocAlign Ultra (Real-Time capture)

VocAlign Ultra will create In its local directory, a subdirectory for each new DAW session. In this subdirectory, VocAlign Ultra will save its “captured” Guide and Dub audio and any aligned (processed) audio that it generates. See examples in Fig.3 below.

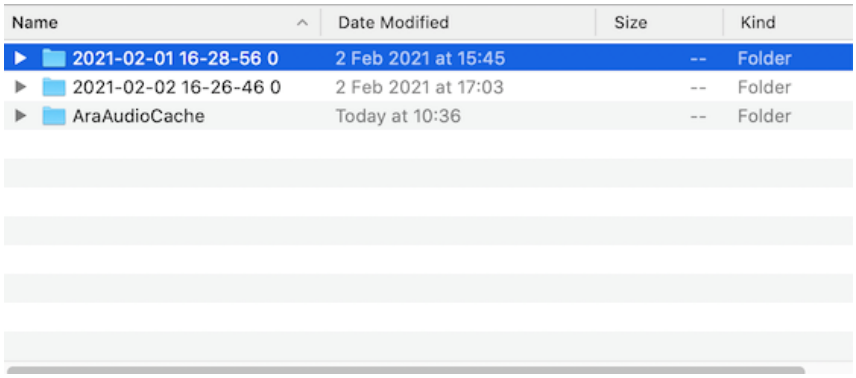

Figure 3. Example of VocAlign Ultra's local audio directory

The subdirectory’s name has the form “year-month-day hours-minutes-seconds (count)”. For example, the directory “2021-02-01 16-28-56 0” was created on 1st February 2021 at 16.28.56 (4.28 p.m.) The “Count” field is used internally by the plug-in.

VocAlign Ultra will **never delete** any of these dated and timed subdirectories. Unfortunately, VocAlign Ultra cannot determine how many of the DAW’s sessions (or projects) still refer to the audio in the subdirectories, so it “plays safe” and assumes that the audio is still needed.

Should and can I delete these directories?

If you are sure that none of your DAW sessions refer to any audio generated by VocAlign Ultra in a subdirectory, then it is safe to delete that subdirectory.

Here's how:

You might be able to use your computer's directory browser to identify old unneeded subdirectories. Look at the subdirectory name and the date/time fields as shown above in Fig 3. You will need to decide what is delete-able.

Another clue is in VocAlign Ultra's "Settings" dialogue box (shown below in Fig.4) which displays the **Audio Cache Location** path for the local directory that the plug-in is using to store its audio for the current session. This may also help you determine which subdirectories are still in use.

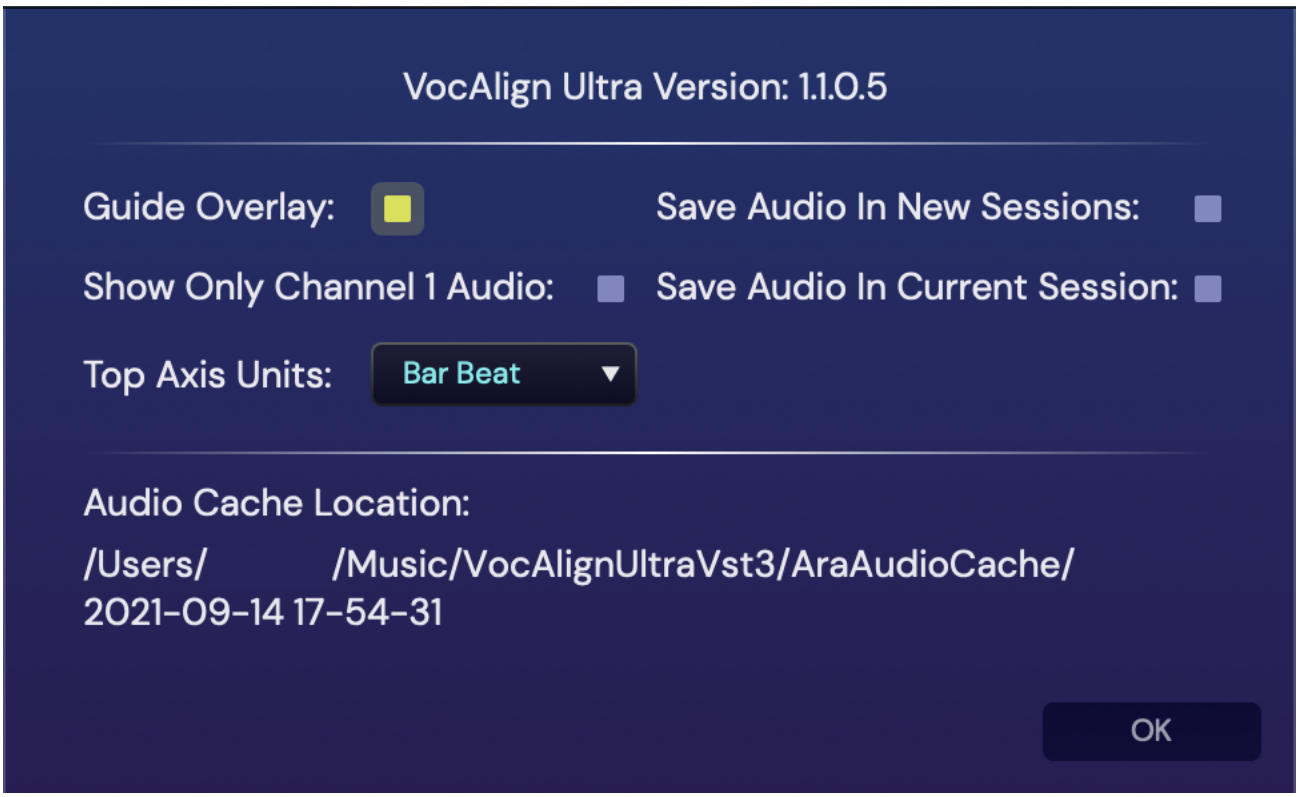

Figure 4. Path of the local directory used to cache the current session's audio

VocAlign Ultra (ARA)

Should you choose not to archive audio in the DAW's session, the ARA version of VocAlign Ultra will save its processed (aligned) output audio to a local directory. VocAlign Ultra will not save the Guide or Dub audio as it can recreate these from your DAW session.

To keep the "Real Time" and "ARA" audio separate, VocAlign Ultra (ARA) stores its data in the directory "AraAudioCache", which is shown expanded in Fig.5 below.

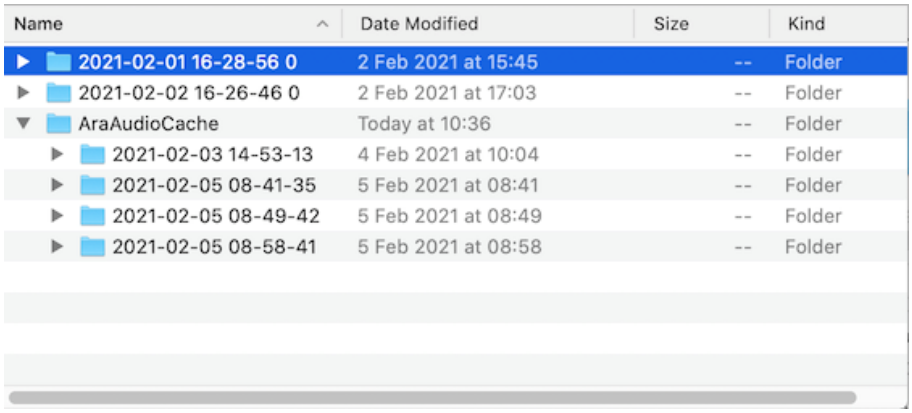

Figure 5. Example of VocAlign Ultra (ARA)'s Audio Cache.

Similar to the "Real-Time" versions of VocAlign Ultra, VocAlign Ultra creates a subdirectory for each session in your DAW. The subdirectory's name has the form "year-month-day hours-minutes-seconds". For example, the directory "2021-02-03 14-53-13" was created on 3rd February 2021 at 14.53.13 (2.53 p.m.).

VocAlign Ultra (ARA) will not delete the directory "AraAudioCache" or any of its subdirectories.

It is, however, always safe to delete any of the subdirectories as VocAlign Ultra can regenerate the audio. But if you delete a subdirectory that is still in use then, at worst, you may have to wait for VocAlign Ultra to regenerate its aligned audio before you replay the project.

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7. Quick Start Guides for DAWs

About these Quick Start Guides

Plug-in Types

These Guides are specific to the types of plug-in(s) each DAW uses. Click the link to go to the referenced Guide.

For AAX (Audio Suite) - **Pro Tools only**

For AU (Audio Units) - **Logic Pro 10 and others**

For VST3 - **Cubase, Studio One, Live, Reaper, Nuendo, Cakewalk and others**

Contents of Quick Start Guides

Each Guide links to a specific Audio Project/Session you can download for many DAWs, and then work through a few examples to help you learn the basics of VocAlign Ultra.

Further Detail

You may have already noticed that these Quick Start Guides are contained in the main **VocAlign Ultra User Guide,** which you can explore using the Table of Contents on the left.

7.1. VocAlign Ultra Quick Start Guide for Pro Tools AAX Plug-in

Quick Start for Pro Tools using AAX (AudioSuite)

Overview

In this Quick Start Guide, you will learn how to set up Pro Tools and VocAlign Ultra to transfer audio into VocAlign Ultra, process that audio, and have the processed output returned to Pro Tools.

The procedure might seem a little complex at first, because you have to tell the plugin which track contains the Guide and which track(s) need their timing and/or pitch adjusted by VocAlign Ultra to match the Guide's.

We won't go into details on the control panels or displays here, as those are described in the 'Using VocAlign Ultra' sections of the main User Guide shown on the left.

One last note: because we started long ago in the film industry, we call the audio to be modified and output the "Dub".

Before we let you do the work, here's a video that gives you the basic steps you are going to learn.

[Updated video for VocAlign 1.1 in Pro Tools with SmartAlign workflow forthcoming]

Installation and Initial Setup

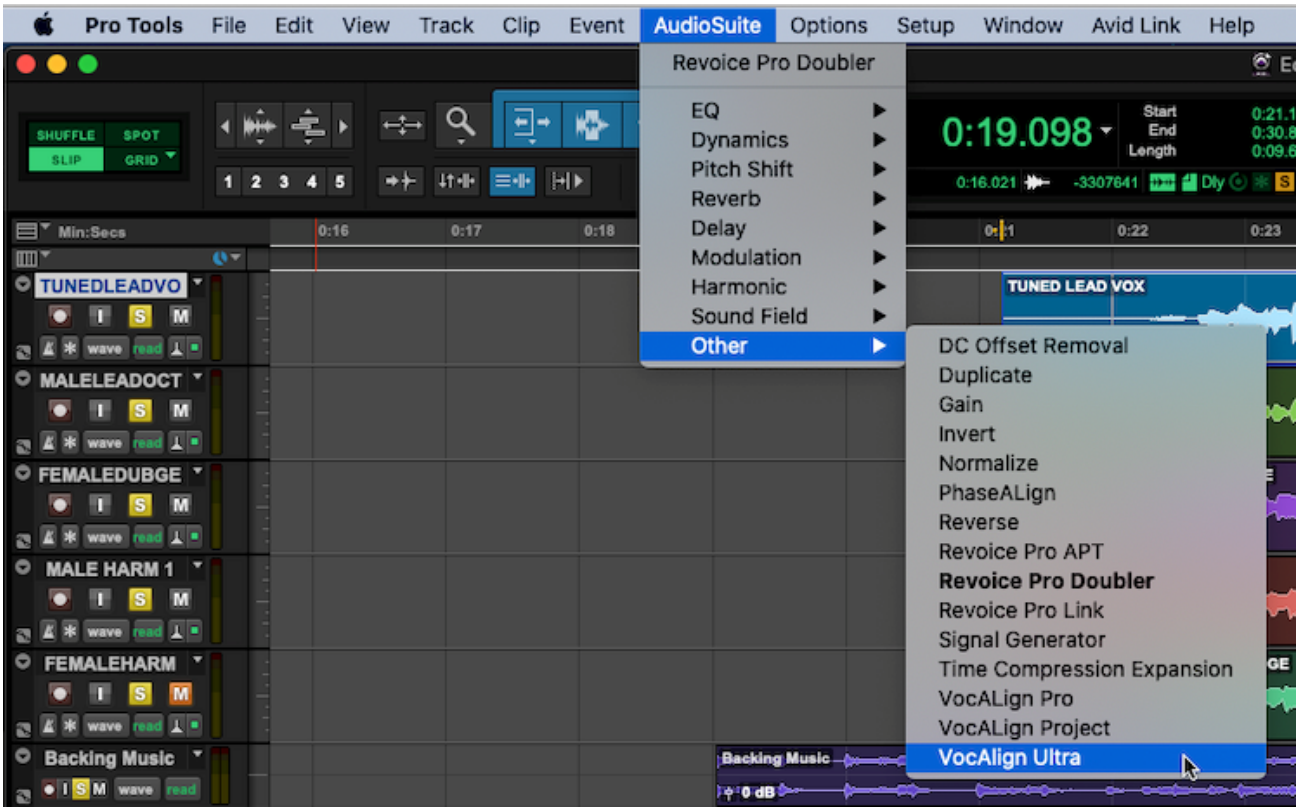
- You should have already downloaded, installed and authorised the VocAlign Ultra plug-in on your computer.
  See Installation and Authorization if you haven't.
- Download the 'No Holding Back' Pro Tools Session and follow along with the operational instructions below.
- Note that VocAlign Ultra is not a real-time plugin, so it doesn't appear in channel inserts. It can only be found in the **AudioSuite** menu.

Let's Start Processing

Here, we'll describe the VocAlign Ultra workflow steps of selecting a preset, capturing the Guide and Dub signals from Pro Tools, processing the Dub audio and sending the

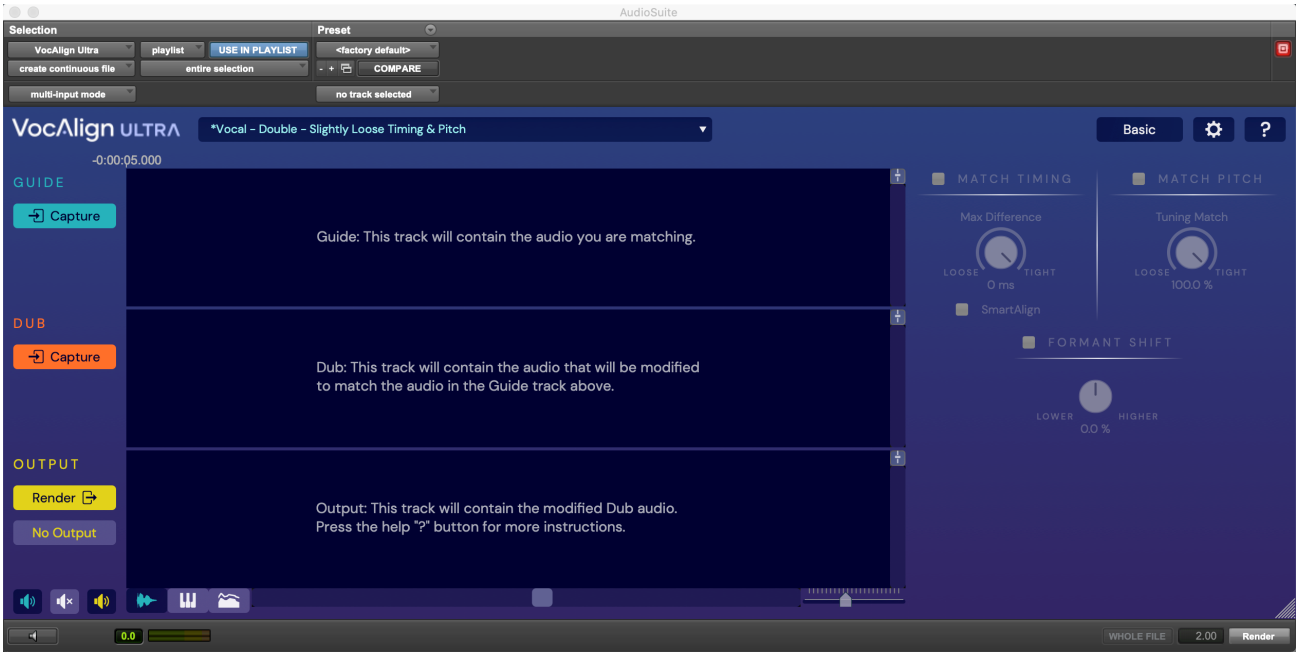
processed Output back to Pro Tools. We're using the 'No Holding Back' Session that you should have downloaded. We'll also look at changing presets and settings.

1. In Pro Tools, open the 'No Holding Back' Session (download link is given above).
2. Load the **VocAlign Ultra** plugin by opening Pro Tools' **AudioSuite** menu, selecting the **Other** submenu, then selecting **VocAlign Ultra** as shown below.

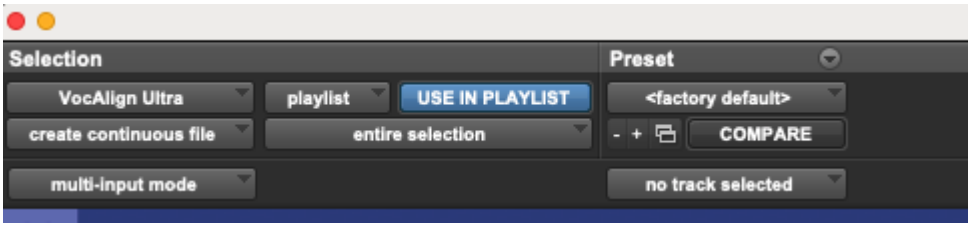


3. VocAlign Ultra should open and look similar to the picture below.

NOTE: You can drag the triangle in the bottom right corner to scale the width and height of the plug-in window.



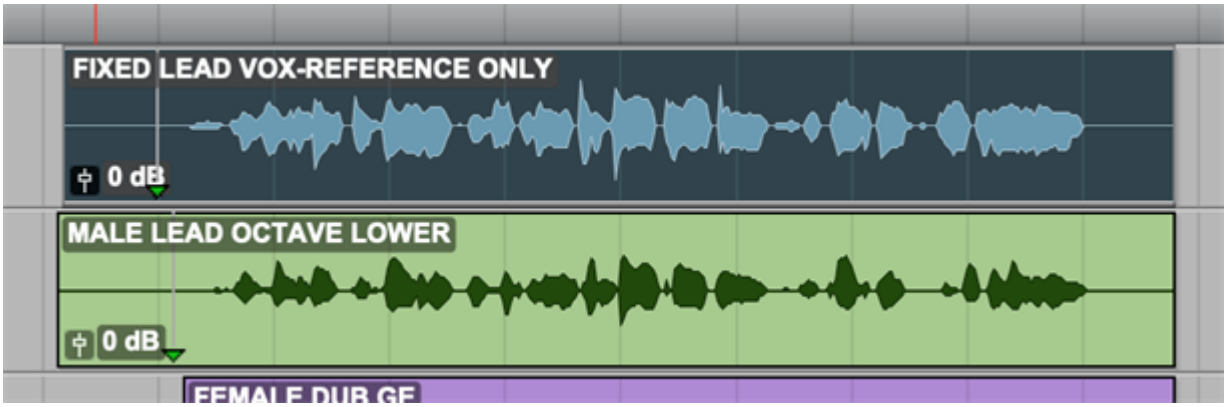
4. In the **AudioSuite** menu at the top of the plugin, make sure **USE IN PLAYLIST** is activated, as shown below.



5. Play each of the tracks in the Session against the 'Tuned Lead Vox' track to get an idea of what the parts sound like and what needs to be done to them.

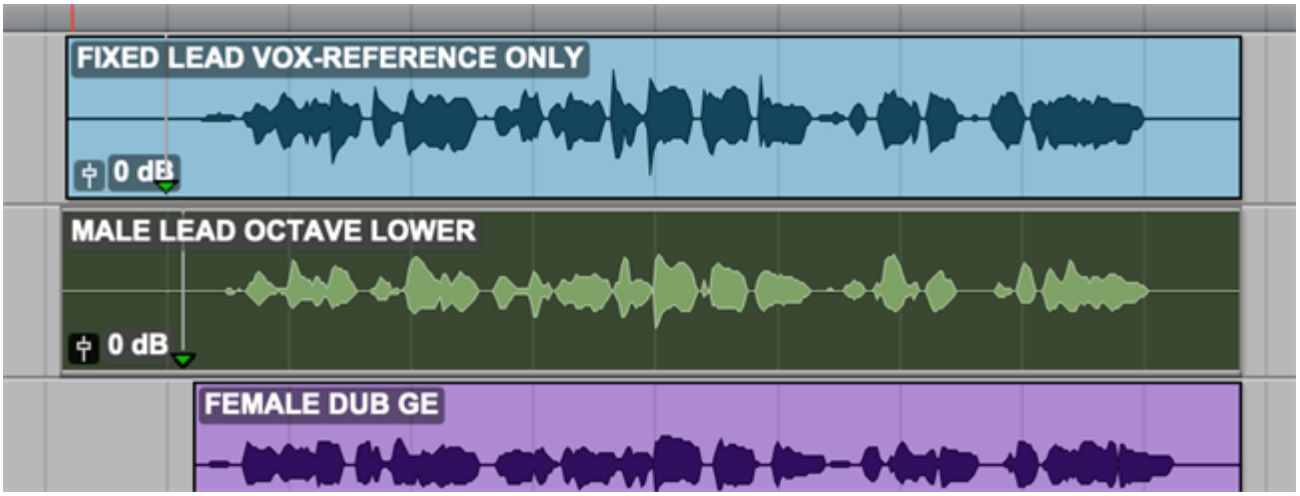
Process your first Guide and Dub with SmartAlign

6. In Pro Tools, select the 'Tuned Lead Vox' clip shown in the picture below. This will be our **Guide** audio.



7. In VocAlign Ultra, click the Guide **Capture** button to load the selected audio signal into the Guide section, as shown below. The **outline** of the Guide waveform is also shown in the Output track as a timing reference.

8. In Pro Tools, select the clip ‘MALE LEAD OCTAVE LOWER’ as shown in picture below. This will be the Dub audio. When working with SmartAlign, the start times of the Guide and Dub clips do not need to be the same.



9. The second track is a double of the first (even though they're an octave apart), so in VocAlign Ultra, select the **Vocal – Double – Slightly Loose Timing & Pitch** preset *before* Capturing the Dub. This ensures that the Dub will be processed with this setting as soon as it is Captured**.**

In VocAlign Ultra, click the Dub **Capture** button to load the selected signal into the Dub section and automatically process the Dub based on the control settings established by the Preset.

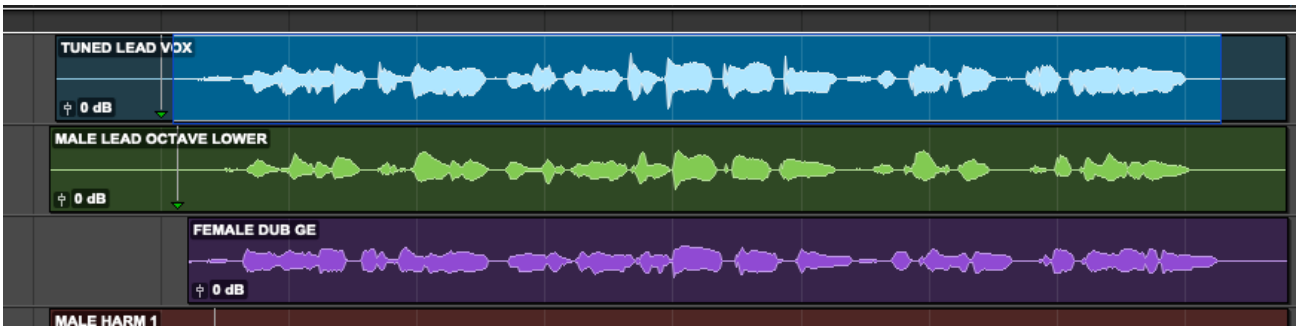
(Note: If this is the first time you have run VocAlign Ultra, it will turn on the process controls before processing)

Process your first Guide and Dub without SmartAlign

If for some reason you need to disable SmartAlign, you can follow the above instructions, but instead of selecting a clip, you will need to highlight a region of that clip as shown below. Make sure the highlighted region in the Dub roughly corresponds with the highlighted region of the Guide.

TIP: Press the ; key to shift the selection range down from the track above. If required you can Press P to shift selection up.

Note: It is a good idea to leave similar amounts of silence ahead of the Guide and Dub.



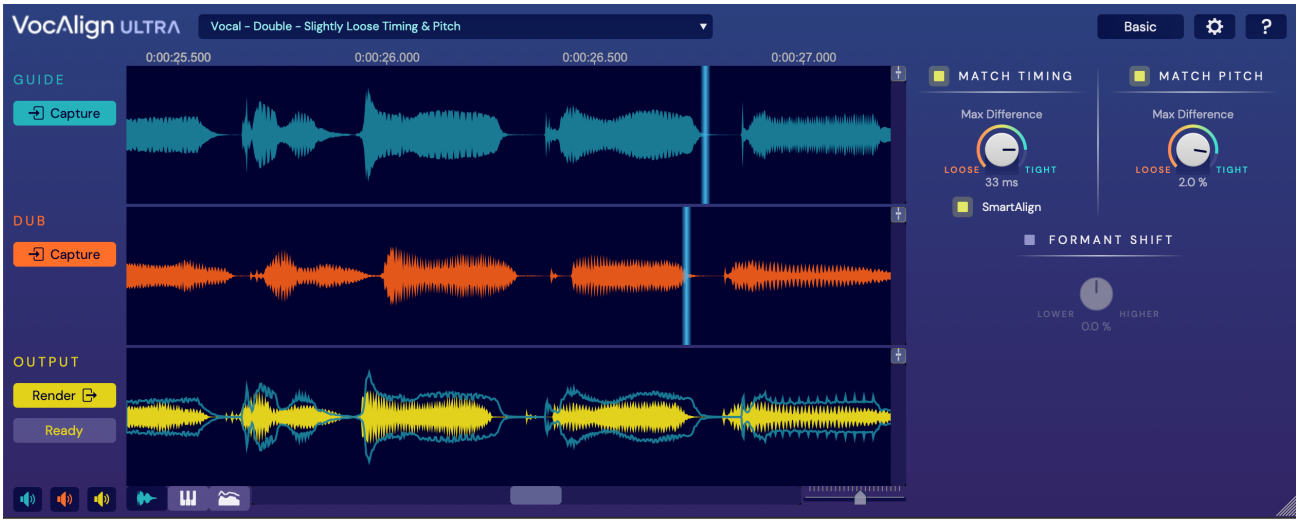
Auditioning and Rendering the Output

Note: At this point, the audio has been processed but not yet returned to Pro Tools.

The Dub and Output (processed Dub) signal waveforms appear as shown below, and the parameters to the right are activated and applied.

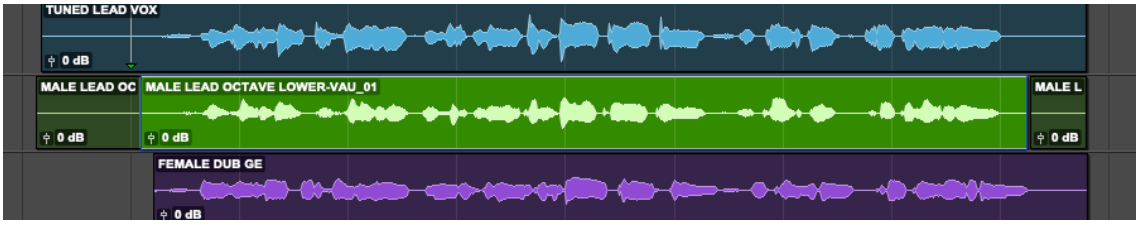
The Output display at the bottom shows the processed signal waveform overlaid with an outline of the Guide's waveform for timing accuracy reference.

The light blue lines follow the mouse pointer along the waveforms to show the calculated offset between matching features of the Guide and Dub that the settings are aligning.

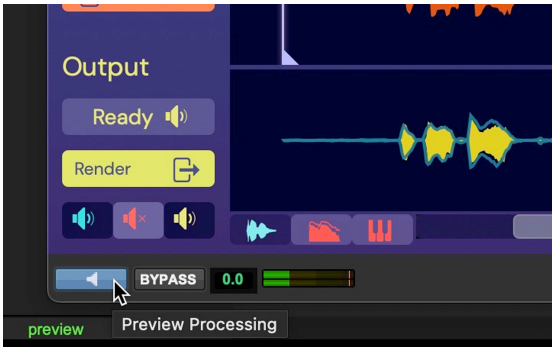


You now have three Options:

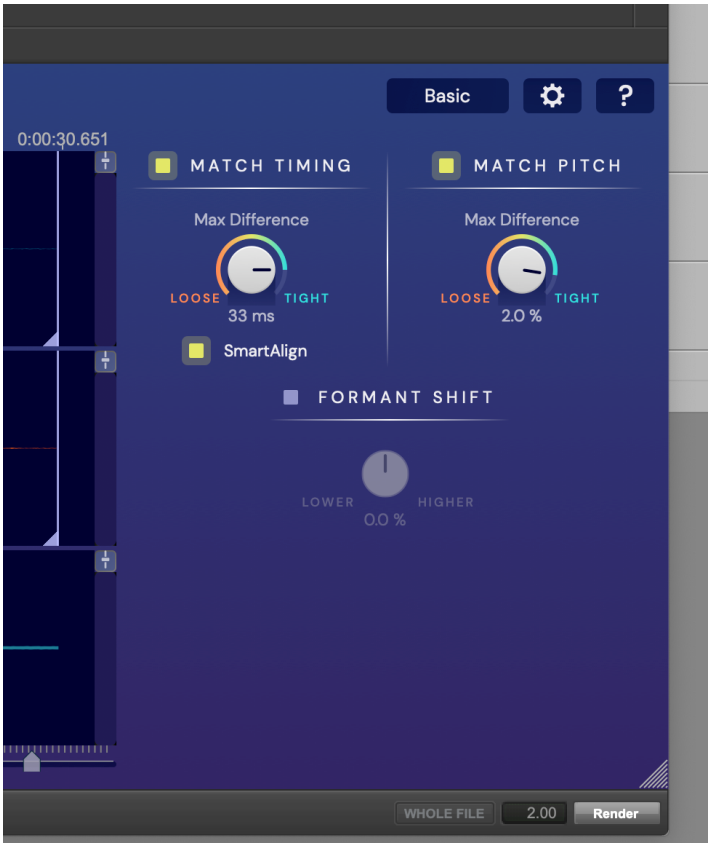
1. Press VocAlign Ultra's **Render** button to render the output over the original Dub, or select an empty track and audition the processed audio in Pro Tools. Here, we've returned the processed audio to the same track it came from.



2. Alternatively, click the Audio Suite **Preview** button (the tiny speaker at the bottom left) to audition the Guide and aligned Output together. Use the three colour- coded **Solo** buttons above to hear any combination of the input and output signals.



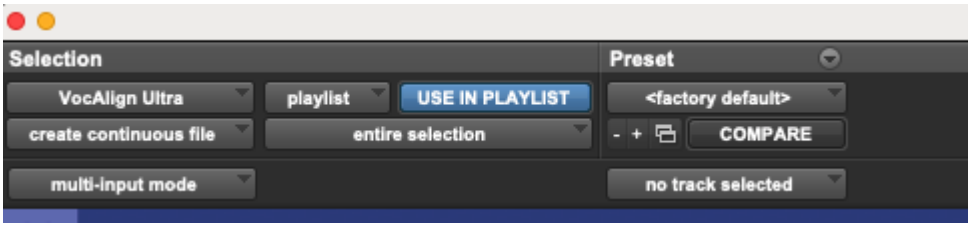
3. You can also adjust the **Max Difference** controls in the Match Timing and Match Pitch sections to tighten or loosen the timing and pitch alignment applied by the preset. With each change, the Output is reprocessed and the Output waveform redrawn, and you can listen to it using the **Preview** button or click **Render** to return it to the Pro Tools session, as described above.



TIP: To store your control changes to use again, click the **Preset** dropdown menu and save them as a User Preset. Give them a name that tells you what is special about it.

Other ways to Render the Output

NOTE: You can transfer the Output from VocAlign Ultra to replace the original Dub (as we did above) or transfer it onto any other track in Pro Tools by selecting a time range larger than a single sample anywhere on the target track and clicking the **Render** button. Or you can change the Audio Suite Track selection button (bottom right of picture "no track selected") to chose a Target track to render to.

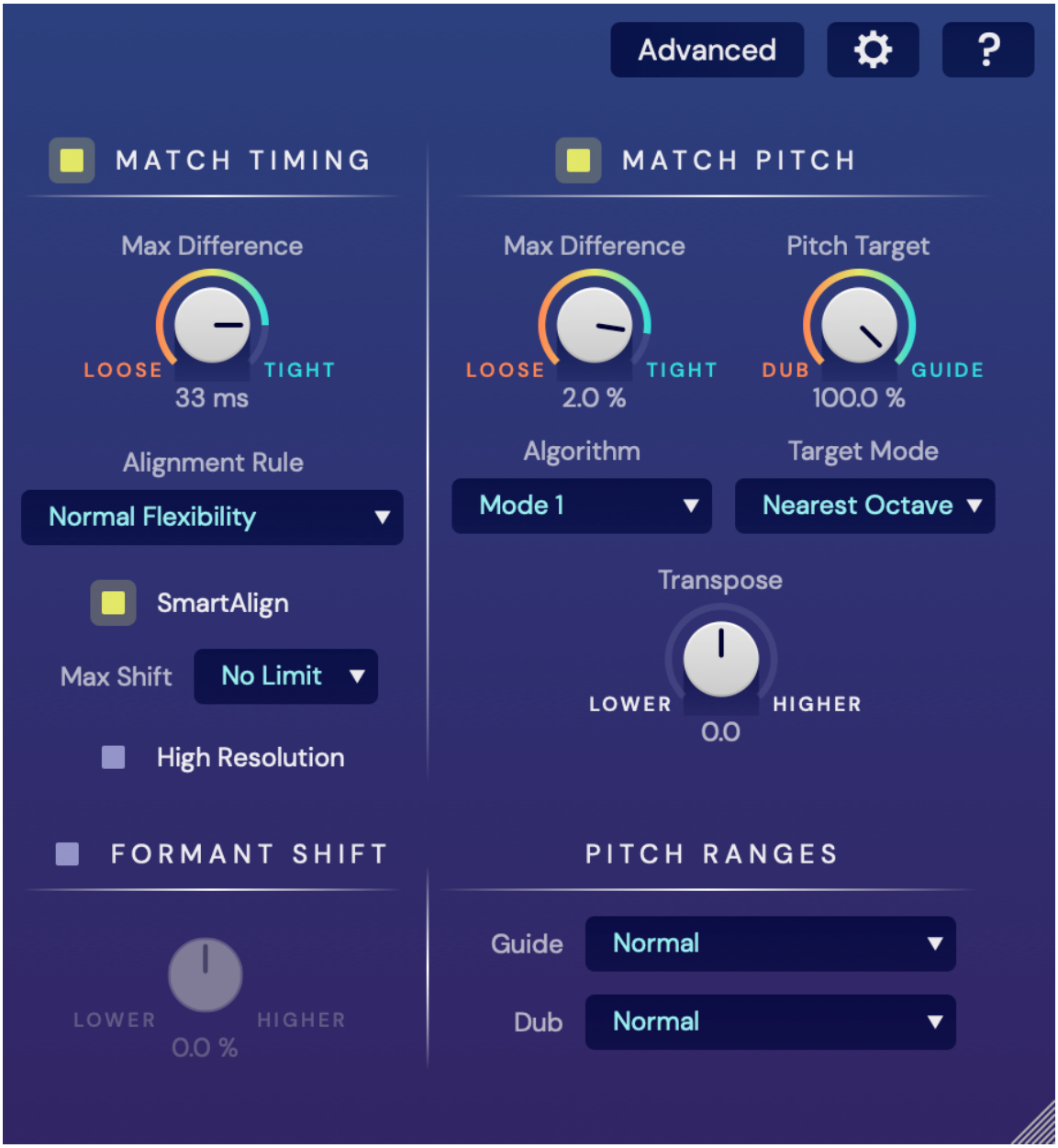


⚠ CAUTION: Be sure to make the correct target track selection before hitting the **Render** button. Otherwise, it's likely that you'll still have a range selected on the Dub source track, which will be overwritten when the Render is performed.

Process 'Female Dub GE'

Now we will process the Female Dub. This is the same pitch as the Guide, so use the **Vocal – Double – Slightly Loose Timing & Pitch** setting again, or try any others in the Vocal preset group.

Let's make sure you see all the controls this time. Press the **Basic** button to switch to show the full **Advanced** controls. These are explained in detail in the **Using VocAlign Ultra** section of this VocAlign Ultra User Guide.



Select the clip 'Female Dub GE' and press Dub **Capture;**.

Then repeat the auditioning process described above or render the **Output** back to Pro Tools to hear it.

If you are using the Pro Tools Preview to audition the output of VocAlign Ultra, and you change any controls while playing, you will either need to stop and restart the preview to hear the effect of the new settings- or if it has looped back, you must wait till it restarts the loop to hear the new settings.

Examine the Pitch

Now let's look at the Pitch Profile display. Press the keyboard switch at the bottom left corner of the VocAlign Ultra interface.

Then, activate and deactivate the 'eye' buttons to see the Guide and Dub Pitch traces, then the Guide and Output Pitch. Turn the Match Timing and Match Pitch **Max Difference** controls and observe the effects of tighter and looser settings on the traces.

Also, notice the white and gray patches along the bottom of the Pitch display. These show you the relative amount of processing being applied to the Dub at every point in time. Tighter settings will usually require more processing (whiter shading). Turn on the Dub pitch trace to see how different it is from the Output pitch and/or timing. Where there are big differences, the processing strength will be white.

The Formant Shift function can be used to add some character to the Output. Try lowering or raising it on the female voice.

Finally, when you like the sound of your Output, render the processed track back to the 'Female Dub GE Track' and listen to it with the Guide and other processed tracks.

Processing a Harmony Track

There are two Harmony tracks in this session: **Male Harmony** and **Female Harmony**.

- Harmonies are actually slightly easier to process, because you don't want to align their pitch to the Guide.
- Because of this, the Harmony presets only process timing.
- However, that does mean at least one of your harmony parts must be in tune. If you have doubles of that harmony, you can of course apply the timing and pitch of its Output to those doubles to match the new time aligned harmony with correct pitch.

Select the Preset **Vocal – Harmony – Tight Timing**

Select and Capture one of the Harmony Tracks.

Return it to Pro Tools.

Finally, do the same to the last harmony.

Audition the end result

If you have time aligned all the tracks to the Guide, and returned them over the original tracks, you can play them all together to hear the vast differerence you will have made with VocAlign Ultra in a very short time.

CONGRATULATIONS!!

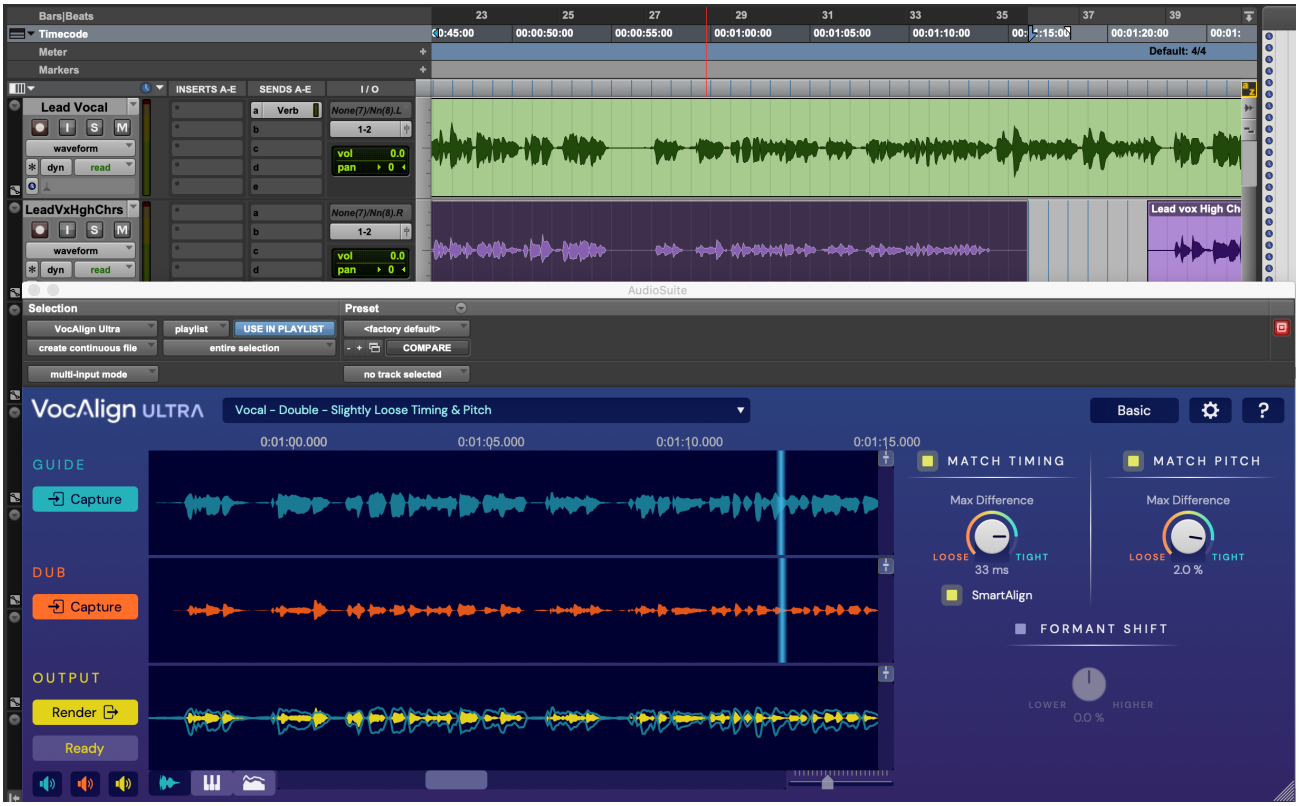
Fixing problems

Protected Areas

There will be times when you want to exclude certain sections in the Dub from processing – when your Guide vocal jumps up an octave, or gets raspy and lower, but your Dub doesn't, for example. Or when there are different words or syllables in the Guide and Dub, which can throw the time alignment off, resulting in unnatural distortion of the Output timing. VocAlign Ultra's **Protected Areas** enable pitch, time or both to be kept unprocessed over any specified range within the Dub. We'll demonstrate this using the 'Tiny Heart' Pro Tools session – please download and open it.

1. Follow the procedure described above to open VocAlign Ultra Audio Suite plug-in in Pro Tools. Before we process anything, listen to Tracks 2 and 3 from bars 27-35. You might want to raise the level of this track 3 to 4 dB to hear time and pitch issues in the high voice against the lead vocal.
2. Now select in Pro Tools the **Lead Vocal** audio event and Capture it as the guide. If you are not using SmartAlign, highlight the track from bars 27-35 and Capture that as the Guide.
3. Next select the preset: **Vocal – Double – Slightly Loose Timing & Pitch**.

4. Lastly, select the **Lead Vox High Chorus** audio event and Capture that as the Dub. If you are not using SmartAlign, highlight bars 27-35 of the **Lead Vox High Chorus** audio event and Capture that as the dub.



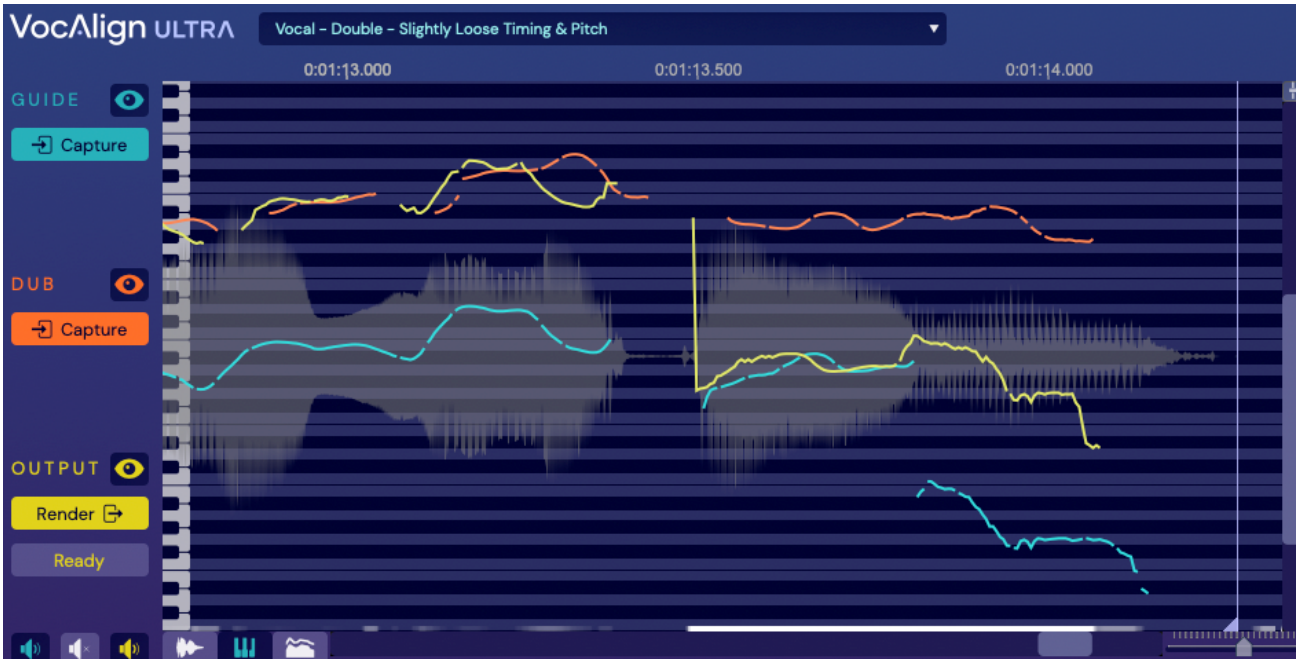
5. Render the Output back to the same Pro Tools track and listen to this selection in tracks 2 and 3. You can hear the time and pitch are closer. But if you listen to the Output Dub on its own, you can clearly hear the pitch of the Dub going awry on the word "again" at the end of the phrase, as it aligns the Dub with the raspy pitch drop in the Guide.

We can fix this by creating a **Protected Area** within the Dub – a range that maintains the original Dub's pitch, timing or both.

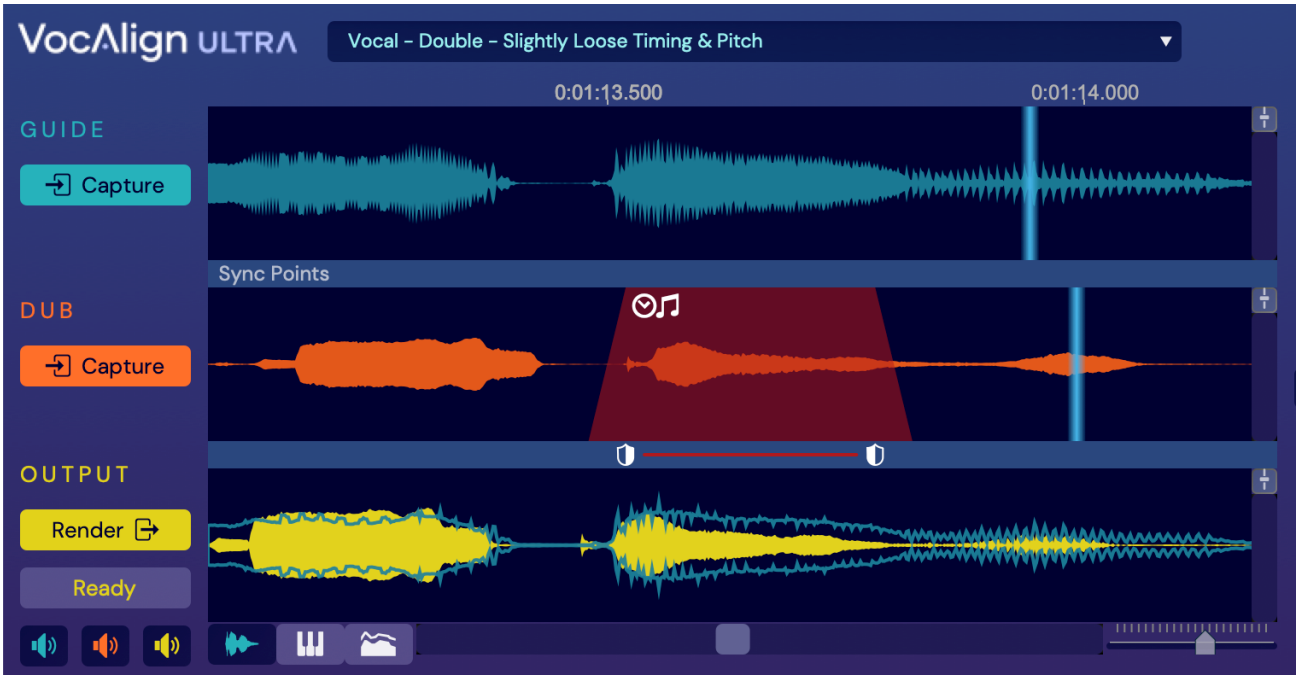
For a visualisation of the signals' pitches, switch to the Pitch Profile View by clicking the keyboard button  below the main display, and zoom in on the very end of the Dub.

Use the vertical slider at the right of the display and the **Scale** control  above it. You'll see the **Guide** (blue) pitch shows an octave drop when it gets 'creaky', which is transferred to the Dub and affects its pitch quality in the **Output** signal (the yellow trace).

Toggle the **Match Pitch** button off and on and you'll see the last section of the Output jump between the natural pitch of the Dub and the incorrectly aligned pitch.



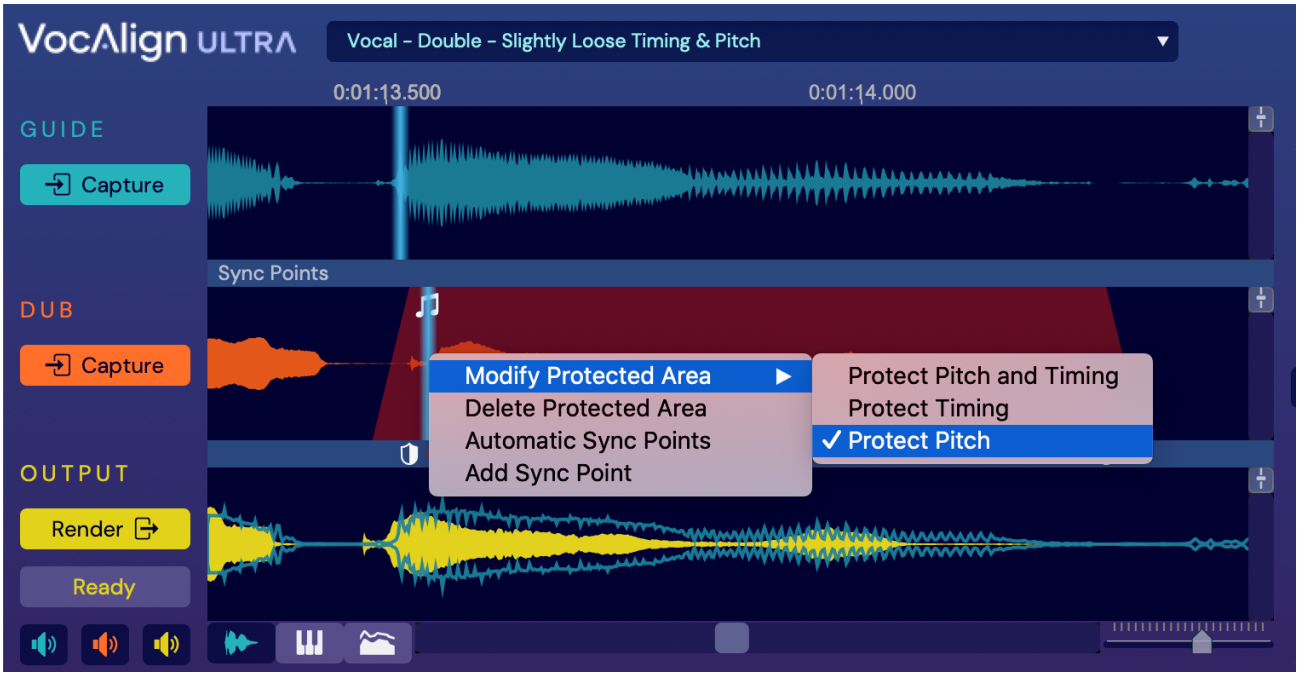
6. Switch back to the **Waveform** view by clicking the waveform button next to the **Pitch Profile** keyboard button.
7. If you are in the Basic control display, click the **Basic** Control display button to switch to **Advanced** mode, then click the dividing bar labelled **Protected Areas** (if none have been created) between the Dub and Output waveforms at the start of the unwanted pitch drop to create a new **Protected Area**.



8. Drag the 'shield' handle at the right hand end of the Protected Area to encompass the last 'piece' of the Dub waveform, then right-click in the Protected Area and select **Modify Protected Area > Protect Pitch** – now the timing will be aligned but the pitch won't.

You can see this by going back to the Pitch Display and look at the yellow Output Pitch, now overlapping the red Dub pitch exactly because it is now protected from pitch changes (but not time changes).

As an exercise, work back through the Dub, adding further Protected Areas where required.



Sync Points

If you're getting small differences in timing caused by different words, sounds or delivery, you can correct them using Sync Points. These let you assign pairs of pointers to events in the Guide and Dub that should be time aligned if they are not. One of the pair is moved to a position in the Dub waveform and the other paired pointer is moved the a similar position in the Guide waveform, and the alignment engine does it's best to nudge the two points together, assuming the audio around that point in the Dub is amenable to being compressed or stretched by the required amount. Click here for more details on Sync Points and how to use them.

And finally...

There's always more to learn, so head to the sections of the full User Guide at the left in the **Using VocAlign Ultra** folder, for much more information on VocAlign Ultra's controls and displays, and for the latest videos and tips, click this link: VocAlign Ultra with Pro Tools .

7.2. VocAlign Ultra Quick-Start Guide for Logic Pro X

Quick Start for Logic Pro X and DAWs using AU Plug-ins

Overview

In this Quick Start Guide you will learn how to set up Logic Pro X and VocAlign Ultra to transfer audio into VocAlign Ultra, process the audio, and have the processed output returned to Logic Pro. Other DAWs using AU plug-ins should have similar workflows.

⚠ **Ableton Live** users: Do NOT use the AU version of VocAlign Ultra, use the VST3 Real-Time Capture Version. Click here to go to instructions.

The procedure might seem a little complex at first because you have to tell the plug-in which track contains the Guide and which track(s) need their timing and/or pitch adjusted by VocAlign Ultra to match the Guide's.

In this Quick Start Guide, we won't go into details about the control panels or displays, since those are described in the "Using VocAlign Ultra" sections.

One last note - because we started long ago in the film industry, we call the audio to be modified a “Dub”.

Two Plug-in Versions

VocAlign Ultra installs two versions of the Audio Unit (AU) plugin used by Logic Pro X (and some other DAWs):

- **VocAlign Ultra AU (ARA) -** which only runs in Logic Pro X 10.5.1 or later.
- **VocAlign Ultra AU (Real-time capture) -** which runs in Logic Pro 10.0.0 and later.

These plug-ins both feature the same processing controls, presets and parameters, and are identical in terms of the end results they deliver.

The versions only differ in the way audio signals are brought into VocAlign Ultra and how the Output is returned to the DAW.

- The **AU (ARA)** plug-in is applied to the track and the user “Captures” the digital audio directly as the designated Guide or Dub in an instant transfer process.
    - The main advantages of this approach are that the capture is faster and you can bounce the processed audio to disc.
    - The main disadvantage is that in Logic Pro you must press the space bar regularly to update the ARA audio data base.

    - It's important to understand that the ARA version loads as a single 'extension' in Logic Pro, and although it might appear that you're adding the plugin to each discrete region being processed, you are in fact adding those regions to the same single instance of VocAlign Ultra ARA.

- The **AU** (**Real-time capture**) plug-in version is also a track insert plug-in and involves making a real-time playback to capture both the Guide (as a side chain input) and the Dub simultaneously.

    - The main advantage of this approach is that you can start and stop the capture of the Guide and Dub at any points in your session.
    - The main disadvantage is that if you export the Output to replace the input Dub it removes the plug in, and there is no undo to restore the plugin to modify the processing.

Installation and Initial Setup

- You should have already downloaded, installed and authorised the VocAlign Ultra plug-in on your Mac computer.
  See Installation and Authorization if you haven't done this.

- Download the Logic Pro 'Tiny Tiny Heart' session from Tiny Heart Logic Session and follow along with the operational instructions below.
- **It's also necessary to make Logic's track selection automatically follow the selection of audio regions.**
    - This may already be set up, but if not, in Logic Pro, open **Preferences > General**, and select the **Editing** tab at the top.

- In the **Editing** page, enable '**Select tracks on Region/Marquee selection**'.

Using the ARA version of VocAlign Ultra

THE FOLLOWING ARA INSTRUCTiONS ARE ONLY FOR: Logic Pro X 10.5.1 and later.

NOTE: The AU **(ARA)** version only works with recent versions of Logic Pro and operates differently than the AU Real-time capture version.

You can skip the ARA instructions and click **HERE** to jump to **AU Real-Time Capture** instructions for Logic Pro 10.0.0 and above.

FOR LOGIC PRO 10.5.1 Users

Once you've installed VocAlign Ultra, you'll need to perform these "one-time" additional steps in Logic Pro to be able to use the ARA version:

1. Launch Logic Pro X and open any project or create an empty project.
2. Add **VocAlign Ultra AU** as an insert effect to any track in the project.
3. Quit Logic Pro X *without saving*.
4. The next time you run Logic Pro X, VocAlign Ultra (ARA) should appear in Logic's Plug-in Manager and Audio FX menus under 'Synchro Arts'

Note - this issue is fixed in Logic Pro 10.6.1 and above.

If you're using an Apple Silicon Mac, rather than an Intel-powered model, you'll currently need to switch Logic to Rosetta Mode to use the VocAlign Ultra AU (ARA) plugin. To do this, right-click the Logic Pro application in your Mac's Applications folder, select **Get Info**, and check the '**Open using Rosetta**' checkbox.

IMPORTANT OPERATIONAL NOTE FOR USING LOGIC PRO WITH ARA PLUG-INS

- **As of VocAlign 1.1, VocAlign will quickly start and stop playback each time the Capture button is pressed, before initiating the capture of audio. This will create a short burst of playback.**
- This ensures tha**t** VocAlign Ultra AU (ARA) (and all other ARA plugins) are updated correctly.
- This is a requirement of Logic Pro rather than a design decision of Synchro Arts.
- **If needed, you can manually update all ARA plugins by simply tapping the Spacebar twice to start and stop playback before you press either Capture button in VocAlign Ultra.**

Let's Start Processing

[Updated video for VocAlign 1.1 in Logic Pro with SmartAlign workflow forthcoming]

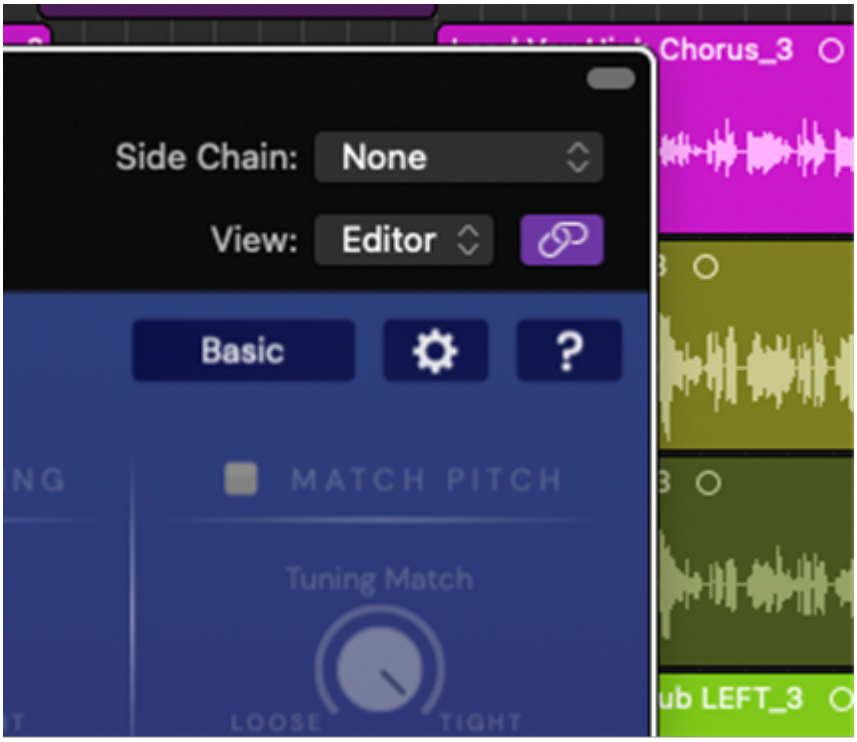
Note: we recommend using the SmartAlign workflow as your default workflow. The 'SmartAlign disabled' workflow is provided in case of any issues.

1. Load the ‘Tiny Heart’ project in Logic.
2. Add VocAlign Ultra AU (ARA) as an insert effect on the **Lead Vocal** Track – which we’ll be using as our **Guide** – by selecting **Audio FX** > **Audio Units** > **Synchro Arts** > **VocAlign Ultra AU (ARA)**.
3. Start and stop playback in Logic Pro using the Spacebar or transport buttons.
4. In VocAlign Ultra, select the preset: **Vocal > Double > Slightly Loose Timing & Pitch**, if it isn’t already selected.

You should see a screen similar to the image below.

TIP: You can **scale** VocAlign Ultra to almost any size to see the Logic Pro window better, by dragging the striped triangle in the bottom right corner of the plug-in window.

5. When VocAlign Ultra AU (ARA) loads, click the **Link** (chain) button at the top right of the plugin to turn it ON – and the background will turn purple as shown below.



We want to align the out-of-time **Lead Vox High Chorus** double track with **Lead Vocal**, so **Lead Vox High Chorus** is our Dub.

6. Add VocAlign Ultra AU (ARA) as an Insert on **Lead Vox High Chorus**, as described in step 2

7. Follow the step below depending on your settings:

Smart Align enabl

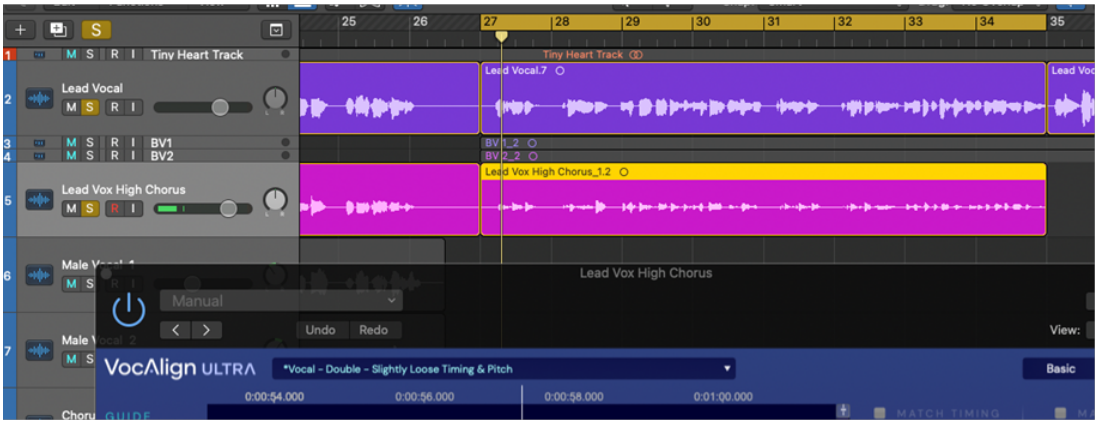
Select the **Lead Vocal** audio region.

ed (defa ult)

Solo the **Lead Vocal** and **Lead Vox High Chorus** tracks and set Logic's Cycle range from bar 27 to 35 to loop the section you'll be working on.

Split the **Lead Vocal** region at bars 27 and 35, and the **Lead Vox High Chorus** region at bar 27 to isolate the required sections.

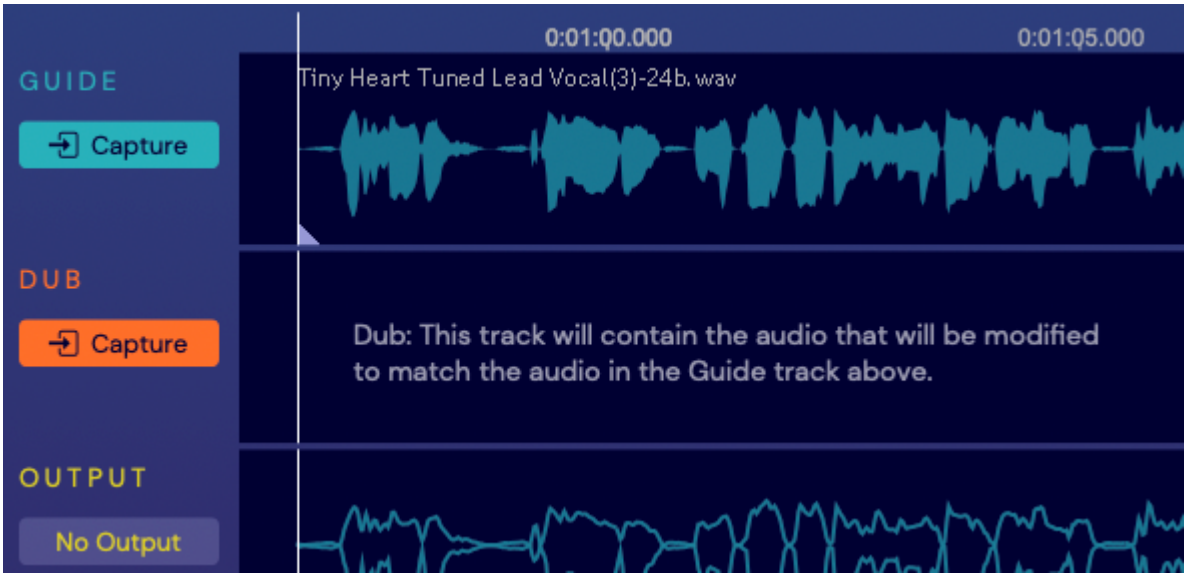
Smart Align disabl ed



Select the isolated **Lead Vocal** region.

8. In VocAlign Ultra AU (ARA), press the Guide **Capture** button. VocAlign will quickly start and stop playback and you'll hear a short burst of playback.

The Guide audio waveform will appear in the Guide section and an outline of the Guide will also appear in the **Output** section to act as a timing reference for the processed Dub.



9. In Logic, select the corresponding audio region on the **Lead Vox High Chorus** Track.

Note: If SmartAlign is disabled, select the region you cut from bars 27 to 35.

2. Press the Dub **Capture** button.

   The Dub waveform appears in orange in the Dub section. At the same time, VocAlign Ultra AU (ARA) will align the Dub to the Guide and create the aligned Output, represented by the yellow waveform in the Output section.

11. Start playback in Logic Pro to hear the **Lead Vox High Chorus** track play the perfectly aligned **Output** signal from VocAlign Ultra. Note in the picture below, the yellow Output (processed Dub) audio is shown visually matching the Guide waveform outline - but not perfectly - because you've chosen "Slightly Loose Timing".

Changing tightness setting

If you want to hear what turning the **Max Difference** control in the **Match Timing** section, turn it towards or to 0 or away and listen to the difference as well as see the difference in the Output time display.

NOTE: We've only capturing a single Dub here, but with ARA you can capture multiple stacked Dubs at the same time which will initially be processed by the same Preset. This will be detailed in the main User Guide.

Correcting areas where Guide Pitch is uncertain or too different from Dub pitch

Because we have chosen a real Guide input that has "typical" uncertain pitch in a few places (because of vocal "creaks" at the end of some phrases), VocAlign Ultra

will make the Dub try to match these areas containing a range of Guide pitches that are sometimes an octave lower when it is measured compared to what we hear. This sort of mis-measurement will affect the Output at these points.

We can fix these by creating **Protected Pitch Areas** within the Dub. These are areas that maintain the original Dub's pitch, timing or both.

This is a useful technique to learn for situations when there are different words or sounds in the Guide and Dub at certain points and make them sound unnatural.

In the above example, you might have noticed a "squeak" in the Output at the very end of the signal where the Guide singer's voice "creaks" and the original Dub has a high note that gets the wrong pitch applied to it at the very end of the phrase.

For a visualisation of the signals' pitch, switch to the Pitch Display by clicking the pitch display selector,

 shown left which is below the left side of the main display.

Now zoom in on the very end of the Dub. Use the slider at the right of the display and the "scale" controls to see the entire range. You'll see the Guide (blue) pitch shows an octave drop when it gets "creaky". This affects the pitch quality in the Output signal (the yellow trace). Toggle the **Match Pitch** button off and on and the last section of the Output will jump between the input pitch of the Dub (red) and the incorrectly aligned pitch.

Double-click in the **Pitch** display at the start of the Guide pitch drop (as shown above) to set the playback head at that point.

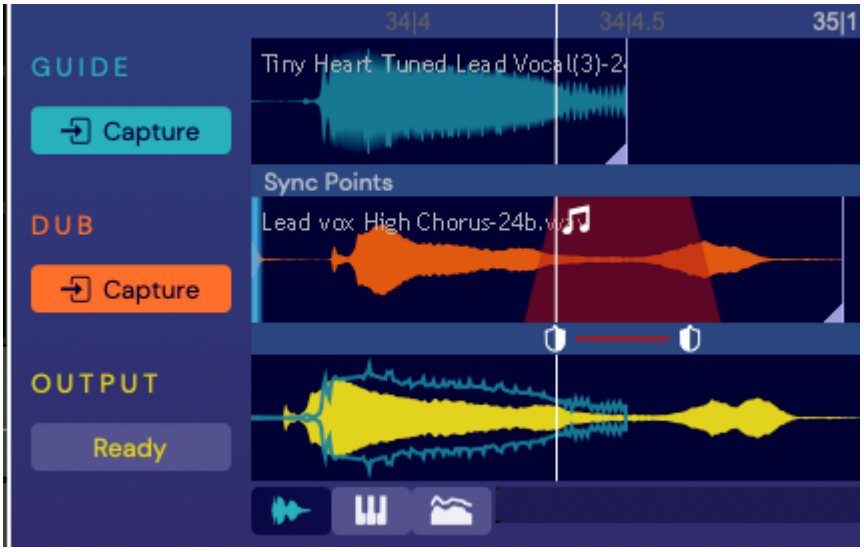
Then switch back to the **Waveform** view by clicking the waveform display button

 to the left of the **Pitch Display** button.

Click the **Basic** Control Panel mode button to switch to **Advanced** mode.

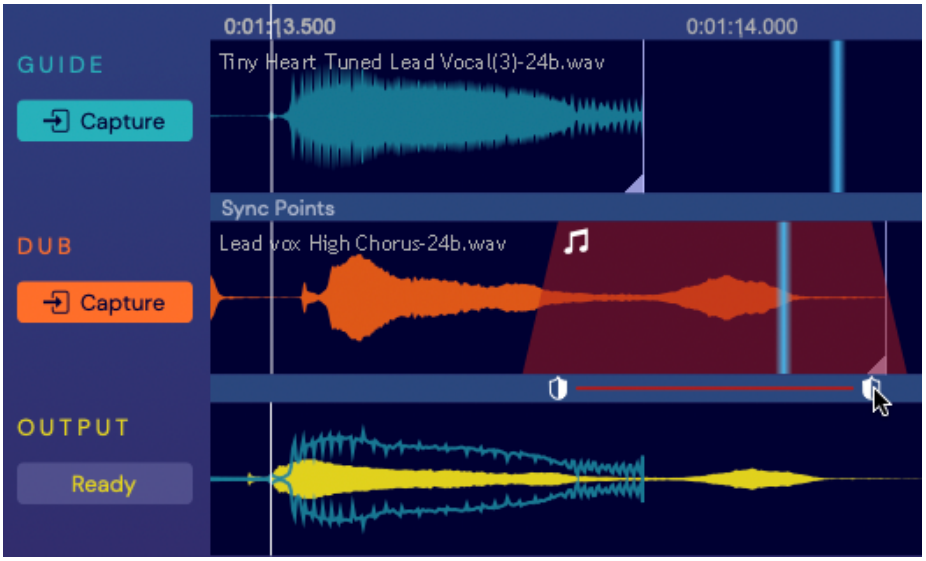
Then Right click the dividing bar that says "Protected Areas" between the Dub and Output waveforms **at the playhead position**. Holding down the mouse key you can select "Add Protected Area" and "Protect Pitch".

When you release the click, you will see a Protected area as shown below with a Note symbol indicating it is protecting pitch.

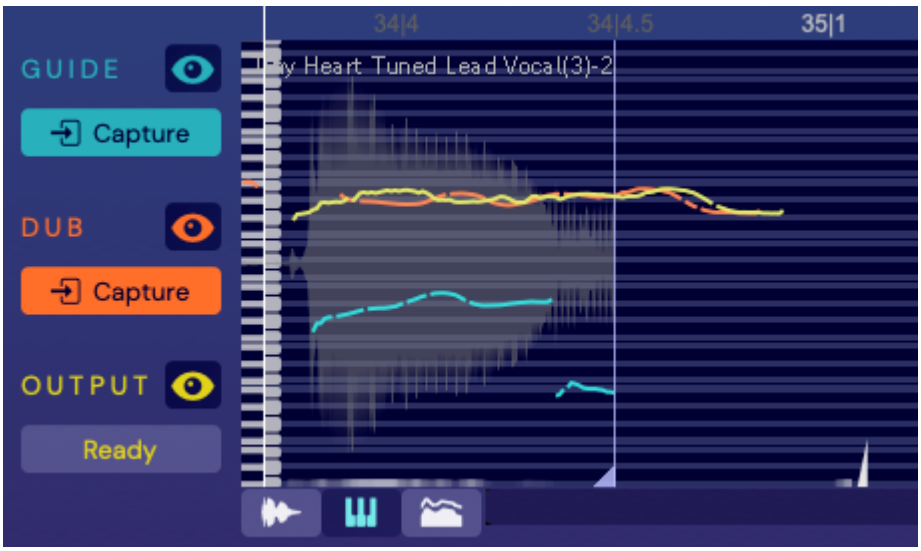


(Note: If you had left clicked, you would have automatically added a Time and Pitch Protected area starting where you clicked. You can right click a Protected Area to change its settings.)

Drag the right 'shield' handle of the Protected Area to move it to the end of the Dub pitch trace as shown below.



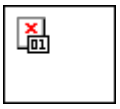
If you now switch back to the Pitch display, as shown In the picture below, the Output pitch (yellow) is now exactly on top of the original Dub pitch so the audio will be in time and not corrupted by the Guide pitch issues.



As an exercise, you can try this on other signals in this session where the Guide voice becomes creaky.

Matching the Timing of Harmonies to a Lead Vocal

Now let's align a harmony vocal with the following steps.



If you are going to use a different preset on a new Guide and Dub, if you change the preset or ANY control before you capture the new Guide, it will be applied to the current Dub, which you might not want to happen.

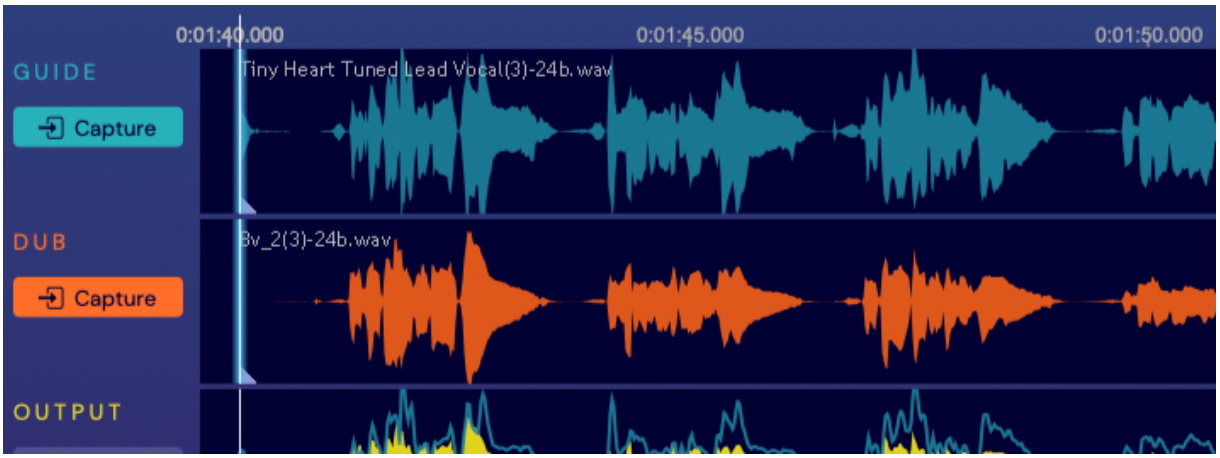
Here is the safest order in which to perform your operations:

1. Before you move on to capture a new Guide, don't change the preset or any controls!!
2. Capture your new Guide
3. Change the preset or controls after the new Guide has been captured (if you want to)
4. Capture the Dub (it will be automatically processed with the new preset and control settings).

1. Load VocAlign Ultra AU (ARA) onto the **BV2** track.
2. If SmartAlign is disabled or you've selected a SmartAlign OFF preset, set Logic's Cycle markers to cover bars 47 and 56 and then split the **Lead Vocal** track at the resulting region.
3. **Capture** the **Lead Vocal** region as the **Guide** and the **BV2** region as the **Dub**.

4. Click the Preset menu and load the **Vocal > Harmony > Tight Timing** preset.`

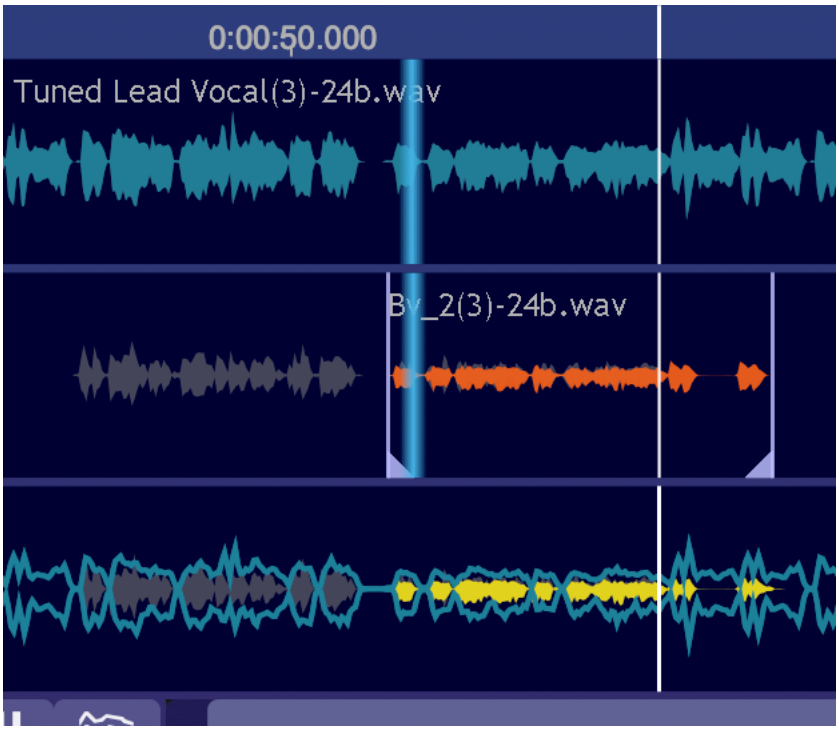
   This will tightly match the **BV2** region's timing – but not pitch – to that of the **Lead Vocal** region.



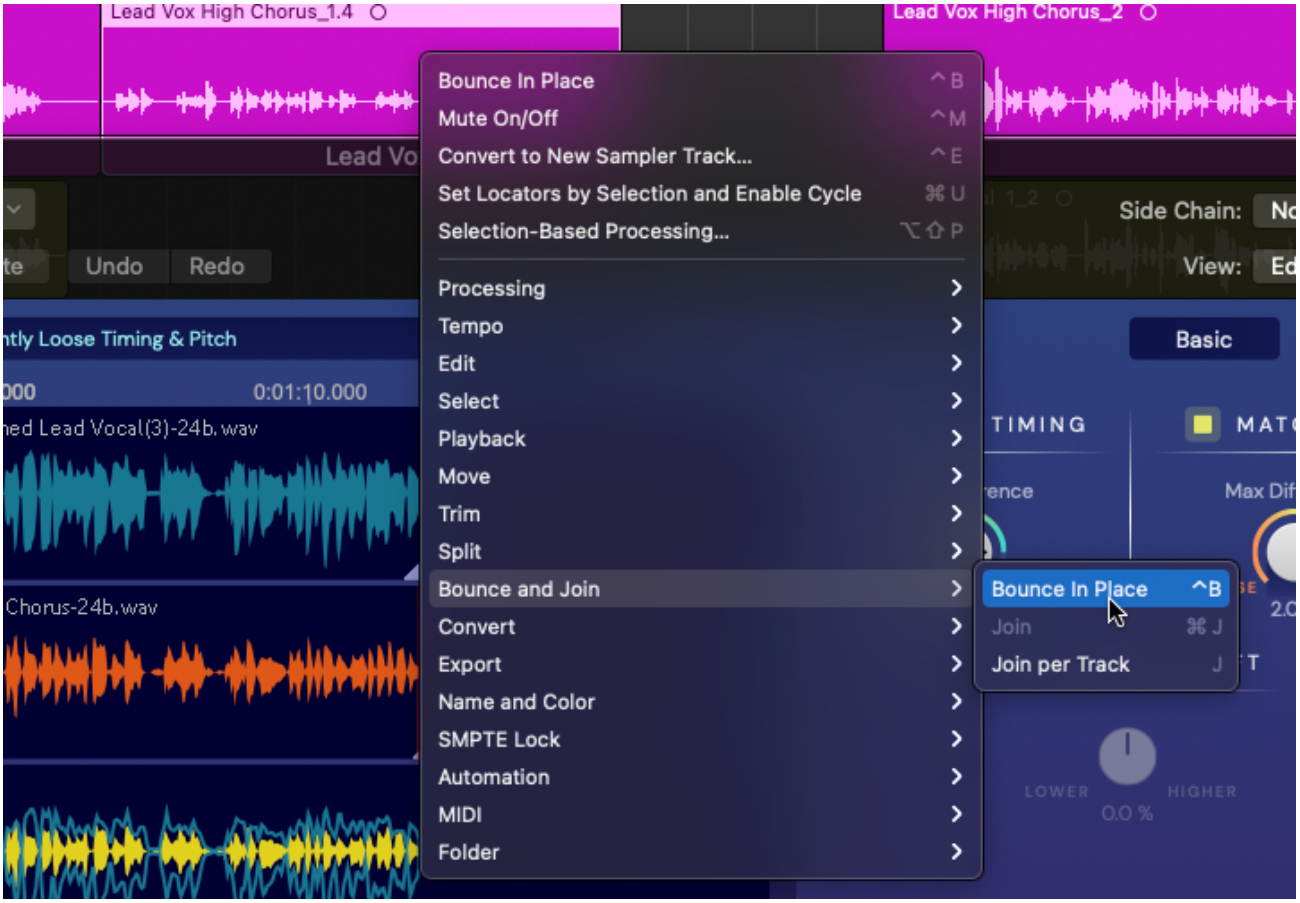
REMINDER: If you want to change a Preset or Control to process the next Dub, change it AFTER YOU CAPTURE YOUR NEXT GUIDE !!

Processing audio along the timeline or down the tracks

You can continue to copy sections along a track and keep the same settings, or even capture Dubs sourced from two different tracks, with each Dub Capture set to a different preset. Switch between them for editing by clicking them in the main display or Overview, or by selecting their source regions in Logic Pro itself. The selected area will be coloured in, while all unselected areas will be greyed out.



To export the **Output** from VocAlign Ultra AU (ARA) to a track, select a Dub region in Logic Pro, start and stop playback, then go to the **File** menu or right-click the region and select **Bounce** > **Regions in Place...** (key command: **Ctrl**+**B**). Adjust the various options presented in the Bounce dialog, as required – replace the region on the track or bounce to a new track, mute the original track, etc.



Processing a "Stack" of Dubs at the Same Time

If you have several Dubs that all have similar audio (i.e. either Doubles or Harmonies - but not both at the same time), you can select the Dub events and process them at the same time with the same settings. However, you will have to change the process setting for them individually after that, by selecting either the Dub in your DAW or right clicking in the VocAlign Ultra Dub window and selecting the Dub you wish to modify, one at a time.

Alternatively, you can use the Delete command to remove the Dubs and their Guide from VocAlign Ultra and then recapture them with a different setting, which the Dubs will all received at the same time and create new Outputs with the new setting.

THIS IS THE END OF INSTRUCTIONS FOR ARA MODE

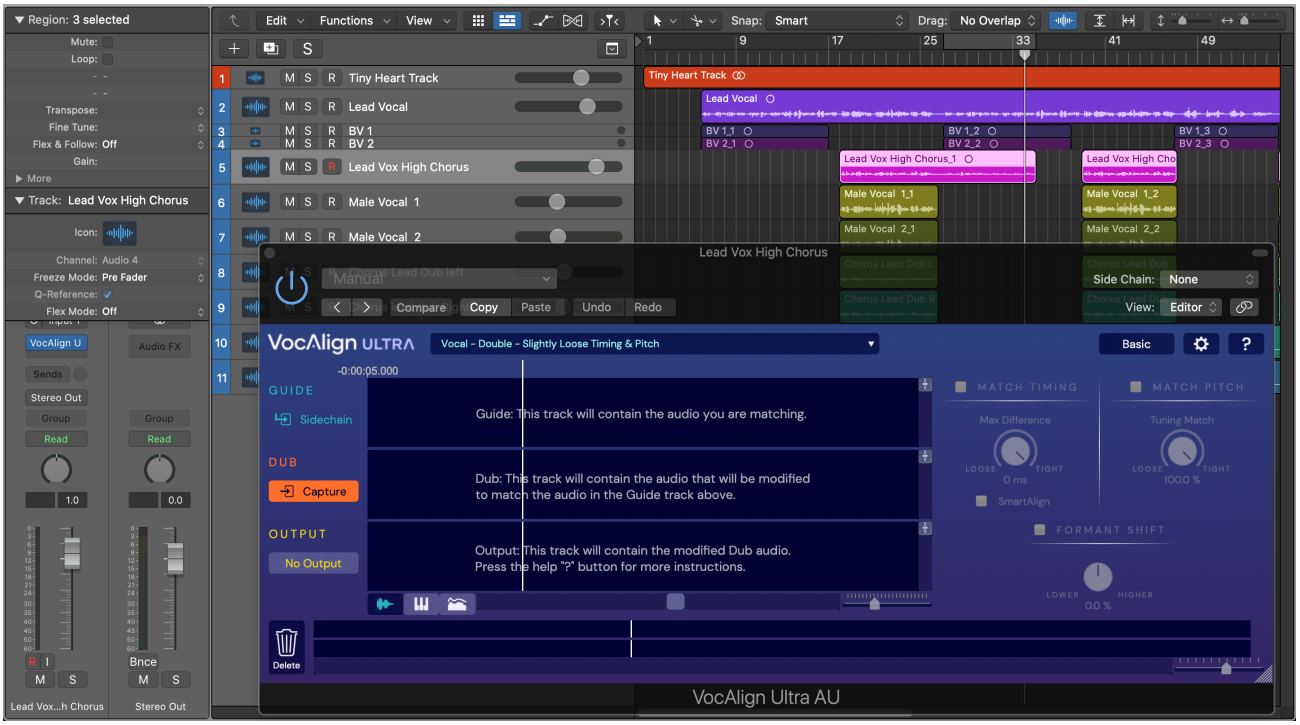
Using the real-time AU version of VocAlign Ultra in Logic Pro X

The ‘regular’ AU (Audio Units) version of VocAlign Ultra captures the Guide and Dub in real time in two specified tracks, but only requires one instance of the plugin to be loaded on the Dub track, and the Guide is captured at the same time via the plug-ins Side Chain input.

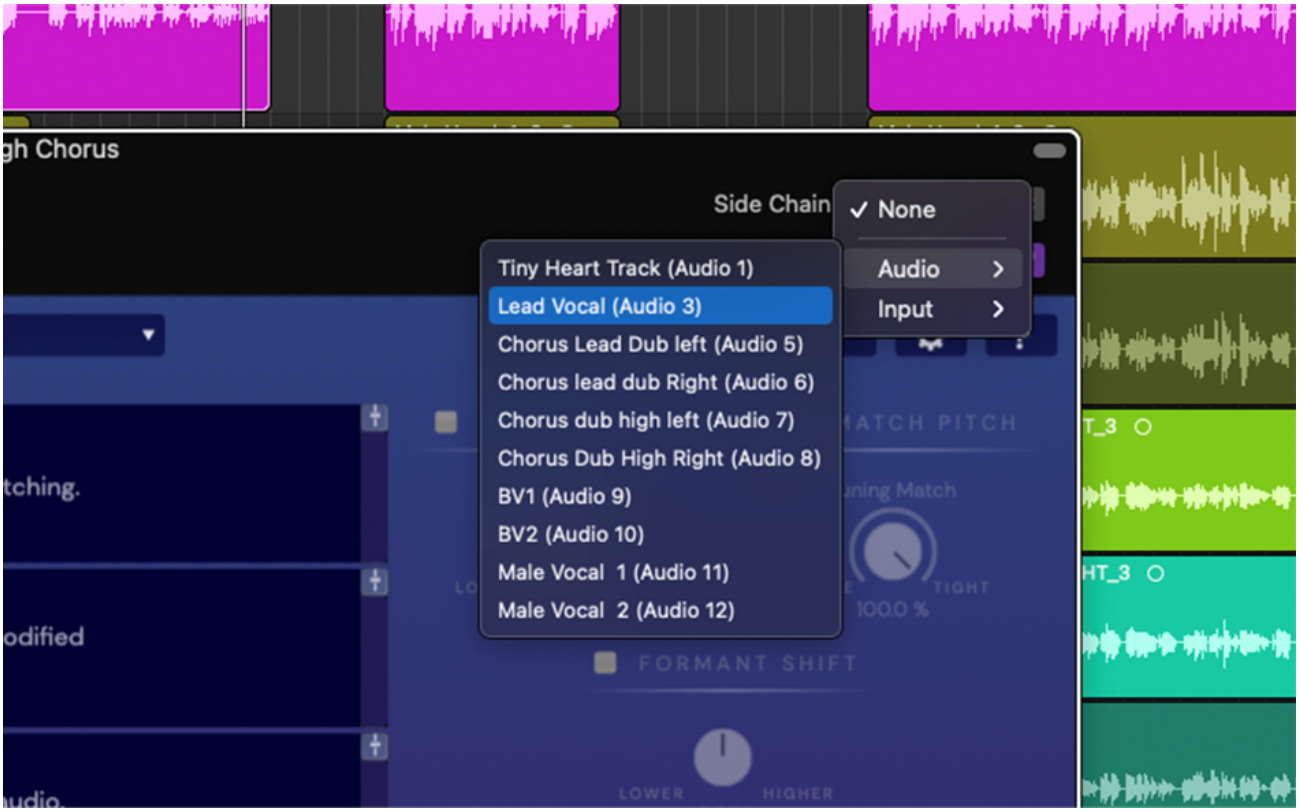
This might seem strange, but it is the Dub track that is being processed and the processed audio is returned to the Dub track when the processing is finished.

Let's process some tracks

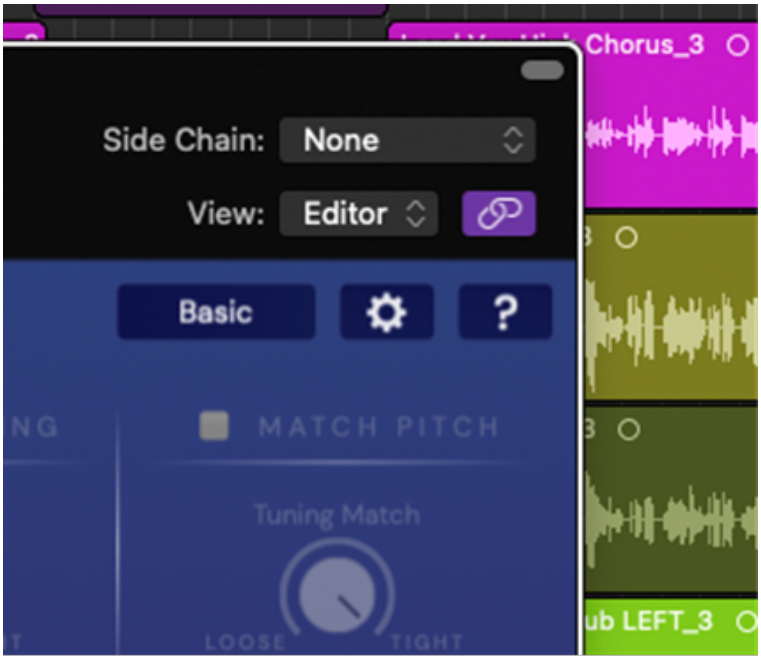
1. With the ‘Tiny Heart’ project loaded in Logic, add **VocAlign Ultra AU** as an **Insert effect** on the **Lead Vox High Chorus** Track by selecting **Audio FX** > **Audio Units** > **Synchro Arts** > **VocAlign Ultra** AU as shown below. This will be our **Dub**, to be aligned with the **Guide**.



2. At the top right of the VocAlign Ultra window set the **Side Chain** input selector as shown below (with the word "None") to the **Lead Vocal** track, which we'll use as our **Guide**.



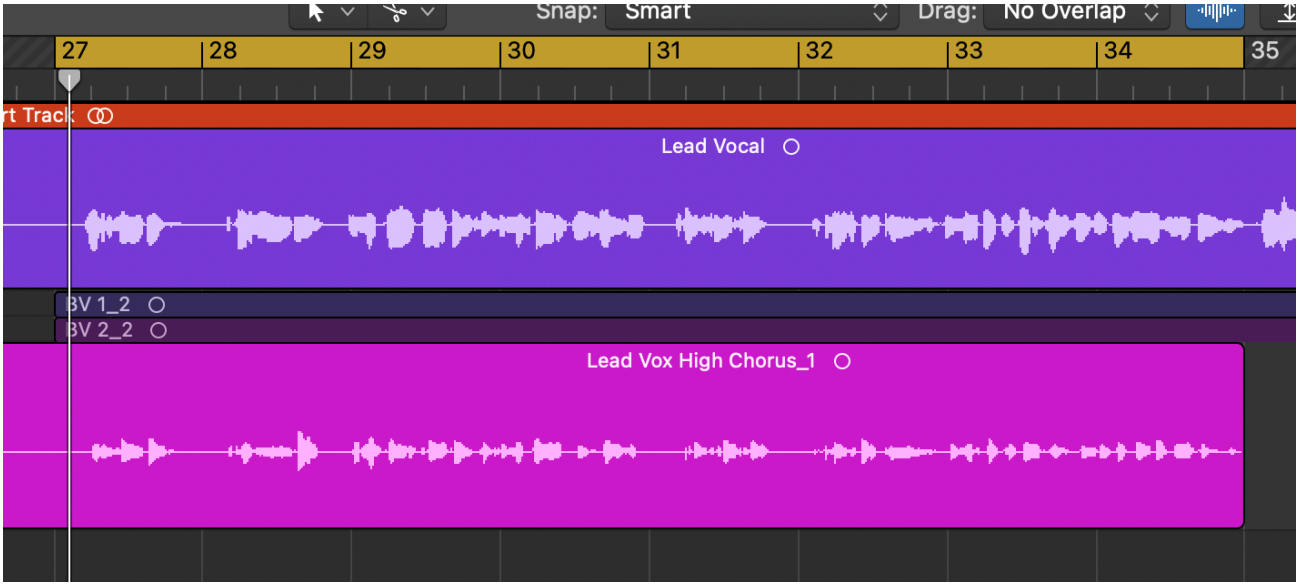
Also at the top right of the plug-in window click the Link (Chain) to ON which will have a purple background. This means you only will get one VocAlign Ultra window, even though you may have created several instances.



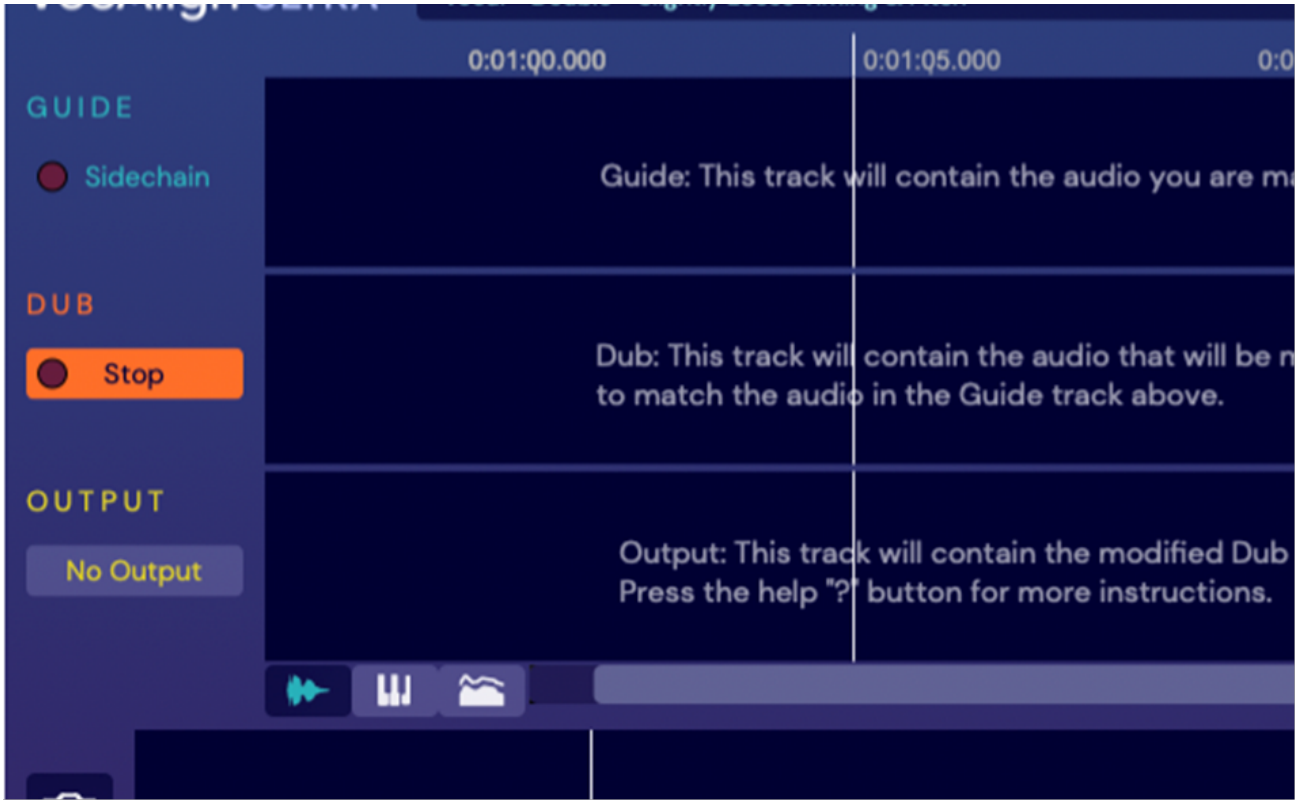
3. NOTE: If you don't see the Sidechain control, click the gray button at the top right corner of the plug-in as shown below:

4. Solo the **Lead Vox High Chorus** and **Lead Vocal** tracks if you want to hear them as you capture them.

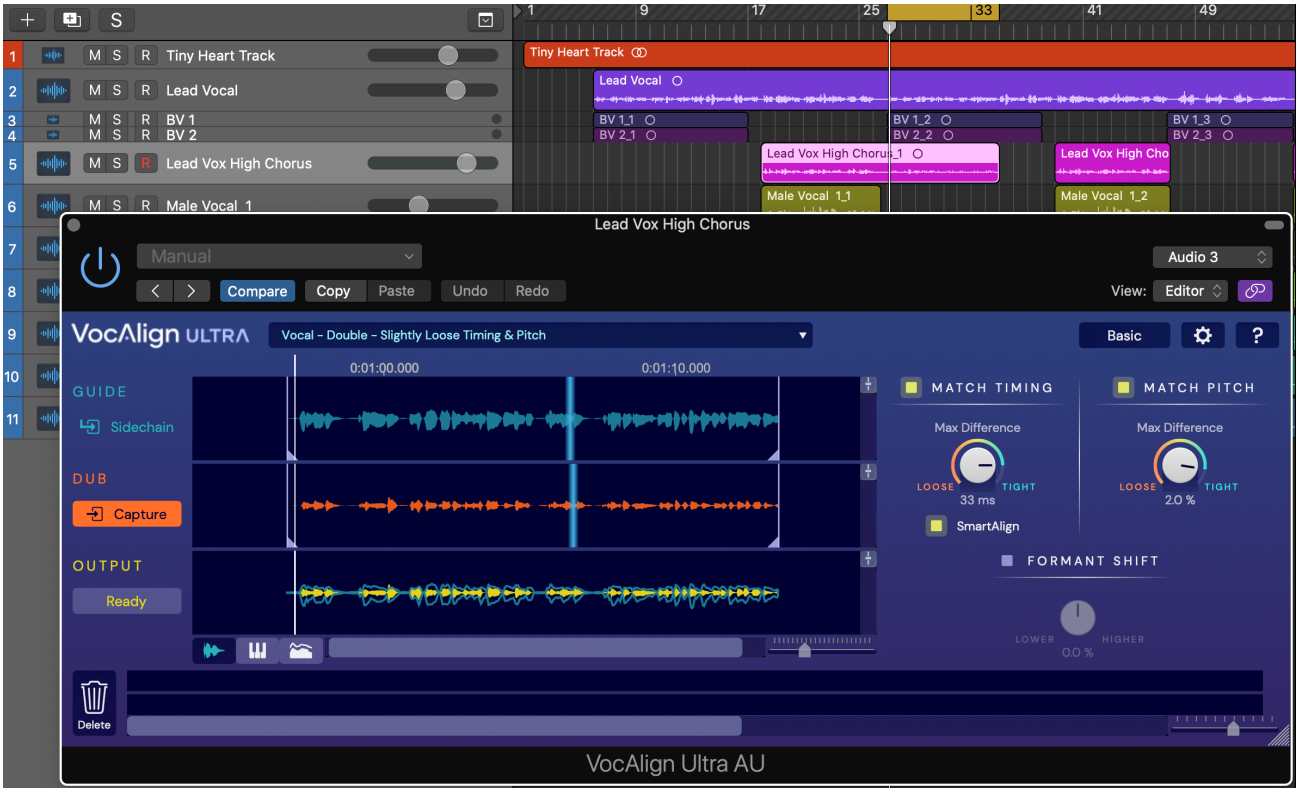
Set Logic's Cycle range from bar 27-35, to isolate the required section so you can check it after processing.



5. Select a Preset. For this case, **Vocal > Double > Slightly Loose Timing & Pitch** .
6. Click the **Capture** button in VocAlign Ultra and start playback of the **Guide** and **Dub** in Logic Pro – the button will change to **Stop** and capture will begin. The red lights in the Guide and Dub track will flash to show capturing is taking place.



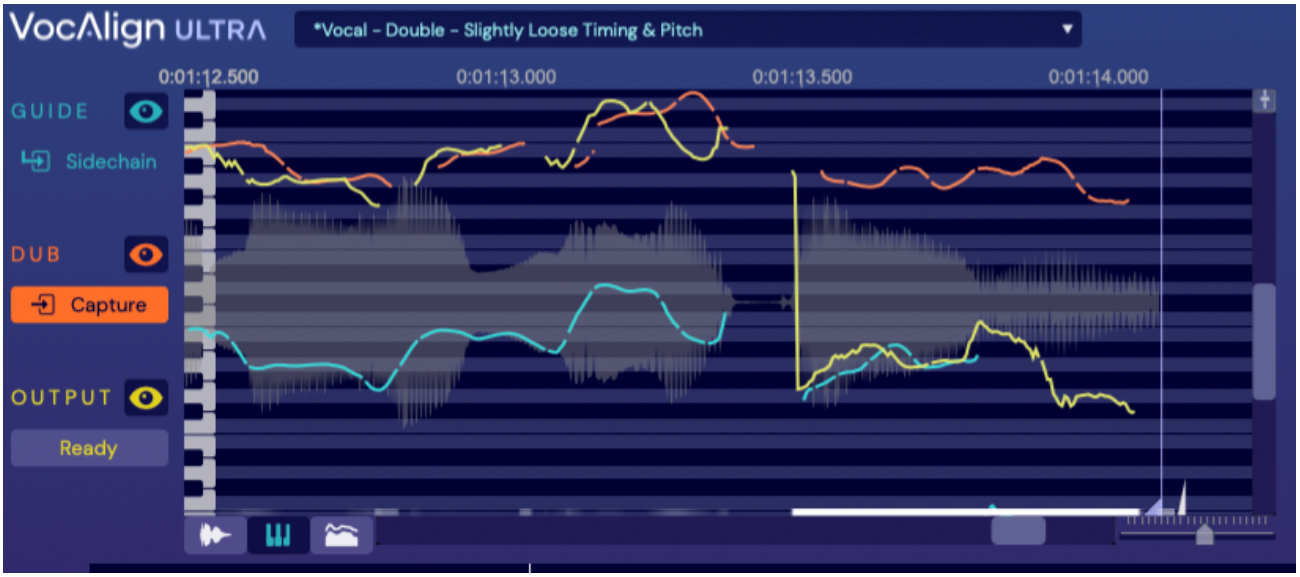
7. Press stop in Logic (or the Stop button in VocAlign Ultra) at the end of the range. The captured audio waveforms will appear in the **Guide** and **Dub** sections of the display, and the aligned Dub will appear in the **Output** section.



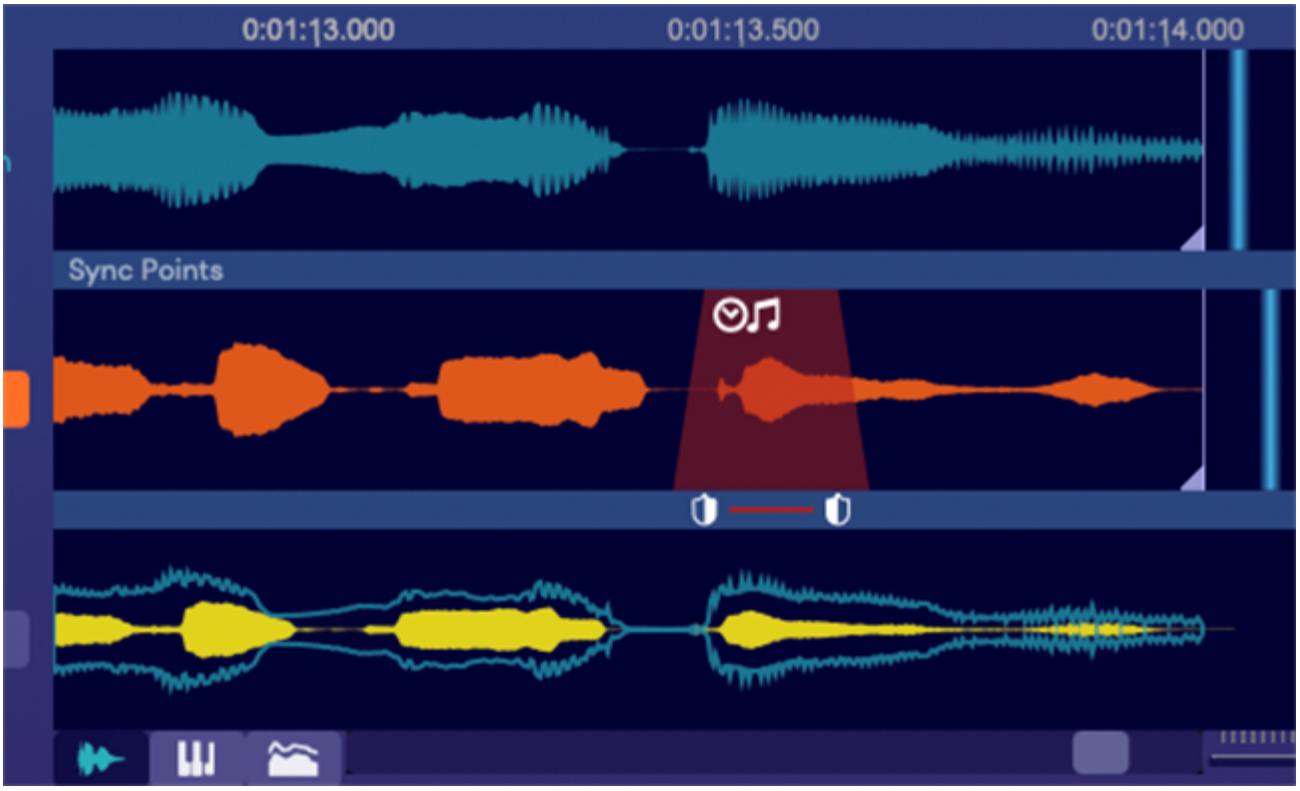
Correcting areas where the Guide Pitch is uncertain or too different from the Dub's

There are a few points in the Output where the differences in pitch movement between the Guide and Dub result in over-alignment of the Dub. We can fix these by creating **Protected Areas** within the Dub – areas that are 'immune' to changes in pitch, time or both. The most obvious anomaly happens with the word "again" at the very end of the phrase.

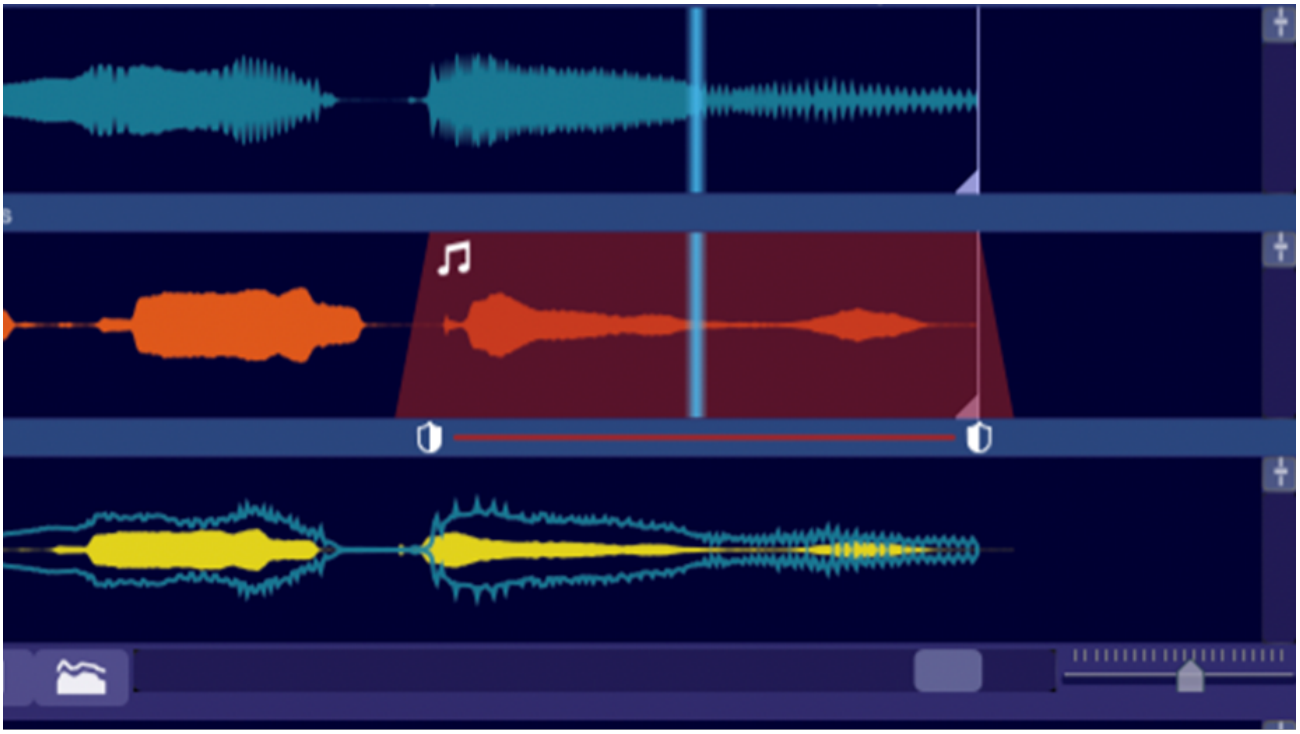
1. For a visualisation of this, switch to the Pitch Profile View by clicking the keyboard button below the main display, and zoom in on the very end of the Dub. You'll see a big, unnatural pitch drop in the Output signal (the yellow trace). To see what processing was done, you can toggle the **Match Pitch** button off and on and the last section of the Output will jump between the natural pitch of the Dub and the incorrectly aligned pitch.



2. Switch back to the **Waveform** view by clicking the waveform button next to the **Pitch Profile** keyboard button. Click the **Basic** edit mode button to switch to **Advanced** mode, then click the dividing bar between the Dub and Output waveforms at the start of the unnatural pitch drop to create a new Protected Area.



3. Drag the ‘shield’ handle at the right hand end of the Protected Area to encompass the last ‘piece’ of the Dub waveform, then right-click in the Protected Area and select **Modify Protected Area > Protect Pitch** – now the timing will be aligned but the pitch won’t. As an exercise, work back through the Dub, adding further Protected Areas where required.



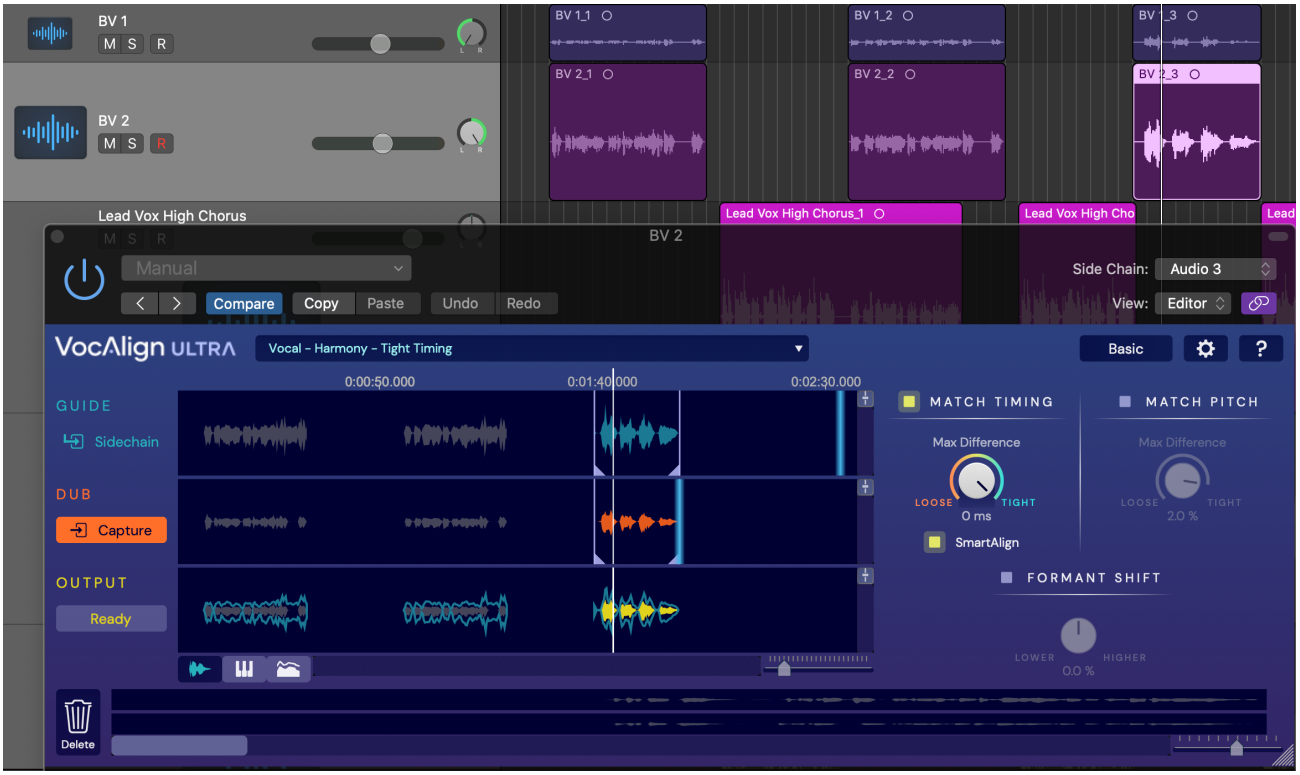
Matching the Timing of a Harmony to a Lead Voice

Now let's align a harmony vocal. In this case, we don't want to match its pitch to the Guide, so it needs to be reasonably in tune.

1. Load VocAlign Ultra onto the **BV2** track (the Dub), then set Logic's Cycle markers to 47 and 56.
2. Select the Preset: Vocal - Harmony- Tight Timing to tightly match lock the **BV2** region's timing – but not pitch – to that of the **Lead Vocal** region.
3. Set the **Sidechain** input in the new instance of VocAlign Ultra to the Lead Vocal track again (the Guide. Press **Capture** and the screen should look as below.

4. Start Playback in Logic and then press stop playback in Logic, or the Stop button in VocAlign Ultra at the end of the section.

5. To review what you've done, click in the VocAlign Ultra overview or main display – or select the relevant regions in Logic Pro – to switch between the three captures. You'll see the controls in VocAlign Ultra update accordingly. Note that you can add further Captures to any instance of VocAlign Ultra by simply repeating the Capture process at a different point on the timeline, using the same or a different Sidechain input as the Guide. You'll then be able to apply different Presets and settings to each Capture, if required, by clicking any one to select it, then making your changes.



6. To export the **Output** from VocAlign Ultra AU (ARA) to a track, select a Dub region in Logic Pro, then go to the **File** menu or right-click the region and select **Bounce** > **Regions in Place...** (key command: **Ctrl**+**B**). Adjust the various options presented in the Bounce dialog, as required – replace the region on the track or bounce to a new track, mute the original track, etc.

More about Bouncing

Note that the Real-time Capture version (non-ARA) cannot reconnect the rendered audio back to VocAlign Ultra.

More details on saving my output audio

For a complete explanation of the options for saving VocAlign Ultra's output audio read this chapter.

7.3. VocAlign Ultra QuickStart for DAWs using VST3 plugins

Quick Start for VST3-compatible DAWs

Studio One, Cubase, Nuendo, Ableton Live, Reaper, Cakewalk

For **OTHER DAWS** you can check here for an up-to-date list of DAWs compatible with VocAlign Ultra

Overview

In this Quick Start Guide, you will learn how to set up your VST3-compatible DAW and the VocAlign Ultra plug-in to be able to load audio into VocAlign Ultra, process it, and return the processed output to your DAW.

What about my DAW?

We will show how this VocAlign Ultra works using Studio One as an example.

However, very similar procedures apply to Cubase, Nuendo, Live and many other DAWs using VST3.

IMPORTANT: Whenever there is a difference in operations from Studio One and the other DAWs listed, **we will provide links to EACH DAW's specific instructions** for you to follow, after which, you will be returned to this main section to continue to follow the instructions in Studio one, but common to all DAWs mentioned.

If you are new to our products, the audio transfer procedures might seem more complex at first than other plug-ins.

This is because you have to tell VocAlign Ultra which track is the Guide and which track(s) are the ones that need their timing and/or pitch adjusted by VocAlign Ultra to match the Guide's.

We won't go into details in this Quick Start about the control panels or displays, as those will be described in detail in the sections in the folder **Using VocAlign Ultra**.

One last note - because we started long ago in the film industry, we call audio to be modified and output the "Dub".

Installation and Initial Setup

To continue, you will need to have **downloaded, installed and authorised the VocAlign Ultra plug-in** on your computer.

If you haven't done all of these, go to **Installation and Authorization** for instructions.

Ready to go? Let's get a sample session to work with.

Click the Download link below for your DAW:

- STUDIO ONE - Download Song
- CUBASE / NUENDO - Download Session
- LIVE - Download Session

and then load the Session/Song into your DAW.

Two Versions of VocAlign Ultra VST

VocAlign Ultra loads as a VST3 plugin in Studio One, Cubase and other VST-compatible DAWs.

Two different versions are loaded.

1. **VocAlign Ultra VST3 (Real-time capture)**

   ⚠ **This should run in most DAWS that support VST3 Side-chains.**

2. **VocAlign Ultra VST3 (ARA)**

This will only run in more recent VST3 DAWS which will be listed in instructions below.

The two plugins both feature the same processing controls, presets and parameters, and are identical in terms of the end results they deliver.

They differ only in the way audio signals are brought into VocAlign Ultra and how the Output is returned to the DAW.

Remember, not all DAWs support ARA, so you may only find the **VST3 (Real-time capture)** version in yours.

- The **VST3 (ARA)** plug-in is applied in most VST3 DAWs to "events"/"Clips"/"Segments" etc. that you want to process in both Guide and Dub tracks, and the user “Captures” the digital audio directly as the designated Guide or Dub in an "instant transfer” process. However, in other DAWs, you will apply it in a track.
- It's important to understand that the ARA version loads as a single 'extension' in the host DAW, and although it might appear that you're adding the plugin to each discrete event or region being processed, you are in fact adding those events or regions to the same single instance of VocAlign Ultra ARA.
- We recommend using this approach if your DAW supports it.
- The main advantages of this approach are that the capture is faster than real-time and you can bounce the processed audio to disc.

- A disadvantage is that the bypass function does not work in the ARA version, but it works in the VST version.
- The **VST3 (Real-time capture)** plug-in version is a track insert plug-in and involves making a real-time playback to capture both the Guide (as a side chain input) and the Dub simultaneously.
    - The main advantage of this approach is that you can start and stop the capture of Guide and Dub at any points in your session.
    - The main disadvantage is that if you export the Output to replace the input Dub it removes the plug in and there is no undo to restore the plugin to modify the processing.

For more detailed comparisons between these two approaches, go to this section VocAlign Ultra Plug-in Versions and DAWs.

If your DAW only supports the VST Real-Time Capture click Using the VST3 Real-time version of VocAlign Ultra

Using the VST3 ARA version of VocAlign Ultra

[Updated video for VocAlign 1.1 in Studio One with SmartAlign workflow forthcoming]

This section explains how to use VocAlign Ultra as an ARA plug-in with audio editors that support ARA.

Because ARA is relatively new, sometimes only newer versions of DAWs will support this method. Your DAW instructions will probably make it clear that yours has this feature.

For most audio editors such as Studio One or Cubase Pro, VocAlign Ultra needs to be added to each clip of audio (Audio Event) as an effect (Event Fx), whereas others such as Reaper, VocAlign Ultra can also be added as a track effect (Fx).

ℹ The steps below describe how to use VocAlign Ultra as an ARA plugin in Studio One.

The steps for using VocAlign Ultra with the other DAWs are identical, apart from Step 2, which describes how to add VocAlign Ultra to an Audio Event in Studio One (i.e. a region, clip, segment of audio in other DAWs.

Define the audio to process

To follow these instructions, make sure you have downloaded and opened the session for your DAW described above if listed.

1. We want to align the out-of-time **Lead Vox High Chorus** double track with **Lead Vocal**, so **Lead Vox High Chorus** is our **Dub** and **Lead Vocal** is our **Guide**. First, we need to load VocAlign Ultra ARA. Here, we'll show you how to do that in Studio One, but to **learn how to add VocAlign Ultra VST ARA plug-in to**

- **Cubase/Nuendo** - **click here**

2. In Studio One, VocAlign Ultra is added to Audio Events as an Event FX.

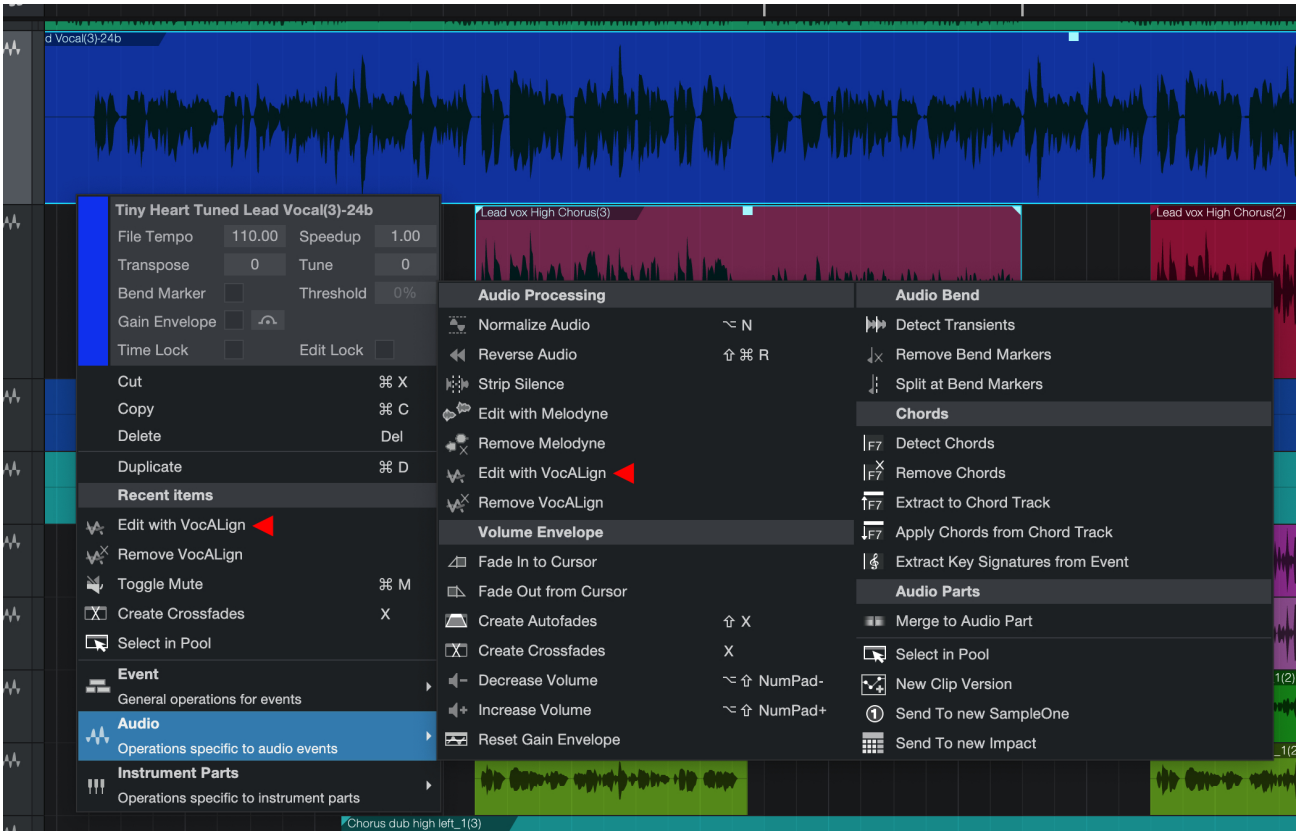
If **Studio One Professional 5** does not show the **Edit with VocAlign** command in the **Audio** menu after installing VocAlign Ultra, please update to Studio One version 5.1.2.62686. The **Edit with VocALign** command will appear in the **Audio** menu and VocALign Ultra will respond to it.

In **Studio One Professional 4**, you can still use VocAlign Ultra as an ARA plug-in: hold down the Option key on your computer keyboard and drag the VocAlign Ultra VST plug-in from the Effects Browser onto all the selected Audio Events you want to process - Guides and Dub(s).

Select the Guide (**Lead Vocal**) and Dub (**Lead Vox High Chorus**) Audio Events in Studio One.

Then, depending on what version of Studio One you have, from Studio One's **Audio** menu, select **Edit with VocAlign**, or drag the VocAlign Ultra VST plugin onto any selected Audio Event from the Browser while holding down the **Option** key.

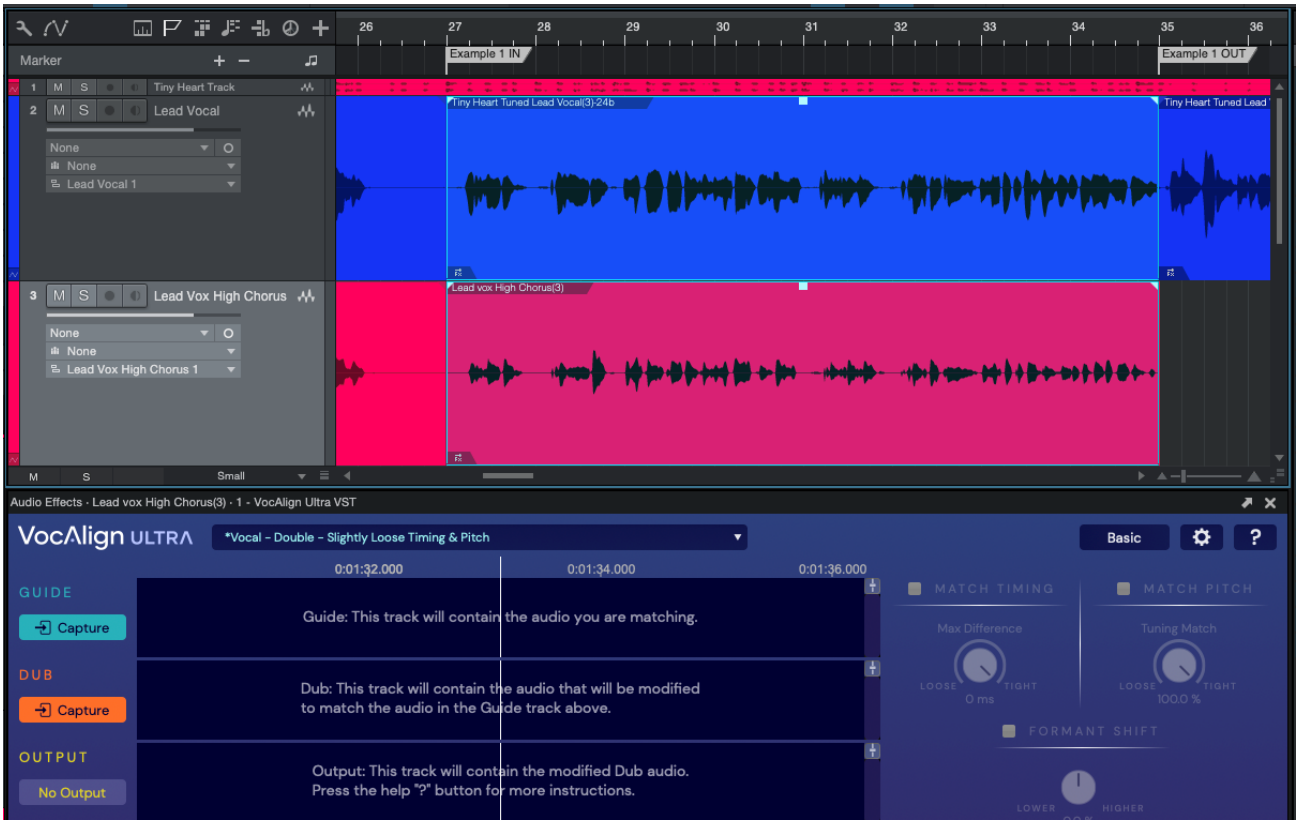
This will add VocAlign Ultra to both selected Audio Events, and selecting either of those Audio Events will open the VocAlign Ultra interface in the Studio One Edit panel.



2a. If you are not using SmartAlign, do the following before moving to step 3:

- Solo the **Lead Vocal** and **Lead Vox High Chorus** Tracks if you like, and set your DAW's Cycle range from bar 27-35 to loop the section you'll be working on.
- Split the **Lead Vocal** region at bars 27 and 35, and the **Lead Vox High Chorus** region at bar 27 to isolate the required sections.

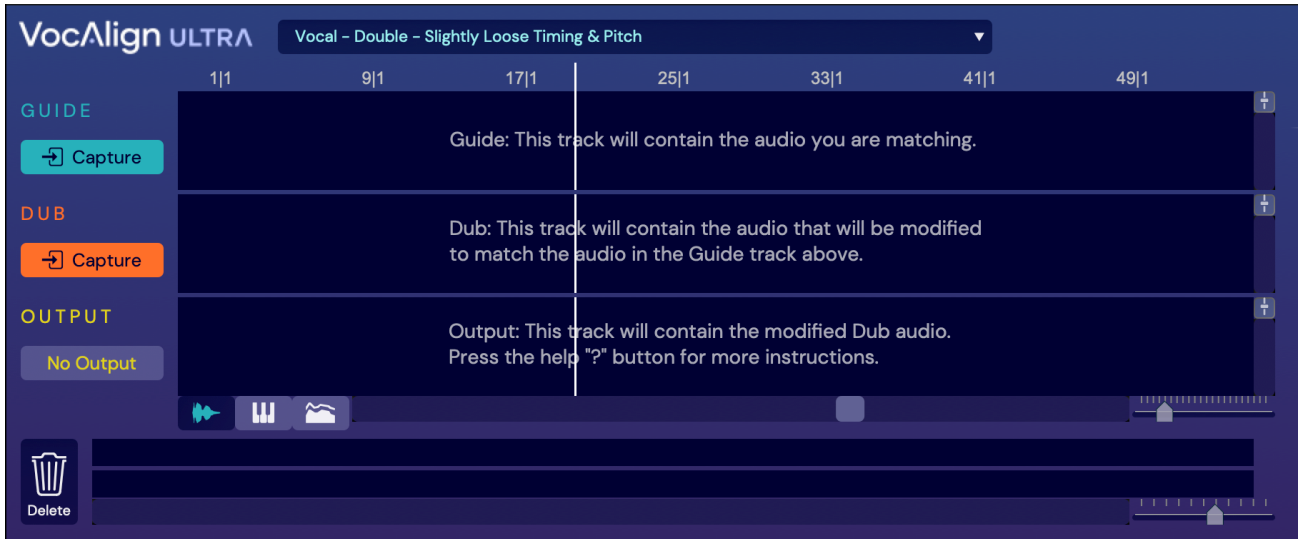
NOTE: We've only capturing a single Dub here, but with ARA you can capture multiple stacked Dubs at the same time which will initially be processed by the same Preset. This will be detailed in the main User Guide.



How to Align a Double

(Remember, we're using Studio One as an example, but the steps taken to process the Dub audio are now exactly the same in all other VST3 ARA plugin hosts.)

3. In VocAlign Ultra, select the Preset **Vocal > Double > Slightly Loose Timing & Pitch** .



TIP: If you want to change a Preset to process the next Dub, change it AFTER YOU CAPTURE THE NEXT GUIDE !!

4. Next, in your DAW, select the **Guide** audio – that's the Audio Event (Clip, Segment, etc.) on the **Lead Vocal** track.

If you are working with a preset that specifies SmartAlign OFF or you have disabled SmartAlign, the Guide Audio Event (Clip, Segment) must match the start and end time of the Dub. We prepared this in step 2a.

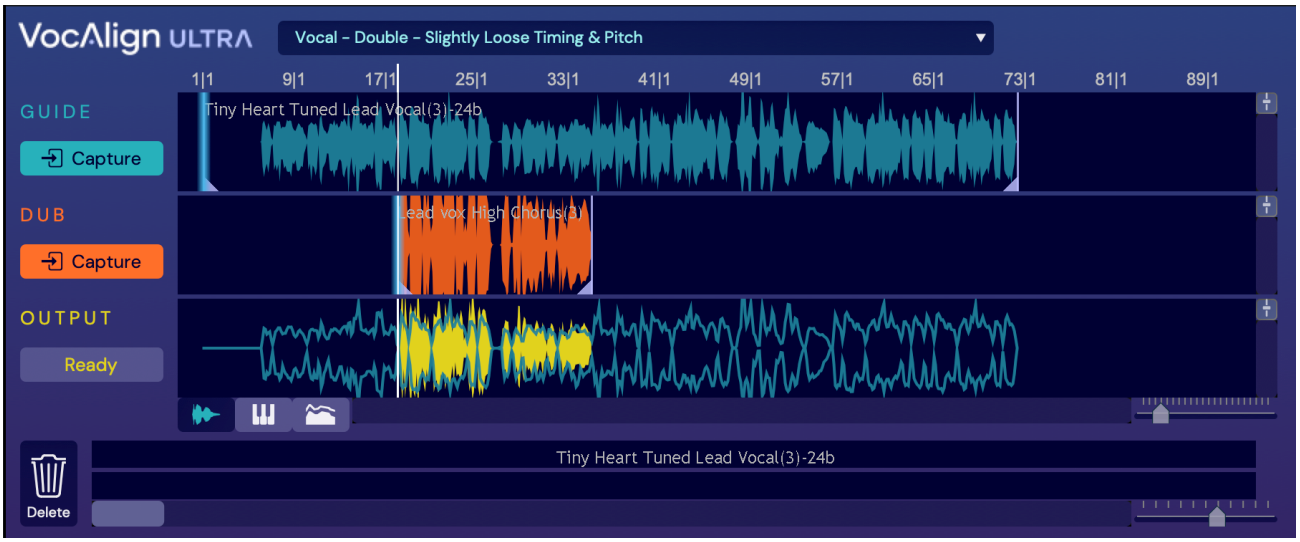
Then press the Guide **Capture** button.

The audio waveform will appear in the Guide section and an outline will appear in the Output track for comparison with the Output, when it is created.

5. Select the corresponding Audio Event on the **Lead Vox High Chorus** Track. The press the Dub **Capture** button.

The Dub waveform appears in orange in the Dub section, and VocAlign Ultra automatically processes the Dub to the Guide and creates the aligned Output, represented by the yellow waveform in the Output section.

Start playback in your DAW to hear the **Lead Vox High Chorus** track play the aligned Output signal from VocAlign Ultra.



6. Because we've chosen an input with 'typically' uncertain pitch in a few places (ie, vocal 'creaks' at the end of some phrases), when VocAlign Ultra makes the Dub match these areas of 'incorrect' Guide pitch, it will affect the Output at these points.

We can fix these by creating **Protected Areas** within the Dub. These are areas that maintain the original Dub's pitch, timing or both.

The most audible anomaly in our example happens in the word "again" at the very end of the phrase.

For a visualisation of the signals' pitches, switch to the Pitch Profile View by clicking the keyboard button below the main display, and zoom in on the very end of the Dub. Use the vertical slider at the right of the display and the **Scale** control above it. You'll see the **Guide** (blue) pitch shows an octave drop when it gets 'creaky', which affects the pitch quality in the **Output** signal (the yellow trace).

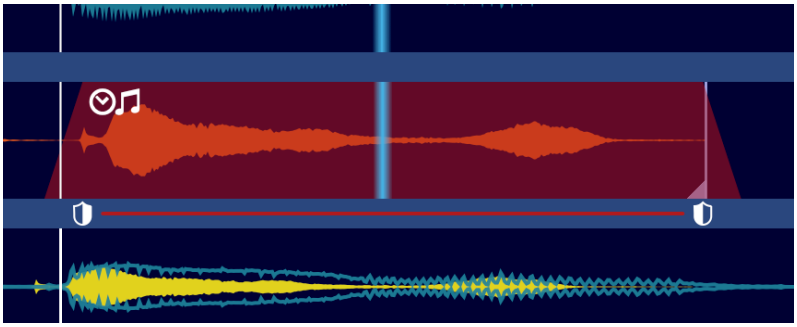
You can see the issue if you toggle the **Match Pitch** button off and on and the last section of the Output will jump between the natural pitch of the Dub and the incorrectly aligned pitch.

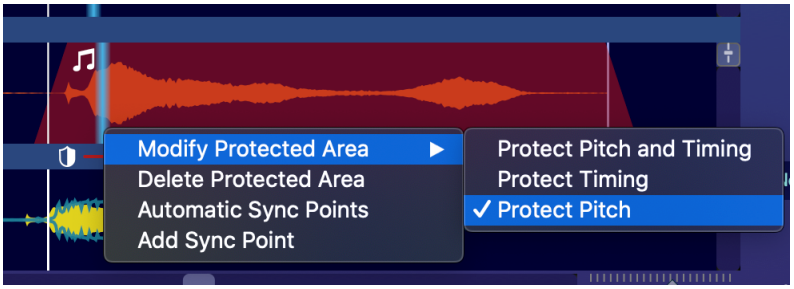
7. Double-click in the **Pitch Profile** display at the start of the pitch drop to set the playback head at that point, then switch back to the **Waveform** view by clicking the waveform button next to the **Pitch Profile** keyboard button.

Click the **Basic** edit mode button to switch to **Advanced** mode, then click the dividing bar between the Dub and Output waveforms at the playhead position to create a new **Protected Area**.

8. Drag the 'shield' handle at the right hand end of the Protected Area to encompass the last 'piece' of the Dub waveform, then right-click in the Protected Area and select **Modify Protected Area > Protect Pitch** – now the timing will be aligned but the pitch won't.

As an exercise, work back through the Dub, adding further Protected Areas where required.





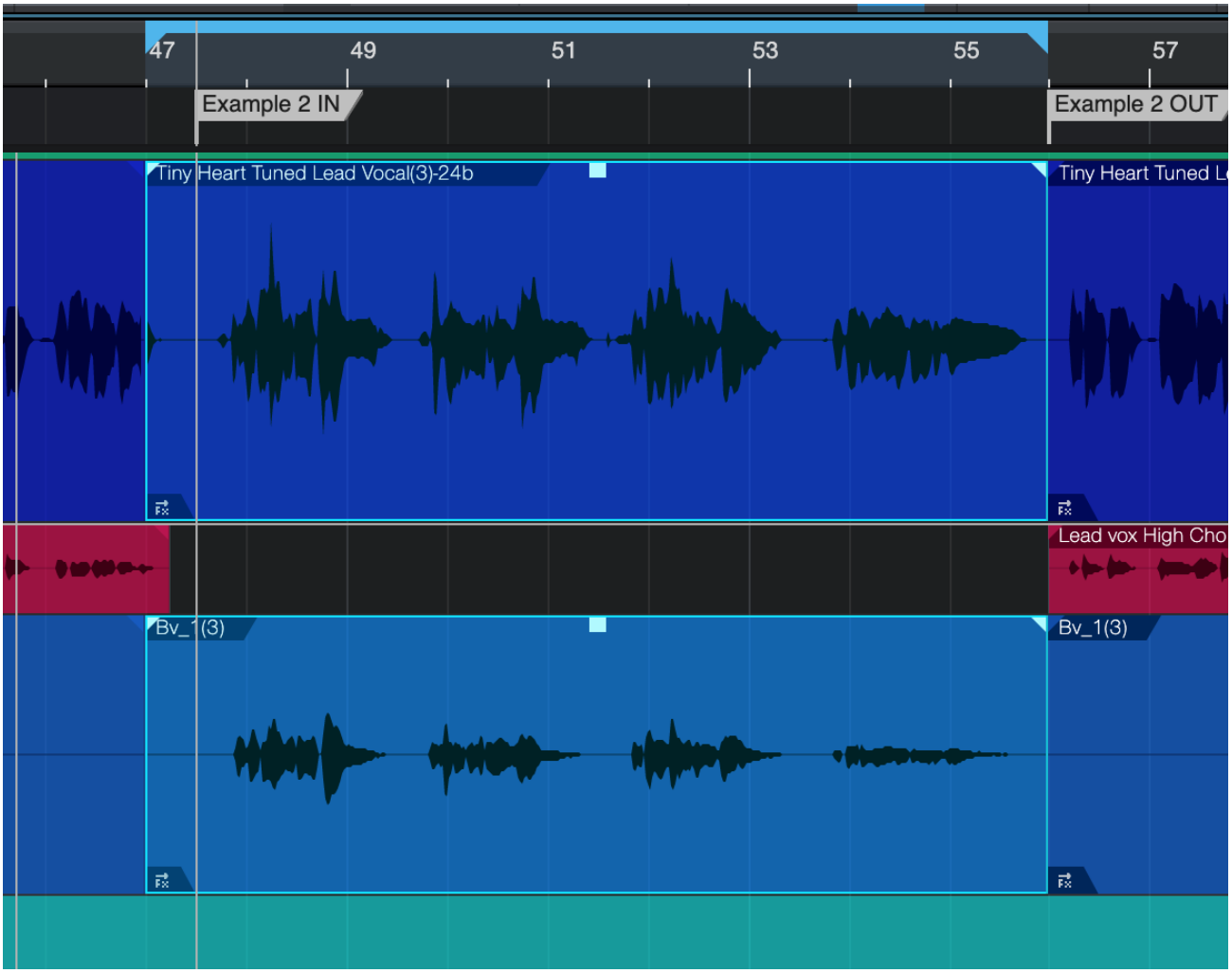
How To Align a Harmony

9. Now let's align a harmony vocal. Select the BV2 audio event, and capture it as a new Dub. Since the ARA version can work with multiple Dubs, we do not need to change the guide.

If you need to change which Dub region you are working with, select the audio event in your DAW, or right click the dub waveform track and Select Audio as described in User Interface and Operation.

9a. If you are not using SmartAlign, do the following instead:

First, split the **Lead Vocal** and **BV2** tracks at bars 47 and 56, and set your DAW's Cycle markers to cover the resulting range.



Then select both Audio Events and add VocAlign Ultra as an Event FX on each, as described in Step 2 above.

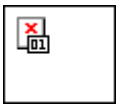
Then select the Lead Vocal event and Capture it as your guide. Continue to Step 10.

10. Click the Preset menu and load the **Vocal > Harmony > Tight Timing** preset to lock the **BV2** region's timing, but not pitch, to that of the **Lead Vocal** region. VocAlign Ultra automatically processes the Dub to the Guide and creates the aligned Output, represented by the yellow waveform in the Output section.

10a. If you are not using SmartAlign, do the following instead:

Click the Preset menu and load the **Vocal > Harmony > Tight Timing** preset to lock the **BV2** region's timing, but not pitch, to that of the **Lead Vocal** region.

Now select the BV2 audio event and press the Dub Capture button. The Dub will be captured and VocAlign will create the aligned Output, represented by the yellow waveform in the Output section.



REMINDER: Do not change the Preset or ANY control before you've Captured a new Guide or you will, in fact, be reprocessing the previous Dub audio.

Here is the safest order in which to perform your operations:

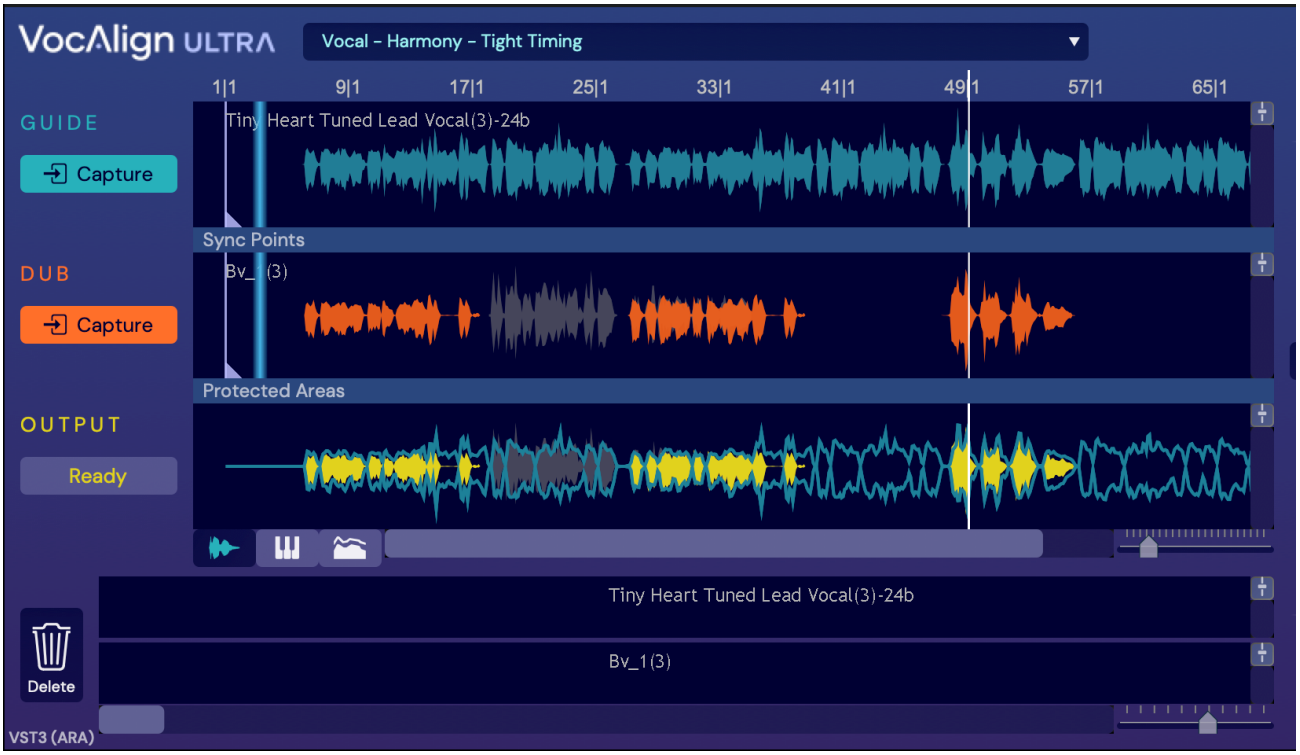
1. Before you move on to capture a new Guide, don't change the preset or any control.
2. Capture your new Guide.
3. Change the preset or controls after the new Guide has been captured (if you want to)
4. Capture the Dub (it will be automatically processed with the new preset and control settings).

11. VocAlign Ultra now contains two separate Dubs sourced from two different tracks, each set to a different preset.

Switch between them for editing by selecting them in the main display or Overview, or by selecting their source regions in the host DAW's arrange page. You can also right-click the waveform and highlight Select Audio. The selected area will be coloured in, while all unselected areas will be greyed out.

High Chorus Double selected:

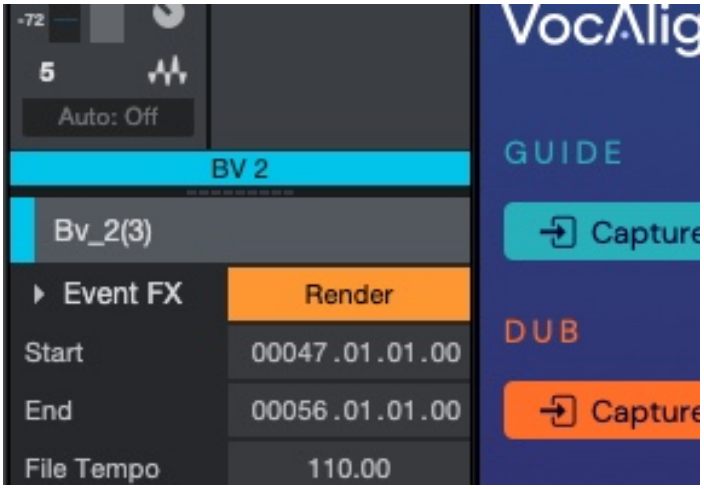
BV2 selected:



If you are using the non-SmartAlign workflow, you will see a screen similar to this:

12. To render the aligned audio permanently in Studio One, select the Dub audio event, then press **Render** in the audio event's Event FX information panel. This is normally visible at the bottom of the left side of Studio One's main display, if the Inspector is enabled in the **View** menu. The **Render** button becomes the **Restore** button once rendering is complete: click **Restore** to undo the render and recall the original audio Event, with VocAlign Ultra ARA in place.

Please see your DAW's manual for instructions on rendering ARA plugin outputs if you're not using Studio one.



TIP: Unless you render the aligned audio, it will continue to be applied as a real-time effect, until the effect is turned off. This means that you will continue to hear it as it was originally aligned, even if you edit the original audio. To avoid any such confusion, render the effect before changing any audio in Studio One and it will then replay reliably. You can Restore the real-time effect after rendering in Studio One if you change your mind.

Processing a "Stack" of Dubs at the Same Time

If you have several Dubs that all have similar audio (i.e. either Doubles or Harmonies - but not both at the same time), you can select the Dub events and process them at the same time with the same settings. However, you will have to change the process setting for them individually after that, by selecting either the Dub in your DAW or right clicking in the VocAlign Ultra Dub window and selecting the Dub you wish to modify, one at a time.

Alternatively, you can use the Delete command to remove the Dubs and their Guide from VocAlign Ultra and then recapture them with a different setting, which the Dubs will all received at the same time and create new Outputs with the new setting.

END OF VST ARA INSTRUCTIONS

Using the real-time VST3 version of VocAlign Ultra

Although VocAlign Ultra can capture Audio Events almost instantly in ARA mode using the Event FX method described above, it can also be operated in Basic VST mode. The plugin is used as an Insert on the Dub track and the audio is captured in real time while playing. This can allow for finer control over what's captured, as you can select the exact start and end points required.

The steps below describe how to use VocAlign Ultra as a VST3 plugin in Studio One.

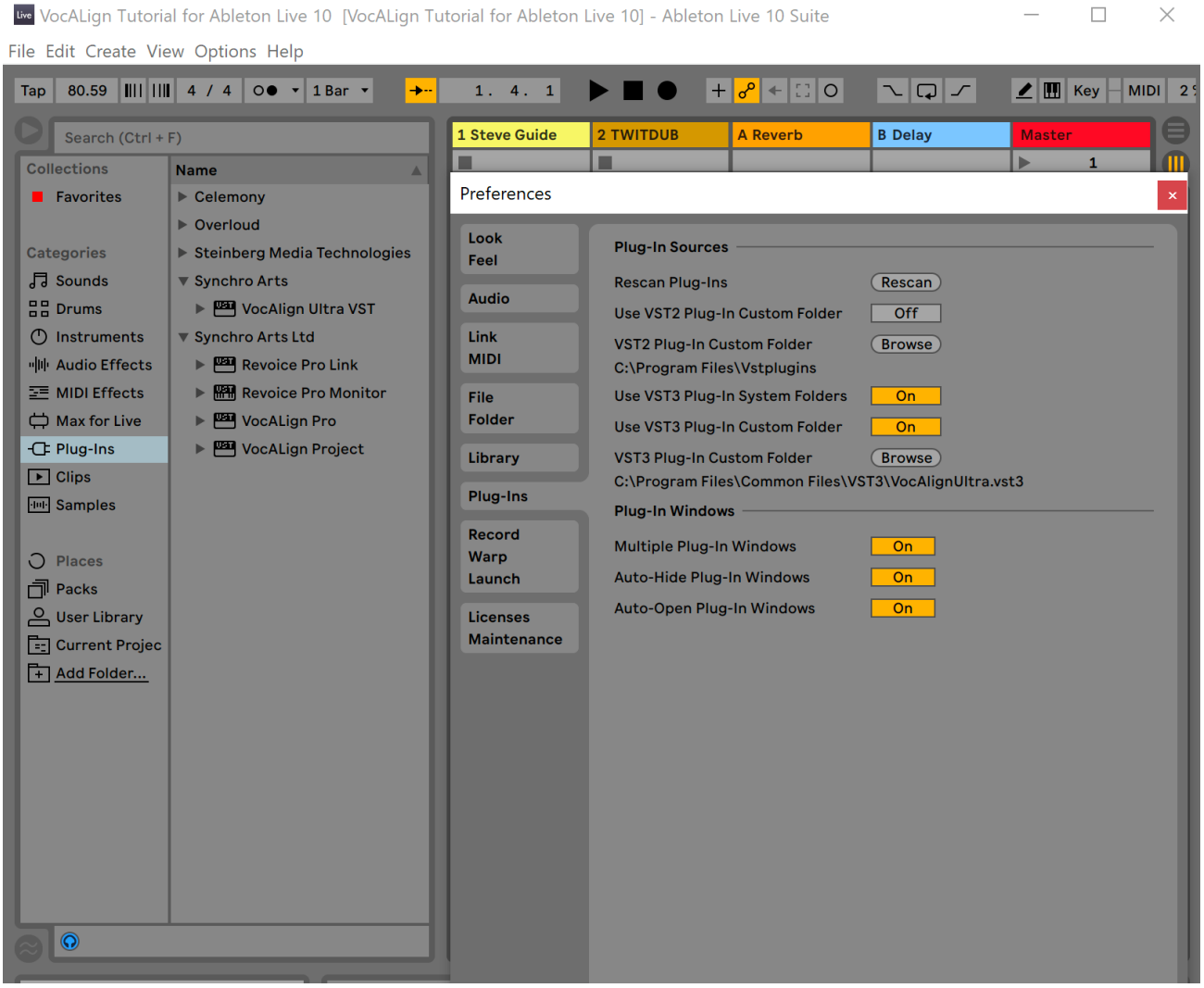
The steps for using VocAlign Ultra in the other DAWs are identical, apart from Step 2, which describes how to set up the sidechain input to VocAlign Ultra for capturing the Guide. We will provide a DAW-based jump to the instructions for this step.

NOTE: If VocAlign Ultra does not appear in Ableton Live for Windows, Click "Show More" below

You will need to set Custom folder path:

C:\Program Files\Common Files\VST3\VocAlignUltra.vst3

in the Live Preferences, as shown in this image



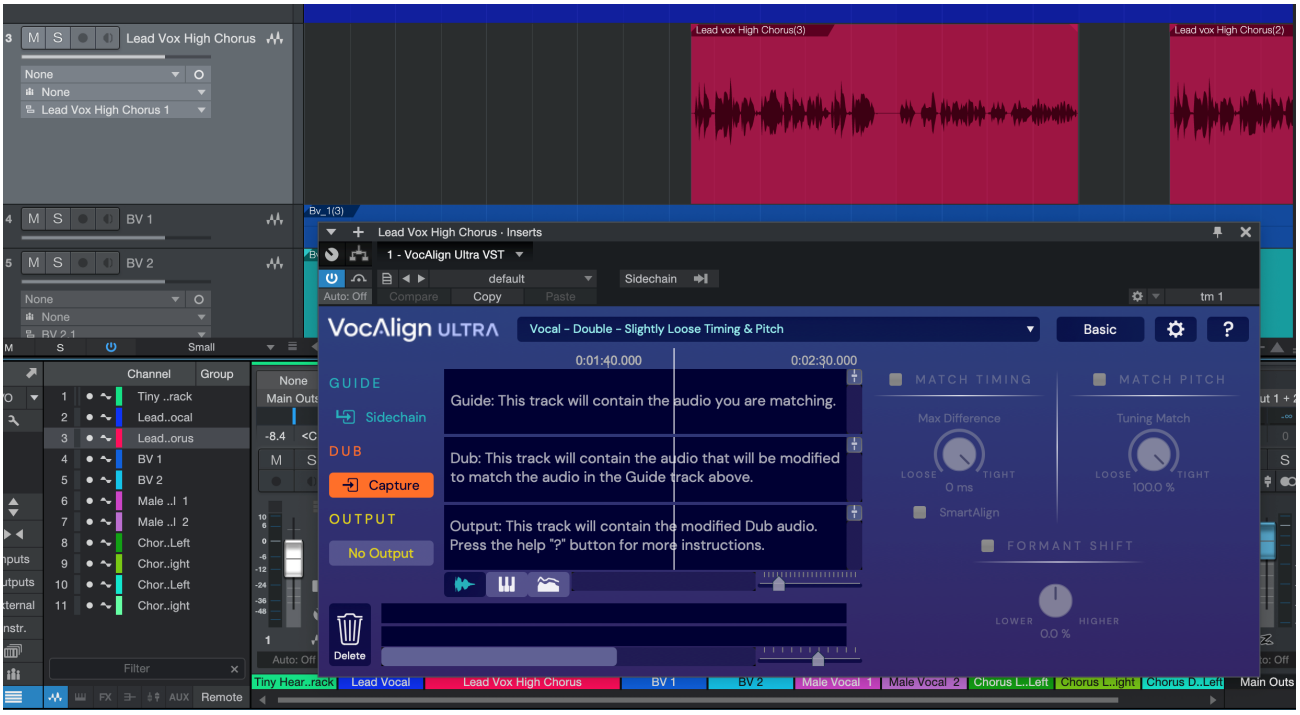
:

How To Align a Vocal Double

1. Add the VocAlign Ultra VST3 plugin as an Insert effect on the **Lead Vox High Chorus** track using your DAW's usual plugin loading system.

In Studio One, you can drag it onto the track from the Effects Browser, or load it via the Mixer. The **Lead Vox High Chorus** track will be our **Dub**.

Select the **Vocal > Double > Slightly Loose Timing & Pitch** preset in VocAlign Ultra.



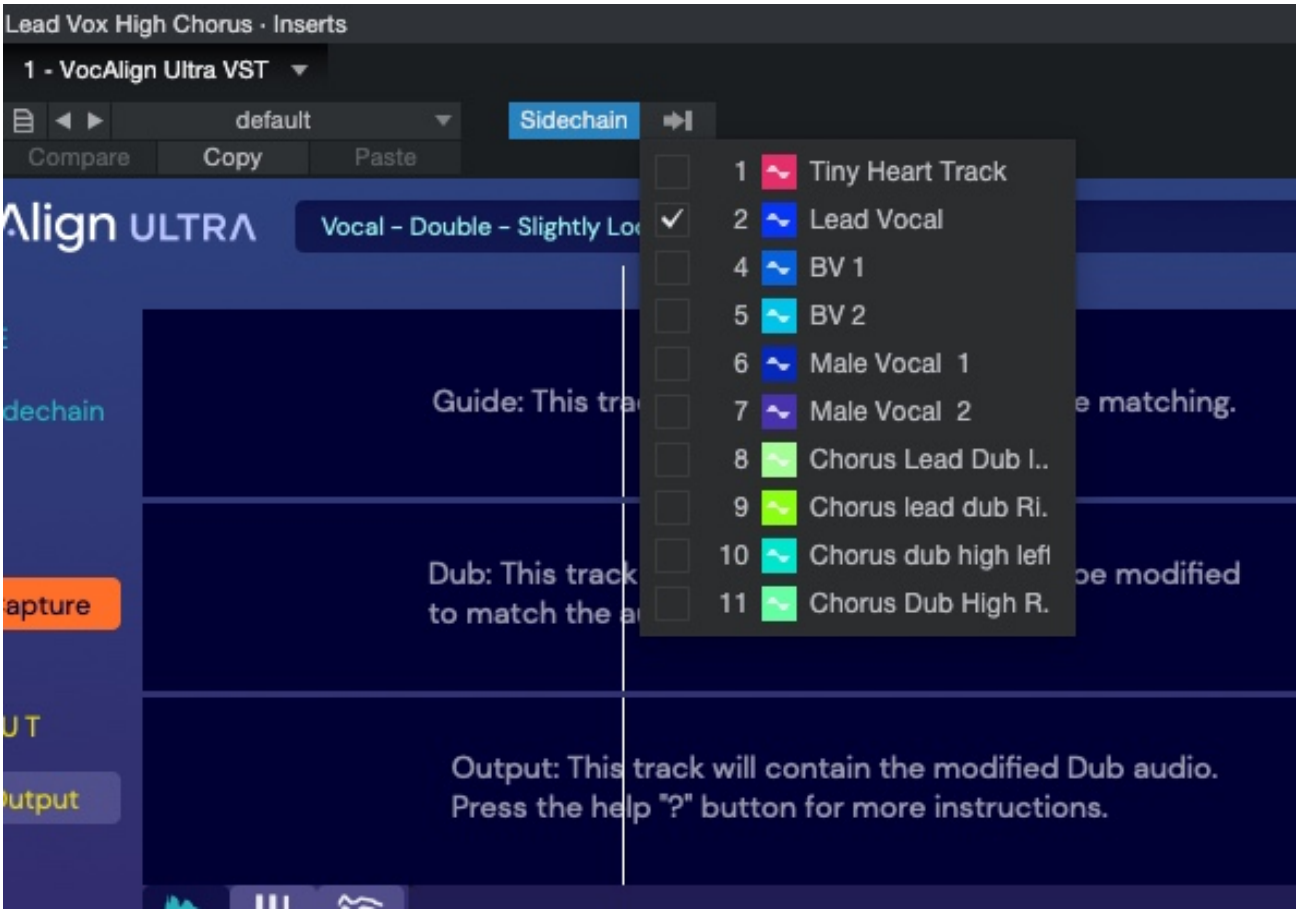
Setup a Guide Sidechain Input

To learn how to set up the Guide Side-Chain input for:

- **Studio One -** click here
- **Cubase/Nuendo** - click here
- **Ableton Live** - click here

For other DAWs, consult your DAW User Guide.

2. At the top of the VocAlign Ultra window set the **Sidechain** input to the **Lead Vocal** track. This will be our **Guide**.



Start Capturing the Guide and Dub Audio

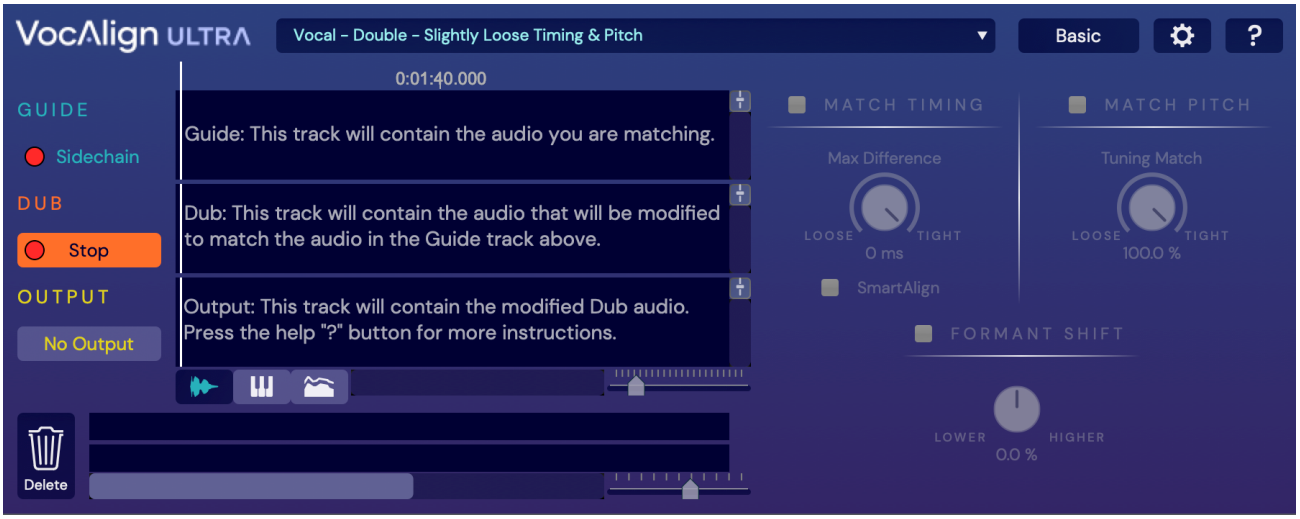
3. Move the play head in your DAW to the point at which you want your capture to begin, which in our case is bar 27, or set the Cycle range to encompass the whole area to be captured (bars 27-35).

Click the **Capture** button in VocAlign Ultra. It will wait for audio input.

Start playback of the **Guide** and **Dub** in your DAW.

The Capture button will change to **Stop** and capture will begin as shown by the flashing red lights under the Guide and Dub labels .

Note: the audio on the two captured tracks should start at roughly the same time.



Stop Capturing Audio

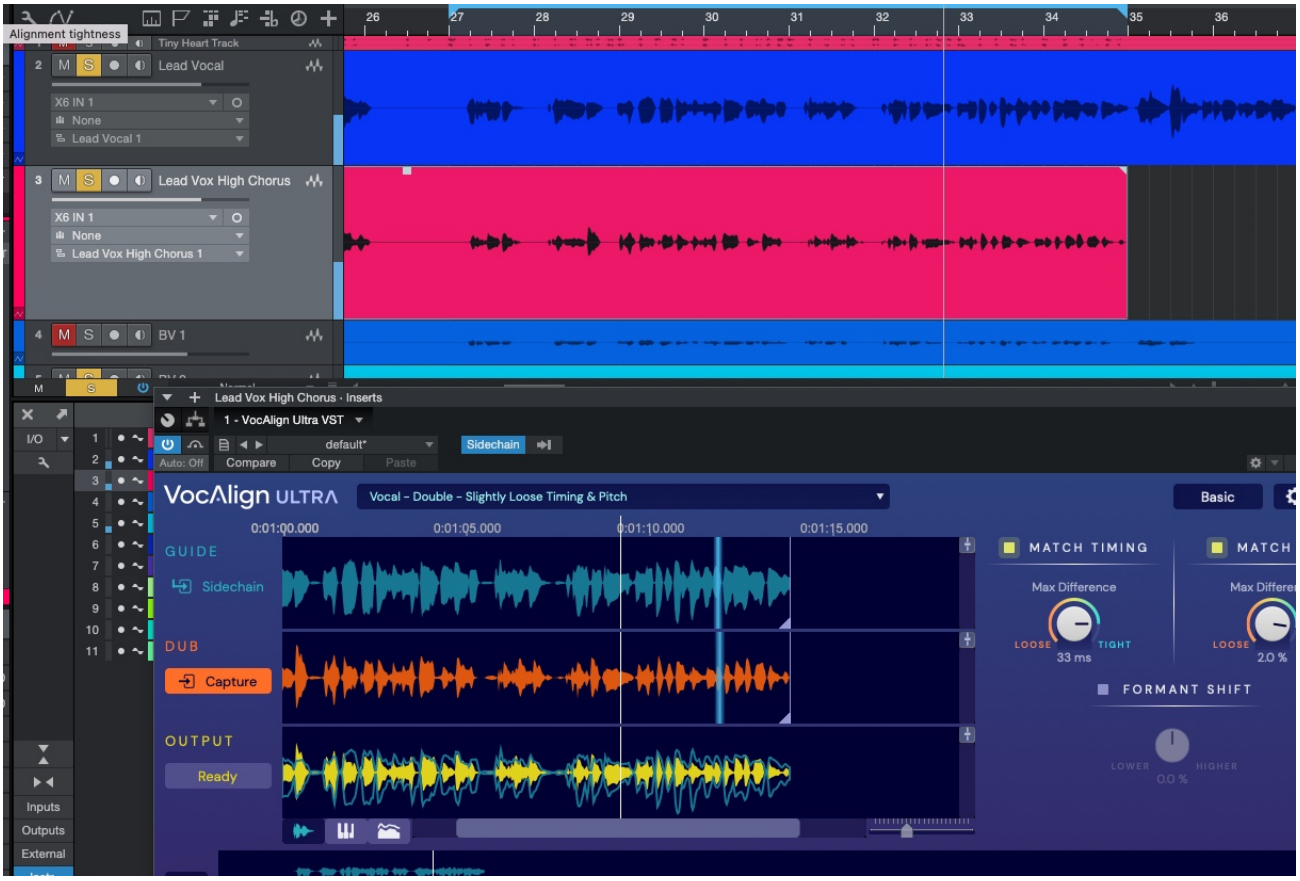
4. Stop playback in your DAW and click the **Stop** button in VocAlign Ultra – it will change back to the **Capture** button.

The captured audio waveforms should appear in the **Guide** and **Dub** sections of the display, and the aligned Dub will appear in the **Output** section.

Check the Output Audio

5. Start playback in your DAW – you'll see the playhead in VocAlign Ultra move in tandem with its DAW counterpart.

As long as playback is within the captured region you'll hear the **Output** signal from the plugin. When playback is *outside* the captured region, you'll hear the unprocessed audio on the track directly.



Find any issues

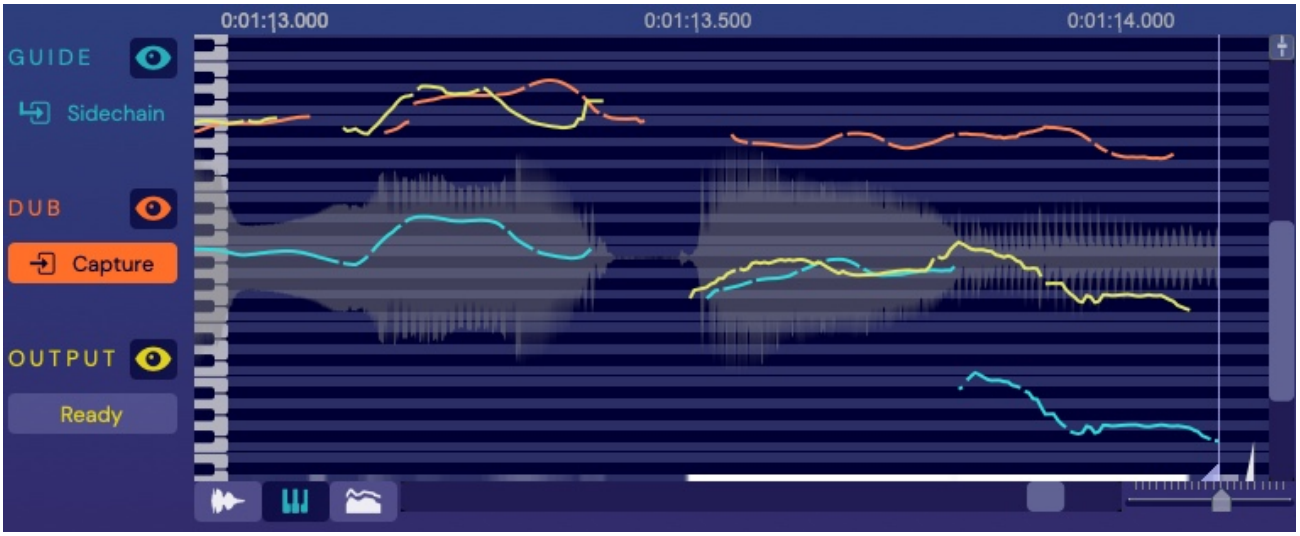
6. Because we've chosen an input with 'typically' uncertain pitch in a few places (ie, vocal 'creaks' at the end of some phrases), when VocAlign Ultra makes the Dub match these areas of 'incorrect' Guide pitch, it will affect the Output at these points.

We can fix these by creating **Protected Areas** within the Dub. These are areas that maintain the original Dub's pitch, timing or both.

The most audible anomaly in our example happens in the word "again" at the very end of the phrase. For a visualisation of the signals' pitches, switch to the **Pitch Profile** View by clicking the keyboard button below the main display, and zoom in on the very

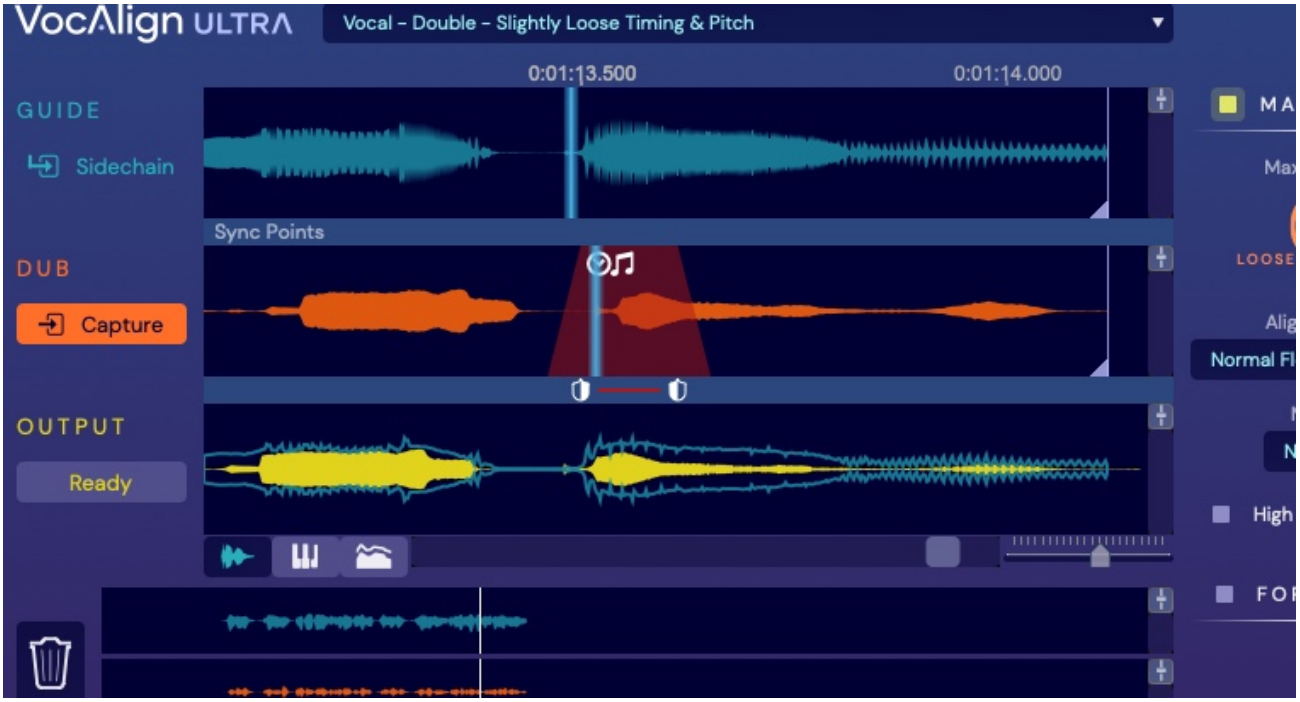
end of the Dub. Use the vertical slider at the right of the display and the **Scale** control above it.

You'll see the **Guide** (blue) pitch shows an octave drop when it gets 'creaky', which affects the pitch quality in the **Output** signal (the yellow trace). You can toggle the **Match Pitch** button off and on to see the this problem in the last section of the Output jumping between the natural pitch of the Dub and the incorrectly aligned pitch.

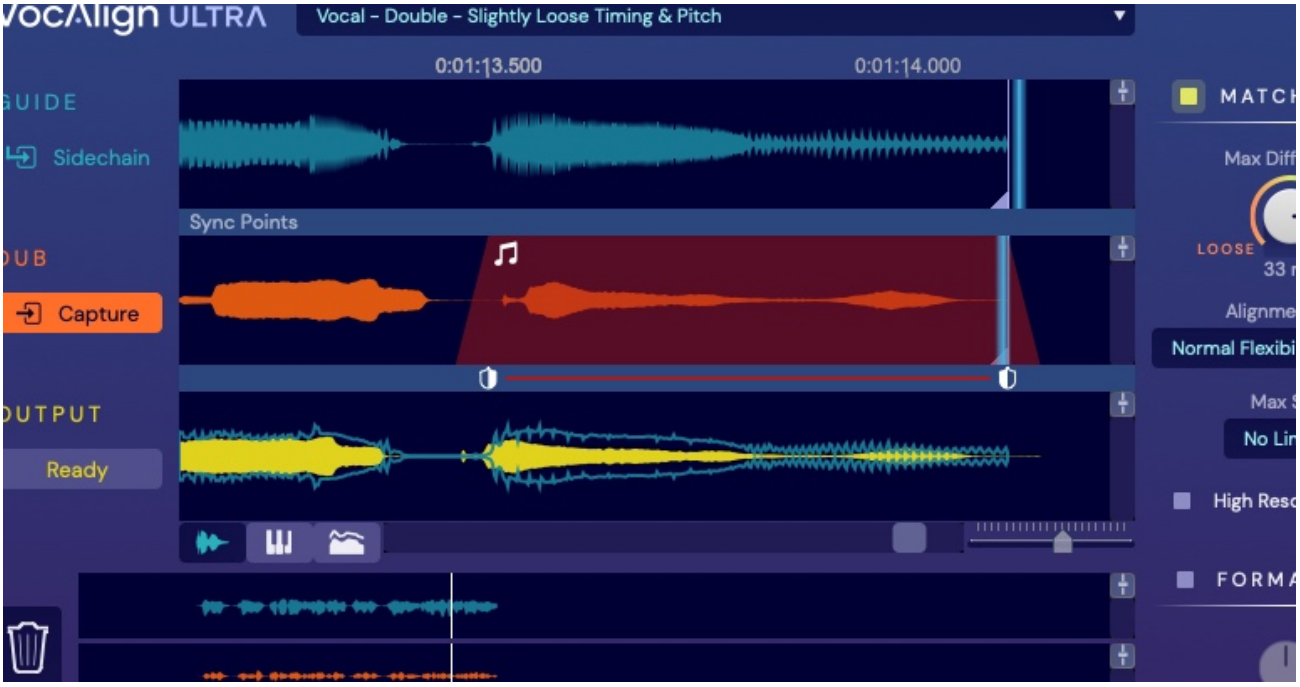


Add Protected Areas to Fix Problem

7. Switch back to the **Waveform** view by clicking the waveform button next to the **Pitch Profile** keyboard button. Click the **Basic** edit mode button to switch to **Advanced** mode, then click the dividing bar between the Dub and Output waveforms at the start of the dodgy pitch drop to create a new **Protected Area**.

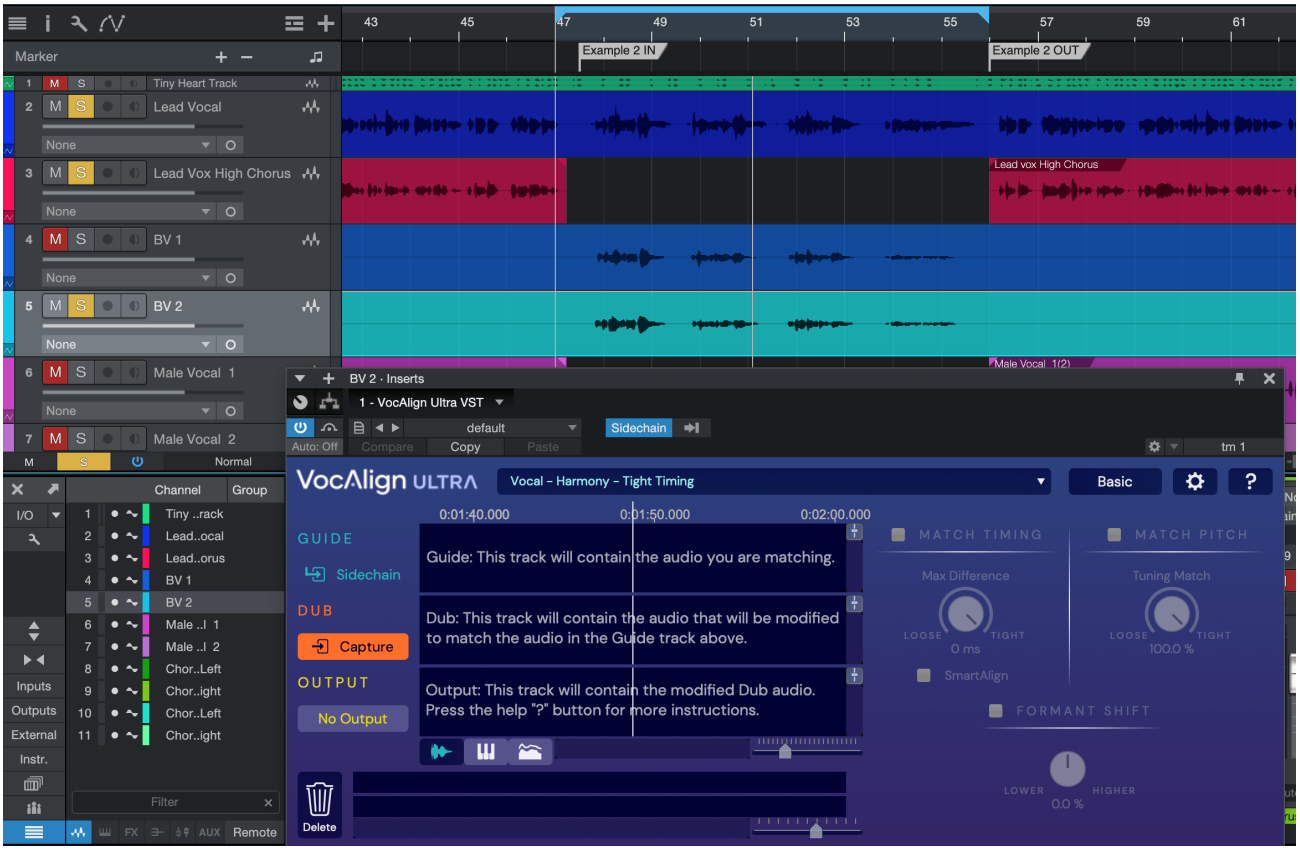


8. Drag the ‘shield’ handle at the right hand end of the Protected Area to encompass the last ‘piece’ of the Dub waveform, then right-click in the Protected Area and select **Modify Protected Area > Protect Pitch** – now the timing will be aligned but the pitch won’t. As an exercise, work back through the Dub, adding further Protected Areas where required.



Align a Harmony

9. Now let's align a harmony vocal. First, load VocAlign Ultra as an insert effects onto the **BV 2** track and select the **Lead Vocal** track as the **Sidechain** input, as described in Step 2 above. Set your DAW's Cycle range to cover bars 47-56.



10. Capture the **Lead Vocal** track as the **Guide** and the **BV2** track as the **Dub** from bars 47-56, as described in Steps 3-4.

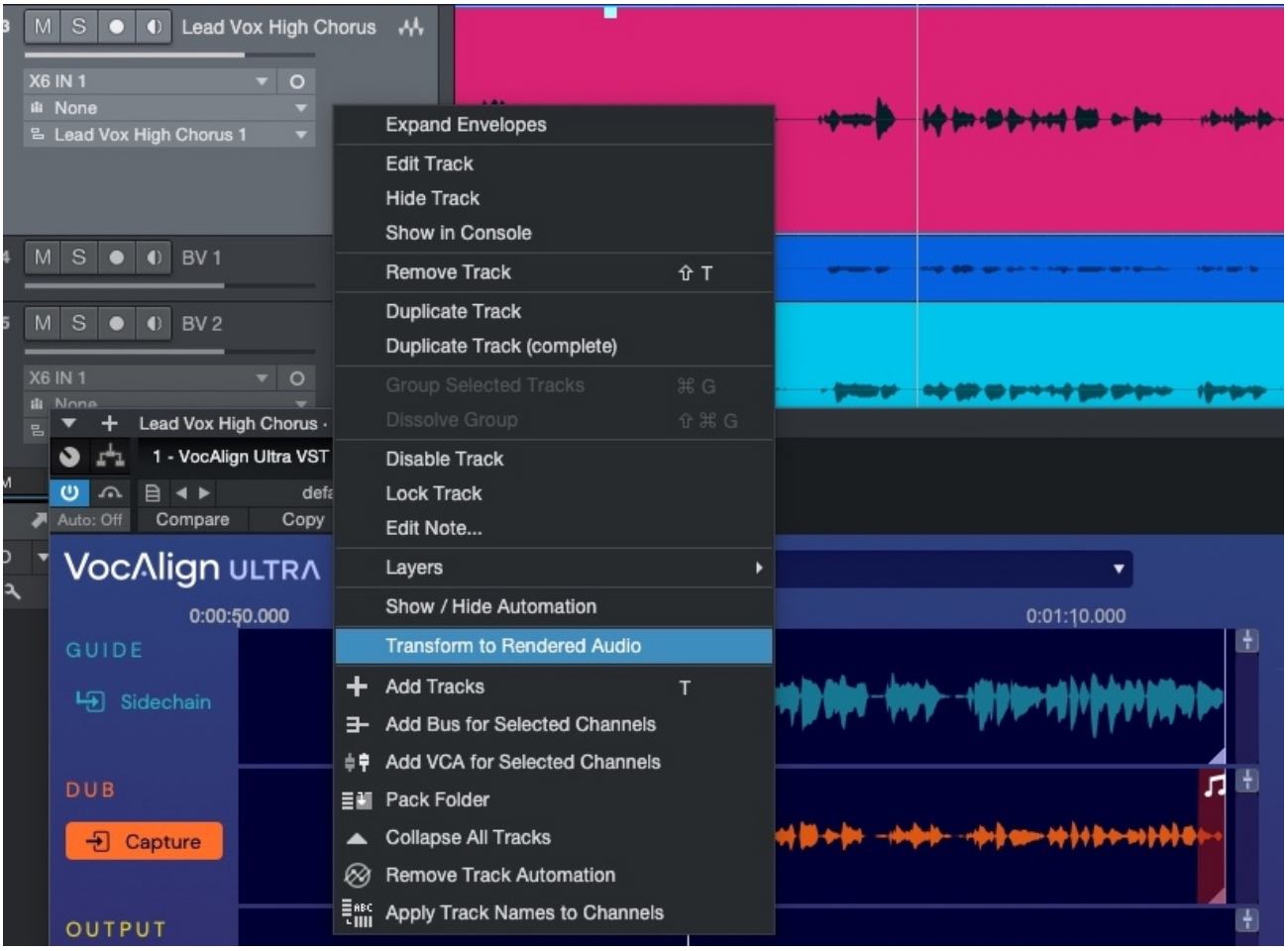
Then select the **Vocal > Harmony > Tight Timing** preset to perfectly lock **BV2**'s timing from bars 47-56, but not pitch, to that of the **Lead Vocal** region.

Process More Audio

11. You can add multiple Captures to any instance of VocAlign Ultra by simply repeating the Capture process at a different point on the timeline, using the same or a different Sidechain input as the Guide. You'll then be able to apply different Presets and settings to each Capture, if required, by clicking a Capture to select it, then making your changes.

Preserving Processed Audio

12. To render the aligned audio permanently in Studio One, right-click the track header in Studio One and select **Transform to Rendered Audio**. Keep the **Preserve Realtime State** option checked so that you can return the track to its real-time processed state, with VocAlign Ultra re-inserted, if necessary. Please see your DAW's manual for instructions on rendering VST2 plugin outputs if you're not using Studio one.



More details on saving my output audio

For a complete explanation of the options for saving VocAlign Ultra's output audio read this chapter.

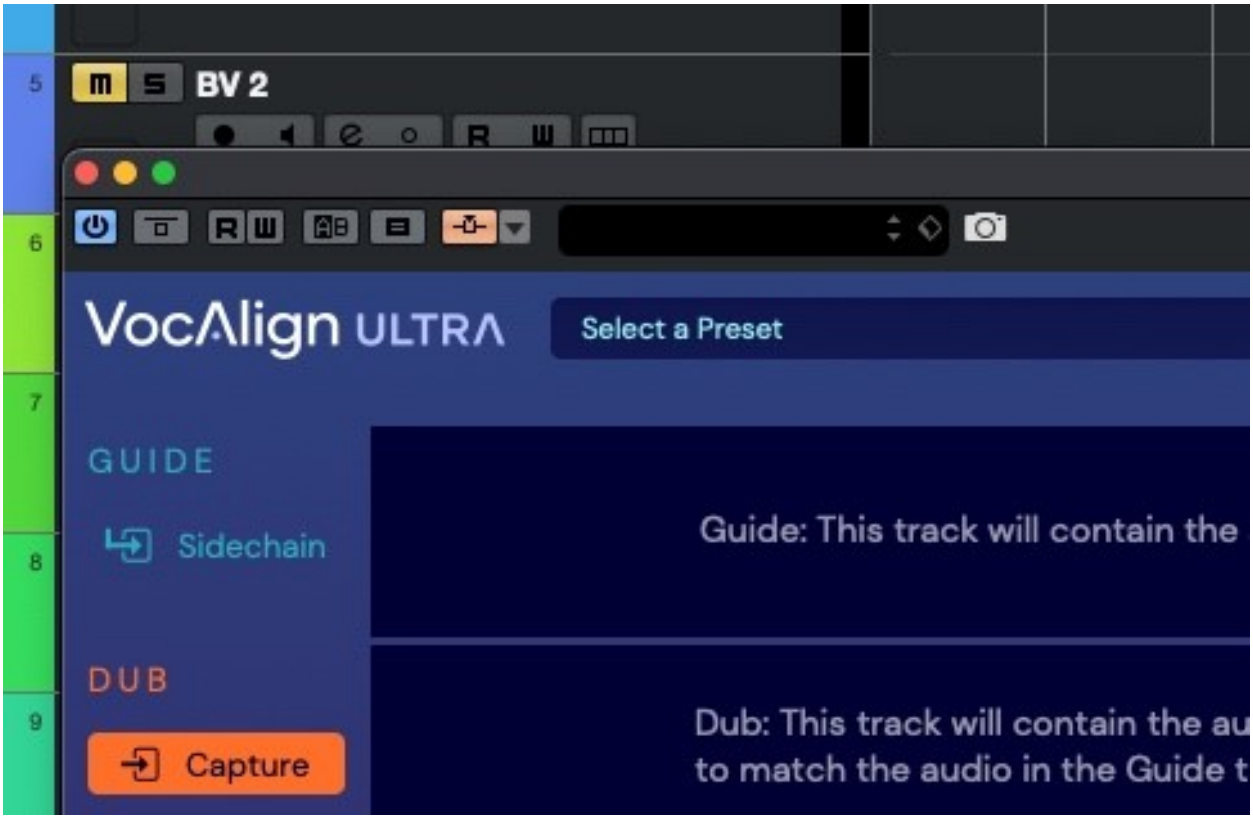
8. Quick Start DAW Variations

8.1. VocAlign Ultra Cubase VST3 setup

Cubase/Nuendo Side-Chain Setup

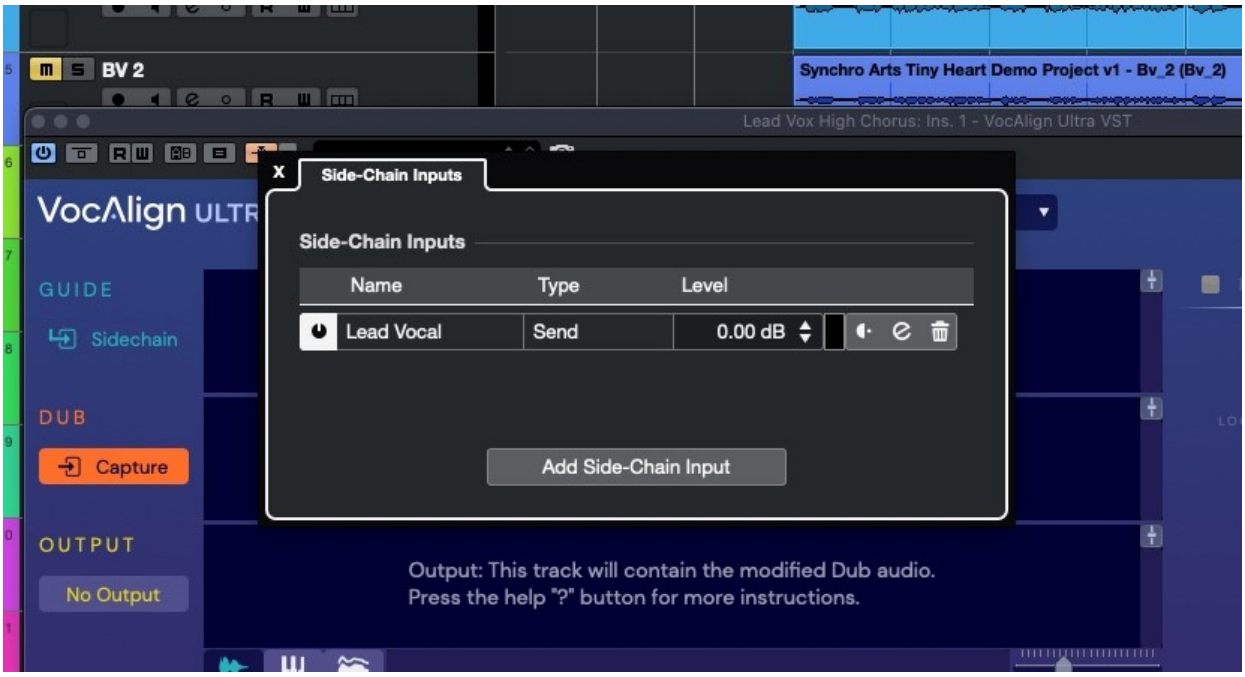
Here, you'll learn how to set up the Guide Side-chain input for the VST3 version of VocAlign Ultra in Cubase or Nuendo.

Click the Cubase **Side-Chain** button above the top left corner of the VocAlign Ultra plug-in to activate the Side-Chain input.



Hold down the **Option** key and click the **Side-Chain** button again to open the **Side-Chain Inputs** panel.

Then click the Add **Side-Chain Input** button at the bottom and select your Guide track (**Lead Vocal** in our 'Tiny Heart' demonstration project) as the Side-Chain Input.



Return to VocAlign Ultra VST Quick-Start Guide

8.2. VocAlign Ultra Cubase ARA setup

Cubase/Nuendo ARA Setup and Use

Here, you'll learn how to set up the ARA version of VocAlign Ultra in Cubase or Nuendo. We are using the ‘Tiny Heart’ demo project as the example.

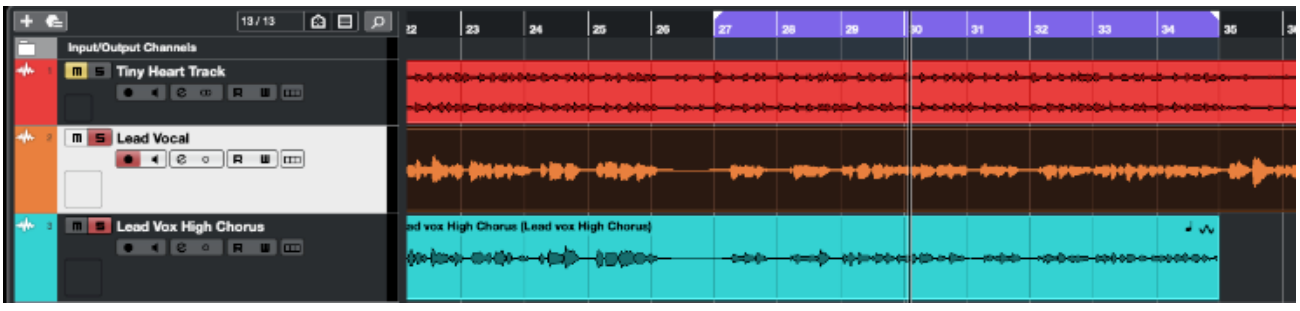
In Cubase Pro (10.0.30 and later), VocAlign Ultra VST (ARA) can be added to an Audio Event as an Extension.

⚠ The Instructions below show an Extension Menu item for VocAlign Ultra that will appear in Cubase 11.10.0 (Coming soon).

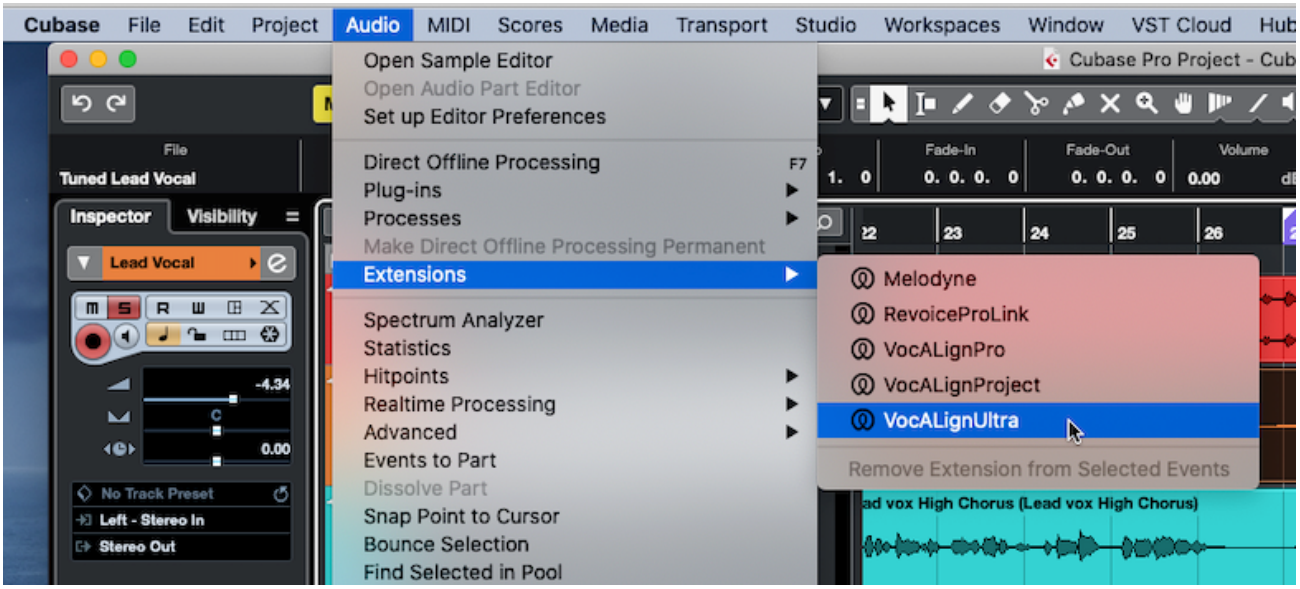
How to add Extensions

- Several audio events that you want to process can be selected at the same time and can have Extensions added at the same time.
- Also, if you select a long continuous audio event, this can be very efficient because if you split it, the VocAlign Ultra extensions will be automatically replicated in all the sections that are split.

In the ‘Tiny Heart’ Cubase example select **Lead Vocal** and **Lead Vox High Chorus** events that extends under bars 27 to 36 as seen below.



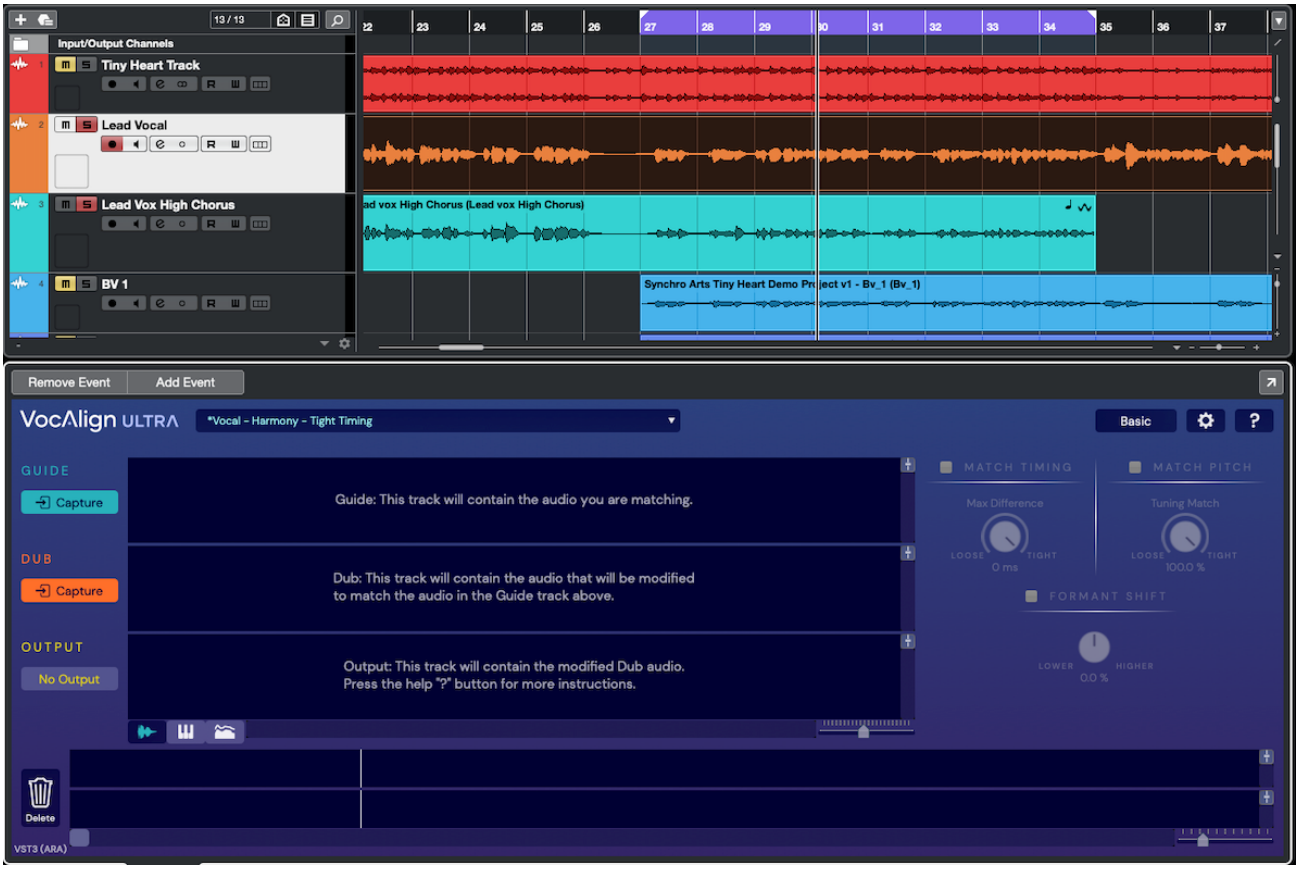
Go to the **Audio Menu**, select **Extensions** and select **VocAlignUltra** as shown below.



Add this Extension to the events named. You can add more later as you need them.

Once you have added VocAlign Ultra as an audio extension to an audio event, Cubase will show the symbol in the event's top right corner and the event's ARA filename between parentheses.

Cubase will open the VocAlign Ultra plug-in in its editor window as shown below when you select an Event with a VocAlign Ultra Extension.



Removing Extensions

There is also a **Remove Extension from Selected Events** entry in Cubase's **Extension** menu that will remove VocAlign Ultra (if it has been added) from all selected audio events.

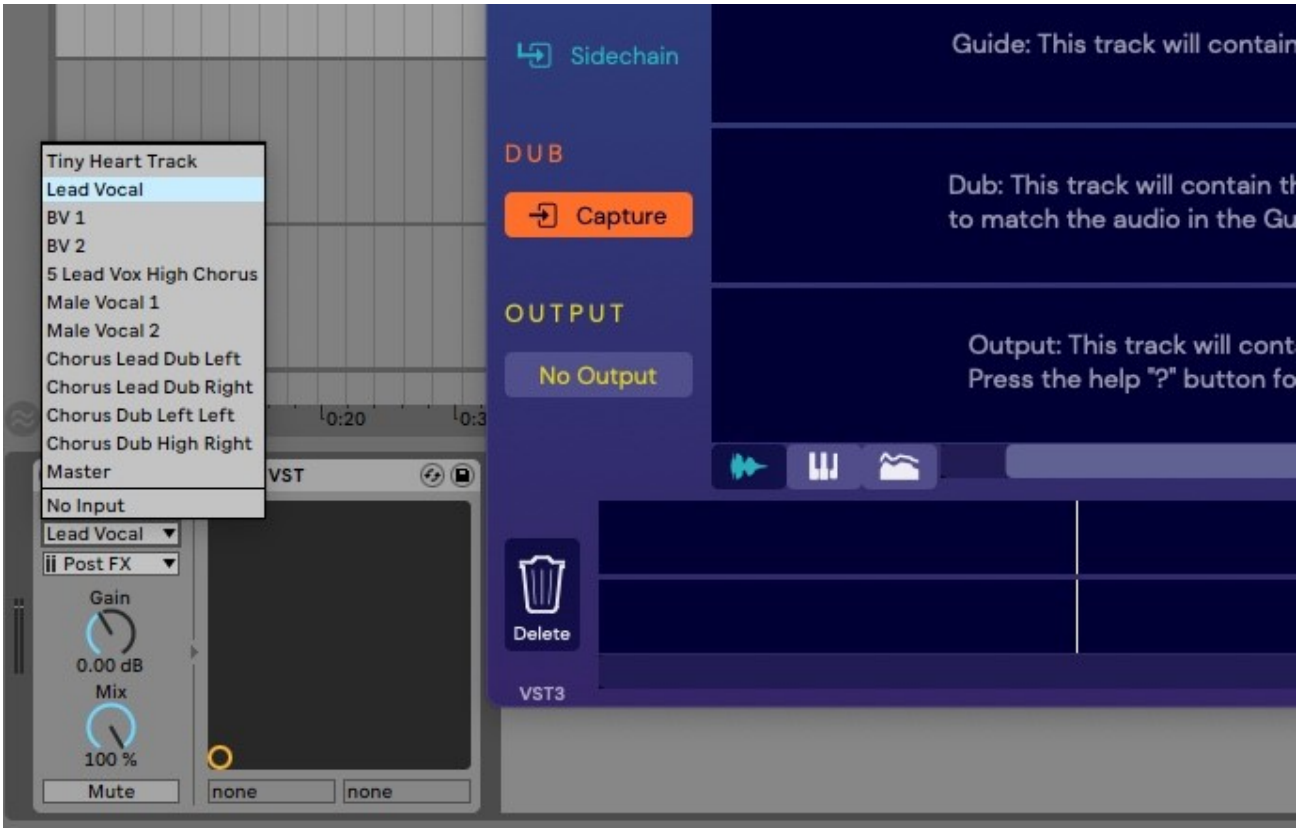
Return to VST ARA sequence in Quick-Start Guide

8.3. VocAlign Ultra Live VST3 setup

Ableton Live Side-Chain Setup

To set up the Guide **Sidechain** input for Ableton Live:

Open the **Sidechain** menu in Ableton's Device panel (in the Device View) and select your **Guide** track (**Lead Vocal** in our 'Tiny Heart' demonstration project) as the Sidechain Input to VocAlign Ultra as shown below.



Then close the Live window.

Return to VocAlign Ultra VST Quick-Start Guide