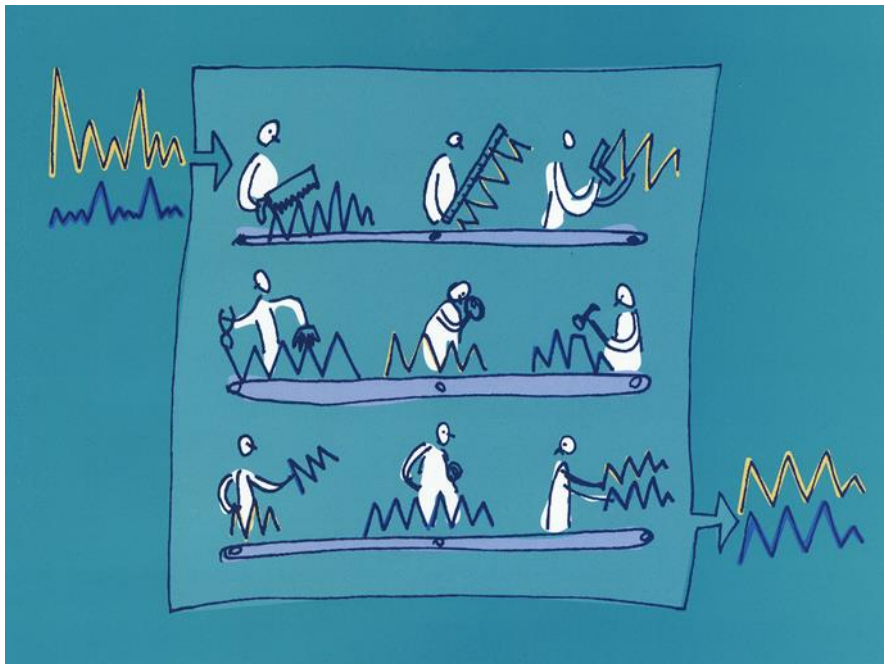




VocALIGN Project 3 AU (ARA) User Manual

An Audio Units Plug-in for Logic 9 and higher



Version 3.5



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Important Notes

- In this manual, 'VocALign Project 3 AU / ARA' will be referred to simply as 'VocALign Project' or simply 'VocALign'.
- Audio Units will sometimes be shortened to AU

Technical specifications

- The AU instance of this program is compatible with Apple Logic 9 or higher, running on macOS 10.9 or later.
- For a full list of compatible DAWs (for all versions of VocALign Project) see <http://www.synchroarts.com/products/vocalign-project/support>.
- VocALign Project 3 AU (ARA) is an audio units plug-in. It also contains an instance that functions as an ARA II plug-in.

Acknowledgements

- Special thanks go to our beta testers and Apple's Logic team for their help and support.
- Thanks to Steve Cooke for providing the English voices in the demonstration audio.
- VocALign is developed and sold under licence from Wordfit Limited.

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A. Introduction to VocALign

What is VocALign?

VocALign is a process that automatically edits the timing of one audio signal to match another.

How does VocALign work?

VocALign works by applying varying amounts of time stretching or compression to one signal (called the 'Dub') to make its energy peaks and troughs align in time with a 'Guide' signal. It does this in three main steps as shown in Figure 1.

VocALign analyses the Guide and Dub audio signals using identical spectrum analysers to produce time-varying energy patterns. Then it uses advanced pattern recognition techniques to examine the energy patterns and determine the best way to 'warp' the time structure of the Dub signal so that its energy pattern is matched to that of the Guide. The time-warping path describes the best time-distortion of the Dub for matching to the Guide. The time-warping path is fed to an audio editing processor that time-compresses and expands the Dub audio to create the aligned version based on the path. It is this edited version of the Dub that is returned to the audio editing software for the desired use.

Note: In the above diagram, the spectrum analyser colours match those used in the VocALign screen for Guide and Dub audio signals and controls.

How can VocALign help?

If you are a dialogue editor needing to lip-synch vocals, or a music editor needing to tighten-up lead or backing vocals, instrumental tracks, or perform a number of other alignment tasks, then VocALign will help you.

Working without VocALign

A dubbing session for film post-production or music production begins with a guide track. Then the voice-over artist, singer, or musician will dub this as closely as possible.

Because humans are not machines, they will not be able to get exactly in time with the Guide. This is generally not acceptable for lip-synching, nor for double-tracking of vocals or instruments. Often, the next step is to loop-record the trickier sections individually, but this can break-up the natural flow of the line. Lastly, the editor will attempt manually to cut and nudge individual sections of the new recordings into time with the Guide.

The above process can take many hours for both the artist and the editor.

Working with VocALign

The above process becomes a simple matter of getting the artist to concentrate on creating a great performance, rather than worrying about the fact that it may drift in and out of exact synch with a previous performance. VocALign can then be used to adjust the timing by automatically time-stretching and compressing the material to allow the Dub to take on the same timing pattern as the Guide.

This saves studio time, saves artists time and improves the quality of results. Most importantly, artists are allowed to produce their best performances, free from the rigidity normally associated with dubbing.

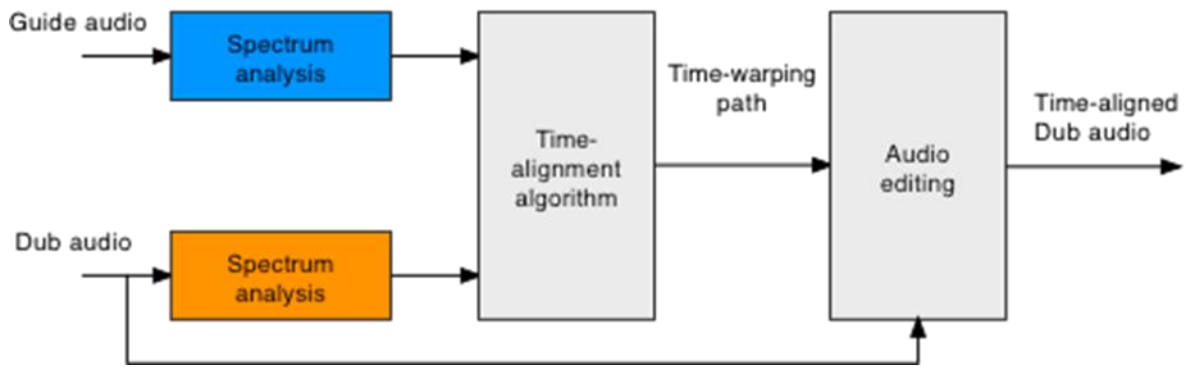


Figure 1 VocALign block diagram



B. Applications

VocAlign was originally designed for lip-synching replacement dialogue for film and video post-production but it has been adapted to work successfully in the following applications:

- Syncing replacement dialogue in post-production for film and video.
- Double-tracking vocal parts or instrumental parts
- Tightening the ensemble of singers with one another, or with the lead vocal
- Tightening the ensemble of backing instrumental tracks
- Syncing a drum machine audio-output to a real drummer (or vice versa)
- Giving a dubbed vocal the timing of a 'live' vocal performance
- Changing the voice or even apparent sex of a singer or actor's performance
- Replacing the vocals from a music video shoot with a production track, achieving perfect lip-synch
- Foreign language dubbing



C. Software Installation and Authorization

Installation

If you have not already done so, download the VocAlign Project 3 AU plug-in from www.synchroarts.com/downloads and install it by following the instruction on the website.

Installation on Logic Pro 10.5.1 (and above)

After you have installed or upgraded VocAlign Project AU, you will need to perform additional steps in Logic Pro to use VocAlign Project AU (ARA) in your projects. The steps are these:

- i) Run Logic Pro X.
- ii) In Logic Pro X, open any project or create an empty project.
- iii) In Logic, add VocAlign Project AU as an insert to any track in the project.
- iv) Quit Logic Pro X *without saving*.
- v) Rerun Logic Pro X. VocAlign Project (ARA) should appear in Logic's Plug-in Manager under Synchro Arts.

Trial and Full Licences

VocAlign Project can run in a **Trial Mode** but it will require an **iLok Trial licence** which you can obtain from the [Synchro Arts website](http://www.synchroarts.com). Once you have obtained and installed the Trial licence as described below, VocAlign Project will run in a **fully functional** demonstration mode for the number of days stated in the information you receive with it.

VocAlign Project licences will authorize both Mac and Windows versions.

If you already have a VocAlign Project licence installed on an iLok USB Key that is plugged into the computer running VocAlign Project, you can skip the rest of this section on authorization.

Software authorization summary

VocAlign Project uses the iLok system described on www.iLok.com for authorization.

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

1. Create a free account on www.iLok.com
2. Go to www.iLok.com, download and install the new **iLok License Manager** on your computer.
3. Run the iLok License Manager and sign in.
4. Synchro Arts normally supplies an iLok Activation code in the form:

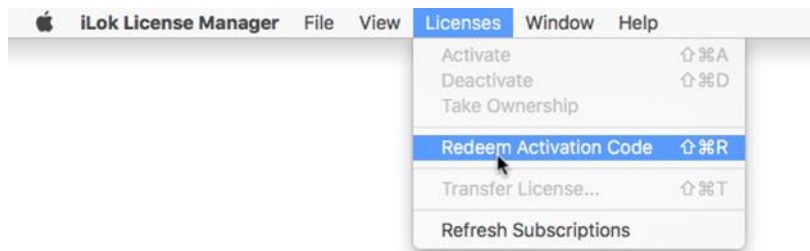
XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XX

(where the X's are numbers)

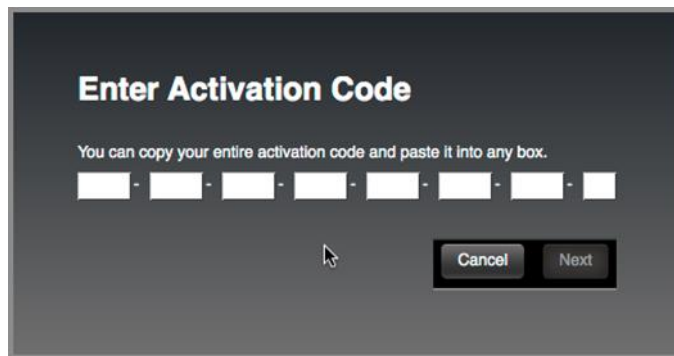
note that this code is NOT a licence but an **Activation Code** that you can redeem in the iLok License Manager to obtain your licence.

5. To redeem an **Activation Code**:

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

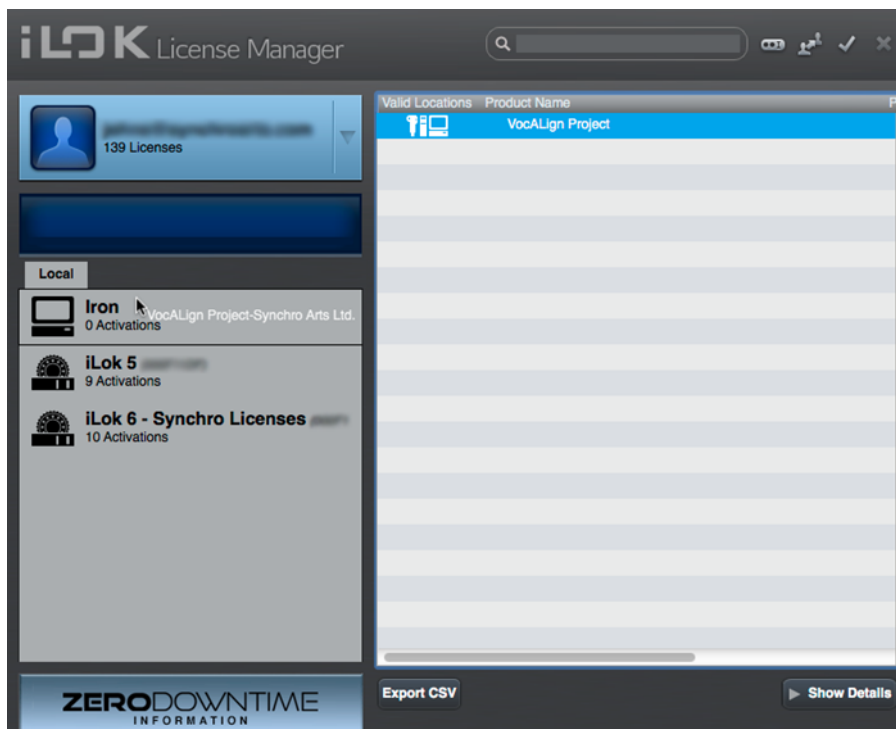


Enter your Activation Code as instructed.



If the code is recognized, you will see a VocAlign Project Licence in the iLok Manager

6. Drag the Licence to your Machine or iLok USB Key



Optional – iLok USB Key

How to authorize VocALign software with your iLok Key

iLok Keys can hold licences for a number of protected software products. You can have licences from Synchro Arts and other software vendors on the same iLok.

If you followed the above procedures correctly, and the iLok Key with the relevant licence is inserted in the computer running VocALign Project, it should run in an authorized mode by simply launching VocALign Project.

Reauthorizing VocALign Project if the iLok is removed

If you subsequently try to run VocALign Project without the iLok inserted into your computer, you will receive a warning message. Follow the instructions in the warning to reauthorize the software.

WARNING:

Do **not** remove the iLok from your computer while you are using VocALign Project.

D. Modes of operation

This version of VocAlign Project has two modes of operation, which operate differently depending on whether you are using an AU-only compatible DAW, or one that additionally supports ARA, such as Apple’s Logic Pro X (version 10.5.1 or higher).

Please see <http://www.synchroarts.com/compatibility/editors/VocAlign+Project+3> for more information and videos about editors that support VocAlign Project.

<i>Mode</i>	<i>Description</i>	<i>Method of capture and alignment</i>
<p>Basic Audio Units (AU) (see Section E and F)</p> <p>Ableton Live, Logic and Logic Pro</p>	<p>The plug-in works as an effect with AU-compatible DAWs that support sends and sidechains (e.g. Logic Pro). Processing is simply applied to the track concerned with no awareness of individual audio events.</p> <p>Useful if you want to work on a track as a whole, or to control exactly what is captured, rather than on individual segments or events.</p> <p>Fairly slow as the audio has to be captured in real time.</p>	<p>Press “Capture”. You must play audio into VocAlign Project in real time.</p> <p>Align by pressing “Process” in the plug-in’s window.</p>
<p>ARA (see Section G)</p> <p>Logic Pro X (version 10.5.1. or higher)</p>	<p>The plug-in works as an Audio FX with Logic Pro X. This means that VocAlign is applied to specific audio segments or events.</p> <p>Faster than Basic AU mode as the audio is captured as quickly as possible.</p>	<p>Press “Capture” to capture selected audio events in non-real time (as fast as possible).</p> <p>Aligns automatically.</p>

E. Getting started (AU: Logic)

To learn to use the basic functions of VocAlign Project 3 only takes a few minutes. To get the best understanding quickly we strongly recommend that you first follow the brief tutorial in [Section F](#), which uses prepared audio examples.

The following section is a Quick Start guide for those that want to jump straight in without following the tutorial. (For the ARA plug-in with Logic Pro X please see [Section G](#).)

Quick start

- 1 In Logic select 'VocAlign Project AU->Mono' as an insert on the track to be aligned (the 'Dub' track, Audio 2). It is found in the list of Audio Units in the plug-in menu as shown in Figure 2.

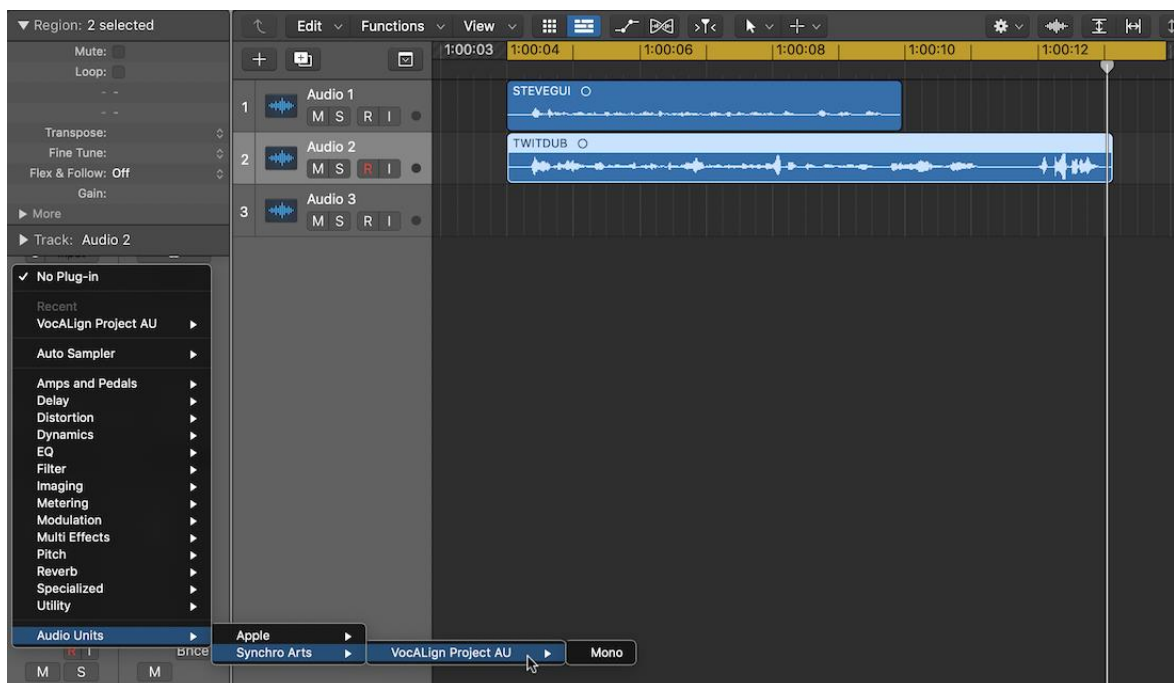


Figure 2. Adding VocAlign Project AU as an Audio Fx to Logic Pro X

- 2 The VocALign Project AU plug-in window will open as shown in Figure 3.

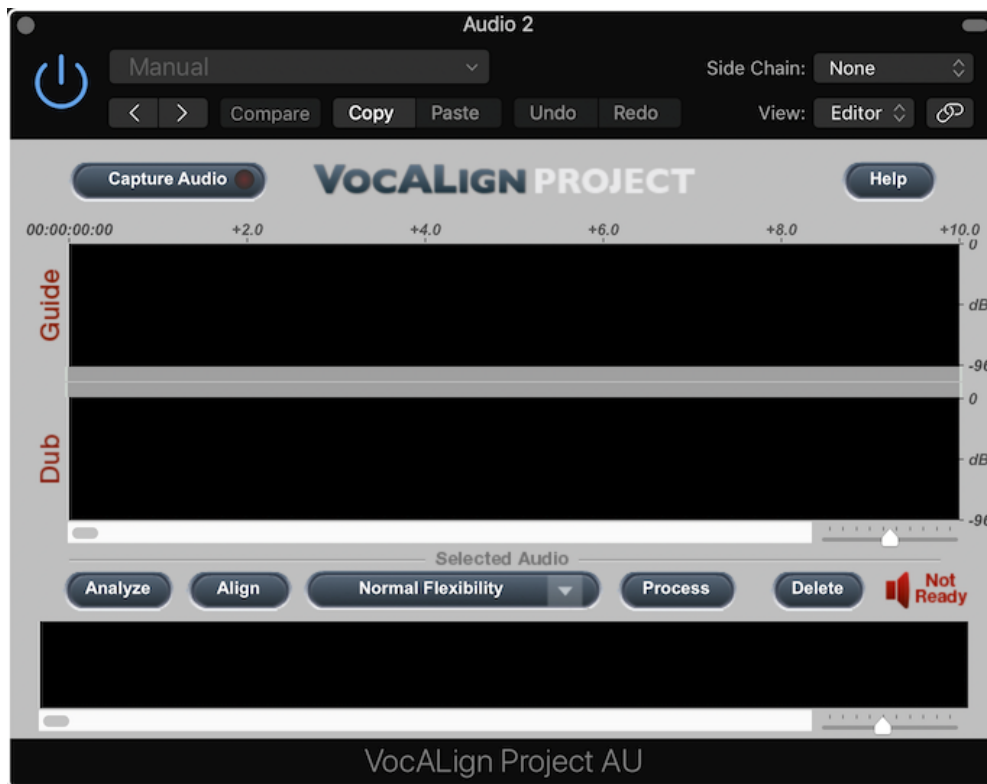


Figure 3. VocALign Project window before capture.

- 3 In VocALign Pro's Side Chain menu select the track that you want to use as Guide audio. In this example it is track 'Audio 1'. The Guide is the original sound to which the Dub audio will be matched. See Figure 4.

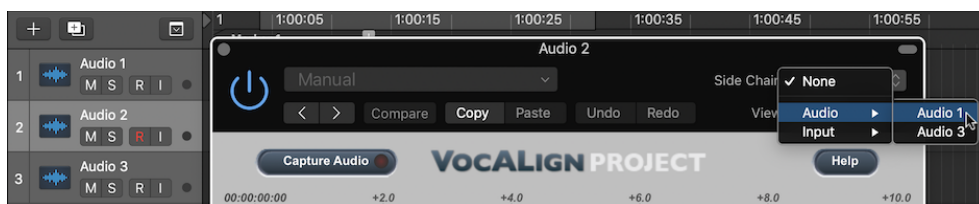


Figure 4. Setting the sidechain track to 'Audio 1' (the Guide).

- 4 Set the Logic Pro's location indicators by dragging the ends of the yellow bar (shown in the image below) to select the audio that VocALign will process.

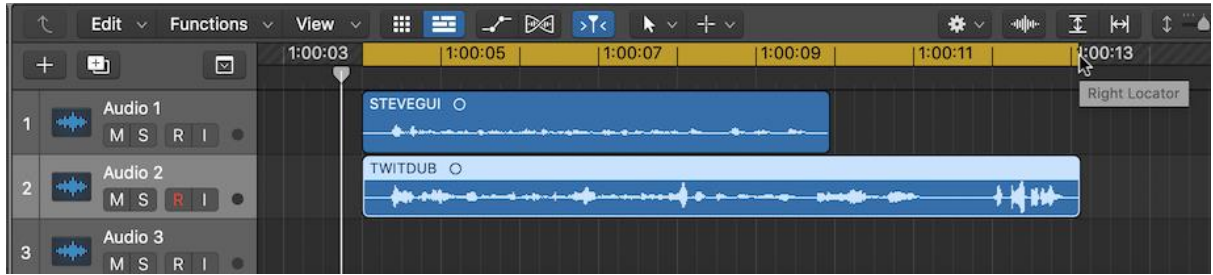


Figure 5. Setting Logic's location indicators to span the audio for capture.



Figure 6. Capture button showing green flashing light.

- 5 In the VocAlign window press 'Capture Audio'. The green light in that button will flash showing that it is waiting for audio. (You can press it again to cancel the capture if necessary.) See Figure 6 above.
- 6 Press <Play> (space bar) in Logic. The selected section of the Dub track and Guide track will be loaded into VocAlign. VocAlign will display the audio waveforms of the captured Guide and Dub when Logic loops to the start of the audio. Press <Stop> (Space bar) in Logic.



Figure 7. VocAlign Project showing captured Guide and Dub waveforms.

- 7 In the VocALign window select **Normal Flexibility** (this is the default setting).
- 8 Press **Process** and VocALign Project will align the Dub audio to the Guide audio. Once the Dub has been aligned, the display will show the energy plots of the Guide and Dub. You will also see a yellow trace above the Guide, which shows how the energy of the Dub has been matched to the energy of the Guide.

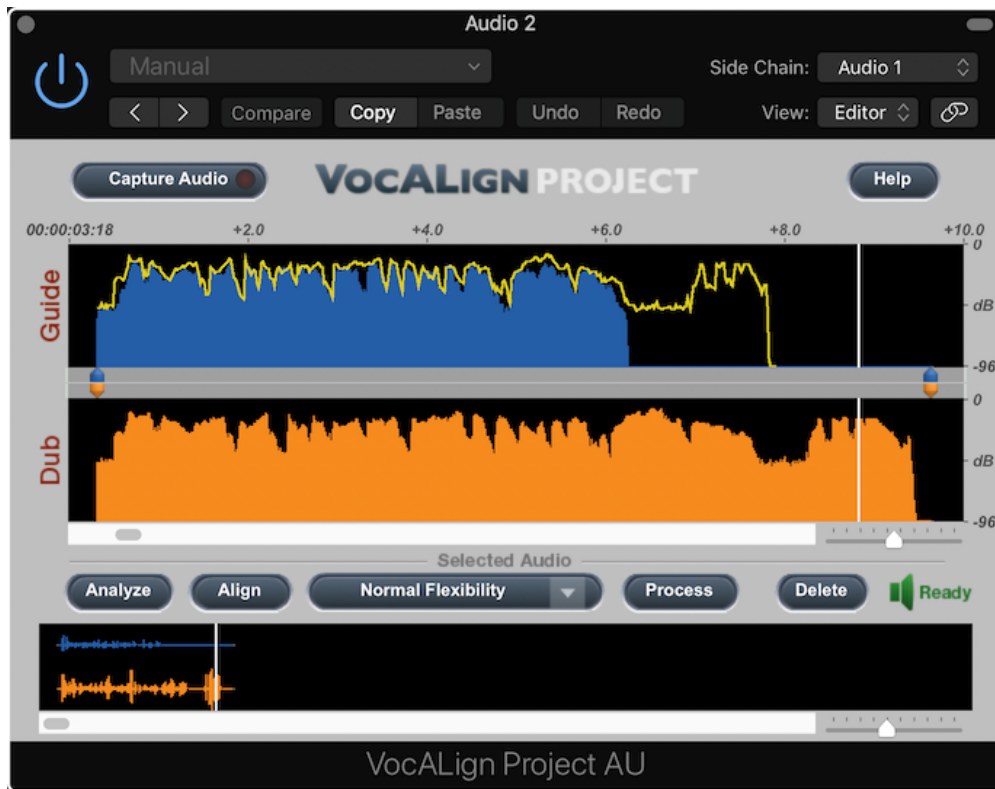


Figure 8. Yellow trace over Guide showing the new alignment.

- 9 In Logic, move the play head back to the start of the Guide. Press **<Play>** in Logic and you will hear the aligned Dub along with the Guide.
- 10 In Logic, right- or control-click on the Dub region waveform and select 'Bounce in Place'. This enables you to make a new aligned audio file that can be played on a new track in Logic. You can either select the track yourself before bouncing, or let Logic create a new track. If you used the 'Export to File' option, you will find the processed file in the *Project Audio Browser* (formerly called *Logic Bin*).

TIP: When you are aligning audio, try to make sure that:

- The Guide audio content is sufficiently similar to the Dub.
- The Guide starts at roughly the same time as the Dub.

- The Guide and the Dub have a small lead-in (a quarter of a second to half a second) containing a bit of background noise.

F. Tutorial (Logic project)

This tutorial guides you through the use of VocALign Project in easy stages, so that you can learn about how it works and how best to use it Logic project that can be downloaded from the Synchro Arts website.

You will learn how to:

- Select the Guide and Dub audio that will be processed in VocALign
- Transfer the Guide and Dub audio into the VocALign plug-in
- Use VocALign to create an Aligned (synchronized) Dub and audition it
- Return the Aligned Dub audio to Logic

Step 1 Obtain the tutorial project and audio

The Logic Pro X project for the tutorial can be found by going to the following webpage:

https://www.synchroarts.com/compatibility/editorproduct/Logic_Pro_X/VocALign_Project_3.

Locate and click on the link ‘*Logic Pro X Project for VocALign Video Tutorial*’ to download a copy of the project to your computer.

Copy the contents of the dmg file to a suitable folder on your computer’s hard disk. The copied material should contain the file and folders shown in Figure 9.

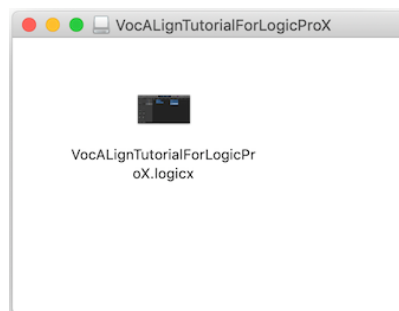


Figure 9. Contents of the downloaded tutorial.

Step 2 Open the project in Logic

Click on the file “VocALignTutorialForLogicProX” to open the tutorial project. It should bear some resemblance to Figure 10 below.

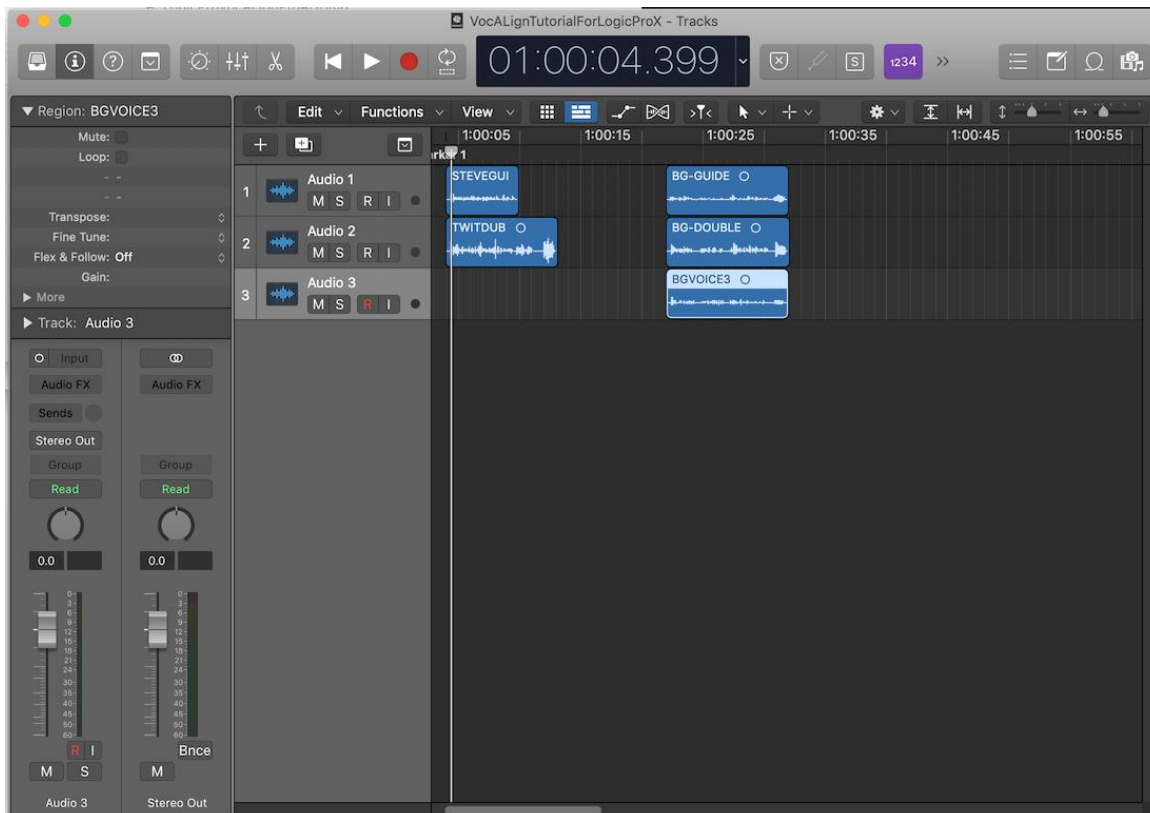


Figure 10. Tutorial project displayed in Logic Pro X.

Step 3 Add VocALign Project as an insert

In Logic, add VocALign Project AU as an *Audio Fx* to the DUB track by selecting the track 'Audio 2' and clicking its *Audio Fx* button.

In the pop-up menu that appears, navigate to "Audio Units->Synchro Arts' and select "VocALign Project AU" as shown in Figure 11. The VocALign Project AU window should appear as shown in Figure 12.

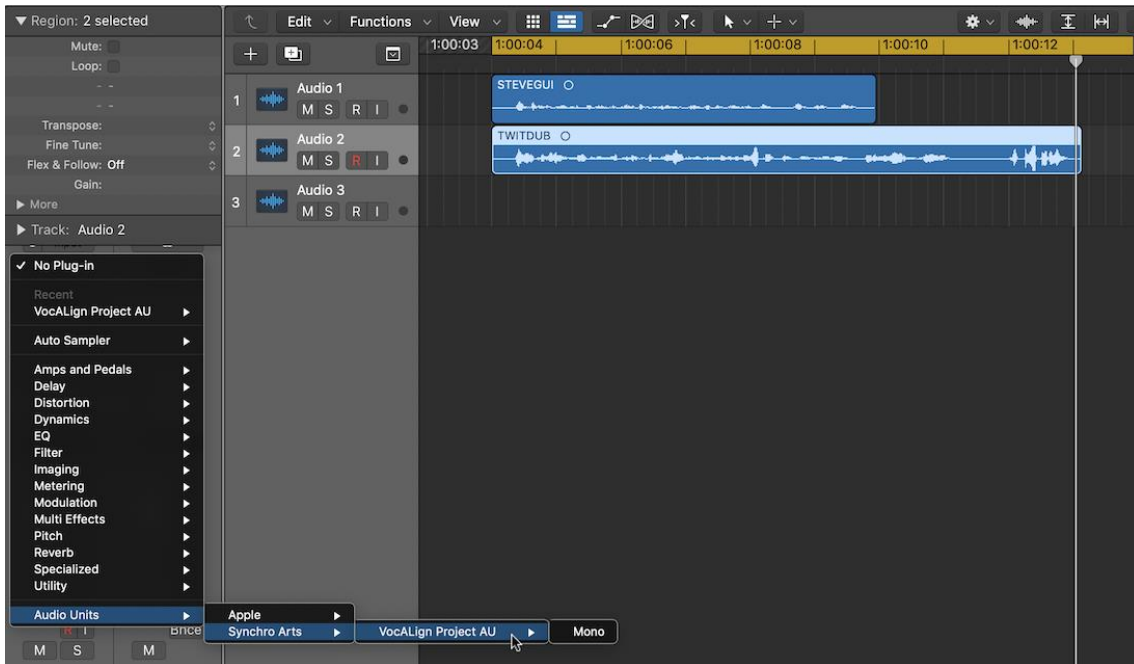


Figure 11. Select VocAlign Project AU as an Audio Fx for the Dub Track 'Audio 2'.

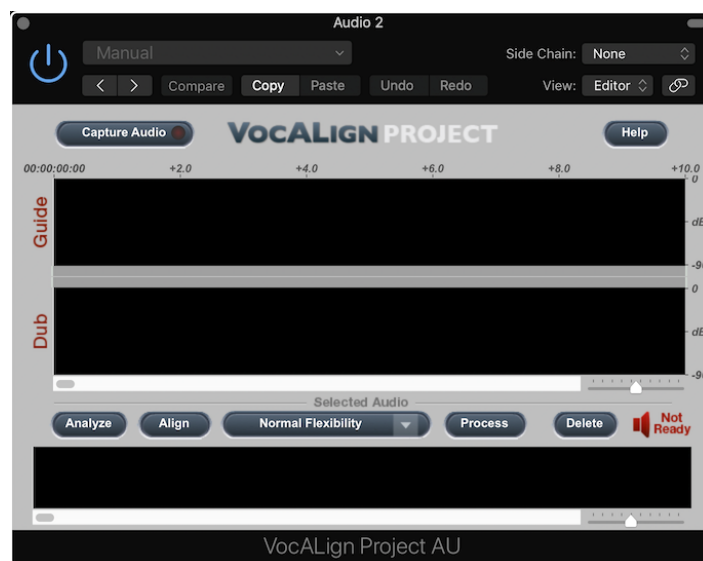


Figure 12. Showing VocAlign Project's window before audio capture

Step 4 Select the Guide audio as the side chain input

The *Side Chain* selection in VocAlign determines which audio material will be used to guide the alignment process. You configure Logic's sidechain by clicking the button "Side Chain" in the top right-hand corner of the plug-in window. In VocAlign Project's Side Chain menu select the track 'Audio 1'. This contains the audio STEVEGUI, which we use as a guide in this tutorial.

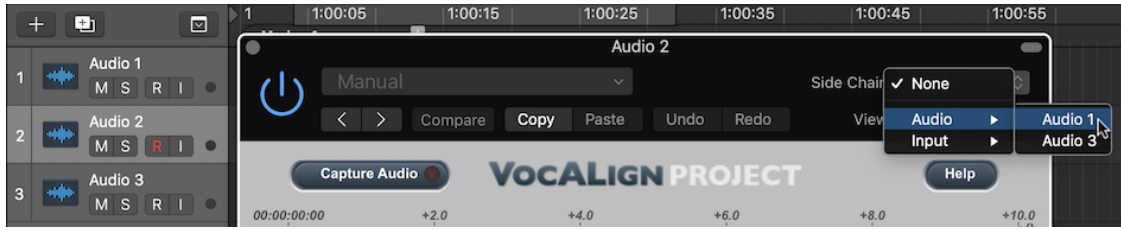


Figure 13. Turning on the side chain input and routing it to Track 'Audio 1'.

Step 5 Set the start point in Logic

In Logic, select the starting point of the audio you want to process, using Logic's timeline. (The Guide and Dub audio should be approximately in the same place.) In this example it means dragging the timeline back to 1:00:04 (before the start of the audio).

Step 6 Capture the audio

In VocAlign, press 'Capture Audio' as shown below. The green light in that button will flash showing that it is waiting for audio.

Press <Play> (space bar) in Logic. When Logic has finished replaying both the Guide and Dub press <Stop> in Logic (space bar). The replayed section of the Guide and Dub tracks will be loaded into VocAlign and their waveforms will be displayed in the plug-in's window. (See Figure 15, below).

TIP: If you need to capture more than one audio region into one instance of VocAlign, you may need to use the Overview display at the bottom of the window to select separate regions for processing. Click on the desired waveform to select it. Click <Delete> to delete the selected waveform from VocAlign. This is covered in more detail in [Section 1](#).

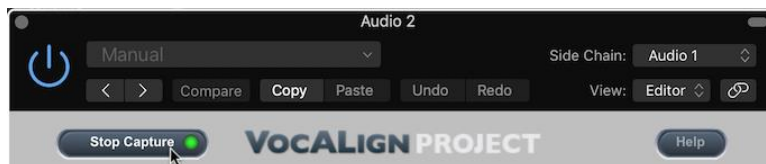


Figure 14. When you select Capture Audio (left) the lamp in the button will turn green and flash.



Figure 15. VocAlign's window after audio capture.

Step 7 Prepare the settings for alignment

In VocAlign, if required, adjust the start or end of the Guide or Dub audio so that the sections to be aligned are roughly similar in terms of content. This is done by clicking and dragging the waveform from its ends (when first captured), or where it changes colour to grey (after adjustment). The selection can also be made by sliding the blue or orange pointers above or below the waveform, as shown in Figure 15. There is a pointer at the beginning and at the end of each waveform to begin with. You may have to scroll to the right in the VocAlign window to see the pointers at the end of the waveforms. Logic's transport commands are used to play the audio.

TIP: Try to ensure the start of the audio selection is in 'silence' (or low-level noise) for about 0.25 seconds before the waveform energy appears and try to ensure the end of the selected audio is at the desired stopping point.

Step 8 Analyse the audio

In VocAlign click **Analyze**. The display changes to show an energy plot of the Guide and Dub tracks (Figure 16), which is what VocAlign uses to create a time-warp path to match the two extracts. (It isn't strictly necessary to do this as a separate step, because **Align** or **Process** will automatically do it anyway, but it helps to see what is happening.)

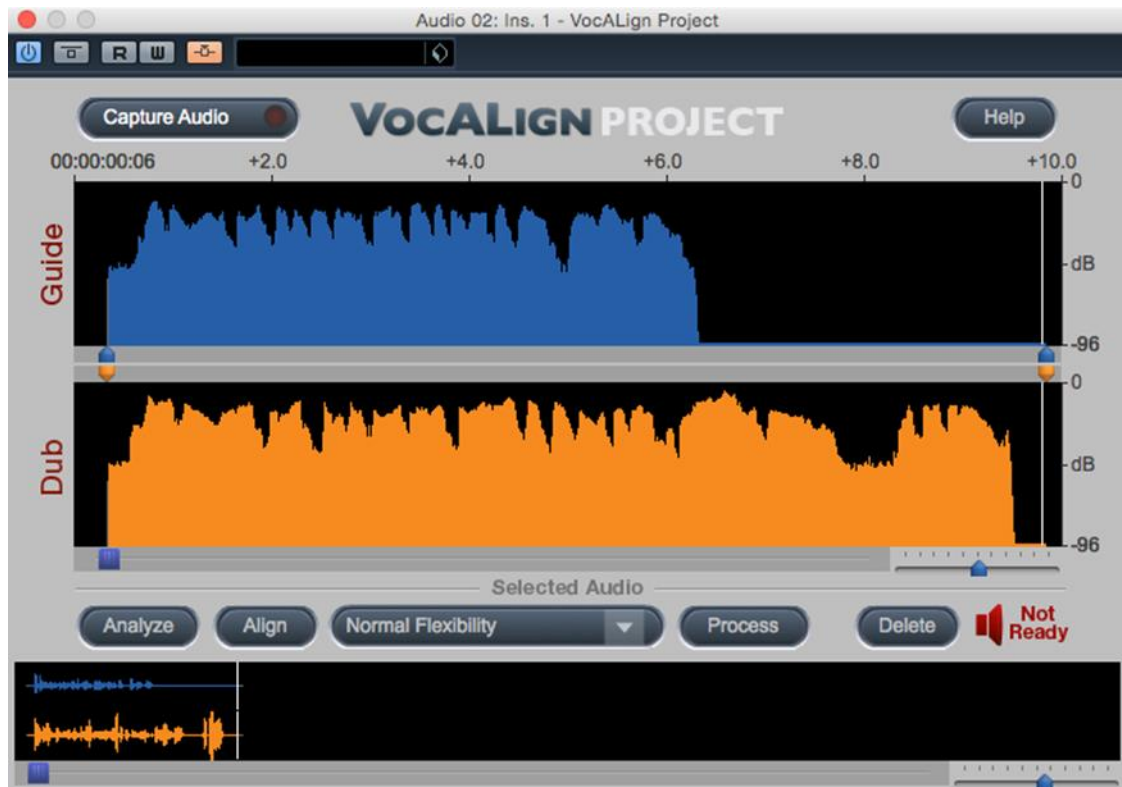


Figure 16 VocAlign energy display after pressing 'Analyze'

Step 9 Align the Dub audio

Clicking **Align** creates a processed version of the track on which the VocAlign plug-in is inserted. You will now see a yellow trace superimposed on the Guide audio track's waveform (see Figure 17), which is VocAlign's proposed mapping of the Dub track's energy pattern to match that of the Guide. Initially VocAlign saves its output to a temporary file, but you can also create a more permanent audio file of the processed version.

(If you press **Help** then **About** in VocAlign, you can see where the plug-in stores the temporary audio files. You can also change the location of the folder for the temporary files.)

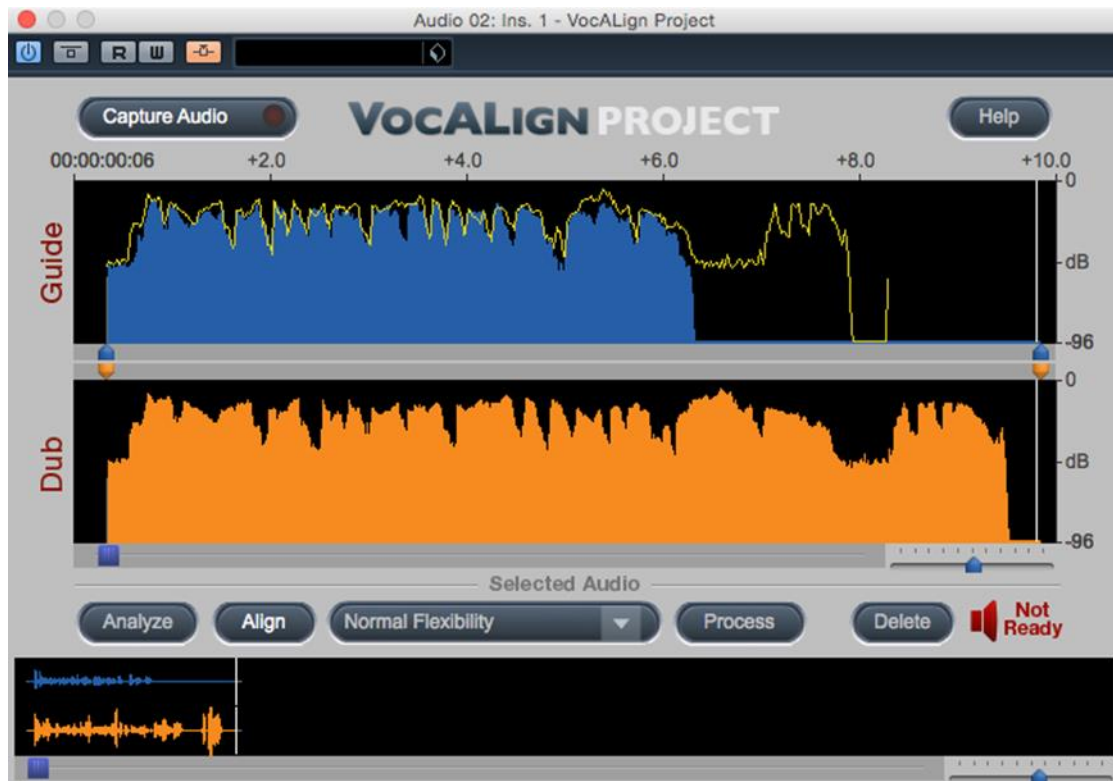


Figure 17 Yellow trace over Guide showing proposed alignment

Step 10 Create the time-aligned version of the Dub audio

Click **Process** to create a rendered version of the aligned audio that is written temporarily to disk. The loudspeaker symbol next to the **Delete** button changes to green and shows **Ready** to show that audio is ready to be auditioned, as shown in Figure 18.

(While the loudspeaker symbol next to the **Delete** button is red – **Not Ready** – you won't hear the aligned audio from the track being processed. When the loudspeaker is green you will hear the aligned audio.)

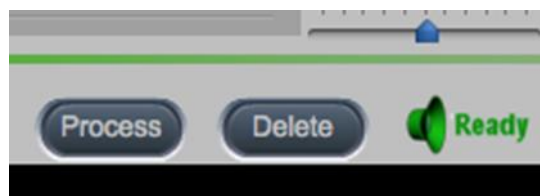


Figure 18 The green loudspeaker shows that audio is ready to be replayed

Step 11 Play the aligned audio

Once the edit is completed and the speaker symbol is green, if you press **<Play>** (space bar) in Logic (having moved the timeline back to the start) you will hear both the Guide and aligned Dub audio together in sync. If you left the start and end pointers unaltered before editing, the laugh at the end of the Dub audio will still be audible and a little time compressed. (VocAlign's mapping of the two energy patterns, as shown by the yellow trace, results in an overall shortening of the Dub audio.)

The bypass button in the top left hand corner of VocAlign’s display (see Figure 19) allows you to temporarily turn off the processing of this plug-in so that you can hear the original unprocessed audio. The button is yellow when the plug-in is bypassed. Be sure to turn bypass off (i.e. *not* bypassed) if you want to use the Aligned audio.



Figure 19. Bypass button in top left-hand corner.

If you move the Guide’s end marker (right hand blue pointer) to just after the end of the Guide signal, then press **Process** again to regenerate the Aligned Dub, the laugh at the end of the dub will be left unprocessed and will remain at the original speed.

You can also move the right-hand orange pointer (the Dub’s end marker). For example, to eliminate the laugh from the processed version, move the right-hand orange pointer, so that it is positioned just before the laugh starts. Press **Process** again and the laugh will be removed from the aligned audio.

Step 12 Create an audio file of the aligned Dub

In order to create an audio file of the processed version (of the Aligned Dub), control-click (or right click) on the Dub region in the Logic window and select ‘Bounce in Place’, as shown below.



Figure 20. Choosing 'Bounce in Place'.

If using ‘Bounce in Place’ the processed audio will be bounced onto a new track in sync with the start of the original one. You can either let Logic choose a new track, or you can select the track onto which it will be bounced before you select ‘Bounce in Place’ (see Figure 21 above). For now, the new extract can be renamed (shown below in Figure 22 as ‘TWITDUB_bip’) and bounced onto track 3. Notice that VocAlign has only processed that part of the Dub audio that matches the Guide.

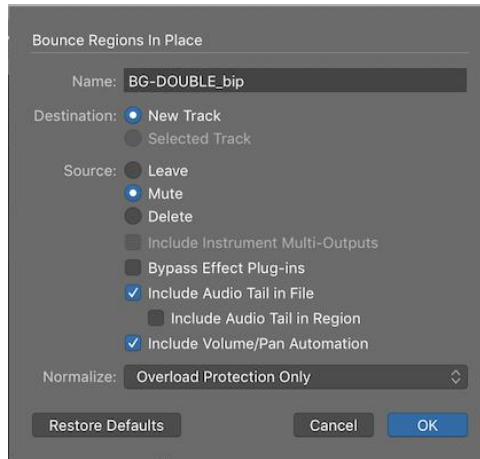


Figure 21. Options for 'Bounce in Place'.

The source (original Dub) audio region can either be left as it is, muted or deleted during this process (Figure 21 above). In the example shown in next Figure, it was muted during the bounce, indicated by a blue dot before the region name on the Logic display. (This means you will only hear the newly aligned file when you play.) You can unmute a muted region by control/right-clicking on the region concerned and selecting 'Mute on/off'. Alternatively, you can mute the entire source track using the track mute control to the left of the display.



Figure 22. Aligned audio on track 3 in the Logic display, showing blue dot on track 2's audio region to indicate muting.

If you have used 'Export as Audio File', the new region will be available in the *Project Audio Browser* (formerly called *Logic Bin*) and can be dragged onto the new track. If the Snap function is active in Logic the aligned audio can be dragged accurately to match the start of the original version.

TIP: Do not save the modified Logic's tutorial session over the original downloaded session when exiting Logic. We recommend that you save the modified one with a different name so that original tutorial can be reused.

G. Operation as an ARA plug-in

The Audio Unit version of VocALign Project contains an ARA-compatible extension that will work with Logic Pro X (version 10.5.1 or higher) as an ARA II plug-in.

This section explains how to use VocALign as an ARA plug-in with Logic Pro. Apart from this, other detailed and advanced aspects of the plug-in's operation are the same as for the basic AU version described in this manual.

Unlike the basic AU version, the ARA version can load audio into the VocALign plug-in quickly without needing to take audio from an insert or sidechain in real time.

The steps below describe how to use VocALign Project AU as an ARA plug-in in Logic Pro X.


Important

Please note that it is important to put Logic Pro X into <Play> briefly just before you add any audio to VocALign Project (ARA). This ensures that VocALign (ARA) is always up to date with your project. The need to do this is a quirk of Logic Pro's implementation of ARA, over which VocALign (ARA) has no control.

*(*Tip*) Tapping the spacebar twice before pressing <Capture Guide> or <Capture Dub> in VocALign Project (ARA) is a quick way to do this.*

We recommend that you make Logic Pro's track selection follow the selection of audio regions automatically. To do this:

a) In Logic Pro X open "Preferences -> Advanced Tools...". Make sure that "Show Advanced Tools" has been selected. and then select "Editing", which you will see near the top of the dialogue box.

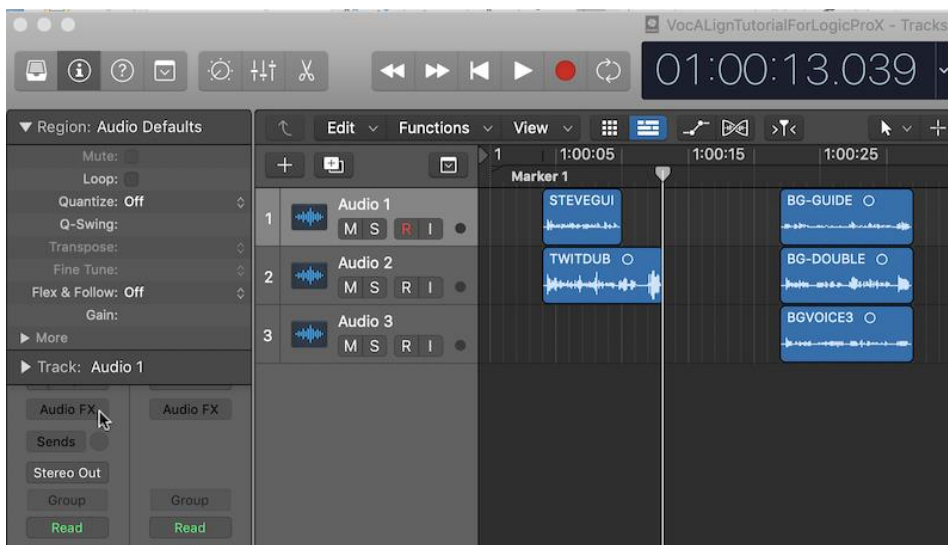
b) Next in Logic Pro X click the button "General"  (near the top left corner of the dialogue box) and then select "Editing", which you will see near the top of the dialogue box. Under "Editing", enable "Select Track on Region/Marquee selection".

Adding VocAlign as an Audio Fx In Logic Pro X

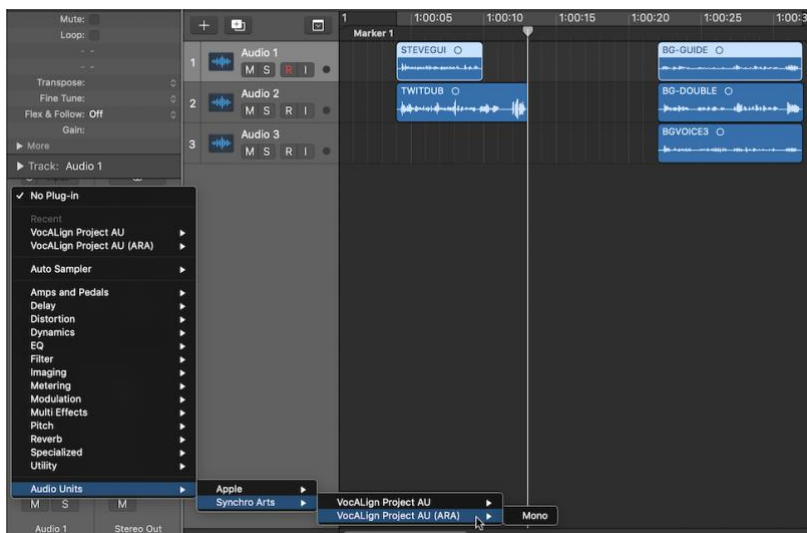
In Logic you need to add VocAlign as an *Audio Fx* to each track that contains the Guide audio and the Dub audio. In the example below the first track contains the Guide while the second and third tracks contain the Dubs.

For each of the first three tracks follow these steps in Logic Pro:

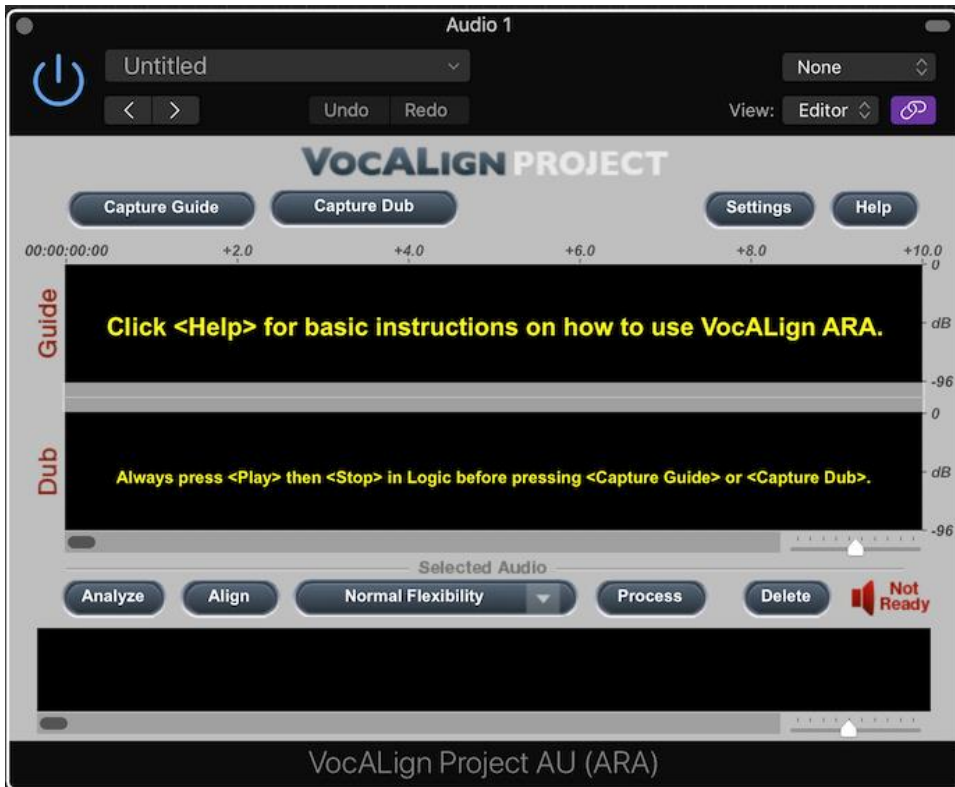
- a) For Track "Audio 1", click the track's button **Audio Fx**




- b) In the pop-up menu, choose *AudioUnits->Synchro Arts->VocAlign Project AU (ARA) ->Mono*. It is important to choose the (ARA) version.



- c) Once you have added VocAlign to the track, Logic Pro will display each plug-in labelled with the name of its associated track.



- d) Set "Link Mode" to "Single" in the VocAlignAU (ARA) plug-in. To do this select the Link button  in the top right corner of the Plug-in's window with <Ctrl><Click> and select "Single" in the pop-up menu that appears. The Link button should glow purple.
- e) Similarly, add VocAlign Project (ARA) to Tracks 2 and 3 by repeating steps a) to d).

To remove VocAlign Project (ARA) from a track, click "No Plug-in" in the Audio Fx menu.

Select and Process the Audio

First, in Logic select the Guide audio, which in this example is *BG-GUIDE* on the first track. Make sure that you have selected only *BG-GUIDE*. Next in Logic, press <Play> followed quickly by <Stop> (by tapping the spacebar twice) and then in VocAlign, press the button "Capture Guide".



Figure 23. Capturing the Guide audio BG-GUIDE in VocAlign Project.

Once you have captured the Guide, VocAlign will show the selected audio in its Guide display.

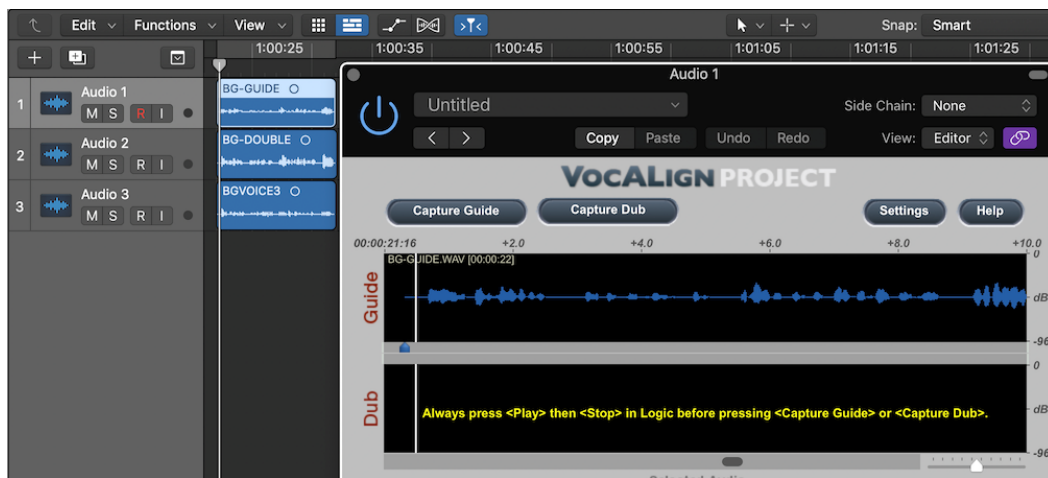


Figure 24. Guide audio in VocAlign Project

Now to Capture the Dub audio, select the audio region *BG-DOUBLE* in Logic Pro X, tap the spacebar twice and then in VocAlign press the button “Capture Dub”. (Make sure that you have selected only *BG-DOUBLE*.)

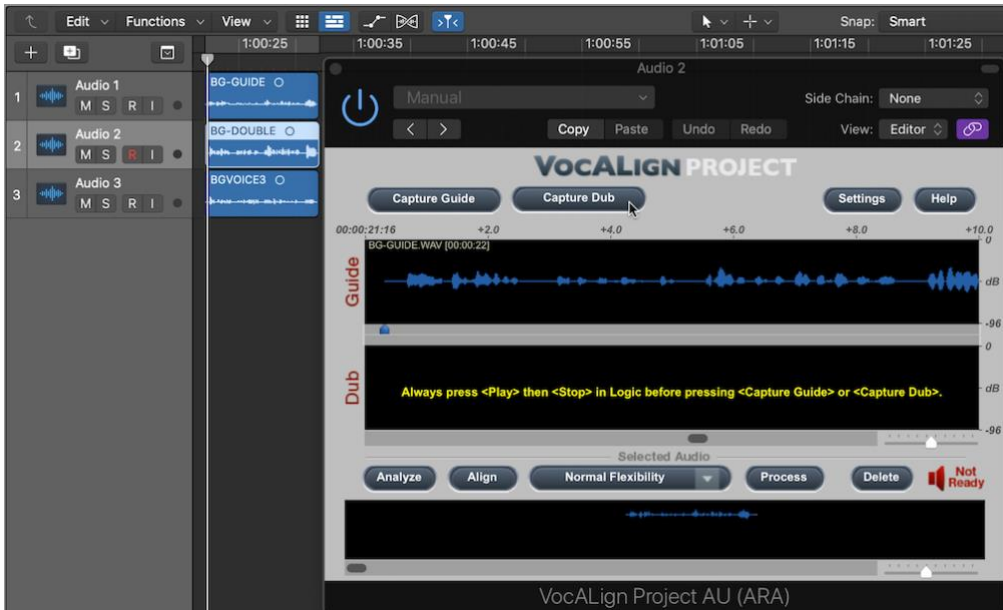


Figure 25. Capturing the Dub audio BG-DOUBLE in VocAlign Project.

Once VocAlign has captured the Dub audio, it will automatically align the Dub to the Guide using the current settings. The display will show the energy profiles of the original audio and the energy profile of the Aligned Dub superimposed on the Guide's. The small loudspeaker icon will glow green to indicate that VocAlign has generated audio file for the aligned Dub.

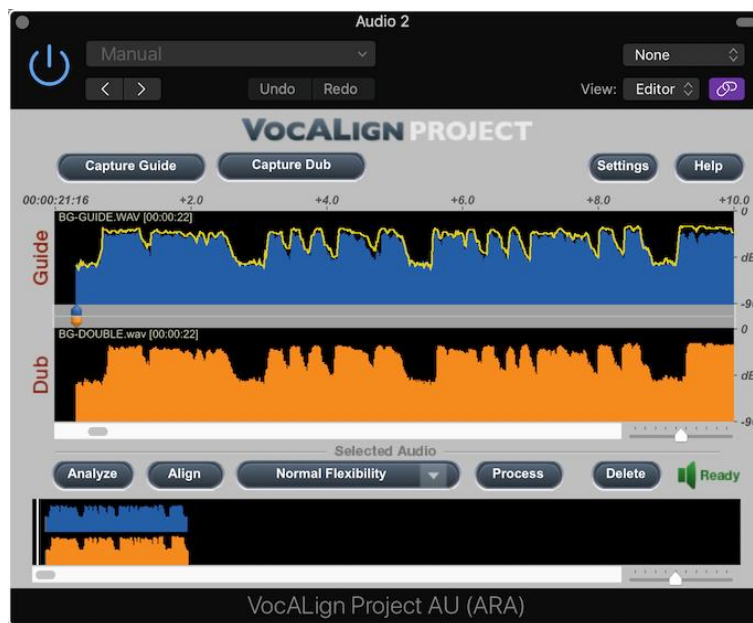


Figure 26 VocAlign Project displays the energy profiles of the Guide (blue) and Dub (orange). The yellow trace shows the energy profile of the Aligned Dub.

Play and render the aligned audio

If the Playback Ready indicator below the Dub track on the plug-in's display is green, you can play the tracks concerned in Logic Pro X. You should hear the aligned version of the audio segment instead of the original one. This, however, is only a temporary "effect" applied to the audio segment in real time.

To "render" the aligned audio permanently in Logic Pro X, first select the Dub audio with <Ctrl><Click> and choose 'Bounce in Place' or use the keys <Ctrl> as a shortcut. 'Bounce in Place' will copy the aligned (processed) audio onto a new track in sync with the start of the original one. You can either let Logic choose a new track, or you can select the track for the bounce's destination.



Figure 27. Use Logic's 'Bounce in Place' to create a permanent audio file of the aligned Dub generated by VocAlign.

TIP: Unless you render (bounce) the aligned audio, it will continue to be applied as a real-time effect, using processing power, unless 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 Logic Pro X and it will then replay reliably.

Capturing and aligning multiple Guides and Dubs

To align more than one pair of audio regions (a Dub paired with a Guide), simply repeat the steps for the first pair, namely:

1. Add VocAlign to the tracks that have the Guides and Dubs. When VocAlign is added as an *Audio FX*, it will have access to all the track's audio.
2. In Logic Pro X select the Guide audio, tap the spacebar twice and then in VocAlign press the button **Capture Guide**.
3. In Logic Pro X select the Dub audio, tap the spacebar twice and then in VocAlign press the button **Capture Dub**. This step both captures the Dub and aligns it to the Guide automatically using the current settings.
4. If necessary, in VocAlign make adjustments to the settings to improve the alignment and press the button **Process**.
5. Repeat steps 1 to 4 for each new pair as required...

It is even simpler to align more than one Dub to the same Guide, namely:

1. Add VocALign to the tracks that have the Guides and Dubs. When VocALign is added as an *Audio FX*, it will have access to all the track's audio.
2. In Logic Pro X select the Guide audio, tap the spacebar twice and then in VocALign press the button **Capture Guide**.
3. In Logic Pro X select the Dub audio, tap the spacebar twice and then in VocALign press the button **Capture Dub**. This step both captures the Dub and aligns it to the Guide automatically using the current settings.
4. If necessary, in VocALign make adjustments to the settings to improve the alignment and press the button **Process**.
5. Repeat steps 3 to 4 for each new Dub as required...

Tip:

The examples in this manual have assumed that each Guide corresponds to a single Audio Region and that each Dub corresponds to a single Audio Region. Nonetheless, it is possible to create the audio for the Guide or the Dub by selecting consecutive Audio Regions in Logic before clicking <**Capture Guide**> or <**Capture Dub**> in VocALign. The Regions for each Guide or Dub must be on the same track and be adjacent to each other. In other words, there can be no silence or overlaps between each Audio Region and the Audio Regions must be next to each other.



Figure 28. Selecting the Guide and Dub(s). In this example, the audio regions BG-Guide.1 and BG-Guide.2 could be selected to form the Guide. Likewise, BG-Voice3.1 and BG-Voice3.2 could be selected as one Dub and BG-Double as another.

(** Remember to tap the spacebar twice before pressing either of the capture buttons **).

Displaying a Specific Dub Audio Event in VocALign

If you have used VocALign to process many Dubs in a Logic Pro project you may want to display a specific Dub/Guide pair. To do this, simply click on the Dub or Guide in Logic Pro X, tap the spacebar twice and VocALign will display that Dub/Guide pair in its windows.

Changing the plug-in's settings

In the ARA version of VocAlign Project you will find a **Settings** button at the top right of the plug-in window. It enables you to change how audio events are described in the drop-down menus for Guide and Dub selection.

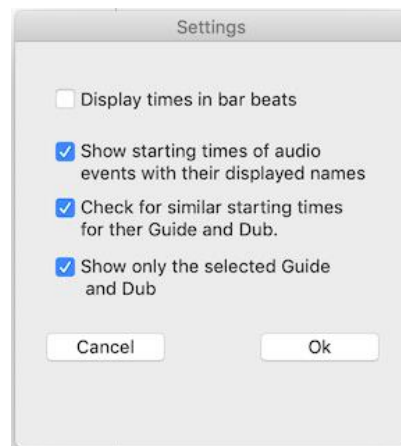


Figure 29. Options in the Settings menu of the ARA plug-in.

Display Times in bar beats allows you to change the format of the displayed times to bar beats. VocAlign will use the current setting of the project's beats per minute.

Show starting times of audio in Guide and Dub lists enables you to choose whether the starting times of events are shown with its name. (This can help to distinguish between copies of events with the same name located at different playback times.)

Check for similar starting times when capturing Guide and Dub checks that the events being captured have similar starting times in the session. This checks the suitability of the Guide and Dub for correct alignment, and guards against capturing unintended events.

Show only the selected Guide and Dub enables you to choose whether VocAlign shows only the selected Guide and Dub in its Guide and Dub graphs.

Normally the selected Guide and Dub are shown highlighted and all the other captured Guides and Dubs are shown at a reduced brightness. Dub signals that overlap or are close to each other can make the graphical displays a little confusing. Selecting this setting will make it easier to see what you are currently processing.

If there is no selected Guide or Dub, then VocAlign will always show all its captured audio at a reduced brightness.

Capturing audio in real time using Basic AU mode (as an Audio Fx)

Although VocAlign Pro can process audio almost instantly in ARA mode using the steps described above, it can also be operated in Basic AU mode (see [Section F](#)). The plug-in is used as an *Audio Fx* on the Dub track and the audio is captured in real time while playing. This can

allow for finer control over what is captured as you can select the exact start and end points required.

The basic steps are almost identical to the introduction to Logic given above:

1. To use the basic AU version, add the plug-in named “VocALign Project AU” (**note:** there is no “(ARA)” in the plug-in’s title) as an Audio Fx to the Dub track.
2. From VocALign Project’s window set the sidechain to the Guide track.
3. Locate the playback cursor in Logic to the start of the audio to be captured. Press **Capture Audio** in the plug-in. Play the audio in Logic. Stop playback. Press **Stop Capture**.

H. VocALign Project 3 screen contents and controls

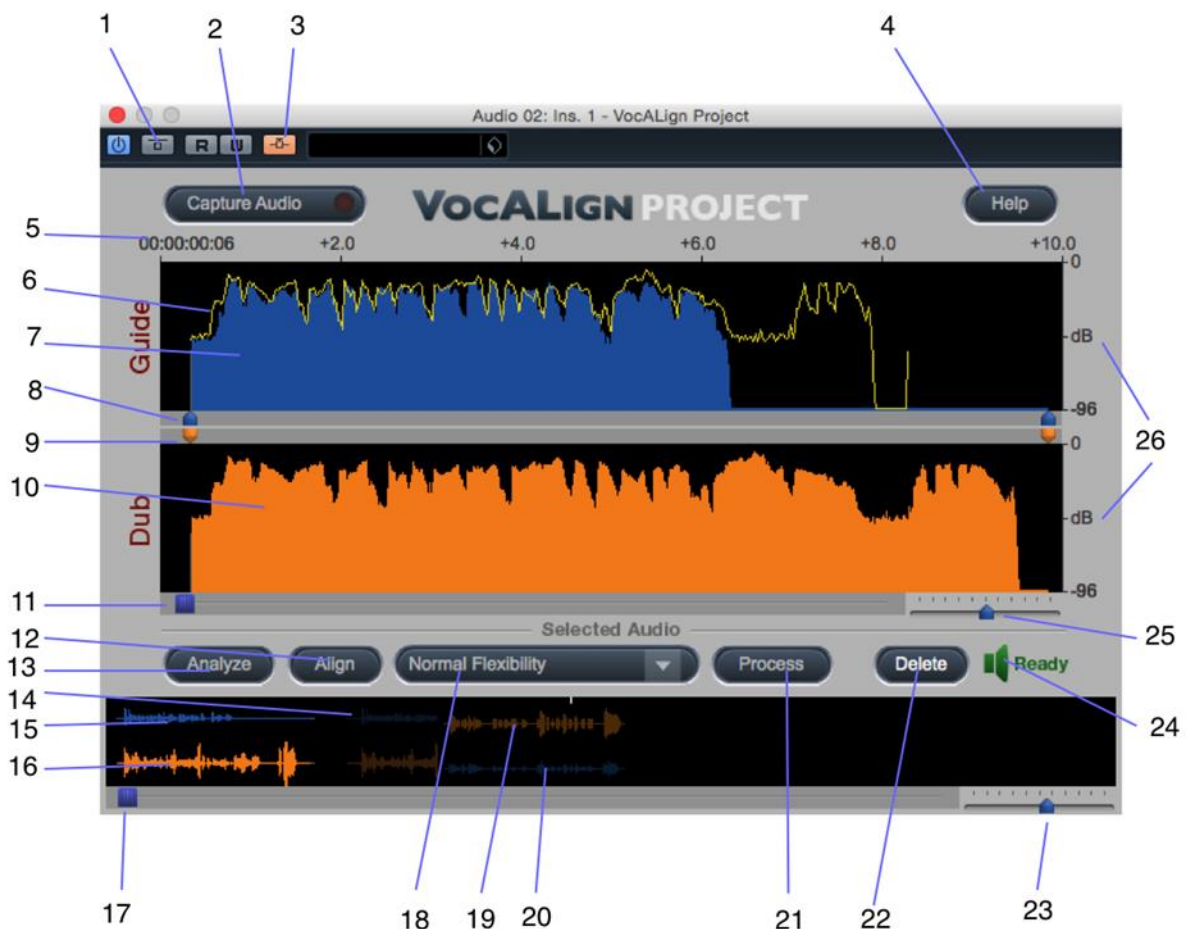


Figure 30. Key to VocALign screen contents and controls (Audio Unit version shown, see previous section for explanation of differences with ARA version)


- 1) **Bypass button:** bypasses any VocALign processing applied on this Insert. If bypass is OFF (grey), VocALign will play the aligned Dub, if the aligned Dub is ready (i.e. indicator (24) is green). If bypass is ON (yellow), VocALign will play the original (unprocessed) Dub audio. (AU only.)
- 2) **Capture Audio button:** arms VocALign to receive Guide and Dub audio from the editor during a play pass. (Yellow when waiting for audio, flashing green when capturing audio.)
- 3) **Side chain button:** turns on the side chain input to VocALign (normally routed from a Send of the Guide track). (Orange when ON.)
- 4) **Help button:** click to access help tips.
- 5) **Display start time and time offsets** – shows position of captured audio referenced to the editor timeline.
- 6) **Aligned audio trace:** a representation of the energy of the new aligned signal.
- 7) **Guide energy:** a profile of the energy of the Guide signal in time.
- 8) **Guide start point selector:** adjusts processing start. (The corresponding end point selector is shown further to the right).

- 9) **Dub start point selector:** adjusts processing start. (The corresponding end point selector is shown further to the right).
- 10) **Dub energy:** a profile of the energy of the Dub signal in time.
- 11) **Scroll bar:** use slider to move waveform position in window.
- 12) **Align button:** click this to generate and display the aligned Dub audio energy trace in Guide window (does not create aligned audio).
- 13) **Analyze button:** click to analyse and display the energy plot of the Guide and Dub. VocAlign displays the energy in only one band (500Hz – 1kHz) but actually splits it into four bands.
- 14) **Overview window:** shows multiple captured regions and clicking waveform selects the Dub and Guide waveforms to be processed.
- 15) **Selected Guide waveform:** Guide audio that will be processed.
- 16) **Selected Dub waveform:** Dub audio that will be processed.
- 17) **Overview waveform display scrolling:** slide to move display
- 18) **VocAlign settings:** controls the characteristics of the alignment processing (see [Section 1](#)).
- 19) **Unselected Guide waveform:** Guide audio that will not be processed (shown as darker waveform). (These will only be visible if multiple regions occurring at different time values have been separately captured into the plug-in.)
- 20) **Unselected Dub waveform:** Dub audio that will not be processed (shown as darker waveform). (These will only be visible if multiple regions occurring at different time values have been separately captured into the plug-in.)
- 21) **Process button:** click to generate aligned audio. (24) will indicate when done.
- 22) **Delete button:** click to remove all waveforms from VocAlign.
- 23) **Overview waveform display scaling:** slide to zoom in and out
- 24) **Editing complete indicator:** If the indicator glows green (**Ready**), the edited (aligned) audio has been processed and is ready for playback. If the indicator is red (**Not Ready**), the aligned audio is not yet ready to be replayed.
- 25) **Selected waveform display scaling:** slide to zoom in and out
- 26) **Energy scale:** shows range of display.

I. Important tips for effective operation

Assuming you have mastered either the Quick Start introduction or the Tutorial in the previous sections, the following will help you to get the best results from VocALign. The text refers to use with Logic Pro X, but in most cases the same principles apply when used with other supported DAWs.

Logic Pro X with VocALign Project (ARA)

- It is important to <Play> momentarily in Logic Pro X before you add any audio to VocALign Project (ARA). This ensures that VocALign (ARA) and any other ARA plug-ins get updated correctly. The need to do this is a quirk of Logic's implementation of ARA over which VocALign Project AU has no control.
- Select the plug-in's link button  with <Ctrl><Click> to set the "Link mode" to "Single" for all VocALign AU's windows. This avoids having too many windows open at once and it removes unnecessary clutter from your screen.

Capture

- In Logic Pro, you will start with a session in which there is Guide (original) audio contained on one track and Dub (replacement or new) audio on a second track.
- In the Logic Project window, drag the timeline (current play time) so that it starts just before the desired portion of the Guide and Dub audio regions for processing. The captured material can include any individual region or multiple regions. Your selection can begin and end in the middle of a region. (To have this fine control over start points with the ARA version, you will have to use it in Insert mode, as described in [section F](#), or adjust the Guide start point selector in VocALign once the audio is captured.) VocALign Project works best when working on relatively short regions at a time, though. But effective alignment will depend on many things: e.g. gaps in the signals, how similar they are and other features. Some experimentation will help the user find the best lengths to process for each signal.
- Try to capture up to around 0.25 to 0.5 seconds of 'background' or 'leader' audio at the beginning of your Guide audio selection. This will assist VocALign to set the noise floor levels and allow better alignment at the start of the signal. (In the current version of VocALign Project 3 AU, the selected audio can be up to two minutes long and must be longer than 0.25 seconds.)
- The Dub does not have to start at the same time as the Guide. In other words, the timecode position of the Dub is not used. The Guide's timecode is important and so is the amount of 'background' captured before the Guide and the Dub.
- Try to leave as much or slightly more background audio before the start of the Dub signal than there is before the start of the Guide.
- If you capture an audio region that begins in digital silence, VocALign may generate an error as it needs to be able to detect a signal to enable it to set its analysis

parameters. Try to start capturing where there is at least some low-level background noise within the audio region.

Overview window

- If you capture more than one audio region (in separate capture passes) while the VocAlign plug-in is open these will show up as separate waveforms in the overview window at the bottom of the display. Click on the section of waveform that you want to align, and it will appear in the upper displays ready for processing. The unselected regions' waveforms are dimmed as shown in Figure 31.

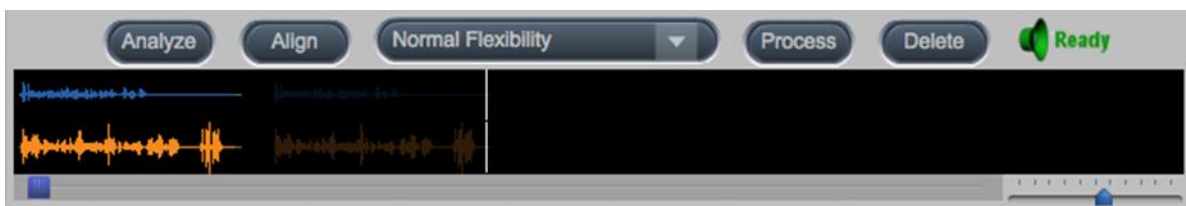


Figure 31. Overview display showing dimmed waveform for unselected audio (right)

Trimming the captured material

- Captured audio material may need to be trimmed before alignment in order to ensure that the extracts are optimised for processing. VocAlign will work best if Guide and Dub material start at a similar point in their energy profiles, and both have a small period of background noise before they begin.
- It is preferable to trim starts and ends of extracts using the energy display. You can help VocAlign do a good job by trimming the audio to match initial energy profiles and ensure that there is a good chance of starting the alignment accurately. To convert a captured audio waveform into the energy display press **Analyze**.
- **IMPORTANT:** There is currently no way to return to the waveform display once an energy analysis has been done. The current contents must be deleted and recaptured if you need to start again.
- You can optionally perform several operations on the energy display waveform itself before alignment:
 - a) The start and end boundaries of the selected regions can be modified by dragging the blue or orange pointers at either end of the audio selections as shown in Figure 32, left. The waveform turns grey to indicate unselected audio energy. Alternatively, you can position your cursor at the boundary of the coloured audio material (the cursor changes into a pair of horizontal arrows) and drag the boundary left or right.
 - b) The display can be scrolled horizontally with the scroll bars to examine the captured waveforms. You may need to scroll right to see the end point adjuster.
 - c) The scale control (Figure 32, right) can be used to expand or contract the horizontal time scale (slider).



Figure 32. (left) Pointers to adjust start of Guide and Dub energy; (right) scale control

Alignment

- Choose an appropriate VocAlign setting before pressing **Align** (e.g. if the Dub is very long compared to the Guide, try 'Maximum Compression'). Guidance is offered in the following section 'Alignment settings'.
- After clicking **Align**, visually inspect the results in the Guide window. The peaks and troughs of the yellow (Aligned Dub) energy trace should line up generally with those of the Guide as in Figure 33.
- If the alignment looks satisfactory, generate the aligned audio by pressing **Process**. This creates the aligned audio.
- A shortcut is to simply press **Process** after capturing the audio as this will run the Analyse and Align steps first.
- Preview the results by using the Logic's play controls.
- If the alignment is satisfactory, transfer the edited audio to Logic by using the Audio Mixdown function, as described in the tutorial.
- If you make any changes to the selected waveform or settings after the initial alignment, the yellow trace of the aligned signal will disappear, and the **Editing complete indicator** will glow red. After having made any changes, simply press the button **Process** to regenerate a new aligned output.
- If the alignment does not look or sound satisfactory, there are a few options:
 - a. Select another setting or alignment mode (which will clear the aligned trace), click **Align** again, and examine the results.
 - b. Adjust the 'leader' audio before the start of the Guide and Dub to be roughly equivalent, with the Dub leader being slightly longer.
 - c. Adjust the end of the Guide or Dub (see previous section).
 - d. Reselect and recapture the Guide or Dub audio in Logic, if the original selection is thought to be causing the problem.

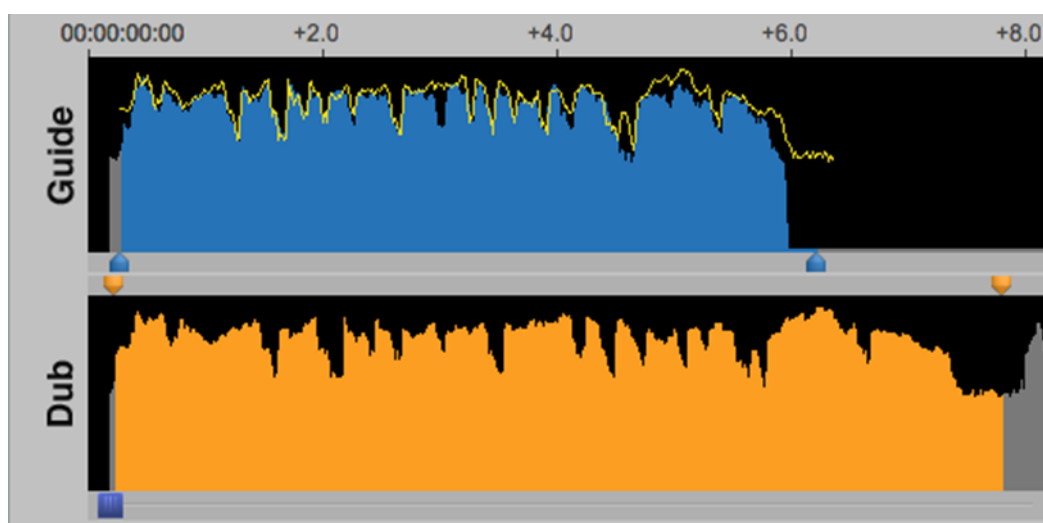


Figure 33 Checking the aligned energy (yellow trace)

Alignment settings

You can control the alignment settings, which greatly affect how the alignment performs. Use the alignment settings menu to select which preset is active, as shown in Figure 34.

The main setting characteristics are described in Table 1.

<i>Setting</i>	<i>Main characteristics</i>
Low Flexibility	Alignment is not very flexible; sound quality may be best.
Normal Flexibility	(Default): it is recommended to try this first as it works best in most cases.
High Flexibility	Alignment is the most flexible of the settings but may compromise sound quality.
Maximum Compression	Tries to match the Guide by time compressing the aligned audio as much as possible.
Maximum Expansion	Tries to match the Guide by time-expanding the aligned audio as much as possible.

Table 1 Alignment settings

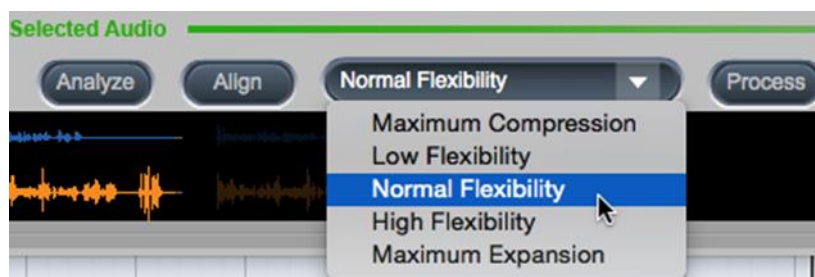


Figure 34 Selecting alignment setting

Further tips and tricks

Latching

To align just the start of the Dub with the Guide (and leave the rest of the Dub unprocessed), use the Guide End Point Selector to use only select 0.25 to 1.0 second of the Guide audio for processing and keep the Dub signal full length.

Reverb tails

To stop the end of a Dub from being stretched to wrongly match a noisy or reverberant Guide, stop the end of the Guide for processing to be 0.25 to 1.0 second before the Guide signal of interest ends and use the entire Dub.

Controlling the plug-in status

After having first added VocAlign as an Insert on a track, the name of the plug-in will appear on the relevant Insert slot. To change or remove the plug-in, click and hold on the Insert slot and select the appropriate plug-in (or 'No Plug-in'). To reopen the VocAlign window once the

plug-in window has been closed, click on the *Audio Fx* button for the track and select VocAlign Project AU.

Previewing material

Once the Dub track has been provisionally aligned (before mixing down the aligned audio to an audio file) you can listen to either the Guide track or the Dub track separately by using the track mute or solo controls in Logic. Mute the Guide track to hear only the Dub track, for example. Use the Bypass control in VocAlign to turn the alignment effect on or off. Remember to remove these modifications before mixing down a processed track.

Troubleshooting

For help and advice, visit the Synchro Arts support website at:

<http://www.synchroarts.com/>

