



Realtime Polyphonic Pitch Correction



# USER MANUAL

Version 1.3.3 / September 2023



**© Copyright 2022 - 2023 zplane.development GmbH & Co. KG. All rights reserved.**

This manual, as well as the software described in it, is furnished under license and may be used or copied only in accordance with the terms of such license. The content of this manual is furnished for informational use only, is subject to change without notice, and should not be construed as a commitment by zplane.development GmbH & Co. KG.

zplane.development GmbH & Co. KG assumes no responsibility or liability for any errors or inaccuracies that may appear in this document. Except as permitted by such license, no part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, recording or otherwise, without the prior written permission of zplane.development GmbH & Co. KG.

zplane.development is a trademark of zplane.development GmbH & Co. KG.

Mac, the Mac logo, and macOS are trademarks of Apple Computer, Inc., registered in the U.S. and other countries. Windows is a registered trademark of Microsoft Corporation in the U.S. and other countries. All other product and company names are trademarks or registered trademarks of their respective holders.

## Table of Contents

1	Introduction.....	5
1.1	Key Features.....	5
1.2	reTune Overview.....	6
1.3	Naming Conventions.....	6
1.4	Known Issues .....	7
1.4.1	Pitch-Mapping Matrix Automation in Logic Pro .....	7
2	Registration, Installation & Activation .....	8
2.1	Registering Your Product .....	8
2.2	Installation.....	9
2.2.1	Windows.....	9
2.2.2	macOS .....	9
2.3	Activating Your Product.....	10
3	The reTune Interface .....	10
3.1	View Selectors .....	11
3.1.1	Advanced View.....	12
3.1.2	Normal View.....	12
3.1.3	Simple View.....	13
3.2	Pitch-mapping Matrix.....	13
3.2.1	Reading the Matrix.....	14
3.2.2	Setting Nodes in the Matrix.....	14
3.2.3	Scale Presets.....	15
3.3	Transpose Controls .....	16
3.4	Automatic Key and Scale Detection .....	16
3.5	Pitch Correct Slider .....	18
3.6	Processing Controls.....	19
3.6.1	Sensitivity Knob .....	19
3.6.2	Transients Knob.....	19
3.6.3	Smoothing Knob.....	19
3.6.4	Dry/Wet Knob .....	20
3.7	Settings Page.....	20
3.7.1	MIDI Quantization Range.....	20

3.7.2	MIDI Input Switch .....	21
3.7.3	Set Map Point Parameters on MIDI Input Switch .....	21
3.7.4	Activation Information .....	21
3.8	Help Page.....	22
3.8.1	Open User Guide .....	22
3.8.2	Visit zplane Online.....	22
3.8.3	Copy System Information to Clipboard.....	22
4	Using reTune .....	23
4.1	Changing the Key of Your Input .....	23
4.2	Automating Key Changes.....	24
4.3	Tuning an Instrument.....	24
4.4	Using reTune Creatively .....	24
4.5	Controlling reTune with MIDI .....	25
4.5.1	Setting up MIDI Control in Ableton Live .....	26
4.5.2	Setting up MIDI Control in Logic Pro .....	27
4.5.3	Setting up MIDI Control in Reaper .....	28
4.5.4	Setting up MIDI Control in Studio One .....	29
4.5.5	Setting up MIDI Control in Pro Tools .....	30
4.5.6	DAWs Without Necessary MIDI Routing.....	30
5	Technical Specifications.....	31
6	Feedback & Support.....	32

# 1 Introduction

**reTune** gives you full access to the pitch content of your audio samples and tracks, and enables you to map each input pitch to any output pitch in the chromatic scale, all in real-time.

This allows you to re-tune your audio to any target key (e.g. from D major to C# minor) or to use it as a creative tool to modify the pitch content in any way you like. If you are unsure about the key of your input audio, you can let **reTune** estimate the key for you.

In addition, **reTune** can act as a pitch-correction tool that quantizes pitches to the nearest semitone. Additional controls include the sensitivity of the pitch detection, the treatment of transients as well as a smoothing of the pitch contours.

## 1.1 Key Features

- Built upon advanced AI analysis and reTune technology created by [zplane.development](https://zplane.development)
- Intelligent and independent shifting of transient and tonal components
- Works on polyphonic and multi-timbral content—can re-tune entire songs
- Graphical matrix for building your own custom pitch-translation mappings
- VST3, AU, and AAX plug-in variants for use in your DAW or video editor of choice
- macOS version has native compatibility with both Intel and M1 processors

## 1.2 reTune Overview

At the center of **reTune**'s interface is a matrix for intuitively creating a mapping between input and output pitches.

Surrounding this matrix are additional dials for fine-tuning the performance of the pitch-shifting algorithm as well as menus for accessing preset keys and scales.

At the top of the window are buttons for switching views, and the lower-right corner has buttons for accessing Settings/Activation and Help materials:

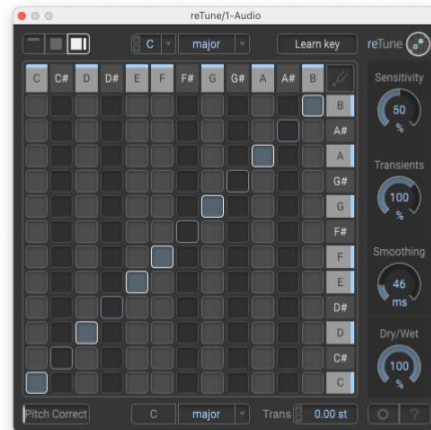


Figure 1: reTune Interface

## 1.3 Naming Conventions

In this documentation, the names of on-screen buttons, sliders, and indicators will be written in bold font between brackets, such as **[Learn Key]** and **[Sensitivity]**.

Selectable menu options will be written in bold font between quotes, such as **"major"** and **"minor"**.

References to numbered pointers in images will be written in bold font between parenthesis, such as **(1)** and **(2)**.

## 1.4 Known Issues

At the time of release, the following issues are known and will be addressed in a future version. Where possible, workarounds for these issues are provided here:

### 1.4.1 Pitch-Mapping Matrix Automation in Logic Pro

Changes to the Pitch-Mapping Matrix will be captured as automation data only when audio is being processed by reTune. You will likely find that changes to the Pitch-Mapping Matrix will not be captured by Logic Pro, either as automation or undo steps, if those changes are made while reTune is processing no audio.

## 2 Registration, Installation & Activation

**reTune** is protected by both a *serial number* and a corresponding *unlock key*. The serial number will be sent to you by e-mail upon purchasing **reTune**. You will receive your unlock key by registering **reTune** at the zplane website. Once you have received the unlock key, you will be able to activate **reTune**.

### 2.1 Registering Your Product

In order to receive your unlock key, please [log in to your account at the zplane website](#)—please [create a new account](#) there if you don't have one already. After logging in:

1. Click the **[REGISTER]** button in the menu bar:

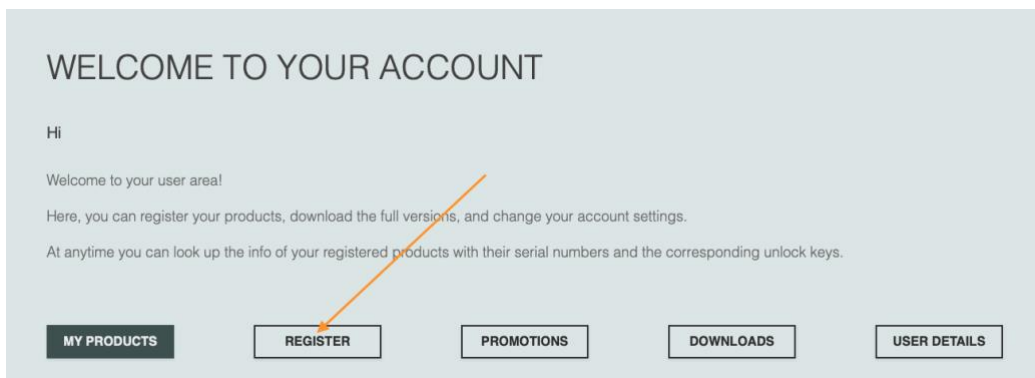


Figure 2: The Account page

2. In the area provided **(1)**, paste in your **reTune** serial number and click the **[REGISTER]** button **(2)** to the right:

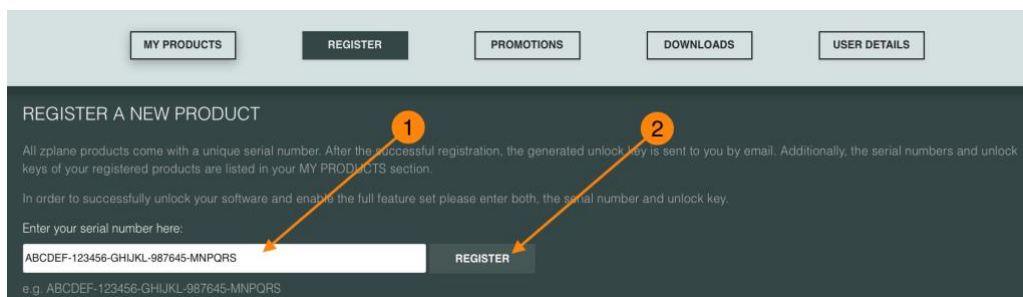


Figure 3: The Product Registration page

3. Your **reTune** unlock key will then be shown.

**Note:** You can recall any of your serial numbers and unlock keys anytime in the future by logging in to your account and clicking the **[MY PRODUCTS]** button in



the menu. This will display the serial numbers and unlock keys for all the zplane products you have registered in your account.

## 2.2 Installation

After registering your **reTune** serial number, the installers will be available in both the “My Products” and “Download” sections of your personal account. Find below a step-by-step description of the installation procedure for your specific operating system:

### 2.2.1 Windows

- Download the **reTune** Windows Installer application (.exe)
- Double-click on the file to launch the Installer
- Click **[Next]** in the installer window
- Read the End User License Agreement and, if you agree, click **[Next]**, otherwise, click **[CANCEL]** to abort installation
- Follow the instructions of the installer to complete the installation—you can choose which variants of the plug-in you wish to install and which to omit during the installation process

### 2.2.2 macOS

- Download the **reTune** macOS Installer disk image (.dmg)
- Double-click on the downloaded .dmg to mount it, then double-click the installer file (.pkg) contained within
- Click **[Continue]** in the installer window
- Read the End User License Agreement and, if you agree, click **[Next]**, otherwise click **[CANCEL]** to abort installation
- Follow the instructions of the installer installation—you can choose which variants of the plug-in you wish to install and which to omit during the installation process
- When installation is complete, you can unmount the disk image by right-clicking on it and clicking **“Eject”** from the context menu

## 2.3 Activating Your Product

Activation of **reTune** is done within the **reTune** plug-in itself. You must therefore first load **reTune** as a plug-in within any host program you have. Once you've loaded **reTune**:

1. Open the **reTune** interface so you can see the plug-in—most hosts will automatically show the plug-in interface as soon as the plug-in is loaded. Access the Activation Screen by clicking the **[⚙]** button **(1)** in the lower-right corner of the window:



Figure 4: Main Window with **[⚙]** button

2. Paste your Serial Number **(1)** and Unlock Key **(2)** into the spaces provided, then click the **[SAVE]** button **(3)**:



Figure 5: Serial Number and Unlock Key entry areas

3. **reTune** will then be activated and will show your registered serial number.
4. After successful activation of **reTune**, you can close the Activation screen and you will return to the main window.

## 3 The reTune Interface

The **reTune** interface has been designed to be flexible, thus allowing you to choose the amount of details and controls you want to see at once. In the

following sections, the various controls and displays of **reTune** will be described, but some of them may not be visible depending on the View you are using—see the next section about selecting Views.

## 3.1 View Selectors

In the top-left corner, you will find the View Selectors. There are three different views which will be compared in the following sections. From left to right, they are Simple View **(1)**, Normal View **(2)**, and Advanced View **(3)**.

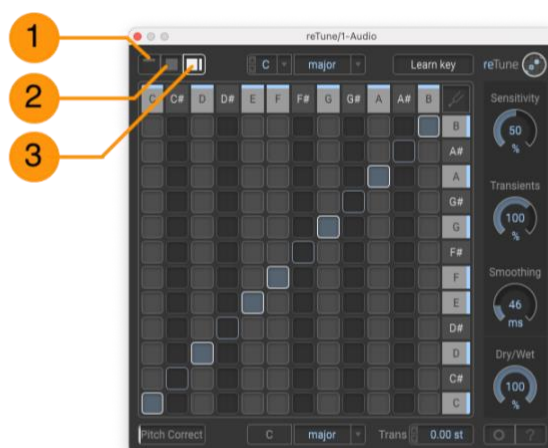


Figure 6: The View Selectors

**NOTE:** For the duration of this manual, we will use the Advanced View as we describe the functions of **reTune** since the Normal and Simple Views are just reduced arrangements of controls that exist in the Advanced View.

### 3.1.1 Advanced View

When you start **reTune** for the first time, the Advanced View in order to give you a complete view of all available controls. Please keep in mind that access to Settings and Help is only available in Advanced View.



Figure 7: Advanced View

### 3.1.2 Normal View

The Normal View removes the extraneous settings (those related to fine-tuning the pitch-correction algorithm) and focuses entirely on the pitch-mapping matrix which is the primary function of **reTune**.

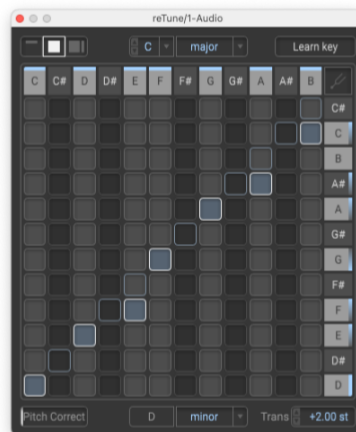


Figure 8: Normal View

### 3.1.3 Simple View

The smallest view possible for **reTune**, the Simple View removes the graphical pitch-mapping matrix and, instead, only presents the basic Key and Scale presets for fast remapping.

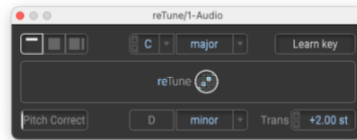


Figure 9: Simple View.

## 3.2 Pitch-mapping Matrix

The most prominent component of the **reTune** Advanced and Normal views is the Pitch Mapping Matrix **(1)**. This component provides access to what is probably the most valuable component of reTune: how pitches coming in to reTune should be changed as they exit **reTune**.

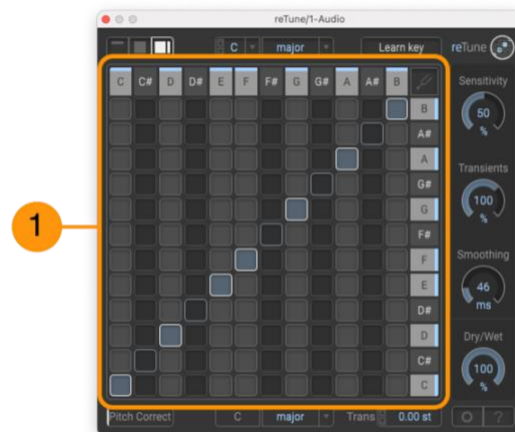


Figure 10: The central Pitch-mapping Matrix

The Pitch-mapping Matrix consists of three basic components: The Input Pitch columns **(1)**, the Output Pitch rows **(2)**, and the Mapping Nodes **(3)** as shown in the image below:



Figure 11: The Inputs, Outputs, and Nodes

### 3.2.1 Reading the Matrix

You “read” the Pitch-mapping Matrix by looking at the pitches along the top and following them down until you encounter a node in the same column below it. You then follow to the right of the node to see the target pitch on the side. Here are two examples:

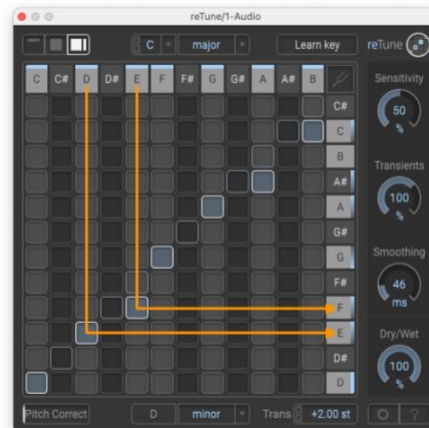


Figure 12: Reading the Pitch-mapping Matrix

- The “D” along the top has a node in its column that corresponds to “E” on the right. Therefore, when **reTune** detects a “D” pitch in the audio, it will shift it up 2 semitones so that it is output as an “E”.
- When looking at the “E” note at the top, we can see that it has a node below it aligned with “F” on the right. This means any “E” that **reTune** detects will be shifted up by only 1 semitone so that it is output as an “F”.

### 3.2.2 Setting Nodes in the Matrix

The primary purpose of the nodes in the Pitch-mapping Matrix is to *alter the scale* of the audio. It is where you make precision changes to only *specific notes* in the

original audio. This is what enables you to change a song or sample with a major scale into one with a minor scale, for example.

You set the nodes in the various columns by simply clicking with your mouse—this will place or remove a node in the location where you click. There are two types of nodes in the Pitch-mapping Matrix as described below:



Figure 13: Forced and Automatic Nodes

- Forced Nodes **(1)** appear as lighter-colored boxes in the matrix, and these indicate nodes that have been set specifically by the user or by the selected preset mappings.
- Automatic Nodes **(2)** appear as darker, outlined boxes, and these provide a visual indication of the mappings that occur naturally as a result of the overall **[Transpose]** value **(3)**.

**NOTE:** Each Input Pitch (column) can have only one node set within it. If you place a Forced Node in a column, it will functionally override the Automatic Node that will remain for visual reference—that is, the Automatic Node will be ignored in favor of the mapping determined by the Forced Node in the column.

However, it is possible to have multiple nodes, either Forced or Automatic, set in a particular output row. One could, if desired, have all input pitches mapped to the same output pitch.

### 3.2.3 Scale Presets

At the top and bottom of the reTune window are two menus for choosing *scale presets*. The top menu selects the Input Scale preset **(1)** and the bottom menu selects the Output Scale preset **(2)**.

By selecting the Input Scale preset which matches the original audio and selecting the Output Scale preset which specifies the intended output scale, **reTune** will configure all nodes in the Pitch-mapping Matrix automatically to achieve the correct shifts.

### 3.3 Transpose Controls

The main purpose of the **[Trans]** display (1) is to *offset the key* of the audio. That is, the **[Trans]** display is a sort of “global” function that instructs reTune on how it should shift *all notes* in the audio. It enables you to take a song or sample in the key of C and change it to the key of D, for example.



Figure 14: Transpose Controls

The **[Trans]** amount is shown in semitones—the digits to the left of the decimal place indicate full semitone values while the digits to the right of the decimal indicate fine-tuning amounts (in cents). You can click the [ and down arrow buttons on the left

To help provide guidance on what **reTune** is doing, you can also set the original key in the Input Key menu (2) at the top of the window. The Output Key display (3) shows the results of the **[Trans]** amount applied to the Input Key. In the screenshot, above, you can see that the Input Key of “C” is changed to an Output Key of “D” as a result of applying a “+2.00 st” transposition.

### 3.4 Automatic Key and Scale Detection

To help you identify the correct Input Key and Scale—an important step in order for reTune to correctly alter the audio to match your specified Output Key and Scale—there is an automatic **[Learn key]** button (1) which, when clicked, starts the internal detection algorithm.





Figure 15: The Learn key button

When the algorithm is running, the appearance of the **[Learn key]** button will change as shown below—if you wish to stop the detection process, click the **[X]** button (1) next to it:



Figure 16: Key analysis underway

Once the algorithm has detected the key and scale, it will be shown (1) and a green checkbox will appear at the left (2):



Figure 17: The Learned Key

If you then click the green check box, the detected Key and Scale will be copied to the Input Key and Input Scale menus (1):

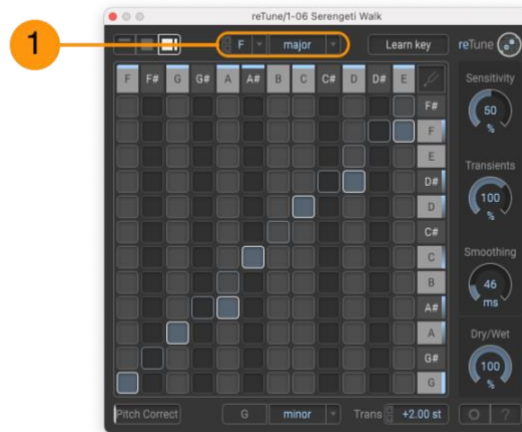


Figure 18: Using the Learned Key and Scale

### 3.5 Pitch Correct Slider

Use the **[Pitch Correct]** slider (1) to adjust the strength of pitch-correction applied to the audio. With **[Pitch Correct]** set to its highest (right-most) value, all mapped pitches will “snap” to the center of the nearest semitone—this will remove any pitch variation which, on vocals, is akin to the “Cher effect”.

As one would then expect, setting **[Pitch Correct]** to its lowest value leaves the relative pitch contours of the original audio unaltered. Use this setting when the audio being retuned has deliberate and accurate pitch variations that should be preserved after the retuning.

Any slider position in between these two extremes applies a proportional amount of pitch correction. It can therefore help fix some intonation problems while still leaving some natural pitch variation intact.

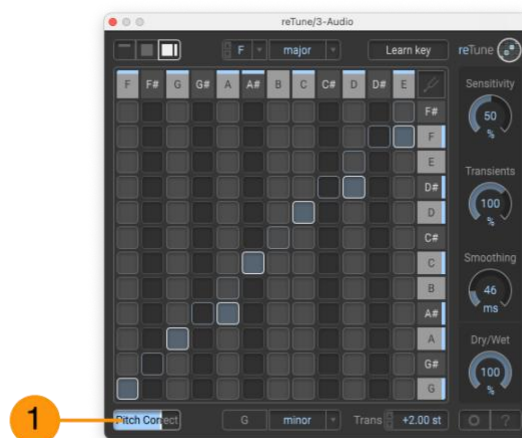


Figure 19: Pitch Correct Slider

**NOTE:** Pitch correction is only applied to those columns of the Pitch-mapping Matrix that contain Forced Nodes.

## 3.6 Processing Controls

Along the right side of the **reTune** interface are a set of 4 rotary controls which control various aspects of how the audio is being analyzed and processed. These are the **[Sensitivity]** knob (1), the **[Transients]** knob (2), the **[Smoothing]** knob (3), and the **[Dry/Wet]** knob (4).

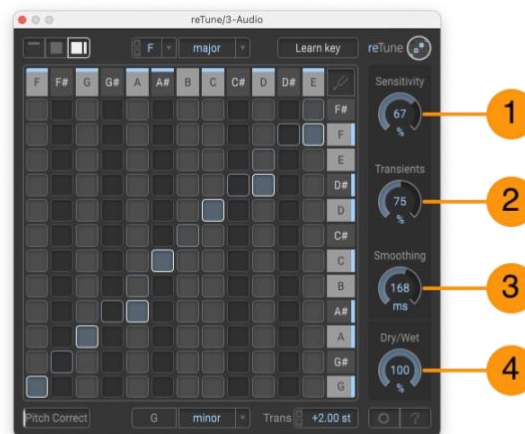


Figure 20: The four Processing Controls

### 3.6.1 Sensitivity Knob

The **[Sensitivity]** knob adjusts, as the name suggests, the sensitivity for initial pitch detection. A high sensitivity will shift a large number of pitches whereas a low sensitivity will only shift the most predominant pitches.

### 3.6.2 Transients Knob

**reTune** processes the tonal and transient components of the audio signal separately, and the **[Transients]** knob adjusts the “intensity” or “strength” of the transient component. The default value of “100%” will leave the transients unchanged. Larger values will boost the transients while lower values will attenuate the transients.

### 3.6.3 Smoothing Knob

The **[Smoothing]** knob determines how quickly **reTune** will shift pitches. Shifting individual pitches can result in gaps in the pitch transitions of connected melodic lines (e.g. of vocals). Smoothing is applied to even out these gaps and to avoid abrupt or awkward jumps in the pitch contours. Shorter smoothing times will result in less smoothing and will enable quicker changes in the pitch contours, whereas larger times will result in a stronger smoothing of the pitch contours.

### 3.6.4 Dry/Wet Knob

As with most effects, the **[Dry/Wet]** knob controls the balance between the original input signal (the “dry” component) and the processed (retuned) output (the “wet” component).

In most cases, you’ll want to leave this control at the **“100%”** position to ensure you only hear the retuned audio being output from **reTune**. However, if there are circumstances where it would be beneficial to hear a blend of the original and retuned signals, you can move this knob counter-clockwise to increase the dry component. With this set at **“0%”**, **reTune** will effectively be bypassed and you will only hear the original, unprocessed signal.

## 3.7 Settings Page

The Settings Page is opened via the “gear” button **(1)** in the bottom-right corner of the **reTune** window—this is only available in Advanced View. It provides access to the authorization mechanism as well as settings that affect the behavior of **reTune**.

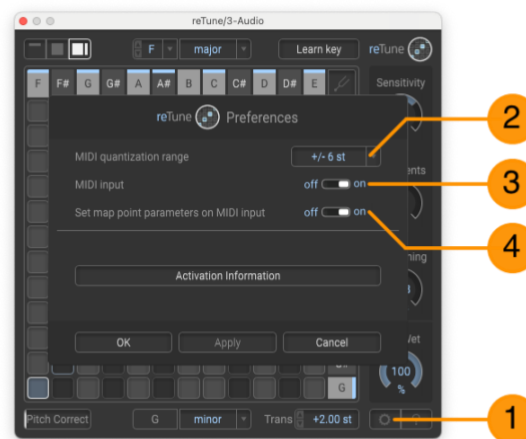


Figure 21: The Settings Page

### 3.7.1 MIDI Quantization Range

The **[MIDI quantization range]** menu **(2)** is part of the MIDI Control system. This setting determines the “width” of the MIDI retuning around the MIDI Note that is sent to **reTune**. For example, with the default setting of **“+/- 6st”**, sending the note “C” to retune will force all notes up to 6 semitones above “C” and down to 6 semitones below “C” to play back at a pitch of C. As 6 semitones up and 6 semitones down represents the entire 12-semitone range of an octave, this setting ensures that *all* detected pitches are retuned to the received MIDI Note.

However, if you choose one of the lower settings from this menu, this will reduce the amount of pitches that get remapped to the received MIDI Pitch. For example, if you simply choose **“+/- 1st”** from the menu and send a “C” to **reTune**, only

incoming pitches of “B” and “C#” will be shifted to “C”—all other pitches outside of this range will be processed normally by **reTune**.

### 3.7.2 MIDI Input Switch

The **[MIDI Input]** switch (3) can be used to tell **reTune** to obey or ignore incoming MIDI messages. By default, this switch will be in the “on” position so that MIDI Notes can control the retuning. Turning this switch off can be useful if you want **reTune** to temporarily ignore MIDI that is normally received by the plug-in—for example, you’ve programmed some MIDI to control **reTune**, but you want to temporarily disable that MIDI control so you can manually experiment with the notes in the Pitch-mapping Matrix.

### 3.7.3 Set Map Point Parameters on MIDI Input Switch

When you use MIDI Notes to control reTune, you will see the various nodes in the Pitch-mapping Matrix change to reflect the new retuning that is taking place. If the **[Set Map Point Parameters on MIDI Input]** switch (4) is in the “on” position, these MIDI-triggered changes to the Pitch-mapping Matrix Nodes will be sent to the host as individual automation changes. However, if you switch this to “off”, any changes to the Pitch-mapping Matrix via MIDI Input will not create any automation parameter changes.

**NOTE:** In most cases, you’ll want to turn this switch “off” when using MIDI Input so that you don’t get redundant automation data recorded in your DAW while also avoiding filling up the DAW undo history with the multiple Node changes that can occur with each MIDI Note received by **reTune**.

### 3.7.4 Activation Information

If you click the large **[Activation Information]** button on this page, you’ll be taken to another small page that shows you the **reTune** version information as well as the serial number you used to activate **reTune**.

## 3.8 Help Page

By clicking the **[?]** button **(1)** in the lower-right corner of **reTune**, you will gain access to the Help Page which provides a handful of useful information.

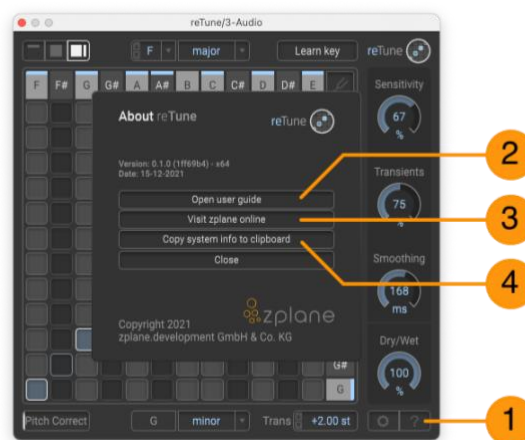


Figure 22: The Help Page

### 3.8.1 Open User Guide

Clicking the **[Open user guide]** button **(2)** on the Help Screen will open the **reTune** User Manual (this document). The User Manual is in PDF format, so it will be loaded into your default PDF reader upon clicking this button.

### 3.8.2 Visit zplane Online

Clicking the **[Visit zplane Online]** button **(3)** on the Help Screen will launch your default web browser and automatically point it to the [zplane.de](https://zplane.de) website. On the site, you can learn about the various zplane products available for purchase as well as access your Account and all your registered zplane products. You can also access the Support section on the site if you need to request product support, report a bug, or have suggestions for future improvements.

### 3.8.3 Copy System Information to Clipboard

If you ever need to submit a Support Request to zplane, it's always best to provide as much information about the computer system you're using. To make this easy, just click the **[Copy system information to clipboard]** button **(4)**. When you write your e-mail, you can then use the paste feature to quickly insert a bunch of useful information into the report.

## 4 Using reTune

In order to get you started, we have provided a few example use cases for **reTune**. These include changing the key of an input file, tuning an instrument, and making creative use of the **reTune**'s pitch-mapping functionality.

### 4.1 Changing the Key of Your Input

In your DAW, drag an audio file into a track and make sure that **reTune** is added to the effect chain of that track. In order to achieve a meaningful key mapping, you need to set the [Input menus at the top of the window to the key and scale of your audio input](#). If you don't know the key of your input, you can click the [\[Learn Key\] button](#) while playing the audio. **reTune** will come up with a suggestion that you can either accept or discard.

Once the input key and scale is set, select the output key and scale for the audio. You can modify the root pitch of the output key by transposing the input. Use the Transpose box to specify the number of semitones to shift the input. You can select the output scale by selecting one of the scales in the Output Scale menu.

The mapping of the individual pitches between input and output is displayed by the [Nodes in the Pitch-mapping Matrix](#). You can manually change the mapping of each input-to-output by clicking on one of the empty cells in the corresponding matrix column—a Forced Node will be placed where you click. Columns that do not contain a Forced Node cell are merely transposed by the number of semitones specified in the **[Trans]** box.

After specifying input and output pitch, adjust the parameters [\[Sensitivity\]](#), [\[Transients\]](#) and [\[Smoothing\]](#) to your tastes. If your input is a single instrument that only plays one or a few notes at a time, set the **[Sensitivity]** to a low value. If your input contains more complex audio, increase the **[Sensitivity]** accordingly.

You can vary the amount of transient preservation with the **[Transients]** knob. Good transient preservation will affect the pitch-shifting quality and vice versa. Just experiment with the **[Transients]** knob to find the right amount of transient preservation.

Likewise, experiment with the **[Smoothing]** knob to find the right amount of pitch contour smoothing to bridge potential gaps caused by the shift of individual pitches.



## 4.2 Automating Key Changes

Different parts of your song might contain different keys, so you might want to apply different pitch mappings to different parts of your audio. You can use your workstation's automation feature to change the pitch mapping at certain positions in your song. Just move the play cursor to the position you would like a new pitch mapping to begin, adjust the **reTune** mapping parameters as described above and take an automation snapshot.

## 4.3 Tuning an Instrument

You might have recordings of instruments that are out-of-tune and that you would like to be in-tune with the rest of your arrangement. A guitarist might have been a bit negligent while tuning his guitar or a singer might have been a bit flat at times. You can use **reTune** to simply correct the pitch of your input audio as opposed to completely remapping it as described in the previous sections.

If your audio input is already in the right key, [select "C chromatic" both as input and output key/scale](#). This will highlight all input pitches in the [Pitch-mapping Matrix](#) and will map each input pitch to the same output pitch.

Use the [\[Pitch correct\] slider](#) to adjust the amount of pitch correction. Full pitch correction can be achieved when you drag the slider completely to the right. Any slider position in between will apply pitch correction proportionally.

## 4.4 Using reTune Creatively

Instead of using the predefined input and output scales, you can configure **reTune** in any way you like.

You could, for example, create a "One Note Samba" by mapping all pitches to a single pitch. Just manually map all input pitches to a single output pitch by [placing all Nodes](#) in a single row of the [Pitch-mapping Matrix](#). You can modify the output pitch by [changing the transposition](#).

You could also add an upper part to an instrument melody that stays in the same key. If you have a melody in "C major", for example, you could shift it to "E phrygian" and put the [\[Dry/Wet\] knob](#) at **"50%"**. This will add an upper third to each note with all notes being part of the "C major" scale. Or experiment with using a different scale than "phrygian" to obtain some notes that are out of key and to make it sound more interesting.

Feel free to experiment with **reTune**'s countless possibilities. Some pitch mappings will sound more musical than others.



## 4.5 Controlling reTune with MIDI

You can use MIDI input to control the mapping of input pitches to output pitches in the Pitch-mapping Matrix in realtime. To use this feature, you need to first feed MIDI data to **reTune** via your DAW—each DAW has its own way of doing this, but examples for some popular DAWs are provided in the following sections.

When sending MIDI Note information to **reTune**, input pitches within a certain range of the MIDI Note are mapped to that MIDI Note. With the default “**+/- 6st**” setting of the [MIDI quantization range](#) setting, sending a single pitch to the plugin will result in all pitches being mapped to this pitch—this results in a horizontal row of Nodes **(1)** as shown below:

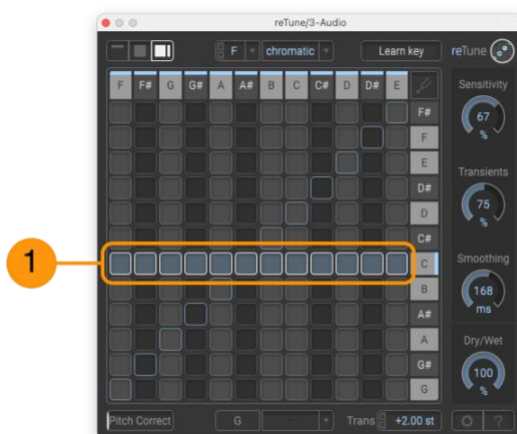


Figure 23: Using the full “+/- 6st” MIDI Quantization Range

However, with a smaller MIDI quantization range like “+/- 2st”, only the two pitches above and below the MIDI Note will be shifted resulting in a shorter row of Nodes **(1)** as seen here:

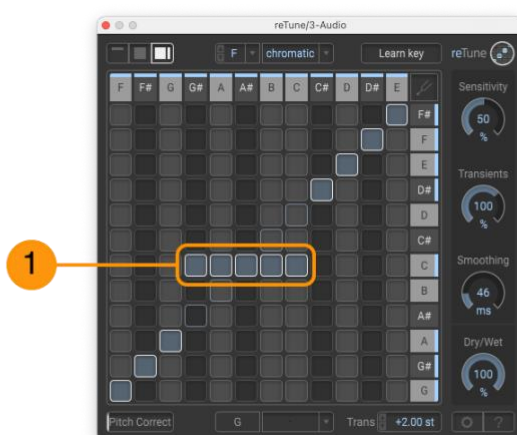


Figure 24: Using the smaller “+/- 2st” MIDI Quantization Range

MIDI Note control only *temporarily* overrides the current Pitch-mapping Matrix. The Nodes in the Pitch-mapping Matrix will then return to their original positions once all MIDI Notes are released.

### 4.5.1 Setting up MIDI Control in Ableton Live

The process for controlling **reTune** with a MIDI keyboard in Ableton Live requires the following steps:

1. Load **reTune** onto the Track you want to retune—this can be an Audio Track or a MIDI Track loaded with a software instrument
2. Create a MIDI Track—this track will be used to capture MIDI notes from your keyboard controller and route them to **reTune** on another Track.
3. Specify the MIDI Input to use—this “All Inputs” by default, but can be changed to a specific MIDI Device/Port and MIDI Channel if desired.
4. Route the output of the MIDI Track to **reTune** — **reTune** is an audio effect rather than a MIDI effect, so **reTune** will be either on an Audio Track or on a MIDI Track where an instrument plug-in has been loaded.
5. Enable MIDI input monitoring on the MIDI Track—this allows live input to go through the track and out to **reTune**.

Below is a screenshot showing a MIDI Track and adjacent Audio Track set up such that the MIDI is routed to **reTune**:

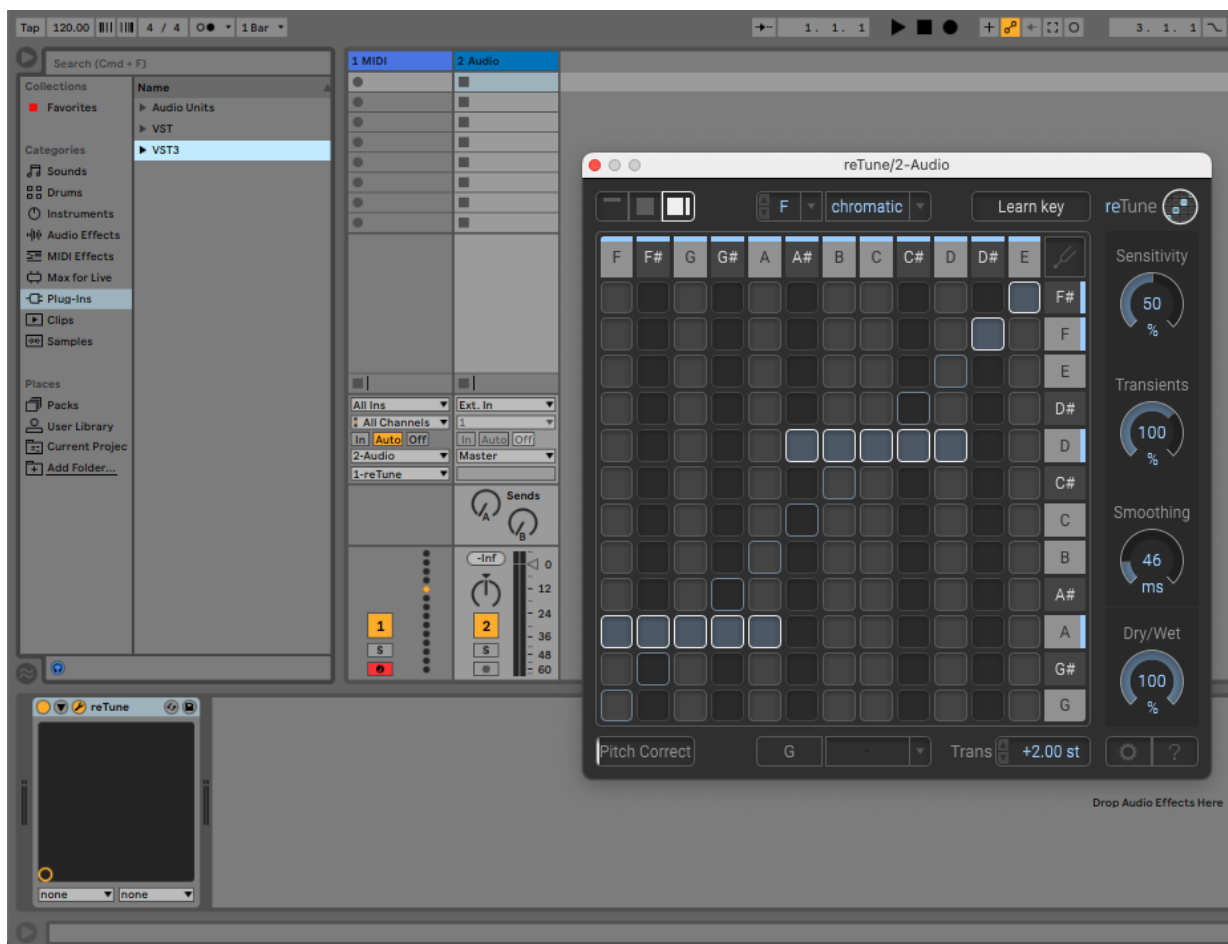


Figure 25: MIDI Control of reTune in Ableton Live

## 4.5.2 Setting up MIDI Control in Logic Pro

Setting up **reTune** to be controllable with a MIDI Keyboard in Logic Pro is somewhat unusual due to how Logic Pro handles MIDI. If you wish to trigger **reTune** via a MIDI keyboard or MIDI data, you will *not* load **reTune** as an insert on the track you want to retune. Instead, you will create a new MIDI track and load **reTune** into it as a “MIDI-Controlled AU effect”. You will then choose the audio track you want to retune as the “side-chain” input to **reTune**. Because **reTune** passes through all audio it receives, you will need to mute the original audio track so that you don’t hear the content twice (resulting it in being extremely loud). Below is an example of **reTune** set up as a MIDI-controlled AU effect on Track 2 using Track 1 as the side-chain audio source:

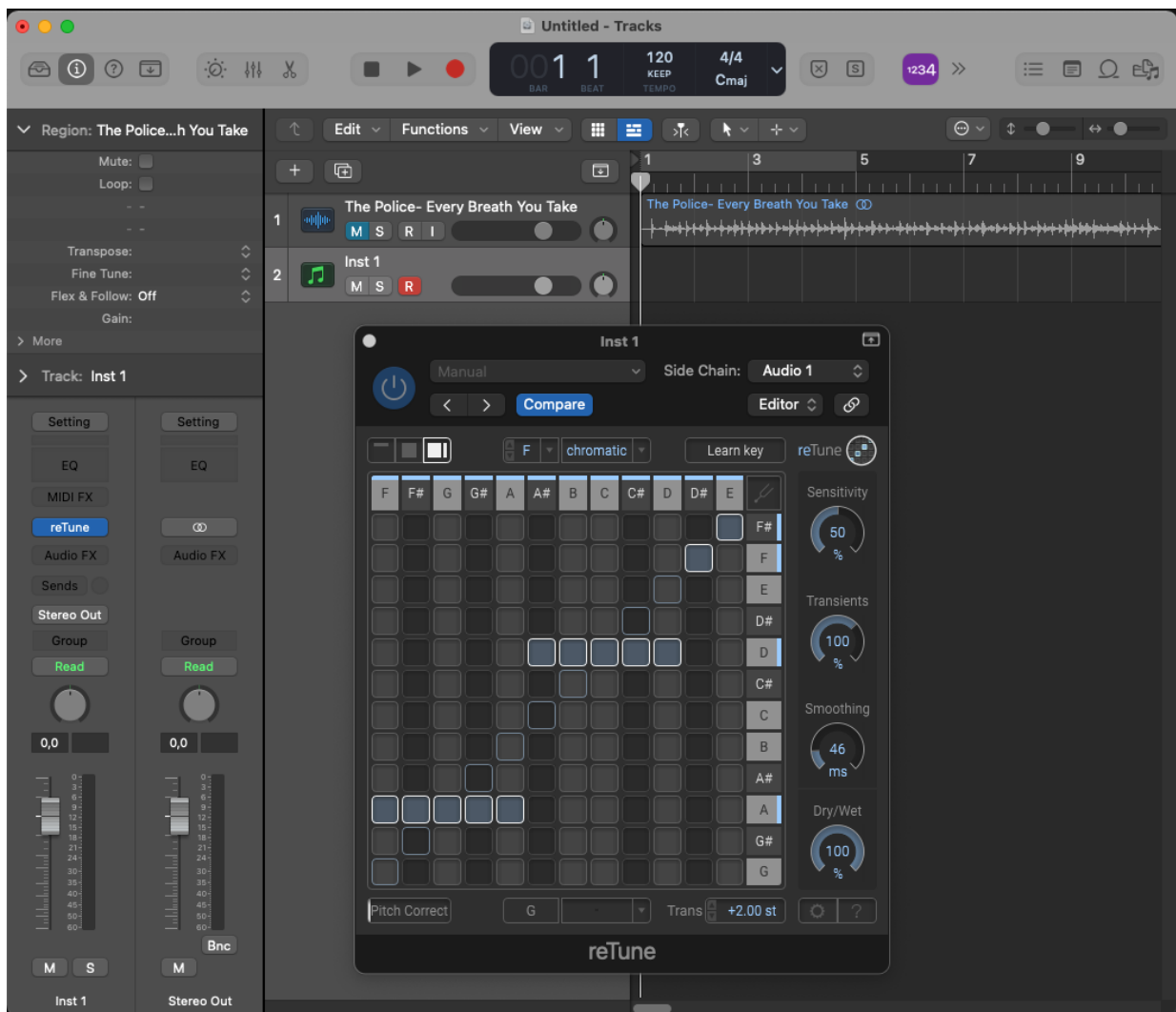


Figure 26: MIDI Control of reTune in Logic Pro

**NOTE:** Logic Pro does not perform any plug-in delay compensation on plug-ins loaded as MIDI-controlled effects. Therefore, the output from reTune will sound late. To solve this, shift the original track earlier to compensate the timing.

### 4.5.3 Setting up MIDI Control in Reaper

Unlike many DAWs, Reaper does not use different track types like “audio tracks” and “MIDI tracks”; the track’s behavior is dictated by the content it contains, be it audio or MIDI. Therefore, to control **reTune** with a MIDI Input, you create a new track and enable its Record button—this will expose a set of controls to choose the input for the track. You can select your MIDI keyboard as the input to the track, and then add a “send” object on the track which sends the MIDI over to another track containing **reTune**. Below is an image of Track 2 set up to receive MIDI input with a send to Track 1 containing **reTune**:

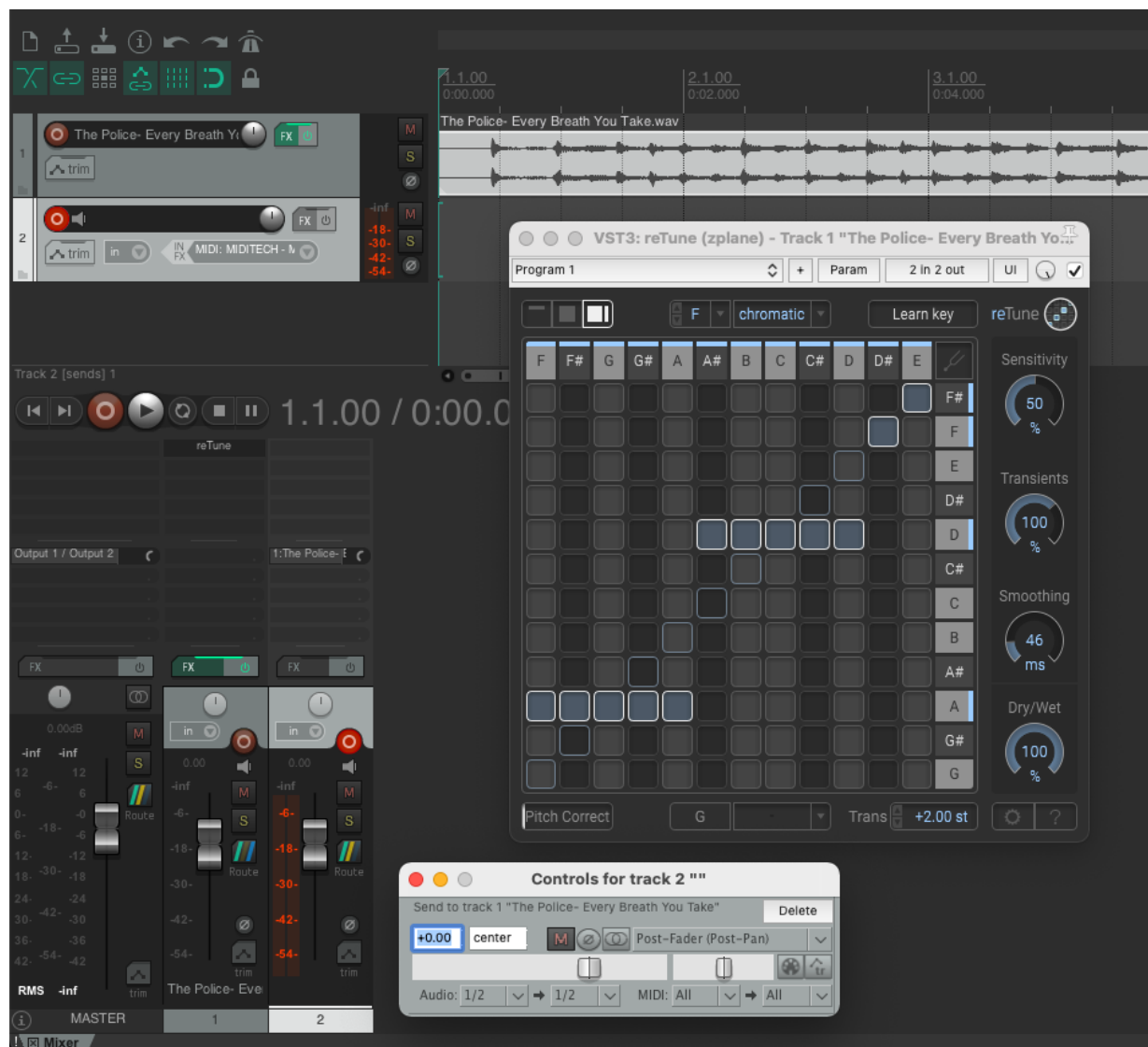


Figure 27: MIDI Control of reTune in Reaper

## 4.5.4 Setting up MIDI Control in Studio One

To control **reTune** with a MIDI keyboard in Studio One, load **reTune** onto the track you want to retune and then create a new MIDI track. When setting up the MIDI track, you set the output to an “Existing Instrument” and select **reTune** from the list. The final setup should look similar to this:

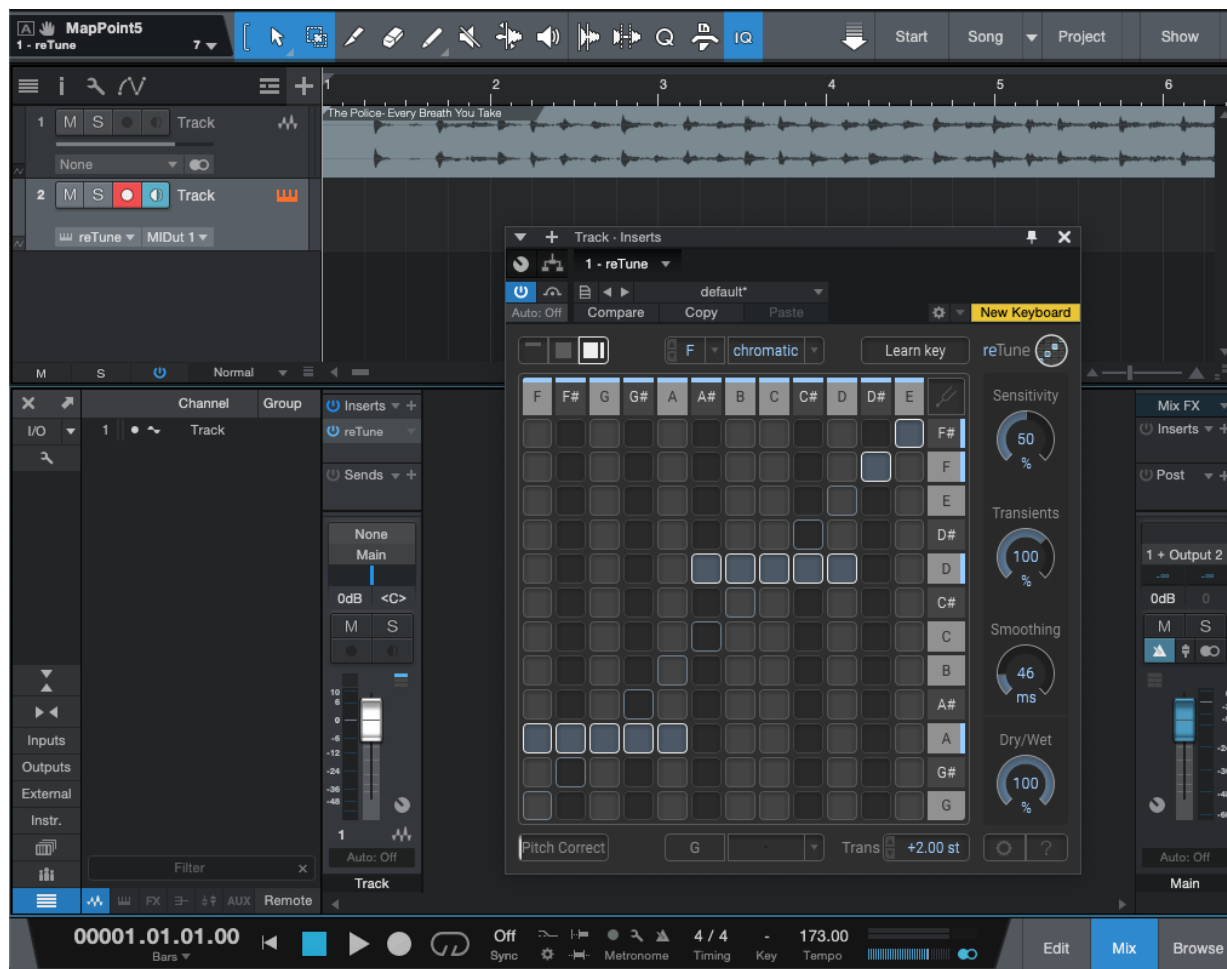


Figure 28: MIDI Control of reTune in Studio One

### 4.5.5 Setting up MIDI Control in Pro Tools

In order to send MIDI to **reTune** in Pro Tools, set up a new MIDI track. In its I/O settings, choose your MIDI keyboard as the input. For the output, select the **reTune** instance on the track being retuned. Click the Record button on the MIDI Track to enable monitoring of the MIDI input, and you can then control **reTune** from your MIDI keyboard. The setup should look something like this:

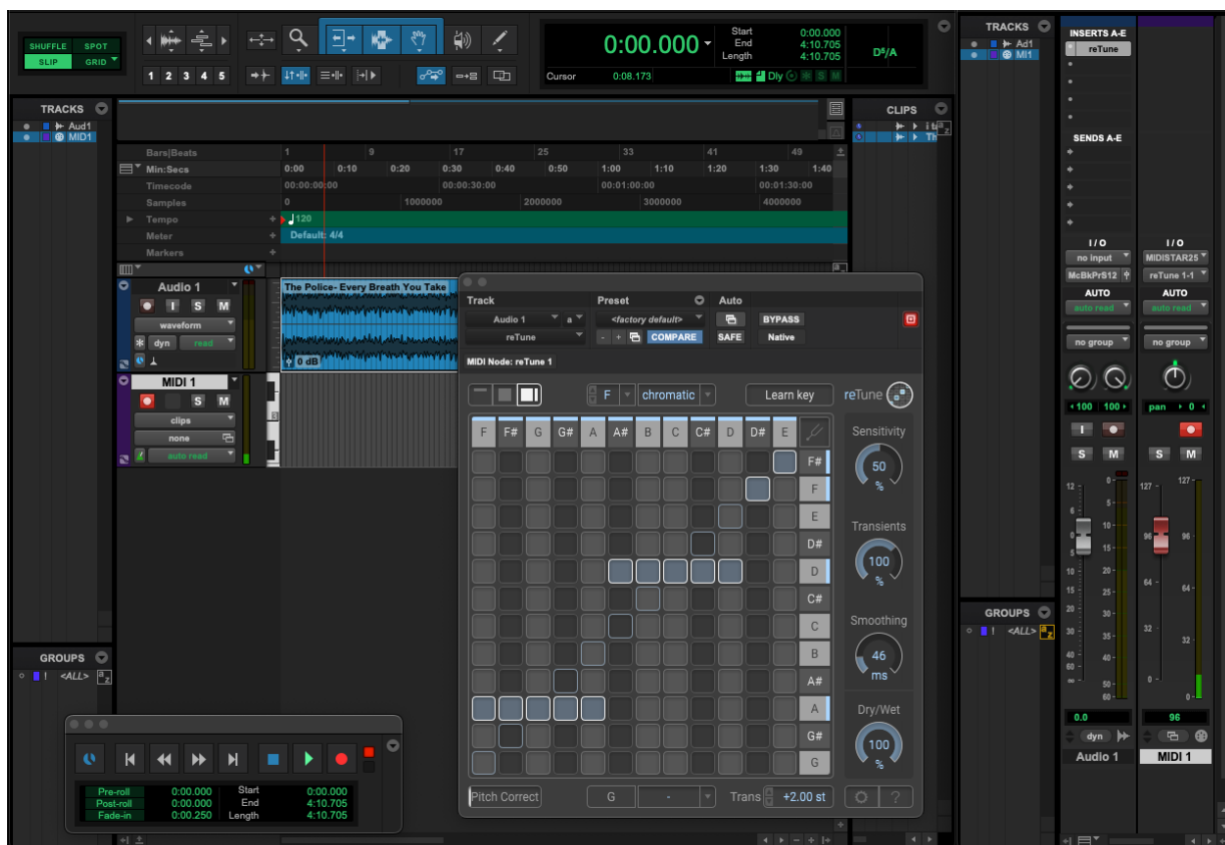


Figure 29: MIDI Control of reTune in Pro Tools

### 4.5.6 DAWs Without Necessary MIDI Routing

Unfortunately, not all DAWs include the necessary features or architectures to route incoming MIDI data to **reTune**. While **reTune** can be used to retune audio in these DAWs, you will be limited to using the mouse to set and automate the behavior. The DAWs we have tested which lack the necessary support are:

- Apple GarageBand—While GarageBand is similar and related to Logic Pro, GarageBand lacks “MIDI-Controlled AU Effects” which is necessary for controlling **reTune** with MIDI input
- FL Studio—While it is possible to place **reTune** on a track and enable MIDI Input, playing MIDI notes to **reTune** also triggers the content on the track making it difficult to do accurate previewing and control

## 5 Technical Specifications

<b>Operating Systems</b>	<ul style="list-style-type: none"> <li>• macOS 10.15 and higher</li> <li>• Windows 10 &amp; 11</li> </ul>
<b>CPU Architecture</b>	<ul style="list-style-type: none"> <li>• Windows: Intel 32- and 64-bit</li> <li>• macOS: Intel &amp; M1 64-bit</li> </ul>
<b>Audio Formats</b>	<ul style="list-style-type: none"> <li>• 1-2 channels (I/O)</li> <li>• 32kHz - 192kHz sample rate</li> </ul>
<b>Plug-in Formats</b>	<ul style="list-style-type: none"> <li>• VST3</li> <li>• VST2</li> <li>• AU (macOS only)</li> <li>• AAX</li> </ul>

## 6 Feedback & Support

Our website [products.zplane.de](https://products.zplane.de) always provides the latest information and news about our products. Any issues you encounter may either be addressed in the FAQ section of the appropriate product or reported directly to us via post or email. Before contacting us directly, please ensure you are using the latest version of the product. Please also make sure that your issue is not covered in the manual, the forum, the FAQ or elsewhere on our website.

If you cannot find answers using the methods above and need to contact us directly, please provide the following details to enable us to help you as fast as possible:

- Your registration information (such as the name of your User Account or your login e-mail)
- Your system specifications (hardware, operating system, host software)
- The exact version number of the plugin (see the “About” box by clicking on Help [?] button located at the lower-right of the **reTune** interface)
- Include a detailed description of your problem with a step-by-step description of what led up to it so we can try to reproduce the issue

Please use the following contact methods:

✉ : zplane.development GmbH & Co. KG  
 Grunewaldstr. 83  
 D-10823 Berlin  
 Germany

🌐 : [products.zplane.de/support](https://products.zplane.de/support)

@ : [support@zplane.de](mailto:support@zplane.de)