REVOLVER

User Guide

Version 5.1
RevB

REVALVER

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(1.0) Introduction

Congratulations on downloading and installing the ReValver Guitar Amp Modeling software! The software models guitar amplifiers, stompboxes, and effects at the component level, resulting in unmatched dynamics and tone. ReValver 5 now adds amp and FX models from the HeadRush line of modeling pedalboards. This in-depth User Guide will take you through all the features of the software.

- The *Amp Cloner Player* enables you to load and play clones that were created in the ReValver Amp Cloner.
- The *Instrument Modeler* uses ACT (Audio Cloning Technology™) to profile your instrument and turn it into a different instrument or shape your presets into classic tones.
- *Gig Mode* enables you to preload patches allowing seamless MIDI switching between presets in a live rig.
- The *RIR 2* speaker simulation module uses convolution modeling with impulse responses for unparalleled realism and response.
- Take ReValver to the live stage with full *MIDI control*.

(1.1) Information and Support

Visit revalver.headrushfx.com for the latest information about this software (documentation, system requirements, compatibility information, and support).

(1.2) About this User Guide

This manual will take you through all the features of the software. For consistency, specific formatting to indicate particular topics of significance:

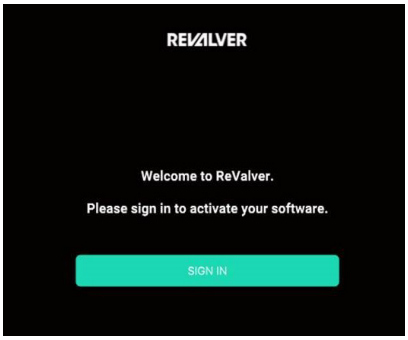
Note/Tip: Important or helpful information on a given topic.

Names of buttons, controls, parameters, settings, and other options are written in **bold** characters throughout the manual.

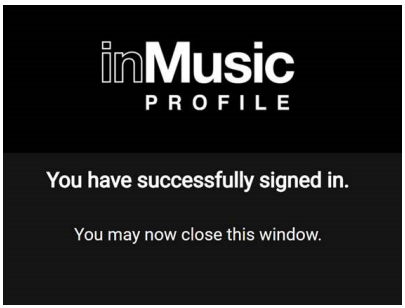
Some parts of this manual refer to other relevant sections, which are cited in ***bold, italic blue*** characters. Click the text to skip immediately to that section.

(1.3) Software Installation and Activation

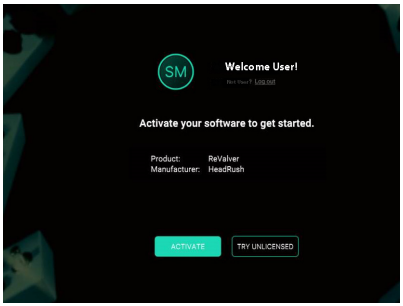
1. Double-click the .exe (Windows) or .pkg (macOS) file you downloaded. Follow the on-screen instructions to install the software.



2. When ReValver first launches (or if you are logged out of your user account), you will be prompted to sign in to your inMusic account. Click **Sign In** to sign into your inMusic Brands Profile using your Internet browser. If you do not have an inMusic Brands Profile yet, you will be prompted to create one.



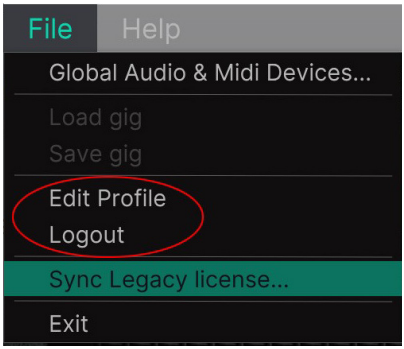
3. Once logged in, you will be prompted to **Activate** ReValver or **Try Unlicensed**. Click **Activate** to enter your serial key to unlock the plugin. If you do not have a serial key, you can click **Try Unlicensed** to explore the plugin with intermittent audio alerts for all content not included in the free version of ReValver.



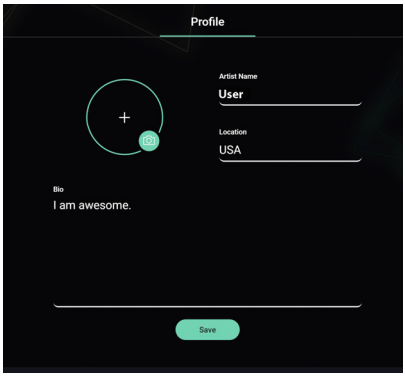
Note: When ReValver is in demo or unlicensed mode, there is still some free content that can be downloaded, such as "ReValver Free" and the Amp Cloner Player module, from revalver.headrushfx.com/free.

If you would like to purchase a serial key, click the link to purchase a license at profile.inmusicbrands.com.

4. Options to **Log Out** or **Edit Profile** will be added to the File menu. Clicking **Edit Profile** will take you to your inMusic Profile where you can add an Artist Name, Location, Bio, and upload a profile image.

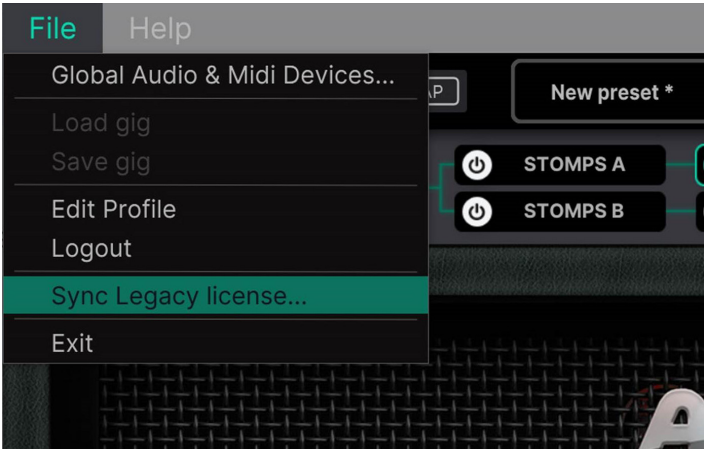


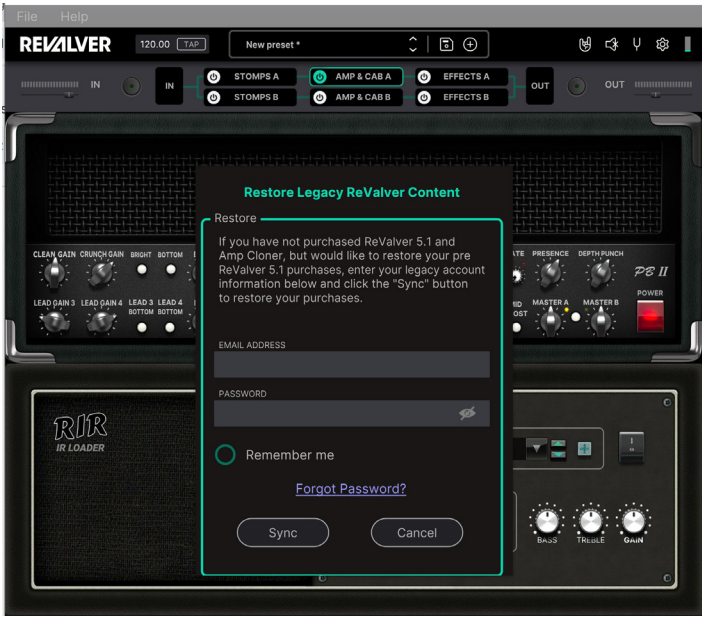
5. Once logged in and activated, ReValver will launch into the main screen, until the time when you log out.



(1.4) Syncing Legacy Content

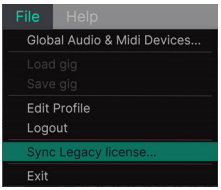
If you install ReValver 5.1/Amp Cloner, but choose to not purchase the software suite, you can download and activate your pre 5.1 purchases by selecting the **Sync Legacy License** option in the **File** menu. This will unlock any legacy content which will run alongside the ReValver Free content.

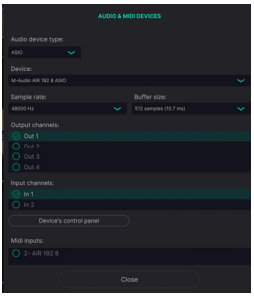




(2.0) Setup

(2.1) Global Audio and MIDI Devices

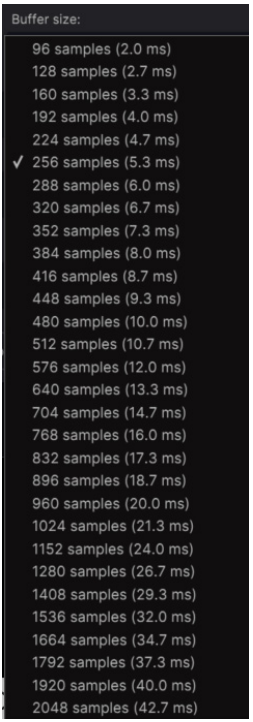




If you hear a high-pitched feedback sound when starting ReValver, it is likely that your internal microphone is selected as your input. To remedy this, go to **File** > **Global Audio and MIDI Devices** and select an alternative input.

To get your guitar signal into your computer and receive audio out, a professional audio interface is recommended. This allows the guitar signal to enter your computer at the correct impedance, so it will sound as it should and help to minimize "latency" or delay between you playing a note and hearing it back.

Once your guitar is hooked up via an audio interface, the device needs to be selected in the **Global Audio and MIDI Devices** panel within ReValver. From here you can select your device and which inputs and outputs (single channels or channels pairs) you would like to use, along with the sample rate. Devices with multiple outputs can give you a lot of flexibility for live use.



The **Buffer size** setting is dependent on your individual system, what other programs you may have running in the background, and your audio interface. The lower you set the buffer size, the less latency you'll experience. A good starting point is to try 256 samples (5.3 ms of latency). If your system allows it, try dropping it or raising it if you hear any crackles or pops.

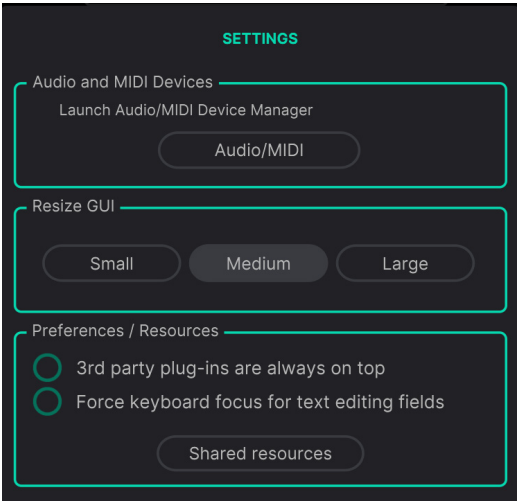
To set up a MIDI interface, make sure the device is plugged in and the appropriate drivers are downloaded. You will then see it as an option in the **MIDI inputs** section. Select your interface by clicking on it.

If you want to try some of the amazing tones of ReValver right away, go to the **Presets Manager** menu at the top left of the Tool Bar and browse through the various banks. You'll see a screenshot and accompanying description of the preset. New users should try the Free Bank first. Any preset can be selected but any unpurchased modules will be in demo mode.

(2.2) Settings

The Settings menu enables you to customize various options that affect the audio and MIDI signal routing, resize the GUI, adjust function preferences, and view system resource folders.

Below are descriptions of the different features in the Settings menu:



Audio and MIDI Devices

Clicking the **Audio/MIDI** button will launch the Global Audio and MIDI devices window. See the *Global Audio and MIDI Devices* section for more details.

Resize GUI

Select **Small**, **Medium**, or **Large** to rescale the size of the app window when relaunched.

Preferences

- **3rd party plugins are Always On Top:** Enable this to ensure that any 3rd party plugins loaded in the VST Host module are displayed above ReValver when their GUI is launched. This prevents the popup window from going behind ReValver and getting lost.
- **Force keyboard focus for text editing fields:** Enable this to keep the keyboard focus on your DAW's plugin text editing field.
- **Open resource system folders:** Opens system level folders to view the software's **Shared resources** location, **This binary** (the standalone app folder), **License folder** (for the installed license text file), and the **Imported IR's folder** (to organize your impulse response files).

(2.3) Loading ReValver

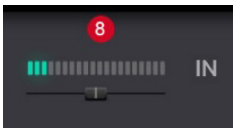
Using ReValver standalone is as simple as loading the program up. It requires no other software to run. When using it as a plugin within a Digital Audio Workstation (DAW), this gives whole new possibilities for recording. Loading ReValver into a DAW will differ from program to program. You may have to scan the system for new plugins within the DAW. Consult your DAW's User Guide for more details.

(2.4) Main Features

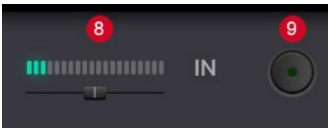
To get started with ReValver, you should familiarize yourself with the main layout. Study the GUI and the top bar features below. You can hover the cursor over most icons for a more detailed description of their function.

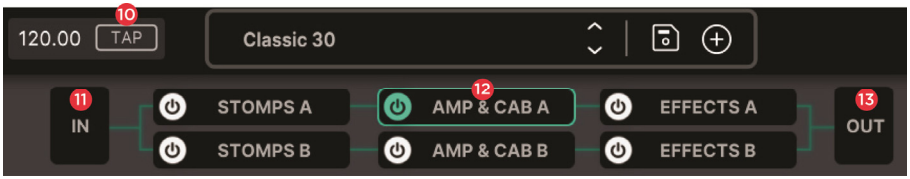
(2.4.1) Top Menu Bar

1. **Save Preset:** Saves changes to the currently loaded preset. If the preset is new, it will prompt you to save as a new preset. If the current preset has been altered in any way, the preset name in the preset field will have an asterix (*) next to it, as shown above. If this is a new preset, it will be named "New Preset" until it is saved and named.
2. **New/Clear Preset:** Opens a new empty preset. If an existing preset is already open, it will prompt you to clear the currently loaded preset.
3. **Gig Mode:** Toggles Gig mode to preload and switch between up to 8 presets seamlessly. For more information on Gig mode, see the *Gig Mode* section.
4. **Global Mute:** Mutes all audio output in ReValver.
5. **Tuner:** Toggles access to the tuner module in the input menu view.
6. **Settings:** Toggles the Settings menu where system level changes are made for audio and MIDI devices, resize the GUI, preferences, and access system resource folders.
7. **CPU Meter:** This meter shows how much of the CPU you are using over a short period of time, displaying both average usage and CPU spikes. While most modern computers can distribute the workload of several programs over the CPU cores, you may want to shut down other programs on your system to keep the sound from becoming choppy.
8. **Input/Output Level:** Adjusts the manual input and output level controls with a VU meter.



9. **Auto Levels:** Adjusts the level automatically to the ideal input and output levels.

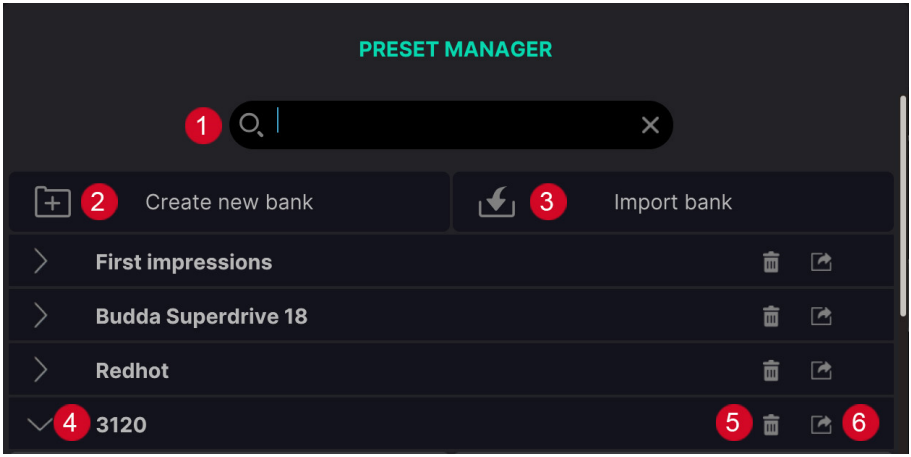




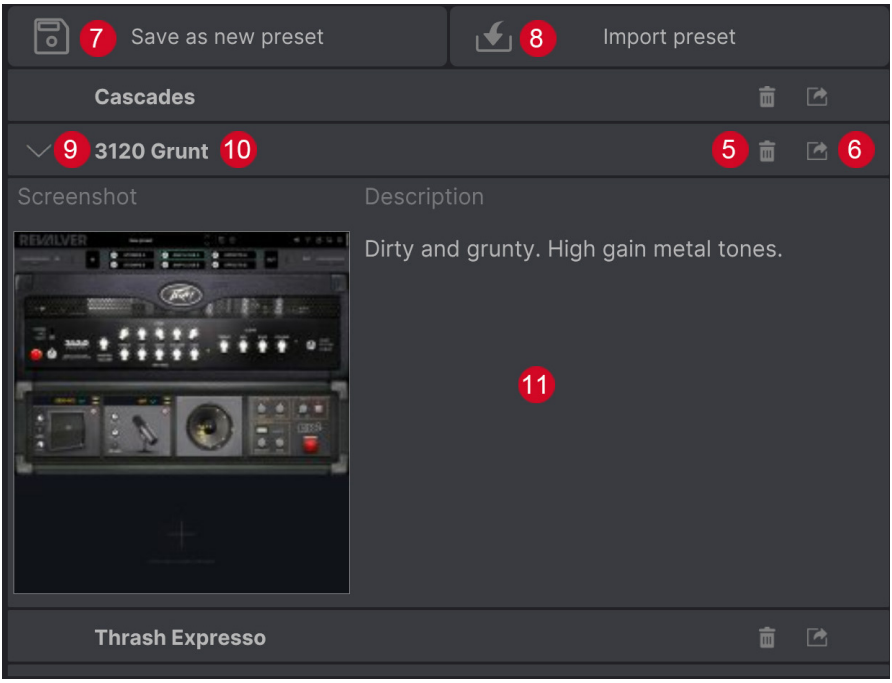
10. **Tap Tempo:** Tap the button repeatedly in time with the song's drum beat or rhythm to calculate the tempo of the song. To manually enter a tempo, double click the numerical field. The tempo can be set from 40-240 BPM (Beats Per Minute).
11. **Input Menu Button:** Launches the Input menu, which gives access to input level, pickup RMS values, noise gate, tuner, and the ACT Instrument Modeler. For more information, see the ***Input Mixer*** section.
12. **A & B Rigs:** ReValver features a dual signal path (A & B), each featuring views for Stomps, Amps & Cabs, and Effects. The buttons in this section allow you to switch to each view on either signal path. For more information, see the ***Modules*** section.
13. **Output Menu Button:** Launches the Output Menu, which gives you access to A/B path mixer, Parametric EQ, and Compressor. For more information, see the ***Output Mixer*** section.

(2.5) Presets

Click the Preset area at the top of ReValver's main screen to open the **Preset Manager**. Hover over most icons for a description of their function.



1. **Search:** Find presets by searching with specific keywords.
2. **Create New Bank:** Creates a new custom-named bank to group your presets. Banks are always created at the bottom of the list. Scroll down to find the new bank that you can rename and then drag to a different area of the menu if desired.
3. **Import Bank:** Imports a .sa bank file that has been saved. The imported bank will be added to your bank list.
4. **Bank List:** This lists all your available ReValver and user banks. Click on the **>** button to open the bank and view the presets within the bank.
5. **Delete Bank/Preset:** Deletes an individual preset or bank.
6. **Export Bank/Preset:** Exports the current preset or whole preset bank to a .sa file.



7. **Save As New Preset:** Found at the top of every preset list within a bank, this allows you to save the currently loaded preset (new or existing) as a new preset within that bank.

   Note: Saving a new preset creates a thumbnail of the current active view of the preset.

8. **Import Preset:** Found at the top of every preset list within a bank, this allows you to import an externally saved .sa preset into that bank.
9. **Open Preset Details:** Click the **>** button to open the preset **Details** view.
10. **Load Preset:** Double click the preset name to load the preset as the active preset.
11. **Preset Details:** Displays the preset description and thumbnail.

    Note: No presets can be saved or created if ReValver is not activated (in demo mode). If you try to save any preset that contains a module in demo mode, that module will not be saved with the preset.

(2.6) Input Mixer

(2.6.1) VU Meter

Click the **In** button before or after the A & B rigs section of the toolbar to bring up the **Input Mixer** which consists of four modules, the first being a **VU Meter.**

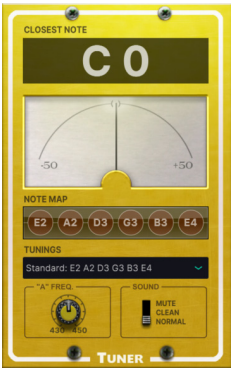
- Change the level **Adjust** knob to manually set the input gain from -32 – 0 – 32 dB.
- The **Auto Normalize** button regulates the input levels to -0.3 dB. The Light will be green when it is enabled and off when normalizing is inactive.
- Click the **Pickup RMS** button to bypass the RMS gain. The Light will be green when active and off when it is bypassed.
- If you have enabled Pickup RMS, use the **Pickup RMS** knob to add an additional gain adjustment to mimic the RMS levels of your guitar pickup to get the best volume levels.
- You can **Save Default** and **Load Default** RMS levels.
- The **Mono** button will merge L+R signals which can be useful if the signal comes in on only one side of the stereo channel.

(2.6.2) Noise Gate

The **Noise Gate** module will stop a signal from getting through when set at a certain threshold.

- The **Threshold** setting controls how much of the signal is let through.
- The Threshold is fully **Opened** when the Threshold control is set at 0.
- Turn the Threshold up to make it more **Closed** to engage the noise gate. This is especially useful if you have a noisy, high gain rig. The more you turn up the Threshold (max setting is 10), the more signal will be required to open the gate, so extreme settings will be very choppy in tone, which is sometimes desirable.

(2.6.3) Tuner

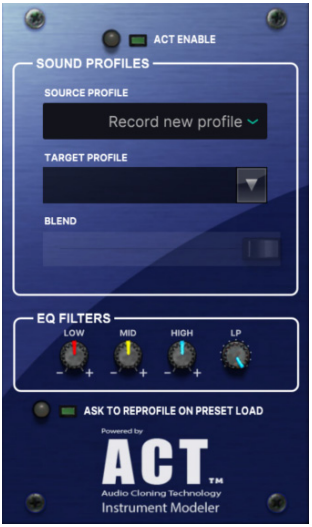


The **Tuner** module is a chromatic tuner that will find and display the note you are playing. When the needle is in the middle, it is in tune.

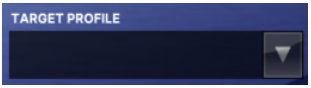
- Use the **Note Map** option to define certain tunings in the drop-down list.
- The **"A" Frequency** calibrates the tuning by selecting the exact tuning of the "A" note. 440 Hz is the standard and default setting, but different tunings can be used for different results. Try a 432 Hz tuning for more mellow sounding results.
- The **Sound** switch allows you to select **Normal** to have all sound pass through, **Mute** to bypass all sound, or **Clean** to bypass the amp modeling for an unprocessed clean sound while tuning (input and output gain pots are stil active).

(2.6.4) Instrument Modeler

The **Instrument Modeler** module uses ACT (Audio Cloning Technology™) to allow you to mold and shape the sound of the guitar. The ACT Instrument Modeler can alter the incoming guitar signal to mimic the sound and characteristics of other instruments, such as acoustics, folk instruments, and even other electric guitar and pickup combinations. The Instrument Modeler accomplishes this (seen in the steps below) by profiling your personal guitar, then uses another target preset profile to transform the sound of your instrument into the sound of the target instrument.

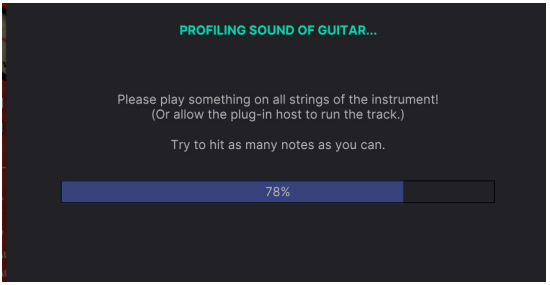


1. Record and save a profile of your instrument or select a profile that you have already recorded and saved. To record a new profile, click on the **Record New Profile** dropdown option under **Source Profile**.
2. Click on the **Target Profile** dropdown box. This will bring up the recording profile window which shows the profiling process.



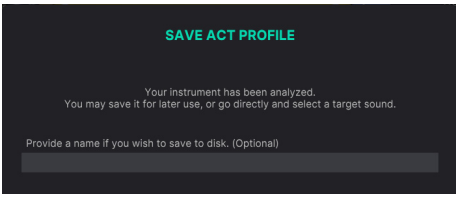
3. Strum the guitar with your finger barred across the whole fretboard like a capo. On every strum, move your “capo” up a fret. The goal is to provide the Instrument Modeler with as many notes of the instrument to better analyze as possible. For bass guitars, you can simply play a series of chromatic notes, trying to cover as many different notes on the fretboard as possible.

   Once the record profile dialog detects an incoming signal, it will begin profiling and a progress bar will start. Once the progress bar is complete, you can stop playing. The whole process takes around 10 seconds.



Note: Instead of profiling your instrument, Instrument Modeler can also analyze a track in your DAW, if you are using ReValver as a plugin.

4. Once the profiling process is complete, you can name and save your new source ACT instrument source profile and Click the **Done** button.



5. Next, choose your **Target Profile** dropdown box. This will bring up options in the ACT browser to select what you want your instrument to sound like. For electric guitars and basses, the options will be pickup selections (bridge, neck, or both), but for acoustics or basses, it may be playing styles (finger or pick).

6. Double click the target instrument profile to select it. You can bypass the ACT transformation by disengaging the **Enable** button at the top of the Instrument Modeler window.

Note: Your sound source profile can only be used on non-demo target profiles.

- Use the **Blend** slider to control the mix of the original and processed signal.
- The tone can be adjusted using the **Low**, **Mid**, **High**, and **LP** (low pass) **EQ Filter** controls.
- You can enable **Ask To Reprofile On Preset Load** to have the module ask what source instrument you are using whenever you load a saved ReValver preset that includes an instance of the Instrument Modeler. Since you may be using a completely different instrument than the one that was used to create the preset, this gives you the chance to profile the instrument you are now playing or select it from the source dropdown.

The Instrument Modeler module ships free with ReValver and comes with a selection of target ACT instruments.

(2.7) Output Mixer

Clicking the **Out** button before or after the A & B rigs section of the toolbar will bring up the **Output Mixer**.

(2.7.1) Blend

The **Blend** tool allows the mixing of the A & B rigs.

- Use the **slider** to blend 100% to A with it up, 100% to B with it down, and anywhere in between. This is a great tool for creating unique tones by blending rigs.
- Use the **Pan** knob to adjust the stereo signal for either rig left or right resulting in some rich tones. Depending on what cabinets and mic placements you are using, you could end up with an out of phase sound. If both rigs are placed centrally then this could create a hollow sound, lacking mids or bott om end.
- The **Phase** switch flips the phase 180° for correctional purposes. This is active when the light above the button is illuminated.
- The **Delay** compensation dial allows more fine tuning of any phase issues. Experiment with this control for some unique and wide sounding tones. The delay is up to 30 ms, although as most phase corrections require less than 2 ms, the control is of a higher sensitivity in the lower numbers.

(2.7.2) Reverb

The **Reverb** module allows you to add a reverb effect.

- Click the **Toggle switch** to enable or disable the global reverb effect.
- Adjust the **Mix** setting to select how much of the reverb signal is blended with the dry signal (from 0 – 100%).
- Adjust the **Time** setting to select how long it takes for the reverb effect to decay (from 0.45 – 144 seconds).
- Adjust the **Size** setting to select the size of the space that the reverb emulates, giving a shorter or longer delay (from 0 – 100%).
- Adjust the **Color** setting to select the damping of the high frequencies, affecting the character of the reverb. Higher values result in a dark, harsh reverb with less high frequencies, while lower values create a brighter sound, letting more high frequencies through. (from 20 Hz – 20,000 Hz).
- Select a **Preset** to use a specific reverb setting.

(2.7.3) Parametric EQ

The **Parametric EQ** is a great tool for final preset shaping.

- Enable the EQ by clicking the **ON** switch.
- Use the first control (a high pass filter) to slowly remove troublesome low-end frequencies that could be interfering with any other instruments in a mix.
- The lowest control helps remove any unwanted noise or distortion for the high frequencies.
- Below and above the filters are two “shelving” EQs which will cut or boost (using the yellow dial) the frequencies selected by the blue knob.
- The three middle filters use a “bell” EQ which will focus on a cut or boost of the selected frequencies while also slightly affecting the surrounding frequencies to create a smooth effect.
- Click **RST** to reset all filter settings.

(2.7.4) Compressor

The optical feedback **Compressor** responds well to transients (short bursts of sound energy, such as from an initial guitar string pluck). A compressor reduces the dynamic range of the audio signal to create a natural-sounding recording. Dynamic range refers to the difference between the signal’s loudest and quietest parts. This is done by increasing the quieter parts to make them more apparent and lowering the louder parts of the audio signal.

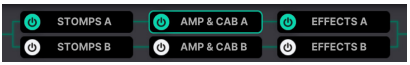
- The **Threshold** adjustment set the level that the signal needs to rise above in order for the compressor to start to work.
- The **Gain** compensation knob boosts the compressed signal to a higher output level.
- Adjust the side chain **Highpass** filter to remove low frequency muddiness and give transparency.
- Adjust the **Compression Ratio** to set how much gain reduction is applied when the signal passes the threshold level. For example, a ratio of 4:1 means that for every 4 dB the signal rises above the threshold, the compressor will increase the output by 1 dB.
- Adjust the **Attack** time to set the time it takes for the compressor to finish the gain reduction.

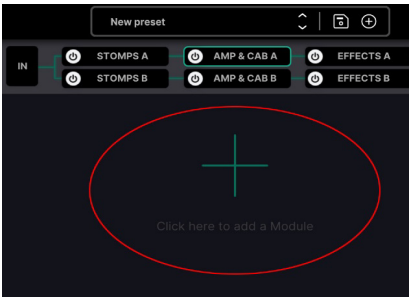
(2.7.5) VU Meter

View the **VU Meter** to see the output levels.

- Turn the **Adjust** knob to set the final output levels. It's important not to let it clip into the red area of digital distortion. If it does, turn down the Adjust knob.
- Click the **Auto Normalization** button to even out the loudness for the signal.

(3.0) Modules





The type of module you can load depends on where you are in the "rig" or signal chain. In the middle of the GUI you can select from Rig A or B (which run in parallel) with Stomps, Amps & Cabs, or Effects. The rig modules are active when the Power LEDs are lit.

In the Module Picker menu, Stompboxes are grouped and sorted by these categories:

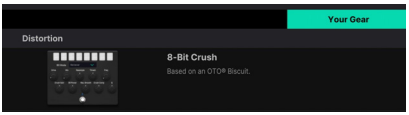
Distortion, Dynamics/EQ, Expression, Modeling, Modulation, Reverb/Delay, and Utility.

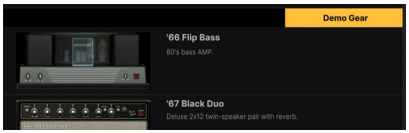
To create a rig:

1. First select an amplifier and cabinet on the **Amps & Cabs** screen by clicking on a blank part of the "rack". This will bring up the **Module Picker** where you can browse through the amplifiers, cabinet modules, and any relevant tools such as the signal splitter and noise gate.

   In the Module Picker, modules are split into two sections:

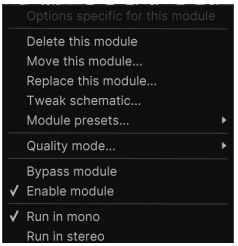
   - ***Your Gear***: These are the modules that you own and are licensed.
   - ***Demo Gear***: These are the modules that are not licensed, but are still available to demo within ReValver. These modules can be played but will not save in any presets.



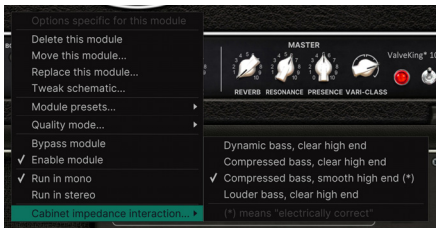


2. Click on a module to load it into the main screen of ReValver. If selecting an amplifier, ReValver will also load the cabinet model that matches the amp. If you're using the free version of ReValver and don't own these modules/cabs, they will show a D on the ones that you don't have a license for (demo), and a beep will sound intermittently. Repeat this process to load a Stomp or Effect.

3. Next, tweak the tones on the amplifier as you would in the real world. Channel switching, gain controls, and EQs function as they would do on an actual amp. Right click (Ctrl+click on macOS) anywhere on the amp that is not a control to bring up the context menu (see image, right).



   - You can **delete**, **move**, or **replace** the module. This allows you control over where each module appears in your rig.
   - Select **Tweak schematic** to bring up the internal circuits of the module. See the *Tweaking Guide* section for more details.
   - In **Module presets** you can save and load presets for individual modules. This is particularly useful if you have created a favorite effect you'd like to use in multiple presets with the same amplifier settings.
   - The **Quality mode menu** options allow you to set the preferred amount of oversampling for a specific module. Each module has a default that is reasonable for its type. Amps and most stomps are always oversampled x2 to help remove unwanted digital noise and distortion. Oversampling will not take place in the case where audio sample rate is higher than 88 kHz. Proper anti-aliasing filters are always used where needed. While previous versions of ReValver used a global quality switch, ReValver 4 and up does not. Instead, all attempts are made to produce the highest possible quality. ReValver uses a mixture of 32 and 64-bit floating-point processing within the modules. Higher quality calculations are always made where needed.
   - Select **Bypass** to have a module turned off.
   - Amps can be selected to **Run in mono** or **stereo**. Some stomps can be run in stereo or mono. If so, the mono/stereo option will be available.
   - Some amps have an extra menu option called **Cabinet Impedance Interaction** which relates to how cabs and amps work together. Other than the commonly known impulse response (IR) of the cab, it has electrical features that can't be measured with a microphone. Those electrical properties strongly affect the inner workings of the amp's power section. A cabinet's electrical characteristics give the amp a dynamic where the low end and the high end is affected separately.



- The menu choices allow you to define how the low and high end is processed. The default mode is the electrically correct approach, but by simple rearrangement of the processing, the effect can be adjusted. Some settings can place the sound better in a mix.

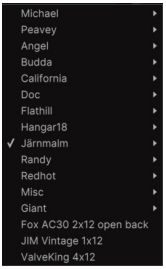
The **RIR 2** and **RIR 2 Lite** modules make use of these measured electrical characteristics, while the original RIR can only make guesses since RIR allows 3rd party IR samples without such information. If more than one RIR 2 cab module is inserted in the preset, only one of them interacts with the amp. If more than one amp is in the preset, the cab will interact with both.

(3.1) RIR 2

RIR 2 is the flagship cabinet modeling module within ReValver, which brings even more dynamics and feel to the program. The full RIR 2 module is now included with ReValver. The RIR 2 Lite module is included for backwards compatibility.

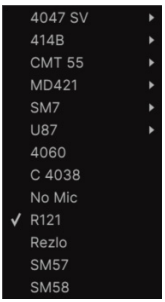
The speaker cabinets modeled in RIR 2 have been created by sampling the actual Impulse Response of the real cabinets with different mic positions. This time-consuming convolution method, when loaded into our algorithm, yields incredibly realistic results. This captures the electrical features of each cabinet and how it interacts with the amplifier module giving unique tones and feel.

Selecting an amplifier module will automatically load RIR 2 and a matching cabinet. Loading a preset will have the cabinet, mic, position, and various parameters adjusted to make that preset sound the way it does. These can be altered to your taste.



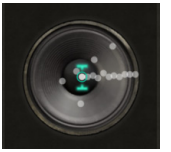
To change the cabinet, click the drop-down menu above the cabinet graphic for a list of cabs to choose from.

A comprehensive **list of microphones** can be selected, which exhibit different tonal characters. Some microphones have options where different frequencies are cut or boosted and variable polar patterns are selectable. If you're not familiar with different microphones and how they can affect the tone, feel free to experiment.



Once a microphone is selected, the amount of **gain** applied to the mic can be altered with the "gain" dial and the proximity to the grill of the speaker, resulting in different tonalities. Click the **off-axis** button to select the impulse response where a mic at a 45-degree angle can be adjusted to another position. Off-axis tones usually result in a roll off of high frequencies and less of the proximity effect resulting in a more mellow tone.

Adjust the **microphone placement** for a tonal change. Small movements with a mic against a cabinet can make big differences. The general rule is that the center of the speaker will have a bright and aggressive sound, tight in the top end with less low resonant frequencies. Pointing the mic at the inner part of the cone tames the high frequencies and introduces lower end, with the sound getting darker towards the outer extremes of the speaker cone. It's best to experiment, remembering perfect mic placement can take time. Being able to change the speaker position after recording in a DAW is an ideal way to help fit a guitar sound into a mix without having to introduce an EQ, which may give undesirable characteristics to the tone you have created.



There are also **delay** compensation and **phase** controls on RIR 2. These are useful when blending different cabinets to correct any phase issues but can also be used to create wide stereo sounds using phase effects from 0 - 30 ms, although as most corrections require less than 2 ms, the control is of a higher sensitivity in the lower numbers. Hold **Shift** while adjusting these controls for small increment fine tuning.

Add a subtle neutral-room reverb using the **Ambience** controls, adjusting the **Amount** (-24 – 0 – 12 dB) and **Size** (25 – 350 ms) for the length of time for early reflections) controls. Hold **Shift** while adjusting these controls for small increment fine tuning.

You can boost or cut **low** and **high** frequencies (from -16 – 0 – 16 dB) using the Filters control.

(3.2) Amp Cloner Player

(3.2.1) Overview

The Amp Cloner Player feature enables you to load and play clones that were created in the ReValver Amp Cloner.

The Amp Cloner Player module within ReValver 5 can open clones and SuperClones that were created in the standalone ReValver Amp Cloner. The Amp Cloner Player is included for free in ReValver 5.

Whenever you create a clone in ReValver Amp Cloner and the clone is saved, it automatically becomes available as an Amp Cloner preset in Amp Cloner Player.

In ReValver, the Amp Cloner Player module is loaded just like any other amp or pedal module. Once loaded, you can load a clone by opening the clone browser menu (the small folder icon with the "+")

(3.2.2) Interface

ReValver Amp Cloner Player comes in two versions: amp and pedal. Amp Cloner Player is available in both the “STOMPS” and “AMP & CAB” sections of ReValver.

Amp Cloner Player – Amp

Amp Cloner Player in the “AMP & CAB” section defaults to an interface that resembles a guitar amp module with familiar gain, volume, tonestack, presence, and master volume controls. When an amp clone is loaded, the software operates as an amp modeler. The skin is determined by what skin was saved with the clone.

Cab Bypass

If a clone was created from an entire rig (amp & cab), but you would like to use another cabinet model or IR, the cab can be bypassed. In this case, as the cab info is “baked into” the clone, ReValver Amp Cloner will remove a generic “cab” from the clone. This process can be toggled to turn the cab on and off.

You have the option of loading an IR with the RIR module or loading one of the ReValver proprietary cabs with the RIR2 module. Selecting RIR or RIR2 in the cloner module loads the respective cab module below the amp clone module.

If you created an “Amp Only” or “Preamp/Pedal” clone, only the Off (Default), RIR, and RIR2 options are active on the cab knob.

Note: If the clone was captured with a cab, turning the cab on or off OR selecting RIR or RIR2 DOES NOT change the clone itself. If the cab was captured in the clone, it will always exist in the clone. To save the cab bypass or the RIR/RIR2 state, you must save a Preset (not a clone).

Amp Cloner Player - Pedal View

If the Amp Cloner Player module is opened in the **Stomps** view, it is presented as a standard pedal module with Drive, Tone, and Level controls. The skin is determined by what skin was saved with the clone.

Preset Loading/Saving

Any changes made within Amp Cloner Player must be saved as a Preset. Once a clone is created, Amp Cloner Player doesn't modify the clone itself as the controls on the Amp Cloner Player are tone shaping controls that happen outside of the clone itself.

SuperClones

SuperClones are a special type of clone that is made up of multiple single clones. When a SuperClone is loaded, the Gain knob in ReValver Amp Cloner (or Amp Cloner Player) “morphs” between clones when turned.

In the case of a SuperClone consisting of 10 clones, one clone is mapped to every whole step of the gain knob. For SuperClones consisting of less than 10 clones, the number of clones are evenly spread out between the range of the Gain knob, starting at “0” and ending at “10”.

A SuperClone can even be a combination of different amps, creating a new "amp" that never existed before.

The Amp Cloner Player Modules will be able to open a SuperClone in both Amp and Stomp views.

(3.3) ACT Rack

ACT Rack is a smart EQ cloning/matching effects module, suitable for both instruments and mixes, with extra tone-shape tools to help dial in the sound you are looking for. The ACT Rack module can analyze the frequency response (EQ curve) of a **Target** audio file or DAW track and apply the frequency response to your **Source** track.

ACT Rack can process mono and stereo audio, but the analysis steps are done in merged mono. As with most other filtering processes, the final EQ is applied to both channels in equal amounts.

Note: The **System Mono** switch from the Input Mixer is duplicated in ACT Rack. System Mono merges the incoming stereo signal to a replicated mono signal.

(3.3.1) Source and Target Sounds

The EQ created by ACT Rack is the difference in frequency response between a **Source** sound and a **Target** sound. That EQ can be applied to the source to have it sonically match the target sound.

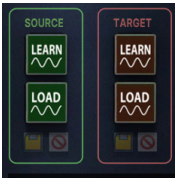
Both the **Source** and **Target** sounds can be analysed by either streaming audio using a track in your DAW or loading an audio file (*.wav, *.ogg, *.aiff, *.opus, or pre-analyzed profile.)

(3.3.2) Creating a Source or Target Profile

The process of analyzing the Source and Target profile is identical. In some cases it may be more intuitive to create the Source profile first.

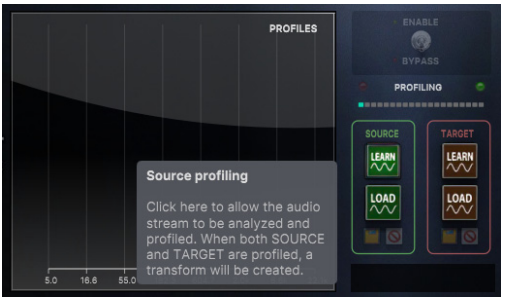
An analysis profile is created either by using the **Learn** or the **Load** functions. While the **Load** function is very fast and able to compute the frequency response of an external audio clip right after loading, the **Learn** function requires an audio stream that will be analyzed as the stream plays.

To analyze an audio signal using the **Learn** function, click on the button for either the source or target profile slot.

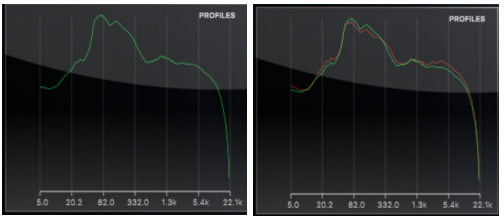


If you are working in a DAW environment, play the track that you are analyzing until the progress bar in the ACT Rack module indicates completion.

As the ACT Rack requires audio running above a set threshold level, the Learn process will remain paused if the audio is not loud enough. If this is the case, ensure you are playing the correct track and raise the level as needed.



When done, the source profile will be displayed in the frequency response graph as green, and the target will be displayed as red.



To analyze the frequency response of an external audio clip, click on the **Load** button, highlighted in the side picture.

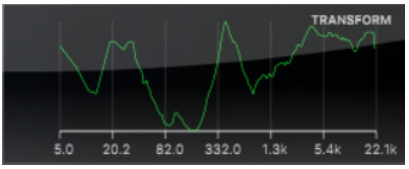
Locate the audio file you wish to analyze and load it. ACT Rack will automatically create an analysis profile from the loaded audio clip and display its frequency range on the **Profiles** display.

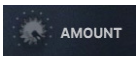
You can save this profile by clicking on the **Save** button  . ACT Rack will save a file that contains the frequency response of this profile, that can be loaded later using the **Load** button.

The profile can be cleared by clicking on the  button.

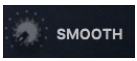
When an EQ has been created based on the source and target profiles, it will be disabled by default. To enable and apply the EQ profile you will need to enable it manually.

After enabling the EQ, the ACT EQ profile will be applied to the audio passing through the ACT Rack module. The **Transform** display will present a curve that represents the difference between the **Source** and the **Target**.





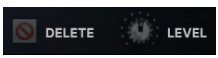
Amount: This is a blend control to mix the original sound with the transformed one. The default value is 100%.



Smooth: Sharp peaks in the transform can be attenuated with smoothing. This function can often enhance the transformation that is applied to the audio.

Tip: Sharply defined EQs carry a certain amount of phase distortion, which is reduced in the smoothing process. Smoothing tends to work better for complex audio such as mixes, whereas sharper EQ tends to work better for single instruments. In the end, you should trust your ears to determine whether to use smoothing.

The Amount and Smooth knobs will be unavailable, and the transform graph will be empty when reloading an ACT Rack preset. However the transform function will be fully operational. To tweak the transform in any way after reloading the ACT Rack preset you will need to load the source and target slots again.



A **Delete** button is available to remove the transform. A **Level** knob allows for output adjustments.

ACT Rack provides an extra set of tools to shape the final transformation, without the need of having to load an external parametric EQ. The **Post EQ** section has high and low pass filters, a high shelf and a low shelf with two bands.

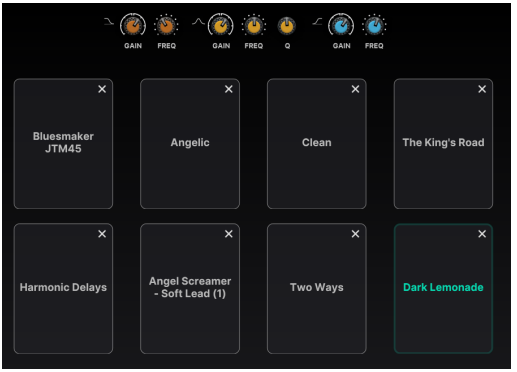
(3.4) Gig Mode

Note: This mode is only available in standalone operation.

Gig mode gives you the ability to preload up to 8 presets and then switch between them seamlessly.

To enable Gig mode, select it from the top menu icon.

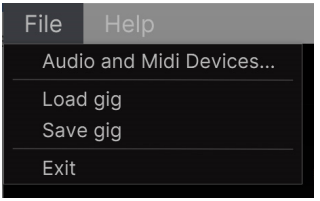
This will bring up the Gig mode interface over the standard ReValver GUI. From here, click on the empty slots to bring up the Preset Manager and load in your desired presets.



If you click any of the preset slots, you will see that the preset you selected loads instantly with no delay. Each slot corresponds to MIDI Program changes 1-8, so using a MIDI command you could change entire presets, along with being able to still employ Control Changes for switching within that preset. See the *MIDI Control* section for more info on this.

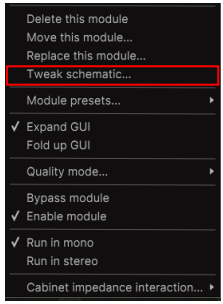
There is also a set of filters on the top of the Gig mode view. Use these as a master EQ to tweak the entire set of presets to maybe suit a specific room or scenario.

You can also **Save** and **Load** gigs from the main File menu to have any number of gigs preprogrammed and ready to load up when needed.



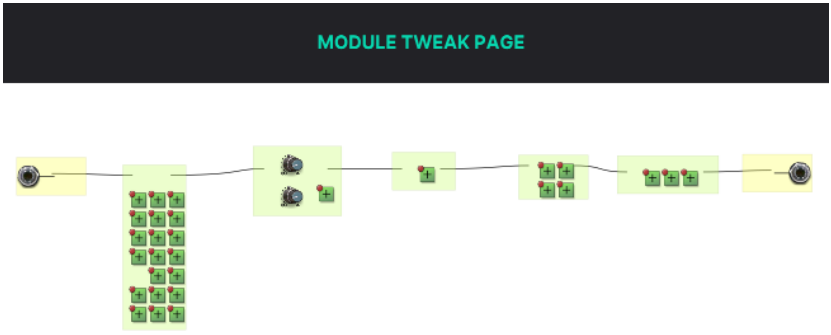
(4.0) Tweaking Guide

ReValver has a remarkable set of parameters that can be adjusted in most modules. This can be found by right clicking (Ctrl+click on macOS) on the module you wish to tweak and select **Tweak schematic**.



Note: Some modules (or circuits in modules) may have editing disabled. This may be because the owner of the schematic or the third-party developer has requested editing to be disabled.

The layout of the UI is that of a schematic. Some circuits are of an electrical type and others are purely digital. The signal flow through these circuits is indicated with lines, in the general direction of left to right.

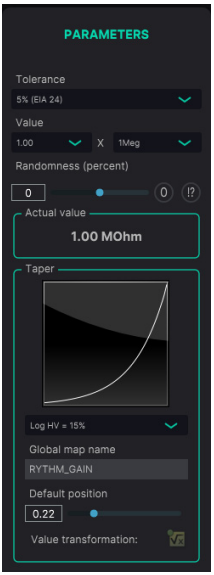


The electronic circuits use a complex modeling engine that allows for high accuracy in filter and nonlinear simulations. It uses a recognised set of techniques to evaluate large electronic networks. It is not possible to remove or insert circuits or components within ReValver, but you can edit parameter values.

You may drag the schematic to fit appropriate sections to the screen, and if you have a scroll wheel you can zoom in and out.

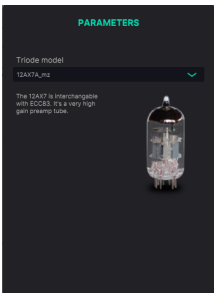
The most common electronic parameters that can be edited are resistors, capacitors, inductors, op amps, preamp tubes, and power amp tubes. Each component provides its own UI to adjust the parameters of interest. Changing a power amp tube is as easy as clicking on the tube diagram in the circuit and swapping the tube. Take note that the tubes are in pairs so if there are four power tubes, you'll have to change both pairs. See the *Tips and Tricks* section for more details.

Changing other components, such as a tone pot, brings up different options.



The value of a resistor or capacitor in ReValver is composed using two drop downs, for example 2.0 x 10k Ohm = 20k Ohm, just as components are specified. The values to choose from depends on the “tolerance” they are said to have. It’s virtually impossible to manufacture a resistor or capacitor with the exact value wanted. A resistor with 5% tolerance will have been manufactured to an actual value +/-5% of what is specified. The actual difference is specified in ReValver as the “Randomness”. You can either set it to zero or click the **“!?”** button to randomize it. By randomizing as many components as possible within the set limit, the interaction between the components will become more natural. You can create endless variations in sound using the same circuitry, just as in real life.

If the resistor is variable, such as a rotary pot, the value varies with position. The “Taper” defines how the resistor varies with position. Changing the taper usually changes the apparent volume of an amp unless the pot is in absolute min or max position.



Global map names and value transformations are used to tie the component to a UI element. It is usually not recommended to change that. Digital circuits usually have parameters inside “green boxes” that will open a specialized UI. Of course, the amplifier modules prove to be the most in depth when entering the tweak UI, but all modules of ReValver are tweakable.

(4.1) MIDI Control

MIDI control can be done in two ways:

1. Using a dedicated MIDI controller, you can send Program, Note, and Control Change (CC) messages.
2. Use Plugin automation within your DAW.

(4.1.1) Using a MIDI Controller

Virtually all parameters in ReValver modules can be controlled by MIDI. Using Control Changes, this allows you to switch stomp boxes on and off, switch channels on amplifiers, control expressive effects such as a Wah and even use expression pedals to control something such as Diffusion on the World Wide Verb delay for extreme delay control.

To assign a MIDI CC to ReValver, right click (Ctrl+click on macOS) on the control you wish to assign, select **MIDI mapping**, and choose **Create MIDI mapping for this control**.

You'll then be presented with this screen:

Using a MIDI foot controller, you could move an expression pedal and the pedal would now control the Wah. See the *Tips and Tricks* section for more details on MIDI control.

Using MIDI CC messages is a very powerful way to get a lot out of just one preset. If MIDI control is used in conjunction with Gig mode, then even more can be achieved.

Gig mode automatically has Program Changes 1-8 assigned to seamlessly switch between the 8 presets you can load. By consulting your MIDI controller's manual you can usually set up Program and Control changes to be sent by different pedals, allowing you to switch between presets and control the effects within them.

See the *Tips and Tricks* section for an example of how to do this with a MIDI controller. All MIDI controllers differ so please consult their documentation for information.

(4.1.2) Plugin Automation

Plugin automation is a way to control the ReValver UI element from within the DAW. To do so, a GUI element must be mapped to a "name" that is exported to the DAW. ReValver provides a set of predefined suggestions such as "Amp Gain" or "Mid", but any UI element can be mapped to any name.

In previous versions of ReValver, certain UI elements were pre-mapped with logical names. In the event you had two amps, it was not possible for either ReValver or the DAW to say which was the Amp Gain or Mid Tone control. In ReValver, such mapping must be manually done.

To map an automation name to a UI element, right click (Ctrl+click on macOS) and select **Host automation mapping** to select a control. Then either select a map name or remove it. The DAW is aware of the map names even before you have made an association with a UI control, but before you map anything, no connection will be made.

Please refer to your DAW's User Guide on how to record and make use of automation information.

(5.0) Troubleshooting

(5.1) Tips and Tricks

Using a Signal Splitter:

- Use a signal splitter in pedal board view to blend two different effects, add distortion, or act as a wet/dry control. Let's say you want to create a unique modulation effect to blend a chorus pedal and a flanger. Load the signal splitter and put the chorus pedal into the blue part and the flanger into the red part and then experiment with the blend control. You can also use it the same way to blend different distortion pedals and get different flavors of distortion. To use it as a wet/dry control, load the pedal you wish to use into the blue part of the signal splitter and leave the red part without any pedals. Then use the blend control to mix the effected signal with the dry one.
- In the amp view, one can use the signal splitter to accomplish unusual setups, like to connect an amp with 2 different speaker simulation modules (RIR, RIR 2, or RIR 2 Lite) or even load two different amps and their respective cabinet simulators, with the option of blending the two different signals for a greater tonal pallette or simply panning each different signal to a side of the stereo field to get a stereo sound.
- In the effects view, you can use the signal splitter to blend 2 different effects such as flanger and chorus, or even blend two different reverbs for a richer ambience.

Using ACT Instrument Modeler:

- If you have an old set of strings in your guitar, the input ACT libraries can help get a little brightness back!
- It's likely that you will get better results in ACT if you use the same pickup as the one used in the library that you are choosing. For example, use the neck pickup of your guitar with a neck library in ACT.

Using the Output ACT Module:

The ACT output module can be used to salvage some poorly recorded guitars. Just load ReValver as an insert plugin in your DAW on the same track that you want to “fix”. Select a profile in the ACT module and profile the sound from your guitar track in the DAW by playing it back. Then, after the preset is applied, you can browse through the various samples we have provided as your recorded track plays back to find a more suitable tone.

Signal Processing Tips:

- If you are using any ambience (reverb or delay) in your sound and use the compressor in the Output mixer, be conservative with how much of the effect you put in your sound. The compressor is likely to make it much more present.
- If you want more control, use a shorter attack on the compressor, since it will tame the transients. If you want more punch, use a longer attack time and it will let more transients pass before compression kicks in. If you want more sustain, use a longer release time. To have a better notion of what the attack and release of your compressor are doing to the sound, exaggerate the ratio and threshold controls until it is really affecting the sound in a way you can perceive clearly. After adjusting the attack and release to your taste, dial back the ratio (3:1 or 4:1 are commonly used) and then the threshold.
- When using an EQ, cut out the frequencies you don't want rather than boosting the ones you want. After cutting, don't forget to compensate the gain of the EQ before you compare it with the unequalized sound since the loss in volume may trick you into thinking that the unequalized one sounds better.
- High Pass and Low Pass filters do wonders for guitar sounds. One can roll off frequencies below 80 Hz and above 12 kHz. Sometimes a Low Pass can go much lower and still allow the guitar tone to cut through (8 kHz is possible).
- All modules have a setting allowing for oversampling or undersampling. While the default setting is appropriate to the nature of the module, it can be changed to save CPU.

Tweaking the circuitry:

- The schematic in the Tweak UI can be tweaked in the same way a circuit could in real life. The same tweaks that can be applied to a hardware amp can be used in ReValver. You may find tips on the Internet that would apply to ReValver as well.
- Although you cannot set the idle bias current in ReValver (just the voltage) you *can* display the idle current in the power amp section by hovering over the green "?" icon at the bottom right of the transformer. A suggested range of idle currents for each type of tube can be found in the tube tweak UI.
- A quick way to change the gain of a preamp tube stage is to alter the "plate resistor" above the tube. Higher resistance means higher gain and vice versa.
- Try different tubes in the power amp section. Switching EL34 and 6L6 tubes can create obvious but pleasing tonal differences.

Sound Tips:

- **For a better metal sound**, add the Greener module before the amp to get a tighter and more pronounced sound.
- **Add weight to the guitar sound** by driving the power amp. Sometimes this control is labeled as “drive” or “volume”. Clipping the power tubes gives a different feel and tone to clipping the preamp tubes.
- **For a better lead guitar sound**, sometimes it is better to use a small cab than a bigger one.
- If you are multi-tracking, use different amps with different cabs for each track. It will make it easier for you to place each guitar in the mix later while creating richer textures.
- Always audition your guitar sounds in a mix context, even if you have to use jam tracks or backing tracks to do it. A great guitar sound on its own can be easily buried in a mix and a guitar that sounds harsh on its own can sound just perfect mixed with other tracks.
- When normalizing your input, make sure to play all strings. If you normalize it by playing a riff using only the higher strings, it will clip when you play a power chord since the lower strings carry more energy.
- **For more realistic guitar sounds**, add some ambience. Be careful though, too much can muddy things up.

MIDI Tips using a Roland® FC-300

- Set the pedal to **Program mode** to simply switch presets in Gig mode. Pedals 1-8 will correspond to the relevant preset slots.
- Switch the controller to **Control mode** to send Control Change messages. Easily assign CC’s to switch stomp boxes on/off, switch channels on amps and assign expression pedals to control the BudWah, Wham! Pedal, or any other parameters. The BudWah features a toe switch button at the top of pedal. If the expression pedal has been assigned and this switch is engaged, the pedal will automatically switch on and off when the expression pedal is 98% of the way forward.

- To have the Wah operate more like a traditional Wah, disengage the toe switch and with the expression pedal already assigned and pushed all the way forward, use the physical toe switch of the FC-300 to assign that function to the circled on/off switch at the bottom of the wah. Now when “toe switching” the FC-300’s expression pedal, it will switch the Wah on and off.

Follow these steps to send Program Changes to switch presets in Gig mode and also Control Changes for switching effects:

1. Click the first pedal on the FC-300. Click the **Parameter >** button then click the **Write** button twice. From where it says **001** scroll across to the first ------ section and click **Value ↑** to display **PC**. As a default it should be CH#01 and PC#001. This is correct for this instance, but for controller pedal **2** make it PC#002 so switch 2 will switch to the second preset in Gig mode.
2. Continue to assign all the bottom row of pedals to switch Program changes 1-5 and then use the bank up pedal to control the last three program changes (6-8) available in Gig mode.
3. If you go back to the first preset, you can now click the **Parameter >** button to scroll to assign a CC# for the CTL 1 button.

To assign two expression pedals to include use of the toe switches, send a Control Change message to switch more than one pedal at a time. Try having one pedal off and one pedal on, then assign the same CC to them. You'll then have them switch at the same time. For example, one button could switch the Chorus off while also switching the Compressor on.

(6.0) Appendix

(6.1) System Requirements

ReValver can be used as a standalone piece of software on macOS or Windows platforms, or as a VST/AU/AAX plugin that can run within Digital Audio Workstations (DAWs). See below for system requirements.

	macOS	Windows
System	macOS 13 or later (64-bit CPU)	Windows 10 or later
Host DAW	VST2.4/VST3/AU/AAX	VST 2.4/VST3/AAX
Sound Output	Built-in audio (CoreAudio)	Sound card (ASIO preferable)
CPU	64-bit with SSE2	32/64-bit with SSE2
RAM	2 GB	2 GB
Disk Storage	1 GB	1 GB

Windows Tablets are supported if they fulfill the requirements above. Tablets with ARM processors are not supported. A keyboard may be useful for some tasks.

ReValver does not support RTAS and for Pro Tools compatibility requires a 64-bit AAX enabled version, version 10.3.5 or later.

The built-in AU / VST host of ReValver will require the 3rd party plugin being built for the same platform. The 64-bit version will require 64-bit plugins.

Significant effort has been made to ensure ReValver can be run on the greatest number of systems. You can evaluate compatibility with the free unlicensed software download.

Specifications are subject to change without notice.

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