



# VocalSynth 2 Help Documentation

## User Interface Guide

VocalSynth 2 includes a number of new features and workflow enhancements. The following guide highlights the key areas of the interface:



KEY	DESCRIPTION
•	<b>PLUG-IN INSTANCE NAME:</b> Displays the name of the current instance of VocalSynth 2. This name can be edited by clicking on the pencil icon. VocalSynth 2 instance names appear in selection menus of compatible iZotope plug-ins. VocalSynth 2 can be selected in Tonal Balance Control and Neutron 2 Masking Meters and controlled by the Neutron 2 Visual Mixer.
•	<b>GLOBAL INPUT MODE:</b> This button displays the icon and name of the currently selected global input mode. To change the global input mode, click on this button to enter the global mode selection screen.
•	<b>PRESETS:</b> Opens the Preset Manager window and displays the currently selected preset name.
•	<b>PREVIOUS/NEXT PRESET BUTTONS:</b> Selects the previous or next preset in the preset list. These buttons are useful for auditioning different presets quickly without having to open the preset manager window.
•	<b>OPTIONS &amp; HELP:</b> Clicking on the gear button will open the VocalSynth options window. Clicking on the '?' button will launch this help documentation.
•	<b>BIOVOX:</b> This panel includes the main Biovox module controls, Biovox synth preset selector and access to the <a href="#">Biovox Advanced View</a> by clicking on the mixer icon to the right of the synth preset previous/next buttons.
•	<b>VOCODER:</b> This panel includes the main Vocoder module controls, Vocoder synth preset selector and access to the <a href="#">Vocoder Advanced View</a> by clicking on the mixer icon to the right of the synth preset previous/next buttons.
•	<b>COMPUVOX:</b> This panel includes the main Compuvox module controls, Compuvox synth preset selector and access to the <a href="#">Compuvox Advanced View</a> by clicking on the mixer icon to the right of the synth preset previous/next buttons.
•	<b>TALKBOX:</b> This panel includes the main Talkbox module controls, Talkbox synth preset selector and access to the <a href="#">Talkbox Advanced View</a> by clicking on the mixer icon to the right of the synth preset previous/next buttons.

KEY	DESCRIPTION
•	<b>POLYVOX:</b> This panel includes the main Polyvox module controls and allows you to access the <a href="#">Polyvox Advanced View</a> by clicking on the mixer icon at the bottom of the panel.
•	<b>PITCH:</b> Includes <a href="#">Register</a> settings for pitch detection and correction, Pitch Correction controls and a dry/pitch corrected signal level control.
•	<b>VOICING:</b> Reveals the Voicing controls tab. The Voicing tab includes controls for the internal synthesizers when using VocalSynth 2 in <a href="#">Auto</a> or <a href="#">MIDI</a> Mode.
•	<b>METER &amp; X/Y PAD VIEW SELECTOR:</b> Toggles between the <a href="#">meter</a> and <a href="#">X/Y</a> pad controller views. The default meter selection can be changed in the <a href="#">Options</a> window.
•	<b>OUTPUT:</b> Includes global output Mix, a Gate Threshold control, Pan, Width and output Gain controls.
•	<b>ADJUSTABLE EFFECTS CHAIN:</b> Click and drag on the dots above the mix slider in any effect panel to change the position of the effect in the processing chain. <b>The following effects are available in the effects Chain:</b>
•	<b><a href="#">DISTORT</a></b> effect.
•	<b><a href="#">FILTER</a></b> effect.
•	<b><a href="#">TRANSFORM</a></b> effect.
•	<b><a href="#">SHRED</a></b> effect.
•	<b><a href="#">CHORUS</a></b> effect.

KEY	DESCRIPTION
Ⓜ	<b><u>DELAY</u></b> effect.
Ⓜ	<b><u>RING MOD</u></b> effect.

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# Global Modes

## Overview

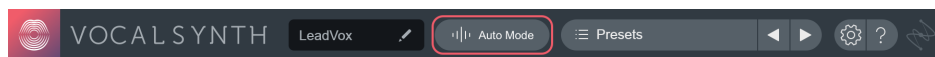
VocalSynth is designed to be inserted on a vocal track and offers different input modes to determine how it applies processing to your vocal.

VocalSynth relies on two input signals to process a vocal, a **modulator** and a **carrier** input.

1. **Modulator:** The modulator (voice/speech) is the audio from the track VocalSynth is inserted on. The modulator imparts spectral characteristics on the carrier signal.
2. **Carrier:** The carrier signal takes on spectral characteristics of the modulator and is further modified by the processing parameters in the different modules. The carrier directly influences the processed (wet) output signal of VocalSynth. The source of the carrier signal is different depending on the global mode you have selected, see the mode descriptions below for more information.

## Changing Modes

You can change the currently selected mode by clicking on the mode button in the top bar of the interface:



In the mode selection screen, select a mode and click “Accept” to change to the selected mode. You can exit the mode selection screen without changing modes by clicking the “Cancel” button.

The following sections outline how the different Global Modes in VocalSynth 2 work:

## Auto Mode



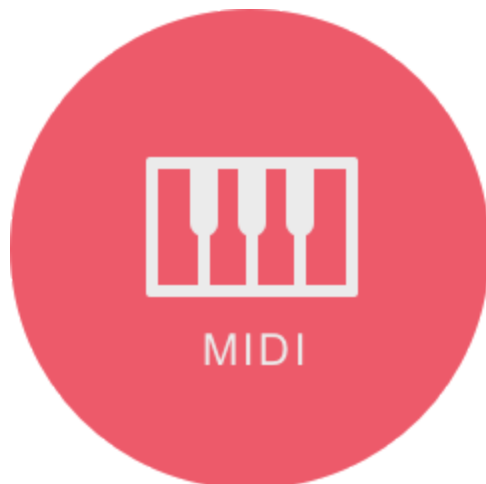
When Auto mode is selected, the incoming audio serves as the source for the modulator **and** the carrier.

VocalSynth listens to the incoming audio and detects pitch information based on the range selected in the Pitch controls area. The pitch information it detects informs the notes played by the internal synth engine. The notes played by the synth can be further customized by adjusting the auto voice parameters in the Voicing panel.

No special configuration is needed to process your vocal in Auto Mode. As long as the vocal track VocalSynth is inserted on contains audio, you will hear the effect.

Auto Mode is ideal for adding textural effects to your vocal. Not a keyboard player? Not using MIDI in your session? Auto mode may be the best option for manipulating your vocal.

## MIDI Mode



MIDI Mode allows you to play harmonies into VocalSynth to create interesting vocal effects tailored to the musical structure of your song.

When MIDI mode is selected, the modulator signal is the incoming audio from the track VocalSynth is inserted on.

The carrier input is based on MIDI information from a connected MIDI keyboard or MIDI clip in your session. The MIDI notes received by VocalSynth tell the internal synth engine what notes to play.

You can choose between Mono or Poly mode and adjust Glide time amount (Mono mode only) in the [Voicing](#) panel.

■ **NEED HELP CONFIGURING MIDI MODE?**

Configuring MIDI mode can vary depending on your DAW. For detailed setup instructions, check out the [DAW Setup](#) chapter.

## Sidechain Mode



Routing non-traditional sources (a guitar or synthesizer, for example) to the sidechain input of VocalSynth when operating in Sidechain mode can create some interesting experimental sounds.

Sidechain mode bypasses the internal synthesizers and routes the audio signal from the selected sidechain input into VocalSynth. The audio routed into VocalSynth's sidechain input will be modulated by your vocal track, allowing you to make any audio source "talk".

When Sidechain mode is selected, the modulator signal is the incoming audio from the track VocalSynth is inserted on. The audio input from a configured sidechain source is treated as the carrier.

**▲ SIDECHAIN MODE LIMITATIONS**

Not all VocalSynth features are available in Sidechain mode. The following controls are disabled in Sidechain Mode:

- › All controls in the Module Advanced View “Synth” sections are disabled because the internal synth engine is disabled in this mode.
- › All controls in the Voicing section are disabled because the internal synth engine is disabled in this mode.
- › The Polyvox module is disabled in Sidechain mode.

**■ NEED HELP SETTING UP SIDECHAIN MODE?**

Configuring Sidechain mode can vary depending on the DAW you are using. For detailed setup instructions, check out the DAW Setup chapter.

## General Functions

### Overview

VocalSynth offers an X/Y pad controller and output effects/mixer section for enhanced control of the processing applied to your vocal. In addition to these controls, an output meter and two visualization options allow you to monitor processing activity in different ways.

### XY View



The X/Y pad controller can be accessed by selecting the X/Y button in the center of the interface.



You can assign parameters to the x-axis by selecting them from the “X” dropdown menu. Moving the X/Y pad node horizontally will increase or decrease the selected parameter’s value. The left edge of the X/Y pad represents the minimum value of the control, the right edge represents the maximum value.

You can assign parameters to the y-axis by selecting them from the “Y” dropdown menu. Moving the X/Y pad node vertically will increase or decrease the selected parameter’s value. The bottom edge of the X/Y pad represents the minimum value of the parameter, the top edge represents the maximum value.

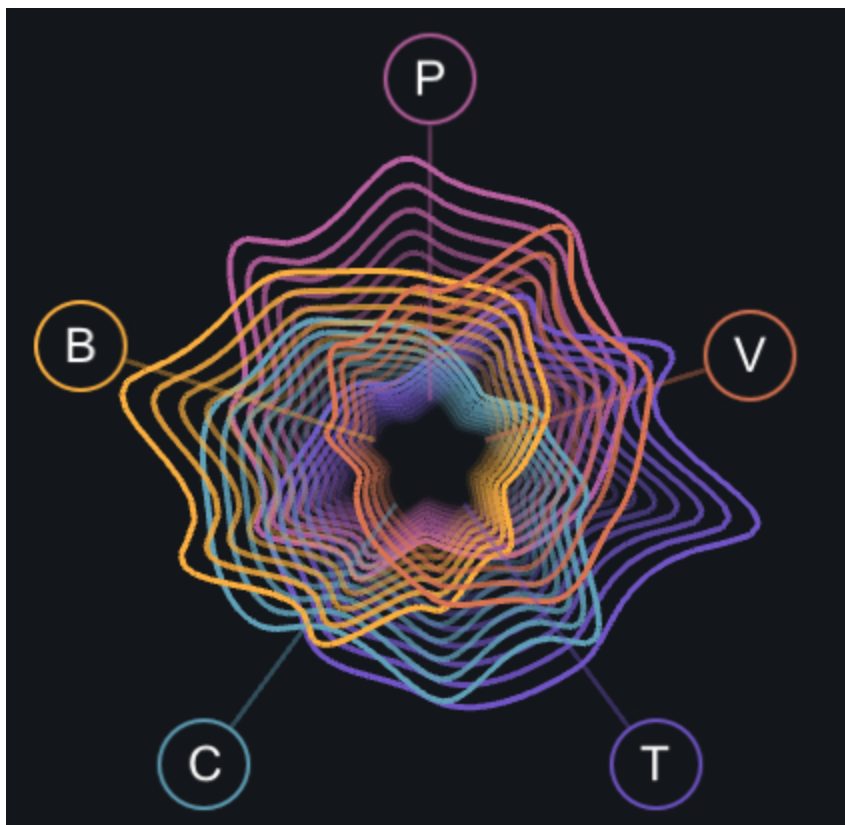
The following parameters can be assigned to either axis of the X/Y pad controller:

<b>X/Y Params</b>				
Biovox Breath	Compuvox Bats	Distort Drive	Polyvox Character	Talkbox Drive
Biovox Clarity	Compuvox Bits	Distort Mix	Polyvox Formant	Talkbox Formant
Biovox Lvl	Compuvox Bytes	Distort Tone	Polyvox Humanize	Talkbox Lvl
Biovox Nasal	Compuvox Lvl	Filter Freq	Polyvox Lvl	Talkbox Speaker
Biovox Shift	Delay Feedback	Filter Mix	Ring Mod Depth	Transform Mix
Chorus Depth	Delay Mix	Filter Res	Ring Mod Freq/Time	Transform Width
Chorus Mix	Delay Time	Lvl (Dry/Corrected)	Ring Mod LFO	Vocoder Lvl
Chorus Rate	Delay Width	Output Mix	Ring Mod Mix	Vocoder Scale
Chorus Width	-	Shred Mix	-	Vocoder Shift

## Meter View

A vocal that sounds good deserves to look good too. VocalSynth 2 comes with a brand new way to visualize your vocal. If you prefer the Wave Meter from VocalSynth 1, you can select it from the Meter dropdown menu in the [Options](#) window.

## ANEMONE



The anemone meter displays visual information for each module and allows you to control module level amounts by clicking and dragging on the associated node (B = Biovox, V = Vocoder, C = Compuvox, T = Talkbox, P = Polyvox). If a module is disabled, the associated node and visualization will be hidden. The shape of the visualization for each module changes based on MFCC (Mel Frequency Cepstral Coefficients) calculations.

## WAVE METER

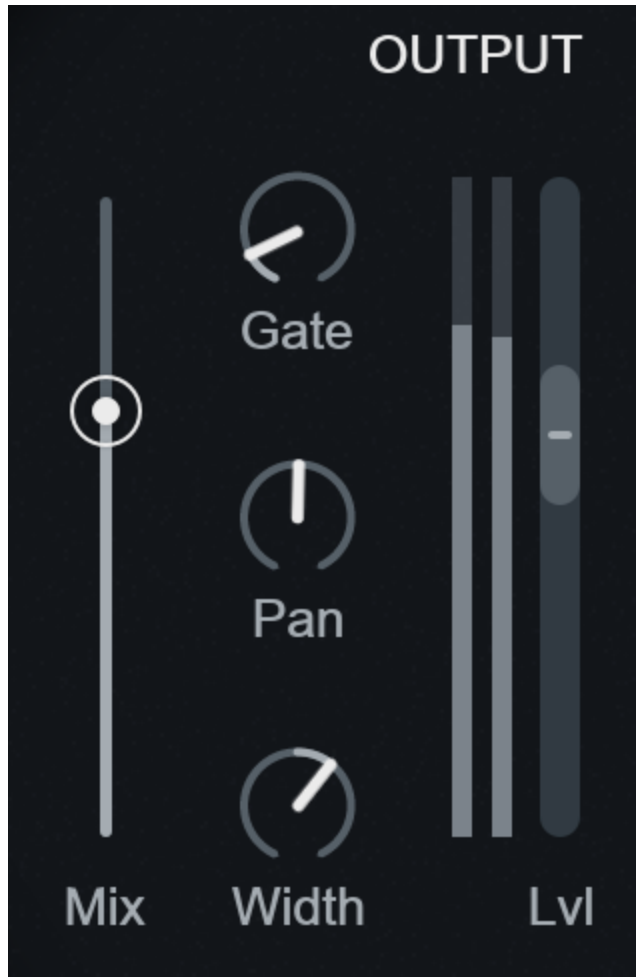


The wave meter displays frequency spectrum information based on the output of VocalSynth.

▀ HOW DO I GET THE WAVE METER TO SHOW UP?

- › Open the Options window and select “Wave” in the “Meter” dropdown menu.

## Output



### MIX

Adjusts the balance between the processed (wet) and unprocessed (dry, pre-FX) signals.

### GATE

Adjusts the Gate threshold level. The Gate detection occurs on the input signal level, gating is applied to the wet output signal before effects chain processing. In other words, if the input signal level falls below the Gate threshold level, gating will be applied to the wet (processed) signal before it is processed by the effects chain.

### PAN

Adjusts the stereo pan position of the output signal.

## **WIDTH**

Adjusts the amount of stereo widening or narrowing effect applied to the output of VocalSynth. At -100 this will narrow the apparent stereo width of the output so that it is effectively mono. At +100 this effect will exaggerate the stereo image width of the output signal.

## **LVL**

Applies a clean gain offset amount to the output signal. Clip indicators appear when the output of the plug-in is clipping. You can clear the clip indicator lights by clicking on them after stopping playback.

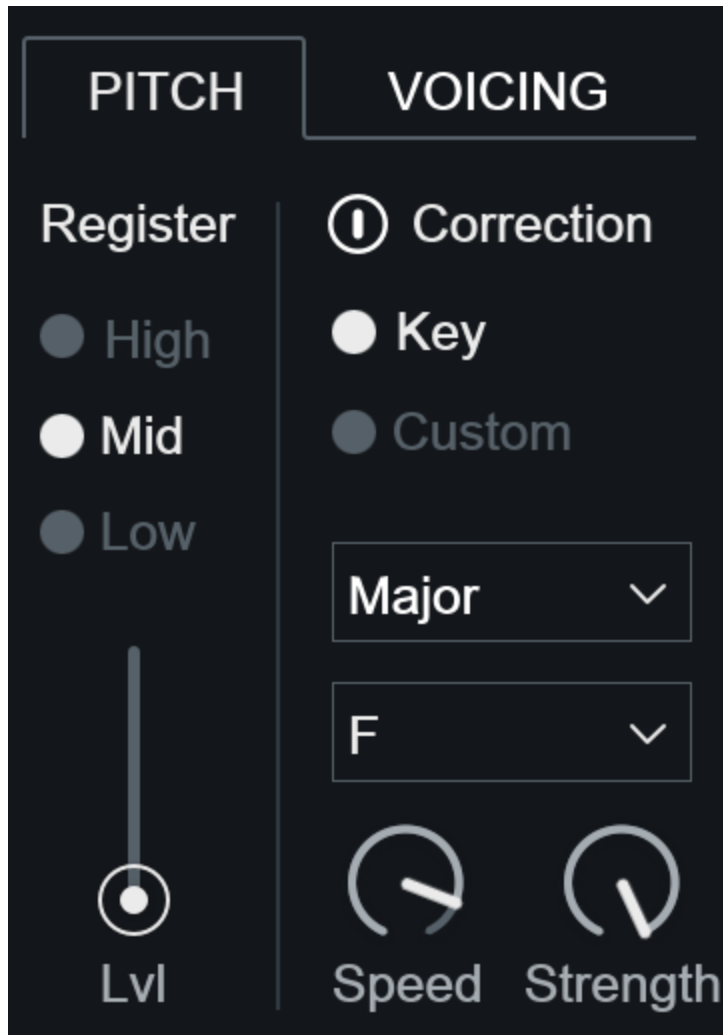
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## 📖 Pitch & Voicing

### Overview

The Pitch and Voicing control tabs allow you to adjust pitch detection and correction parameters, dry voice gain, and synth voice parameters.

### Pitch



### REGISTER

Controls how VocalSynth 2 detects and analyzes incoming vocal data. There are three Register settings to choose from: **LOW**, **MID**, **HIGH**.

📌 TIP

> Start with the Mid setting for most audio applications.

- › If you notice any undesirable behavior or artifacts in the detected pitches, experiment with the Low and High options to achieve the best results.

#### ■ AUTO MODE & REGISTER

When VocalSynth 2 is in Auto mode, the Register control will effect how the pitch tracking interacts with the oscillators. If the Register is set to High and you're singing Low, the oscillators in the Compuvox, Vocoder, or Talkbox modules won't be able to follow your vocal effectively.

## LVL

Adjusts the dry input/pitch corrected signal level.

## ENABLE CORRECTION

Enables/disables pitch correction processing.

## SCALE TYPE

There are two methods for selecting the scale type used for pitch correction: KEY and CUSTOM.

- › **KEY:** Allows you to choose between several predefined scale types.
  - › **Scale:** Defines the scale used to snap your incoming vocal pitches to. Choose from Major, Minor or Chromatic.

#### ■ TIP: CHROMATIC SCALE

- › If you don't know what scale to use, set your scale type to Chromatic.

- › **Root:** Defines the root note or key for pitch correction. It is important to set an accurate root note as this helps the pitch correction algorithm determine the best possible pitches for your vocals to correct to.

- › **CUSTOM:** Custom mode allows you to create a unique scale type. This can be useful for creative effects, such as locking a vocal to only a few pitches, or practical, such as creating a particular scale (e.g. pentatonic). When defining a Custom scale, click on any notes of the keyboard that you wish to enable/disable as options for pitch correction. When the individual notes are enabled, they'll display a bright white.

## **SPEED**

Determines how quickly your incoming vocals will be snapped to any particular note. Speed ranges from 0 to 100 ms. Values closer to 0 ms achieve robotic, immediate pitch snapping, where values higher than 50 ms obtain more natural and transparent results.

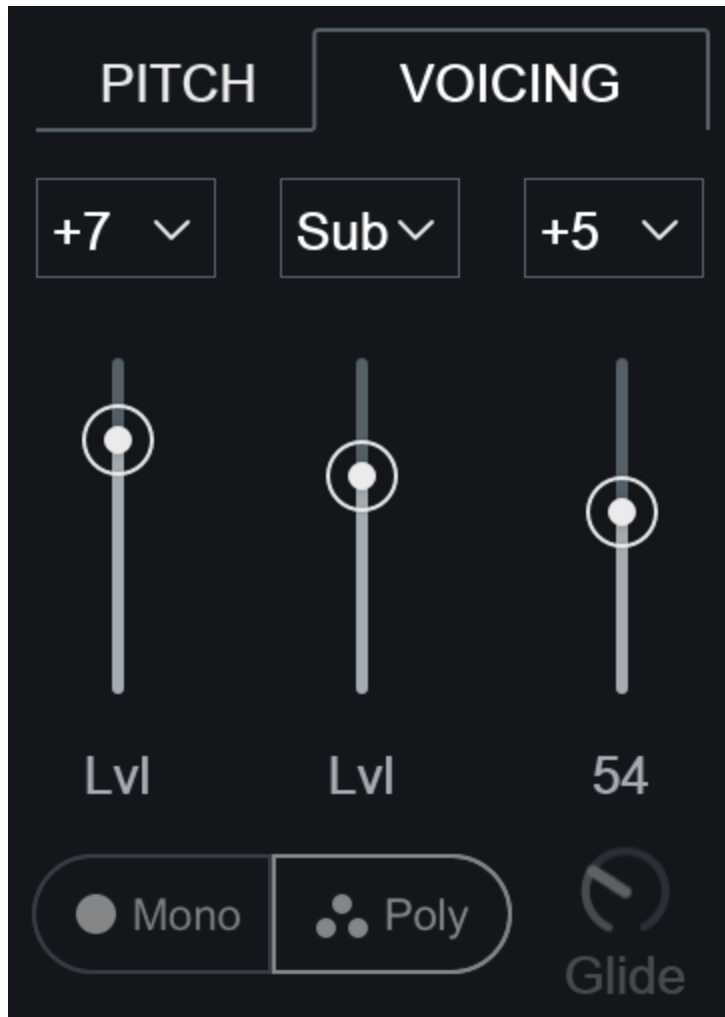
## **STRENGTH**

Controls how closely the pitch correction will pull your voice to the correct frequency. Lower strength values may not perfectly correct a pitch, but will lessen any tuning issues. This tends to sound more natural, but if you're after the more robotic sound, you'll want Strength turned up.

## **Voicing**

There are two global modes that allow you to control aspects of the internal synthesizer voices in VocalSynth 2: Auto mode and MIDI mode. When Sidechain mode is selected, the internal synthesizers are bypassed and all Voicing controls are disabled. Read more about the global different input modes in the [Global Modes](#) chapter.

## **AUTO MODE VOICING**



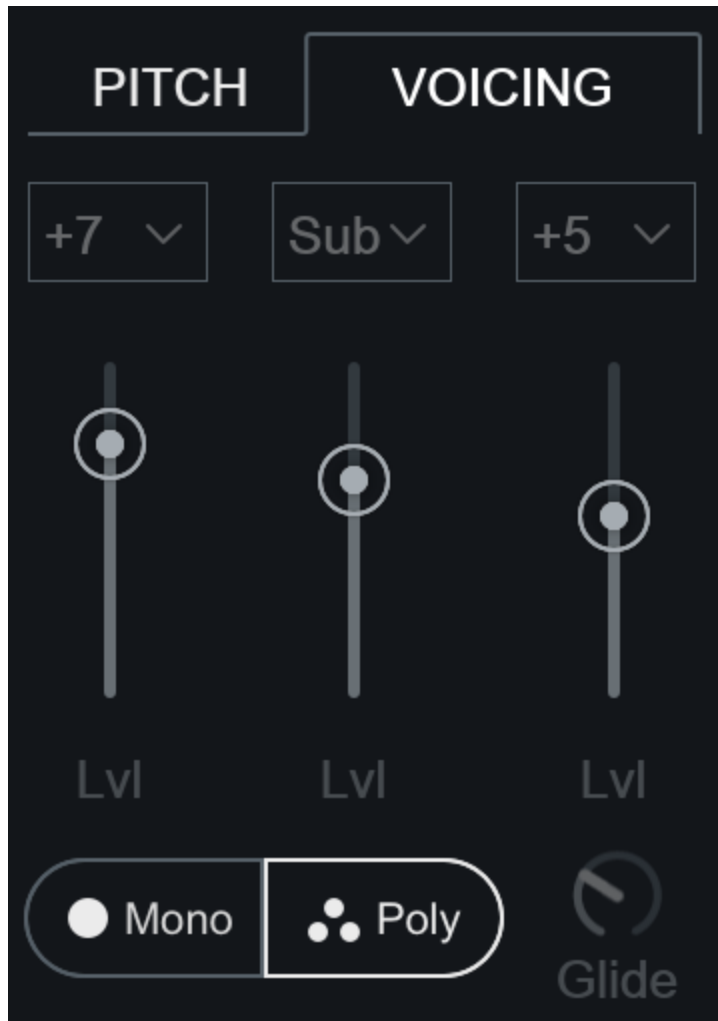
## INTERVAL

Defines an interval for each of the 3 auto voices. This interval is how far away, diatonically, the new harmony will be from the root note of the musical key. The musical key is defined in the Pitch control panel (which doesn't have to be enabled).

## LVL

Adjusts the level of the auto generated voices sent to the modules for processing.

## MIDI MODE VOICING



## MONO

Short for **monophonic**. Allows only one pitch to be played at a time, but playing notes consecutively will not retrigger the internal envelopes.

## POLY

Short for **polyphonic**. Allows multiple pitches to be played at once (known as polyphony) like chords with lines or melodies that might have overlapping voices.

## GLIDE

Adjusts the portamento speed when transitioning from one note to another (*Mono Mode only*).

## Biovox

### Overview

Inspired by articulatory synthesis, Biovox offers tools for altering physiological qualities of a vocal. The module estimates a vocal tract shape from the incoming audio and allows you to effectively manipulate the vocal tract length and shape using just a few intuitive controls. In addition to adjusting properties of the vocal tract, you can control and blend vowel sounds using the vowel pad and even impose vocal imperfections such as nasality and breathiness on your vocal. Biovox is an innovative suite of tools for sculpting formants, tone, and the overall vocal aesthetic.

### Controls



#### ENABLE

Enables/disables Biovox module processing.

#### CLARITY

Controls the amount of filter modulation applied to the signal. At lower values, more of the synth signal is present which allows Biovox to exhibit a playable synth character. Lower values also result in less intelligibility.

## SHIFT

Alters vocal tract length to effectively shift the formants of the processed vocal higher or deeper. Positive values result in higher, chipmunk-like sounds. Negative values produce a deep, monster-like sound.

## NASAL

Simulates changes to the soft palate to introduce a more nasal quality in the processed vocal.

## BREATH

Mixes in a breathy, whisper-like character to the processed audio. At the minimum value, no breathiness is added to the signal. At the maximum value, Biovox will output only the breathy signal.

## LVL

Controls the output level of the Biovox module.

### NOTE

- > You can also control the Biovox output level by dragging the node labeled 'B' that appears in the [anemone](#) visualization when the Biovox module is enabled.

## SYNTH PRESET SELECTOR



Displays the currently selected synth preset name and allows you to change the synth preset without opening the advanced view. Clicking on the preset name display will open the synth preset list. Clicking on the left and right arrow buttons allows you to quickly load different synth presets. You can modify synth parameters and save new synth presets in the advanced view.

## ADVANCED VIEW BUTTON

You can open the Advanced View window by clicking on the mixer button at the bottom of the module's main panel:



## Advanced View

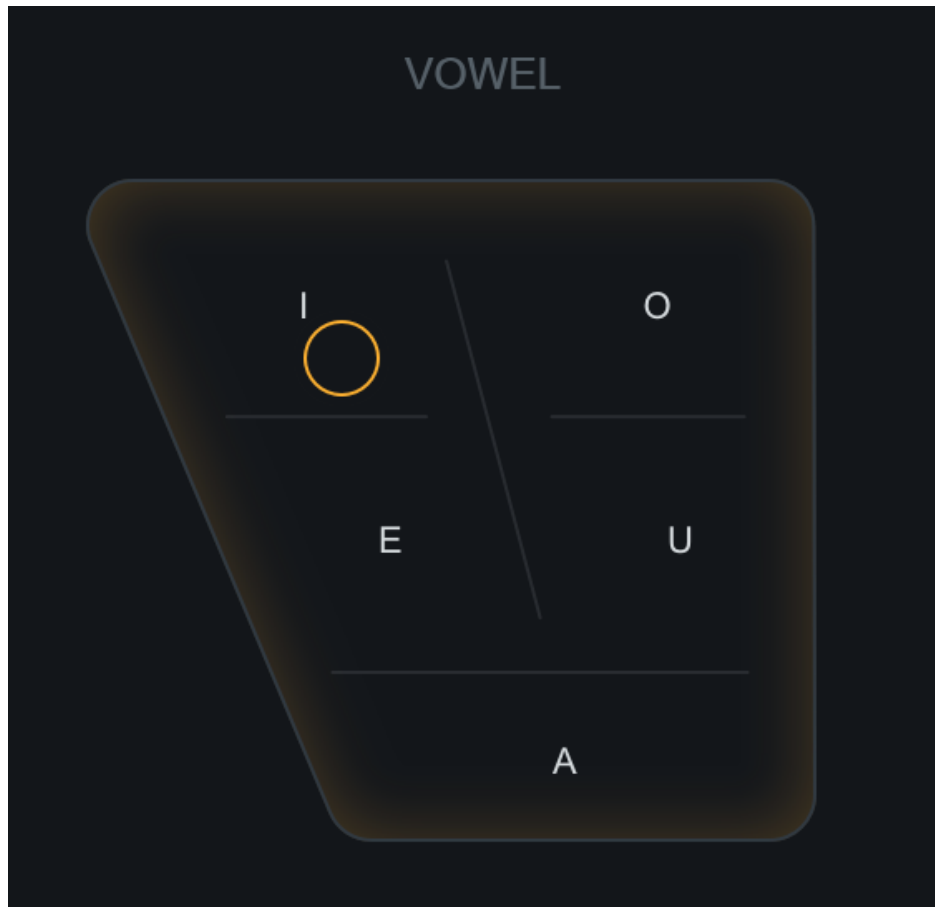
The Biovox Advanced View includes:

- > **VOWEL**: Control and blend vowel sounds.
- > **SYNTH**: Customize synth parameters & save synth presets.
- > **MIX**: Control filtering and panning of the module's output signal.



## Advanced View: Vowel

The Vowel chart is modeled after the official [International Phonetic Alphabet Vowel Chart](#) that maps vowels according to a physical location on the tongue. The Vowel chart controller can be used to impart the sound of a particular vowel on the processed signal by moving a node to different locations on the chart.



By default, the node is positioned in the center of the chart, resulting in no vowel blend.

▀ **DOUBLE-CLICK TO RESET**

Double-clicking on the node will return it to the default position in the center of the chart.

Dragging the node toward the outer boundaries of the chart will impart more of the nearest indicated vowel(s) to the processed audio.

When the node is positioned at an edge of the chart, the vowel blend is at the maximum amount and only the nearest vowel(s) will be audible in the processed output.

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## Advanced View: Synth

When Auto Mode or MIDI Mode is selected, you can control the oscillators and modulation settings for the notes being played into the Biovox module synth engine.

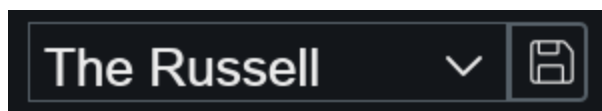


### ▲ SIDECCHAIN MODE DISABLES SYNTH CONTROLS

When Sidechain mode is selected, the sidechain input signal replaces the module synth engine as the carrier signal. Synth parameters are disabled in all modules when Sidechain is selected as the global mode.

## SYNTH PRESETS

Modules that include synth parameters in the advanced view allow for synth presets to be saved and recalled.



- › Default synth presets are loaded when VocalSynth is opened. Each module loads a different synth preset by default. Choosing the “Init” preset from the synth preset dropdown menu will return the module’s synth settings to the default preset values.
- › Double-clicking on any knob in the “Synth” section of the advanced view will set the control to a factory default state, rather than resetting the value to the “Init” state.

## LOAD PRESETS

Select a preset from the dropdown menu to load the saved synth parameter values in the current module.

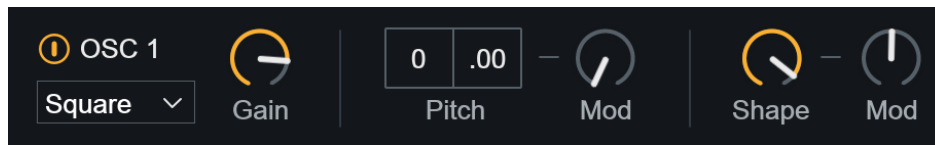
▀ NOTE

You can also quickly change synth presets without opening the advanced view by clicking on the left/right arrow buttons in the module main panel.

## SAVE PRESETS

Click on the floppy disk button next to the preset dropdown menu to save a new Synth preset. Type a name in the text field and hit the enter/return key to save the preset.

## OSC 1

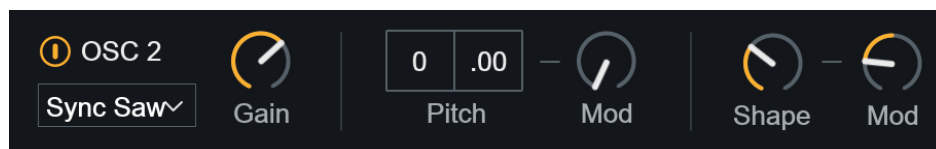


NAME	DESCRIPTION
<b>ENABLE</b>	Enables/disables Osc 1.
<b>WAVEFORM</b>	Selects the waveform shape.
<b>GAIN</b>	Adjusts the level of Osc 1.
<b>PITCH: Coarse Tune</b>	Tunes Osc 1 in coarse increments. (Semitones)
<b>PITCH: Fine Tune</b>	Tunes Osc 1 in fine increments. (Cents)
<b>PITCH: MOD</b>	Adjusts the amount of LFO modulation applied to Osc 1's pitch.
<b>SHAPE</b>	Morphs the waveform shape.
<b>SHAPE: MOD</b>	Adjusts the amount of LFO modulation applied to the waveform shape.

**The following table outlines how each shape is affected by modulation:**

Shape	Modulation Behavior
<b>SAW</b>	Modifies the pulse width of the saw wave.
<b>SQUARE</b>	Modifies the pulse width of the square wave.
<b>SYNC SAW</b>	This shape simulates two synchronized saw oscillators. Modulating shape will modify the pitch ratio between the two saw oscillators.
<b>TRIANGLE</b>	Morphs the triangle wave into a saw wave shape.
<b>SAWS</b>	Simulates a swarm of seven saw waves. Modulating shape will modify the detune amount between the saw waves.

## OSC 2

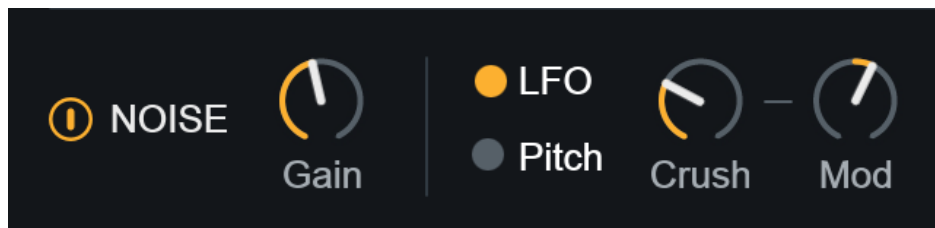


NAME	DESCRIPTION
<b>ENABLE</b>	Enables/disables Osc 2.
<b>WAVEFORM</b>	Selects the waveform shape.
<b>GAIN</b>	Adjusts the level of Osc 2.
<b>PITCH: Coarse Tune</b>	Tunes Osc 2 in coarse increments. (Semitones)
<b>PITCH: Fine Tune</b>	Tunes Osc 2 in fine increments. (Cents)
<b>PITCH: MOD</b>	Adjusts the amount of LFO modulation applied to Osc 2's pitch.
<b>SHAPE</b>	Morphs the waveform shape.
<b>SHAPE: MOD</b>	Adjusts the amount of LFO modulation applied to the waveform shape.

The following table outlines how each shape is affected by modulation:

Shape	Modulation Behavior
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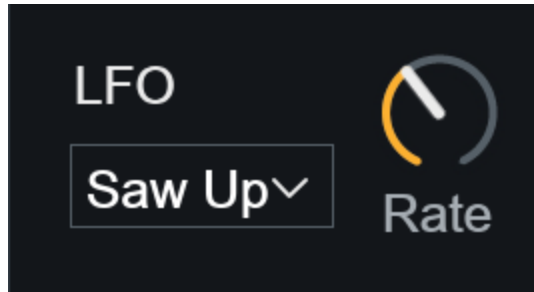
## NOISE



NAME	DESCRIPTION
<b>ENABLE</b>	Enables/disables the Noise oscillator.
<b>GAIN</b>	Adjusts the level of Noise oscillator.
<b>LFO/PITCH</b>	Selects the modulation source used by the Crush Mod control.
<b>CRUSH</b>	Adjusts the amount of aliasing distortion applied to the noise oscillator. At the maximum value, the Noise oscillator will output white noise.
<b>MOD</b>	Adjusts the amount of modulation applied to the Crush parameter. The modulation source is determined by the LFO or Pitch selection to the left of the Crush knob. This Mod parameter allows for bidirectional modulation.

## LFO MOD SOURCE

These parameters define the waveshape and speed of the LFO modulation source. All Mod knobs in the current synth view (except for the Crush Mod control, which can toggle between LFO or Pitch modulation sources) use this LFO as their modulation source.

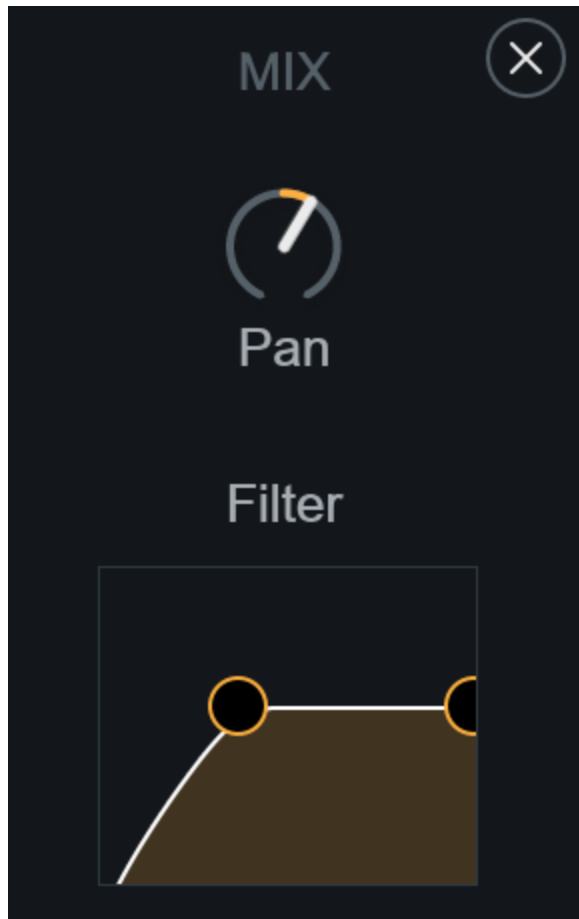


NAME	DESCRIPTION
SHAPE	Selects the low frequency oscillator waveform shape.
RATE	Adjusts the speed of the low frequency oscillator.

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## Advanced View: Mix

Adjusts stereo pan position and pass filter controls of the module's output signal.



## PAN

Controls the stereo pan position of the module's output signal.

## FILTER

Adjusts the center frequencies of high-pass and low-pass filters applied to the module's output signal. Clicking and dragging on a node will adjust the center frequency of that filter. Clicking and dragging in the space below the two nodes will move both nodes at the same time.

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## Vocoder

### Overview

As with a lot of today's musical technologies, the vocoder (short for **Voice Encoder**) began life as a completely non-musical, utilitarian piece of electronic equipment. A vocoder relies on two signals, a carrier (synthesizer) and a modulator (usually a voice). Both of the incoming signals are split into a number of frequency bands. The amplitude of the modulator signal in each individual band is then used to control the amplitude of the corresponding bands of the carrier signal. This has the auditory effect of mapping the frequency characteristics of the modulator onto the carrier signal as amplitude changes in each of the frequency bands, resulting in what we hear as talking synthesizers.

VocalSynth 2 allows for detailed manipulation of the Vocoder frequency bands and carrier synth parameters in the [Advanced View](#).

### Controls



#### ENABLE

Turns Vocoder module processing on and off.

#### MODE

The Vocoder has three different modes which alter number of frequency bands used in both the modulator (voice) and carrier (instrument) input. You can adjust the gain and pan of the frequency bands by modifying the Bands controller in the Vocoder advanced view.

- > **SMOOTH:** Reminiscent of the sound produced by early analog vocoders, but with the added benefit of wider resolution. This mode produces a pleasant, smooth sounding effect that retains intelligibility.
- > **VINTAGE:** A classic analog vocoder sound with musically spaced frequency bands for a moderate level of resolution and a timeless sound.
- > **HARD:** A modern analog hybrid rooted in classic vocoder designs. This mode offers greater resolution for a more articulate overall sound.

## SHIFT

Alters the amount of frequency shift applied to each vocoder frequency band. Adjusting the Shift amount results in changes to the pitched timbre of the processed signal. Positive values result in brighter timbre but may reduce lower frequency presence in the processed signal. Negative values result in a darker sounding timbre, but may reduce higher frequency presence in the processed signal.

## SCALE

Adjusts how quickly the vocoder responds to changing vowel sounds. Higher values may increase the articulation of the synthesized output, where lower values may sacrifice intelligibility for softer-sounding, pad-style result.

## LVL

Controls the output level of the Vocoder module.

### NOTE

- > You can also control the Vocoder output level by dragging the node labeled 'V' that appears in the anemone visualization when the Vocoder module is enabled.

## SYNTH PRESET SELECTOR



Displays the currently selected synth preset name and allows you to change the synth preset without opening the advanced view. Clicking on the preset name display will open the synth preset list. Clicking on the left and right arrow buttons allows you to quickly load different synth presets. You can modify synth parameters and save new synth presets in the advanced view.

## ADVANCED VIEW BUTTON

You can open the Advanced View window by clicking on the mixer button at the bottom of the module's main panel:



## Advanced View

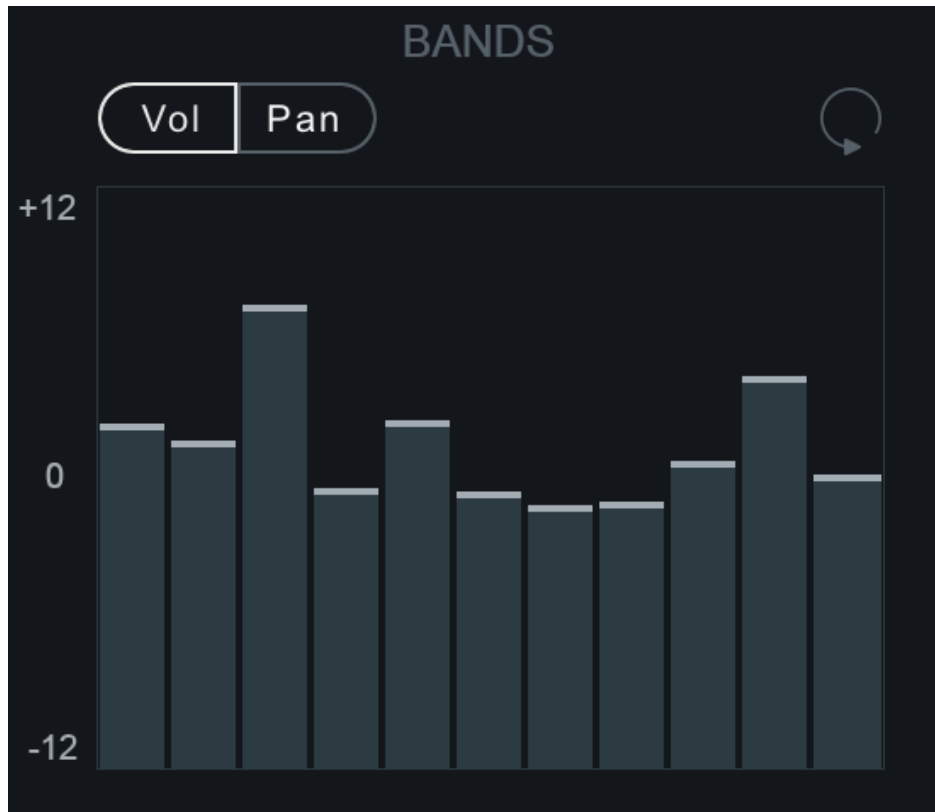
The Vocoder Advanced View includes:

- > **BANDS**: Adjust the Volume and Pan of the Vocoder frequency bands.
- > **SYNTH**: Customize synth parameters & save synth presets.
- > **MIX**: Control filtering and panning of the module's output signal.



## Advanced View: Bands

Displays a bar for each Vocoder frequency band control. The currently selected view (Vol or Pan) determines what the bars control. The number of frequency bars displayed in the bands view is determined by the currently selected vocoder Mode.



## **VOL**

When selected, adjusting a band control will modify the volume of the associated frequency band.

## **PAN**

When selected, adjusting a band control will modify the stereo pan of the associated frequency band.

## **RESET**

Sets controls in the currently selected band processing view to their factory default values.

---

## **Advanced View: Synth**

When Auto Mode or MIDI Mode is selected, you can control the oscillators and modulation settings for the notes being played into the Vocoder module synth engine.

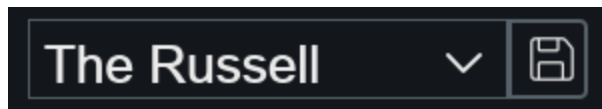


### ▲ SIDECHAIN MODE DISABLES SYNTH CONTROLS

When Sidechain mode is selected, the sidechain input signal replaces the module synth engine as the carrier signal. Synth parameters are disabled in all modules when Sidechain is selected as the global mode.

## SYNTH PRESETS

Modules that include synth parameters in the advanced view allow for synth presets to be saved and recalled.



- > Default synth presets are loaded when VocalSynth is opened. Each module loads a different synth preset by default. Choosing the "Init" preset from the synth preset dropdown menu will return the module's synth settings to the default preset values.
- > Double-clicking on any knob in the "Synth" section of the advanced view will set the control to a factory default state, rather than resetting the value to the "Init" state.

## LOAD PRESETS

Select a preset from the dropdown menu to load the saved synth parameter values in the current module.

### ▀ NOTE

You can also quickly change synth presets without opening the advanced view by clicking on the left/right arrow buttons in the

module main panel.

## SAVE PRESETS

Click on the floppy disk button next to the preset dropdown menu to save a new Synth preset. Type a name in the text field and hit the enter/return key to save the preset.

## OSC 1



NAME	DESCRIPTION
<b>ENABLE</b>	Enables/disables Osc 1.
<b>WAVEFORM</b>	Selects the waveform shape.
<b>GAIN</b>	Adjusts the level of Osc 1.
<b>PITCH: Coarse Tune</b>	Tunes Osc 1 in coarse increments. (Semitones)
<b>PITCH: Fine Tune</b>	Tunes Osc 1 in fine increments. (Cents)
<b>PITCH: MOD</b>	Adjusts the amount of LFO modulation applied to Osc 1's pitch.
<b>SHAPE</b>	Morphs the waveform shape.
<b>SHAPE: MOD</b>	Adjusts the amount of LFO modulation applied to the waveform shape.

The following table outlines how each shape is affected by modulation:

<b>Shape</b>	<b>Modulation Behavior</b>
<b>SAW</b>	Modifies the pulse width of the saw wave.

Shape	Modulation Behavior
<b>SQUARE</b>	Modifies the pulse width of the square wave.
<b>SYNC SAW</b>	This shape simulates two synchronized saw oscillators. Modulating shape will modify the pitch ratio between the two saw oscillators.
<b>TRIANGLE</b>	Morphs the triangle wave into a saw wave shape.
<b>SAWS</b>	Simulates a swarm of seven saw waves. Modulating shape will modify the detune amount between the saw waves.

## OSC 2

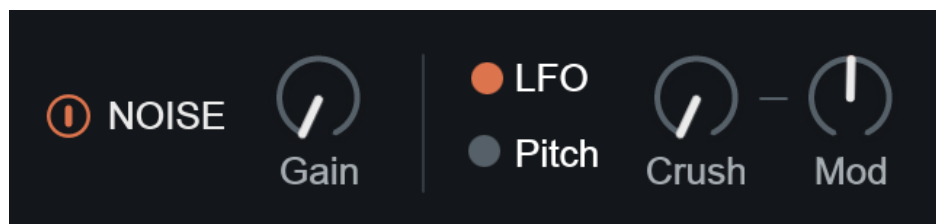


NAME	DESCRIPTION
<b>ENABLE</b>	Enables/disables Osc 2.
<b>WAVEFORM</b>	Selects the waveform shape.
<b>GAIN</b>	Adjusts the level of Osc 2.
<b>PITCH: Coarse Tune</b>	Tunes Osc 2 in coarse increments. (Semitones)
<b>PITCH: Fine Tune</b>	Tunes Osc 2 in fine increments. (Cents)
<b>PITCH: MOD</b>	Adjusts the amount of LFO modulation applied to Osc 2's pitch.
<b>SHAPE</b>	Morphs the waveform shape.
<b>SHAPE: MOD</b>	Adjusts the amount of LFO modulation applied to the waveform shape.

The following table outlines how each shape is affected by modulation:

Shape	Modulation Behavior
<b>SAW</b>	Modifies the pulse width of the saw wave.
<b>SQUARE</b>	Modifies the pulse width of the square wave.
<b>SYNC SAW</b>	This shape simulates two synchronized saw oscillators. Modulating shape will modify the pitch ratio between the two saw oscillators.
<b>TRIANGLE</b>	Morphs the triangle wave into a saw wave shape.
<b>SAWS</b>	Simulates a swarm of seven saw waves. Modulating shape will modify the detune amount between the saw waves.

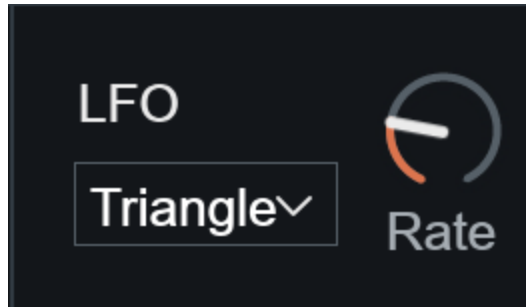
## NOISE



NAME	DESCRIPTION
<b>ENABLE</b>	Enables/disables the Noise oscillator.
<b>GAIN</b>	Adjusts the level of Noise oscillator.
<b>LFO/PITCH</b>	Selects the modulation source used by the Crush Mod control.
<b>CRUSH</b>	Adjusts the amount of aliasing distortion applied to the noise oscillator. At the maximum value, the Noise oscillator will output white noise.
<b>MOD</b>	Adjusts the amount of modulation applied to the Crush parameter. The modulation source is determined by the LFO or Pitch selection to the left of the Crush knob. This Mod parameter allows for bidirectional modulation.

## LFO MOD SOURCE

These parameters define the waveshape and speed of the LFO modulation source. All Mod knobs in the current synth view (except for the Crush Mod control, which can toggle between LFO or Pitch modulation sources) use this LFO as their modulation source.

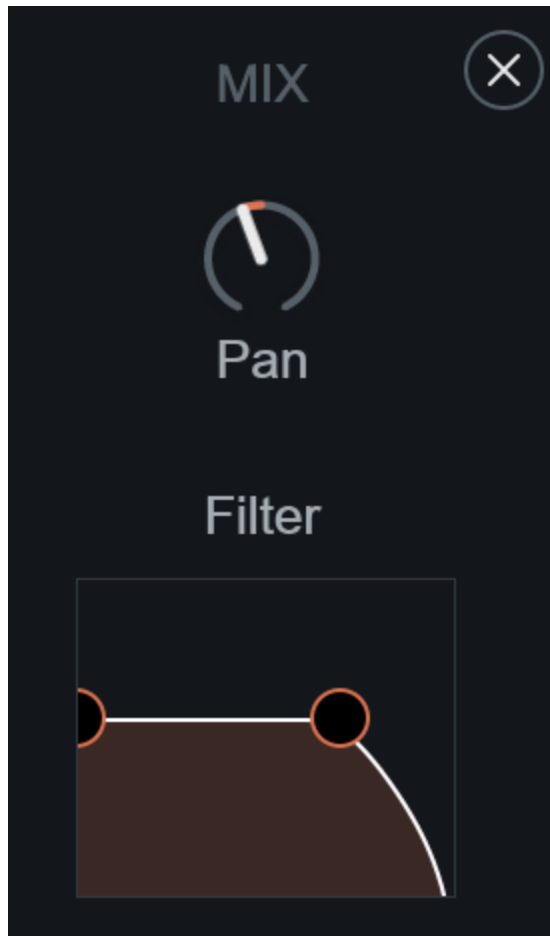


NAME	DESCRIPTION
SHAPE	Selects the low frequency oscillator waveform shape.
RATE	Adjusts the speed of the low frequency oscillator.

---

## Advanced View: Mix

Adjusts stereo pan position and pass filter controls of the module's output signal.



## PAN

Controls the stereo pan position of the module's output signal.

## FILTER

Adjusts the center frequencies of high-pass and low-pass filters applied to the module's output signal. Clicking and dragging on a node will adjust the center frequency of that filter. Clicking and dragging in the space below the two nodes will move both nodes at the same time.

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## More Information

One of the earliest vocoders was developed by Homer Dudley in the late 1920s/early 1930s at Bell Laboratories. Large-scale telephone networks were being implemented at the time, and the vocoder was developed as a potential solution to bandwidth issues. These early tools were designed to encode speech to reduce bandwidth, allowing multiple voice signals to be transmitted over the same cables. Vocoders even underpinned pivotal World War II technologies, such as the SIGSALY system used for secure voice transmission.

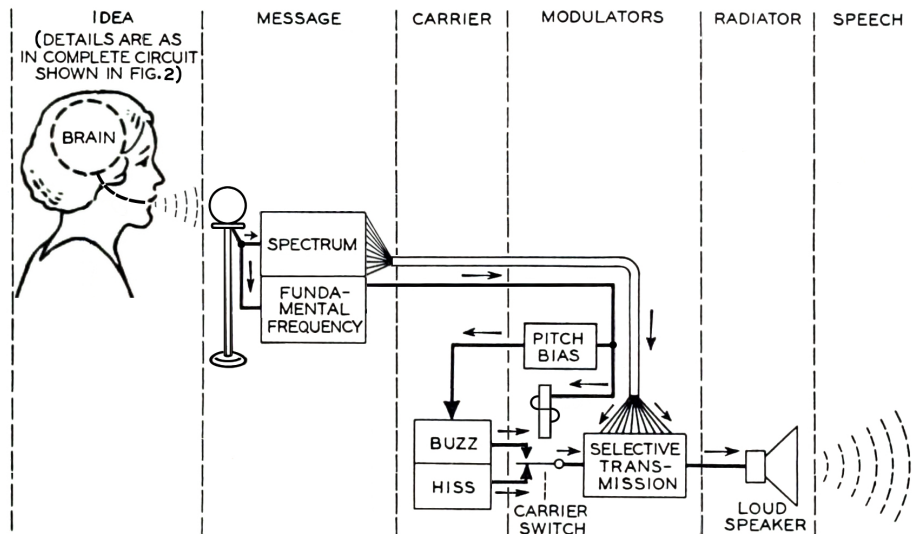


Fig. 7—Schematic circuit of the vocoder.

### **“The Carrier Nature of Speech. 1940. Bell System Technical Journal.” <sup>1</sup>**

Fast forward a few decades and the vocoder was starting to be used in some iconic musical applications. Early pioneers such as Werner Meyer-Eppler paved the way for Robert Moog and Wendy Carlos as well as Kraftwerk. In the early 1970s Moog and Carlos built a vocoder in which the carrier signal was a Moog modular synth and the modulator a mic input, which was heard several times on the soundtrack to Stanley Kubrick’s film adaptation of Anthony Burgess’ *A Clockwork Orange*. <sup>2</sup>

Over the years vocoders have become so well known, audible on anything from ELO’s *Mr. Blue Sky* <sup>3</sup> and Michael Jackson’s *P.Y.T. (Pretty Young Thing)* <sup>4</sup> to Coldplay’s *Midnight* <sup>5</sup> and now... whatever you’ll be using VocalSynth on next!

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1. Dudley, H. *The Carrier Nature of Speech*. 1940. *Bell System Technical Journal*. Internet Archive Book Images derivative work: User: Clusternote. [CC BY-SA 3.0](#), via Wikimedia Commons. [\[return\]](#)

2. Carlos, W. *A Clockwork Orange*. Warner Bros. Records. 1972. LP. [\[return\]](#)

3. Lynne, J. *Out of the Blue*. Jet. 1977. [\[return\]](#)

4. Ingram, J., Jones, Q. *Thriller*. Epic. 1982. [\[return\]](#)

5. Berryman, G., Buckland, J., Champion, W., Martin, C., Hopkins, J. *Ghost Stories*. 2014. [\[return\]](#)

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## Compuvox

### Overview

Compuvox is based on a technology known as Linear Predictive Coding (LPC) which has existed since the late 1960s. As with a number of the audio processors in VocalSynth, LPC was originally a communications technology for encoding intelligible speech at low bit rates to save bandwidth. Nowadays this computerized vocal sound is often used as a special effect common in electronic music production. The outcome sounds similar to infamous toys like the Furby, Speak n Spell (which uses LPC), and even older text-to-speech technologies.

### HOW DOES COMPUVOX WORK?

Compuvox breaks down the vocal signal into two components. It simultaneously estimates the formants alongside the “excitation,” which is the buzz or noise created by the vocal folds. This information can then be used to recreate the sound of the vocal signal by synthesizing the excitation and filtering it through a formant filter. The simplifications that this model makes lead to some wonderfully cool artifacts.

### Controls



### ENABLE

Enables/disables Compuvox module processing.

## BITS

Adds digital aliasing noise to the signal by resampling it using a low-quality technique known as zero-order hold interpolation. Used gently, this can add an interesting inharmonic quality to the sound. Pushed farther, this control can reduce your audio to almost unrecognizable levels of digital chaos.

## BYTES

Allows you to artificially prolong vowel sounds. Stretching vowels out in this way can create some interesting non-human yet musically useful vocal effects.

## BATS

Increases noise and vocal gravel for a winged-animal-man effect.

### ■ TIP

There are some genuinely fun, diverse, and practical ways to use this control. With a lead vocal, especially in some rap, EDM, or metal tracks, pushing Bats close to 100%, but then using the Mixer to only blend in a small amount of Compuvox helps fill out the bottom of the vocal with some really solid noise full of emotion and inflection.

## MODE

Compuvox has three different modes that represent multiple different flavors of LPC processing. They react differently to varying types of incoming vocals so experiment with each mode to find the setting that works best for your audio.

- › **SPELL:** The most balanced LPC setting, using medium strength and size filtering for an articulate and classic sound.
- › **READ:** The strongest high-order filter mode; it also contains a smaller window size and a faster analysis to give you a narrower sound.
- › **MATH:** The broadest setting; it contains a wider windowing size, a more gentle filter, and a reasonably fast analysis speed to give an alternate timbre and sound.

## LVL

Controls the output level of the Compuvox module.

▀ NOTE

- > You can also control the Compuvox output level by dragging the node labeled 'C' that appears in the [anemone](#) visualization when the Compuvox module is enabled.

## SYNTH PRESET SELECTOR



Displays the currently selected synth preset name and allows you to change the synth preset without opening the advanced view. Clicking on the preset name display will open the synth preset list. Clicking on the left and right arrow buttons allows you to quickly load different synth presets. You can modify synth parameters and save new synth presets in the advanced view.

## ADVANCED VIEW BUTTON

You can open the Advanced View window by clicking on the mixer button at the bottom of the module's main panel:



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## Advanced View

The Compuvox Advanced View includes:

- > **SYNTH**: Customize synth parameters & save synth presets.
- > **MIX**: Control filtering and panning of the module's output signal.



## Advanced View: Synth

When Auto Mode or MIDI Mode is selected, you can control the oscillators and modulation settings for the notes being played into the Compuvox module synth engine.

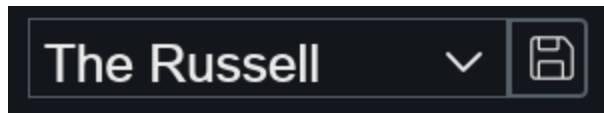


### ▲ SIDECCHAIN MODE DISABLES SYNTH CONTROLS

When Sidechain mode is selected, the sidechain input signal replaces the module synth engine as the carrier signal. Synth parameters are disabled in all modules when Sidechain is selected as the global mode.

## SYNTH PRESETS

Modules that include synth parameters in the advanced view allow for synth presets to be saved and recalled.



- › Default synth presets are loaded when VocalSynth is opened. Each module loads a different synth preset by default. Choosing the “Init” preset from the synth preset dropdown menu will return the module’s synth settings to the default preset values.
- › Double-clicking on any knob in the “Synth” section of the advanced view will set the control to a factory default state, rather than resetting the value to the “Init” state.

## LOAD PRESETS

Select a preset from the dropdown menu to load the saved synth parameter values in the current module.

### NOTE

You can also quickly change synth presets without opening the advanced view by clicking on the left/right arrow buttons in the module main panel.

## SAVE PRESETS

Click on the floppy disk button next to the preset dropdown menu to save a new Synth preset. Type a name in the text field and hit the enter/return key to save the preset.

## OSC 1



NAME	DESCRIPTION
<b>ENABLE</b>	Enables/disables Osc 1.
<b>WAVEFORM</b>	Selects the waveform shape.
<b>GAIN</b>	Adjusts the level of Osc 1.
<b>PITCH: Coarse Tune</b>	Tunes Osc 1 in coarse increments. (Semitones)
<b>PITCH: Fine Tune</b>	Tunes Osc 1 in fine increments. (Cents)
<b>PITCH: MOD</b>	Adjusts the amount of LFO modulation applied to Osc 1's pitch.
<b>SHAPE</b>	Morphs the waveform shape.
<b>SHAPE: MOD</b>	Adjusts the amount of LFO modulation applied to the waveform shape.

The following table outlines how each shape is affected by modulation:

Shape	Modulation Behavior
<b>SAW</b>	Modifies the pulse width of the saw wave.
<b>SQUARE</b>	Modifies the pulse width of the square wave.
<b>SYNC SAW</b>	This shape simulates two synchronized saw oscillators. Modulating shape will modify the pitch ratio between the two saw oscillators.
<b>TRIANGLE</b>	Morphs the triangle wave into a saw wave shape.
<b>SAWS</b>	Simulates a swarm of seven saw waves. Modulating shape will modify the detune amount between the saw waves.

## OSC 2



<b>NAME</b>	<b>DESCRIPTION</b>
<b>ENABLE</b>	Enables/disables Osc 2.
<b>WAVEFORM</b>	Selects the waveform shape.
<b>GAIN</b>	Adjusts the level of Osc 2.
<b>PITCH: Coarse Tune</b>	Tunes Osc 2 in coarse increments. (Semitones)
<b>PITCH: Fine Tune</b>	Tunes Osc 2 in fine increments. (Cents)
<b>PITCH: MOD</b>	Adjusts the amount of LFO modulation applied to Osc 2's pitch.
<b>SHAPE</b>	Morphs the waveform shape.
<b>SHAPE: MOD</b>	Adjusts the amount of LFO modulation applied to the waveform shape.

The following table outlines how each shape is affected by modulation:

<b>Shape</b>	<b>Modulation Behavior</b>
<b>SAW</b>	Modifies the pulse width of the saw wave.
<b>SQUARE</b>	Modifies the pulse width of the square wave.
<b>SYNC SAW</b>	This shape simulates two synchronized saw oscillators. Modulating shape will modify the pitch ratio between the two saw oscillators.
<b>TRIANGLE</b>	Morphs the triangle wave into a saw wave shape.
<b>SAWS</b>	Simulates a swarm of seven saw waves. Modulating shape will modify the detune amount between the saw waves.

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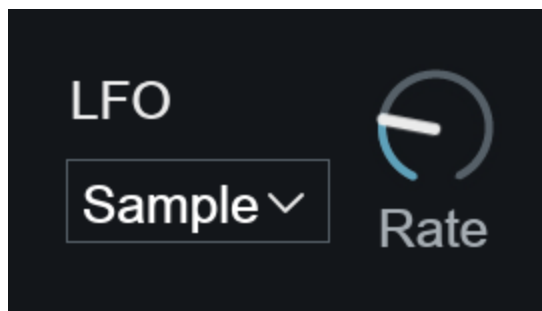
## **NOISE**



NAME	DESCRIPTION
<b>ENABLE</b>	Enables/disables the Noise oscillator.
<b>GAIN</b>	Adjusts the level of Noise oscillator.
<b>LFO/PITCH</b>	Selects the modulation source used by the Crush Mod control.
<b>CRUSH</b>	Adjusts the amount of aliasing distortion applied to the noise oscillator. At the maximum value, the Noise oscillator will output white noise.
<b>MOD</b>	Adjusts the amount of modulation applied to the Crush parameter. The modulation source is determined by the LFO or Pitch selection to the left of the Crush knob. This Mod parameter allows for bidirectional modulation.

## LFO MOD SOURCE

These parameters define the waveshape and speed of the LFO modulation source. All Mod knobs in the current synth view (except for the Crush Mod control, which can toggle between LFO or Pitch modulation sources) use this LFO as their modulation source.



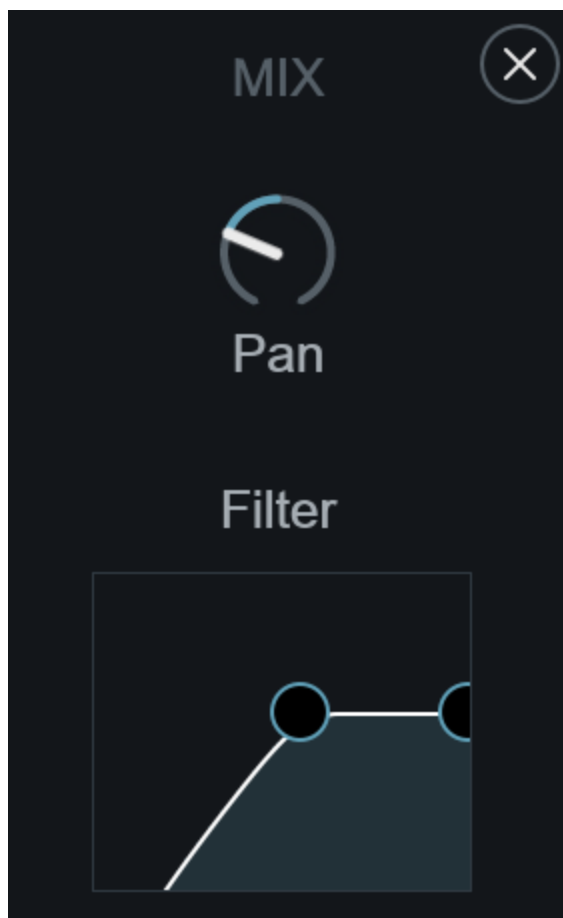
<b>NAME</b>	<b>DESCRIPTION</b>
<b>SHAPE</b>	Selects the low frequency oscillator waveform shape.

NAME	DESCRIPTION
RATE	Adjusts the speed of the low frequency oscillator.

---

## Advanced View: Mix

Adjusts stereo pan position and pass filter controls of the module's output signal.



### PAN

Controls the stereo pan position of the module's output signal.

### FILTER

Adjusts the center frequencies of high-pass and low-pass filters applied to the module's output signal. Clicking and dragging on a node will adjust the center frequency of that filter. Clicking and dragging in the space below the two nodes will move both nodes at the same time.

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## Talkbox

### Overview

The Talkbox module emulates the effect of a hardware talkbox effect popularized by rock artists such as Peter Frampton, The Who, and Stevie Wonder, to name just a few. A talkbox imparts vocal characteristics on an input source (a guitar, for example) by driving the output of an instrument through a tube that terminates in or around a performer's mouth. The signal is then filtered and modulated by the mouth, tongue and lip movements of the performer. The resulting effect sounds as though the guitar is "speaking" or "talking". With its tube-free design and unique formant shifting feature, the Talkbox module is an excellent alternative to the traditional Talkbox pedal.

### Controls



#### **ENABLE**

Enables/disables Talkbox module processing.

#### **DRIVE**

Increases the input gain into the Talkbox. Higher values will add a crunchy distortion to your signal. The additional harmonics generated when increasing the Drive amount can help to enhance intelligibility by effectively adding frequency content for your voice to modulate.

## SPEAKER

Adjusts the amount of talkbox convolution applied to the signal. This simulates the internal acoustics of the speaker compression driver that is typically sealed inside of a hardware Talkbox pedal.

## FORMANT

Adjusts the amount of formant shift applied to the incoming signal. VocalSynth's talkbox algorithm has the ability to extract formant information from the incoming vocal, making this unique feature possible.

The deep, raspy, throatiness of a talkbox can sound very different from person to person, so if your vocal formants aren't doing it for you, experiment by shifting them with this parameter.

## MODE

Alters the response to high frequencies in both the modulator (voice) and carrier (instrument) input. You can choose from the following Talkbox modes:

- › **DARK:** Offers a more brooding, bassy sound.
- › **CLASSIC:** Most reminiscent of a classic talkbox, this is the default mode selection.
- › **BRIGHT:** Offers an accentuated high-end that helps maximize bite and articulation.

## LVL

Controls the output level of the Talkbox module.

## SYNTH PRESET SELECTOR



Displays the currently selected synth preset name and allows you to change the synth preset without opening the advanced view. Clicking on the preset name display will open the synth preset list. Clicking on the left and right arrow buttons allows you to quickly load different synth presets. You can modify synth parameters and save new synth presets in the advanced view.

## ADVANCED VIEW BUTTON

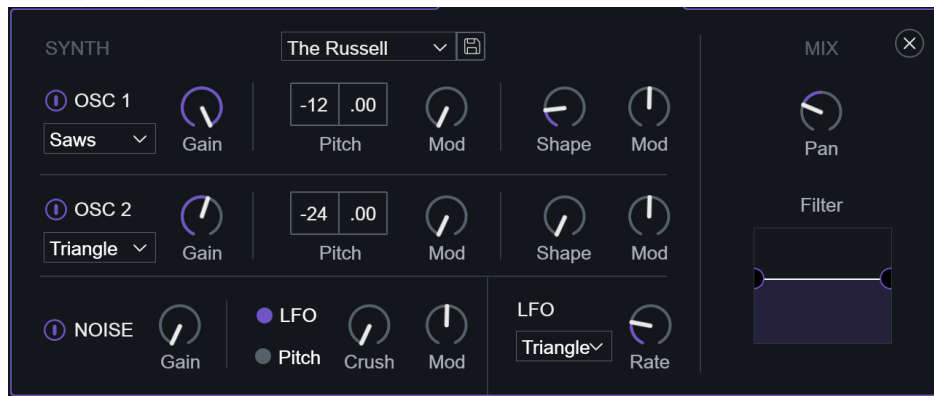
You can open the Advanced View window by clicking on the mixer button at the bottom of the module's main panel:



## Advanced View

The Talkbox Advanced View includes:

- > **SYNTH**: Customize synth parameters & save synth presets.
- > **MIX**: Control filtering and panning of the module's output signal.



## Advanced View: Synth

When Auto Mode or MIDI Mode is selected, you can control the oscillators and modulation settings for the notes being played into the Talkbox module synth engine.



**▲ SIDECCHAIN MODE DISABLES SYNTH CONTROLS**

When Sidechain mode is selected, the sidechain input signal replaces the module synth engine as the carrier signal. Synth parameters are disabled in all modules when Sidechain is selected as the global mode.

## SYNTH PRESETS

Modules that include synth parameters in the advanced view allow for synth presets to be saved and recalled.



- › Default synth presets are loaded when VocalSynth is opened. Each module loads a different synth preset by default. Choosing the “Init” preset from the synth preset dropdown menu will return the module’s synth settings to the default preset values.
- › Double-clicking on any knob in the “Synth” section of the advanced view will set the control to a factory default state, rather than resetting the value to the “Init” state.

## LOAD PRESETS

Select a preset from the dropdown menu to load the saved synth parameter values in the current module.

**■ NOTE**

You can also quickly change synth presets without opening the advanced view by clicking on the left/right arrow buttons in the module main panel.

## SAVE PRESETS

Click on the floppy disk button next to the preset dropdown menu to save a new Synth preset. Type a name in the text field and hit the enter/return key to save the preset.

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## OSC 1

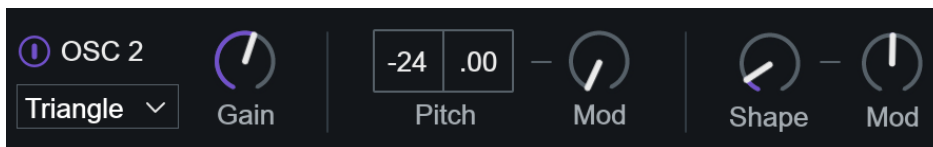


NAME	DESCRIPTION
<b>ENABLE</b>	Enables/disables Osc 1.
<b>WAVEFORM</b>	Selects the waveform shape.
<b>GAIN</b>	Adjusts the level of Osc 1.
<b>PITCH: Coarse Tune</b>	Tunes Osc 1 in coarse increments. (Semitones)
<b>PITCH: Fine Tune</b>	Tunes Osc 1 in fine increments. (Cents)
<b>PITCH: MOD</b>	Adjusts the amount of LFO modulation applied to Osc 1's pitch.
<b>SHAPE</b>	Morphs the waveform shape.
<b>SHAPE: MOD</b>	Adjusts the amount of LFO modulation applied to the waveform shape.

The following table outlines how each shape is affected by modulation:

Shape	Modulation Behavior
<b>SAW</b>	Modifies the pulse width of the saw wave.
<b>SQUARE</b>	Modifies the pulse width of the square wave.
<b>SYNC SAW</b>	This shape simulates two synchronized saw oscillators. Modulating shape will modify the pitch ratio between the two saw oscillators.
<b>TRIANGLE</b>	Morphs the triangle wave into a saw wave shape.
<b>SAWS</b>	Simulates a swarm of seven saw waves. Modulating shape will modify the detune amount between the saw waves.

## OSC 2

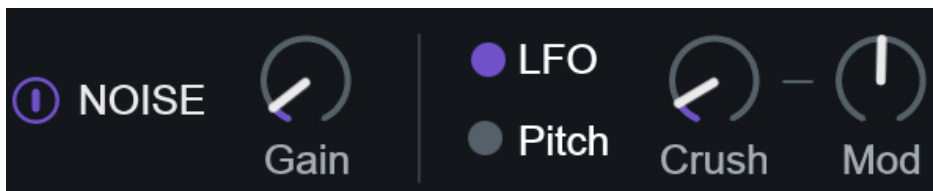


NAME	DESCRIPTION
<b>ENABLE</b>	Enables/disables Osc 2.
<b>WAVEFORM</b>	Selects the waveform shape.
<b>GAIN</b>	Adjusts the level of Osc 2.
<b>PITCH: Coarse Tune</b>	Tunes Osc 2 in coarse increments. (Semitones)
<b>PITCH: Fine Tune</b>	Tunes Osc 2 in fine increments. (Cents)
<b>PITCH: MOD</b>	Adjusts the amount of LFO modulation applied to Osc 2's pitch.
<b>SHAPE</b>	Morphs the waveform shape.
<b>SHAPE: MOD</b>	Adjusts the amount of LFO modulation applied to the waveform shape.

The following table outlines how each shape is affected by modulation:

Shape	Modulation Behavior
<b>SAW</b>	Modifies the pulse width of the saw wave.
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<b>SAWS</b>	Simulates a swarm of seven saw waves. Modulating shape will modify the detune amount between the saw waves.

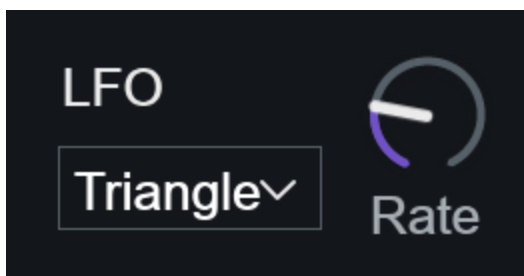
## NOISE



NAME	DESCRIPTION
<b>ENABLE</b>	Enables/disables the Noise oscillator.
<b>GAIN</b>	Adjusts the level of Noise oscillator.
<b>LFO/PITCH</b>	Selects the modulation source used by the Crush Mod control.
<b>CRUSH</b>	Adjusts the amount of aliasing distortion applied to the noise oscillator. At the maximum value, the Noise oscillator will output white noise.
<b>MOD</b>	Adjusts the amount of modulation applied to the Crush parameter. The modulation source is determined by the LFO or Pitch selection to the left of the Crush knob. This Mod parameter allows for bidirectional modulation.

## LFO MOD SOURCE

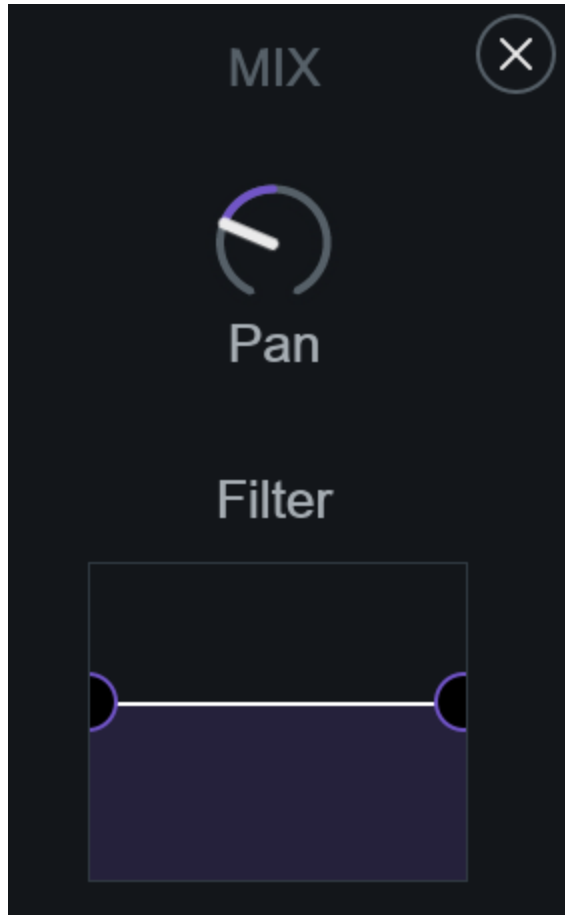
These parameters define the waveshape and speed of the LFO modulation source. All Mod knobs in the current synth view (except for the Crush Mod control, which can toggle between LFO or Pitch modulation sources) use this LFO as their modulation source.



NAME	DESCRIPTION
<b>SHAPE</b>	Selects the low frequency oscillator waveform shape.
<b>RATE</b>	Adjusts the speed of the low frequency oscillator.

## Advanced View: Mix

Adjusts stereo pan position and pass filter controls of the module's output signal.



### PAN

Controls the stereo pan position of the module's output signal.

### FILTER

Adjusts the center frequencies of high-pass and low-pass filters applied to the module's output signal. Clicking and dragging on a node will adjust the center frequency of that filter. Clicking and dragging in the space below the two nodes will move both nodes at the same time.

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# Polyvox

## Overview

Polyvox is a voice generator that allows you to create vocal harmonies based on your vocal. Voice generators come in all shapes and sizes but are based on a similar fundamental concept: sampling an incoming audio signal and then creating multiple additional versions of this audio signal using time/pitch stretching to achieve different intervals, such as an octave down, a third up, and so on. Voice generators are most commonly used on voice but there are many examples of this type of technology being used in guitar effects as well, usually some combination of pitch/whammy adjustment.

## Controls



### ENABLE

Enables/disables Polyvox module processing.

### FORMANT

Transposes the vocal formants of the signals it reproduces. This type of control is often talked about as the difference between deeper voiced and higher, chipmunk-style sounds.

### CHARACTER

Controls the relationship between the incoming vocal's formant envelopes and how they are applied to the outgoing sound.

A higher value will cause the formants themselves to shift more in the direction of the pitch of the audio (e.g. sing a higher pitch, formants scale upwards). Interestingly, this parameter can be used to increase naturality, if, say, the generated voices were consistently a lot higher or lower than the original source, or it can be used to push a voice into a sonic realm the human voice-box isn't capable of. **Pro tip:** This is a lot safer than Helium.

By default, the voices generated by Polyvox will sound like your voice singing at potentially different pitches. The algorithm preserves the formants of an incoming vocal exactly as is...crucial for a natural sound.

## HUMANIZE

Varies time and pitch offset amount applied to the generated voices. This reduces phase cancellation and can increase realism slightly.

A higher Humanize value will start to introduce more extreme variations to the point of detuning, a very powerful auditory sensation, especially when done in unison.

## LVL

Controls the output level of the Polyvox module.

### ■ NOTE

You can also control the Polyvox output level by dragging the node labeled 'P' that appears in the [anemone](#) visualization when the Polyvox module is enabled.

## ADVANCED VIEW BUTTON

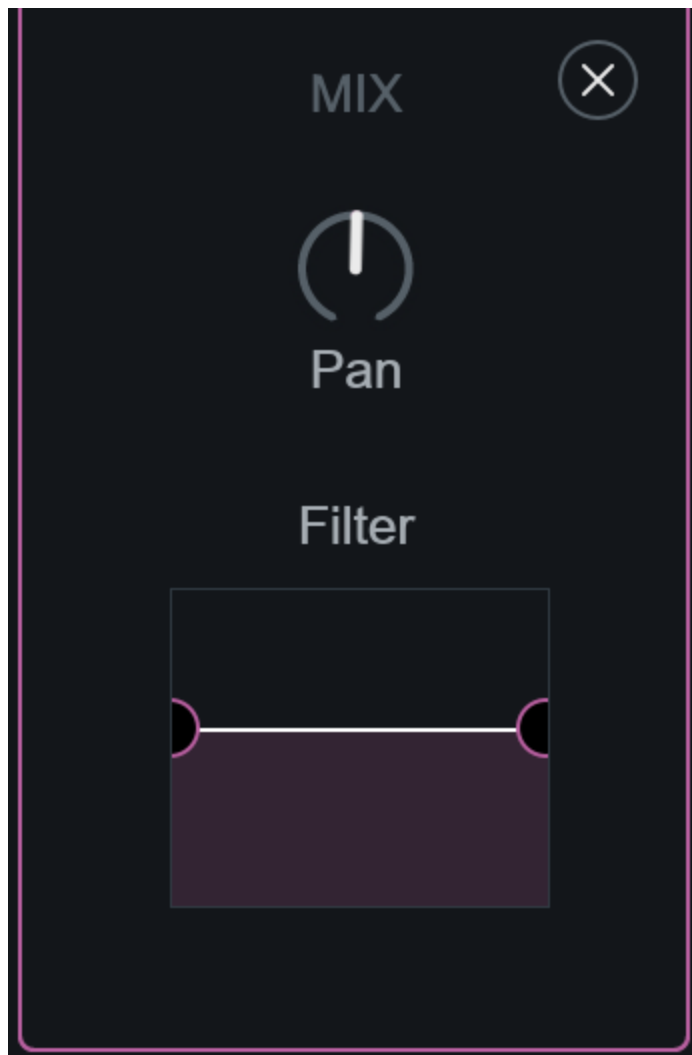
You can open the Advanced View window by clicking on the mixer button at the bottom of the module's main panel:



---

## Advanced View: Mix

Adjusts stereo pan position and pass filter controls of the module's output signal.



## PAN

Controls the stereo pan position of the module's output signal.

## FILTER

Adjusts the center frequencies of high-pass and low-pass filters applied to the module's output signal. Clicking and dragging on a node will adjust the center frequency of that filter. Clicking and dragging in the space below the two nodes will move both nodes at the same time.

## Chorus

### Overview

Chorus is a modulation effect that can simulate the slight variations in timing and pitch that occur when multiple performers play or sing the same part. This effect applies a short delay to the input signal and modulates the delay time using an LFO. The modulation of delay time introduces slight pitch variations in the chorused signal. Chorus can be used to add subtle depth and movement to your voice. When using aggressive modulation settings, Chorus can be used to add a more synthetic sounding vibrato effect.

### Controls



#### DEPTH

Adjusts the intensity of LFO modulation.

#### RATE

Adjusts the speed of LFO modulation.

#### WIDTH

Adjusts the perceived stereo image of the processed output.

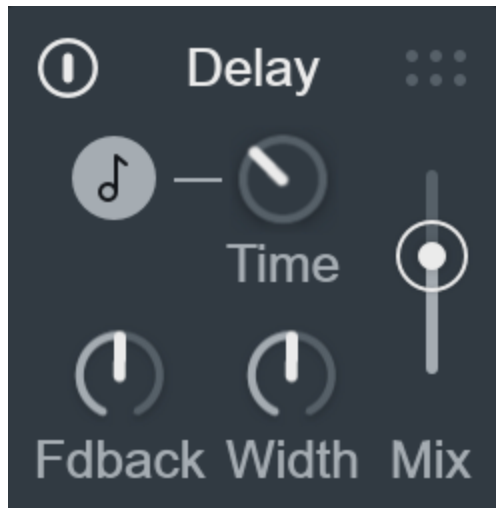
#### MIX

Adjusts the balance of dry (unprocessed) and wet (processed) audio at the output of the effect. 0 = dry (unprocessed); 100 = wet (processed).



## Delay

### Controls



#### **ENABLE**

Enables/disables the Delay effect processing.

#### **HOST SYNC**

Enables/disables host tempo sync behavior for the Time control.

#### **TIME**

Determines the amount of time that will pass before each successive repeat of a dry audio input signal.

#### **WIDTH**

Adjusts the perceived stereo image of the processed signal.

#### **FEEDBACK**

Adjusts the amount of delayed signal that is fed back into the input of the delay.

#### **MIX**

Adjusts the balance of dry (unprocessed) and wet (processed) audio at the output of the effect. 0 = dry (unprocessed); 100 = wet (processed).

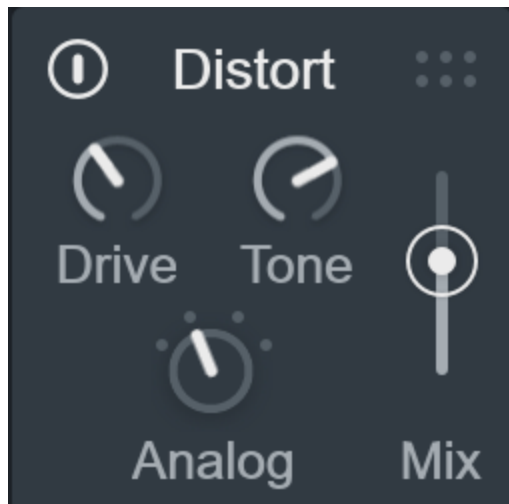


## Distort

### Overview

The Distort effect adds grit, attitude, and perceptual power to your vocal track. The Distort effect utilizes waveshaper distortion and several different algorithms to affect your vocal. A waveshaper creates complex harmonics in an audio signal by mapping the input signal (dry) to a new output signal (wet) based on the current “shape” of the waveshaper’s curve. There’s something unique and fun about the way a waveshaper sonically transforms a vocal, the most important areas of which are the tonal elements from 300 Hz to 900 Hz and the sibilant presence from 8 kHz to 15 kHz.

### Controls



#### **ENABLE**

Enables/disables the Distort effect.

#### **DRIVE**

Increases the amount of overdrive applied to the selected distortion type.

#### **TONE**

Applies filtering to the distorted signal, effectively modifying the tone of the processed output.

#### **TYPE**

The Distort effect offers the following waveshapes:

- > **WARM**
- > **ANALOG**
- > **EDGY**
- > **FUZZ**

## **MIX**

Adjusts the balance of dry (unprocessed) and wet (processed) audio at the output of the effect. 0 = dry (unprocessed); 100 = wet (processed).

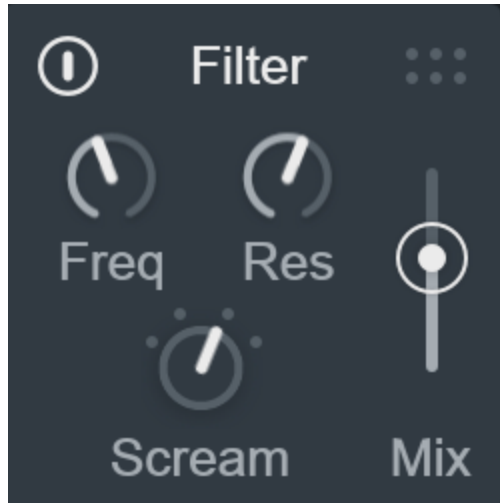
---

## Filter

### Overview

The Filter effect offers four filters with adjustable resonance specially selected with vocal processing in mind.

### Controls



### ENABLE

Enables/disables the Filter effect.

### FREQ

Adjusts the center frequency of the filter.

### RES

Adjusts the amount of emphasis applied to a narrow band of frequencies surrounding the center frequency of the filter.

### TYPE

You can choose between the following 4 filter types:

Name	Description
NY LP	A low pass filter that lends a warm, “buttery” quality to the low-end of a vocal fundamental. Based on an analog filter design originally developed in the 1960s in upstate New York.
NY HP	A high pass filter that enhances the high frequency presence of a vocal. Based on an analog filter design originally developed in the 1960s in upstate New York.
SCREAM	A very sharp resonant filter with a lot of amplification around the center frequency for aggressive peaks and overdrive.
COMBO	Combines both flat HP and LP filters in a single sweepable control. Moving it downward engages a low-pass filter, moving it up engages a high-pass filter. In the center neither filter is applied.

## MIX

Adjusts the balance of dry (unprocessed) and wet (processed) audio at the output of the effect. 0 = dry (unprocessed); 100 = wet (processed).

---

## Ring Mod

### Overview

Ring modulation is an effect that multiplies the frequency content of two input waveforms and outputs a new waveform that includes frequency content from both input sources and it's own unique frequency content. The output waveform contains partials (inharmonic frequency content) that are responsible for the metallic sound characteristic of ring modulation. VocalSynth's Ring Mod effect can be used as a Tremolo effect by setting the Freq control to lower values.

### Controls



### ENABLE

Enables/disables Ring Mod effect processing.

### HOST SYNC

Enables/disables host tempo sync behavior for the Freq control.

■ **HOST SYNC MODE PARAMETER AVAILABILITY**  
When host sync is enabled, the LFO and Depth controls will be disabled.

### FREQ

Adjusts the timing of frequency modulation. When Host Sync is enabled, musical note values are used to determine the timing of the effect. When Host Sync is disabled, the unit used to determine the timing of the effect is Hertz. At lower values the timing is slower, functioning as a Tremolo. At higher values the timing is fast, functioning as a Ring Mod.

## **LFO**

Adjusts the rate of triangle-wave LFO modulation.

## **DEPTH**

Adjusts the intensity of the triangle-wave LFO modulation.

## **MIX**

Adjusts the balance of dry (unprocessed) and wet (processed) audio at the output of the effect. 0 = dry (unprocessed); 100 = wet (processed).

---

## Shred

### Overview

Shred comes with all new processing under the hood and the addition of a bite-sized 3 step sequencer in VocalSynth 2. The Shred effect takes chunks of audio and repeats them. The captured audio can be repeated at 3 different rates (each step has it's own repeat rate), the rate and capture length values are always synced to the tempo of your session. Shred also allows you to choose from a number of sequence rhythms (based on Euclidean Rhythms) to vary the musical timing of switching between the different steps.

### Controls



#### ENABLE

Enables/disables Shred effect processing.

#### LENGTH

Sets how often Shred captures new buffers of audio to repeat. This value is synced to the timing of your session and presented in musical note units (from 2 bars to 1/64T in length).

#### SEQ

Determines the Euclidean rhythm sequence used to switch between the different steps. There are 16 different rhythm sequences to choose from.

**■ TIP**

If you want Shred to repeat at one constant rate, set the Seq knob to 1. When Seq is set to 1, Shred will only repeat step A.

## STEP REPEAT RATE

Sets how often the captured audio is repeated for the currently selected step when it is triggered by the sequencer. Each step has an independent Repeat Rate setting

**■ SETTING THE REPEAT RATE OF THE DIFFERENT SEQUENCE STEPS**

The Repeat Rate knob only sets the rate value for the currently selected step. The currently selected sequence step will display a thin circle around the step's activity light.

## STEP ACTIVITY LIGHTS

The circles directly above each step label (A/B/C) turn white when the associated step is triggered to repeat. The rhythm used for triggering the steps is determined by the SEQ parameter setting.

## MIX

Adjusts the balance of dry (unprocessed) and wet (processed) audio at the output of the effect. 0 = dry (unprocessed); 100 = wet (processed).

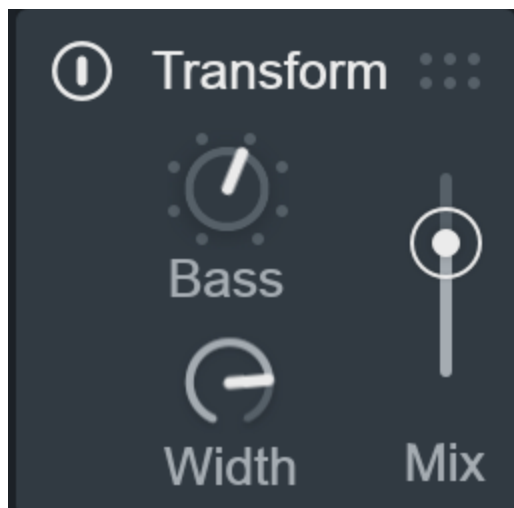
---

## Transform

### Overview

Transform is a convolution effect modeling a variety of guitar cabinets, speakers, and other devices that are key to significantly shaping a vocal sound. Re-amping a vocal through guitar amps is a commonly used production effect. The Transform effect's impulse responses provide a natural post-filtering counterpart to distortion and filtering.

### Controls



### ENABLE

Enables/disables Transform effect processing.

### TYPE

The following Impulse Responses (IR) are available in the Transform effect:

<b>Impulse Response</b>	<b>Description</b>
<b>HOLLOW</b>	An IR based on a recording of someone knocking on an empty briefcase and, weirdly, this imparts a really cool sound.
<b>BRIGHT</b>	Samples an air pump that made a high, airy sound we thought sounded cool.
<b>CREEP</b>	An IR that various folks at iZotope have used and enjoyed for years but the original source has been lost to the ages. After asking around to see if anyone remembered, many explanations of Creep were volunteered, none of which can be printed.
<b>BASS</b>	A heavy mid scoop which is often used to give vocals a more polished, broadcast sound.
<b>RADIO</b>	Places your voice inside a 1960s transistor radio speaker/cabinet.
<b>STERLING</b>	A smaller amplifier with a low end drop-off and a heavy emphasis around 3 to 5 kHz for are more biting sound.
<b>OXFORD</b>	A popular 2x10 cabinet with a heavy mid range bump 700 Hz to 3 kHz and a steeper cutoff above 4 kHz.
<b>CAMBRIDGE</b>	A popular 2x10 cabinet with a “smile curve” mid range dip and a more gradual cutoff above 5 kHz.

#### ▀ WHAT IS AN IMPULSE RESPONSE?

An Impulse Response is a snapshot of a system’s output when it is presented with a brief input signal.

## WIDTH

Adjusts the amount of stereo widening or narrowing effect that is blended into the transformed audio.

## MIX

Adjusts the balance of dry (unprocessed) and wet (processed) audio at the output of the effect. 0 = dry (unprocessed); 100 = wet (processed).



## Presets

VocalSynth ships with many presets covering a wide variety of iconic sounds, genres, and interesting textures.

You can open the Preset Manager window by clicking the Preset button in the top bar of the interface. You can also cycle through the presets without opening the preset manager window by clicking on the left/right arrow buttons to the right of the Presets button.

### Add/Remove Presets

- › Create a preset of your current settings by clicking the + button in the Preset Manager window.
- › Remove the currently selected preset or preset folder by clicking the x button in the Preset Manager window.
- › Add a new preset folder by clicking on the folder button in the Preset Manager window.

### Working Settings

If you decide not to use a preset and would like to apply the last settings used that were not associated with a preset, you can select to return parameters to the previous state.

### Default

Select to return all parameters to their factory default state.

### Comments

Below the list of presets, some text details the parameter settings associated with the selected preset. Double-click on this field to edit a comment or add a new one. Hit the enter/return key to update the comment field.

#### ■ FACTORY PRESET LOCATIONS

VocalSynth 2 factory presets are stored in the following locations:

##### › **Windows:**

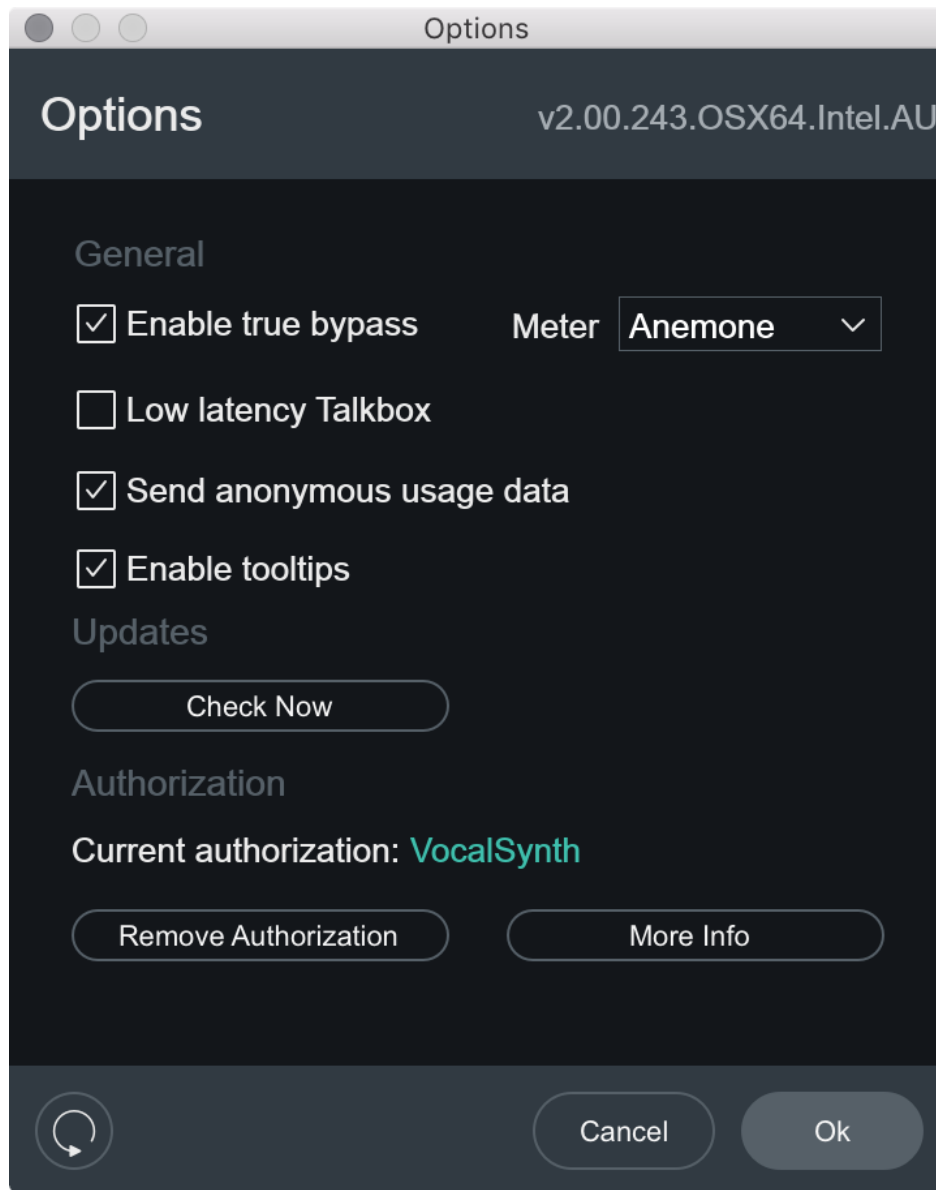
C:\Users\username\Documents\iZotope\VocalSynth 2\Global Presets

> **Mac:** ~/Documents/iZotope/VocalSynth 2/Global  
Presets

---

## Options

### General



### ENABLE TRUE BYPASS

To ensure seamless transitions (no audible clicks or ramp up times) when enabling/disabling modules, the DSP is always running in the background. Enabling True Bypass means that when disabling a module or effect that particular DSP is fully disabled rather than running in the background. This saves on CPU resources and latency. Optimizing performance by enabling True Bypass means that you may hear audible transitions when enabling/disabling modules or effects. This may make it harder to do A/B comparisons.

## LOW LATENCY TALKBOX

VocalSynth's Talkbox is able to intelligently analyze an incoming audio signal, extracting an accurate map/envelope of the formants without need for the hardware. With more latency comes more intelligibility but this compromises the ability for live performance. This parameter allows you to toggle between two types of algorithms, one optimized for live performance, and one for studio use, or the final bounce, which increases intelligibility. The algorithm for studio use has approximately 50 ms of latency at 44.1 kHz. This, coincidentally, is roughly the amount of time it takes all frequencies to pass (a 20 Hz cycle is 50 ms long).

## SEND ANONYMOUS USAGE DATA

When enabled, anonymous usage data is sent to help iZotope improve VocalSynth.

## ENABLE TOOLTIPS

When enabled, control descriptions will be displayed in a tooltip when you hover your cursor over a parameter.

## METER

Selects the meter to display in the center of the VocalSynth 2 interface. You can choose between:

- > **Anemone:** New to VocalSynth 2, displays visualizations based on enabled module activity.
- > **Wave:** Displays the wave meter visualization from VocalSynth 1.

## Updates

### CHECK NOW

Checks for available updates to VocalSynth 2.

## Authorization

Displays your current authorization status and allows you to authorize or remove authorization. Read more about authorizing VocalSynth in the [Authorization](#) chapter.

---

## DAW Setup

### Overview

The sections below outline how to setup VocalSynth 2 in popular DAWs. To learn more about how the different modes work, see the [Global Modes](#) chapter.

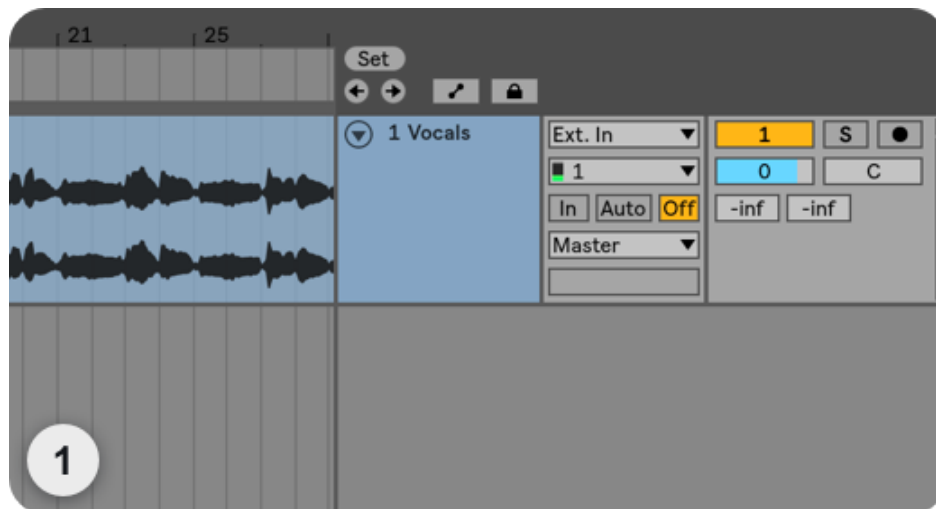
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### Ableton Live

The following instructions apply to Ableton Live 9 and Ableton Live 10.

#### AUTO MODE | Ableton Live

Make sure there is audio on the track VocalSynth 2 is inserted on and press play.

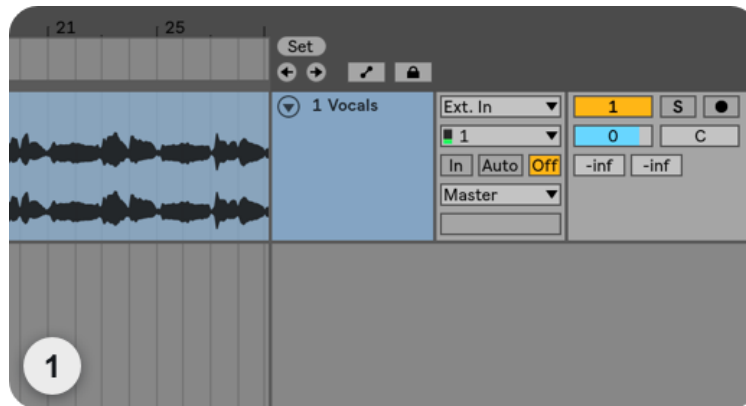


#### MIDI MODE | Ableton Live

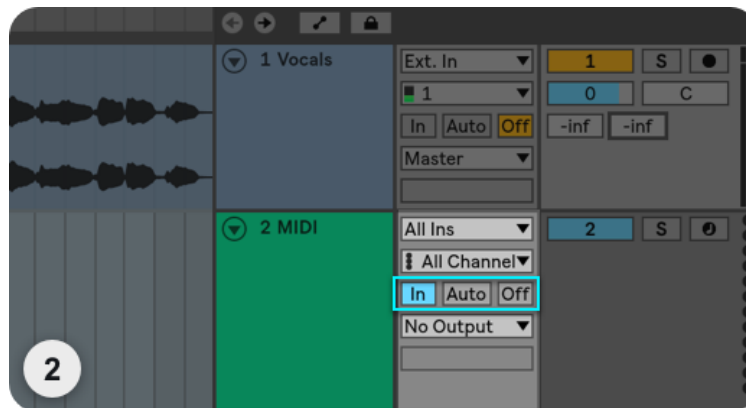
This mode uses a MIDI keyboard or the piano roll as a MIDI input.

► MORE INFORMATION: MIDI MODE  
See the [MIDI Mode section](#) of the Global Modes chapter to learn more about MIDI Mode.

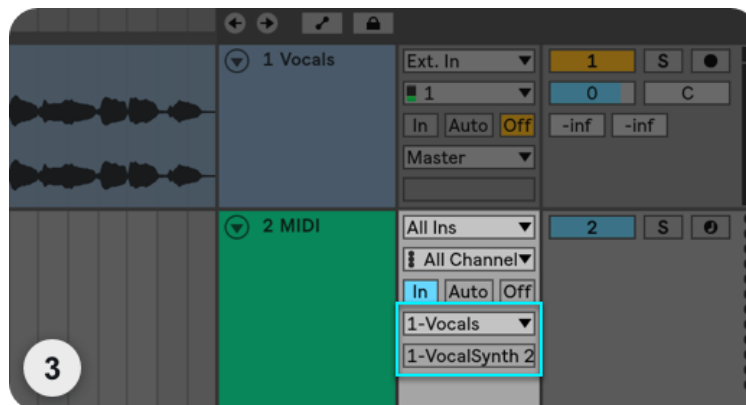
#### 1. Create an Audio Track and insert VocalSynth 2.



2. Create a MIDI Track and choose “In” from the Monitor drop down.



3. On the MIDI Track’s “MIDI To” dropdown, choose the name of the Audio Track that has VocalSynth 2 on it. In the next dropdown menu, select “VocalSynth 2.”



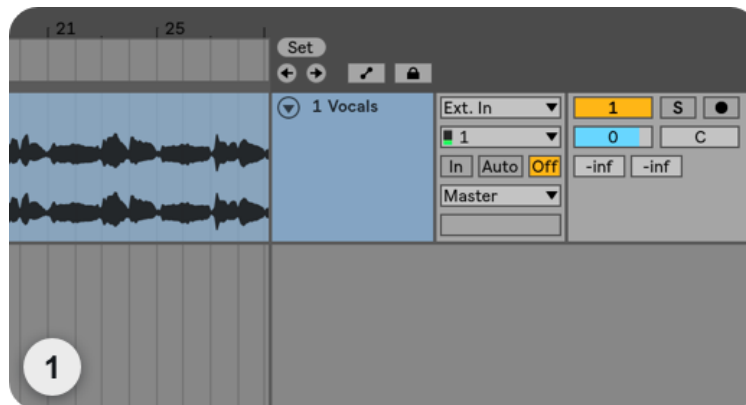
## SIDECHAIN MODE | Ableton Live

The audio routed into VocalSynth’s sidechain input will be modulated by your vocal track, allowing you to make any audio source “talk.”

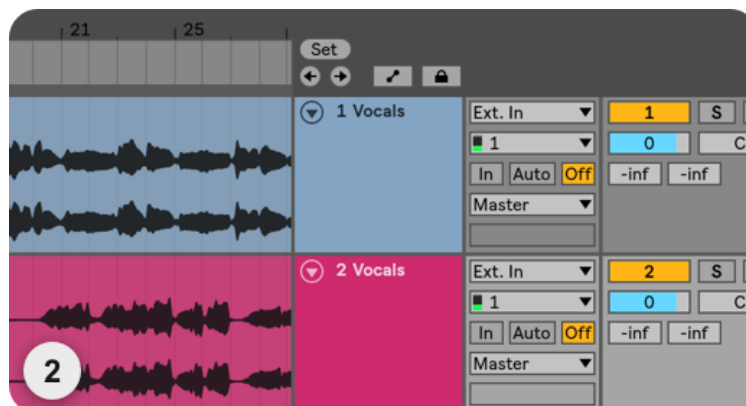
► MORE INFORMATION: SIDECHAIN MODE

See the [Sidechain Mode](#) section of the Global Modes chapter to learn more about Sidechain Mode.

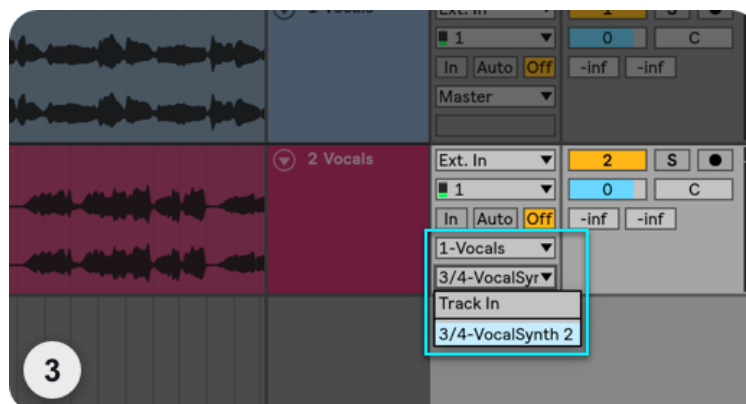
### 1. Create an Audio Track (1) and insert VocalSynth 2.



### 2. Create a second Audio Track (2) and make sure there is some audio on Audio Track (2).



### 3. On Audio Track (2), find the "Audio To" dropdown and choose Audio Track (1). In the next dropdown menu, select "VocalSynth 2."



## Cubase

### AUTO MODE | Cubase

Make sure there is audio on the track VocalSynth 2 is inserted on and press play.



### MIDI MODE | Cubase

This mode uses a MIDI keyboard or the piano roll as a MIDI input.

▀ MORE INFORMATION: MIDI MODE

See the [MIDI Mode section](#) of the Global Modes chapter to learn more about MIDI Mode.

▲ NOTE: PLUG-IN FORMATS

- > Use **VST3** instances of VocalSynth 2 when using MIDI Mode in Cubase.
- > MIDI mode will not work as expected when using VST2 instances of VocalSynth 2 in Cubase.

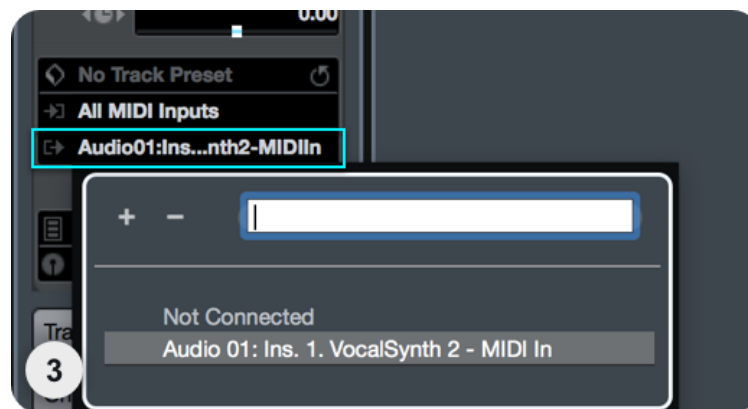
#### 1. Create an Audio Track and a MIDI Track.



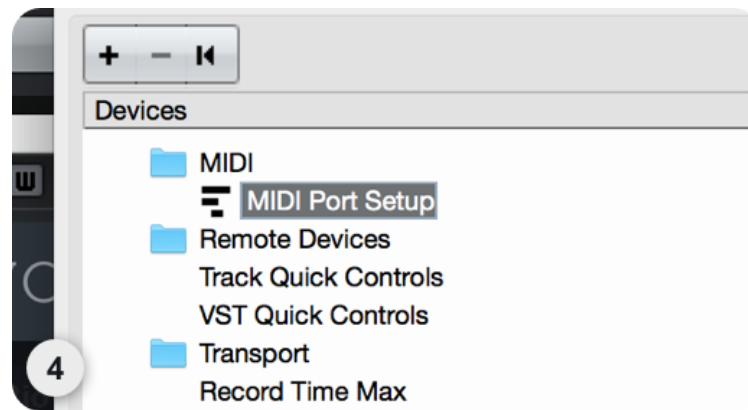
2. Insert VocalSynth 2 on the Audio Track (VST3 only, not VST2).



3. Select VocalSynth 2 in the Output section of your MIDI Track.



4. If you are using a live MIDI device, make sure it is configured by going to Devices/Device Setup, and navigating to the MIDI Port Setup option.



## SIDCHAIN MODE | Cubase

The audio routed into VocalSynth's sidechain input will be modulated by your vocal track, allowing you to make any audio source "talk."

### ▮ MORE INFORMATION: SIDCHAIN MODE

See the [Sidechain Mode section](#) of the Global Modes chapter to learn more about Sidechain Mode.

### ▲ NOTE: PLUG-IN FORMATS

- > Use **VST3** instances of VocalSynth 2 when using Sidechain Mode in Cubase.
- > Sidechain mode will not work as expected when using VST2 instances of VocalSynth 2 in Cubase.

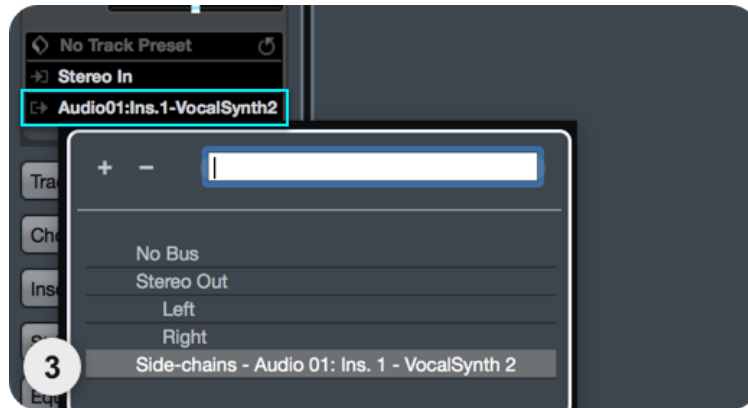
### 1. Create two Audio Tracks.



### 2. Insert VocalSynth 2 on one of the two Audio Tracks (VST3 only) and activate sidechain.



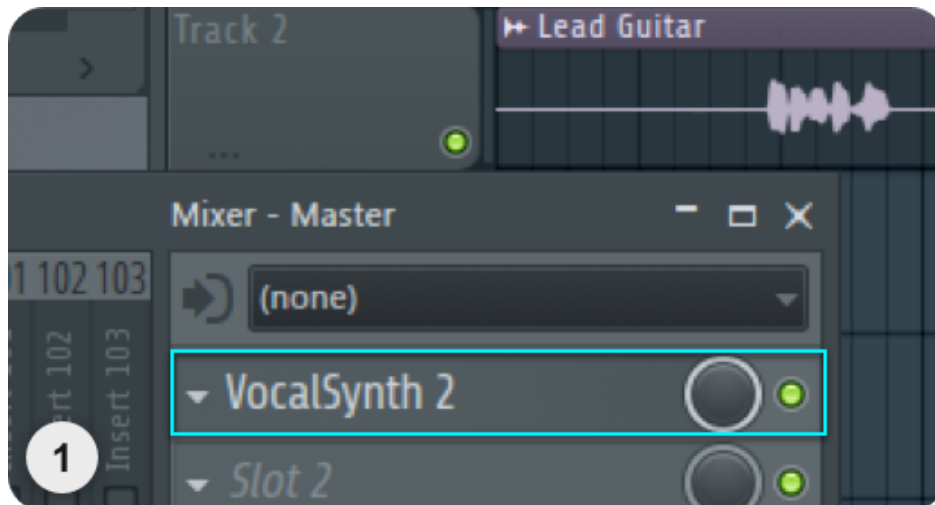
3. On Audio Track 2, navigate to the Output section and set the Output to the sidechain input for VocalSynth 2.



## FL Studio

### AUTO MODE | FL Studio

Make sure there is audio on the track VocalSynth 2 is inserted on and press play.



## MIDI MODE | FL Studio

This mode uses a MIDI keyboard or the piano roll as a MIDI input.

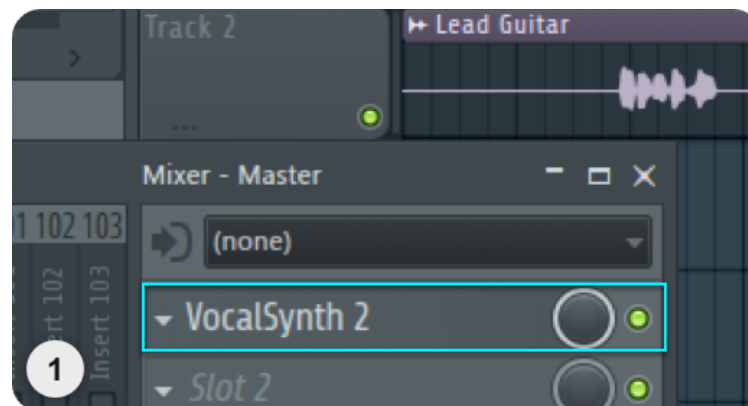
▀ **MORE INFORMATION: MIDI MODE**

See the [MIDI Mode](#) section of the Global Modes chapter to learn more about MIDI Mode.

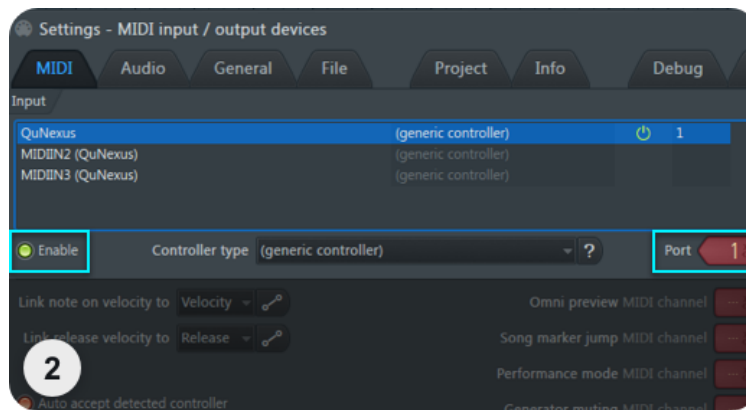
▲ **NOTE: PLUG-IN FORMATS**

- > Use **VST3** instances of VocalSynth 2 when using MIDI Mode in FL Studio.
- > MIDI mode will not work as expected when using VST2 instances of VocalSynth 2 in FL Studio.

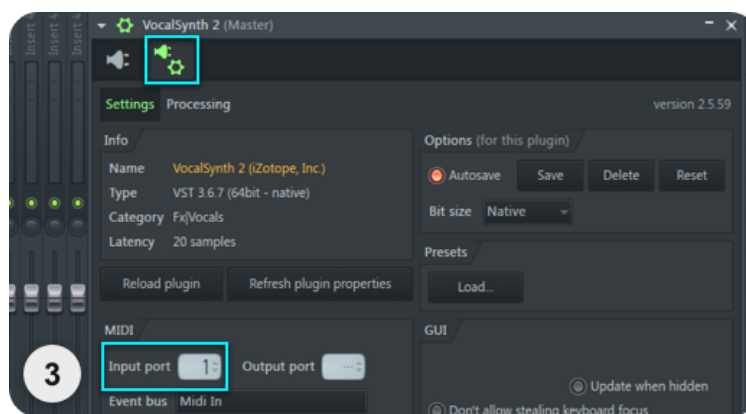
1. **Create an Audio Track and insert VocalSynth 2 as a VST3 (not VST2) onto this track.**



2. **Go to Options/MIDI Settings. Under "Input," select your MIDI keyboard and the desired Port, then click "Enable." If you don't have a keyboard, insert a MIDI Out instrument into your project and select the port in the MIDI Out window.**



3. Open VocalSynth 2 and click the gear icon to open the plug-in settings. Make sure the MIDI Input Port matches the Port you selected for your device.



## SIDECCHAIN MODE | FL Studio

The audio routed into VocalSynth's sidechain input will be modulated by your vocal track, allowing you to make any audio source "talk."

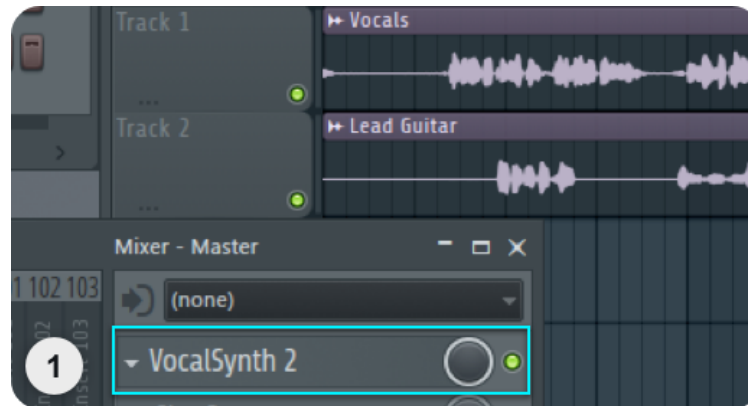
### ▀ MORE INFORMATION: SIDECCHAIN MODE

See the [Sidechain Mode](#) section of the Global Modes chapter to learn more about Sidechain Mode.

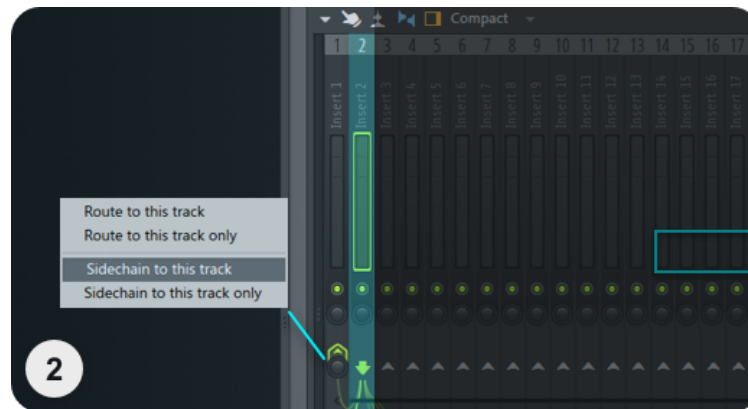
### ▲ NOTE: PLUG-IN FORMATS

- › Use **VST3** instances of VocalSynth 2 when using Sidechain Mode in FL Studio.
- › Sidechain mode will not work as expected when using VST2 instances of VocalSynth 2 in FL Studio.

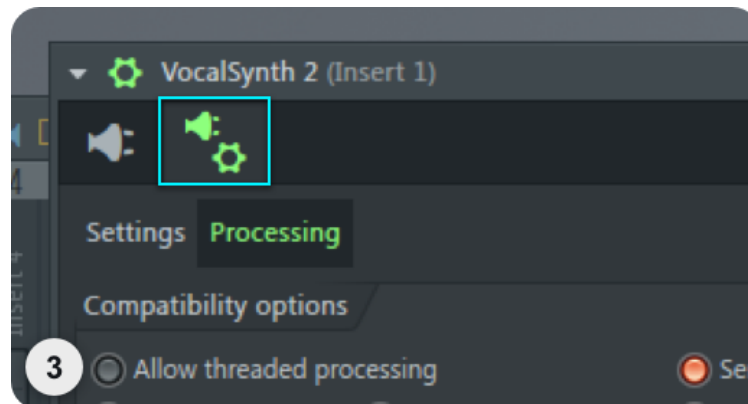
1. **Create two Audio Tracks: one with VocalSynth 2 inserted as a VST3 (not VST2), and one with the audio you want to send to VocalSynth 2.**



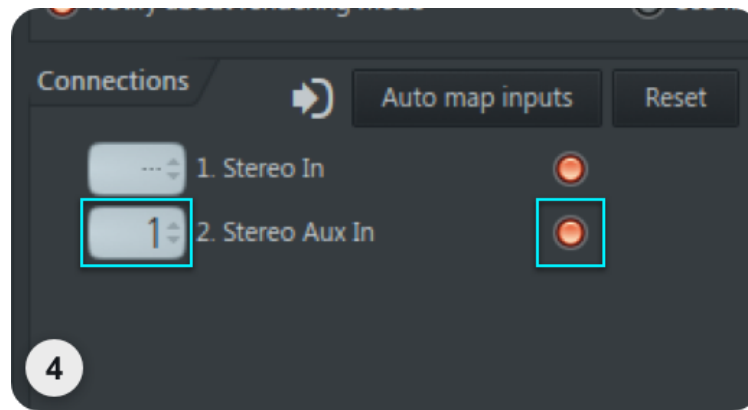
2. **In the FL Studio Mixer window, select Track 2 then, right-click on the upward arrow at the bottom of your VocalSynth 2 track and select "Sidechain to this track."**



3. **Open the VocalSynth 2 window, and click on the gear icon in the upper left corner of the plug-in window to open the plug-in settings.**



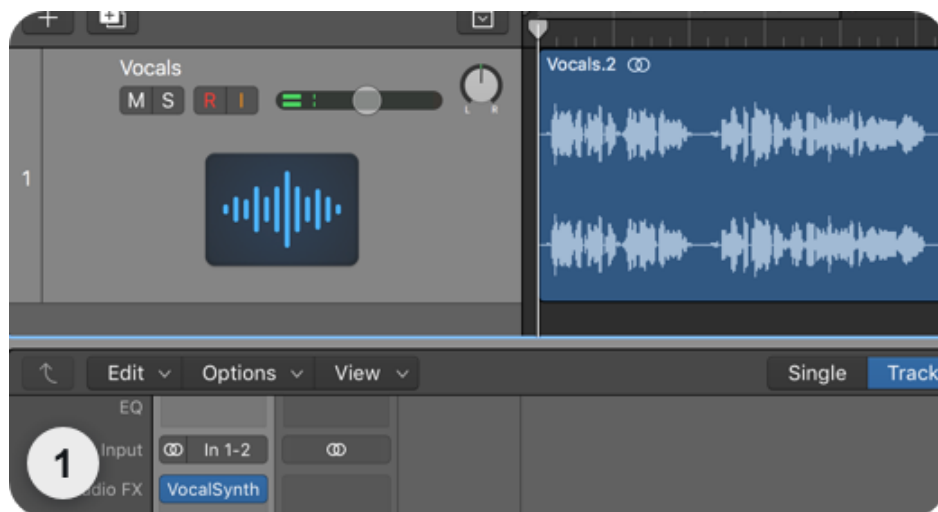
4. **In Processing, enable the "Stereo Aux In" option, then left-click in the grey box to select the Sidechain input.**



## Logic Pro X

### AUTO MODE | Logic Pro X

Make sure there is audio on the track VocalSynth 2 is inserted on and press play.



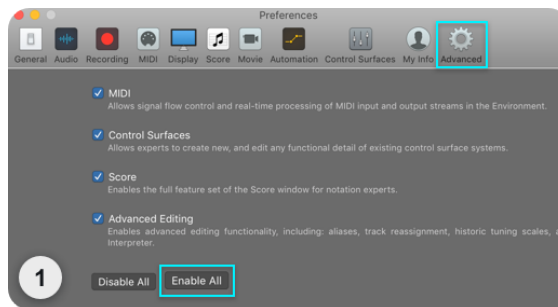
### MIDI MODE | Logic Pro X

This mode uses a MIDI keyboard or the piano roll as a MIDI input.

**■ MORE INFORMATION: MIDI MODE**  
 See the [MIDI Mode](#) section of the Global Modes chapter to learn more about MIDI Mode.

1. **“Advanced Tools” need to be enabled in Logic’s Preferences menu to use MIDI mode in VocalSynth 2.** To enable “Advanced Tools” in Logic:

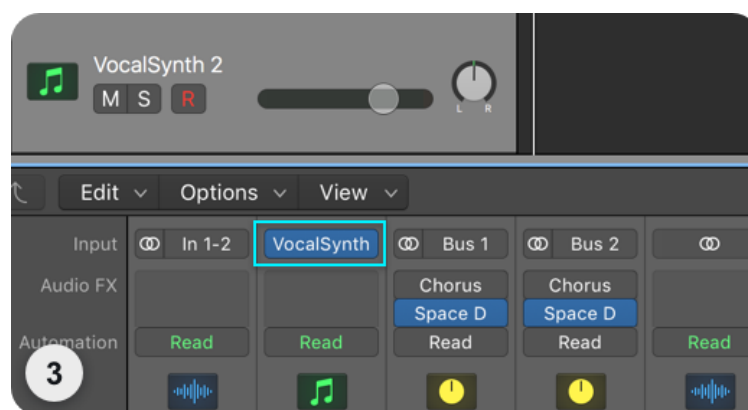
- › Navigate to: “Logic Pro X” menu > “Preferences” > “Advanced Tools...”
- › Check the “Show Advanced Tools” box.
- › Select “Enable All” at the bottom of the window.



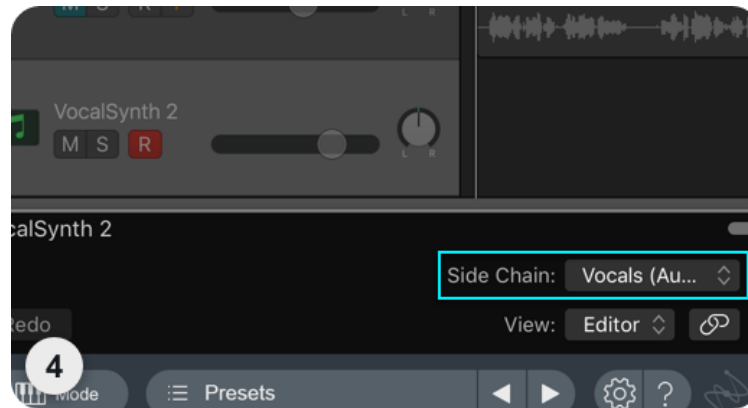
## 2. Create an Audio Track and mute it.



## 3. Create a Software Instrument Track and insert VocalSynth 2 into the Instrument slot.



## 4. In the VocalSynth 2 plug-in window, navigate to the Sidechain dropdown menu and select the Audio track you want to apply VocalSynth to.



## SIDECCHAIN MODE | Logic Pro X

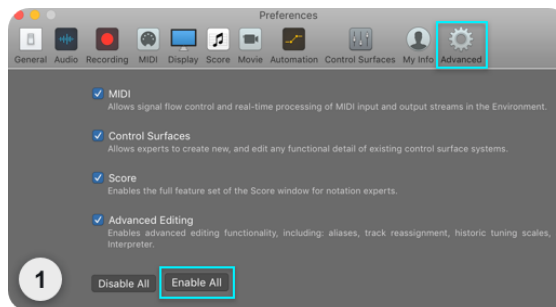
The audio routed into VocalSynth’s sidechain input will be modulated by your vocal track, allowing you to make any audio source “talk.”

### ▀ MORE INFORMATION: SIDECCHAIN MODE

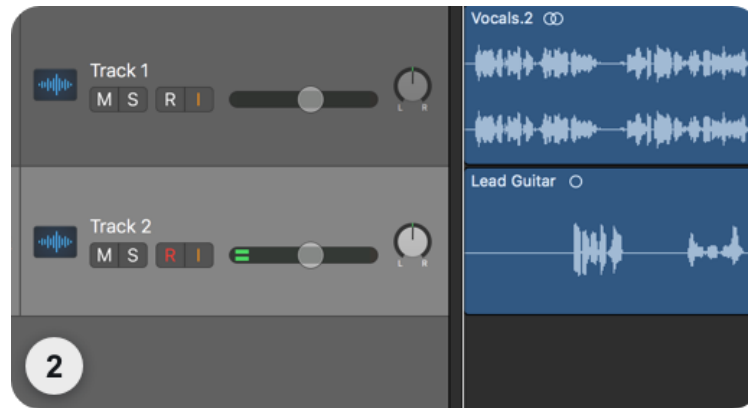
See the [Sidechain Mode section](#) of the Global Modes chapter to learn more about Sidechain Mode.

### 1. “Advanced Tools” need to be enabled in Logic’s Preferences menu to use Sidechain mode in VocalSynth 2. To enable “Advanced Tools” in Logic:

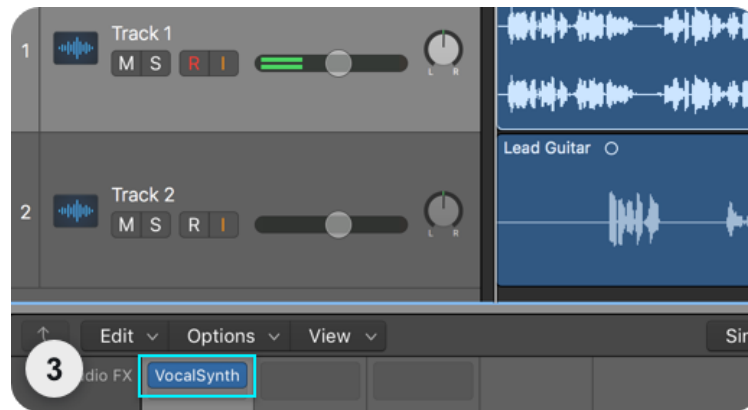
- Navigate to: “Logic Pro X” menu > “Preferences” > “Advanced Tools...”
- Check the “Show Advanced Tools” box.
- Select “Enable All” at the bottom of the window.



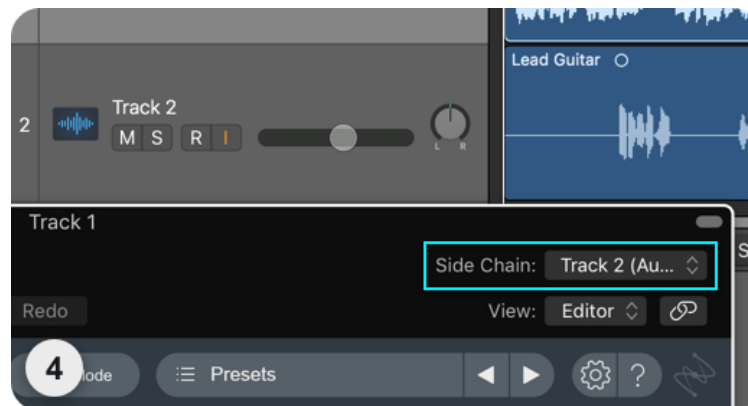
### 2. Create two Audio Tracks with audio on both. Try vocals on Track 1 and the instrument on Track 2.



### 3. Insert VocalSynth as a plug-in on Track 1.



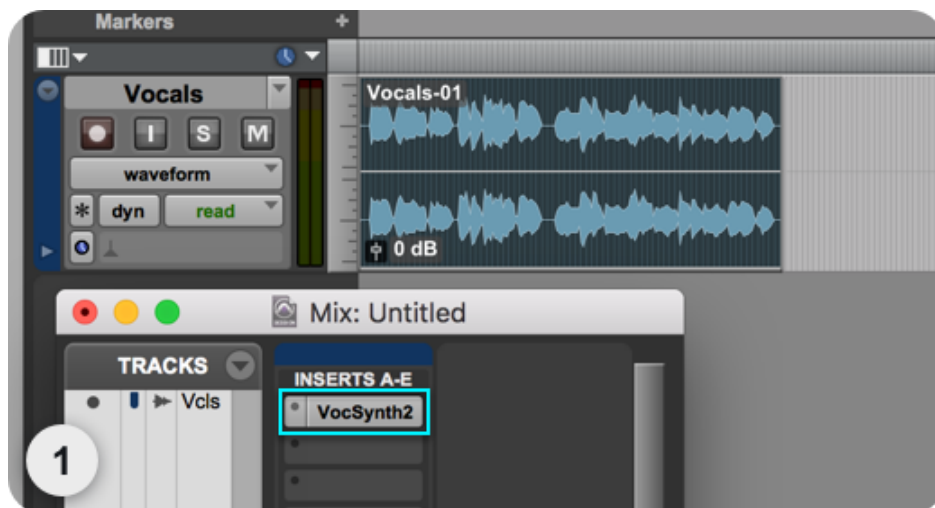
### 4. From the VocalSynth 2 plug-in window, find the Sidechain menu and choose Track 2.



## Pro Tools

### AUTO MODE | Pro Tools

Make sure there is audio on the track VocalSynth 2 is inserted on and press play.



## MIDI MODE | Pro Tools

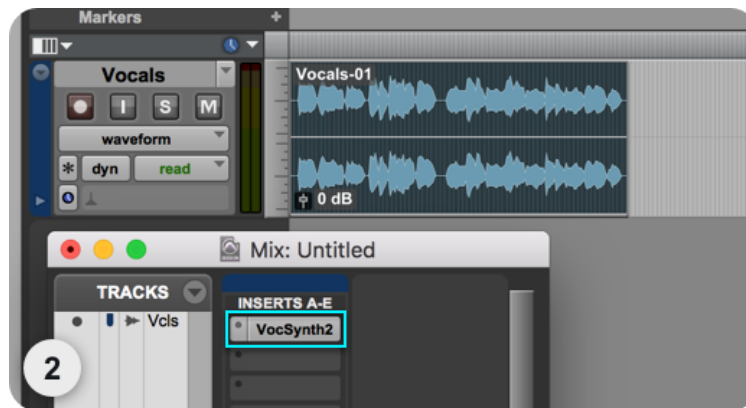
This mode uses a MIDI keyboard or the piano roll as a MIDI input.

■ MORE INFORMATION: MIDI MODE  
 See the [MIDI Mode section](#) of the Global Modes chapter to learn more about MIDI Mode.

### 1. Create an Audio Track and a MIDI Track.



### 2. Insert VocalSynth 2 onto the Audio Track.



3. In the Output dropdown menu of the MIDI Track, select any MIDI channel you want for VocalSynth 2.



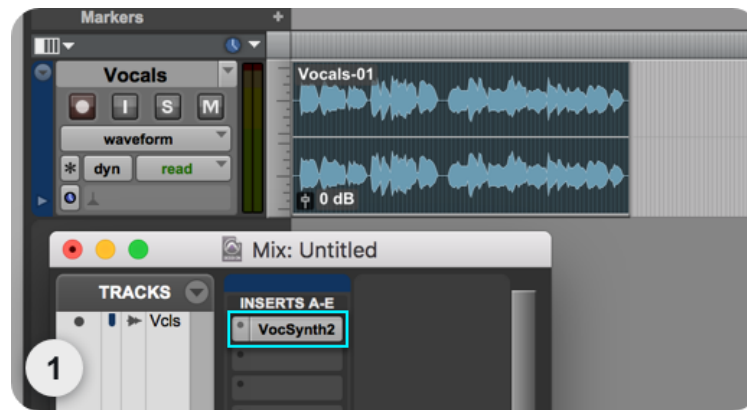
## SIDECHAIN MODE | Pro Tools

The audio routed into VocalSynth's sidechain input will be modulated by your vocal track, allowing you to make any audio source "talk."

### ▀ MORE INFORMATION: SIDECHAIN MODE

See the [Sidechain Mode](#) section of the Global Modes chapter to learn more about Sidechain Mode.

1. Create an Audio Track (1) and insert VocalSynth 2.



2. Create a second Audio track (2) and make sure there is some audio on it.



3. On Audio Track (2), set the Output to any open Bus.



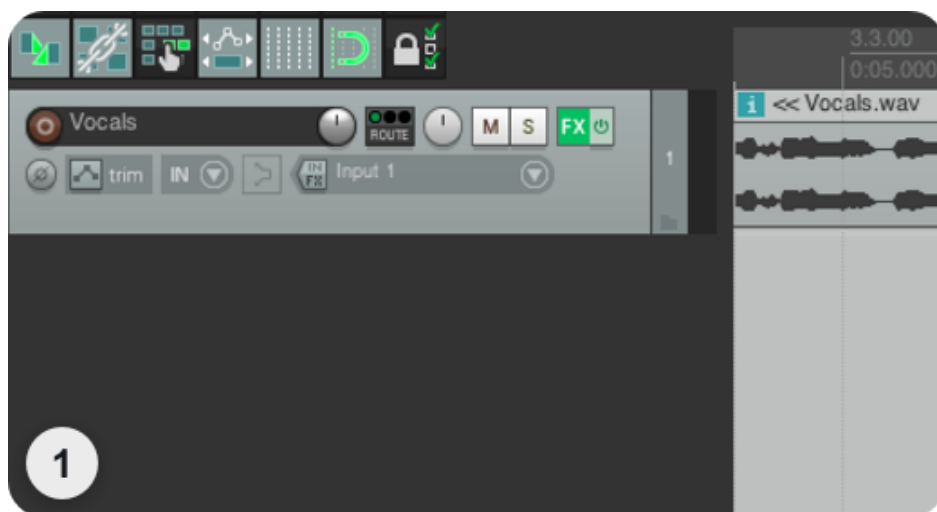
4. From the VocalSynth 2 plug-in window (Track 1), select the Bus you set in Step 3 from the key input dropdown.



## REAPER

### AUTO MODE | REAPER

Make sure there is audio on the track VocalSynth 2 is inserted on and press play.

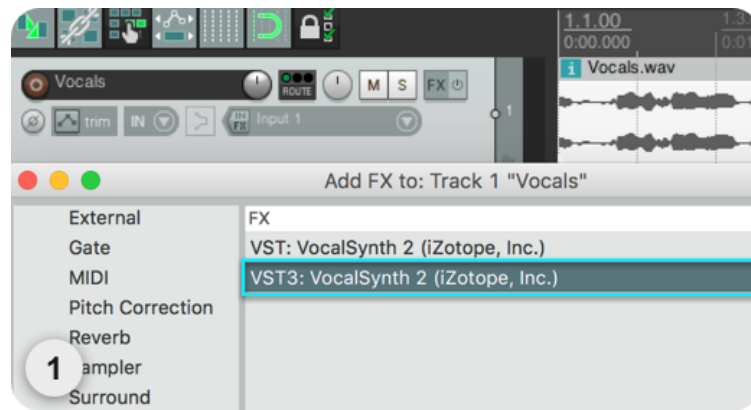


### MIDI MODE | REAPER

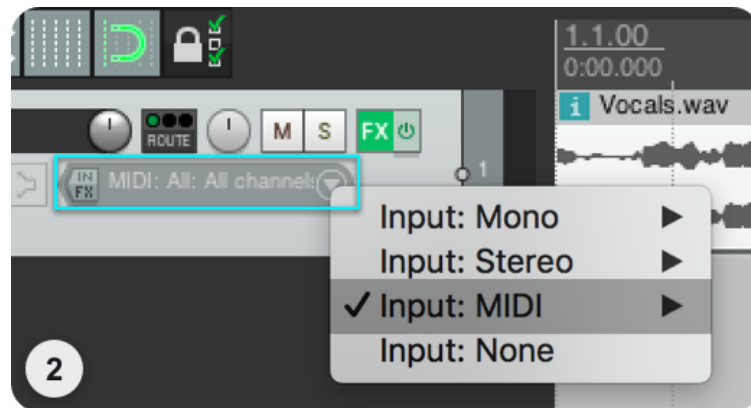
This mode uses a MIDI keyboard or the piano roll as a MIDI input.

■ **MORE INFORMATION: MIDI MODE**  
 See the [MIDI Mode](#) section of the Global Modes chapter to learn more about MIDI Mode.

#### 1. Create an Audio Track and insert VocalSynth 2.



2. Click "Input 1" to open the dropdown and choose your MIDI device.



3. Click the speaker to turn on "Record Monitoring" and record-enable your Track.



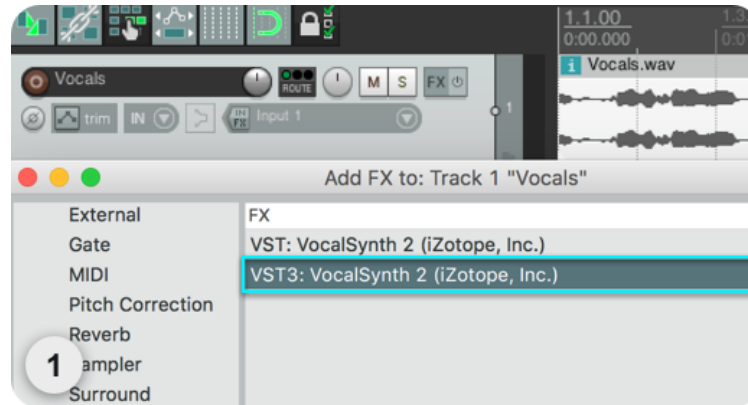
## SIDECCHAIN MODE | REAPER

The audio routed into VocalSynth's sidechain input will be modulated by your vocal track, allowing you to make any audio source "talk."

► MORE INFORMATION: SIDECCHAIN MODE

See the [Sidechain Mode section](#) of the Global Modes chapter to learn more about Sidechain Mode.

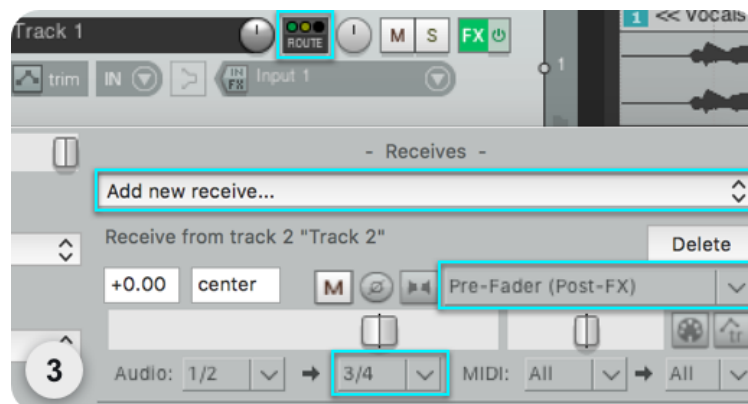
### 1. Create an Audio Track (1) and insert VocalSynth 2.



### 2. Create a second Audio track (2) and make sure there is some audio on Audio Track (2).



### 3. On Track (1), click the Route button, select "Add new receive," choose Track (2), choose "pre-fader" and choose $\frac{3}{4}$ instead of $\frac{1}{2}$ .



### 4. Bring the fader of Audio Track (2) to off.



## Reason

### AUTO MODE | Reason

Make sure there is audio on the track VocalSynth 2 is inserted on and press play.

### MIDI MODE | Reason

This mode uses a MIDI keyboard or the piano roll as a MIDI input.

▀ **MORE INFORMATION: MIDI MODE**  
See the [MIDI Mode](#) section of the Global Modes chapter to learn more about MIDI Mode.

1. **Create an Audio Track and and insert VocalSynth 2.**
2. **Open Preferences/Sync. Under “External Control: Bus A,” choose your MIDI Device.**
3. **Open Adv. MIDI Panel from the “Hardware Interface” at the top of the rack.**
4. **In any channel from the Adv. MIDI Panel, from the triangle button dropdown, choose your Audio Track and then the VocalSynth 2 plug-in.**

## SIDECCHAIN MODE | Reason

The audio routed into VocalSynth's sidechain input will be modulated by your vocal track, allowing you to make any audio source "talk."

▀ **MORE INFORMATION: SIDECCHAIN MODE**

See the [Sidechain Mode section](#) of the Global Modes chapter to learn more about Sidechain Mode.

- 1. Create two Audio Tracks, and make sure there is audio on one of the tracks.**
- 2. Insert VocalSynth 2 onto Track 1.**
- 3. Press Tab to flip to the back of the rack, and press the CV Programmer button on Track 1.**
- 4. Expand track 2 and connect the Output cables from Track 2 to "Optional Audio In" 3-4 of Track 1.**

---

## Studio One

### AUTO MODE | Studio One

Make sure there is audio on the track VocalSynth 2 is inserted on and press play.

### MIDI MODE | Studio One

This mode uses a MIDI keyboard or the piano roll as a MIDI input.

▀ **MORE INFORMATION: MIDI MODE**

See the [MIDI Mode](#) section of the Global Modes chapter to learn more about MIDI Mode.

1. **Create an Audio Track and insert VocalSynth 2 (VST3) on the track.**
2. **Create an Instrument Track and select “VocalSynth 2” in the output section.**
3. **If you are using a live MIDI device, make sure to set the input of this track to your MIDI device.** If you do not see your device available, open the Studio One Preferences and select the External Devices option to configure it.

## SIDECCHAIN MODE | Studio One

The audio routed into VocalSynth’s sidechain input will be modulated by your vocal track, allowing you to make any audio source “talk.”

■ **MORE INFORMATION: SIDECCHAIN MODE**  
See the [Sidechain Mode](#) section of the Global Modes chapter to learn more about Sidechain Mode.

1. **Create an Audio Track (1) and insert VocalSynth 2.**
2. **Create a second Audio Track (2) and make sure there is some audio on Audio Track (2).**
3. **Open the Console View, click “+” in the Sends section of Track (2), and select VocalSynth 2 under Sidechains.**
4. **Turn the Pre/Post-fader toggle to Pre-Fader (the toggle will turn yellow) and turn down the volume fader for the sidechain’s Audio Track.**



# Authorization

## Overview

The first time you open VocalSynth 2, the Authorization window will appear.

The Authorization window allows you to:

- › **TRIAL:** Start or continue a Trial period evaluation prior to purchasing
- › **DEMO:** Continue evaluating the product with Demo limitations (*after the 10 day Trial period has been exceeded*)
- › **AUTHORIZE:** Authorize the product with a serial number

## Trial and Demo Modes

A 10 day trial period will start when you first open the VocalSynth 2 plug-in. After the 10 day trial period has expired, VocalSynth 2 will enter demo mode. To disable Trial or Demo mode, you must authorize the product with a valid serial number.

### Trial Mode

Trial mode begins when VocalSynth 2 is first instantiated in a DAW/NLE. The authorization wizard window will display the number of days remaining in your trial period.

Clicking on the “Continue” button will dismiss the Authorization window and allow you to continue evaluating VocalSynth 2 in trial mode.

### Demo Mode

After 10 days, VocalSynth 2 will operate in Demo mode. VocalSynth 2 will periodically output silence when operating in demo mode. If you would like to continue evaluating VocalSynth 2 in demo mode, click the “Demo” button.

## Authorizing VocalSynth 2

There are three methods for authorizing VocalSynth 2:

- › **Online Authorization:** Use this method to authorize VocalSynth 2 on a machine that is connected to the internet.

- › **Offline Authorization:** Use this method to authorize VocalSynth 2 on a machine that is not connected to the internet.
- › **iLok Authorization:** Use this method to authorize VocalSynth 2 using an iLok.

## More Information

For information on authorization, please visit the iZotope website:  
<https://www.izotope.com/authorization>

### For additional help with authorizing VocalSynth 2:

- › Check out the Customer Care pages on the iZotope website:  
<http://www.izotope.com/support>
- › Contact our Customer Care department at  
[support@izotope.com](mailto:support@izotope.com)

More information on iZotope's Customer Care department and policies can be found in the [iZotope Customer Care](#) chapter.

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## Customer Care

### Purchasing VocalSynth 2

If you are using the demo version of VocalSynth 2 and would like the full version, you can purchase VocalSynth 2 direct from the iZotope online store: [www.izotope.com/store](http://www.izotope.com/store)

Once your purchase is complete, you will be sent an email confirmation and a full version serial number that can be used to fully authorize your current installation of VocalSynth 2.

### iZotope Customer Care policy

iZotope is happy to provide professional technical Customer Care to all registered users absolutely free of charge.  
[www.izotope.com/support/contact/index.php](http://www.izotope.com/support/contact/index.php)

We also offer valuable pre-sales technical Customer Care to customers who may be interested in purchasing an iZotope product. Before contacting iZotope Customer Care, you can search our [Product Knowledgebase](#) to see if the solution to your problem has already been published.

#### **How long does iZotope provide customer support for purchased products?**

You can email us with any question for 12 months after you buy any iZotope product. Past 12 months, we'll still help you with your account and authorization but will not provide technical support for in-depth product questions. If you need more detailed help on how to use the product, please check out our FAQs and Tutorials.

#### **How long does iZotope support its products?**

Although we can't guarantee it, we do our best to keep our products up to date with the operating systems and plug-in hosts that we support. Sometimes, other companies make changes that we're not able to support, but we actively work with other companies to avoid these sorts of compatibility problems. We also do our best to address bug fixes within the product itself to ensure our products operate in accordance with our specifications.

We will provide software updates for 12 months from product release. After 12 months, no software updates will be provided.

For details on what operating systems and plug-in host software are officially supported for a product, please check that product's Specs page.

## Contacting iZotope Customer Care

For additional help with VocalSynth 2:

- > Check out the Customer Care pages on our web site at [www.izotope.com/support](http://www.izotope.com/support)
- > Contact our Customer Care department at [support@izotope.com](mailto:support@izotope.com)

iZotope's highly trained Customer Care team is committed to responding to all requests within one (1) business day and frequently respond faster. Please try to explain your problem with as much detail and clarity as possible. This will ensure our ability to solve your problem accurately, the first time around. Please include all system specs and the build/version of VocalSynth 2 that you are using.

Once your Customer Care request is submitted, you will receive a confirmation email from iZotope Customer Care. If you do not receive this email within a few minutes, please check your spam folder and make sure our responses are not getting blocked. To prevent this from happening please add [support@izotope.com](mailto:support@izotope.com) to your list of allowed email addresses.

## International distribution

Customer Care is also available from our international distributors worldwide for any customers who purchased their iZotope products through a certified iZotope distributor.

Check with your local distributor for availability. If you would like help locating your local distributor please contact iZotope Customer Care.

Thanks for using VocalSynth 2!

-The iZotope Team

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Version 2.4

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### Better Enums

Version 0.11.1

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Version 4.0.0

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## JsonCpp

Version 1.2.1

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## nanomsg

Version 0.5-beta

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Jean-loup Gailly [jloup@gzip.org](mailto:jloup@gzip.org)

Mark Adler [madler@alumni.caltech.edu](mailto:madler@alumni.caltech.edu)

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