

Tomofon

Real Audio Synth



Welcome!

This is the user manual for **Tomofon**, a real audio synthesizer. Tomofon is an expressive musical instrument that aims to add an extra dimension to your music production. This virtual instrument introduces a new “Audio Model” format, containing thousands of waves based on real audio, as its sound source. But Tomofon is not a sampler. Nor is it a regular wavetable synth. The sounds generated are instead morphed between these real audio sound waves in multiple dimensions, making Tomofon highly flexible and instantly expressive, with sounds that on one hand sounds very organic and on the other, like something out of this world.

Tomofon comes pre-loaded with a pack of 124 Audio Models based on high quality audio recordings of multiple expressions of several instrument including strings, vocals, brass, woodwind, guitars and others. Included are also over 180 presets to get you going right away. From there on you can venture further and start creating Audio Models based on your own audio files and experiment on the types of sounds they can grow to be.

Tomofon is available for Mac & Windows (AU/VST/AAX plug-in). It has been designed and developed by Klevgrand, a small studio in Stockholm, Sweden.

[Read more at klevgrand.com](http://klevgrand.com)

LICENSING (DESKTOP ONLY)

Until unlocked, the plug-in output will be silent now and then. To unlock the full version, click the Demo label (top left corner) and type or paste in your license key. (Some hosts have disabled the ability to paste. In that case, right-click in the input box to show a “paste” command).

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How Tomofon works

Tomofon is an advanced wavetable synth using waves extracted from monophonic audio. The generated sounds are seamlessly morphed between different layers and sections of audio sound waves, resulting in an instantly playable and expressive synthesizer.

The Audio Model format has a unique capability to structure and process multiple wavetables with very large volumes of waves based on real audio. In addition to the Audio Models included in the Tomofon Starter Pack (124 models), you can also create your own Audio Models and unique soundscapes using your own audio samples.

The synth engine is packed with features that emphasizes the musical and audible possibilities of how to play back an Audio Model. Everything is displayed in an intuitive manner that supports a musical workflow.

AUDIO MODELS

Tomofon's audio source is called an Audio Model. An Audio Model contains a large set of oscillating waves, which are originally extracted from normal monophonic audio files. In a very simplified way, regular audio samples are deconstructed and rebuilt in a new format - an Audio Model.

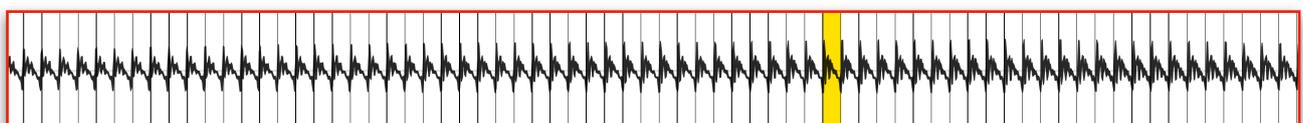
The oscillating waves, which have been extracted from the audio file(s), are structured by frequency and time, and put into pitch zones, forming several wavetables - one wavetable in each pitch zone. In addition to wavetables, the pitch zones also contain information on how the wavetables are mapped to the keyboard layout. A pitch zone is normally populated with waves that has corresponding pitches. The fundamental frequency span of an Audio Model is between D2 (73.4 Hz) and F7 (2793.8 Hz).



Audio sample of a male vocalist singing "Wow" on one note.



Here the same sample is zoomed in and one cycle in the audio is marked in yellow. When importing audio, one such cycle will result in one wave in the Audio Model.



Here the same sample is zoomed out a bit and the same cycle is marked in yellow. This way the whole sample is split into hundreds of waves and turned into one wavetable.



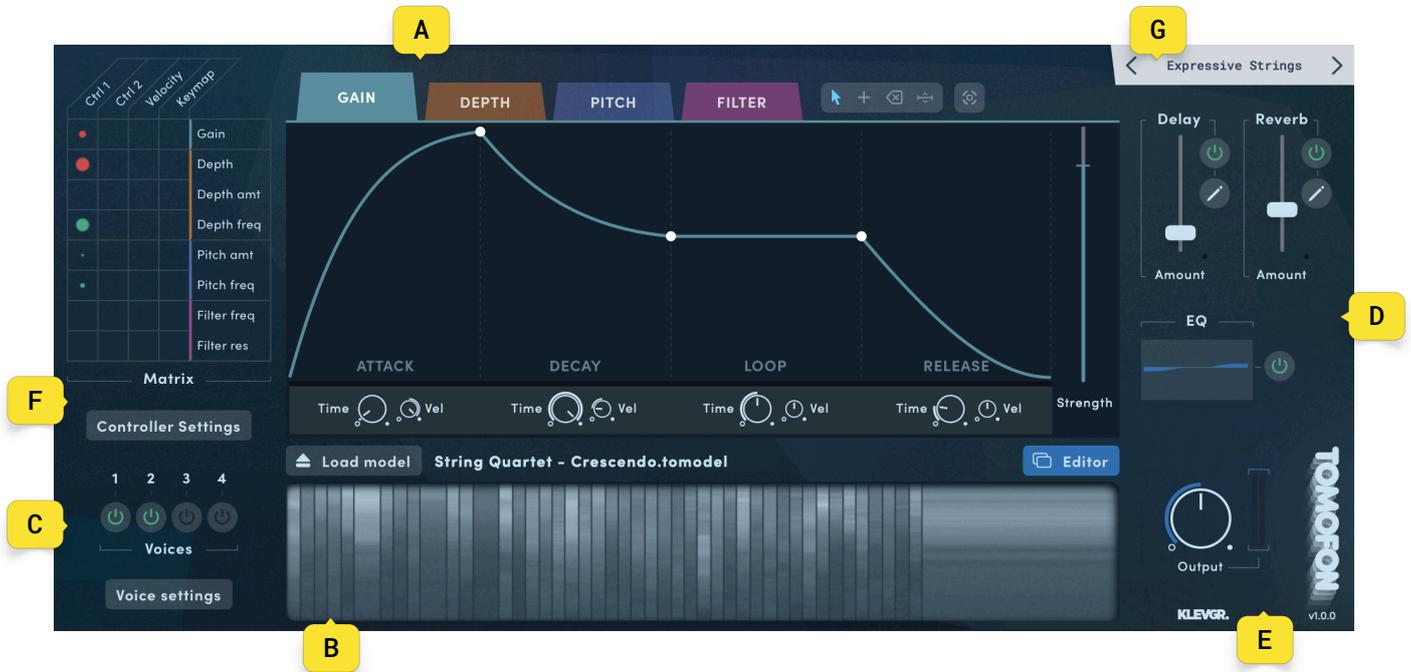
The Audio Model filled with multiple wavetables mapped across the keyboard. The marked pitch zone is the same content as the audio sample in the images above.

This structure makes it possible to organize waves based on both pitch and expression (for example the intensity of a violinist playing a crescendo). This expression can be any change in sound over time; formants, amplitude or shift in timbre. We call this variable expression Depth.

Playing an Audio Model means that the audio engine will use different waves based on both pitch and depth. When playing a note at a certain pitch at a certain Depth, the engine will find the nearest two pitch zones and inside those two pitch zones (based on the Pitch value) the nearest two waves (based on the Depth value) and calculate a new momentary wave of those to be rendered.

Synth Overview

This is the main part of the plugin and contains all the synth settings. This is where envelopes, LFO's, voice settings and effects shape the sound. This is also where presets and Audio models are loaded, and MIDI-mapping and legato-modes are structured. The second part of the plugin the Editor, which manages Audio Models in various ways (read more about the Editor on page 18).



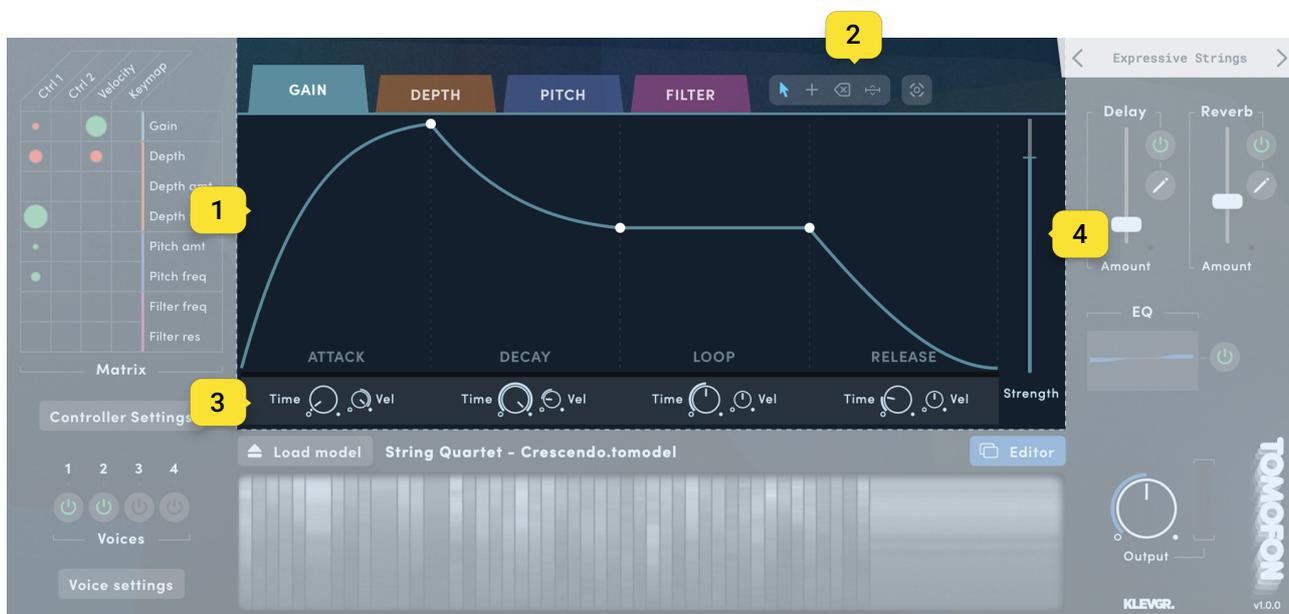
- A. Envelopes and LFO's
- B. Audio Model
- C. Voices
- D. Effects
- E. Output
- F. Controllers and Matrix
- G. Presets

A. Envelopes and LFO's

This section is based on four tabs: GAIN, DEPTH, PITCH and FILTER. Click one of these tabs to select what envelope to control. When playing, the collected movement of the Depth and Pitch envelopes, LFO's, Sample and Hold and MIDI-modulators is represented by the yellow dots moving across the Audio Model visualization (read more about the Audio Model visualization on page 10, and midi-controllers on page 14).

ENVELOPES

Gain, Depth, Pitch and Filter each has their own envelope. The envelopes work similarly to a regular ADSR but with a Loop stage instead of the Sustain stage. Gain controls the amplitude of the synth. Depth controls the vertical position in the Audio Model of each note. Pitch controls the horizontal position in the Audio Model of each note (relative to the midi-note value). Filter is a low-pass ladder filter.



1. Points and curves

The envelopes consist of a set of points and curves which can be moved, added and removed via mouse interactions. The toolbox, to the right of the envelope tabs, provides different edit modes. Details for the different tools are explained in the table below.

2. Tools

	Mac	Windows	
Arrow			To change a value - click, hold and drag one of the points. To change a curve, click and hold between two points and drag. To straighten a curve, double-click the curve.
Add	Cmd	Ctrl	Adds points on the envelope.
Remove	Cmd-Shift	Ctrl-Shift	Removes points on the envelope.
Scale			Click and drag to raise or lower the whole stage without losing the internal formation of that stage.
Fine	Option	Alt	Fine tune mode on or off. When on, any dragging amount will be divided by 10.

3. Time

Times for each stage are set via the **Time-knobs** below each stage.

*Note: **Release times** for all envelopes (except Gain) are relative to the Gains release time.*

The **Vel-knobs** sets how much the incoming velocity value should affect the times.

4. Strength

The Gain, Depth and Pitch envelopes each have a corresponding **Strength**-slider. This parameter sets the range of the envelope output values.

DEPTH

Depth controls the vertical position in the Audio Model through its envelope, LFO and Sample & Hold. Depth can also be modulated with midi controls (read more about controllers on page 14).

Depth in the Audio Model can be any change in sound over time; formants, amplitude or shift in timbre (for example the intensity of a violinist playing a crescendo). The Depth-movement is visualized by the yellow dots moving vertically across the Audio Model representation when playing.



LFO

The Depth LFO is an ordinary sine wave that modulates the Depth value. Each note triggered sets a new randomized phase of the LFO.

- 1. Amount** Sets how much the LFO-signal affects Depth.
- 2. Frequency** Sets the frequency (in other words speed) of the LFO.

3. Attack time Sets the time it takes the LFO to reach its Amount-value from noteOn.

Sample and Hold

S&H modulates the Depth value to make irregular Depth movement.

4. On / Off Disable or enable the S&H by toggling.

5. Amount Sets how much the S&H-signal affects Depth.

6. Frequency Sets how often a new value is picked.

7. Random Randomizes the time frequency (within the timespan based on frequency).

8. Smooth Sets how much the signal should be smoothed between values.

PITCH

Pitch controls the horizontal pitch-related position in the Audio Model through its envelope and LFO. The Pitch-LFO-values can also be modulated with midi controls (read more about controllers on page 14).

The pitch-movement is visualized by the yellow dots moving horizontally across the Audio Model representation when playing.



LFO

The Pitch LFO is an ordinary sine wave that affects the Pitch value. Each note triggered sets a new randomized phase of the LFO.

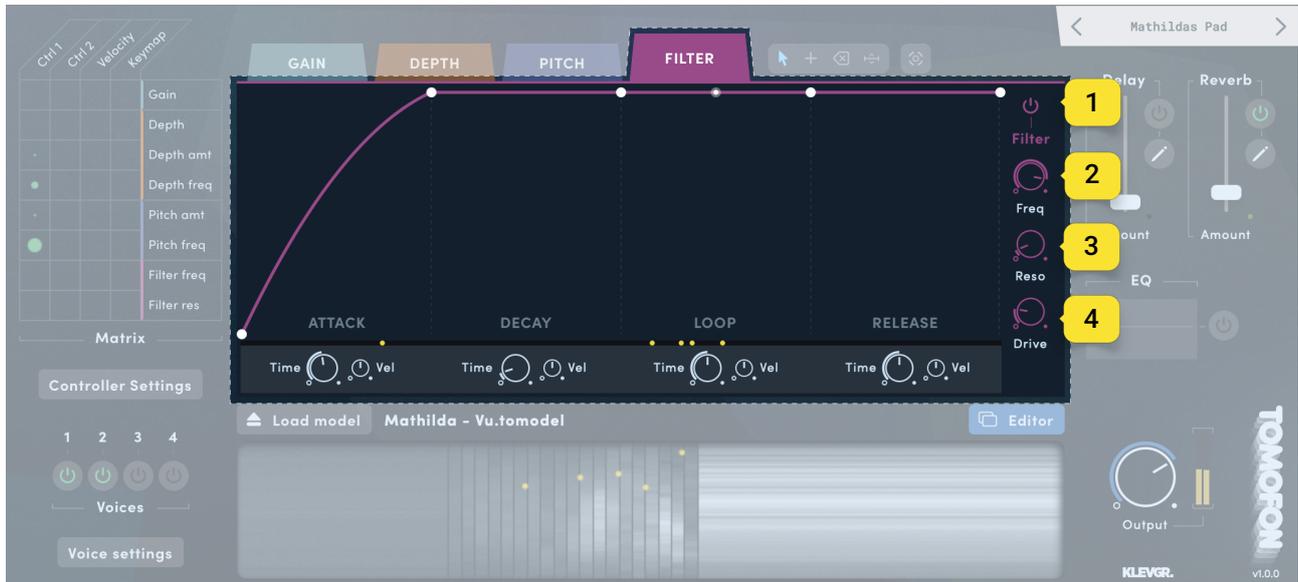
1. Amount Sets how much the LFO-signal affects the Pitch.

2. Frequency Sets the frequency (in other words speed) of the LFO.

-
- 3. Attack time** Sets the time it takes the LFO to reach its Amount-value from noteOn.

FILTER

A low pass ladder filter with a saturation parameter (Drive).



- 1. On/Off** Since even when resonance is zero and frequency is at max it's also possible to completely disable it using the on/off button.
- 2. Freq** Sets the frequency of the filter.
- 3. Reso** Sets the resonance of the filter.
- 4. Drive** Sets the amount of saturation for the filter.

B. Audio Model

This section contains the visualization of the currently loaded Audio Model, options to load other Audio Models and a button to go to the Editor (see Editor Overview).



1. AUDIO MODEL VISUAL REPRESENTATION

This is a representation of the currently loaded Audio Model. It shows the wavetable-populated pitch zones and their frequency range (a wide pitch zone has a greater frequency range).

When playing, the depth-movement is visualized by the yellow dots moving vertically across the Audio Model. In other words, if the Depth value goes from low to high, the yellow dot will also move from bottom to top over the Audio Model. In the same way, the pitch-movement is visualized by the yellow dots moving horizontally across the Audio Model.

Each pitch zone in the Audio Model is a representation of its corresponding wavetable. With the wavetables positioned from start to finish horizontally from bottom to top. The amplitude of the waves are represented by brightness, with higher volumed waves resulting in brighter shades and lower volumed waves resulting in darker shades.

2. AUDIO MODEL NAME

The name of the currently loaded Audio Model is displayed over the visual representation.

3. LOAD MODEL

This button opens the browser for all Audio Models - Factory and User. The factory Audio Models are



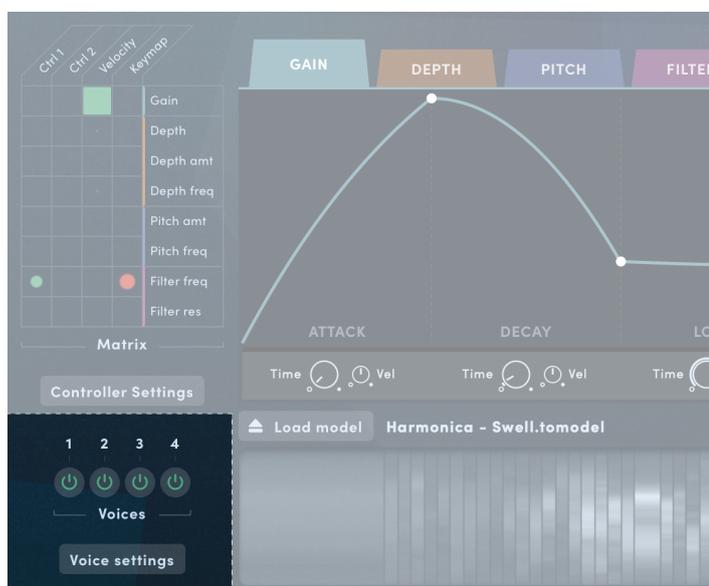
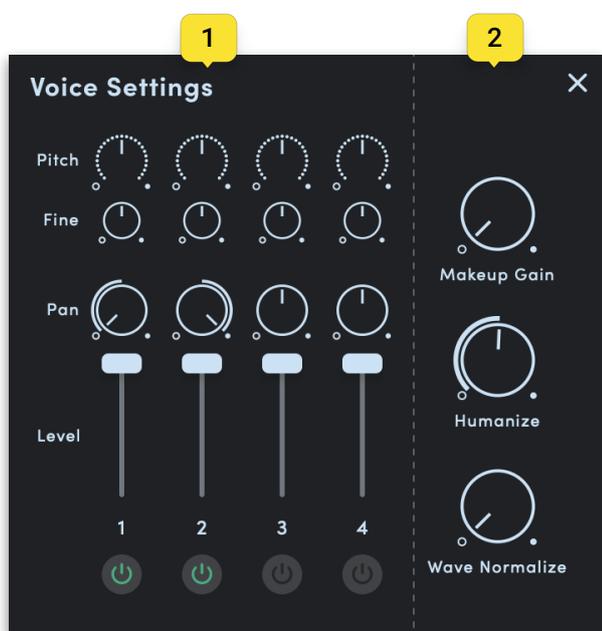
sorted into categories. Click one of the categories to the left to view the containing Audio Models. Click the name of an Audio Model to load it.

4. EDITOR

The Editor button opens the Editor view where Audio Models are created and edited. Read more about the Editor on page 18.

C. Voice Settings

This section contains settings for the up to four available voices. The Voice Settings panel is opened by clicking the button labeled **Voice settings**.



1. INDIVIDUAL VOICE PARAMETERS

Pitch	Sets the relative pitch in fixed semi tones from -12 to +12.
Fine	Sets the relative pitch in cents from -50 to +50.
Pan	Sets the left to right pan of the voice.
Level	Sets the volume of the voice.
On/Off	Enables or disables the voice. This option is available both in the Voice Settings popup and in the synths main interface.

2. OVERALL VOICE PARAMETERS

Makeup gain	Sets the amount of makeup gain for all voices.
Humanize	Adds very subtle depth and pitch changes on each voice for a more human/imperfect sound. This is also useful to create a natural stereo effect, if two or more voices are panned left and right.
Wave normalize	Sets how much all waves in the Audio Model are normalized. The highest value will make all waves play at the same level, the lowest value will make all waves play at their original level.

D. Effects

These effects are used to shape the sound of the synth and include a ping-pong delay, a reverb and an EQ.



DELAY

A ping-pong delay with a filter in the delay line loop. Open the delays settings panel by clicking the pencil-icon.

1. On / Off

Enable or disable the delay by toggling. This option is available both in the Delay popup and in the synths main interface.

2. Amount

Sets the gain level of the wet signal. This option is available both in the Delay popup and in the synths main interface.

3. Sync

Sets the delay time as note values (synced to the host's BPM). Click the icon to open a popup with different note-values. Choose the *ms* option in the popup to set the time in milliseconds.

4. Time

Sets the delay time in milliseconds. This parameter is disabled when using any of the note valued sync-options. Choose the *ms* option in the Sync-popup to enable.

5. Feedback

Sets the amount of delay signal to be re-routed from the delay output to its input.

6. Width

Sets the stereo width and position of the first delay response.

7. Filter

A classic resonant low/high-pass filter in the delay line loop.

LP/HP	Switches the delay filter between Low Pass and High Pass.
Freq	Sets the cutoff frequency of the filter.
Res	Sets the resonance amount.



REVERB

An algorithmic reverb with six different characters to choose from. Open the reverbs settings panel by clicking the **pencil-icon**.

1. On / Off

Enable or disable the reverb by toggling. This option is available both in the Reverb popup and in the synths main interface.

2. Character

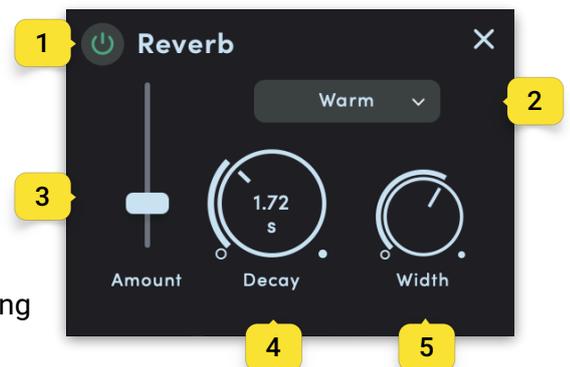
Choose between a selection of different reverb algorithms using the dropdown menu.

3. Amount

Sets the gain level of the wet signal. This option is available both in the Reverb popup and in the synths main interface.

4. Decay

Sets the reverb tail time.



5. Width

Sets the stereo width of the reverb.

EQ

A parametric EQ with Low Shelf, two parametric peak filters and a high shelf. Open the EQ settings panel by clicking the EQ-representation.

1. On / Off

Enable or disable the EQ by toggling. This option is available both in the Reverb popup and in the synths main interface.

2. Gain

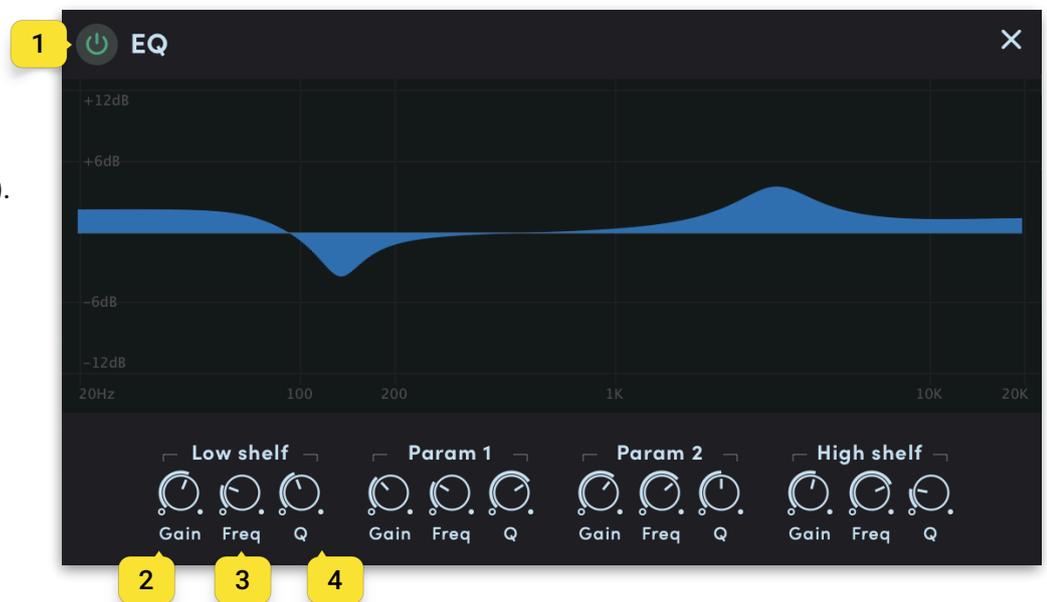
Sets the static gain level of the filter.

3. Freq

Sets the frequency of the filter.

4. Q

Sets the Q value (in dB/oct).



E. Output Gain

Sets the overall output gain of the whole plugin.

F. Controllers and Matrix

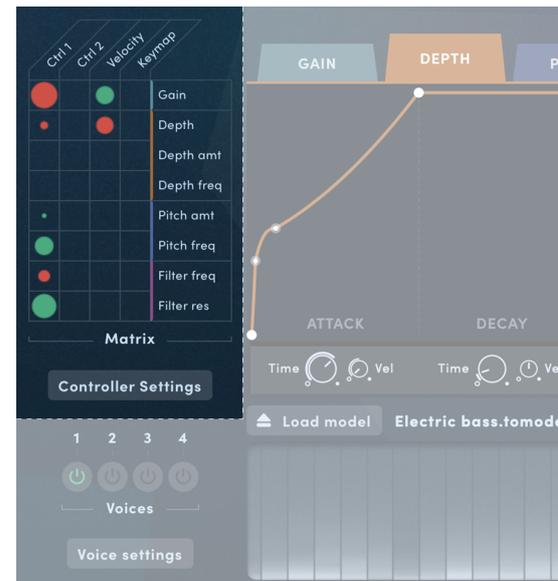
This section contains settings for how different MIDI-inputs are handled within the plugin and how they modulate different parameters in the synth.

MATRIX

The matrix controls how much each controller modulates each target, with controllers on top and targets to the right.

Each controller can modify:

- Gain
- Depth
- Depth LFO amount
- Depth LFO Frequency
- Pitch LFO amount
- Pitch LFO frequency
- Filter frequency
- Filter resonance



Values can be positive (green) or negative (red) and to change them click the value-area and drag up or down.

The Matrix is useful to create an expressive patch where for example the mod wheel dictates the frequency of the Pitch LFO and keymap dictates the Filter frequency.

CONTROLLER SETTINGS

This popup panel sets how external input is handled and processed within the plugin.

1. Ctrl 1/Ctrl 2

Selects what MIDI Control Changes controls each of the two assignable controllers. Click to select what Ctrl 1 / Ctrl 2 is mapped to.

2. Learn

All MIDI Control Changes's are not available in the source list. To use another MIDI Control Change, this function can be handy. Click to start learning mode and then send a MIDI Control Change to the plugin.

3. MIDI Keymap range

Start and end note for MIDI Keymap controller (startnote is 0% and endnote is 100%).



4. Controller curves

Ables the controller values to be non-linear. Change the knob to set each controller's mapping curve.

5. Pitch bend

Sets the pitch bend range.

6. Legato modes

There are three legato modes, switch between them using the three-pole-switch.

Polyphonic	Starts a note when a MIDI note on is received and ends it when the corresponding MIDI note off is received. This is the most common way polyphonic synthesizers are configured.
Mono	Will only play one note at a time, and if a new note is started while some other note is down, the other note will change its pitch, velocity and keymap value to the new notes values.
Poly legato	Similar to polyphonic, but will copy the current playing notes envelopes position when (if playing).
Gain attack	Sets the gain attack time when a new note is started while some other note is playing in Poly legato mode.

7. Glide time settings

Enabled only in Mono-legato-mode.

Pitch	Time for the pitch value to alter when a new noteOn is sent (assuming it was played when another note was down).
Velocity	Time for the velocity value to alter when a new noteOn is sent (assuming it was played when another note was down).
Keymap	Time for the keymap value to alter when a new noteOn is sent (assuming it was played when another note was down).

G. Presets

The preset browser is where all the synth presets are found. Click on the preset name to reveal a list of all factory and user presets, or on the left/right arrows to step through the list. A preset loads both all synth parameters and an Audio Model as a sound source .

The factory presets are divided into several categories and contains a wide selection of patches that works great as is, but can also be a good starting point for further tweaking.

1. Save

Overwrites the current patch.

2. Save as...

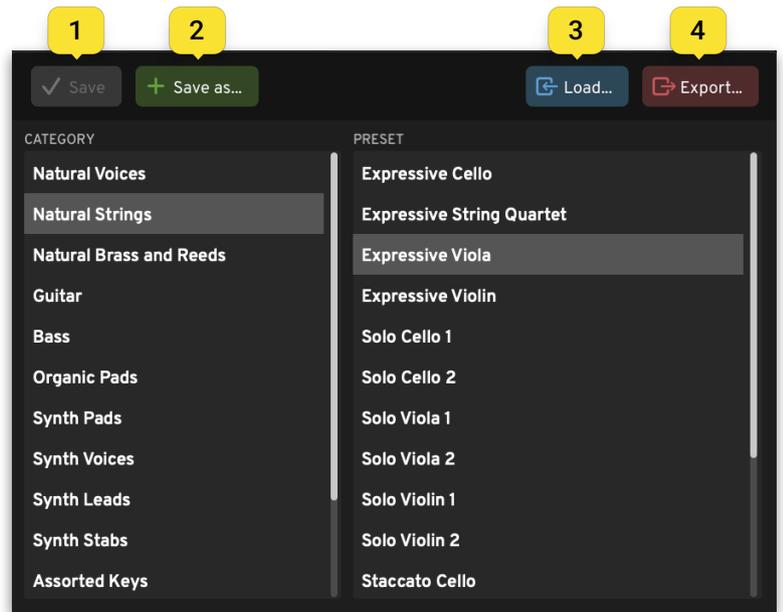
Saves the current patch with a new name.

3. Load

Opens the file browser to import a patch or an Audio Model from anywhere on the disk.

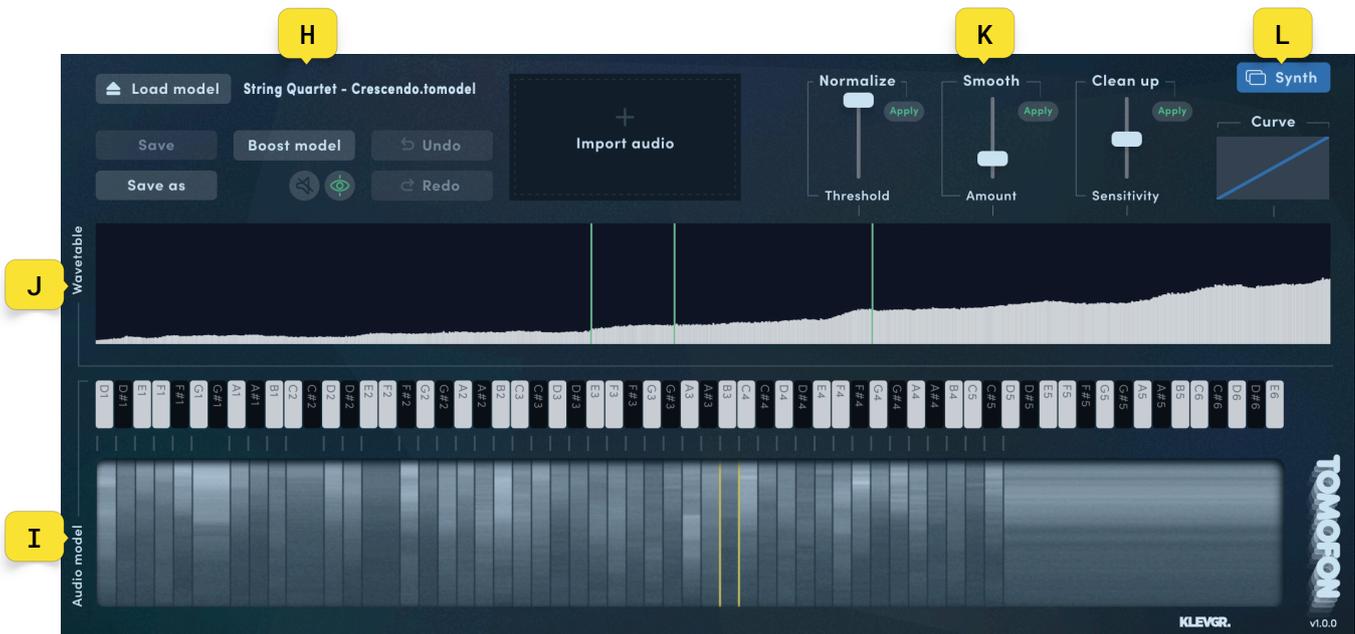
4. Export...

Opens the file browser to name and export user patches and Audio Models to anywhere on the disk. When doing this, Tomofon exports two files. One with the extension .tomodel (which is the Audio Model file) and one with the extension .topatch (which is the synth settings). Both are needed to load a patch properly.



Editor Overview

This part of the plugin manages the Audio Models in various ways. Here are options to import audio files to create new Audio Models as well as save, load, preview and edit them.



- H. File management
- I. Audio Model
- J. Wavetable
- K. Wavetable actions and Curve
- L. Synth

H. File management

1. Save

Overwrites the current Audio Model.

2. Save as...

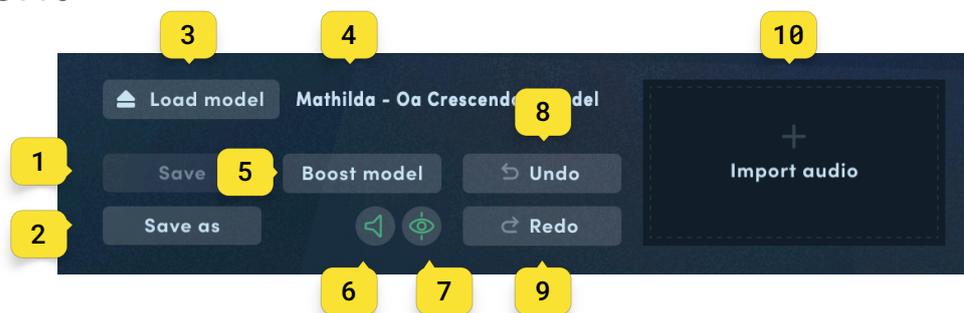
Saves the current Audio Model as a new file.

3. Load model

This button opens the browser for all Audio Models - Factory and User. The factory Audio Models are sorted into categories. Click one of the categories to the left to view the containing Audio Models. Click the name of an Audio Model to load it.

4. Audio Model name

The name of the currently loaded Audio Model.



5. Boost model

Normalizes the whole Audio Model.

6. Preview Audio

Enabled with short key Cmd (Mac) or Ctrl (Windows). Click and drag across the Audio Model to play a certain pitch zone at a certain Depth. This also auto-selects the nearest pitch zone. Click and drag across the Wavetable to play a certain wave within the wavetable at its original frequency.

7. Show cuts

Show or hide cuts in the wavetable. Cuts are indicated by green lines in the wavetable.

8. Undo

Undo up to 5 steps. The undo will reset when leaving the Editor, loading a new Audio Model or importing a new audio file.

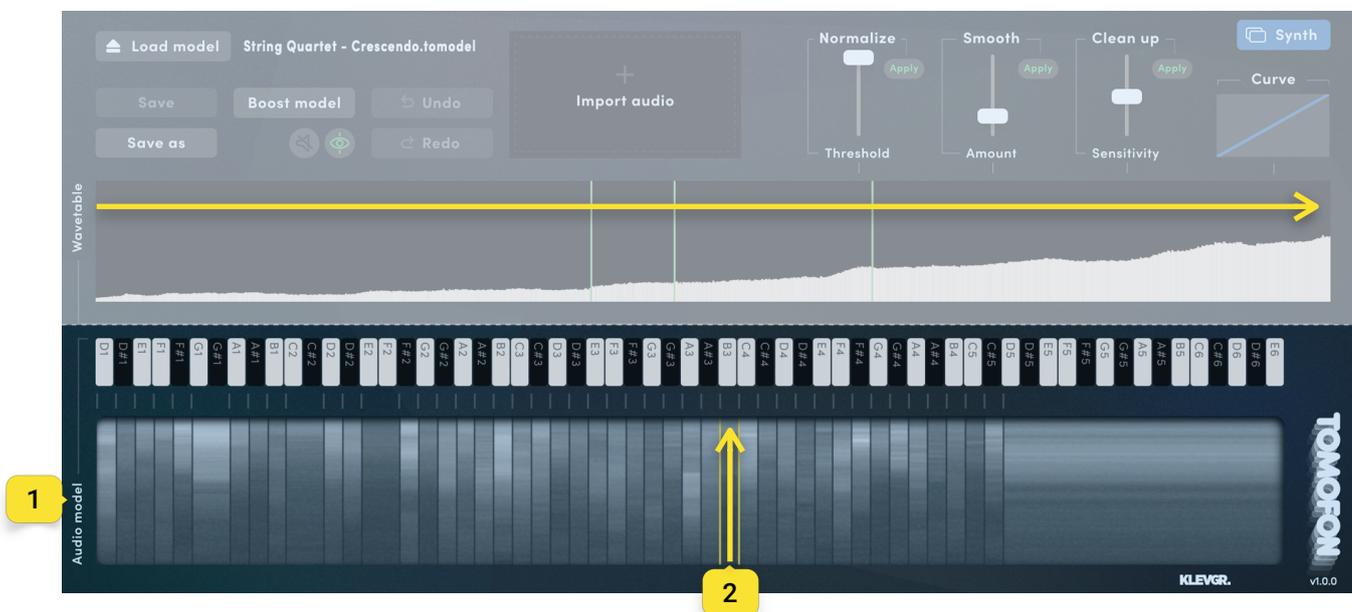
9. Redo

Redo up to 5 steps.

10. Import audio

Click to reveal a browser and select an audio file to import. Drag and drop a file on this element also imports it. See Import Audio on page 24 for more details on importing audio files.

I. Audio Model and Pitch Zones



1. Audio Model

This is a representation of the currently loaded Audio Model. It shows the populated pitch zones (2) over the keyboard and their frequency range (a wide pitch zone has a greater frequency range). Click and drag across the Audio Model with **Preview Audio** enabled to play a certain pitch zone at a certain Depth. This also auto-selects the nearest pitch zone.

2. Pitch zones

Each pitch zone in the Audio Model is a representation of its corresponding wavetable. With the wavetables positioned from start to finish horizontally from bottom to top (see the yellow arrows in the image above). The amplitude of the waves are represented by brightness in the Audio Model, with higher volumed waves resulting in brighter shades and lower volumed waves resulting in darker shades.

Left-clicking a pitch zone selects it and shows its corresponding wavetable in the wavetable view above the Audio Model. Right-click a pitch zone and select Delete to delete that pitch zone

If notes are played via MIDI, the yellow dots indicate what pitch zone and what depth is playing. Note that when playing this way, the synth settings will affect how the Audio Model is played.

J. Wavetable

The wavetable view shows a set of staples, each staple representing a wave in the selected pitch zone. Here are options to preview and edit the wavetable using mouse interactions.



The visual representation of the wavetable is determined by the amount of waves, their amplitude and their correlation to the pitch zones frequency. When there are a lot of waves in the wavetable, the staples become quite narrow and they will altogether look similarly to an ordinary audio file. The height of each staple is determined by its amplitude. The shading of each staple is determined by how close it is to the pitch zones base frequency - bright shaded staples correlates more and darker staples are further away.

Cuts are represented by a horizontal green line. They occur when the waves aren't continuous compared to the original audio file. If there's more than 7 missing waves between two waves inside a wavetable it will be indicated by such a horizontal green line.

HOW TO INTERACT

Select and edit the selected waves using mouse interactions.

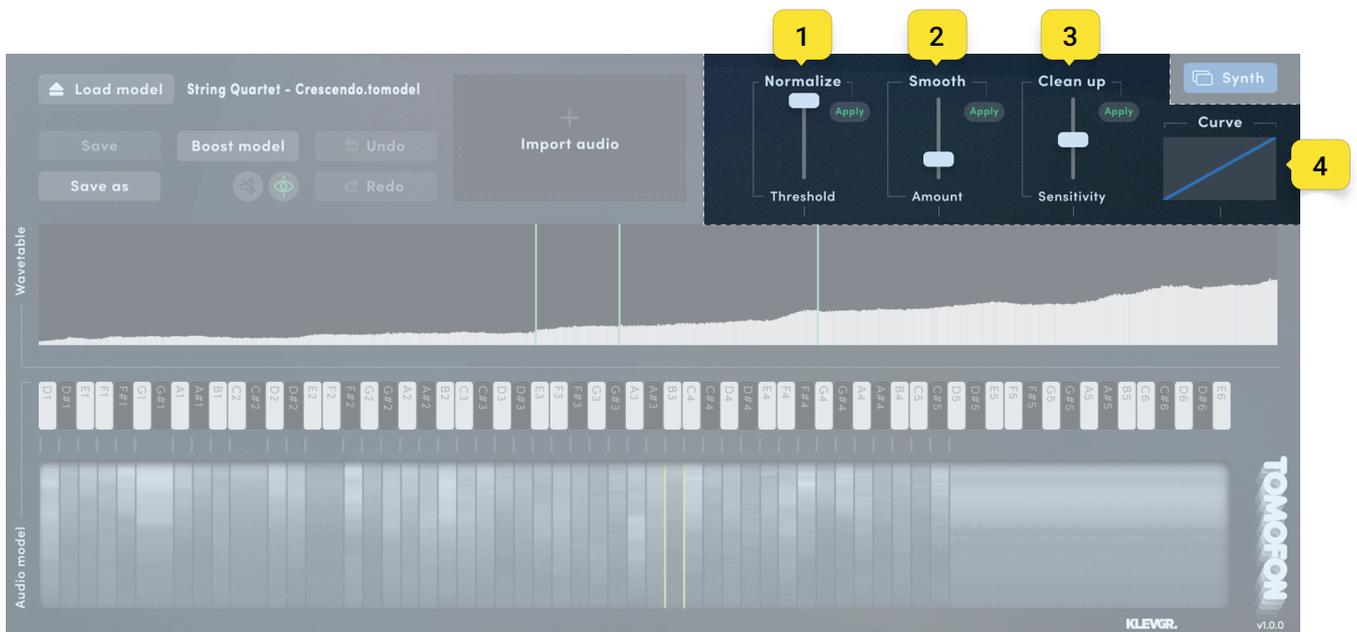
- Left-click with **Preview Audio** enabled and drag over the wavetable to listen to it at its original frequency.
- Left-click and drag over the wavetable to select a set of waves.
- Left-click a selection, drag it outside of the selection and release to move the selection.

- Left-click a selection, drag it to a different pitch zone and drop it to move the selection to that pitch zone.
- Right-click a selection to reveal a popup menu with the following options:

Smooth	Makes a continuous morph between the first selected wave and the last.
Delete	Deletes all waves in the selection.
Reverse	Reverses the position of the selected waves.
Select All	Select all waves in the wavetable.

K. Wavetable actions and Curve

The Wavetable actions and Curve applies to the selected wavetable.



WAVETABLE ACTIONS

The Wavetable actions are applied to the whole wavetable by clicking the **Apply**-button next to each corresponding slider.

1. Normalize

Normalizes the wavetable according to its threshold setting.

Threshold

Sets the maximum level of the wavetable from 100% (0dB) to 10% (-20dB).

2. Smooth

Smooths all cuts in the wavetable by re-rendering and morphing the waves around each cut in the wavetable.

Amount

Sets the amount of waves surrounding each cut to be smoothed. The value is relative to the amount of waves between the cuts. In other words - if there are a lot of waves, more waves will be smoothed than if there are just a few waves.

3. Clean up

Deletes waves between cuts according to its sensitivity setting.

Sensitivity

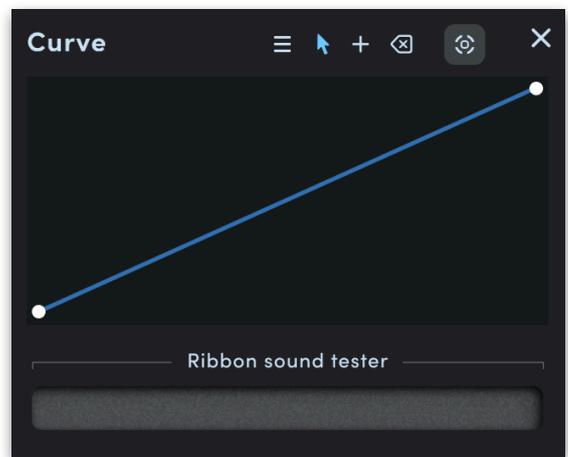
Sets how sensitive the Clean up action is, in relation to the amount of waves in the wavetable. For example if the whole wavetable is 200 waves, and the sensitivity is at 10%, all parts with 20 waves or less between cuts will be removed.

4. CURVE

The curve alters the linearity of each Pitch Zone's depth. Click the Curve representation to open the Curve editor.

Ribbon sound tester

Preview how the pitch zone's depth is affected by the curve.



	Mac	Windows	
Hamburger			Opens a drop down menu with a set of curve presets.
Arrow			To change a value - click, hold and drag one of the dots. To change a curve, click and hold between two dots and drag. To straighten a curve, double-click the curve.
Add	Cmd	Ctrl	Adds points on the curve.
Remove	Cmd-Shift	Ctrl-Shift	Removes points on the curve.
Fine	Option	Alt	Fine tune mode on or off. When on, any dragging amount will be divided by 10.

L. Synth

The Synth button opens the Synth view, which is the main part of the plugin that contains all the synth settings. Read more about the Synth on page 5.



Going from the Editor to the Synth without saving changes made to the Audio Model will prompt a warning-dialogue with options to Save the current Audio Model, Revert to the latest saved Audio Model or Skip the save altogether. Not saving changes will prompt a yellow Warning-sign next to the Audio Model in the Synth view (see the image below).



Importing Audio

When creating Audio Models, one or more audio files are needed to extract waves.

FILE FORMATS AND AUDIO CONTENT

Monophonic audio

In order to create high quality Audio Models, imported samples must be monophonic (in other words one note at a time, no chords) and the sound source should be as dry as possible. Percussive sounds are generally filtered away, and polyphonic sounds generate unpredictable wavetables.

Frequency span

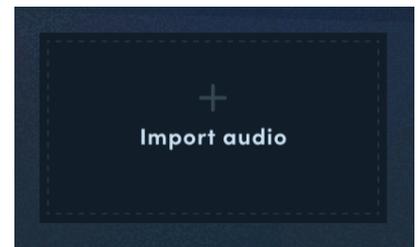
The fundamental frequency span of an Audio Model is between D2 (73.4 Hz) and F7 (2793.8 Hz).

Supported formats

Supported audio file formats are wav, aif, mp3 and m4a in any sample rate or bit depth. All audio models work in mono, so if a stereo file is imported only the left channel will be used.

SELECTING FILE

Click the Import audio box to reveal a browser and select an audio file to import. Drag and drop a file on this element also imports it.



ANALYSIS

When a file has been selected, Tomofon will run an analysis, split the audio into a multitude of waves and estimate the fundamental frequency of each wave. Once the analysis is complete, the Import Audio dialog will appear with options on how the extracted waves are imported.

IMPORT AUDIO DIALOG

This dialog appears once the analysis is finished and contains the options for how the extracted waves are imported. Below follows a list explaining each option.

New Automatic

- This option is a useful quick-fix that creates a playable Audio Model instantly.
- This automatic option works best if the imported audio file contains *all* audio to be used in the Audio Model. So to use several individual files, render them as one file before import when using this automatic option.
- For more control over the process, choose one of the other import options.

New Sorted

- Clears the current Audio Model and creates a new one.
- Each extracted wave will be put in its corresponding pitch zone (based on frequency). The order of the waves in each pitch zone will be based on time-position in the audio file.

New Manual

- Clears the current Audio Model and creates a new one.
- Lets the user decide exactly which waves should be used in what pitch zone(s) - (see Manual Audio Import for more details).

Merge All

- Adds waves to the currently loaded Audio Model.
- Each extracted wave will be put in its corresponding pitch zone (based on frequency). The order of the waves in each pitch zone will be based on time-position in the audio file.

Merge Empty

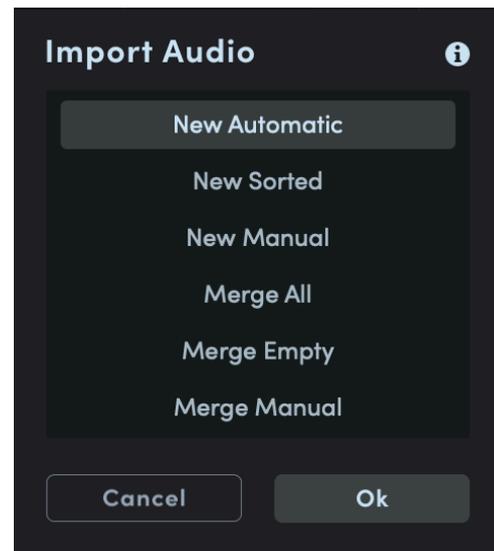
- Adds waves to the currently loaded Audio Model, only to pitch zones that are empty - new waves that correspond with pitch zones that are not empty will be ignored.
- Extracted waves will be put in their corresponding pitch zones (based on frequency). The order of the waves in each pitch zone will be based on time-position in the audio file.

Merge Manual

- Adds waves to the currently loaded Audio Model.
- Lets the user decide exactly which waves should be used in what pitch zone(s) - (see Manual Audio Import for more details).

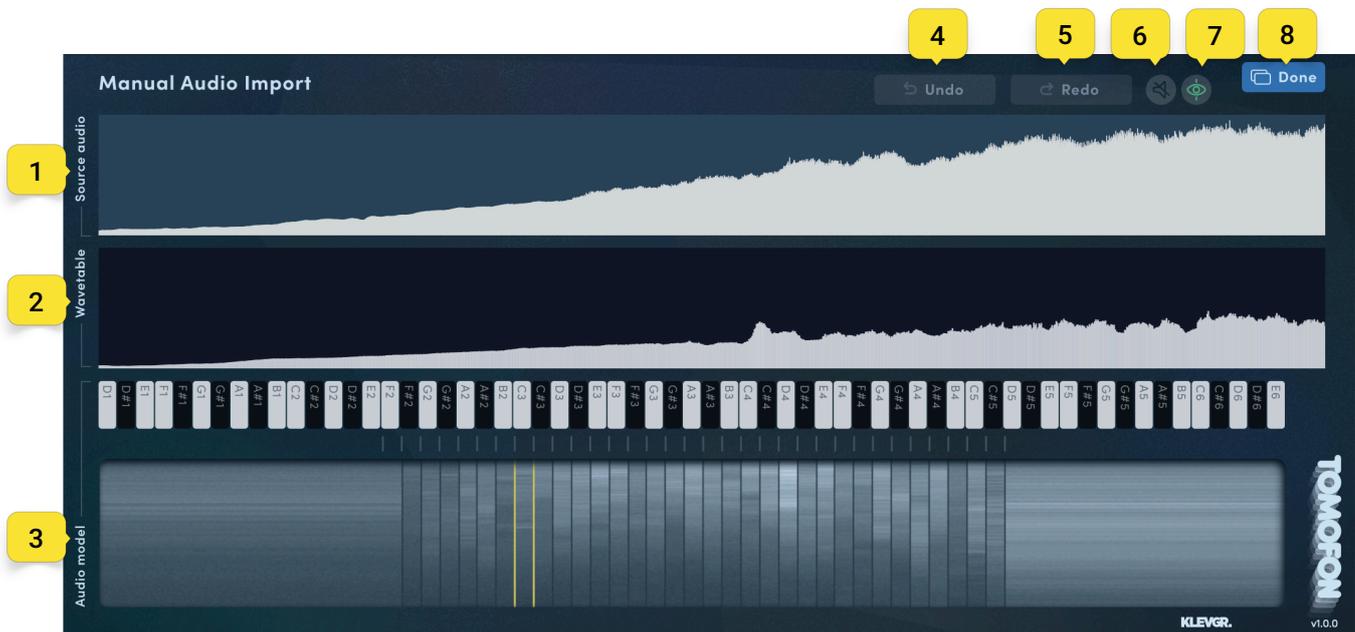
Cancel

- Don't do anything.



MANUAL AUDIO IMPORT

This view lets the user import waves to pitch zones manually to any pitch zone.



1. Source audio

Shows all extracted waves from the audio file.

2. Wavetable

Shows the selected wavetable.

3. Audio model

Shows the currently loaded Audio model.

4. Undo

Undo up to 5 steps. The undo will reset when leaving the Editor, loading a new Audio Model or importing a new audio file.

5. Redo

Redo up to 5 steps.

6. Preview Audio

(enabled with short key Mac: Cmd / Windows: Ctrl) - Click and drag across the Audio Model to play a certain pitch zone at a certain depth. This also auto-selects the nearest pitch zone. Click and drag across the Wavetable to play a certain wave within the wavetable at its original frequency.

7. Show cuts

Show or hide cuts (indicated by the green lines) in the wavetable.

8. Done

when done importing, click Done to go back to the Audio Model Editor.

Importing waves to pitch zones

In the Source audio view, select a set of waves, or right click within Source audio area and choose Select All.

The estimated pitch (note) of the current selection will be shown in the top left corner of the Source audio area. This note reflects the mean value of all the selected waves' pitch values.

Right click within the selected area of the Source audio and select Send to pitch zone to send the selection to the pitch zone for that note. Dragging a selection to a pitch zone and dropping it on a keyboard key of your choice creates a pitch zone on that note (or fills it with the selected waves if one already existed).

In the Wavetable area, make a selection and right click to Delete the selection or Select all.

Quick guide

This is a quick guide on how to make your own Audio Models and a few tips along the way on how to make them sound as good as possible.

TIP! In order to create high quality wavetables, imported samples must be monophonic (in other words one note at a time, no chords) and the sound source should be as dry as possible. Percussive sounds are generally filtered away, and polyphonic sounds generate unpredictable wavetables.

TIP! All audio models work in mono, so if a stereo file is imported only the left channel will be used. Stereo effects are created using either Humanize in Voice settings or by creating a chorus effect with fine tune on more than one voices panned left and right.

TIP! When importing waves, the New Automatic option (available in the Import Audio dialog) will create a playable Audio Model instantly. The automatic option works best if you import one audio file containing all audio you want to use in your Audio Model. So if you have a selection of several samples, you might want to render them as one file before import.

When creating an Audio Model and not using the Automatic import option, this can be a useful workflow to create high quality Audio Models.

1. Import Audio

Import one or more audio files using one of the import options available in the Import Dialogue. The New Sorted or Merge All options are recommended if you don't use the Automatic import.

2. Delete unwanted pitch zones

After importing waves, you will notice that some pitch zones might be populated with very few waves. Use the Preview Audio function to listen to these and notice that you don't want to keep them. Right-click a pitch zone to delete it.

TIP! Pitch zones with very few waves will look more pixelated than pitch zones with a lot of waves.

3. Clean up wavetables

If you see a lot of cuts in your wavetable (often at the start and end of the wavetable) you might want to remove them. Select them, right-click and choose Delete. Alternatively you can use the Clean up wavetable-action (see Wavetable actions for more details).

TIP! Make sure you don't have very low volume on the last wave of the wavetable if you want to be able to go from soft to loud on your mod wheel.

4. Smooth cuts

To get a smooth sounding Audio Model, you might want to smooth the cuts. Do this by selecting the waves surrounding a cut, right-click and select Smooth. Alternatively you can use the Smooth wavetable-action (see Wavetable actions for more details).

5. Normalize

If some pitch zones have very different volume, you can use the Normalize wavetable-action. If your whole Audio Model is very quiet, use Boost Model to normalize the whole Audio Model.

6. Save!

Save your Audio Model!

Special keys

Hold Alt/Option to finetune a value (e.g. a knob or slider).

Double-click a control to reset it to its default value.

Specifications / System requirements

Mac	Windows
64 bit AU/VST/AAX plug-in	64 bit VST/AAX plug-in
macOS 10.10+	Windows 7+ with SP1 or higher
Intel or ARM (Apple Silicon) based CPU	

KLEVGR.