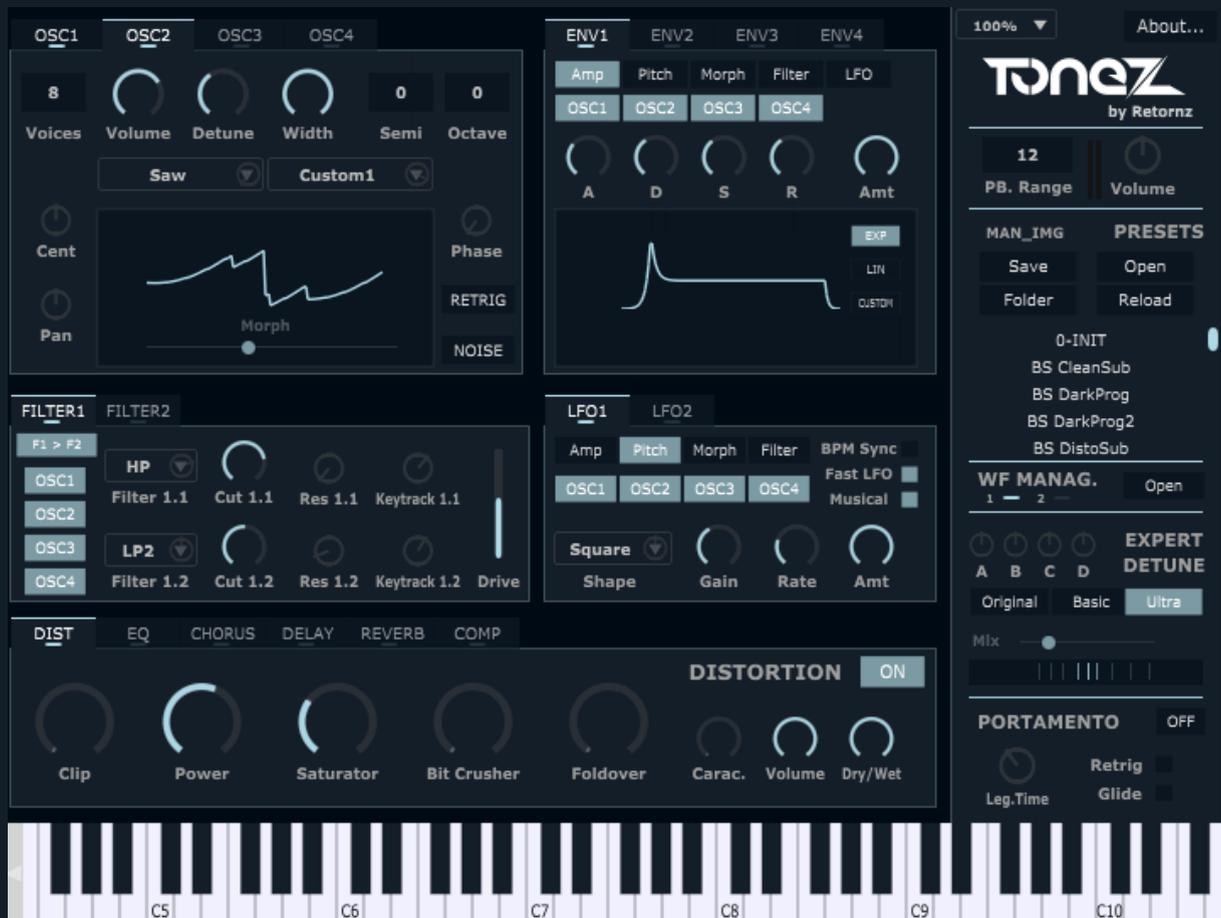


# User Manual (EN)

# ToneZ v2



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# Changelog

## xx/12/2023 – ToneZ v2.0.0

- Add linux (Ubuntu / Debian) version
- Add custom waveforms manager & ToneZ Waveform Creator
- Add custom shaped envelopes
- Add LFO envelopes
- Add filter layout: serial or parallel
- Add filter Drive
- Add “Musical” (keytracking gain) for the LFO & faster LFO speed
- Add “Clip” distortion & distortion character
- Add mid band EQ
- Add chorus modes “Super” & “Hyper” and add delay parameter
- Add delay & reverb order selection
- Add reverb sidechain
- Add detune modes: “Basic” & “Ultra”
- Add detune mix
- Add visualizers for: oscillators, envelopes, detune
- Global rebranding of the plugin
- Fix blinking combobox in LMMS
- Small improvement & bug fixes
- Compatible with the latest Csound version

## 2019 – ToneZ v1.x

- Public release of ToneZ
- Fix FL glitches, ToneZ is now 100% working in FL
- Better scaling of the presets in the list box
- Use relative path for resources
- Fix glitch with OSC PAN at 100%
- Fix many MIDI glitches, missed events, stopped events
- Add a EXP/LIN button on the envelope to switch between Exponential/Linear curves
- Public release of the Mac OS version (VST / AU)
- Fix comboboxes not saving their states in some DAW (Ableton)
- Fix GUI & preset issue in FL after reloading the .flp / reopening the GUI
- Add VST3 version for Windows
- Add an update checker in the “about” menu

- Add a Panic button (the ToneZ logo on top right is now a Panic button)
- Add inverting filters when envelope amount slider is set to a negative value
- Add preset pack shortcut from the “about” button
- Fix Sample Rate issue when other than 44100Hz
- Fix FL listing ToneZ as “Effect”
  
- Fix a crash in FL studio when loading a .flp
- Add a “Glide” mode for the portamento
- Add “BPM Sync” control for the LFOs
- Add a Stereo Width control on the reverb effect
- Improved CPU usage

# 1. Behind ToneZ

**ToneZ** is a free & open source synthesizer developed and designed by the French Producer [Retornz](#)



The tracks "[Mental Gate](#)", "[After Vibes](#)" as well as the dozens presets included, showcase what can be done with the synth.



**ToneZ** was developed using [Cabbage](#) framework. It is based on Csound audio synthesis language.

Many thanks to Rory Walsh for the help & support, Iain Mc Curdy and other devs for their great plugins examples.

**Thank you for using ToneZ!**

**Have fun & share it with your friends!**



## 2. Installation & DAW compatibility

⇒ ToneZ V2 is a whole new plugin : any existing ToneZ (V1) instances in your project will remain untouched.

⇒ ToneZ V2 is able to load any ToneZ V1 preset and the will sound the same.

⇒ ToneZ V2 is not compatible with 32-bit setups.

### 2.1 Installation

#### 2.1.1 Windows (64-bit VST / VST3)

📌 **Make sure to close your DAW before installing ToneZ**

To install ToneZ v2 64-bit VST<sup>1</sup>, after downloading the .zip file, extract the setup (.exe) file, run it and follow the wizard, you can choose the path where ToneZ\_V2 64-bit VST will be installed (default path is C:\Program Files\Steinberg\vstplugins\ToneZ\_V2)

If chosen, the VST3 version will install in C:\Program Files\Common Files\VST3

#### 2.1.2 Mac OS (VST / AU)

📌 **Make sure to close your DAW before installing ToneZ v2**

After downloading the .zip file, open the .dmg inside, you will see 3 versions of the plugin

- ToneZ\_V2.vst : This is the VST plugin, just drop it where your DAW expects VST plugins.
- ToneZ\_V2.vst3 : This is the VST plugin, just drop it where your DAW expects VST3 plugins.
- ToneZ\_V2.component : This is the AU plugin, just drop it where your DAW expects VST plugins.

⇒ IMPORTANT : Before using ToneZ you need to whitelist it by running the commands provided in the script file included in the dmg.

These commands are explained [here](#)

*Please remember : ToneZ is Open Source, so feel free to check out the code if you want to make sure it is safe by yourself.*

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<sup>1</sup> VST is a trademark of Steinberg Media Technologies GmbH.

### 2.1.3 Linux (64-bit VST / VST3)

📌 **Make sure to close your DAW before installing ToneZ v2**

After downloading the .zip file :

- 1) Make your to have csound v6 installed on your computer
- 2) Copy the "Retornz" folder inside your \$HOME directory
- 3) Finally copy the .so and/or .vst3 plugin where your host can find it

## 2.2 DAW compatibility

ToneZ was tested in the following DAWs, let us know it goes on [Discord](#) !

### 2.2.1 Windows

- **FL Studio** : no known issues
- **Ableton** : no known issues.
- **Reaper** : no known issues.
- **MuLab** : no known issues.
- **Cubase** : no known issues.
- **LMMS** : no known issues.

### 2.2.2 Mac OS

- **Reaper** : no known issues.
- **Ableton (VST/AU)** : no known issues.
- **Logic Pro (AU)** : no known issues.
- **Garageband (AU)** : no known issues.

### 2.2.3 Linux

- **Ardour (VST/VS3)** : no known issues.

### 3. Oscillators

ToneZ provides 4 oscillators, they all work the same way and are independent from each other:



**OSC1, 2, 3, 4:** Tabs to switch between oscillators.

*Tips: Each tab has a LED to see which one is active.*

**Waveform selection boxes:** The box on the left defines the main waveform of the oscillator, 13 different waveforms are available:

- Saw
- Sine
- Triangle
- Square
- Pulse
- 6 special waves
- 2 user custom waves

The box on the right defines the secondary waveform.

**Morph:** Morphing level between the two waveforms. (by default, the cursor is at 0%, which means only the waveform of the left box is taken into account)

**Noise:** When activated, the oscillator produces a white noise (waveforms will be ignored).

**Voices:** Number of voices played when the user hits a note, each oscillator can go up to 8 voices.

**Volume:** Volume of the oscillator.

**Detune:** Controls how much voices are detuned from each other.

*Tips : The global detune vizualizer can help understanding what is going on.*

**Width:** Controls the spreading of the voices in the stereo field.

**Octave:** Changes the octave of the oscillator

**Semi:** Changes the semitone of the oscillator

**Cent:** Changes the cents of the oscillator

**Retrig:** Retrigger of the oscillator. Makes all the voices start at the same spot of the waveform.

**Phase:** Only when retrigger if enabled. Controls the starting point of the waveform.

**Pan:** Change the panning of the oscillator

## 4. Envelopes

**Tonez** provides 4 multi-purpose ADSR envelopes. They can be used to control oscillators amplitude, pitch, morph, filter cutoff or LFO amount. The 4 envelopes work the same way.

### 4.1 Amplitude envelope

In any of the 4 envelopes, if the “Amp” button is selected, the envelope will act as an amplitude envelope, and will modulate the volume of the selected oscillators.



**ENV1, 2, 3, 4:** Tabs to switch between envelopes.

*Tips: Each tab has a LED to see which one is active.*

**Amp, Pitch, Morph, Filter, LFO:** Buttons to choose the kind of envelope desired.

**OSC1, 2, 3, 4:** Buttons to choose the oscillators modulated by the envelope.

*ie: in the screenshot above, “Amp” and “OSC1”, “OSC2”, “OSC3”, “OSC4” are enabled.*

*ENV1 is an amplitude envelope and will modulate OSC1, OSC2, OSC3, OSC4 volume.*

**A, D, S, R:** Attack time (A), Decay time (D), Sustain level (S), Release time (R)

**EXP/LIN/CUSTOM:** Defines the curves of the envelope (Exponential/Linear/Custom)

**A, D, R Curve:** Displayed only when the curve type is set to “Custom”, define the custom curves of the Attack (A Curve), Decay (D Curve), Release (R curve)

**Amt:** Controls the amount of envelope applied to the signal.

## 4.2 Pitch envelope

In any of the 4 envelopes, if the “Pitch” button is selected, the envelope will act as a pitch envelope, and will modulate the pitch of the selected oscillators.



*Note: in the screenshot above, “Pitch” and “OSC1” are enabled.*

*ENV2 is a pitch envelope and will modulate OSC1 pitch.*

*The A,D,S,R & curves work the same as described in the previous section.*

## 4.3 Morph envelope

In any of the 4 envelopes, if the “Morph” button is selected, the envelope will act as a morph envelope, and will modulate the morph of the selected oscillators.



*Note: in the screenshot above, “Morph” and “OSC1” - “OSC2” are enabled.*

*ENV2 is a morph envelope and will modulate OSC1 and OSC2 morph.*

*The A,D,S,R & curves work the same as described in the previous section.*

## 4.4 Filter envelope

In any of the 4 envelopes, if the “Filter” button is selected, the envelope will act as a filter cutoff envelope, and will modulate the first filter cutoff of the selected filter units.



**FILTER1, 2:** Buttons to choose the filter cutoff modulated by the envelope.

Other controls are the same as the Pitch envelope.

*Note: in the screenshot above, “Filter” and “FILTER2” are enabled*

*ENV3 is a filter cutoff envelope and will modulate filter2 cutoff. (filter 2.1 > Cut2.1)*

*The A,D,S,R & curves work the same as described in the previous section.*

## 4.5 LFO envelope

In any of the 4 envelopes, if the “LFO” button is selected, the envelope will act as a LFO Amount envelope, and will modulate the amount of the selected LFOs.



**LFO1, 2:** Buttons to choose LFO modulated by the envelope.

Other controls are the same as the Pitch envelope.

Note: in the screenshot above, “Filter” and “LFO2” are enabled  
 ENV3 is a LFO envelope and will modulate LFO2 amount.  
 The A,D,S,R & curves work the same as described in the previous section.

## 5. Filters

ToneZ provides 2 filter units.

Each unit provides 2 filter units “FILTER1” & “FILTER2” working in serial or parallel mode.



**FILTER1, 2:** Tabs to switch between filter units.

*Tips: Each tab has a LED to see which one is active.*

**OSC1, 2, 3, 4:** Buttons to choose which oscillator will go through the 2 filters of the unit.

**Filter X.X :** Controls the types of filter, 4 types are available:

- LP3 - 3 pole low pass filter (18 dB/octave)
- LP2 - 2 pole low pass filter (12 dB/octave)
- HP - 2 pole high pass filter (12 dB/octave)
- BP - 2 pole band pass filter (12 dB/octave)

**Cut:** Controls the cutoff frequency of the filter.

*Note: When an envelope is set to control the filter cutoff of a unit, it will actually control only the first filter of the unit.*

**Res:** Controls the resonance of the filter

**Keytrack:** Controls the keytracking of the filter: higher notes will open the filter more than lower notes

**Drive:** Controls the saturation inside the filters

**Filter flow (serial/parallel):** Will change the way the 2 filter units work together, serial mode or parallel mode



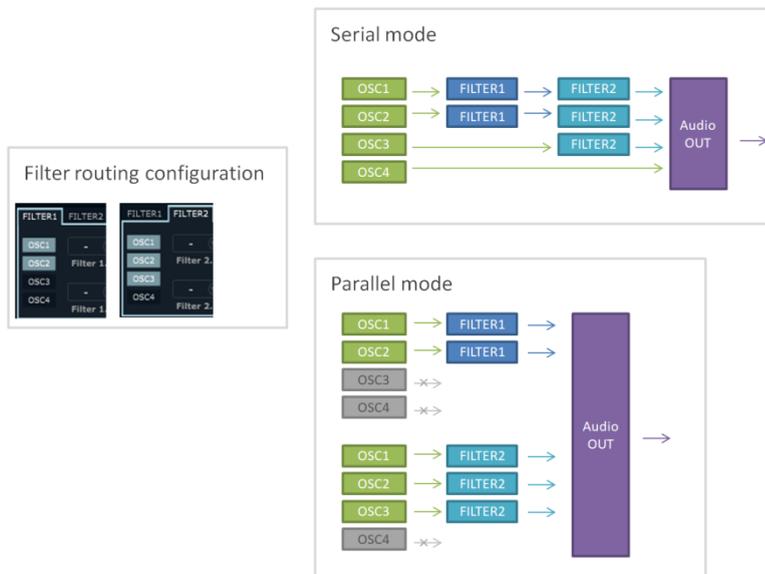
**“F1 > F2” (Serial):** Filter units “FILTER1” & “FILTER2” works in Serial mode



**“F1 // F2” (Parallel):** Filter units “FILTER1” & “FILTER2” works in Parallel mode

*Note: inside the same filter unit, the 2 filters always work in serial mode.*

Here is a visual explanation of the 2 modes:

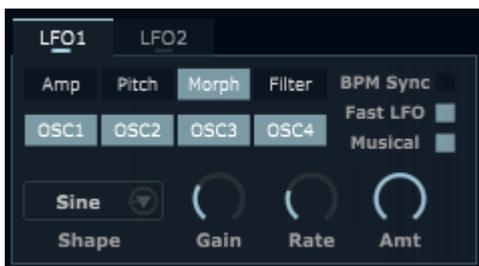


*Note: In parallel mode, every oscillator used must be routed to at least one filter unit to output the audio, else it will be muted. A red flag will remember this when it happens.*

## 6. LFOs

**ToneZ** provides 2 Low Frequency Oscillators (LFO).

They can be used to control oscillators amplitude, pitch, morph or filter cutoff. The 2 LFOs works the same way.



**LFO1, 2:** Tabs to switch between LFOs.

*Tips: Each tab has a LED to see which one is active.*

**Amp, Pitch, Morph, Filter:** Buttons to choose the kind of LFO desired:

- **Amp** : Amplitude, the LFO will affect the volume of the selected oscillators,
- **Pitch** : the LFO will affect the pitch of the selected oscillators,
- **Morph** : the LFO will affect the morph of the selected oscillators,
- **Filter** : the LFO will affect the filter cutoff of the first filter of the selected filter unit.

**OSC1, 2, 3, 4:** Buttons to choose the oscillators affected by the LFO.

*Note: When a LFO is set to control filter cutoff, only the first filter of the selected filter unit will be affected.*

**Shape:** Shape of the LFO, 6 shapes are available:

- Sine
- Triangle
- Square
- Saw Down
- Saw Up
- Random

**Gain:** Controls the level of variation of the LFO.

**Amt:** Controls the amount of the LFO applied.

**BPM Sync:** When enabled, sync the LFO to the beat of the DAW.

**Fast LFO:** When enabled, the LFO will work at audio rate (= could be used to do some kind of Frequency Modulation). Disabling it will allow ToneZ v1 presets to sound the same.

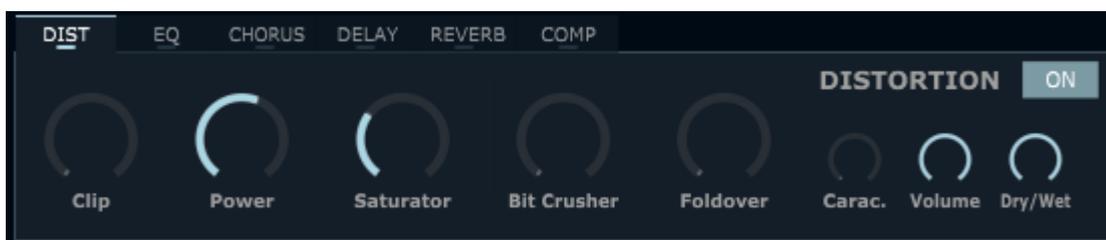
**Musical:** When enabled, the LFO gain will be key tracked to sound more musical.

**Rate:** Controls the speed of the LFO. When “BPM Sync” is enabled, the Rate a fraction of the beat

## 7. Effects

ToneZ provides 6 Effects: Distortion, EQ, Chorus, Delay, Reverb and a Compressor

### 7.1 Distortion



**ON/OFF:** Enable/Disable the effect.

**Clip:** Clipping distortion

**Power:** Distort the signal (powershape distortion).

**Saturator:** Apply saturation to the signal (more subtle than “Power”).

**Bit Crusher:** Reduce the bit depth of the signal.

**Foldover:** Apply sampling rate foldover effect to the signal.

**Carac.:** Apply some character to the distorted signal

**Volume:** Controls the volume of the distorted signal.

**Dry/Wet:** Controls how much of the effect is applied to the signal (Dry, 0% means no effect – Wet, 100% means full effect).

## 7.2 Equalizer



**ON/OFF:** Enable/Disable the effect.

**Low:** Controls the frequency of the equalizer (Low shelf).

**Gain:** (on the left) Controls the gain of the equalizer (Low shelf).

**Mid:** Controls the frequency of the equalizer (Mid Peak).

**Gain:** (on the center) Controls the gain of the equalizer (Mid Peak).

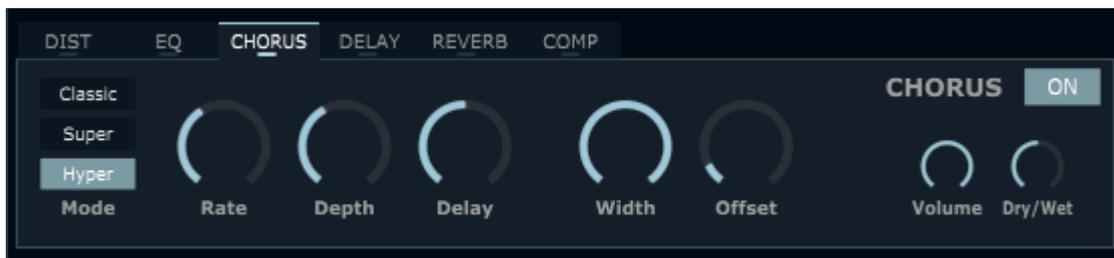
**High:** Controls the frequency of the equalizer (High shelf).

**Gain:** (on the right) Controls the gain of the equalizer (High shelf).

**Volume:** Controls the volume of the equalized signal.

**Dry/Wet:** Controls how much of the effect is applied to the signal (Dry, 0% means no effect – Wet, 100% means full effect).

## 7.3 Chorus



**ON/OFF:** Enable/Disable the effect.

**Mode:** 3 modes available (Classic, Super, Hyper) to change the voicing of the chorus.

**Rate:** Controls the speed of the chorus effect.

**Depth:** Controls the intensity of the chorus effect.

**Delay:** Controls the delay of the chorus effect

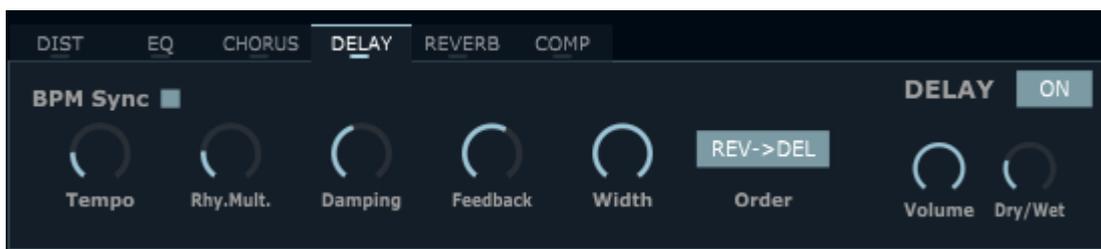
**Width:** Controls the stereo width of the chorus. Setting it to 0 will make the effect mono.

**Offset:** Controls the offset between the right and left stereo channel.

**Volume:** Controls the volume of the chorused signal.

**Dry/Wet:** Controls how much of the effect is applied to the signal (Dry, 0% means no effect – Wet, 100% means full effect).

## 7.4 Delay



**ON/OFF:** Enable/Disable the effect.

**BPM Sync:** When enabled, the tempo of the delay effect will be synced with the host tempo, otherwise it will use the “Tempo” knob.

**Tempo:** Only when “BPM Sync” is disabled, controls the tempo of the delay.

**Rhy.Mult:** Tempo multiplier/divider

**Damping:** Controls the diffusion of high frequencies

**Feedback:** Controls the feedback of the delay effect

**Width:** Controls the stereo width of the delay. Setting it to 0 will make the effect mono.

**Order:** Change the relative order of the delay/reverb in the chain “REV->DEL” or “DEL->REV”

**Volume:** Controls the volume of the delayed signal.

**Dry/Wet:** Controls how much of the effect is applied to the signal (Dry, 0% means no effect – Wet, 100% means full effect)

## 7.5 Reverb



**ON/OFF:** Enable/Disable the effect.

**Type:** Choose the type of reverb:

- “L” is more focused on Low frequencies
- “H” is more focused on high frequencies

**Size:** Controls the size of the reverb

**Pre-del. :** Controls the delay before the reverb

**Damping:** Controls the diffusion of high frequencies

**Pitch Mod:** Only available for “type 0”, modulate the pitch of the reverb

**Width:** Controls the stereo width of the reverb. Setting it to 0 will make the effect mono.

**LPF:** Low pass filter of the reverberated signal

**HPF:** High pass filter of the reverberated signal

**Sidechain:** ON/OFF to enable/disable the sidechain effect on the reverb

**Level:** If sidechain is on. Sidechain level, controls how much the reverb will be ducked when a note is played.

**Rel.:** If sidechain is on. Sidechain release, controls how fast the reverb will come back after being ducked.

**Volume:** Controls the volume of the reverberated signal.

**Dry/Wet:** Controls how much of the effect is applied to the signal (Dry, 0% means no effect – Wet, 100% means full effect)

## 7.6 Compressor



**ON/OFF:** Enable/Disable the effect.

**Attack:** Controls the attack of the compressor.

**Release:** Controls the release of the compressor.

**Ratio:** Controls the Ratio of the compressor.

**Low Knee:** Set the low knee of the compressor.

**High Knee:** Set the high knee of the compressor.

*NB: High knee and low knee together define the threshold of the compressor.*

**Gain:** Controls the gain of the compressed signal.

**Dry/Wet:** Controls how much of the effect is applied to the signal (Dry, 0% means no effect – Wet, 100% means full effect).

## 8. Control panel



The part on the right of the synthesizer is the control panel: it groups all the buttons/parameters that will affect the whole synth, as well as miscellaneous settings.

The ToneZ logo acts like a Panic button when clicked.

**About:** Open the “About” tab.

**Plugin size** (“100%”): Controls the resizing of the plugin.

**PB. Range:** Controls the range of the pitch bending (when pitch is modified by a midi-keyboard/DAW pitch parameter of the host).

**VU Meter:** Left & Right channel VU meter (next to the Volume knob)

**Volume:** Master volume of the synth.

### 8.1 Presets

ToneZ is provided with more than 100 presets, to showcase the possibilities of the synthesizer and guide new users. Double click on a preset from the preset box to load it into ToneZ.

**Save:** Save a preset into a .tzip2 file (share this file to share the preset with others; everything needed will be embedded inside).

**Open:** Load a preset from a .tzip2 file or .tzip file.

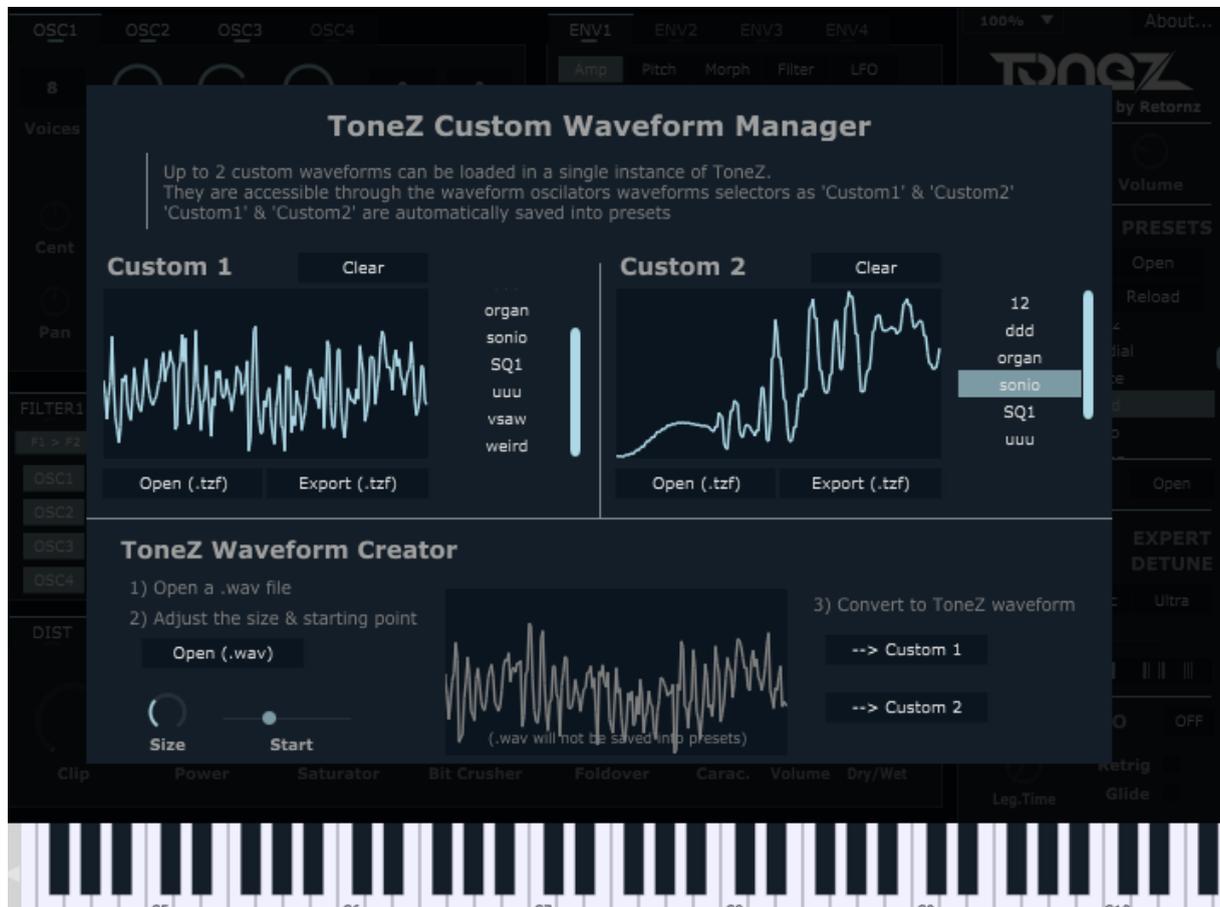
*Pro tip : ToneZ (v1, .tzip) are compatible and can be open with ToneZ V2, they will sound the same !*

**Reload:** Reload a preset to its original state (available only in the current DAW session & current instance of the plugin).

**Folder:** Choose the preset folder to display the presets in the preset box. (by default, the preset folder is “C:\ProgramData\Retornz\Tonez\factorypresets” (or directly in the .vst, .component for Mac OS or .vst3 plugins).

## 8.2 Waveforms Manager

ToneZ provides a full waveforms manager



### 8.2.1 Factory custom waveforms

Click on the presets (next to the waveforms visualizer to load a factory custom waveform into “Custom 1” and/or “Custom 2” slots of the oscillators.



In this example, “sonio” waveform was loaded into the “Custom 2” slot and can be used within any of the 4 oscillators.

**Open (.tzf):** Open a custom ToneZ waveform into Custom 1 or Custom 2 slot.

**Export (.tzf):** Export the current custom ToneZ waveform into a file.

*Note: When custom waveforms are used into presets, they are automatically saved within the .tzip2 file.*

## 8.2.2 ToneZ Waveform Creator

Create your own custom waveforms from your .wav files !

- 1) Open a .wav file
- 2) Adjust the size & starting point of the waveform
- 3) Convert the result to "Custom 1" or "Custom 2"

*Please note: The original .wav will not be saved into presets.*

## 8.3 Expert Detune

**Expert Detune:** Adjust the detune of the voices of all the oscillators, 2 by 2.

Try to tweak them on 8 voices supersaws to adjust the detune, learn from the presets – try with and without, experiment!

**Mix:** Adjust the blending of the central voice vs. the side voices.

## 8.4 Portamento

**ON/OFF:** By default ToneZ is in Polyphony Mode, there is no portamento and several notes can be played at the same time.

If turned to "ON", portamento is enabled and only one note can be heard at the same time.

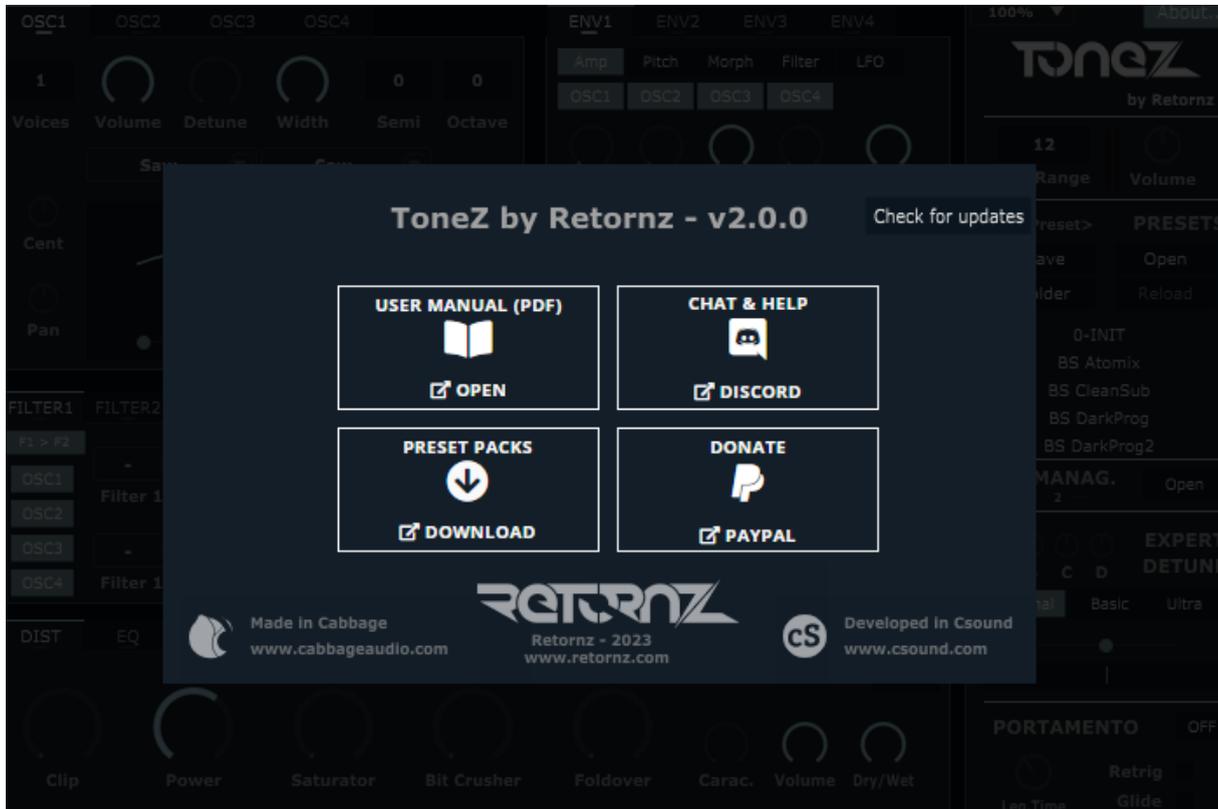
**Leg.Time:** Legato time, controls the speed of the portamento.

**Glide:** If enabled, when the portamento is enabled, the portamento will also affect notes that don't overlap.

**Retrig:** If enabled, when the portamento is enabled, envelopes will retrigger each time a new note is played. For a glissando effect, keep the option disabled.

## 9. About Tab

This view provides information and useful links within ToneZ.



**v2.0.0:** Version of ToneZ.

**Pro tip :** *you can click on it to enable the debug console, may be useful to report issues*

**Check for updates:** ToneZ update checker (online), click here to make sure you are using the latest version of ToneZ.

**User Manual:** ToneZ user manual (online), click here to open the latest version of this user manual.

**Chat & Help:** ToneZ Discord Server (online), click here to join a nice community that loves ToneZ, this is also the best place to get help with ToneZ, or to get in touch with ToneZ creator.

**Preset Packs:** ToneZ preset packs (online), click here view all the preset packs made by talented ToneZ users, if you made a preset pack for ToneZ, feel free to let us know on Discord for a chance to get featured on ToneZ webpage!

**Donate:** ToneZ donations (online), ToneZ is free for everyone, but if you feel like ToneZ deserves it and want to make a donation for it, just click here to go to the Paypal page where you can choose how much you want to donate for ToneZ :)