User Manual (EN)

Contents

Changelog

20/03/2019 – ToneZ v1.0

- Public release of ToneZ

1. Behind ToneZ

ToneZ is a free & open source synthesizer developed and designed by the French DJ/Composer [T0NIT0 RMX.](#)

The track "[Lost Legacy](#)", as well as the presets provided, 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, and Iain Mc Curdy for the audio plugin examples.

Thank you for using ToneZ!

Have fun & share it with your friends!

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2. Installation & DAW compatibility

2.1 Windows 64-bit - VST

To install ToneZ 64-bit VST[1], run the setup file and follow the wizard, you can choose the path where ToneZ 64-bit VST will be installed (default path is C:\Program Files\Steinberg\vstplugins\ToneZ)

2.1 DAW compatibility

ToneZ was tested in the following DAWs, if it works (or if you have issues) in other DAWs, let us know on Discord.

- **FL Studio**

    Known Issue: Weird noise during playback.
    Solution: Select "**Wrapper Settings > Processing**"
    Then and enable "**Use fixed size buffers** > **Process Maximum Size Buffers**".
    You only need to do this one single time; FL Studio will remember your choice for every other instances of ToneZ you will open in the future.
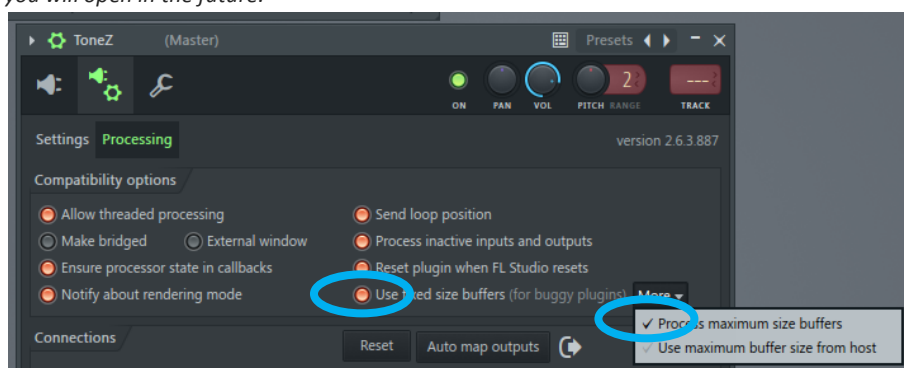
- **Ableton**

    100% working

- **Reaper**

    100% working

- **LMMS**

    Known Issue: Blinking Comboboxes when clicked.
    Solution: Don't click on the boxes, use instead the little knobs in the arrows of the boxes to change their content.

    Example of a combobox with the knob on arrow (on the right side):

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[1] VST is a trademark of Steinberg Media Technologies GmbH.

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.

Waveform selection boxes: The box on the left defines the main waveform of the oscillator, 8 different waveforms are available:

- Saw
- Sine
- Triangle
- Square
- Pulse
- 6 special waves
- White Noise

The box on the right defines the secondary waveform.

Morph: Morphing level between the two waveforms. (by default, Morph is at 0%, which means only the waveform of the left box is taken into account) (Note: White noise cannot be morphed)

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.

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 or filter cutoff. 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.

Amp, Pitch, Morph, Filter: 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: Attack time.

D: Decay time.

S: Sustain level.

R: Release time.

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.*

4.3 Morph envelope

In any of the 4 envelopes, if the "Morph" button is selected, the envelope will act as an 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.*

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)*

5. Filters

ToneZ provides 2 filter units.

Each unit provides 2 filter working in serial.

FILTER1, 2: Tabs to switch between filter units.

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

> → *If an "OSC" button is selected in both, FILTER1 & FILTER2 units it will go through Filter 1.1 > Filter 1.2 > Filter 2.1 > Filter 2.2*

Filter A: 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 filter cutoff, only the first filter of the selected filter unit will be affected.

Res: Controls the resonance of the filter

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

> *Ie: In the screenshot above "OSC1" and "OSC2" are enabled*
>
> → *OSC1 and OSC2 will be affected by FILTER1 unit:*
> *First: the signal will go through "Filter 1.1" (low pass in this case)*
> *Then: the output signal from the "Filter 1.1" will go through "Filter 1.2" (high pass in this case)*

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.

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.

Rate: Controls the speed of the LFO.

Amt: Controls the amount of the LFO applied.

7. Effects

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

7.1 Distortion

ON/OFF: Enable/Disable the effect.

Power: Distort the signal (powershape distorsion).

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.

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).

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.

Rate: Controls the speed of the chorus effect.

Depth: Controls the intensity of the chorus effect.

Offset: Controls the offset between the right and left stereo channel.
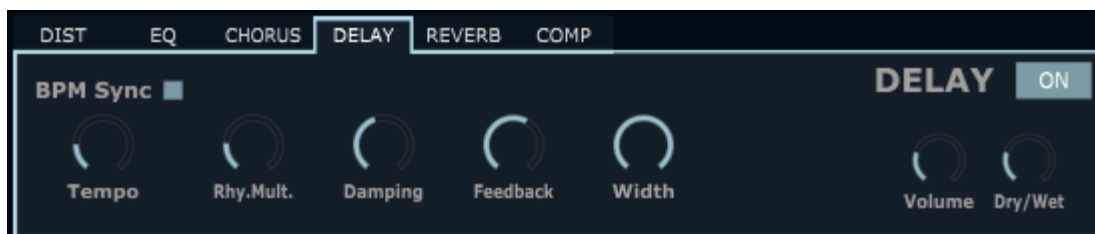
Width: Controls the stereo width of the chorus. Setting it to 0 will make the effect mono.

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).

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.

Mult: Tempo multiplier/divider

Damping: Controls the diffusion of high frequencies

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

LPF : Low pass filter of the reverberated signal

HPF : High pass filter of the reverberated signal

Volume: Controls the volume of the reverberated signal.

7.6 Compressor

ON/OFF: Enable/Disable the effect.

Threshold: Set the threshold of the compressor

Attack: Controls the attack of the compressor

Release: Controls the release of the compressor.
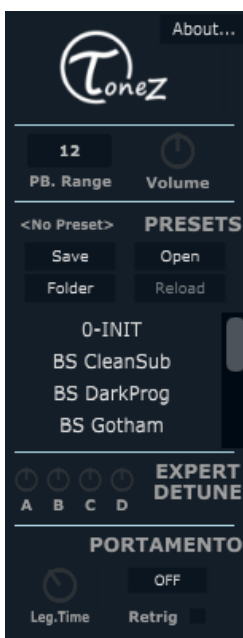
Ratio: Ration of the compressor.

Low Knee: Low knee of the compressor.

High Knee: High knee of the compressor.

Volume: Controls the volume 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 section

The part on the right of the synthesizer is the control section: it groups all the buttons/parameter that will affect the whole synth.

About: Open the "About" tab, where useful links are.

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

Volume: Master volume of the synth.

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!

8.1 Portamento

Poly/Mono: By default ToneZ is in Polyphony Mode (poly), there is no portamento and several notes can be played at the same time.
If turned to "Modo" mode, only one note can be played at the same time, and portamento is enabled.

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

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

8.2 Presets

ToneZ is provided with several 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 .tzp file (share this file to share the preset with others).

Open: Load a preset from a .tzp file.

Reload: Reload a preset to its original state (available only in your current DAW session)

Folder: Choose the preset folder to display the presets in the preset box. (by default, the preset folder is "C:\ProgramData\T0NIT0RMX\Tonez\presets"