

Steal this Waveshape! (Part 1)

One of the deepest and most versatile software synths available recently gained yet another source of powerful processing. As of the z3ta+ 1.5.1 revision, the results of the waveshaping transformations can now be exported as a .wav file. With it, you can create thousands of wavetable variations, for use within z3ta+ itself, or any number of other synths.

Initialize

Launch the z3ta+ Microhost. In order to clearly hear your transformation adjustments, it's not a bad idea to right click on the Program button (bottom right), and select "Initialize" from the resulting menu. It'll set up some base conditions as found in the default.fxp file under Presets.

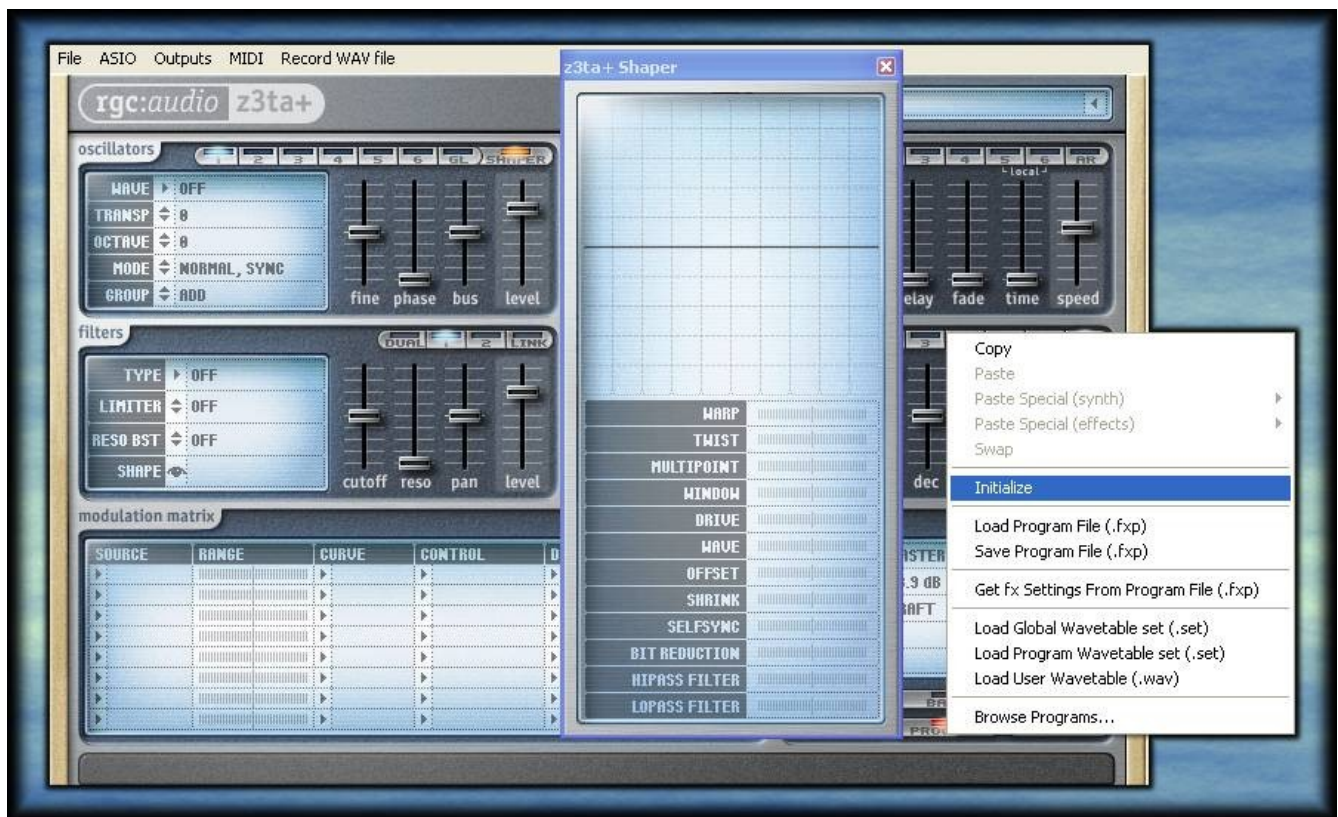


Illustration 1: Waveshaper & Program Initialization

Load a Target Oscillator

From the dropdown menu of "Wave", with Oscillator 1 selected, select one of the included wavetables. Click on the "Shaper" button (at the end of the Oscillator row) to have a look at what's been loaded.



Illustration 2: Loading an existing wavetable

Shaping

Start making some adjustments to the 14 transformations found in the Shaper window. (There's an excellent description of those processes on page 21 of the "z3ta+ User's Guide.pdf".)

The visual feedback is enough to create some exotic wavetables, or use the extensive MIDI Learn feature for some remote control programming.

When you're satisfied with the audible results, right-click on the display itself, and choose "Save Wavetable As ..."

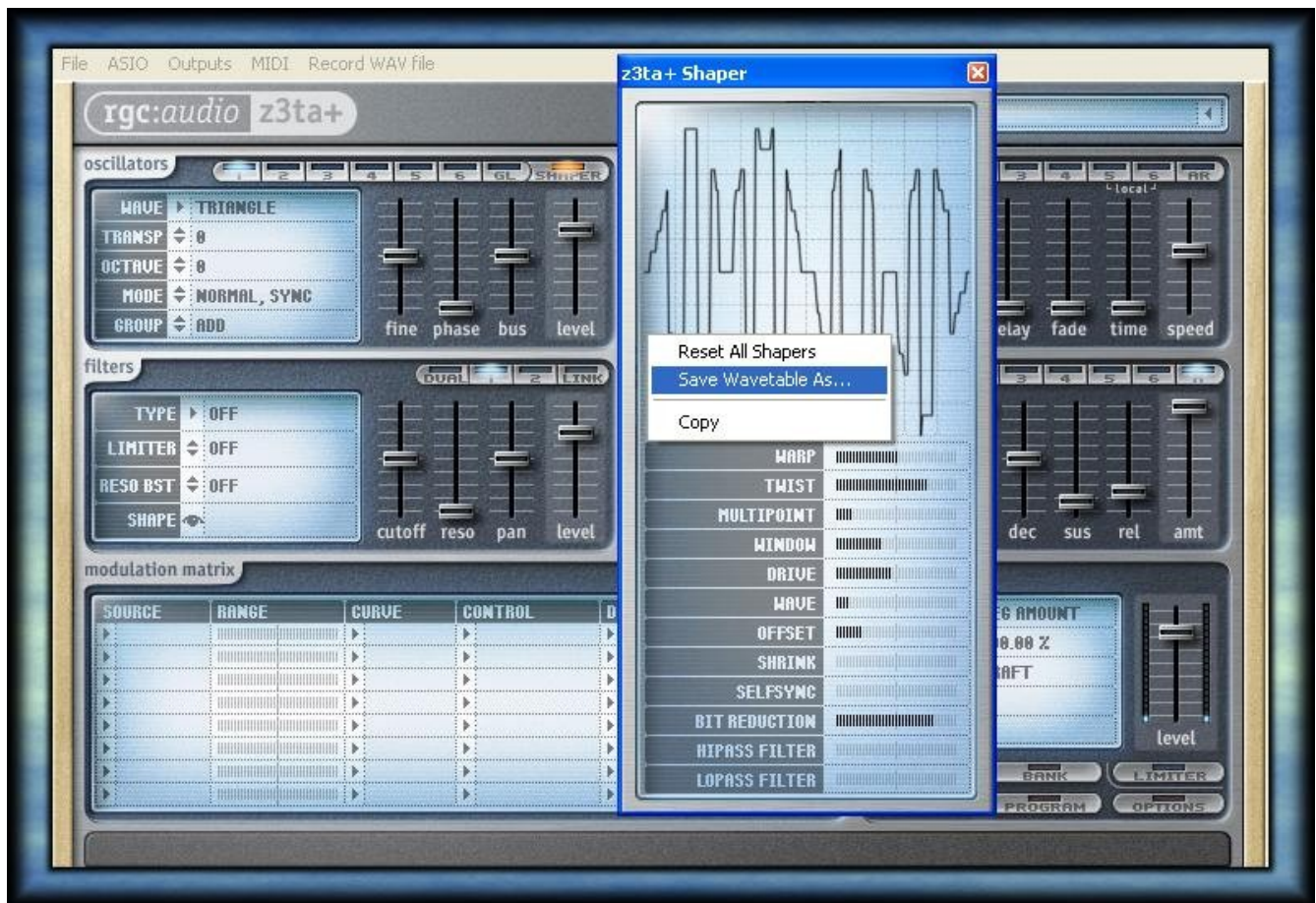


Illustration 3: Waveshaping adjustments and right-click, "Save Wavetable As"

Saving

The Save Wavetable dialog will bring you to z3ta+'s default Wavetables folder. Here, I chose the unused "user6.wav" for the file name.

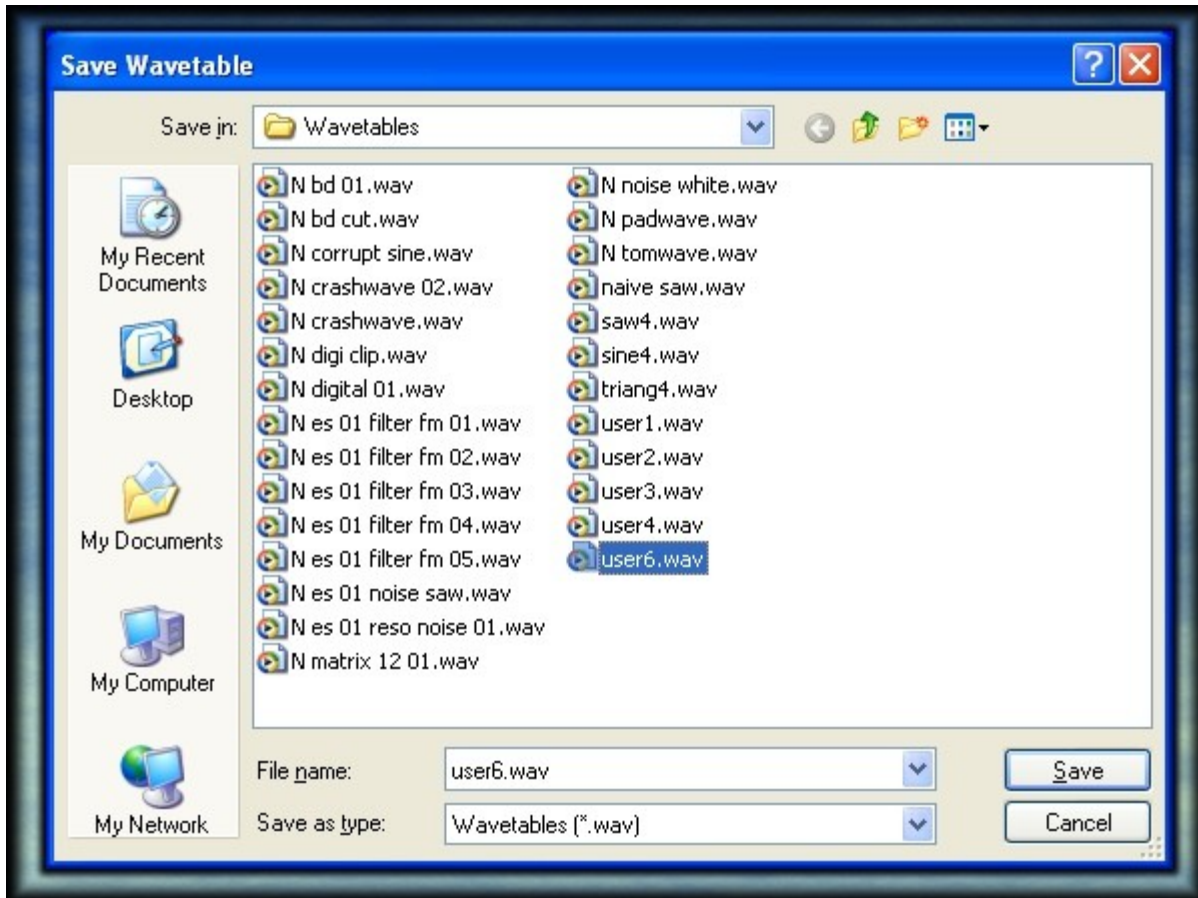


Illustration 4: Save Wavetable dialog box

Reload

Back under Oscillator 1, change the loaded Triangle wavetable to "User 6". At launch, it contained a sine waveform.

By right-clicking on the Program button, bring up that context menu again. This time, select "Load User Wavetable (.wav)".

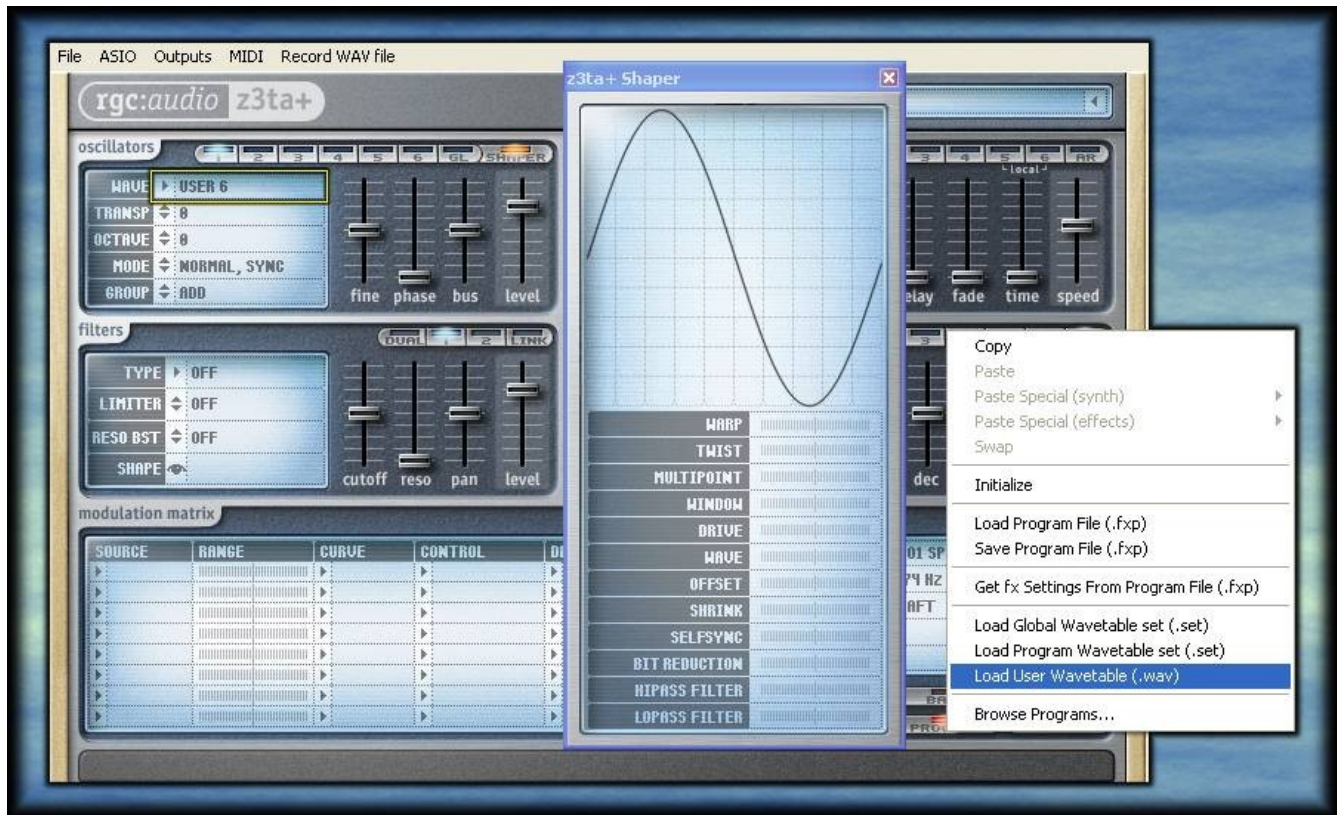


Illustration 5: Reloading the wavetable via right-click, "Load User Wavetable (.wav)"

Select the Saved Transformation

The Load Wavetable dialog will bring you right back to the same Wavetables folder. Select the freshly saved "user6.wav" file.

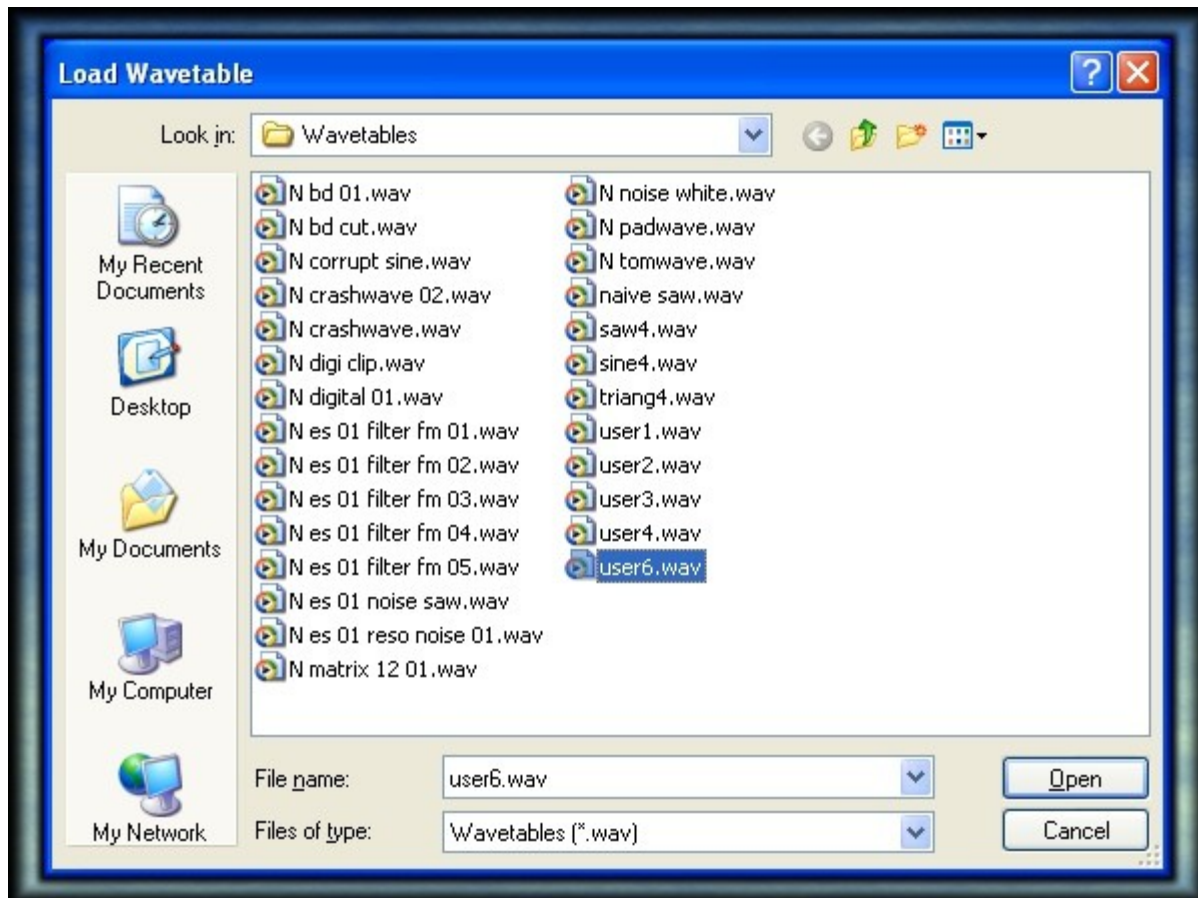


Illustration 6: Load Wavetable dialog box.

Transformed

Right-click in the Shaper display, and select "Reset All Shapers". Verify that this is what you intended to do in the next warning dialog.

You'll see that your previous transformations are all intact, and have been saved within the "user6" .wav file.

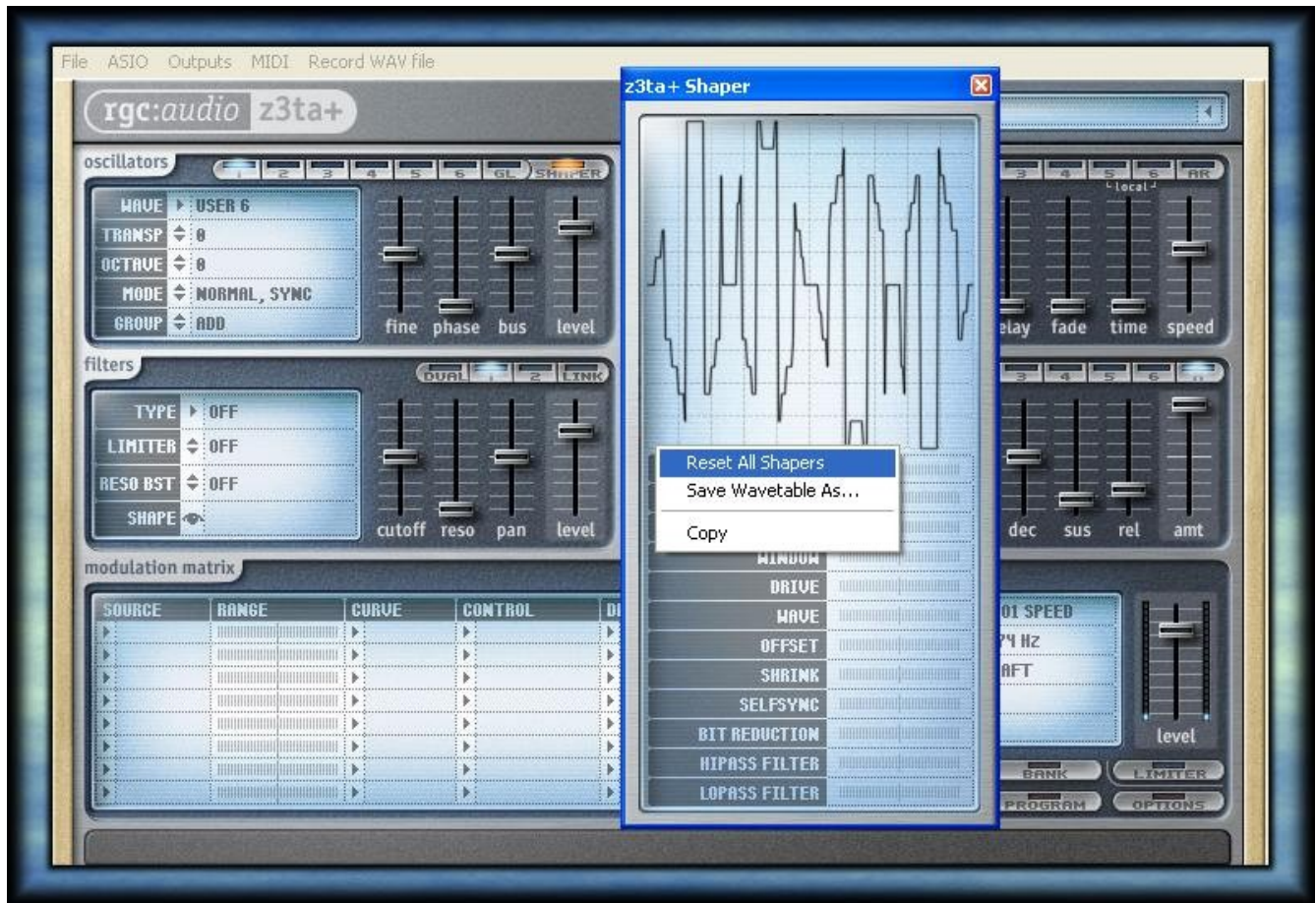


Illustration 7: Modified wavetable with all shapers reset.

Retransformed

Now, the transformations in the Shaper display are still available for further processing of the "user6.wav" file.

It can be modified continuously, saved as another .wav file, and brought back in again, for unlimited variations.

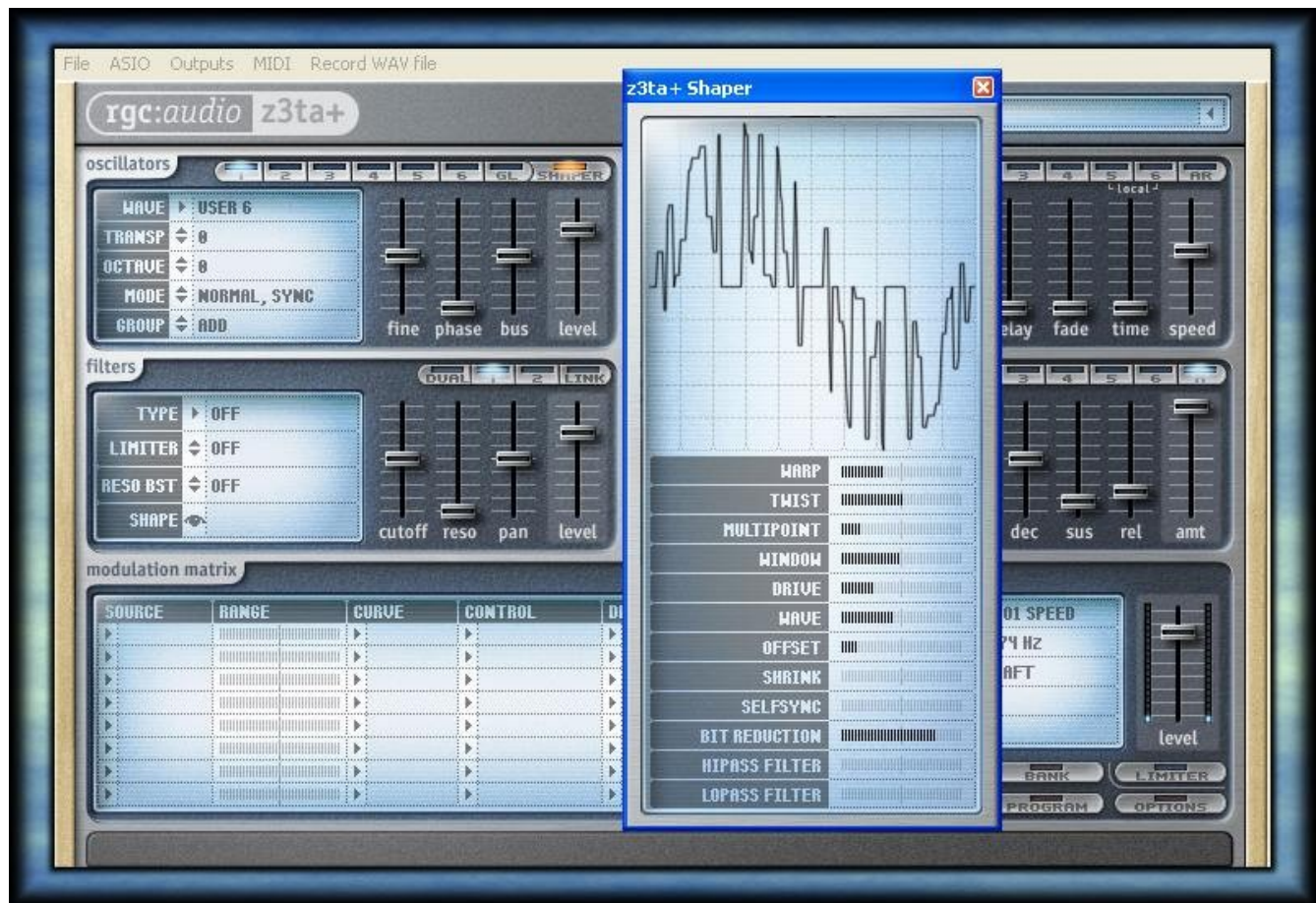


Illustration 8: Additional waveshaper processing.

Distribution

Beyond internal use for z3ta+, these same wavetables can be exported to many other synthesizers. Think of this new feature in z3ta+ as a wavetable generator with any number of outside uses.

In the next section, we'll explore a handful of potential uses within Cakewalk's [[Rapture]] synth.

b rock

Steal this Waveshape! (Part 2)

Steal This Waveshape (Part I) discussed how to use the waveshaper export feature found in z3ta+ 1.5.1 (and above).

But those files can be used in any number of synthesizers, from one of the Dimension 'flavors', to non-Cakewalk instruments; even to some hardware synths.

Here, we'll send the transformed wavetables to Rapture. These processed files can be pressed into service as multisamples, LFOs, and beyond.

Export

Take the processed wavetable found in Steal This Waveshape! (Part I), and once again, right-click on the Shaper display.

Select "Save Wavetable As ...", and navigate to the general location of Rapture's folders.



Illustration 9: Another right-click, "Save Wavetable As" operation.

Multisamples

Under Rapture's Multisamples folder, save the transformed file with a unique file name.

For clarity here (and to bring it near the top of this folder), I named it "000 - z3ta+ Waveshaper.wav".

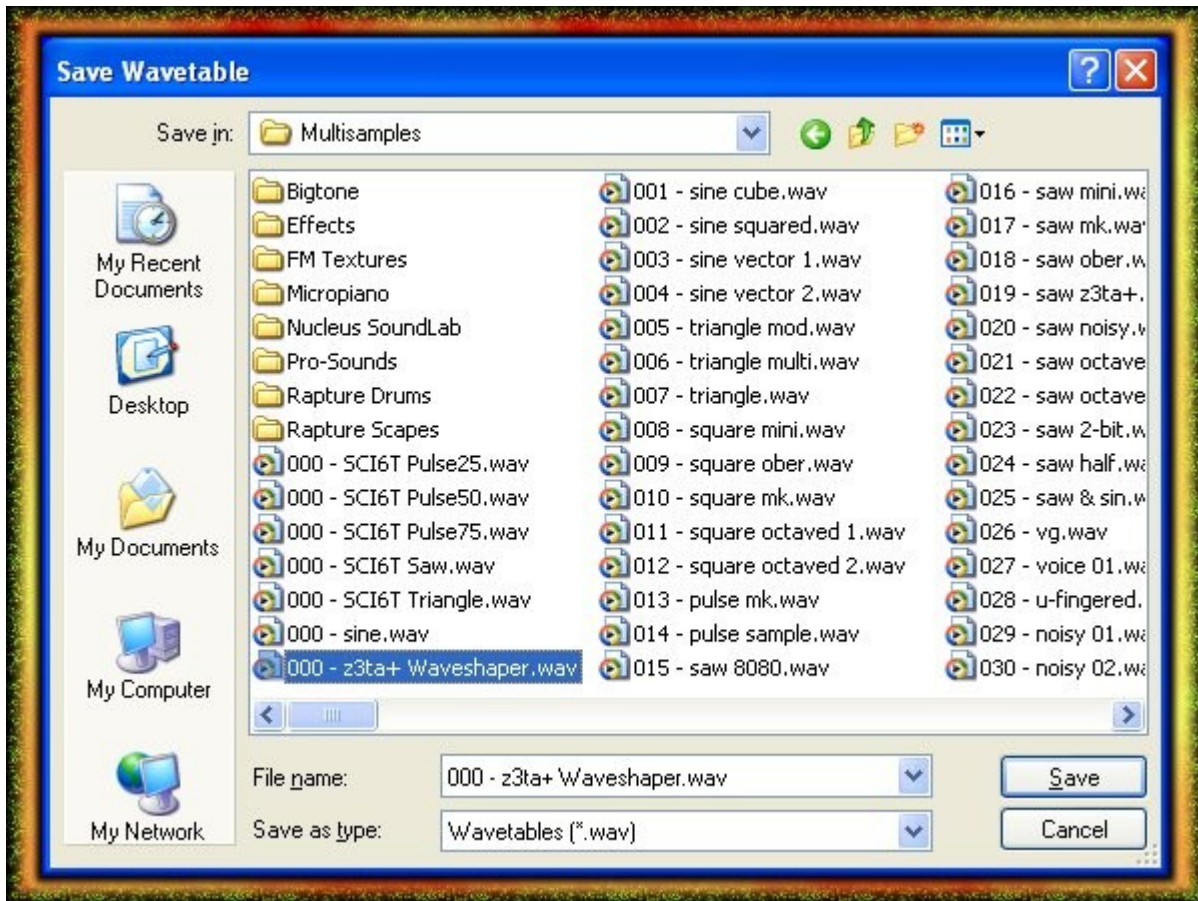


Illustration 10: Save Wavetable to Rapture's Multisamples folder.

LFO Waveforms

While you have z3ta+ open, right click a second time, and navigate to Rapture's LFO Waveforms folder.

You can create around 80 user-defined LFOs here, and they'll be available to use at Rapture's next launch.

There are several waveforms already residing in that folder, with the naming convention

["LfoWaveform"XXX".wav"].

Don't overwrite any of the existing waveforms. Here, I chose "LfoWaveform030.wav" to steer clear of those files.

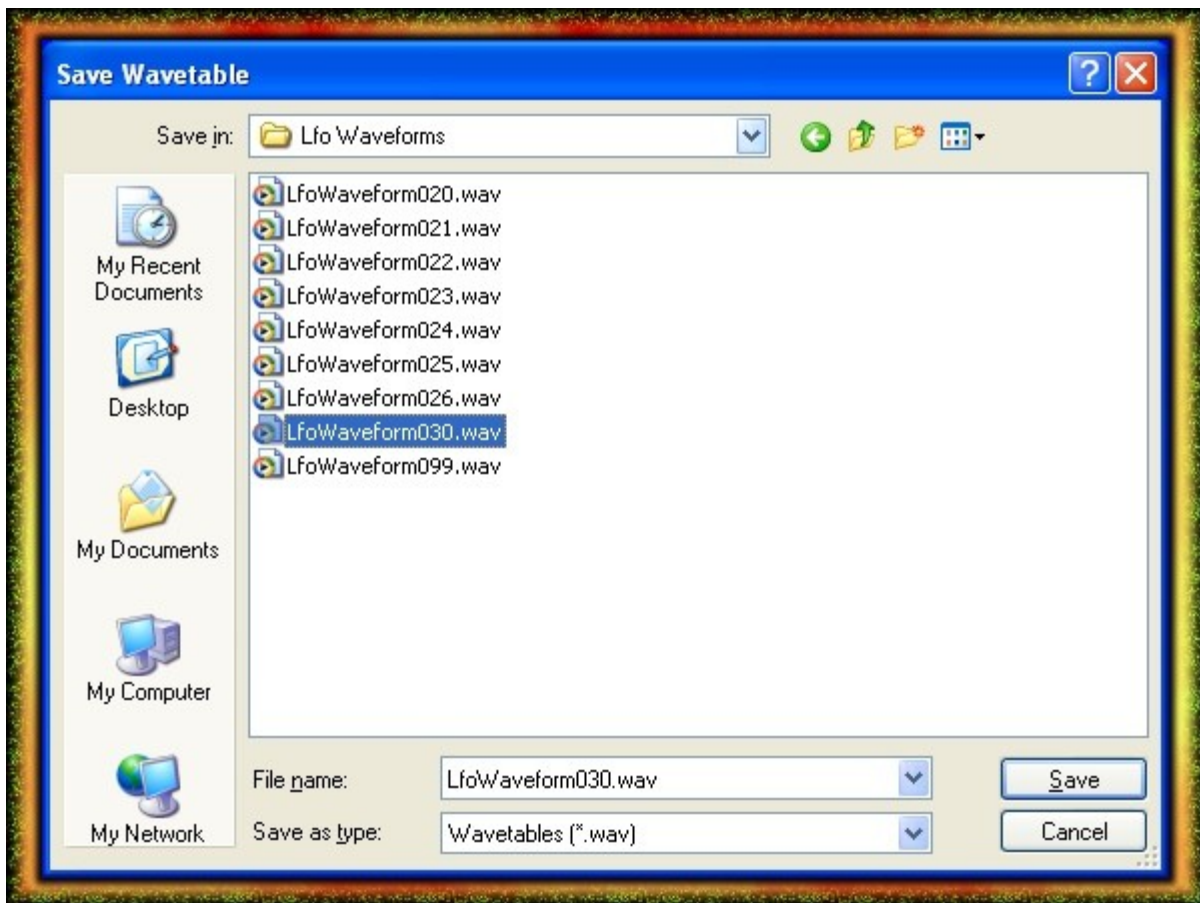


Illustration 11: Save Wavetable to Rapture's LFO Waveforms folder.

Two Loads

Below, the "000 - z3ta+ Waveshaper.wav" is brought in to Element 1 by invoking on the Load Multisample dialog.

It's also available to the LFO modulators under Waveform #30. Click on the Pitch LFO display to navigate to it.

The multisample (wavetable) itself has it's own characteristic sound before any further processing takes place.

The Pitch LFO shape is unusual. Here, it's set to a Status of On, a Freq of .50, and a shallow Depth of 5 cents.



Illustration 12: Loaded Multisample and user-defined LFO.

Copycat Elements

Right-click on "E1", then select Copy Element. On the "E2" button, right-click, and choose Paste Element.

In Element 2's Pitch LFO, set the Status to Off. You'll hear a thick, flanging/detuning sound as a result of the "E1/E2" differences.



Illustration 13: Pasted Element 2 with Pitch LFO Status disabled.

The First Cut

The LFO waveform is available to any modulator. In the image below, Cut 1's Waveform #30 is again displayed, but will remain unused.

Hold the Shift key, click on the LFO display, and drag the waveform about 180 degrees out of phase (or use the arrow keys).

In the Cut 1 step generator below it, set the Status to On, and dial in 128 Steps. Right-click on the step generator display.

From the context menu, select "Copy Shape From LFO". The transformed waveshape is impressed over the Steps; complete with it's phase offset position.

(Of course, don't forget to first select filters, set a filter routing, and adjust the Cutoff and Resonance knobs to taste.)



Illustration 14: Cut1 StepGen copied from LFO, with phase offset.

The Second Cut

If you don't need any phase offset adjustments for your transformed waveshape, you can take the direct route instead.

In Cut2, enable the step generator, and leave the Steps at the default number of 16. Right-click for the context menu.

Select "Extract Shape From Sample File." Once you've extracted a file, dragging out the number of Steps will reveal repetitions of that extracted shape.



Illustration 15: Cut2 StepGen with a repeating extracted waveshape.

Back Home Again

In all of these examples, we've used the same transformed file generated by z3ta+'s waveshaper.

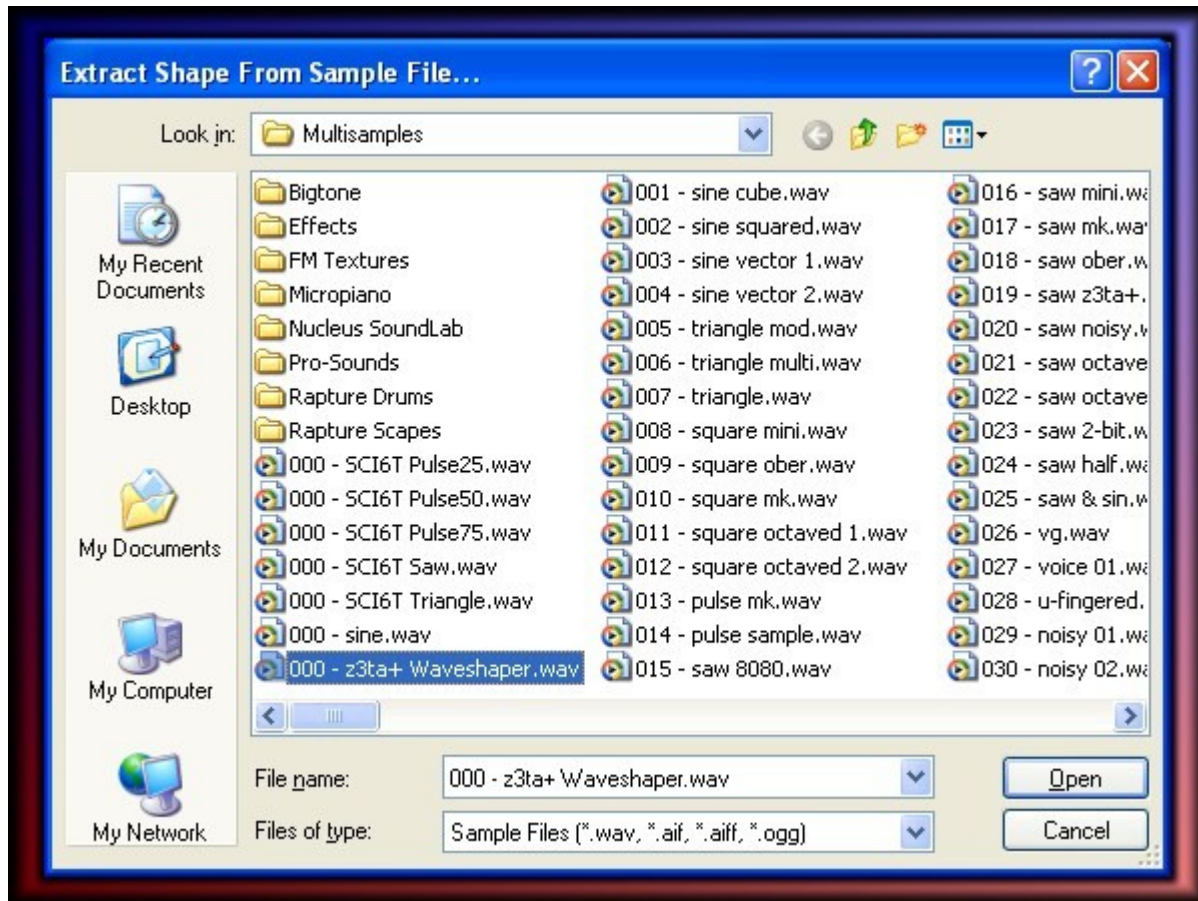


Illustration 16: Extract Shape From Sample File dialog box.

Creating Beyond z3ta+

By processing a variety of files, and copying/pasting between modulators & Elements, you can make quick work of patch programming.

Only one small feature added to z3ta+ 1.5.1, yet it's possible to build an unlimited array of jaw-dropping results from that simple addition.

- b rock