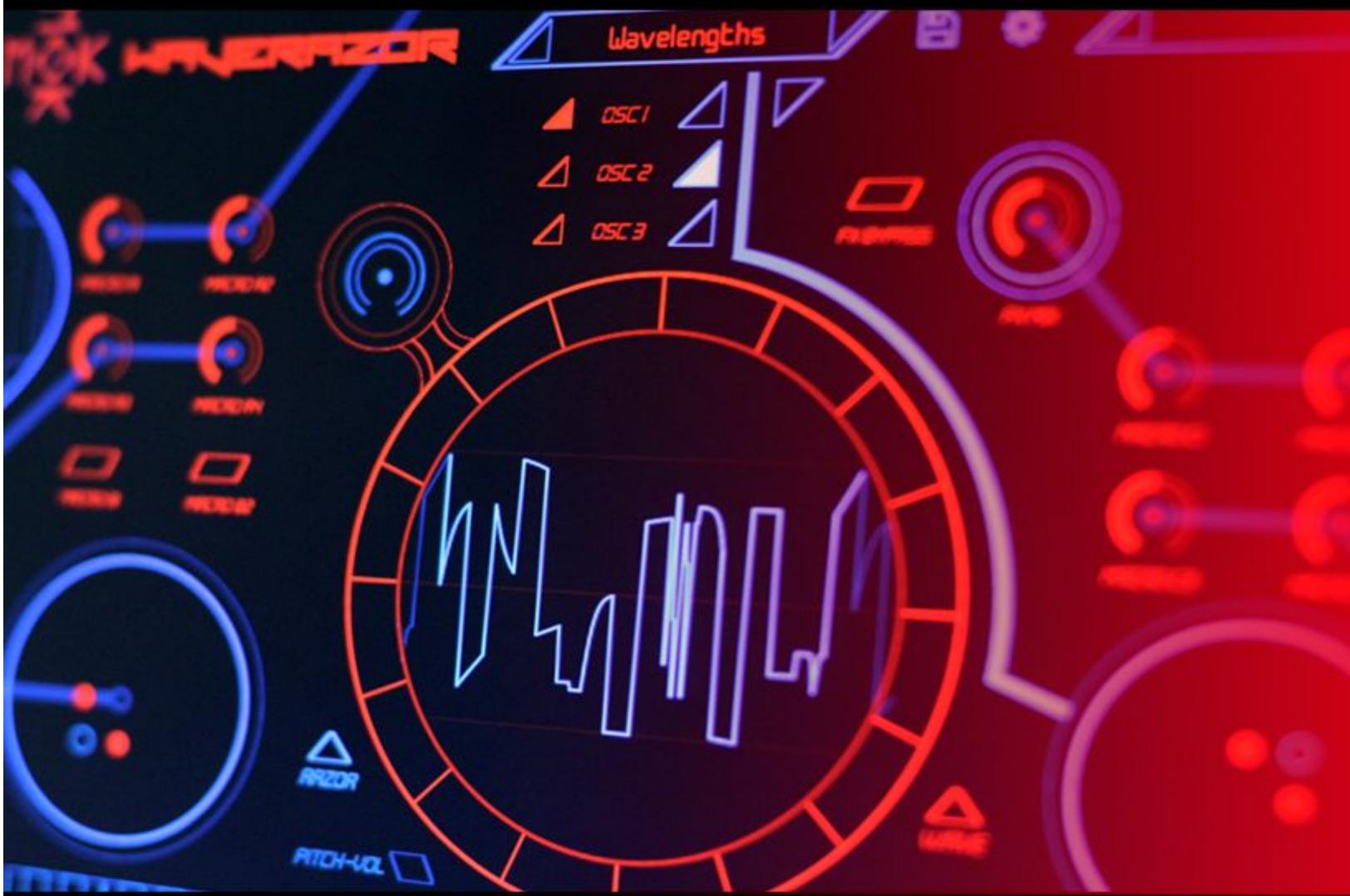




Waverazor Quick Start Guide v1.1

By Randy Lee



Welcome to Waverazor™!	3
System Specifications	3
Installation	4
Mac OS X	4
Windows	5
Registration	6
Main Performance Page	7
The Tool Bar	10
Patch Browser	10
Save	10
Settings	11
Arpeggiator Browser	12
Voice Counter / CPU Meter	12
Waveform Edit view	13
Waveform Shape and Variation	14
The Shape Browser	14
The Variation Browser	14
Waveform Pitch/Volume and Phase/DC Offset	15
The Pitch–Volume Button	15
The Phase–DC Button	16
Waverazor Project Credits	18

Welcome to Waverazor™!

Thank you for choosing MOK's flagship synthesizer, Waverazor! We are certain this instrument will provide an experience in synthesis unlike any you've ever had.

Here's a brief look at its unique features:

- Unparalleled waveform sculpting capabilities
- Oscilloscope mode with freeze and zoom functions for real-time visual feedback of waveform edits
- Three extremely versatile oscillators per voice
- Three simultaneous filters per voice (series or parallel)
- Innovative features such as Mutant AM and Multi-Sync
- Three independent effect sends/returns
- A powerful wave sequencer and arpeggiator
- Dual Vector Controllers with X/Y modulation capabilities
- MIDI-assignable macro and performance controls
- Operates in Windows and Macintosh platforms
- AU and VST compatibility

System Specifications

Macintosh: OS X 10.9 or higher (32- or 64-bit operation)

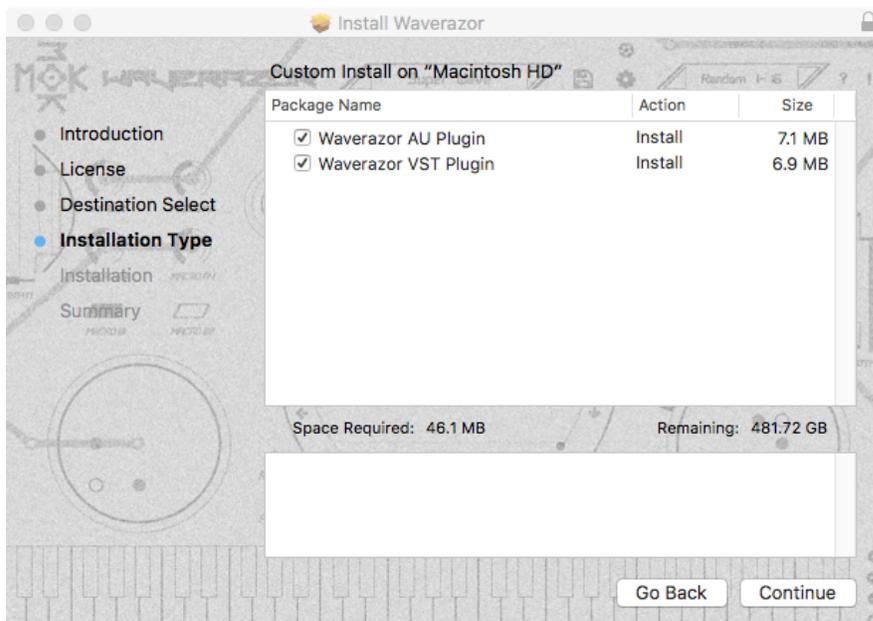
Windows: Windows 7 or higher (32- or 64-bit operation)

Installation

The Waverazor installer file is available for Mac OS X (.dmg) and Windows (.exe). Once you have downloaded and unzipped the installer file, follow these steps:

Mac OS X

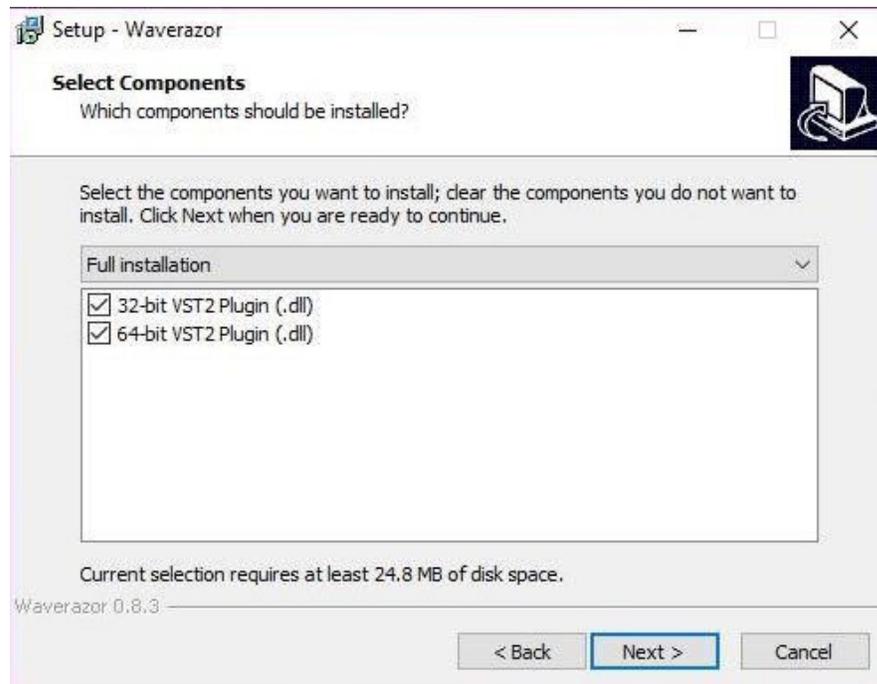
1. Double-click the .dmg file
2. Double-click the .pkg file
3. Accept the license terms and conditions
4. Choose the desired versions of Waverazor: AU and/or VST



5. Select destination location
6. Enter your password to authorize installation
7. Once the installation is complete, close the installation window.
8. Eject the .dmg file.

Windows

1. Double-click the .exe file
2. Accept the license terms and conditions
3. Select destination location



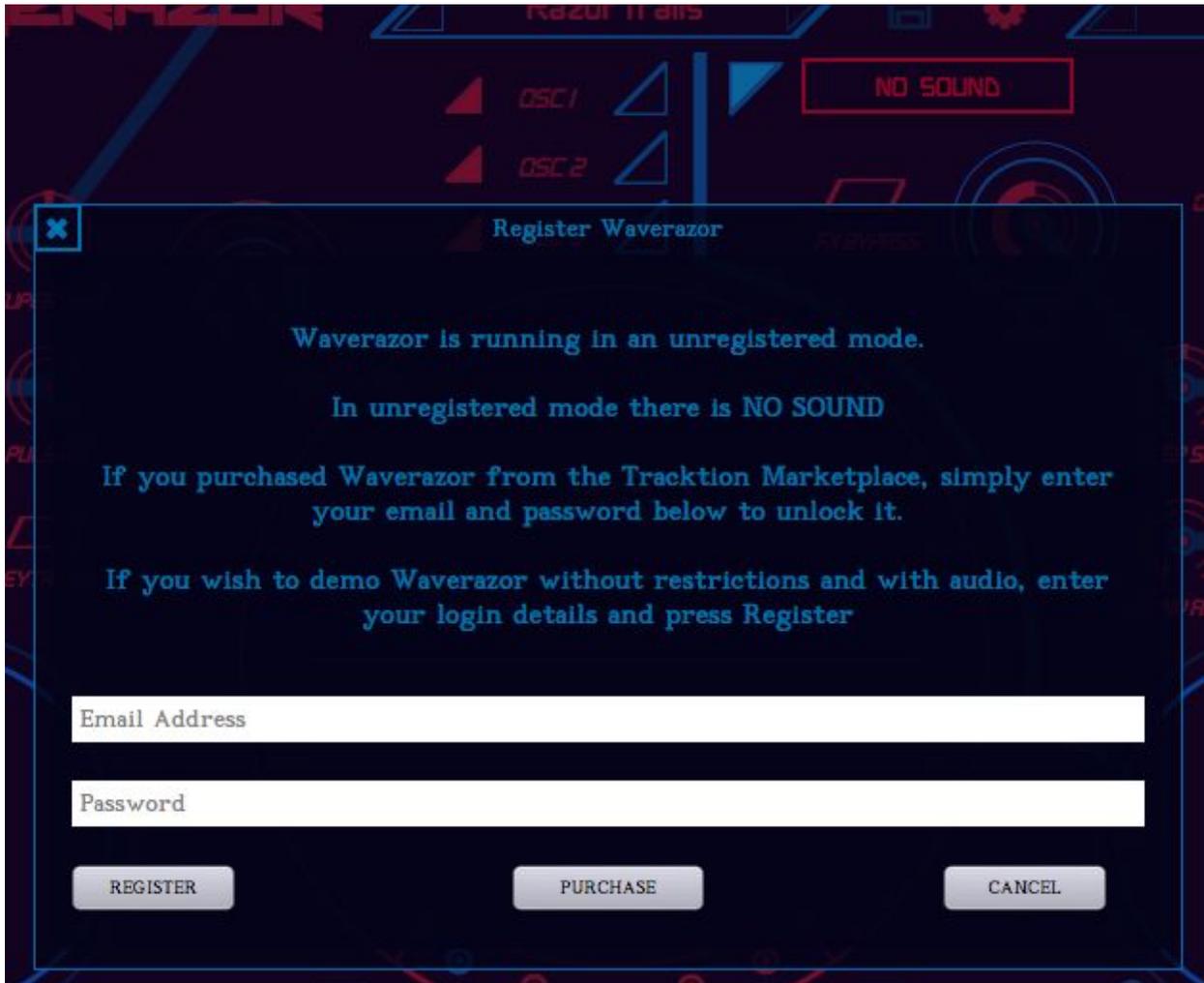
4. Confirm the file types to be installed
5. Confirm shared folder locations
6. Confirm program shortcut locations
7. Choose whether to create a desktop icon
8. Confirm all installation choices
9. Click Install.

Registration

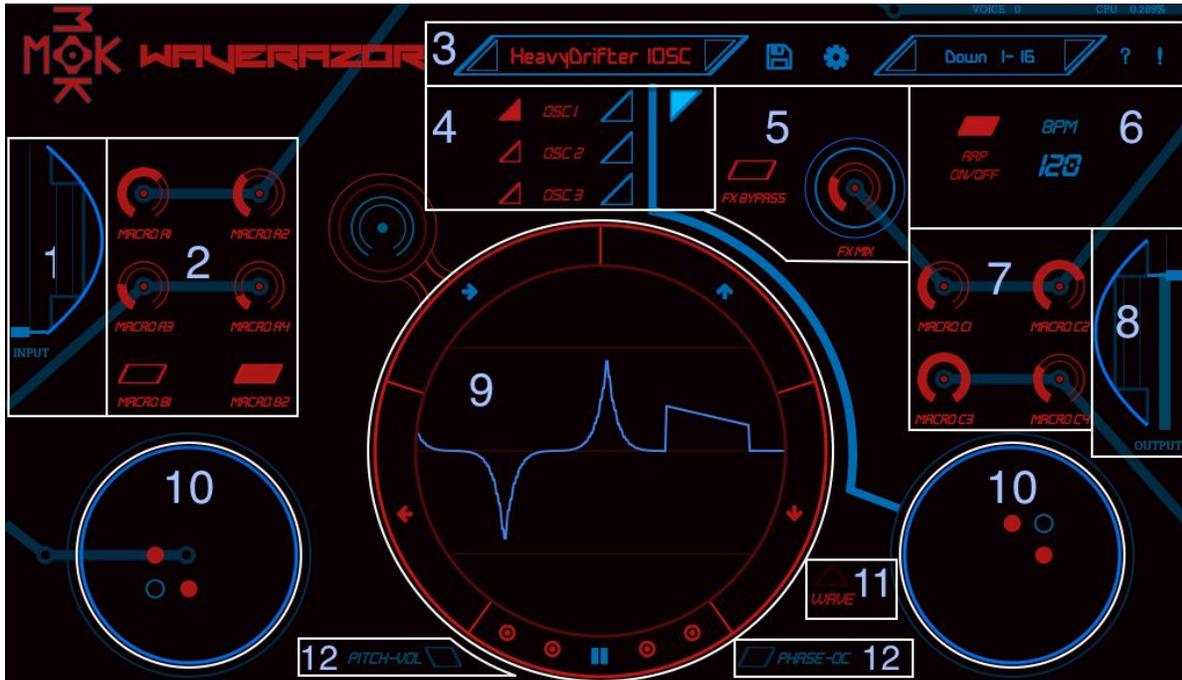
When you first open Waverazor, it will display "NO SOUND" on the Main UI screen beneath the Settings button (the "Gear" Icon).

If it is not registered, Waverazor will not make any sound. You will need to unlock Demo Mode, or register your purchase using your Traktion account login in order to use the plug-in. You can do this by pressing the "NO SOUND" button (or the Settings button), then the Register button, and then enter your login details in the fields provided.

Demo Mode allows complete functionality of Waverazor for 30 days. At the end of that period, you must purchase Waverazor if you wish to continue.



Main Performance Page



The Main Performance page opens when you start Waverazor. It contains the top-level, performance-oriented features plus the “gateway” features that access the editing parameters.

1	Input level	Controls the audio input level
2	Performance macro controls	Control sound parameters; functions/names may vary
3	Tool bar	Patch/arpeggiator browsers, Save mode, Settings, Help, Panic
4	Oscillator/oscilloscope selectors	Enable/disable oscillators, select Oscilloscope views
5	FX controls	Toggle FX on/off; control FX wet/dry balance
6	Arpeggiator/Tempo controls	Activate arpeggiator, set tempo value
7	Performance macro controls	Control sound parameters; functions/names may vary
8	Output level	Controls the audio output level
9	Oscilloscope	View and edit waveform output
10	Vector controls	Modulate and/or animate sound parameters
11	Wave mode button	Access/select the shape and variations of wave segments
12	Waveform edit buttons	Access/edit pitch, volume, phase & DC offset of wave segments

1. Input level

Click this fader to control the audio input level. Ctrl-click to reset the fader (Cmd+click on Mac).

2. Performance Macro controls

The knobs and buttons control sound parameters. These can be single parameters or macros. The assignments and labels are determined by the sound designers, so their functions and names may vary from one patch to another. They are also MIDI-assignable.

3. Tool bar

Select patches or arpeggiator patterns by clicking within the large rectangular fields or using the left/right buttons on either side of the fields. The floppy disc icon activates Save mode, while the gear icon will open the Settings window. The question mark icon opens this manual, and the exclamation point sends an All Notes Off command to all active Waverazor voices.

4. Oscillator/oscilloscope selectors

The red triangles mute and unmute the oscillators, while the three blue triangles select an oscillator for editing and then show a static waveform so you can see what you're doing. The single blue triangle on the right is used to exit the waveform editing mode and return to Oscilloscope mode.

5. FX controls

This area has the top-level, basic controls for the effects section. The Bypass button will toggle all three effects sends on and off, and the Effects Mix knob controls the balance between the effects and the dry signal.

6. Arpeggiator section

The Arp On/Off button enables and disables the arpeggiator, which can then be triggered by an incoming MIDI note. The BPM field displays the tempo value and also allows you to enter a new one: simply click the number and drag it up or down, or double-click the field to type in a number between 1 and 480 beats per minute.

7. Performance Macro controls

These knobs also control sound parameters. They can be assigned to single parameters or macros. The assignments and labels are determined by the sound designers, so their functions and names may vary from one patch to another. All of these features can be controlled via MIDI.

8. Output level

This fader controls the audio output level. Ctrl-click to reset the fader (Cmd+click on Mac).

9. Oscilloscope

At the top level the Oscilloscope shows how the various oscillator parameters affect the main output waveform. The buttons around the ring partitions allow you to “freeze” and zoom in or out on the waveform. The four circles on either side of the “pause” button access different oscilloscope trigger modes (how it synchronizes with the audio).

The two smaller blue buttons access the waveform edit view for each oscillator. In this mode the ring buttons can select a segment for editing, allowing you to edit pitch/volume and phase/DC offset per segment. You can also select the wave shape per segment.

The single blue button returns to Oscilloscope mode, with its realtime view of the main output.

10. Vector controls

Click and drag the blue vector dot to modulate sound parameters. The controllers are MIDI-assignable, so your DAW can record and play back their actions.

11. Wave mode button

Use one of the blue oscillator view buttons to activate the Wave mode button. This allows you to select the shape and variation for each of the waveform segments. Use the partitions around the ring to select between the waveform segments.

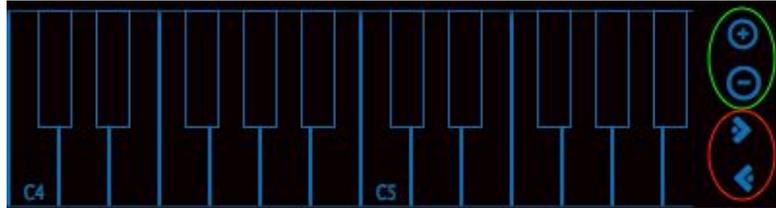
12. Waveform edit buttons

Use one of the blue oscillator view buttons to activate the Waveform edit buttons. From here you can select between Pitch – Volume X/Y editing or Phase – DC Offset X/Y editing of the

waveform segments. Use the partitions inside the ring to select between the waveform segments.

13. Keyboard

Use the cursor to trigger notes on the virtual keyboard. The +/- buttons zoom the visible keyboard range; the left/right arrows shift the keyboard range.

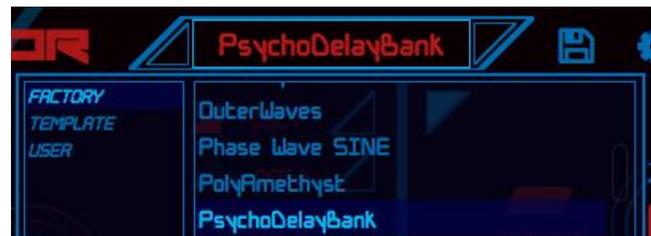


The Tool Bar

Patch Browser

Click the Patch name field to open and close the Patch browser window. This reveals a scrollable list of patch names from which you can select a new patch.

Use the categories on the left side of the patch name list to specify the sound bank.



You can also click the arrows on either side of the patch name to select another patch. The arrows are MIDI-assignable.

Save

Click the floppy disc icon to open the Save menu. You can save the edited patch on top of itself or use the Save As function to give it another name.

The functions of the save menu are:



SAVE: This is only available for USER bank patches, as Factory Presets cannot be overwritten. This saves a patch in place.

SAVE AS: It is always possible to save the current patch state as a new User Patch in the User Bank.

RENAME: This menu item is only available for USER bank patches. It allows you to change the name of the patch.

DELETE: This menu item is only available for USER bank patches. This erases the selected patch from the USER bank.

IMPORT: This menu item is always available. It allows you to open a .wraz file from the disk and imports it into the USER bank.

EXPORT: This menu item is always available. It allows you to save the current patch to a location on your disk as a .wraz file.



Settings

Click the gear icon to open the Settings window. You'll use this to register your copy of Waverazor. This is also where you'll select the language and theme for the user interface. (Sanskrit is one of our favorites, though Klingon is pretty cool too.)

You can also set the maximum allowable number of voices in the Num Voices field. The Voice Buffer field allows you to find the balance between Waverazor functionality and CPU load that

suits your working style.

Arpeggiator Browser

Click the Arpeggiator name field to open the Arpeggiator browser window. This reveals a scrollable list of arpeggio patterns from which you can select a new arpeggiation pattern.

You can also click the MIDI-assignable arrows on either side of the pattern name to select a different pattern.



Voice Counter / CPU Meter

Above the Arpeggiator browser in the Tool bar are a couple of meters that indicate the number of active voices and the current CPU load.



Waveform Edit view

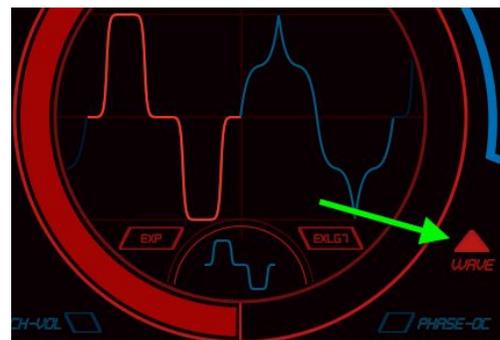
The three triangular blue buttons are used to enter Waveform Edit view. This is where you will select the waveform shape, phase, pitch (frequency), and other parameters that determine the output of each oscillator.

As we go through the examples on the next few pages we will use the preset “Biodiversity”. Use the Patch browser window to find that preset and then click the first of the three blue buttons to select oscillator 1.

The graphic on the right shows two partitions inside the ring around the waveform, but there can be as many as sixteen. They are used to select the waveform segment you want to edit.

Click the segment on the left. A portion of the waveform will turn red to indicate which segment we will be editing in the next few examples.

Next, click the triangular red button labeled “Wave”. Two smaller browser windows will appear beneath the waveform: in the Biodiversity preset they will show the terms “EXP” and “EXLG7”, as pictured. You will use these browsers to choose the waveform shape and variation for the selected segment of the waveform.



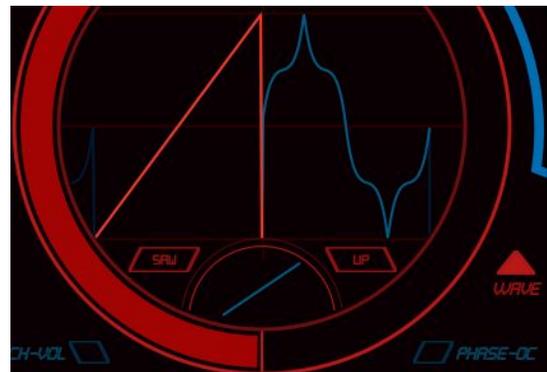
Waveform Shape and Variation

The *Shape* Browser

Click the small browser window on the left side within the Waveform Edit view. This will reveal a list of available waveforms for the selected waveform segment.



Select the Saw shape with the cursor for this example. The waveform of the selected segment will change.



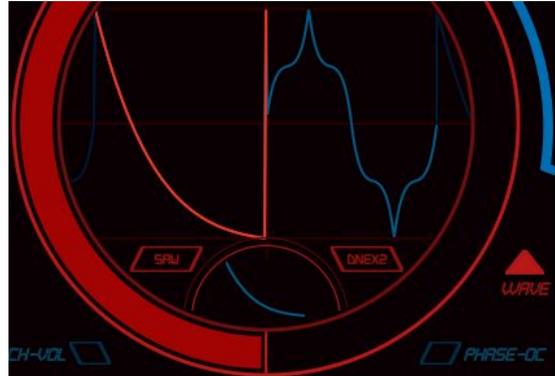
The *Variation* Browser

Click the mini-browser window on the right side within the waveform window. This will reveal a list of variations for the selected waveform segment.

We've circled the selection we will make for this example (DNEX2, or "Downward Exponential 2").



After the selection is made the variation will be applied to the waveform of the selected segment and the mini-browser window will close.



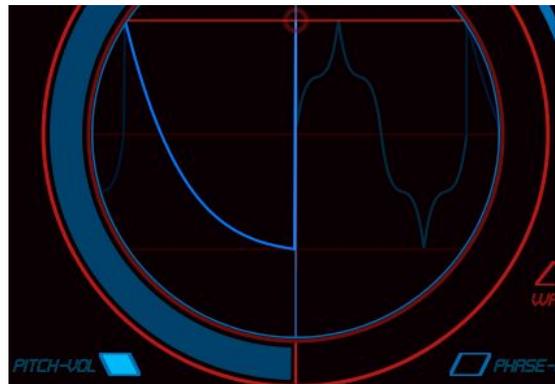
Waveform Pitch/Volume and Phase/DC Offset

The Waveform Edit view is also where you can edit the pitch (frequency) and other aspects of the selected waveform segment.

We will continue editing oscillator 1 from the “Biodiversity” preset.

The *Pitch-Volume* Button

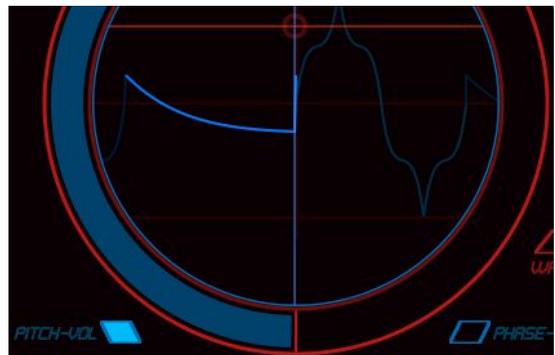
Click the *Pitch-Vol* button. This configures the X/Y grid with Pitch on the X axis (horizontal) and Volume on the Y axis (vertical).



Edit the Volume

Click the small red ring and drag it downward (i.e., along the Y axis). This will reduce the output level of the selected waveform segment until the edit control reaches the center point of the Y axis.

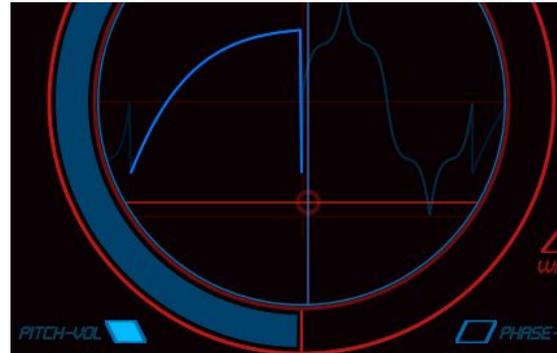
The center point results in no output, and as the red ring crosses center the waveform segment phase will be inverted. As you drag the red ring downward its



output level will increase again.

Since the DNEX2 waveform variation began as a negative-going waveform, then as the red ring continues to move below the center point the graphic will show a positive-going waveform instead.

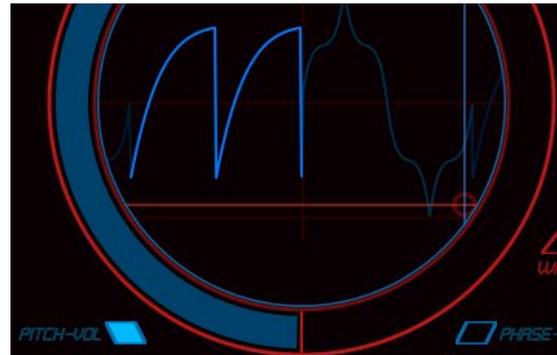
Note: You can also click and drag on the red or blue crosshair lines to only affect a single axis.



Edit the Pitch

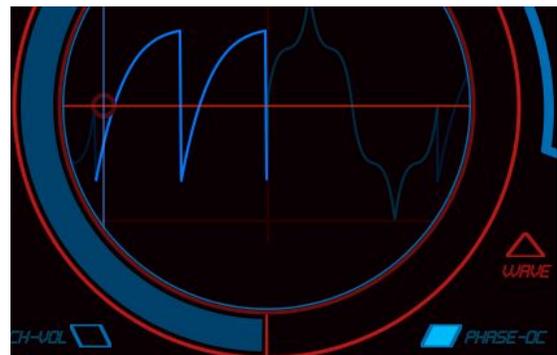
Click the small red ring (or the blue line) and drag it directly to the right (i.e., along the X axis).

The pitch (frequency) of the selected waveform segment will be altered without changing any other aspect of the waveform.



The *Phase-DC* Button

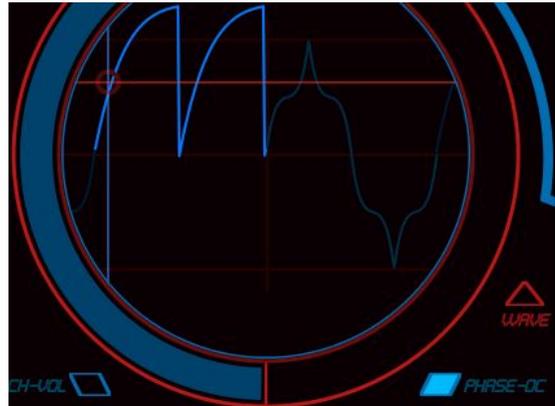
Click the *Phase-DC* button. The X/Y grid will be configured with Phase on the X axis (horizontal) and DC Offset on the Y axis (vertical).



Edit the DC Offset

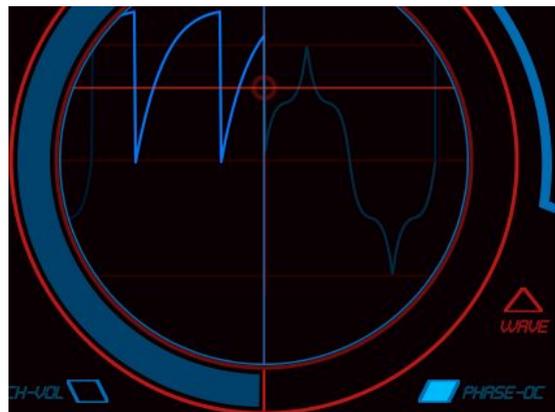
Click the small red ring (or the red line) and drag it directly upward (i.e., along the Y axis).

An offset will be applied to the selected waveform segment without changing any other aspect of the waveform.

**Edit the Phase**

Click the small red ring (or the blue line) and drag it directly to the right (i.e., along the X axis).

The phase of the selected waveform segment will be altered without changing any other aspect of the waveform.



Waverazor Project Credits

MOK

- Rob Rampley : Application and DSP Algorithm Design
- Taiho Yamada : Product Design, Sound Design
- Chris Compton : Online Systems Architect

Tracktion

- Distribution and Marketing support.
- Thank you to James “Woody” Woodburn, Dave Christenson, Dave Rowland and Brian Rink.

Tropical Media Labs

- Daniel Alflatt : Director of Product Testing
- Komang Priatna Suardi : Product testing and Indonesian translation

Additional Credits

- Amplify Marketing : Product Messaging, Press Releases, Web Copy
- Randy Lee : Manual and Quick Start Guide
- Patrice Tarabbia : Big Tick Software / Zen Database API
- Yasuo Matsunaka : Japanese marketing and translation
- Wolfram Franke : Coding support and German translation
- musiXboy : Chinese translation
- Dmitry Larionov : Russian translation

TRACKTION SOFTWARE CORPORATION END USER LICENSE AGREEMENT

Media Overkill (aka MOK) Waverazor Synthesizer

By clicking on the "I Accept" button, installing, copying or otherwise using the Software, **You agree to be bound by the terms of this License Agreement.** The terms also apply to any Software updates, supplements, and support services provided by TSC or MOK. **If You do not agree to the terms of this License Agreement, click on the "I Do Not Accept" button and/or do not install the Software.**

1. Definitions. "TSC" means Tracktion Software Corporation and any third party licensor of software bundled with TSC products. "MOK" means Media Overkill, LLC. "Software" means (a) Media Overkill Waverazor Synthesizer and all supplements or upgrades, and (b) any third party software or sound libraries bundled with a TSC product and all supplements and upgrades thereof. "You" means the end user of the Software and, if the end user is an entity, all of its employees, agents and independent contractors.

2. License. You are granted the following personal, nonexclusive, nontransferable, limited license:

(a) **YOU MAY:** (1) use the Software on a maximum of two computers; (2) physically transfer the Software from one device to another provided that (i) the Software is used on no more than two devices at a time and that You remove any copies of the Software from the device(s) from which the Software is being transferred, and (ii) the transfer is not for the purpose of sharing this license between devices; and (3) install another copy of the Software in the event that the first Software installation is unusable.

(b) **YOU MAY NOT:** (a) distribute copies of the Software or the documentation to others; (b) modify, rent, lease or grant sublicenses or other rights to the Software; (c) use the Software in a computer service business, network, time-sharing, multiple CPU or multiple user arrangement without the prior written consent of TSC or MOK; (d) work around any technical limitations in the Software; (e) make more copies of the Software than permitted by this agreement; (f) publish the Software for others to copy, or (g) reverse engineer, disassemble, compile, modify, translate, or otherwise alter the Software in whole or in part.

2. Title to Intellectual Property. The Software is licensed to You, not sold. MOK retains title and ownership of the Software and documentation, including all intellectual property and usage rights. ALL RIGHTS NOT EXPRESSLY GRANTED HEREIN ARE RESERVED TO TSC AND MOK.

3. Limited Warranty. TSC warrants that the media on which the Software is furnished will be free from defects in materials and workmanship under normal use for a period of ninety days from the date of purchase or, in the case of supplements or upgrades, delivery. If a defect appears during the warranty period, return the medium containing the Software to TSC, and You will receive a free replacement. This Limited Warranty is void if failure of the Software has resulted from accident, abuse, or misapplication. Any replacement Software will be warranted for the remainder of the original warranty period. The foregoing is Your sole and exclusive remedy for breach of warranty. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY BY JURISDICTION.

4. Exclusions From Warranty. This warranty does not cover problems caused by Your acts (or failures to act), the acts of others, or events beyond TSC's reasonable control.

5. No Other Warranties. The limited warranty set forth above is the only warranty provided by TSC. TSC AND MOK DO NOT WARRANT THAT THE SOFTWARE WILL MEET YOUR REQUIREMENTS OR IS ERROR FREE. TSC AND MOK DISCLAIM ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT OF THIRD PARTY RIGHTS WITH RESPECT TO THE SOFTWARE. If Your local laws give You any implied warranties, guarantees or conditions, despite this exclusion, Your remedies are described in the Limited

Warranty clause above, to the extent permitted by Your local laws.

6. Limitation of Liability. IN NO EVENT SHALL TSC OR MOK BE LIABLE TO YOU FOR ANY LOST PROFITS, CONSEQUENTIAL, SPECIAL, INCIDENTAL OR INDIRECT DAMAGES OF ANY KIND ARISING OUT OF THE USE OF THE SOFTWARE, EVEN IF TSC OR MOK HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. TSC'S AND MOK'S LIABILITY FOR ANY CLAIM, LOSSES, DAMAGES OR INJURY, WHETHER CAUSED BY BREACH OF CONTRACT, TORT OR ANY OTHER THEORY OF LIABILITY, SHALL NOT EXCEED THE AMOUNT YOU PAID FOR THE SOFTWARE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSIONS MAY NOT APPLY TO YOU.

7. Term. This Agreement is effective until terminated. You may terminate this Agreement at any time by uninstalling the Software together with destroying all copies of the Software in any form. This Agreement, including the license to use the Software, will terminate automatically if You fail to comply with any of its terms or conditions.

8. Upgrades and Supplements. TSC or MOK may, at its discretion, release upgrades or supplements to the Software. TSC and MOK have no obligation to offer upgrades or supplements to any end user of the Software.

9. Export. You shall comply with all laws, regulations, rules and requirements relating to the import, export, or re-export of the Software, documentation or any other items subject to this Agreement (including, but not limited to, the requirements under the U.S. Export Administration Act, Regulations of the Department of Commerce or its successors, executive orders, and other export controls of the United States of America). You shall not export or re-export, or authorize or permit the export or re-export of, any such items to any country to which export or re-export of the Software is prohibited without first obtaining the permission of the United States Department of Commerce, Bureau of Export Administration or its successor.

10. Assignment, Successors. No right or license under this Agreement may be assigned or transferred by You, nor may any duty be delegated by You without Licensor's prior written consent. Any assignment, transfer or delegation in contradiction of this provision shall be null and void. Subject to the foregoing, this Agreement will bind and inure to the benefit of the successors and assigns of You, TSC and MOK.

11. Governing Law and Severability. This Agreement will be governed by the laws of the State of Washington and will be interpreted as if the agreement were made between Washington residents and performed entirely within Washington. For purposes of this Agreement, the United Nations Convention on the International Sale of Goods shall not be considered as a part of the law of the State of Washington and shall not be applicable to this Agreement. If for any reason a court finds any provision of this License unenforceable, that provision will be enforced to the maximum extent possible, and the remainder of the License shall continue in full force and effect.

12. Entire Agreement. This is the entire agreement between You and TSC/MOK and supersedes any prior agreement, whether written or oral, relating to the subject matter of this Agreement. No amendment or modification of this agreement will be binding unless in writing and signed by a duly authorized representative of TSC or MOK.

Media Overkill, MOK and Waverazor are trademarks of Media Overkill, LLC.

Specifications subject to change without notice.