

Synthetic

User Manual



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Thank You for using Synthetic!

Features Of Synthetic:

- **4 oscillators**- There are two groups of two oscillators, each oscillator has 7 different wave forms: Sine, Saw, Triangle, Square, Noise, Supersaw, Tri-Sine. Also, each group has it's own filter and amp envelope, which makes it perfect for layering.
- **Built in effects**- Reverb, Ping-Pong Delay, Chorus, Distortion, and a Stereoizer; All of the essential effects to make some cool sounds.
- **Trancegate**- Synthetic contains a 16 step stereo trancegate with adjustable contour.
- **Parameter Modulation**- Modulate 20+ different parameters with two LFOs & four envelopes.
- **MIDI Learning**- Easily link your MIDI hardware to Synthetic with just a few clicks.
- **Voice Control**- Control how many voices you want from 1, 4, 8, 12, or 16.
- **Sounds Included**- Synthetic comes preloaded with 128 presets! Including Basses, Leads, Pads, Strings, & more.
- **It's Easy to Use!**- A simple layout provides a much more user friendly experience!
- **It's Affordable!**- Synthetic is a whole lot of synthesizer for the money!

System Requirements

- Windows XP/Vista/7 (NOTE: Synthetic is not supported on Mac OS)
 - 512 MB RAM (1+ GB recommended)
 - Pentium III or better (or AMD equivalent)
 - SSE processor support
 - DAW or host for VSTi
 - ASIO driver recommended
-

Installing Synthetic

Step 1. Locate and launch the downloaded Synthetic VST/Standalone Installer.

Step 2. Follow the installation wizard and click next.

Step 3. Read the end-user license agreement, and check accept to continue or decline to exit the installer, then click next.

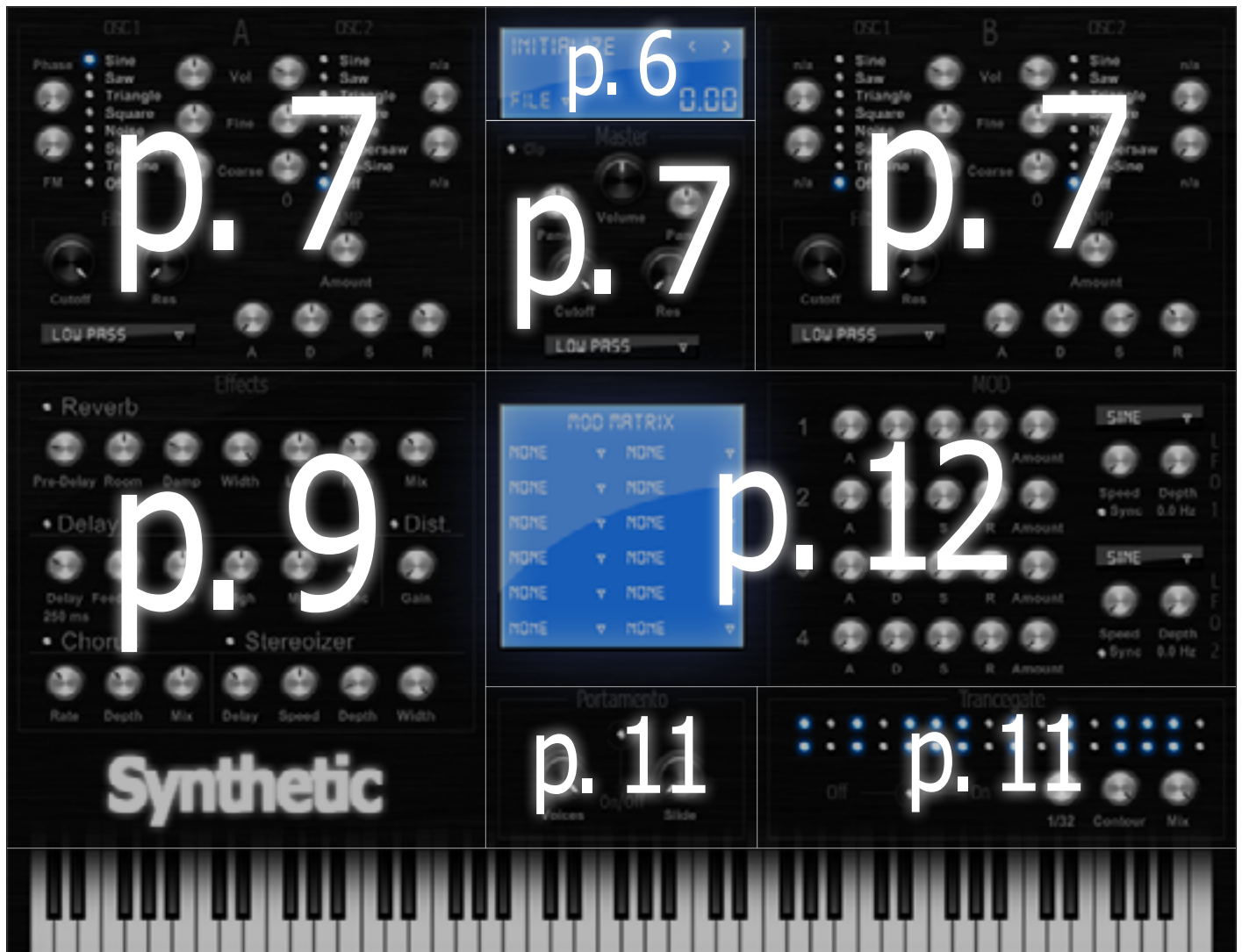
Step 4. Choose where to install Synthetic and click next. Most DAWs/hosts use the Vst-Plugins folder in your Program Files folder by default. (NOTE: The installer will create a VstPlugins folder if there is not one already present.)

Step 5. Click "Install", and the installation process will start. Once the installation has finished, click next.

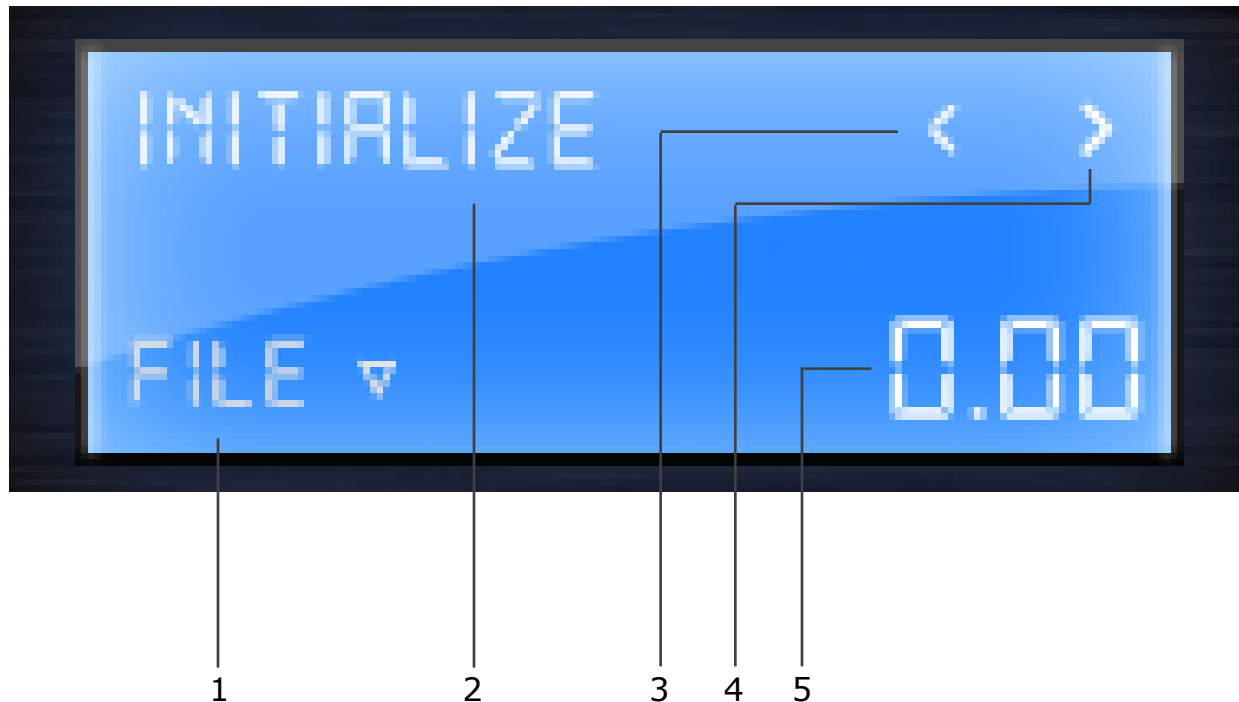
Step 6. Check "Launch Synthetic" to open Synthetic after the installer has been closed (optional), and click finish.

Step 7. (For VST) Open your DAW/host and import the VST. Please refer to the DAW/host user manual on how to do this.

Synth Layout



Preset Manager



1. File- Clicking this button shows a list of options:

Save Program- Saves currently selected program as a Synthetic Preset File (.spf).

Load Program- Loads a single saved .spf.

Rename Program- Renames currently selected program.

Save All Programs- Saves all 128 presets into one .spf file.

Load All Programs- Loads a .spf that contains all 128 presets.

Initialize- Resets currently selected program back to factory default.

MIDI Forget All- Forgets all MIDI.

Kill Audio- Kills all voices. Use this option in the event of a stuck note.

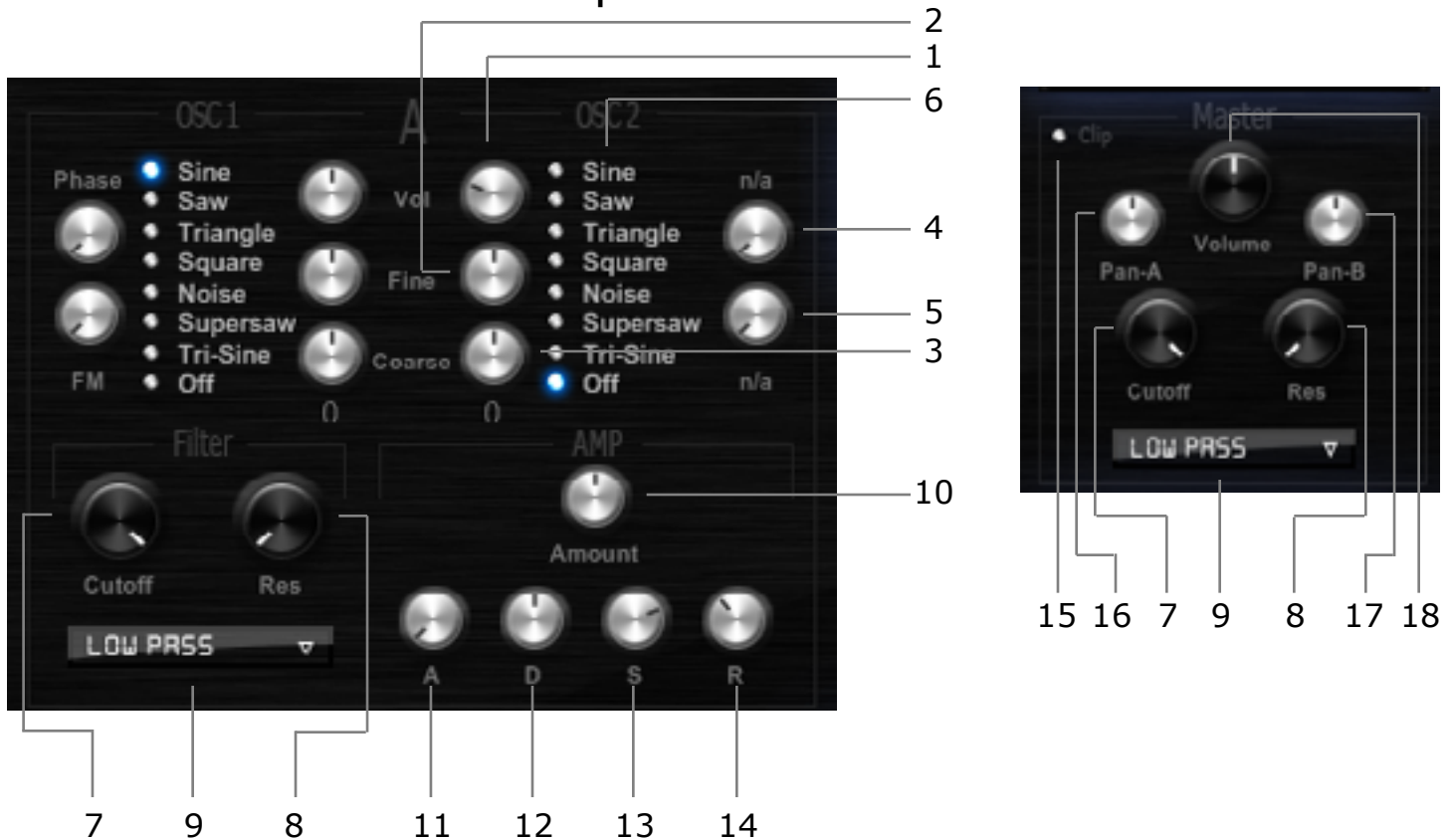
2. Program Name- To rename, click "File" and select "Rename Program".

3. Previous Program- Switches program to the previous one.

4. Next Program- Switches program to the next one.

5. Knob Readout- When a knob is turned, it will show it's value here.

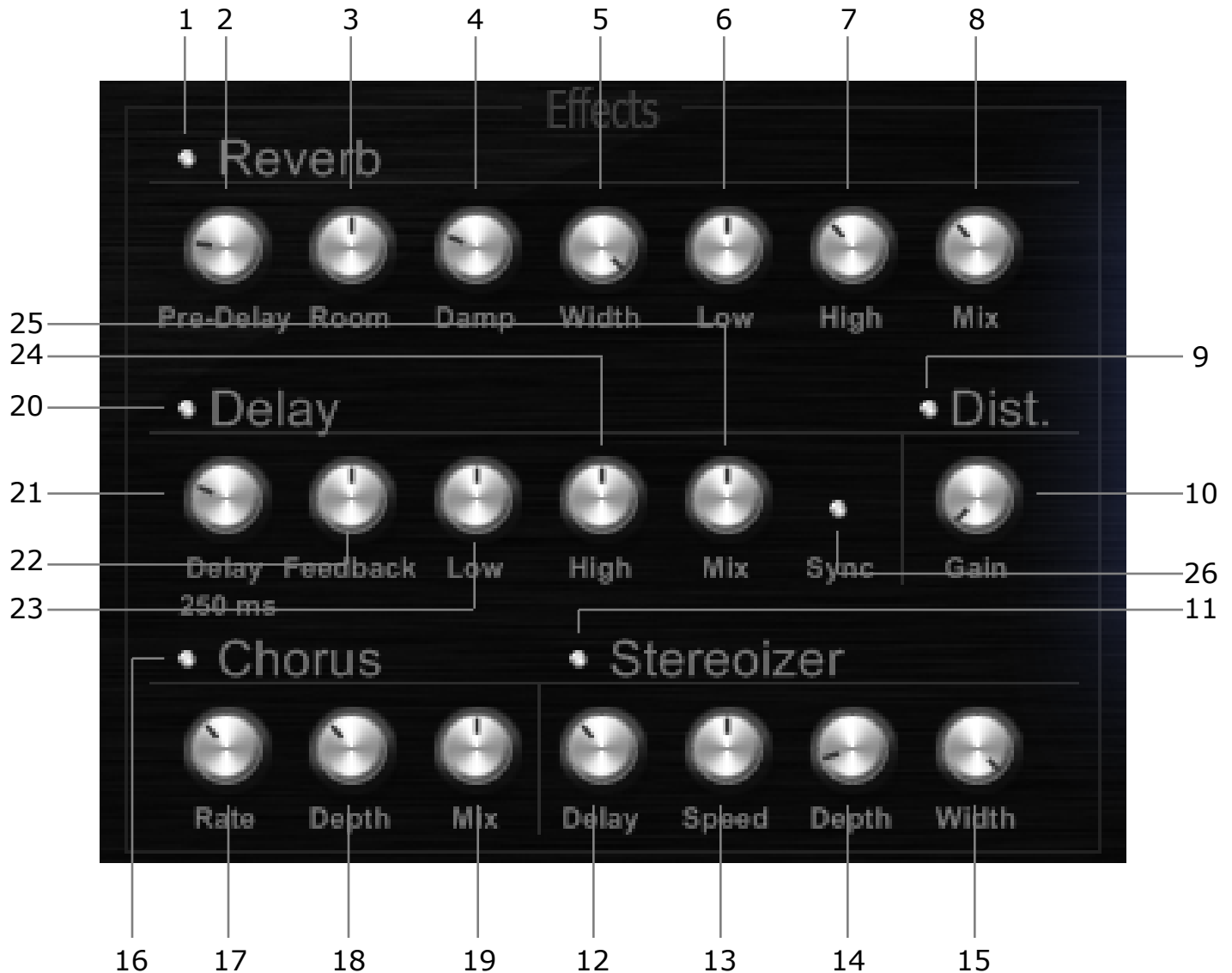
Oscillator & Master Groups



1. Oscillator Volume- Adjusts the volume of the oscillator.
2. Fine Tune- Tunes the oscillator up or down up to 50 cents. Increments of 1 cent.
3. Coarse Tune- Tunes the oscillator up or down up to 36 semitones. Increments of 1 semitone.
4. Phase/Detune- Depending on which wave is selected, this knob will control either the phase or detune. The Sine, Saw, Triangle, Square, Noise, & Tri-Sine waves will have adjustable phase. The Supersaw wave is the only one that has detune.
5. FM (Frequency Modulation)- The only waves that have FM enabled is the Sine, Triangle, Square, & Tri-Sine. Adding FM can make the sound brighter and more metallic.
6. Wave Forms- There are 7 wave forms in Synthetic: Sine, Saw, Triangle, Square, Noise, Supersaw, & Tri-Sine. Select "Off" if you do not wish to use an oscillator.

7. Filter Cutoff- This knob, depending on which filter is being used, adjusts which frequencies will be cut from the signal.
8. Filter Resonance- This knob controls how much signal boost there is around the cut-off point. (NOTE: Be cautious when adding filter resonance, as adding too much can cause unpleasant results.)
9. Filter Type- There are 5 different types of filters that are available in Synthetic:
 - Low Pass- Filters out high frequencies.
 - High Pass- Filters out low frequencies.
 - Band Pass- Only passes frequencies within a certain range and cuts the rest.
 - Band Reject- Basically an inverted band pass filter.
 - Peaking- Boosts the signal around the cutoff point.
10. Envelope Amount- This sets the amplitude of the envelope.
11. Attack- This adjusts how long it will take for the amplitude to go from 0% to 100%.
12. Decay- This adjusts how long it will take to go from 100% amplitude to the sustain period.
13. Sustain- This adjusts what the amplitude is when a note is held down during the sustain period.
14. Release- This adjusts the time it takes for the amplitude to decay from the sustain to 0% after a note is released.
15. Clip- Enabling this keeps audio from exceeding it's limits.
16. Pan-A- Left-right panning for group A.
17. Pan-B- Left-right panning for group B.
18. Master volume- Increases the overall volume.

Effects



1. Reverb On/Off- Turns the reverb effect on and off.
2. Reverb Pre-Delay- Delays the reverberation effect.
3. Reverb Room- Emulates the size of the room. Using more room makes the sound more spacious.

4. Reverb Damping- Adding damp muffles the reverb. It makes the reverb more subtle when a lot of room is used.
5. Reverb Width- Turning the knob to the left makes the reverb mono, turning the knob to the right makes the reverb stereo.
6. Reverb EQ Low- Adjusts the amplitude of the lower frequencies.
7. Reverb EQ High- Adjusts the amplitude of the higher frequencies.
8. Reverb Mix- Adjusts the amount of the reverb effect used. Turn left for a more dry effect, and right for a more wet effect.
9. Distortion On/Off- Turns the distortion effect on and off.
10. Distortion Gain- Makes the signal more distorted. (NOTE: It is recommended to have clip enabled when a lot of gain is used.)
11. Stereoizer On/Off- Turns the stereoizer effect on and off.
12. Stereoizer Delay- This knob delays the right channel from 0 to 1000 samples.
13. Stereoizer Speed- Adjusts the rate of the stereoizer effect. (pan faster)
14. Stereoizer Depth- Adjusts the amount of the stereoizer effect. (pan deeper)
15. Stereoizer Width- This makes the effect more mono or stereo.
16. Chorus On/Off- Turns the chorus effect on and off.
17. Chorus Rate- Adjusts the rate of the chorus effect.
18. Chorus Depth- Adjusts the depth of the chorus effect.
19. Chorus Mix- Adjusts the amount of the chorus effect used. Turn left for a more dry effect, and right for a more wet effect.
20. Delay On/Off- Turns the delay effect on and off.
21. Delay (Delay)- This adjusts how long it takes to delay the sound before it plays again. The delay is measured in milliseconds, unless the "Sync" option is enabled (see #26)

22. Delay Feedback- This adjust how long the delay effect will continue to play the delayed signal back.

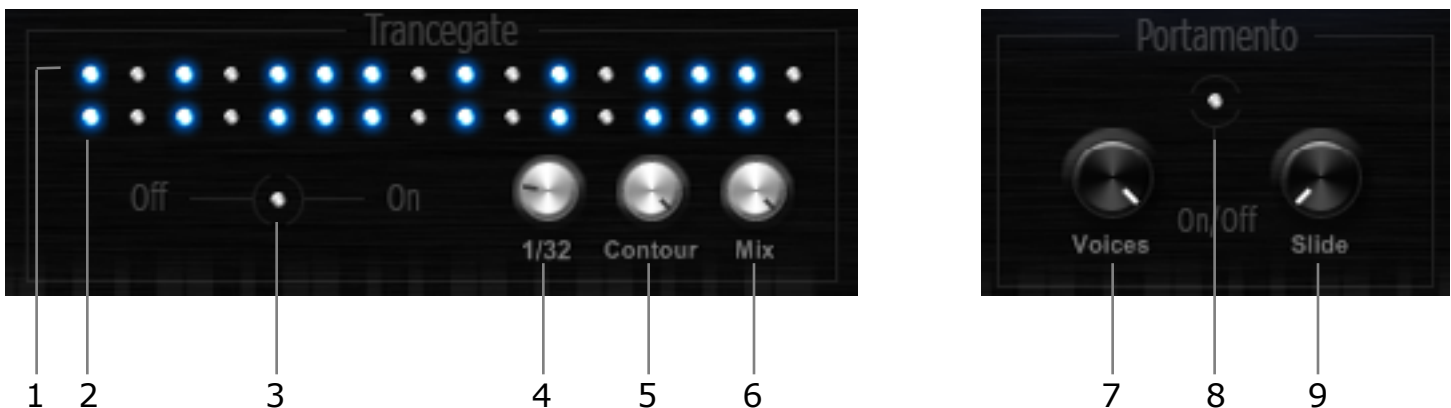
23. Delay EQ Low- Adjusts the amplitude of the lower frequencies within the delay effect.

24. Delay EQ High- Adjusts the amplitude of the higher frequencies within the delay effect.

25. Adjusts the amount of the delay effect used. Turn left for a more dry effect, and right for a more wet effect.

26. Delay Sync- Enabling this syncs the delay time to either 1/1, 1/2, 1/4, 1/8, 1/16, 1/32, 1/1d, 1/2d, 1/4d, 1/8d, 1/16d, 1/32d, 1/1t, 1/2t, 1/4t, 1/8t, 1/16t, 1/32t.

Trancegate & Portamento



1. Trancegate Left Step- There are 16 Left steps, enabling a step causes a note to be heard.

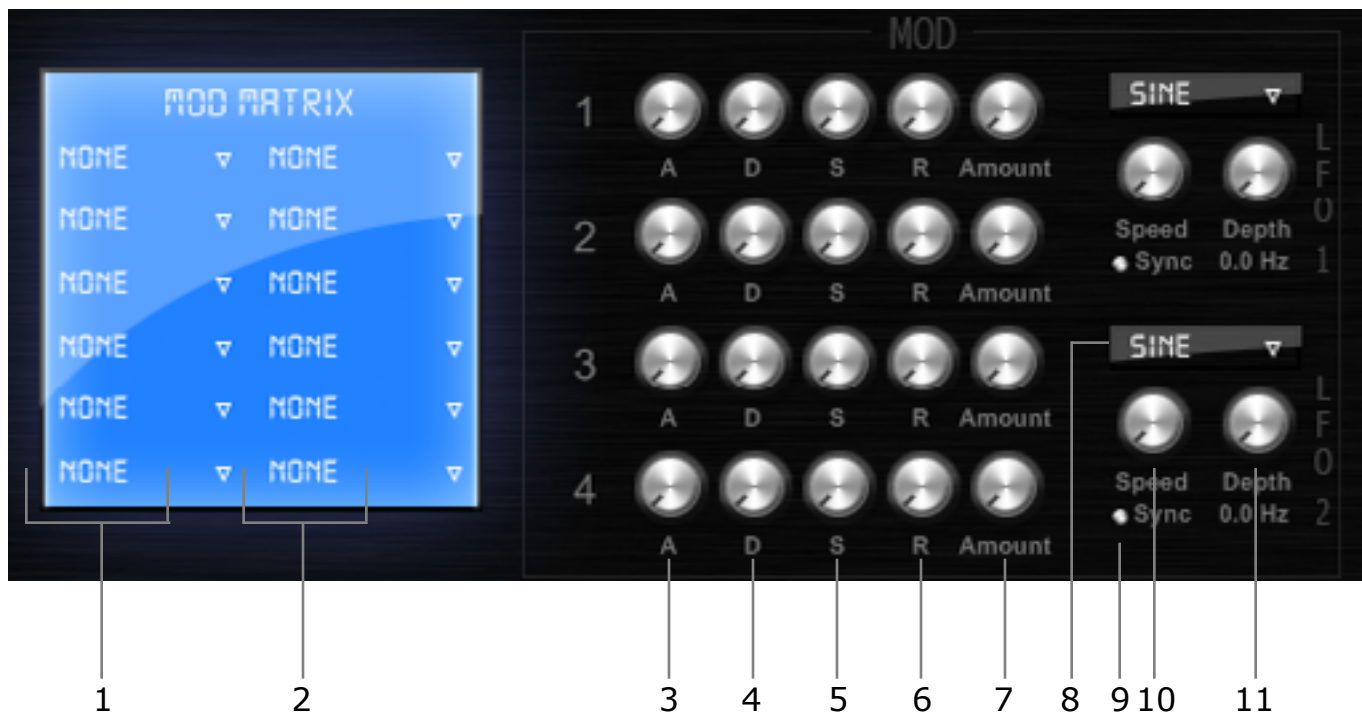
2. Trancegate Right Step- There are 16 right steps, enabling a step causes a note to be heard.

3. Trancegate On/Off- Turns the trancegate on and off.

4. Trancegate Speed- There are 5 speeds for the trancegate: 1/4, 1/8, 1/16, 1/32, 1/64. The trancegate will sync to a host if one is provided.

5. Trancegate Contour- Turning this knob to the left will make step transitions smoother.
6. Trancegate Mix- Adjusts the amount of the trancegate effect. Turn left for a more dry effect, and right for a more wet effect.
7. Voices- There can be between 1 and 16 voices available for use in Synthetic. You can choose between 1, 4, 8, 12, 16 voices. To make the timbre "slide" set the voices to 1 (all the way left) and turn portamento on.
8. Portamento On/Off- Turns the portamento on and off.
9. Slide- Adjusts the amount of time it takes to get from one note to another.

Modulation & The Matrix



1. Modulation Source- Here you can select what will modify the target. You can choose between 2 LFOs and 4 envelopes to use within the six spots.

2. Modulation Target- Here you can choose the target that will be modified. There are 23 different targets:

Cutoff-A: Modulates the cutoff of group A.

Cutoff-B: Modulates the cutoff of group B.

Cutoff-M: Modulates the master cutoff.

Res-M: Modulates the master resonance.

Res-A: Modulates the resonance of group A.

Res-B: Modulates the resonance of group B.

Phase-A1: Modulates the pitch of the left oscillator in group A.

Phase-A2: Modulates the pitch of the right oscillator in group A.

Phase-B1: Modulates the pitch of the left oscillator in group B.

Phase-B2: Modulates the pitch of the right oscillator in group B.

Pan-A: Modulates the pan of group A.

Pan-B: Modulates the pan of group B.

Vol-A1: Modulates the volume of the left oscillator in group A.

Vol-A2: Modulates the volume of the right oscillator in group A.

Vol-B1: Modulates the volume of the left oscillator in group B.

Vol-B2: Modulates the volume of the right oscillator in group B.

LFO1-Depth: Modulates the depth of LFO 1.

LFO2-Depth: Modulates the depth of LFO 2.

Pitch-A1: Modulates the pitch of left oscillator in group A.

Pitch-A2: Modulates the pitch of right oscillator in group A.

Pitch-B1: Modulates the pitch of left oscillator in group B.

Pitch-B2: Modulates the pitch of right oscillator in group B.

TG-Mix: Modulates the dry-wet mix of the trancegate.

3. Envelope Attack- This adjusts how long it will take for the modulation level to go from 0% to 100%.

4. Envelope Decay- This adjusts how long it will take to go from 100% modulation to the sustained modulation level.

5. This adjusts what the modulation level is when a note is held down during the sustain period.

6. This adjusts the time it takes for the modulation level to decay from the sustained modulation level to 0% modulation level after a note is released.

7. Modulation Amount- This sets the amount of modulation to use. Setting this to 0 means the target will not become modulated.
8. LFO Wave Form- The LFOs can either be a sine, saw, triangle, or square wave.
9. LFO Sync- Enabling this syncs the LFO speed to either 1/1, 1/2, 1/4, 1/8, 1/16, 1/32, 1/1d, 1/2d, 1/4d, 1/8d, 1/16d, 1/32d, 1/1t, 1/2t, 1/4t, 1/8t, 1/16t, 1/32t.
10. LFO Speed- This adjusts the speed of the LFO & modulation. Unless "Sync" is enabled, the speed is measured in hertz.
11. LFO Depth- This adjusts the depth of the LFO & modulation.

How to use the modulation matrix:

Step 1. Select a mod source in the left hand column on the "Mod Matrix". (e.g. ENV 1)

**Fig. 1*

Step 2. Select a mod target in the right hand column directly across from the selected mod source. (e.g. Cutoff-M)**Fig. 2*

Step 3. Turn the chosen target knob to around 50%. Turn the knob more or less for different results. **Fig. 3*

Step 4. Adjust the mod source (e.g. ENV 1) to the desired settings. **Fig. 4*



Fig. 1



Fig. 2



Fig. 3



Fig. 4

MIDI Hardware

Using a MIDI controller in the standalone:

To use a MIDI controller in the standalone, click "MIDI In" at the top of the program and select the desired MIDI controller. When a MIDI controller is enabled, there will be a check beside it. To disable a MIDI controller, click the controller in the "MIDI In" drop down again. (NOTE: You will have to do this every time you open the standalone.)

Using a MIDI controller in the VST:

The Synthetic VST uses MIDI controllers that are enabled in your host or DAW.

Please refer to your host's manual for enabling MIDI controllers.

MIDI Learn, Set, & Forget

(NOTE: Some DAWs/hosts do not allow VSTs to communicate directly with the MIDI controller, so this may not work in some DAWs/hosts. Please refer to your DAW/host manual to learn how to link a MIDI controller through your DAW/host.)

To use the MIDI Learn feature, first make sure there is a MIDI controller enabled. Next, right click the knob you wish to link. A pop up will show a list of options, choose "MIDI Learn"(the knob will turn red), then turn a knob on your MIDI controller. If it worked, the knob will move with the MIDI controller knob. Right click the same glowing red and select "MIDI Set". The knob is now linked with the MIDI controller. To break the link between the knob and MIDI controller, right click the desired knob and select "MIDI Forget", or you wish to break all the MIDI links click "File" in the preset manager and select "MIDI Forget All".

MIDI Learn- Puts the select knob in MIDI Learn mode. In MIDI Learn mode, the selected knob will glow red.

MIDI Set- Once a knob is linked to the MIDI controller, choosing this locks the MIDI link so that no other MIDI knob can control the selected knob.

MIDI Forget- MIDI Forget breaks the MIDI link between the knob.

ASIO

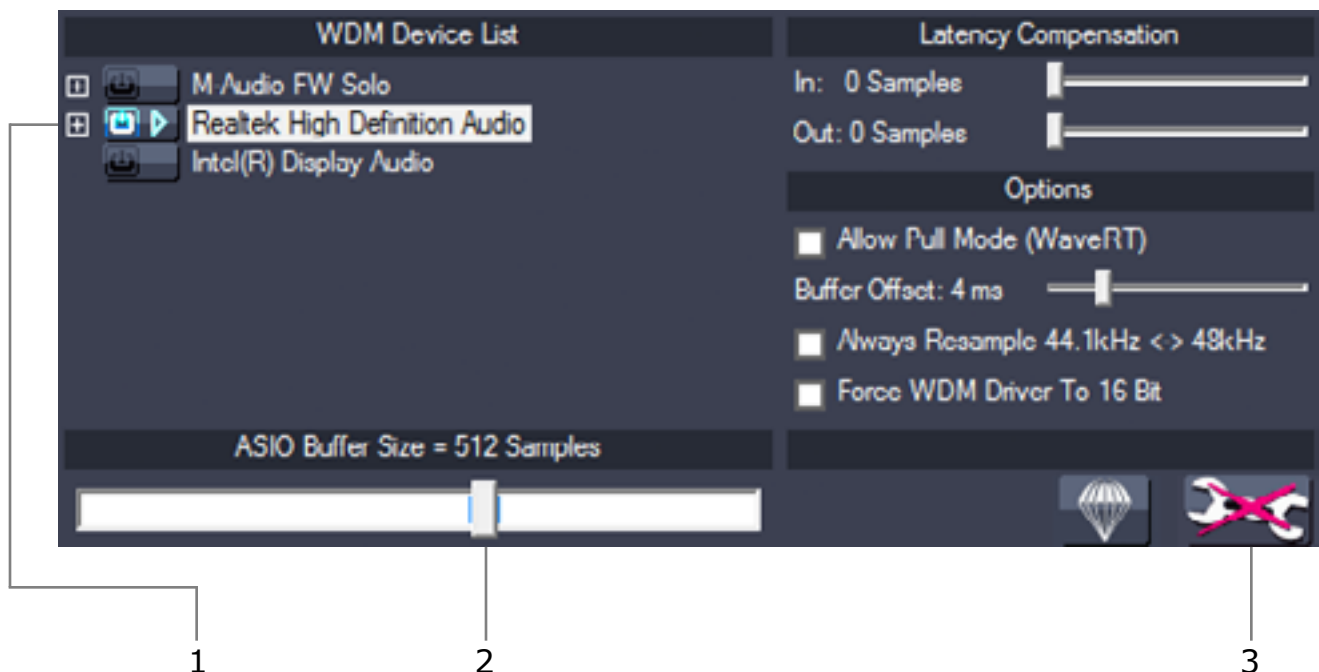
Using an ASIO driver is recommended when using Synthetic. An ASIO driver reduces the latency from when a key is played to when you actually hear the sound. Depending on the power of your computer's sound card, if you choose not to use ASIO, it may be very hard to play music on the synth because of the long latency.

For a free, low latency, hardware independent ASIO driver, try ASIO4ALL.
(Visit: <http://www.asio4all.com>)

Optimizing ASIO4ALL For Synthetic

After you have downloaded and installed ASIO4ALL, you will need to set it up. For a more detailed setup, visit: http://www.image-line.com/support/FLHelp/html/envsettings_asio4all.htm

Your settings should look something like this:



1. Device List- Choose your audio device. Click the power button next to the selected device to enable it and it will turn blue.
 2. ASIO Buffer Size- It is recommended to have the ASIO buffer size somewhere around 416 to 640 samples. You can set the buffer size to be more or less than that, but if you have too few samples, you may hear glitches/crackling. Also, if you set too many samples there may be some noticeable latency.
 3. Show/Hide Advanced Settings- Pressing this button shows/hides the advanced settings.
-

Enabling ASIO4ALL In Synthetic

Standalone: Open Synthetic, click "Audio" in the menu, and select ASIO4ALL. (NOTE: You will have to do this every time you open the standalone.)

VST: Enable ASIO4ALL in your DAW/host. Please refer to your DAW/host user manual on how to do that.

Troubleshooting

Q. I hear pops and clicks when I use Synthetic.

A. Try a greater ASIO Buffer Size: Open the ASIO4ALL control panel and move the slider to the right for more samples.

Q. When I change programs, the voices are killed a few seconds after the program has been changed.

A. Try enabling "Hardware Buffer" in the advanced settings on the ASIO4ALL control panel. If that does not work, enable "Always Resample 44.1 kHz <-> 48 kHz" & "Force WDM Driver To 16 Bit". If you are still experiencing problems, check your DAW/host settings, and refer to the DAW/host user manual.

Q. I cannot load presets into Synthetic.

A. If you are using the demo version, loading presets is disabled. If you are using the full version, re-install Synthetic and try again.

Q. Synthetic does not load.

A. Does your processor support SSE/SSE2? If not, Synthetic may not load.

A. Check to see if there are any background processes eating too CPU/RAM. If so, close the program that's causing the high CPU/RAM usage.

Q. There is a hung note in Synthetic and I can't make it stop.

A. Click "File" on the preset manager, and select "Kill Audio".

Q. MIDI learning does not work in my DAW.

A. Some DAWs/hosts do not allow VST's to communicate directly with a MIDI controller. You will have to link MIDI to the VST through your DAW/host. Refer to the DAW/host user manual to learn how to do that.

Q. Synthetic in using a lot of CPU.

- A. If you are experiencing high CPU usage, try:
- Reducing the voices.
 - Use less effects. (Turn off the reverb)
-

Contact

If you are still experiencing problems, contact me by visiting the link below and send me a message. Be sure to include your computer specs, as well as the steps to recreate the problem.

<http://www.sound-base.org/request.html>

