

OBSESSION



User's Manual

Copyright © Synapse Audio Software 2021. All rights reserved.

Concept: Richard Hoffmann

Graphic Design: Marcin Lezak

Programming: Richard Hoffmann and Marcin Lezak

Reverb code by Mirko Ruta



www.synapse-audio.com

Table of Contents

1. Introduction.....	4
1.1. Installation.....	4
1.2. Activation.....	5
1.3. System Requirements.....	6
2. Basic Operation.....	7
2.1. Interface.....	7
2.2. Patch selection.....	7
2.3. Panel toggle.....	8
2.4. Controlling parameters.....	8
2.5. Controlling by MIDI.....	8
2.6. Parameter Lock.....	9
2.7. Single, Dual and Split modes.....	9
2.8. Adjusting polyphony.....	10
3. Sound Engine.....	11
4. Front Panel.....	12
4.1. Pitch Bend (PB) and Modulation Wheel (MW).....	12
4.2. Control section.....	12
4.3. Common/Master section.....	13
4.4. Modulation section.....	14
4.5. Oscillators section.....	15
4.6. Filter section.....	17
4.7. Envelopes section.....	19
4.7.1. Filter envelope.....	19
4.7.2. Loudness envelope.....	20
4.8. Voice edit section.....	21
4.9. Active/Mute voice section.....	23

5. Back Panel.....	24
5.1. Mod Matrix.....	24
5.1.1. List of Sources.....	24
5.1.2. List of Destinations.....	27
5.2. Reverb.....	31
5.3. Delay.....	33
5.4. Chorus.....	34
5.5. Global.....	36
5.6. LFO Steps.....	37
6. Patch Browser.....	39
7. Troubleshooting.....	43
7.1. Obsession does not appear in the host's plugin list.....	43
7.2. Patches do not recall.....	43
7.3. Parameters change unexpectedly.....	43
7.4. MIDI messages are not received.....	44
7.5. The CPU usage is very high.....	44
8. Legal Information.....	45
8.1. Trademarks.....	45
8.2. End User License Agreement (EULA).....	45
Appendix A. Sound Design Reference.....	47
Appendix B. MPE Support.....	48

1. Introduction

Thank you for choosing Obsession by Synapse Audio!

Obsession brings the power of a great polyphonic vintage synthesizer to your fingertips. It combines the astute modeling of voltage-controlled oscillators (VCOs), voltage-controlled filter (VCF) and voltage-controlled amplifier (VCA) with a comprehensive individual voice control that has never been done before in this detail. Each sound parameter of each voice board can be freely modified by the user, allowing to model specific hardware instances, with their rich, dynamic sound. Even extra parameters like oscillator and filter scaling, found on the real hardware, are present in this emulation. Temperature-dependent fluctuations can be simulated by the novel "Organic" knob, lifting the expressiveness and sound quality to a new level.

On top of this, Obsession offers additional controls not found on the original hardware, greatly enhancing its already impressive feature set. The most significant additions are 16-voice polyphony, Stepped LFO modes with freehand drawing and a high-quality effect block with Delay, Reverb and Chorus.

Obsession is available in VST®, AAX and Audio Unit formats, and supports Multidimensional Polyphonic Expression (MPE), as well as the Native Kontrol Standard (NKS).

1.1. Installation

Installation on Windows

Unzip "obsession.zip" and run SETUP.EXE to commence the installation process. The installer will guide you through the necessary steps. You will be asked to select the location of your 64-bit VstPlugins directory.

Make sure to choose the correct directory for your host software. Refer to your host software's manual if you are unsure about where the host software's VstPlugins directory is located. The plugin file "Obsession.DLL" and the manual will be placed in the chosen directory.

Patches will be placed in your user documents directory (Synapse Audio/Obsession).

The next time you start your host software, Obsession will appear in the VST instrument list.

Installation on Mac OS X

Download and open the disk image named "obsession.dmg".

Afterwards, double-click on the installer icon to begin the installation process. The installer will guide you through the necessary steps. When starting your host software, Obsession will now appear in the AU and/or VST instrument list, depending on which format your host software supports.

1.2. Activation

After installation, the next step is to provide your license key by using the Activation Tool.

On PC/Windows the tool is launched on first plug-in instance insert in your host (UI must be opened). On Mac OS X the tool is launched right after installation is completed. After typing in the key, you will be asked to activate the license. This is required just once per computer. The preferred way is Online Activation, which requires only a single click.

Activation permanently enables Obsession to run on your computer.

You may activate Obsession on up to three computers simultaneously, provided you are the only user of those computers (for multiple users, multiple licenses need to be purchased). Note that when choosing Online Activation, no personal data is transmitted in the process, it is a perfectly safe method of activation. If you wish to activate Obsession on a computer not connected to the Internet, choose Offline Activation. You will be given a key which you can save to a USB stick or write down on a piece of paper. Now switch to a different computer with Internet access and log in to your account at:

<https://www.synapse-audio.com/support.html>

Click on the "Access product activations" link in the "Product activations" section on the left. Enter the key previously stored and you will receive a response code, which you can type into the Offline Activation dialog to complete the installation process.

1.3. System Requirements

In order to obtain a very high sound quality, Obsession employs complex DSP algorithms that are CPU demanding. A modern computer is required to run Obsession.

PC/Windows

PCs require Windows 7 SP 1 or later, a 2 GHz quad core CPU or better, and a 64-bit host that is VST 2 or VST 3 compatible.

ProTools 11 or above is required for the AAX version.

Mac OS X

Macs require OS X 10.11 or later, a 2 GHz quad core CPU or better, and a host compatible with 64-bit VST 2, VST 3 or Audio Unit plugins.

Apple Silicon M1 based Macs are supported natively.

ProTools 11 or above is required for the AAX version.

2. Basic Operation

Obsession's user interface is divided into two pages: A front and a back panel. The front panel contains the main sound parameters of Obsession, while the back panel hosts additional settings, such as pitch bend ranges and three effect processors, Delay, Reverb and Chorus.

2.1. Interface



When opening Obsession for the first time, we recommend you to choose your favorite size for the interface. Click the top-left icon and select either "Small", "Medium" or "Large".

2.2. Patch selection



Each musical sound that you can play is called a Patch. A patch is selected by clicking on the display on the top-right of the interface. Alternatively the arrow buttons can be used to browse the sounds. The open and save icons allow to open/save individual patches from/to your drive. Patches are stored in the following directory:

PC/Windows: Documents/Synapse Audio/Obsession/Soundbanks

Mac OS X: /Library/Application Support/Synapse Audio/Obsession/Soundbanks

Each patch is a single Cubase patch file (.fxp), a common format for storing patches. Obsession also allows you to import and export patches in Rack Extension format (.repatch), in order to interchange patches between the Reason Rack Extension and .fxp format.

2.3. Panel toggle



As stated on the previous page, Obsession has two panels, a front and a back side. The panels are toggled using the icon on the top-right of the interface, or by simply clicking on Obsession's logo.

2.4. Controlling parameters

Knobs, faders, and numerical displays are controlled by left-clicking on them, then dragging the mouse up or down in vertical direction (see fig. 2.4). Hold down Shift while turning knobs to slow down the movement, in order to set precise values. Use Ctrl+Click to set knobs to their default position.



Figure 2.4. Controlling parameters

The mouse wheel is a very useful tool to speed up your workflow, and works on almost every parameter. Use the mouse wheel on numerical displays to increase or decrease the current value. Use the mouse wheel on drop-down lists, to select the previous or next parameter in the list. Knobs and faders can be fine tuned using the mouse wheel.

2.5. Controlling by MIDI

Most controls of Obsession can be remote controlled via MIDI. Right-click on any knob or switch to set up a connection between a MIDI controller and a specific knob or button.

2.6. Parameter Lock

Most sound parameters can be locked by right-clicking on a knob or button and choosing “Lock Parameter”. This makes the parameter global, i.e. preset changes will have no effect on the locked parameter.



Possible applications include locking the modulation wheel (to protect against accidental modulation), or locking the Effect on/off switch to obtain a strictly vintage-analog sound.

2.7. Single, Dual and Split modes



Obsession can operate in 3 modes: Single, Dual and Split.

The default mode is Single. Single mode simply plays the current patch. Whenever a key is pressed, Obsession will trigger the next free voice in Single mode.

For more advanced sound design tasks, the Dual mode can be used. Dual mode can stack two different patch settings A and B, called parts. To access the parts, click on either the "A" or "B" button. Use the fader between A and B to control the balance between both parts. Right-click on A or B to copy/paste or swap parts. You can copy parts from any patch, or from different instances of Obsession currently open. Since the Dual mode consists of two parts, pressing a key will cause two voices to be used, instead of just one as in Single mode.

Split mode functions in the same way as Dual mode. The only difference is that instead of stacking two parts, one part (A) will be played in the lower region of the keyboard, while the other part (B) will play in the upper region. This mode can be used to put e.g. a Bass sound on the lower half of the keyboard to be played by the left hand, and a lead sound on the upper half to be played by the right hand. The split point can be set on Obsession's back panel.

2.8. Adjusting polyphony

Obsession can be toggled between 8 and 16 voices. Since both the Dual and Split modes described above essentially cut the polyphony in half, it can be useful to double the polyphony to 16 voices in those modes. Another useful application for 16 voice polyphony is when playing pad or string sounds with a long release time. In case a specific amount of voices is desired (say exactly 6 voices), this can be accomplished by muting excess voices at the bottom.

3. Sound Engine

Fig. 3 shows the overall signal flow of Obsession.

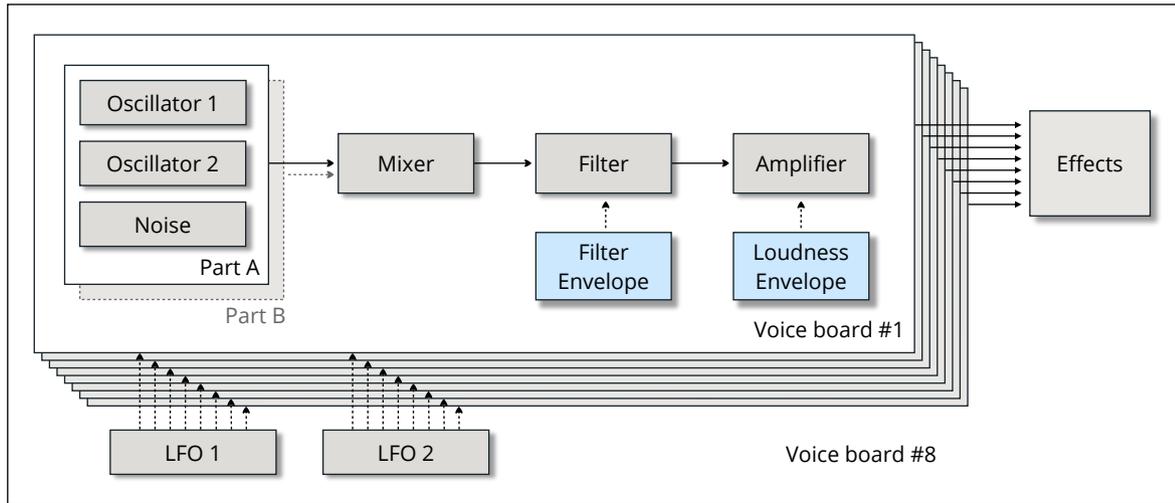


Fig. 3 Signal Flow of Obsession

Obsession uses two oscillators and a noise generator for its sound generation. Those three sources are mixed and then processed by a low-pass or band-pass filter. The output of the filter passes through an amplifier. All voices are then summed, and optionally processed by the Delay, Reverb and Chorus effects located on the back panel. The final output is scaled in volume by the Master Volume control.

The filter and amplifier are controlled by two envelopes, the Filter and the Amp envelope. On top of this there are two global modulation sources, LFO-1 and LFO-2. Both can be used to modulate the oscillators and the filter via the front panel controls. More sophisticated modulations can be set up by using the modulation matrix on the back panel.

4. Front Panel

This chapter describes all sound parameters of Obsession, from the top-left to the bottom-right.

4.1. Pitch Bend (PB) and Modulation Wheel (MW)



This section reflects the current state of the Pitch-Bend and Modulation Wheels, typically controlled via a MIDI controller. Note that the modulation wheel directly controls the amount of modulation in Obsession, without any routing matrix in between. Therefore, the state of the modulation wheel is saved with all patches, to ensure all patches sound just like the sound designers intended it. The maximum amount of pitch bending can be fine tuned on the back panel.

4.2. Control section



Portamento

Portamento is an important effect in Unison mode, where just a single voice is audible at a time. When holding down a key then pressing another new key, the voice will glide smoothly from the old pitch to the new pitch.

The Portamento parameter adjusts how fast this transition takes place. When Portamento is set to zero, the transition is basically instantaneous. When using Portamento on polyphonic patches (with Unison off), pressing a key will cause the voice just triggered to glide from its last pitch to the new pitch. This can be interesting in some cases, but the outcome is much more difficult to control than in Unison mode.

Unison

By default, Obsession uses 8 voices (or 16 in 16-voice mode) that are triggered successively when pressing keys on your keyboard. Enabling unison turns Obsession into a monophonic synthesizer, where all voices are played simultaneously on each key press. This feature can be used to create fat bass and lead sounds.

Osc 2 Detune

This knob controls the fine tuning of oscillator 2, relative to oscillator 1.

Osc 2 X-Mod

Controls the cross-modulation of oscillator 2, that is how much the pitch of oscillator 2 is modulated by the oscillator 1 output. Often, X-Mod is used in combination with oscillator sync to provide a stable pitch for oscillator 2.

4.3. Common/Master section



Effects

Turns on/off Obsession's global effects (Delay/Reverb/Chorus).

Tuning

Adjusts the overall tuning of the synthesizer in a +/- 1 semitone range.

Spread

Each of the 8 (or 16) voices in Obsession can be positioned in the stereo field, by using the Pan knob in the voice edit section. The Spread knob offers a shortcut to control the panorama of all voices at once. By turning the spread knob to the right, voices 1,3,5,7,... will be panned increasingly to the left speaker, while voices 2,4,6,8,... go to the right speaker.

Volume

Controls the master volume of Obsession (post-fx).

4.4. Modulation section



Obsession features two low-frequency-oscillators (LFOs) to modulate its sound parameters. The LFOs are controlled by the parameters described below.

LFO 1 / 2

Switches between LFO 1 and 2.

Rate

Adjusts the LFO rate from 0.02 Hz to 22 Hz. If the LFO shape is set to "Steps" mode, the rate is synchronized to the host tempo and can be set in musical intervals (half note, sixteenth, triplets, etc).

Shape

Toggles the waveform shape between sine, square, sample-and-hold (S+H) and the step mode. Step mode allows the waveform shape to be drawn freehand on the back panel.

Depth

Depth controls how much an LFO affects the destination parameters. The destination parameters can be enabled or disabled by the switches next to the Depth knobs. The first Depth knob affects the frequencies of oscillators 1 and 2, as well as the filter frequency. The second Depth knob controls the impact of the LFO on the pulse widths of oscillators 1 and 2. Note that the pulse waveform must be selected for an oscillator for pulse width modulation to have any effect.

4.5. Oscillators section



Obsession uses two oscillators as the core of its synthesis, which produce periodic pitched tones. The sound parameters are explained below.

Frequency

The first frequency knob adjusts the coarse tuning of oscillator 1, ranging from 0 to +3 octaves. The second knob adjusts the tuning of oscillator 2 in the range from 0 to +63 semitones. The detuning between both oscillators is controlled by the Osc 2 Detune knob at the top of the interface.

Pulse Width

Sets the pulse width of both oscillators (when in Pulse mode). Note that the pulse width of each oscillator can be controlled individually via the Modulation Matrix, if required.

Waveform

The waveform switches set the waveform shape. The available shapes are:

- **Sawtooth** if "Saw" is chosen.
- **Pulse** if "Pulse" is chosen.
- A mix of **Sawtooth** and **Pulse** if both switches are enabled.
- **Triangle** if no switch is enabled.

Sync

Enables oscillator hard sync. If switched on, oscillator 2 will be reset each time oscillator 1 has finished a cycle. When changing oscillator 2's frequency, the classic hard sync sound is achieved.

To obtain interesting sounds, usually the frequency of oscillator 2 is modulated. This can be accomplished via the Modulation matrix on the back panel, or more directly by using the Filter Envelope (F-Env) switch.

F-Env

If the Filter-Env switch is enabled, oscillator 2's frequency will be modulated by the filter envelope. The amount of modulation is controlled by the Env Amt knob. This is particularly useful in combination with the Sync switch above.

4.6. Filter section



After all sound sources have been mixed, the composite signal is sent to the filter section. The raw composite signal coming from the mixer section is typically too bright to be useful, especially when ramp or pulse waveforms are used. Most sounds have a much darker timbre, and this is where the filter section comes in. Obsession comes with a low pass filter, which attenuates frequencies above a variable cutoff frequency. Additionally there is a band pass filter, which attenuates frequencies both below and above the cutoff frequency.

Frequency

The Frequency knob sets the cutoff frequency. When the knob is turned from right to left, the sound will become progressively darker. Note that the range of the Frequency knob is somewhat limited, mimicking the hardware it is based on. For additional brightness, the envelope amount knob or the modulation matrix can be used.

Resonance

This knob controls the filter resonance. Resonance in a filter creates a sharp peak around the cutoff frequency, emphasizing those frequencies.

Env Amt

Whenever a note is played, two envelopes are triggered, the filter and the amplitude envelope (See chapter 4.7. *Envelopes section*).

The Envelope Amount knob controls how much of the filter envelope is added to the cutoff frequency. If the knob is set to zero, the filter envelope has no effect on the sound.

OSC 1

Sends the oscillator 1 signal into the filter. If this switch is disabled, oscillator 1 will be inaudible.

OSC 2

Sends the oscillator 2 signal into the filter. This button has three states, off, half and full volume, corresponding to the emulated hardware. Other mix levels are possible by using the modulation matrix on the back panel.

Noise

Sends noise into the filter. The level is fixed according to the emulated hardware, but can be changed via the modulation matrix if needed.

BP

Turning on BP will switch to a band pass filter, instead of the usual low pass filter.

4-Pole

The filter can be toggled between an attenuation of 12 dB and 24 dB (4-pole) per octave. This affects how quickly the high frequencies are attenuated above the cutoff frequency, either by 12 dB per octave or 24 dB per octave. Most common is 24 dB, however 12 dB can be useful to create brighter sounds. Another technical difference between the 12 dB and 24 dB filters is that adding resonance increases the volume in 12 dB mode, whereas it decreases in 24 dB.

Track

Enabling key track increases the cutoff frequency according to the key currently played, so higher keys correspond to a higher cutoff frequency. With key track enabled, moving up an octave approximately doubles the cutoff frequency. This is also known as 100% key tracking. Values other than 0% or 100% can be set by using the modulation matrix destination, "Filter KeyTrk".

4.7. Envelopes section



4.7.1. Filter envelope

An envelope controls a sound parameter over time, starting from the instant a key is pressed (see fig. 4.7.1). The filter envelope is designed specifically to modify the filter cutoff frequency over time. Most sounds, whether synthetic or acoustic, start out very bright then become dark quickly. The filter envelope achieves precisely this effect in combination with the low pass filter.

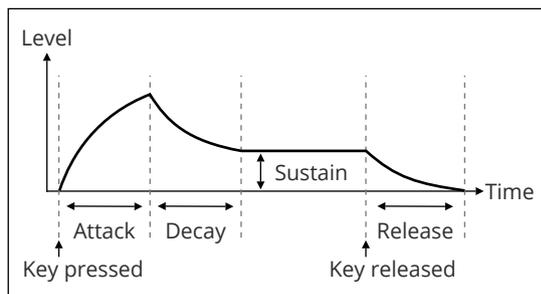


Fig. 4.7.1. The filter envelope

Attack

The Attack knob sets the duration it takes for the envelope to reach its maximum value. Most sounds use a setting near the minimum in order to create a snappy attack.

Decay

After reaching the peak, the decay stage commences. During the decay stage, the envelope falls back to a lower level, the sustain level. The Decay parameter specifies the duration of the decay stage, i.e. how long it takes to fall back to the sustain level.

Sustain

This parameter specifies the sustain level that is reached after the decay stage ends. The sustain stage lasts as long as a key is depressed.

Release

The release stage is triggered whenever a key is released. The release parameter specifies the duration it takes the envelope to hit zero. Note that when the sustain level is set to zero, the release parameter may have no effect if the envelope has previously reached zero already.

4.7.2. Loudness envelope

The loudness envelope works just like the filter envelope, but controls the volume of the sound, rather than its timbre.

Attack

The Attack knob sets the duration it takes for the envelope to reach its maximum value. Most sounds use a setting near the minimum in order to create a snappy attack.

Decay

After reaching the peak, the decay stage commences. During the decay stage, the envelope falls back to a lower level, the sustain level. The Decay parameter specifies the duration of the decay stage, i.e. how long it takes to fall back to the sustain level.

Sustain

This parameter specifies the sustain level that is reached after the decay stage ends. The sustain stage lasts as long as a key is depressed.

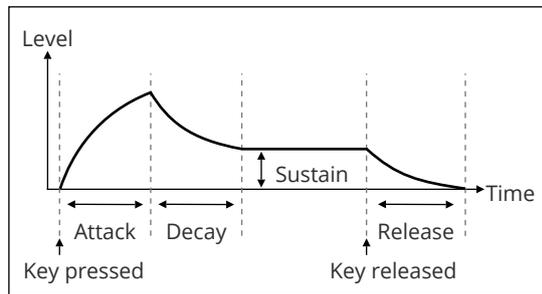


Fig. 4.7.2. The loudness envelope

Release

The release stage is triggered whenever a key is released. The release parameter specifies the duration it takes the envelope to hit zero. Note that when the sustain level is set to zero, the release parameter may have no effect if the envelope has previously reached zero already.

4.8. Voice edit section

This is probably the most important feature of Obsession: Each voice can differ noticeably from the other voices in many ways, creating that organic, lively sound that vintage-analog poly synths are famous for. By clicking on one of the EDIT buttons, each of the 8 voices can be fine tuned (or each of the 16 voices, when in 16-voice mode).



After choosing one of the voices, the knobs change to trimpots, thus indicating a voice is being fine tuned. Almost all trimpots directly correspond to the underlying sound parameter. For instance, turning the Cutoff Frequency trimpot to the left means that the Cutoff Frequency of that particular voice is going to be lower than average, whereas turning it to the right means it is higher than average. Likewise, turning the Amp Release trimpot to the left is going to shorten the release time somewhat for that particular voice, whereas turning the trimpot to the right will result in a longer release time.

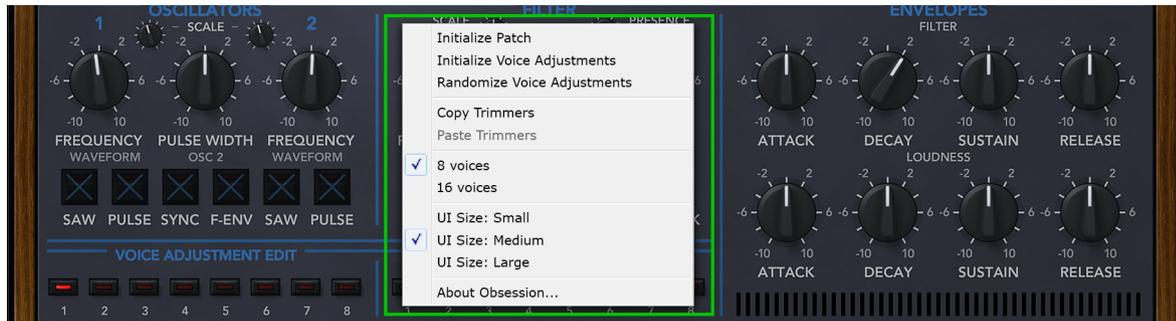
Some sound parameters cannot be changed per voice in a meaningful way. For instance, since the LFOs are global, those LFOs cannot have different rates per voice. Thus for those sound parameters, we devised useful alternatives:

- **LFO Offset** causes the output of the LFO to be shifted up or down per voice.
- **Pan** sets the panorama position of the edited voice.
- **SEMI** changes the tuning of the voice, in semitones. This feature can be used to create chord stabs in Unison mode.

In order to make Obsession as authentic as possible, the voice editing additionally also comprises a few voice trimpots seen only in analog hardware:

- **OSC Scale 1/2** adjusts the oscillator key tracking across the keyboard. In any analog synthesizer based on VCOs, this key tracking is imperfect. Furthermore, since all oscillators in all 8 voices have a slightly different key tracking, there is a lot of pleasant variation in the sound when playing the synthesizer.
- **Filter Scale** adjusts the key tracking of the filter per voice, if key tracking is enabled (TRACK switch on).
- **Filter presence** adjusts the treble of the filter when in 24dB mode (i.e. the 4-POLE switch is on). If the presence trimpot is turned to the right, the filter sounds somewhat brighter, while turned to the left it sounds darker. The difference is easiest to hear if the filter is fully open.

Right-clicking anywhere in the interface (except on the knobs) opens a menu with further options:



- **Initialize Patch** sets the entire patch to default values.
- **Initialize Voice Adjustments** resets all trimmers of all voices. This will cause all voices to sound identical, and should only be used for special purposes, as the "analog" feel will be lost.
- **Randomize Voice Adjustments** randomizes all trimmer positions. This will essentially create a unique instrument in one go.
- **Copy/Paste Trimmers** allows to copy/paste the trimmer settings from one voice to another.
- **8 / 16 voices** toggles between 8 and 16 voice mode.
- **About Obsession...** shows the credits.

4.9. Active/Mute voice section



This section indicates the voices that are currently playing. Additionally these buttons work as switches by which the specified voices can be muted (left mouse click) or soloed (right mouse click). This can be useful to set up a particular polyphony, for instance a single, monophonic voice.

5. Back Panel

The back panel of Obsession provides parameters to fine-tune the analog simulation and hosts the parameters of the Delay, Reverb and Chorus effects.

5.1. Mod Matrix



Obsession features a modulation matrix with 12 slots.

A modulation matrix is used to combine different modulation sources, such as LFOs, envelope generators or MIDI controllers, with specific targets such as the filter's cutoff frequency or LFO depth.

The AMT (Amount) knob between a source and destination controls the amount of modulation. Set to center, there is no modulation. Negative values correspond to negative modulation while positive values correspond to positive modulation.

5.1.1. List of Sources

The following section lists all available modulation sources with a brief explanation. All sources, whether it is MIDI data or synth parameters, are converted to the same range, which is [0,+1] for unipolar and [-0.5,+0.5] for bipolar sources. The LFOs, the Pitch bend wheel and the Random modifier are bipolar sources, all other sources are unipolar.

The current value of a source is multiplied with the amount value [-100 to +100] in the same modulation slot. The result of the multiplication is then added to the selected destination parameter.

Velocity

The MIDI Note-On velocity information, which is transmitted once at the instant a key is pressed. The harder a key is hit, the higher the transmitted value.

Keytrk (C0)

The MIDI Note number becomes the source of modulation, relative to the root key C0. This means low keys emit a low value while high keys emit a high value.

This source can be used to make a patch key-dependent, for instance by shortening the envelopes when pressing a higher key.

This is a common feature of various acoustic instruments, for instance plucked-string instruments.

Keytrk (C4)

Identical to Keytrack, however with a root key of C4.

Modwheel

The MIDI modulation wheel data (controller CC#01).

Pitchbend

The MIDI pitch wheel data. Note that the pitch bend wheel always changes the pitch up or down dependent on the Bend up/down setting in the main panel. Set both to zero if you wish to use the pitch wheel exclusively for a different purpose.

Aftertouch

Quality MIDI keyboards not only transmit velocity, but send pressure information as well.

This parameter is called Aftertouch. In contrast to velocity, the aftertouch information is sent permanently and for the entire keyboard, not per key. It is transmitted for as long as any key(s) are being pressed.

Poly AT

Some MIDI keyboards transmit pressure information per key, known as polyphonic aftertouch. For such keyboards, the Poly AT modulation source can be used, instead of Aftertouch.

Foot

MIDI Foot controller (CC#04).

Expression

MIDI Expression controller (CC#11).

Timbre (74)

The MIDI controller for brightness/timbre (CC#74).

Const

This source simply sends a constant value of 1. Hence, the amount setting is directly added to the destination parameter. This can be useful to set parameters only available in the modulation matrix. For instance, both oscillators and the noise generator are enabled via switches on the front panel.

Using the modulation matrix with Const as the source, it is possible to set the exact level of the oscillators or noise generator where necessary.

Random

Creates a random value whenever a voice is triggered. This source can be useful to add various sorts of subtle modulations, such that a patch sounds different each time a new key is pressed. This can make a patch sound more dynamic or natural.

LFO-1/2

Current value of LFO-1 or LFO-2.

LFO*MW

The value of LFO-1 or LFO-2 multiplied by the modulation wheel data.

Use this to create vibrato or tremolo effects with the depth controlled by the modulation wheel.

LFO*AT

The value of LFO-1 or LFO-2 multiplied by the aftertouch data. Useful to create vibrato type effects when applying pressure on the keyboard.

Flt Env

Current value of the filter envelope.

Amp Env

Current value of the loudness envelope.

5.1.2. List of Destinations

The destinations of the modulation matrix comprise most sound parameters Obsession offers, plus most effect parameters and a few helper functions not available on the front panel.

Cutoff

Adjusts the cutoff frequency of the filter relative to the front panel knob ("Frequency") and using the same value range.

Resonance

Adjusts the resonance for the filter relative to the front panel knob, using the same value range.

Env Amt

Adjusts the envelope amount for the filter relative to the front panel knob, using the same value range. A common application of this destination is to change the envelope amount dependent on how hard a key is hit (Velocity).

Volume

Sets the voice volume. The primary application of this destination parameter is to combine it with Velocity as a source.

Portamento

Adjusts the portamento value relative to the front panel knob.

Pitch Semi

The overall tuning in semitones. An amount value of +1 corresponds to one semitone, +12 transposes the oscillator one octave up, -12 transposes one octave down etc.

This destination is useful in combination with LFO 1 or 2 in "Steps" mode, which creates arpeggiator-like melodic sequences.

Pitch Fine

The overall fine tuning. The maximum amount value of +100 corresponds to a full note up, -100 means a full note down.

Osc 1/2 Semi

The tuning of oscillator 1 or 2 in semitones.

Osc 1/2 Fine

The fine tuning of oscillator 1 or 2.

Osc 1/2 Vol

Allows to adjust the volume of oscillator 1 or 2.

Osc 1/2 Phase

This destination provides a way to set the initial phase for oscillator 1 and 2. By default, both oscillators are in free-run mode. For some bass or effect sounds it can be useful to fix the initial phase, in order to have static transients that do not vary.

Osc 1/2 PW

Pulse width of oscillator 1 or 2.

Osc 1+2 PW

Sets the pulse width of oscillators 1 and 2 simultaneously.

Osc 2 X-Mod

Adjusts the cross-modulation (X-Mod) relative to the front panel knob.

Noise Vol

Adjusts the volume of the Noise generator. Useful to have more volume control than just on/off, or to create effect sounds by routing an envelope or LFO to noise volume.

Organic

Adjusts the Organic parameter.

Flt Keytrack

Adjusts the filter key tracking, where an amount of +100 corresponds to 100% key tracking.

This destination parameter is useful to have more control over the precise key tracking than just the on/off state the front panel button offers.

Flt Attack, Decay, Sustain, Release

Adjusts the filter envelope parameters relative to whatever is set on the front panel. A common application of this destination is to change the attack or decay parameter dependent on how hard a key is hit (Velocity).

Amp Attack, Decay, Sustain, Release

Adjusts the loudness envelope parameters relative to whatever is set on the front panel.

LFO 1/2 Depth

Controls the depth of LFO 1 or 2, relative to the front panel knob.

LFO 1/2 Rate

Controls the rate of LFO 1 or 2, relative to the front panel knob.

Part Mix

Adjusts the mix between part A and part B. This destination is relevant in Dual and Split modes, it will have no effect in the default Single mode.

Part A/B Cutoff

Adjusts the cutoff frequency of the filter relative to the front panel knob ("Frequency") and using the same value range for Part A or Part B exclusively.

Part A/B Semi

The tuning in semitones for Part A or Part B exclusively. An amount value of +1 corresponds to one semitone, +12 transposes the oscillator one octave up, -12 transposes one octave down etc.

Part A/B Fine

The fine tuning for Part A or Part B exclusively. The maximum amount value of +100 corresponds to a full note up, -100 means a full note down.

Part A/B Vol

Allows to adjust the volume of Part A or the Part B exclusively.

DL Feedback/Width/LowCut/HighCut/DryWet

Adjusts the delay parameters, relative to the back panel knob positions. Note that all three effects in Obsession including the delay unit are global, and hence the modulation source should be typically global as well. If a per-note source like Velocity is used as the modulation source, the voice last played is used to determine the modulation value.

RV Time/Color/Width/Regen/Shimmer/DryWet

Adjusts the reverb parameters, relative to the back panel knob positions.

CH LowCut/HighCut/Rate/DryWet

Adjusts the chorus parameters, relative to the back panel knob positions.

5.2. Reverb



A reverb effect is used to create the illusion of a sound being played back in a spatial environment such as a living room, hall or cathedral. The reverb effect in Obsession is designed to give best results for synthetic sounds, which are often more difficult to process than natural sounds.

The reverb effect in Obsession is designed to give best results for synthetic sounds, which are often more difficult to process than natural sounds.

Active

The active switch enables or disables the reverb effect.

Disabling the reverb effect saves CPU if the reverb is not used, i.e. set to fully dry.

Chorale

Enabling this switch adds a formant-type character to the reverberated signal.

Time

Adjusts the reverb time in seconds.

Color

Sets the damping of the reverb. High values cause the reverb to become increasingly dark very quickly. If the "Chorale" mode is enabled, this knob controls the formant (A,E,I,O,U).

Width

Adjusts the stereo width from mono (0%) to full stereo (100%).

Regen and Shimmer

The reverb in Obsession features a Shimmer effect, which blends the reverberated sound with a copy of itself, transposed up +1 octave. The Shimmer knob controls the blend, while the Regen(erate) knob creates a feedback loop of the effect, transposing additional octaves. Combined this results in a nice shimmer effect of the reverb, great for atmos, leads and pads.

Dry/Wet

Adjusts the amount of reverb, by blending between the dry and processed signals.

5.3. Delay



The Stereo Delay in Obsession creates a series of echoes, synchronized to the host tempo.

Active

The active switch enables or disables the delay effect.

Disabling the delay effect saves CPU if the delay is not used, i.e. set to dry.

Double-X

By default, the delay unit creates a series of echoes spaced apart as specified by the Time knob. If Double-X is enabled, the rate doubles after the first echo, and the echoes are alternating between the left and right channels.

Time

Sets the delay time in musical intervals (1 = half note, 1/8= eighth note etc). All delay times have two further variations marked "T" and "*". "T" denotes a triplet, whereas "*" extends the delay time by +50%.

Feedback

The feedback parameter adjusts how long the echoes are repeated.

The parameter specifies the level change from one echo to the next, so mid position cuts the level of each subsequent echo approximately in half, etc.

Width

The Width parameter blends echoes seamlessly from monophonic to full stereo.

Low Cut

Echos pass through a low cut filter with an adjustable low cut frequency. Set to high values, the echoes become very thin.

High Cut

The echos also pass through a high cut filter with an adjustable high cut frequency. Set to high values, the echoes become dampened.

Dry/Wet

Adjusts the amount of the delay effect, by blending between the dry and processed signals.

5.4. Chorus



A chorus effect is obtained by summing a signal with a delayed copy of itself.

When the delay is continuously varied with a low-frequency oscillator and separately for the left and right channel, the sound becomes thicker and more spatial.

Active

The active switch enables or disables the chorus effect.

Ensemble

Switches between chorus mode (off) and ensemble mode (on).

Ensemble is a special kind of chorus with multiple delay lines instead of just one.

Rate

Adjusts the rate of the chorus or ensemble effect.

Low Cut

The chorus output signal passes through a low cut filter with an adjustable low cut frequency. Set to high values, the effect signal becomes very thin.

High Cut

The chorus output signal passes through a high cut filter with an adjustable high cut frequency. Set to high values, the effect signal becomes very dark.

Dry/Wet

Adjusts the amount of the chorus effect, by blending between the dry and processed signals.

If the Ensemble mode is chosen, this knob controls the effect Depth instead of the blend, as ensembles must be 100% wet.

5.5. Global



VCA Sat

Enables saturation in the amplifier. This will cause the output of each voice to be slightly distorted. A subtle effect, which can however spice up some sounds.

Limiter

Enables the output limiter, which prevents the output signal from exceeding 0dB. The limiter is a zero-latency type, which means it can be used safely in most situations.

Organic

Modulates all sound parameters in all voices randomly. This control can be used to further enhance the "analog feel" of the instrument.

PB Range

The two Pitch Bend Range controls adjust the maximum amount of semitones the pitch wheel will transpose up or down.

Note that the controls operate just like all other knobs, i.e. they must be left-click/dragged to change their value.

Transpose

Transposes the overall pitch from -24 semitones (-2 octaves) to +24 semitones (+2 octaves).

Split

Defines the split point between the upper and lower patch when in SPLIT mode.

5.6. LFO Steps



The Steps control is designed to greatly improve the flexibility of the two LFOs. To use the Steps control, it must be chosen as the LFO shape on the front panel for either LFO 1, LFO 2 or both.

Afterwards, the LFO will cycle through the steps which can be drawn with the mouse. The LFO Steps are synchronized to the host tempo, making it ideal for rhythmic effects. Thus on the front panel, if Steps is chosen, the LFO Rate parameter is adjustable in musical intervals (1 = half note, 1/8= eighth note, T = Triplet etc), instead of the usual Hz.

Pencil/Line tool

By default, steps are drawn directly by left-clicking into the Steps control. For larger numbers of steps like 128, switching to the line tool can be useful to draw precise up- or downward slopes.

Steps

This pop-up adjusts the amount of steps to draw. The default of 16 steps is useful for rhythmic effects, while the maximum of 128 steps can be used to draw arbitrary LFO shapes or create an extra envelope (using one-shot mode, see below).

Soften

With the Soften knob, the output coming from the Steps control is smoothed. This is useful for applications where the step modulation is too coarse.

One Shot

Triggers the Steps just once on each key press. In this special mode, the Steps control can be used as an additional auxiliary envelope.

Filter Env Retrigger

Each step encountered on LFO-1 retriggers the filter envelope. In this special mode, arp-style sequences can be created.

Edit LFO 1 / 2

Edit the steps of LFO 1 or LFO 2.

Keyboard shortcuts

- Ctrl+LeftMb - resets the value of a step
- Alt+LeftMb (or left/right arrow keys) - rotate the steps left/right
- Shift+LeftMb - move the step value in a raster of 1/24th, useful to create melodic sequences
- Mouse Wheel - increase/decrease step value

6. Patch Browser

Since version v1.2, Obsession contains an extensive patch browser to search for specific sounds, manage soundbanks, mark favourites, or even create completely new sounds with the Genetics function. The patch browser is opened by the "BROWSER" icon in the patch selection area.



Important: Since the patch browser is typically used to change the currently selected patch, any changes made to the active patch should be saved before using the patch browser.

The functions of the patch browser are explained in more detail below.

Soundbanks

When the browser is opened for the first time, all installed patches from all soundbanks are shown on the right column. By left-clicking on a soundbank, the displayed patches can be limited to the selected soundbank. By right-clicking on a soundbank, that soundbank can be renamed, or its location in the file system can be revealed.

In addition to the factory soundbanks, there are special banks highlighted in color:

- **Favourites:** This displays all patches that have been marked as favourites.
- **User:** Own patches can be stored in this soundbank.
- **Trash:** Displays patches that have been moved to the trash can. These patches can then be permanently deleted by right-clicking and selecting "Clear Trash".

With the function "Create new soundbank..." a new soundbank can be created with the desired name.

Authors

This popup menu can be used to limit the patches displayed on the right to a specific author. By default, all authors are displayed.

Categories

The patches shown can be limited to specific categories. Multiple selection is possible by holding the CTRL key.

The "Show uncategorized patches" function displays all patches that have not yet been assigned to a category yet. This is useful for sound designers who are creating a new soundbank.

Patches

The right column shows all patches that match the current selection criteria. Left-clicking on a patch selects and makes it the current patch. Multiple selection is possible by holding either the CTRL or SHIFT keys. Using Drag+Drop, selected patches can be assigned to a specific soundbank or category.

The search box on top can be used to search for specific patch names. Entering a string will immediately show all patches containing this string.

With the "Create new patch..." function at the bottom, a new Init Patch can be created in the current soundbank.

Menu

The MENU button provides the following functions:

- **Genetics:** Opens the Genetics tab, which can be used to create new sounds (see below).
- **Import Patch/Folder:** These functions can be used to add a single Obsession patch or a directory of patches to the sound banks. This can be useful to quickly integrate patches from external hard drives or USB sticks.
- **Import ZIP:** With this function a zipped soundbank can be imported directly. The soundbank will be named like the ZIP.
- **Reload Soundbanks:** Reloads all patches, in case patch files have been added or deleted manually via the file system.

Note: For the folder and ZIP import, if there are wavetables found besides the patches, these are also automatically copied into the wavetables. In this way, third-party soundbanks can be installed quickly and conveniently.

Genetics

With the Genetics function, new sounds can be created from 2-3 already existing patches. In doing so, properties from these patches are randomly thrown together.

After selecting at least two patches in the patch window on the right (hold down the "CTRL" key for multiple selection), a new patch can be created using the "Generate" function. If the selected patches fit well together, usually only a few clicks on "Generate" are necessary to get a usable sound.

Important: When pre-listening, the listening volume should be relatively low, since the generated patches are random and can therefore sometimes become very loud.

The "Auto" function is similar to the "Generate" function, with the difference that here two new patches are randomly selected from the current directory with each click.

Successful sounds can be quickly saved with SAVE. These sounds are then stored in their own soundbank "Genetics" and are date and time stamped.

The Genetics function can weight the selected patches differently. This is controlled by the "Amount" knob. The larger the value, the more patches 2 and 3 are factored into the final sound. At the minimum value of 0%, patches 2 and 3 are not considered at all, i.e. the first patch remains as is.

Keyboard shortcuts

To speed up the workflow, the browser supports the following keyboard shortcuts:

- **Arrow keys** select the next/previous patch.
- **F2** renames the currently selected patch.
- With **ESC** or **RETURN** the browser can be closed.

7. Troubleshooting

If Obsession does not work as expected, check the following points. If your problem is not listed here, do not hesitate to contact us at service@synapse-audio.com, we are happy to assist you.

7.1. Obsession does not appear in the host's plugin list

If Obsession is not visible in the plugin list of your host software, please re-scan all your plugins. If this still does not help, the most likely reason is that Obsession has not been authorized yet:

- On the PC, launch Activation.exe in the Documents\Synapse Audio\Obsession folder and perform the authorization.
- On the Mac, launch RegisterObsession.app in the /Library/Application Support/Synapse Audio folder and perform the authorization.

7.2. Patches do not recall

The most likely reason is that you have the demo version installed, which does not recall the parameter states. If you have purchased the full version, make sure to uninstall the demo version then install the full version, and be sure to provide your proper serial number and activate Obsession with no errors.

7.3. Parameters change unexpectedly

Check your MIDI setup. While Obsession uses a controller map designed to not react on controllers such as program change or volume (which may be sent by some hosts), it is possible that your gear sends other controller messages that Obsession will respond to.

7.4. MIDI messages are not received

Check the MIDI IN indicator, located on the top right of Obsession's user interface. If this indicator never lights up, Obsession is not receiving any MIDI messages. Check the MIDI setup of your host sequencer, as well as the setup of your hardware.

7.5. The CPU usage is very high

Check if your system meets the minimum system requirements.

8. Legal Information

8.1. Trademarks

VST is a trademark of Steinberg Media Technologies GmbH, registered in Europe and other countries. NKS is a registered trademark of Native Instruments GmbH. All other trademarks and trade names are the properties of their respective owners, and do not imply owner's endorsement of this product, or guarantee full compliance with owner's standards.

8.2. End User License Agreement (EULA)

By installing, copying, or otherwise using this software or any files provided with it, you agree to be bound by all of the terms and conditions of this license agreement. If you are not the original purchaser of the Software, or if you do not agree with the License Agreement, you must promptly remove the software from your computer, and cease any and all use of it. If you are accepting the License Agreement on behalf of an other legal entity, the use of the terms "you" and "your" in the License Agreement shall refer to such entity.

Grant of license

You are granted a personal, nonexclusive, and limited license to install and use the Software for the purposes set forth herein. Unless you have purchased additional licenses, you may install and use up to two copies of the Software simultaneously, provided that you are the only individual using the software. If you are an entity, you may appoint one individual within your organization to have the right to use the Software under the terms of this License Agreement. This software, including all of its components and any additional files included with the distribution, is protected by copyright law and international copyright treaties. The term of this license is perpetual, unless terminated under the conditions provided in the License Agreement. Except as provided in the agreement, you receive no rights to rent, lease, lend, copy, modify, market, transmit or reverse engineer the software, any component hereof, or any file provided with the distribution.

The software, and any files included with the distribution, including sampled sounds, patches and demonstration songs, is licensed but not sold to you, for use in music production. If you have purchased this software as an upgrade from a previous version, this constitutes a single licensed product, to be used under the terms of this License Agreement.

Disclaimer

The software, any component hereof, and any files distributed with the software, is provided "as is", and there is no warranty of any kind, either express or implied - including, but not limited to, the implied warranties of merchantability and fitness for any particular purpose. The risk as to the quality and performance of the program is with you, and the licensor will not be held responsible for any damage or loss, to your person or property, as incidental or consequential result of installing or using this software.

Termination

Your license to use the software is effective from the date you agree to the terms and conditions of this License Agreement. Your license is automatically terminated if you fail to comply with the limitations described in the License Agreement, and no notice shall be required from the licensor to effectuate such termination. Upon termination of this License Agreement for any reason, you shall make no further use of the software, and shall destroy all copies hereof, and shall not be entitled to any claims or refunds.

Appendix A. Sound Design Reference

Ab.	Author name	Email or website
AB	Alex Butcher	https://www.alexbutcher.de
EX	Daniel Thiel (eXode)	https://soundcloud.com/exodesound
GW	Ghostwave	https://www.ghostwaveaudio.com
IW	Ingo Weidner	ingo_weidner@web.de
MC	Michael Cavallo	michael@monomosound.com
Nk	NOVAkILL	-
KS	Kevin Schroeder	https://www.facebook.com/DejaVuSound
RH	Richard Hoffmann	https://www.synapse-audio.com
SM	Sascha Meola	-
TK	Marc Hoppe (Teksonik)	teksonik@outlook.com

Appendix B. MPE Support

Obsession supports **Multidimensional Polyphonic Expression** (MPE). MPE allows to control each note played individually, as opposed to classic MIDI controllers like the pitch bend wheel, modulation wheel, foot or expression pedal, which affect all audible notes simultaneously.

To use MPE in Obsession, all that needs to be done is to set up the desired modulation in the modulation matrix. Supported MPE controllers are Aftertouch and Timbre/Brightness (CC#74). Note that if Timbre is chosen, then this particular MIDI controller (CC#74) can no longer be used to remote-control knobs or faders.

Obsession also supports polyphonic pitch bend, which works out of the box and thus does not require to be explicitly enabled.