



SUR-AUDIO Lab

VOID

advanced subtractive synthesizer

✓ includes FLEXOR TECHNOLOGY

user manual

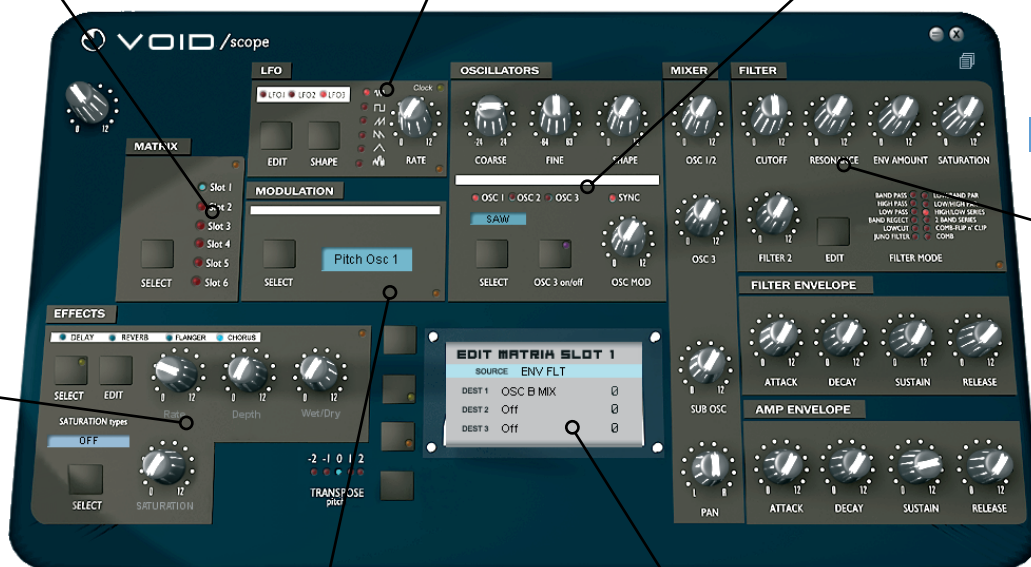
11x35 matrix
Send everything
-everywhere

3 Multiwave lfo's
with special clock
sync mode

3 main oscillators
+ sub osc

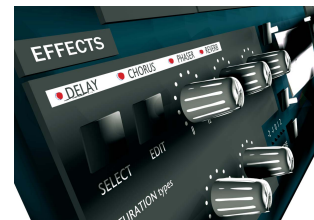
4 effects plus
a powerful
saturation
section

Filter section
with 12
different
schemes



2nd modulation area
for another 5x7 modulations

One panel for plain
user interface



INTRODUCTION

SUR-AUDIO Lab's VOID virtual analog brings to the scope family a synth capable to produce timbres needed by the modern electronic music artist.

By combining a classic analog shell with some extensive shaping and onboard effects we have created a synthesizer that it is ready to explore new eras of sound sculpting.

In the current situation whereas the granular "synthesis" is taking the place there are certain timbres that are still main part of electronic music which are only achieved with pure subtractive synthesis. All these plus the advantages that provides a synth running on Creamware's DSP powered platform, the high quality sound unreachable from the native alternatives.

The particular structure provides some new function for the Scope family synthesizers such the extensive modulation capabilities (the 11 sources x 35 destinations matrix) plus the advanced clock sync modulation mode.

We wish you an enjoyable music creation trip!



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specifications

Voices:

16 max, 4-8 in general systems.

Lower in smaller systems. (depends on the DSP's)

Sound generators:

2 main oscillator featuring 6 wave types and 2 modes each to choose from: Pulse Sync - Pulse width, Saw sync - saw, Waldorf oscillator, sine sync - sine shaped, noise filtered - noise comb filtered, 2 sines added, 2 sines fm 'ed.

- There are specific functions according to oscillator wave selection. Refer to panel reference sections for detailed info.

Oscillator modulation section:

Here you can further shape the oscillators timbre or perform other actions. Modulation modes include: Filter FM, Warp shaping, a distorted Ring modulation type, Frequency modulation, Phase Modulation, Ring Modulation.

Envelope generators:

There is 2 envelopes in VOID. One ADSR for the amp, one ADSR for the filter. Both are sources for the matrix and the 2nd modulation section.

LFO's:

3 multi-wave lfo's with rate, delay, amount, fade-in, fade-out, 6 waves to choose (sin-square-saw up-saw down-triangle-random), key-retrigger, offset, phase, plus special clock sync modulation



Filters:

The filter section is quite extensive. There are single and poly filter modes. The filters included are:

- LP 12-24db/octave
- HP 12-24db/octave
- BP 12-24db/octave
- Band Reject
- Juno filter (12db LP followed by 12db HP)
- LP Vintage 24db
- Lowpass/bandpass parallel config
- Lowpass/highpass parallel config
- Highpass/Lowpass in series config
- 2 bandpass in series
- a Comb filter followed by a Flip n' Clip shaper
- a Comb filter

Filter saturation:

There is 7 ways to saturate the filter signal:

- Soft Sat
- Bit reduction
- Sample rate decimator
- 6db lowpass
- 6db highpass
- Warp shaper
- Squish shaper

Effects:

There are 4 effects available:

- Delay syncable to internal tempo
- Reverb
- Flanger
- Chorus

Distortion:

There are 6 ways to "distort" your signal:

- Fat Sat
- Distortion
- S/r reduction
- 6db Lowpass
- 6db Highpass
- Warp shaper
- Squish shaper

Others:

- Audio input for Lfo sync purposes with pre-recorded Ramps for sample accurate Lfo synced modulations.
- Envelope follower input
- List of Matrix sources and destinations at page 22

Programs:

194 presets in different categories

Requirements:

Creamware Scope platform hardware and software. *

Pentium 3-4 for optimal use.

Creamware Modular 2 software

"Classic" screen mode is recommended for better behaviour (SFP provides better graphics performance in "classic" and elimination of jerky edges of the panel

** minimum requirement 6 DSP's for 1-2 voices (or lower...). 12 DSP's will handle 4 voices. In a 21 system you can have 4-9 voices. It is rather heavy in DSP and some patches uses a lot of DSP memory. Best experience 12+ DSP's.*

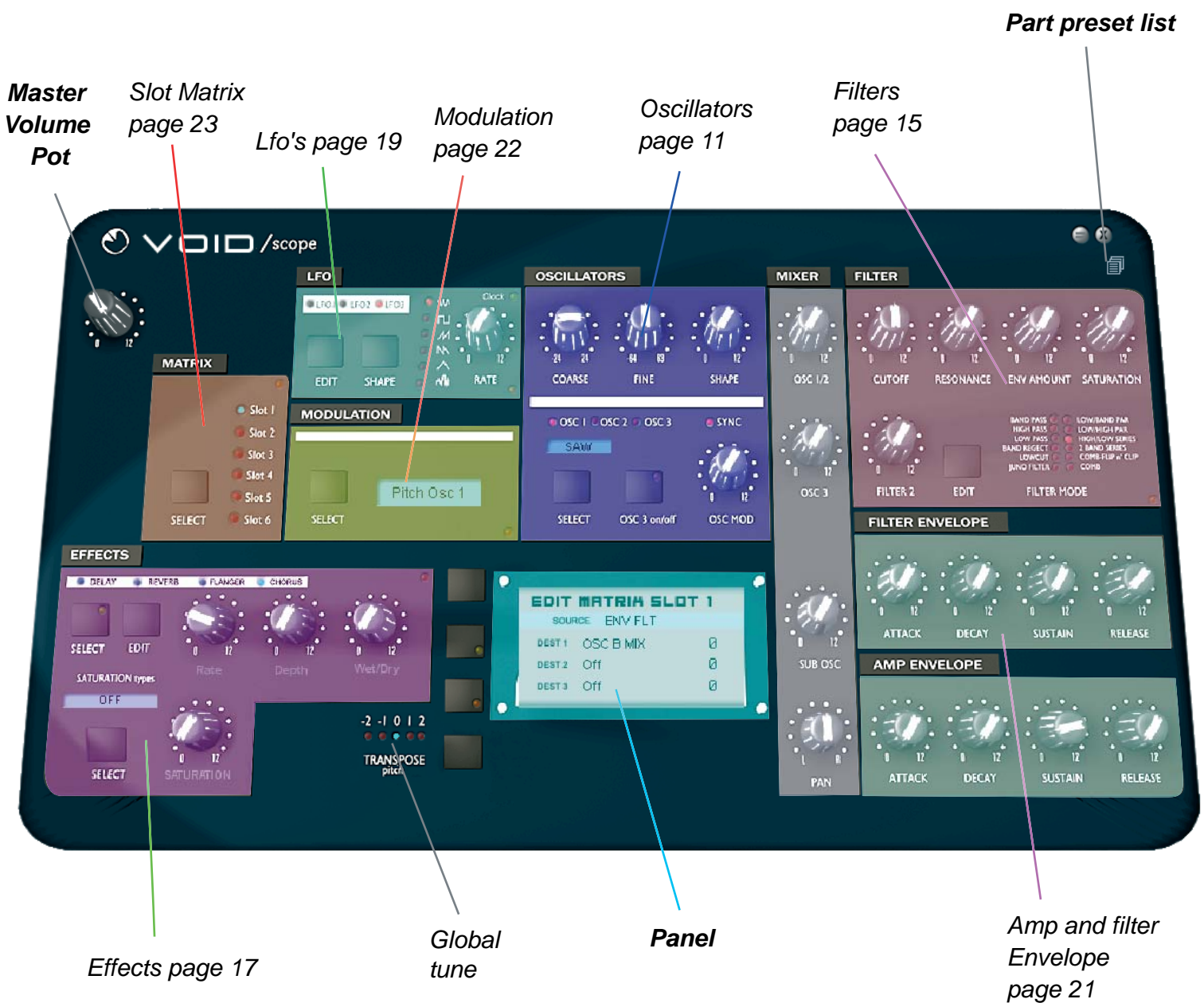
-Not tested for MAC OS. It will be tested soon to check general behaviour.

device installation

- ▶ Copy VOID.dev in your devices folder. (normally c:\SCOPE\devices\)
- ▶ Copy the provided VOID.pre file in your preset files folder (normally in c:\SCOPE\presets\).
- ▶ Move the provided ramp "rAMP 144_00.wav" to a safe place that you don't browse for audio files.
- ▶ Drag the device from the File browser or windows explorer (or use Live bar menu) in project window and connect midi in and the outputs as necessary.
- ▶ That's all.

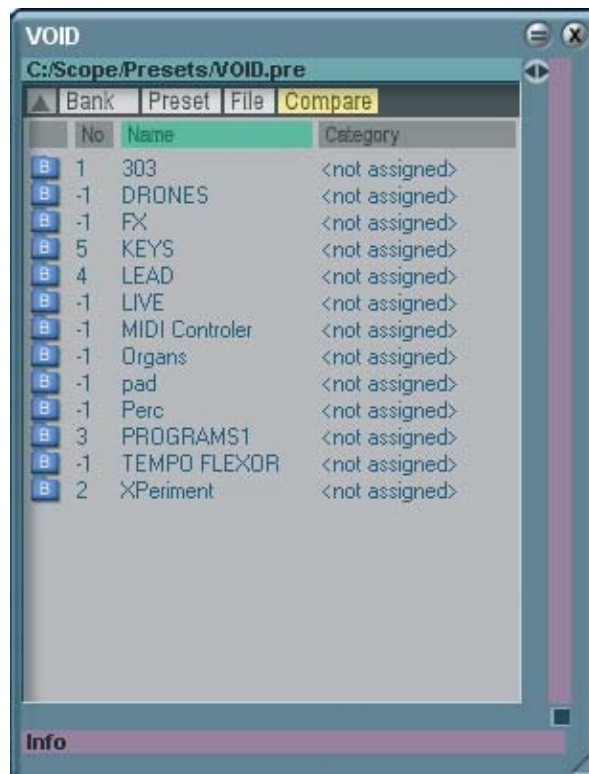


front panel



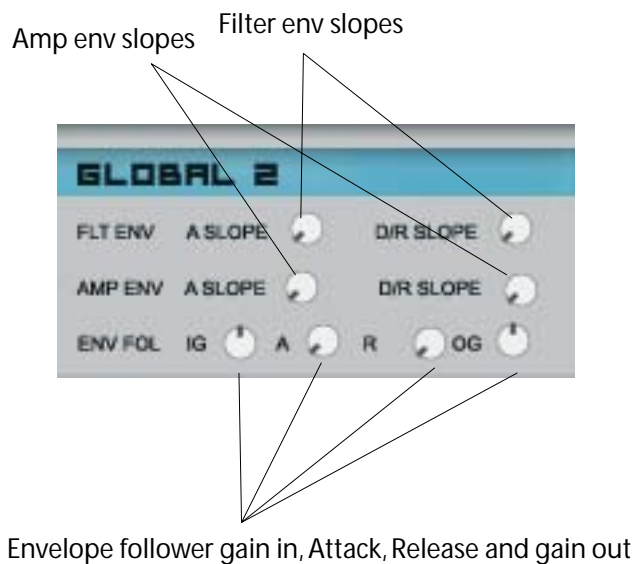
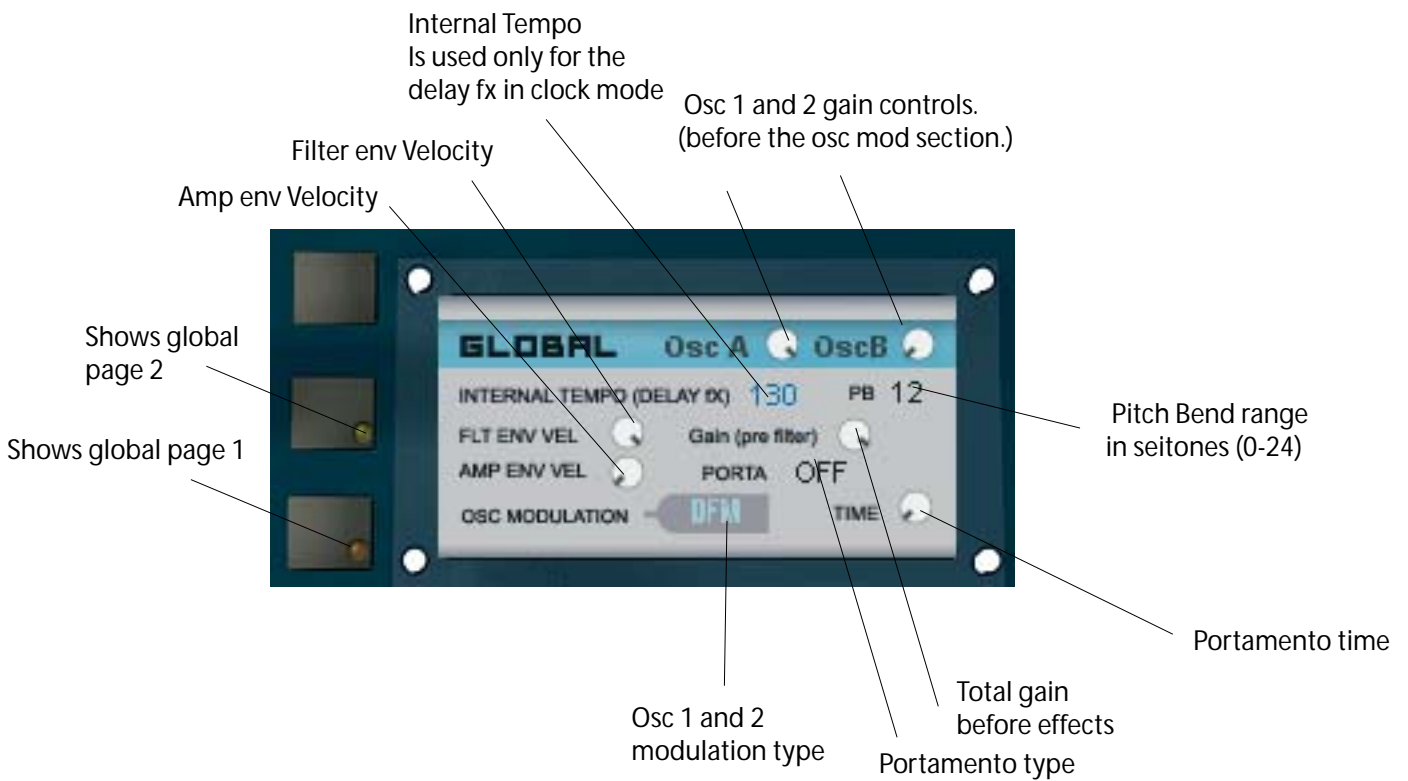
Preset Lists handling

- VOID synthesizer provides a single preset list. The presets are divided in categories.
- The time required for the preset change to take place is hardly influenced by the active voices and the preset contents. For example a 1 voice preset change happens quite fast, but a 4 voice preset change that turns reverb off, changes oscillator type etc. may take a while (10-20 seconds).



Globals

There are 2 Global pages. Here we set several parameters.



Panel reference - Oscillators

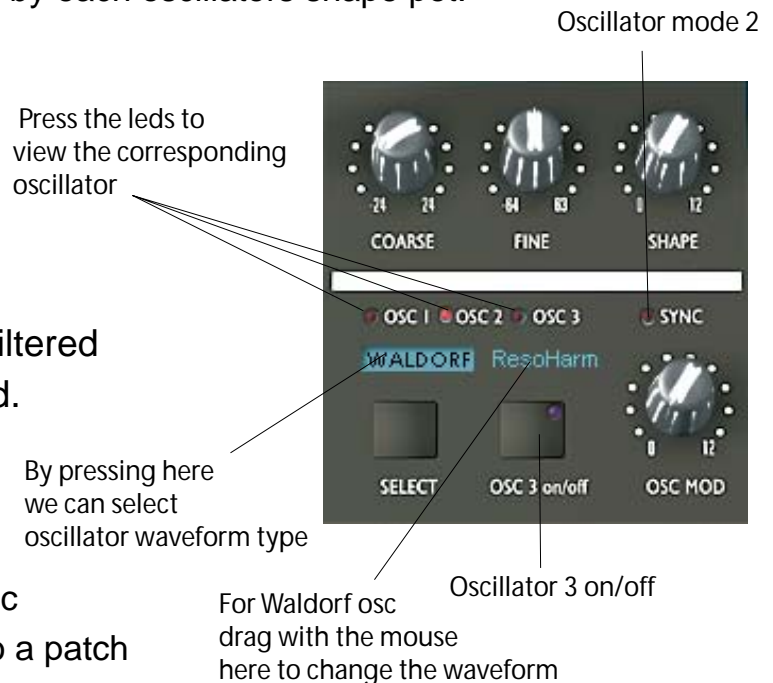
- There are 3 main oscillators and an extra sub oscillator (taking frequency information from oscillator 1). They are identical in their design so the explanation of the first implies also to the other two.
- The oscillators provides 6 waveforms to choose, and each one features a 2nd mode. The 2nd mode of each oscillator most of the time provides sync but it isn't always that. The "shape" of each the oscillator (which is different according to the selected waveform) is controlled by each oscillators shape pot.

The included waveforms are:

- Pulse Sync - Pulse width
- Saw sync - Saw
- Waldorf oscillator
- Sine sync - Sine shaped
- Noise filtered - Noise comb filtered
- 2 sines added, 2 sines fm 'ed.

- When the "sync" led is lit then the 2nd mode is working. All sync modes offer independed sync so a patch can contain 3 synced oscillators in parallel.

The Sine shaped type is very useful in FM patches. It has an internal feedback path (modulated by the shape parameter) which actually makes the sine to transform smoothly in a octave below squarish shaped sine. The second mode is sine sync. The waldorf oscllator provides the 64 classic waves from the original PPG. Thus able to deliver the digital shapes needed to access sounds beyond the standard waveform capabilities. The shape parameter in that mode "sweeps" the selected waveform.



Panel reference - Oscillators

NOISE

The «noise» waveform is white noise passed through a 12db lowpass filter. The filtering is controllable from the shape parameter. The second noise oscillator is a new approach. It's noise passed through a comb filter. The shape parameter controls the comb filter cutoff.

OSC 2 sine B tune



2 sines mode

In that mode we actually have 2 sines per oscillator. In the first one the sines are added. The little pot that shows when the 2 sines wave is selected controls the 2nd sine coarse tune. With the shape parameter we control the 2nd sign gain. In the second mode the 2 sines are fm'ed each other. Here also the shape parameter controls the 2nd sine gain thus controlling the FM index in synthesis words.

That mode we use to create FM patches and how we do that we 'll be explained in the next paragraph.



Panel reference

Oscillator Modulation

- ▶ Oscillator 1 and 2 pass through some modules that allow further modification of the timbre. To change the type of oscillator modulation use global page 1.
- ▶ There are 6 types of modulation:
 - Filter FM
 - Warp shaping
 - a distorted Ring modulation type
 - Frequency modulation
 - Phase Modulation
 - Ring Modulation.
- ▶ The pot named "Osc Mod" at the oscillator section controls the amount of the modulation.
- ▶ According the selected modulation mode the "Osc mod" pot performs a different action.
 - In Filter Fm controls the amount osc 2 will modulate filter 1 cutoff frequency
 - In Warp mode controls the amount of shaping
 - In Distorted RM, controls the hidden oscillator coarse tune
 - In FM controls the amount osc 2 will modulate osc 1 frequency
 - In PhaseM controls the amount osc 2 will modulate osc 1 phase
 - in RM, controls the level of osc B



Panel reference

Oscillator Mixer

- ▶ The output of the modulated osc 1 and 2 are added in the mixer with osc 3 and the sub oscillator. Osc 3 can be switched off to conserve DSP power.
- ▶ The individual oscillator gains are destinations in the slot matrix and oscillator 1 and 2 has also little gain pots in Global page 1. (Very useful to attenuate the osc's level before reaching the filter so to have extra clear resonances...



Panel reference - Filters

The oscillators mix signal then passes to the filters. The filter types provided are 12 featuring 1 and 2 filter combinations plus some extra ways to filter sound. The filters are a unique collection of the best filters of the scope family so there trully a lot of possibilities.

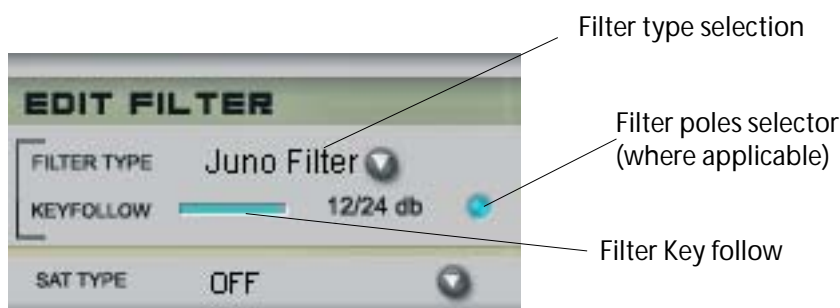
The types provided are (selectable in the filter panel as on the synth surface)

- LP
- HP
- BP
- Band Regect
- Juno filter (12db LP followed by 12db HP)
- LP Vintage 24db
- Lowpass/bandpass parallel config
- Lowpass/highpass parallel config
- Highpass/Lowpass in series config
- 2 bandpass in series
- a Comb filter followed by a Flip an' Clip shaper
- a Comb filter



Press the LED so the filter panel to appear

Something about the comb filters: in the combfilter/flip n'clip type we control the comb filter cutoff with cutoff 1 pot, and with the cutoff 2 pot the amount of the clip. In the Comb filter mode, cutoff 2 pot controls the dumpen of the comb filter.



Panel reference - Filter saturation

There is 7 different ways to saturate the filter signal:

- Soft Sat
- Bit reduction
- Sample rate decimator
- 6db lowpass
- 6db highpass
- Warp shaper
- Squish shaper



Filter saturation
type selector

You control the amount of the saturation with the Saturation pot and it is also a destination for the slot matrix... (most of them can be modulated). Now these shapers are polyphonic and with careful usage they are capable to really change the input signal.

The waveshapers (warp-squish) after the filter gives a new range of sounds unacheivable until now. But with the freedom in the ranges they have it is also easy to end with a lot of nasty aliasing, or brutal distorted sounds. With clever usage of the gains of the oscillators we can use the shapers in a very good manner and as they are non-linear elements (change their output according to the level of the input signal) they are taking a crucial role in synthesis.



Panel reference - Effects

VOID has all the essential effects onboard ready to be saved with your patch and become part of the programming. The effects provided are: distortion, delay, reverb, flanger, chorus. All can be switched off to save DSP.

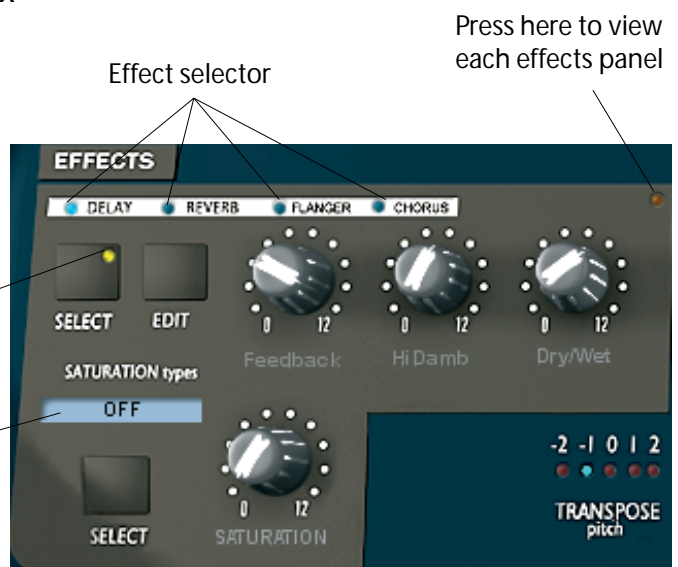
The **distortion** is something like the saturation area of the filter but it is monophonic. There are 7 ways to "distort" your signal:

- Fat Sat *
- Distortion *
- S/r reduction *
- 6db Lowpass
- 6db Highpass
- Warp shaper *
- Squish shaper *

*a * means it can be modulated by the slot matrix*

When that led is lit the selected effect is active

Distortion type selector



DELAY

In the dedicated delay panel you can set the time of the delay for the right and left channel. When synced to internal clock (the tempo can be set in the Global 1 panel the display changes to show values as a division of the tempo. We also control delay feedback, high frequencies attenuation and Dry/wet from the pots.



Panel reference - Effects

REVERB

The reverb is a simple one but can take a crucial role in the overall sound. We can control Time, HiDamp and dry/wet from the pots and several other parameters from the reverb panel like: algorithm (5 types), Lowpass filtering, High pass filtering, High frequency damp, pre-delay and diffuse.

FLANGER

The flanger provided is really interesting. It's really fat and can make your sound expand it's stereo field in a nice way. Feedback, Rate and Depth are controllable from the dedicated pots.

We can also edit in the flanger panel the dry/wet parameter, the left and right times for the delay of the signal and the phase of the shift.

** Rate and depth can also be modulated from the slot matrix which leads to several interesting sounds.*

CHORUS

The chorus effect provided is also a nice one. Controllable are Rate, Depth, Wet/dry from the pots and time for the left and right signal, and the phase of the shift at the dedicated panel.

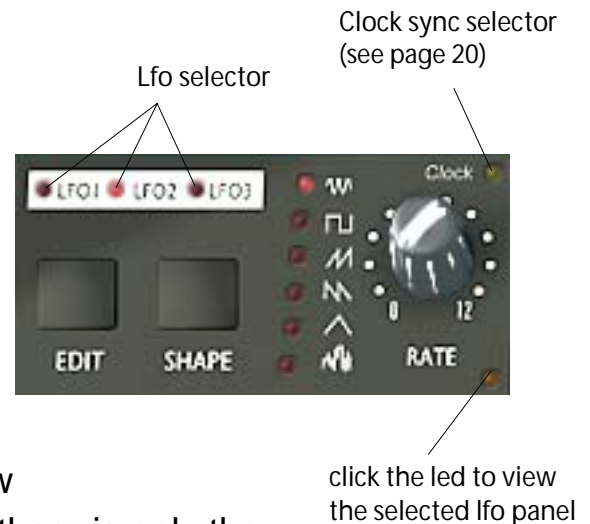


Panel reference - Lfo's

- There are 3 lfo's providing 6 different waveforms. Lfo's can have their amount modulated by the matrix and also their rate. They can easily self modulate themselves so to insert some feedback paths in your sound creation.

- The waveforms provided are sine/saw up/saw down/square/triangle/random. In the surface there is only the rate pot, and the waveform selector. Other parameters like delay, fade in, re-trigger, fade out, offset, amount, and phase can be found in the dedicated Lfo screen.

- The Lfo's can go really fast so they pass a lot of time in audio frequencies so to further enrich the timbre creation. But can also fall down to 0 with a nice curve that passes a lot of time in the common vibrato frequencies. Lfo 3 signal is unipolar so to make vibrato easy and the right way.

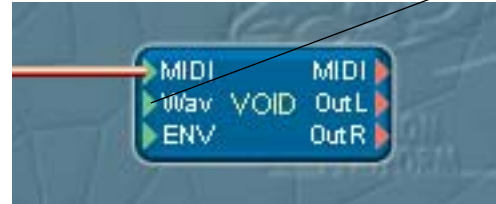


Panel reference

Lfo's (sync to clock)

The input for the Ramp modulation signal

- The clock 'ed lfo's needs a separate introduction cause they are special. When swithed to "clock" mode the Lfo signal is coming from the "wav" input of the device. It is designed that way so to be able to make modulations sample accurate and to provide some new function.



So how do we achieve that? It's not very easy and the begginers should also be careful cause what we are going to do is to route a "recorded" saw waveform from the sequencer to the VOID "wav input" (clock mod input).

!!Be careful not to send such a wave to your speakers, it can really hurt your ears... and the speakers.

(also when you browse for ramps switch auto monitoring off or your sequencer will preview the sound and... disaster). For an extra precaution you should create a folder named «ramps» or whatever and place it in a safe place in where you don't browse for sounds. It is suggested to avoid using the clock mode if you don't know exactly what you are doing.

- So we route the provided ramp (recorded saw wave) from the sequencer (LIVE is really good for it as it can time-stretch the ramp to our song tempo very easy) to the "wav" input and then we can set the division (sync rate) the amount and the "lfo" wave between saw and triangle (for each of the 3 lfo's).



Panel reference - Envelopes

- Some info about the envelopes.
The filter's and the amplifier's envelopes are of ADSR type with modulable times (by the slot matrix).
- Their levels can be modulated by velocity and they have also controllable slope A/D and D/R. (set in global page 1 and 2 respectively)



Panel reference - Modulation

- So we have 5 sources. 3 lfo's and the 2 env's.
These are the «basic» modulators and in the modulation panel we can route these 5 modulators with different bipolar amounts to 7 destinations. Oscillators pitch, oscillators shapes and filter 1 cutoff frequency.
- If you add the 5x7 modulator matrix to the 18 parralel modulations provided in the Slot matrix you end with 53 modulation in paralle!

Use the pots to send different amounts



Destination selector

Panel view

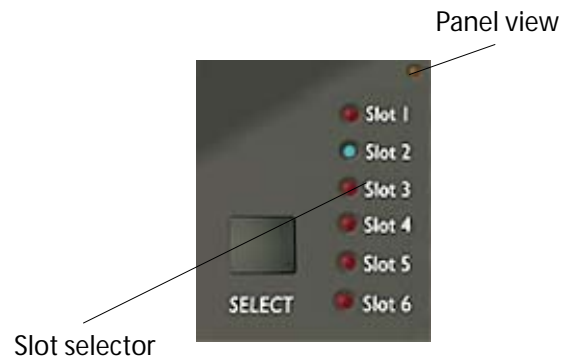


Panel reference - Slot Matrix

Then there is the Slot matrix. Here we have 6 slots that each one can send to 3 different destinations offering in total 18 parallel routings. Only an active dest is loaded on the DSP's.

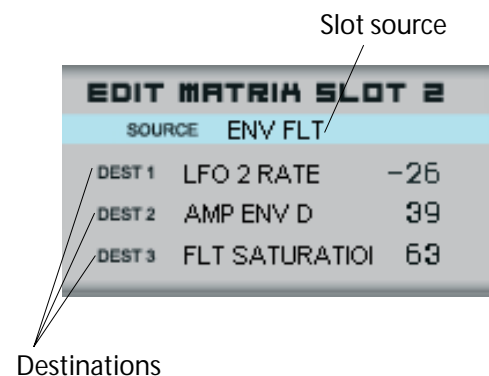
The sources available as modulators are:

- Lfo 1,2,3
- Filter Env
- Amp Env
- Modulation wheel
- Pitch bend
- Velocity
- Note value
- Env follow
- Aftertouch.



The destinations are 35. These are:

- Oscillator 1 pitch
- Oscillator 2 pitch
- Oscillator 3 pitch
- Oscillator 1 shape
- Oscillator 2 shape
- Oscillator 3 shape
- Filter 1 Cutoff
- Filter 2 cutoff
- Resonance (both filters)
- Filter Env A
- Filter Env D
- Filter Env S
- Filter Env R
- Amp Env A
- Amp Env D
- Amp Env S
- Amp Env R
- Lfo 1 Rate
- Lfo 2 Rate
- Lfo 3 Rate
- Lfo 1 Amount
- Lfo 2 Amount
- Lfo 3 Amount
- Filter saturation
- Distortion fx mod
- Osc 1/2 mix
- Osc 1/2 modulation
- Pan
- Flanger depth
- Flanger Rate
- Osc 1 gain
- Osc 2 gain
- Osc 3 gain
- Sub osc gain
- Amp



Preset Bank 303

0 2bands
1 70's psychedellia
2 Acid3
3 anabuaty2
4 analog beauty
5 band wha
6 BAss dec
7 bass1
8 Digi Harsh
9 Elastic Perco
10 elastic ridoo
11 feedback
12 Filter 3osc
13 Filter FM
14 Filter sat mod
15 Fm chr
16 Grqan1
17 Juno filter
18 loko filt1
19 Nadja1e
20 noisy
21 Perco 75
22 psy perc seq
23 Psy re5
24 psy swe
25 r1
26 r2
27 r3
28 r4
29 r5
30 re3temp
31 Reason2
32 Res3
33 Reso Filr
34 reso lfoing
35 Reson Filter
36 ridoo
37 Room Pos
38 S/h seq1
39 S1
40 Schiz s/rate
41 seq 4
42 Seq rubba
43 seq1
44 seq3
45 seq5
46 seq77
47 Space rabbit talking
48 Spi23
49 syncfio
50 synv seq
51 Too Fat
52 Trance seq4
53 vocal reso
54 Vocal1
55 Whirl filter
56 whourl seq
57 xiss
58 Xiss 45
59 xiss2

Preset Bank Drones

0 industrial
1 metro
2 noise
3 Psy sweep drone
4 slow res

Preset Bank Fx

0 A001 RE5 (env Amo)
1 Careful with f eygene
2 DFM sweep
3 FDB Alien
4 hold for drone
5 Lfo bello
6 LfoBello2
7 NeXt Z (dsp mem hig)
8 NOISR wave
9 Palo sweep
10 Psy triller (dsp mem hi)
11 Reverb hall
12 RM Sample and H
13 slow open noize
14 space craft land
15 wind

Preset Bank Keys

0 alien key
1 bellsynth
2 Groiler 2
3 gty56
4 RESon
5 reson 2
6 slow move
7 slow move 2
8 synth1

Preset Bank LIVE

0 303 bass
1 Bass
2 Delayed
3 Lfo mono sweep
4 Reduct
5 Sel
6 ser5
7 Viro
8 xia45

Preset Bank Pads

0 3osc pad
1 ether45
2 resion99
3 Sphere1
4 Storybell

Preset Bank Lead

0 Distorted
-1 PB TO LFO Am
-1 Wheel to lfo3 AM

Preset Bank Programs 1

0 A Angel
1 bell organ
2 cartoon show intro
3 chord54
4 corneta
5 cosmic pad
6 crazy lfo mod
7 deep reverb place
8 delay field
9 Delay Squish
10 Dist slow chords
11 Dist sping
12 drone fx PB
13 el piano2
14 Elec piano
15 Epic intro
16 Figourine
17 FM psy lfo
18 FMPI
19 FMPIANOP
20 FX PSY piano
21 fx squang
22 fx trill21
23 glide bass 1 (mono)
24 in move pad
25 industrial Age
26 Indy 23
27 kermit 2
28 KERmit1
29 Let it sound
30 lfo sin PB
31 lok1
32 Low dr44
33 Nadja
34 Psy lead 3
35 psy lead loko1
36 PULSE detune
37 Sacred neuron
38 sad paddy
39 Saws
40 schizz1
41 simple FM
42 space fx PB
43 sphere1
44 Spitol1
45 sweep key
46 Sweeper
47 Sweepr5
48 test filt
49 twistl
50 Vib pad
51 VocaHArm
52 VocAL (if wait)
53 Warp Mod
54 whawha1
55 Xperim54

Preset Bank Tempo

0 bass 1
1 bassy
2 bassy2
3 FM1
4 LFO squelch
5 New Preset
6 New Preset : 2
7 New Preset : 3
8 PSU SEQ 54

Preset Bank Experiment

0 Aaaaaaallo
1 Alarm y6
2 Bass Legent
3 bass oi6
4 bass2
5 Basso
6 bell seq
7 DFm fat
8 Fatty
9 Filter Formant lfo
10 Filter rub
11 FMish
12 loko4
13 Perc
14 play sync1 f1 e1
15 Ploe4
16 psy fx (sync cutooff)
17 Psy Gtr1
18 Psy ser4
19 Psycheddelic sounds
20 Pulse bass
21 RM trill
22 Seq
23 seq anal3
24 ser5
25 Super Dist
26 Vocal RM
27 xiss

