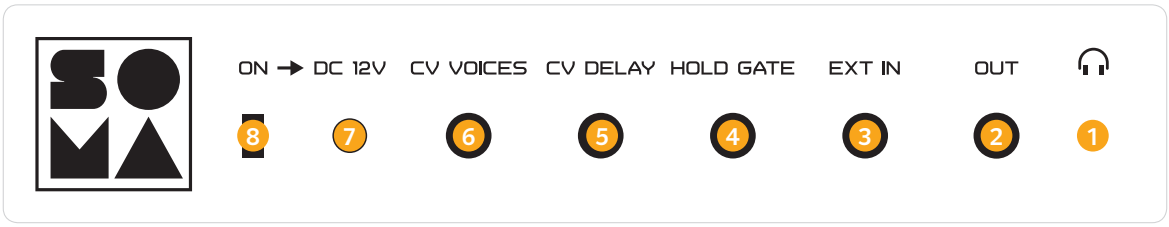

LYRA·8
ORGANISMIC
SYNTHESIZER
ANVÄNDAR-MANUAL
DISTORTION
LYRA·8
ORGANISMIC
SYNTHESIZER
MIX
HOLD
MOD
TUNE
TUNE
FAST

CONNECTIONS



1 **PHONES:** For headphones with a resistance of 8 to 64 Ohm.

2 **OUT:** A balanced mono output. Works as a typical TS jack output in unbalanced mode; can also be connected via an XLR adaptor directly to a multicore. This eliminates the need for DI boxes, which, if passive, can degrade the signal's bass and sub-bass.

3 **EXT IN:** Input for an external audio source. The external signal mixes with Lyra's voices and is processed by the delay and the distortion. It turns Lyra into a cool FX processor and also makes it possible to play a synth or drum line together with Lyra's voices through the internal FX units. When TOTAL FB or SELF in the delay section are turned on, the external signal will influence resonance and warp the modulation loops, thereby affecting overall synth behaviour.

4 **HOLD GATE:** A dynamic input for controlling the HOLD function. An input voltage of +5 volt will fully open the VCA. The more the voltage is lowered, the more it will close the VCA. With the control voltage at 0, the voice levels will decay according to their individual envelopes. Use the HOLD knob to adjust the level for each of the two voice groups. When set to FAST, the synth will react faster to a decrease in control voltage.

5 **CV DELAY:** This input allows using control voltage to modulate the delay time. When a cable is plugged in, the SELF and LFO modes are automatically disabled and delay modulation comes from an external source, regardless of the delay switch positions. Set the modulation amount with the individual MOD knobs for each delay line. The input signal must have a positive value and a 3 to 12 volt amplitude. The relation of delay time to the control voltage is linear.

6 **CV VOICES:** This input is for using control voltage to control the pitch of voices. The CV input will control the voice pairs with LFO CV chosen as their modulation source. Plugging in a CV source cable in the CV VOICES input will cause the control voltage to replace the LFO and TOTAL FB signals (which are bypassed automatically). The amount of modulation is set by the MOD knob in a given voice section. This CV input doesn't offer the standard 1V/oct logarithmic function necessary for achieving a tuned musical scale. It's a modulating input, not a tone-precise VCO control that covers the entire frequency range. Nevertheless, a step sequencer can be used to build melodic lines by ear. Combined with the internal modulation, this will yield interesting results. You can also try connecting an audio source to this input, e.g. a drum machine or another synth.

7 **DC 12V:** The plus is in the centre (centre positive). A 100-240V switching power supply with EU plug is included. In case of replacement, use a stabilised 12-volt power supply with a minimum of 200 mA (0,2A). It's recommended to use a recent switched-mode power supply with a wide input voltage range and excellent stability.

8 **POWER SWITCH**

MASTERING THE INSTRUMENT

LYRA was conceived as a unique, fully-fledged instrument with controls and playing techniques all its own. Its knobs and switches are not mere parameter controls to set-and-forget, they are hands-on musical controllers meant to be played in real-time. Particularly so, the TUNE, PITCH, MOD, TIME 1, TIME 2, FB knobs and the FM structure switches.
The instrument will fully reveal itself when the player has developed an intuitive feel of the controls, much like feeling the strings on a guitar. This might require some time and dedication. To help you along with this process, a way to learn LYRA's key modes and techniques is described below.

Step 1. THE ORGAN

Set the FM modulation source selectors of the voices to the centre position (i.e. off), HOLD at zero, PITCH close to maximum, delay MOD at zero, TIME—11 to 3 o'clock, FB below middle, delay MIX below 2 o'clock, overdrive mix at zero.

Let's try to build a musical scale; the lower the number of the voice, the lower the pitch. If you know and hear the musical intervals, try to build scales or intervals. If not, just create a sound you find interesting.

Next, try to intentionally get consonant and dissonant scales and harmonies.

Try building some chords with the eight voices, try interpreting the higher harmonies with lower bass notes. Try soloing with one voice on top of an interval or a chord.

Now, try slowly changing chords while playing. E.g., in a C-E-G chord, try raising G to A to get a C-E-A chord; then raise E to F and get a C-F-A chord; then lower C to Bb and get a Bb-F-A...

Now, try transposing one of the voice groups right while you're playing, thus simultaneously shifting several voices down one-fourth. Use it as a harmonic tool.

Step 2. FM SYNTHESIS

Set the FM modulation source selectors upward to positions 34 12 78 56. Turn off (down) the FM structure switch 34>56, 12>72, set MOD of the voices to 12 o'clock.
LYRA is now locked into two cross-modulation loops. One loop, one group.

Let's explore the changes, listen how the synth now reacts to touching the sensors, and how voice pitch is influenced by which of the neighbouring voices are triggered.

Try changing the modulation depth. Important: the higher a voice is tuned, the less sensitive it is to FM modulation. The lower frequency range has the highest sensitivity.

Let's explore the near-maximum positions of the MOD knobs. The modulation chain will start to behave as a low-frequency oscillator—try playing with this. It's an extreme sort of mode, yielding spontaneous responses from the instrument.

Try going to the organ mode by switching the modulation source switches to the middle, and back to the FM.
Add HOLD and play with the knobs only (Lyra will now act as a drone synthesizer).

Try using one voice group as a drone (HOLD on), and another for solo (HOLD off).

Step 3. LFO

Assign LFO modulation to some of the voices and listen. Explore the summing and multiplying of various FREQ A and FREQ B settings. Try to get rhythmic pulsations in the sound.

Step 4. DELAY

To achieve a reverb-like effect, set TIME 1 and 2 around 12 to 3 o'clock, but so that their positions differ. FB around 10-11 o'clock. MIX at 12 o'clock. MOD at zero.

For a chorus-like effect, set the delay times close to minimum.

Now, listen to various types of modulation.

Add FB to a stage of self-oscillation and try only playing the delay by changing the delay time and modulation depth. Here, the slightest turn of a knob will affect the sound dramatically. There are standing waves in the delay lines now, and changing or modulating the delay times will change the parameters of these stable vibrations.

Let's try the SELF mode. With the self-modulation added, the stable resonances occurring at strong feedback become unstable and will modulate. Try playing with this.

Now, set the FB on the edge of self-oscillation and try to drive the delay into it by playing the voices with various techniques.

Step 5. DISTORTION

Add the overdrive. Try changing the drive's amount and mix as dramatic tools.

LYRA'S HISTORY AND PHILOSOPHY

I have spent many years exploring the brain and nervous system of the living organism. One of the things I wanted to understand was how and why a several-hundred-neuron nervous system in the smallest of insects and the simplest of animals is capable of producing the complex and multifaceted behaviour that our most powerful computers still fail to model today. One of the answers I found is that the brain is an analogue system with a large number of non-linear, chaotic processes. The brain, as well as the whole bio-organism, has many loops of positive and negative associations. Like a very complex see-saw, it's searching for balance while in constant motion. It's this balancing act on the brink of chaos in a highly non-linear state, that enables an organism and the brain as part of it, to react to the outside world so effectively and dynamically, and also to create inner worlds of its own.
This cannot be modelled by a digital machine, because in the process something essential is lost. In the age of digitalisation we've been consciously deleting all chaos or controversy from digital chains — which was their very essence. It's what makes even a simple living organism so effective: its every cell, when you look close enough, turns out to be a highly complex, virtually endless, unpredictable and open system — a mini-universe, a microcosm. Analogue electronic circuits give us something similar.

I decided I wanted to apply these concepts to building synthesizers, as synths are a huge interest of mine — my second love. LYRA's secret isn't the modules as such — they've all been around for decades. Rather, it's how they connect and interact. LYRA's schematics aren't linear, unlike classic subtractive synths with blocks in series that gradually process the signal. Here, for example, the envelope generator can affect a voice's pitch, or in some modes change the parameters of FM synthesis or even of the delay when it's set to self-modulation mode (SELF on + MOD and FB high enough). LYRA is a structure that reacts to your slightest touch. It's a bizarre animal that twists and turns under your fingers, rather than a precise mechanism. This is why it's called "organismic".

Another important source for my experience has come from exploring acoustic instruments, such as the violin. And that presented the question: how is it that a musician can consciously spend a profound lifetime with a piece of wood with four pieces of metal wire on it, with nothing more than a horse-tailed stick? How is it possible then that a musician gets bored in a matter of months with the most powerful synthesizer with a thousand controls? The answer I came to was that the best instruments are those that allow for the most direct and the most tactile connection between the player's body and the "tone generator". This gives the musician the most immediate control over the sound and, as such, the ability to express the aspirations of their soul. This is why we call a violin a "live" instrument.

Then an insight came: a synthesizer can act similarly if we rebuild the connection once broken. Just look at how many little machines stand in the way between the tone generators and the player's body in today's traditional synth: sequencers, quantizers,envelope generators, LFOs etc. The player, in fact, can't control the sound source as such; they just choose the algorithm for those machines to use to control the tone generator. From this standpoint, the perfect "live" synthesizer was the very first of them — the Theremin. Just one monophonic oscillator and one simple waveform, but it's so connected to the player's movements. And, quite importantly, the Theremin is perhaps the only synth to have preserved its original structure despite the enormous progress in electronics since the 1920s — which goes to show that the principle once found was absolutely right!

I rewound the history of synth schematics to the beginning and took some of the most archaic and rawest solutions. My intention was to give the player maximum control over the generated sounds, with minimal quantization or automation. I've made a complete stage-ready instrument where any position of controls creates a good soundscape. The direct, non-tempered control over the pitch means that you are not bound by the chromatic scale, and instead can let your own hearing of notes and intervals work entirely free in order to create unique scales, play around with microtonalities and so on.
In other words, LYRA is a complex, futuristic electronic violin that can hear you.

The third source for LYRA's philosophy is taken from the North-Indian musical tradition, with its remarkable attention to the inner states of the player, the listener and the world, and the ability to interact with them. LYRA was greatly inspired by a deep study of the Indian ragas, where the art of mastering your mental and emotional state is essential. The idea came about to create an instrument with a sound texture and overall behaviour that invite the player into deeper states of perception and awareness, to guide the listener into that stream, and to allow enough space and freedom for immersion.

SPECIFICATIONS

Max output voltage	2 v 0-to-peak
Output connector	mono 6.3 mm TS or TRS (balanced) jack
Output resistance	100 Ohm
EXT IN	1 v 0-to-peak
EXT IN connector	6.3 mm TS jack
HOLD GATE	full HOLD volume +5 V
HOLD GATE connector	6.3 mm TS jack
CV DELAY	unipolar, range of 0 to +5 volt
CV DELAY	6.3 mm TS jack
CV VOICES	unipolar, range of 0 to +5 volt
CV VOICES connector	6.3 mm TS jack
Power supply	stabilised, +12 V, 0.2 A, centre positive
Power Consumption	2 watt
Dimensions	266 x 266 x 62 mm
Weight (without power supply and packaging)	2.5 kg

PACKAGING

The box Lyra comes in should not be thrown away. Its lightweight, sturdy and durable construction makes it an ideal transport case for the instrument, perfect for local shows and for travels if accompanied by an understanding person.

CREDITS

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Idea for the HOLD function: Vitaly Ignatoff.

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ABOUT SOMA

The word SOMA is an abbreviation from SOund MAchines.

SOMA is also a psychedelic ritual drink used in ancient vedic (Indian) culture, as well as in Iranian (known as Haoma) and Persian ancient traditions. The drink is mentioned in the ancient East's sacred books, e.g. in Rigveda, one of the earliest religious texts still existing. The recipe is long lost.

Other meanings of the word include a neuron's cell body and a town in Japan.

Enjoy
SOMA:)
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FREQ A
HYPER LFO
HOLD
CV
MOD
TUNE
FAST
2
3
4
5
6