

Instruction Report:

Quick Start Guide for Soma Lab's Lyra-8 Synthesizer

Dan String

University of Cincinnati

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Professor Kathleen Spada

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Summary

DSI Technical Writing Services has written a quick start guide for the Soma Laboratory Lyra-8 synthesizer. This guide distills Vlad Kreimer's provided material into the essentials for musicians to get up and running with one of the most unique synths ever released! To minimize potential delays, we recommend sending the title page mock-up (Appendix A) and the rest of the guide to a printer in Soma's local area as soon as possible. YouTube user "SynthSeeker" creates social media videos of professional audio equipment. We have distilled his video on the Lyra-8 down to an easy-to-use quick-start guide.

Introduction

Soma Laboratory is built on the idea that analog audio equipment can be used to unleash musician's creativity. The folks here at DSI believe creativity does not need to stop at the instrument. The written material that ships with Soma Lab's instruments should reflect your company's philosophy. A manual is not just some paper you shove in a box; it is an expression of the product it accompanies. Our team here at DSI has a plan to compile a manual for the Lyra-8 and create a framework for your future instrument releases.

Background

DSI Technical Writing Services contacted Vlad Kreimer in May 2024 with a proposal to write a quick-start guide for the new Lyra-8 Synthesizer, which will be shipped out next quarter. DSI has come up with a campaign to be proud of. We have taken the press kit and long-form manual that Mr. Kreimer provided. DSI's plan for this project is to research how musicians use the Lyra-8 and incorporate their workflows into a quick start guide. Vlad Kreimer made this possible by sending numerous units to prominent social media influencers before its release.

Quick Start Guide

Some sections of the entire User Manual that Vlad Kreimer provided to DSI go further in-depth than this Quick Start Guide. One element Soma might want to keep in the Quick Start Guide is Lyra's History and Philosophy. The section Vlad wrote is an account of the development of the Lyra-8 and should not be paraphrased for brevity.

The following is the text to be included in the quick start guide in its entirety:

Welcome!

Congratulations on your purchase of the Soma Laboratory Lyra-8! This guide has been designed with musicians in mind to create as quickly as possible. We at Soma Labs pride ourselves on devising unique instruments to express ourselves in ways no other synthesizer makes possible. This ethos is not only evident in our instruments, but in our

company, as well. We have combined YouTube personality, SynthSeeker's (Luke Stark) Lyra-8 playing technique into a Quick Start Guide. We believe this technique will ease some musicians' frustration when trying to tame this beast!

Description

Voices

The Lyra-8 contains eight parallel oscillators, or voices. The voices are tied together in pairs, with two pairs in each bank. Each voice is triggered by closing the circuit between the two metal contacts closest to the artist. Many criteria change the way the voices trigger, including ambient humidity, surface area of skin (or other conductive material) touching each contact, and amount of moisture on the skin. A sweaty finger will trigger the voice differently than a dry one!

Voices 1 & 2 are tuned lower than the rest, like bass notes.

Voices 3-6 are tuned to mid-band frequencies.

Voices 7 & 8 are tuned higher than the rest.

The range on each tuning knob is quite vast, so Voice 1 can play high notes just as Voice 8 can play bass notes—these are just rough suggestions.

Pairs

Each pair has two voices running through the same envelope. The envelope has two settings: slow and fast. Slow has a much longer attack and delay. Each Lyra-8 is slightly different, but one can expect these times to be about 10 seconds each. Fast's attack and decay are about 0.5-0.8 seconds long.

After the envelope, the signal passes through our sharpness engine. This waveshaper changes both voices in the pair from a softer triangle wave to a much harsher square wave. This parameter can be modulated by two sources: the hyper LFO or the other voice pair in the bank. For example, the sharpness of a pair containing Voices 1 and 2 can be modulated by the sum of Voices 3 and 4.

The Mod knob next to each Sharp knob is bipolar, meaning the top dead center is 0 (no modulation), and turning the knob CCW will modulate the signal down, and turning the knob CW will modulate the signal up.

Banks

Voices 1-4 and 5-8 are divided into two banks. Two parameters control all four voices in each bank:

The Pitch knob adjusts the pitch of each voice in the bank up or down.

The Hold knob simulates a connection between the trigger contacts. The knob fully CCW corresponds to no connection, and fully CW corresponds to a direct connection. This allows all four voices to be enabled without touching the contacts.

One particular quirk of the Lyra-8 that SynthSeeker takes advantage of is the Hold threshold of Fast is slightly higher than Slow. This means you can slowly raise the Hold knob, and pairs with their envelope set to Slow will be audible before those set to Fast.

Beyond

The three parameters that control all voices are:

The Total FB switch uses the final output signal as the modulation source for all other parameters, such as the envelope, sharpness, delay mix, and distortion mix.

The Vibrato switch applies vibrato to each voice. There is an independent vibrato frequency for each oscillator.

The 34→56 | 78→12 switch changed the FM synthesis structure of the Lyra-8. When switched up, Pair 2 modulates Pair 3, and Pair 4 modulates Pair 1. Pairs 2 and 8 are still modulated by the source indicated by their respective switch. When the switch is down, there is no modulation between Banks 1 and 2.

Effects

Hyper LFO

The Hyper LFO is used to modulate many parameters in the Lyra-8

The Hyper LFO is made up of two simple low frequency square wave oscillators. The output of the Hyper LFO is either the logical ADD or OR of the individual waveforms, depending on the configuration of the switch.

By default, the oscillations are free-running. Flipping the last switch (LINK) in this section links both frequencies. In this orientation, Freq B will be a multiple of Freq A.

Mod Delay

There are two parallel lines in the Mod Delay section of the Lyra-8. Each line can be modulated by its own output signal (audio rate oscillation) or by the Hyper LFO. If the LFO is chosen, the wave can be changed from triangle to square.

The FB knob sets the amount of the delay's output is fed back into its input. Turning this knob past 50% will cause the delay to self-oscillate.

The Mix knob sets the ratio of the dry/wet signal.

Distortion

The Lyra-8's distortion stage is located at the very end of the signal chain. There is a knob to adjust the amount of gain applied to the signal and a Mix knob to adjust the dry/wet signal.

The SynthSeeker Method

In the official User Manual, the Lyra-8 playing technique suggests tuning each oscillator to create an 8-note scale. In this Quick Start Guide, we examine the method laid out by popular YouTube channel *SynthSeeker* (Luke Stark), who suggests *NOT* tuning the oscillators before starting.

“[The Lyra-8] really comes into its own when you stop trying to control it and let it do its thing [and do] some of the opposite things I would normally do with any other synth” - SynthSeeker

SynthSeeker suggests using an off-board reverb connected to the output of the Lyra-8. This help make the sounds much lushier than without. The reverb used in his tutorial is the Source Audio Collider Delay+Reverb but any reverb you have will suffice.

1. Start by attaching any external connections to the Lyra-8.
 - a. Connect a guitar cable from the Ext. Out jack to the input of your reverb module.
 - b. Connect a cable from the output of your reverb to the input of your speaker.
 - c. Connect the provided 12V AC to DC power supply to the DC 12V plug of the Lyra-8.
 - d. “Zero” all knobs on the Lyra-8
 - i. All Mod knobs should be set to 50%
 - ii. All Sharp, Tune, Hold, Mix, and Volume knobs should be set fully CCW.
 - iii. Flip all envelopes to Slow.
 - iv. Flip all Pair Modulation sources to FB CV.
 - e. Switch the Lyra-8 on by the switch on the back panel.
2. Set the basis for your patch by “Tuning” Pair 1
 - a. Set Pair 2-4's envelope to Fast (raising their Hold trigger threshold).
 - b. Slowly turn Bank A's hold knob until Pair 1 becomes audible.
 - c. Adjust Voice 1 to any desired pitch with the Tune knob.
 - d. Adjust Voice 2 to unison with Voice 1, then slowly detune Voice 2 to about a 5th above Voice 1's pitch (This is not an exact measurement, judge by your ear, not a tuner. Just do not make them too dissonant).
3. Configure the Modulation.

- a. Flip Pair 1's Mod source switch to LFO CV.
- b. Set LFO Freq 1 and 2 to any desired frequency. SynthSeeker sets Freq 1 to about 10 o'clock and Freq 2 to about 12 o'clock.
- c. Set the LFO combination to OR the two LFOs.
- d. Choose to either Sync the LFOs or to let them run independently.
- e. Listen to the resulting sound.

"It's tempting to try and make chords. Don't! Screw chords! - SynthSeeker

4. Bring in the Effects!
 - a. Enable your reverb—the sound will become much lush, but still won't be enjoyable.
 - b. Adjust the various modulating parameters, delay time, and feedback. Your movements should be extremely fine while doing so. Make a small adjustment to one knob, wait a moment for the change to take effect, and move to your next change.
5. Rinse and repeat.
 - a. Enable the other Pairs by flipping their envelopes to Slow.
 - b. Repeat Step (2) until all Voices are active.
 - c. Continue "tuning" and making small adjustments to your parameters. The result will be deep growls and swells characteristic of the Lyra-8.
6. Notes
 - a. The Lyra-8 is called an "organismic synthesizer." Much like a living organism, the beauty of the Lyra-8 is the chaos it creates. Embrace this chaos—do not try to control it. Make small changes and see where the Lyra-8 takes you.
 - b. In the Lyra-8, "interesting" lies between "not interesting" and "not interesting". If you make course adjustments instead of finessing the knobs, you will miss most of the magnificence in this synthesizer.

"Don't play notes. Play the delay time, feedback, sharpness, and modulation" - SynthSeeker

Conclusion

The User Manual provided with the Lyra-8 is too lengthy and lacks a reliable method to help quickly create soundscapes. The quick start guide outlined in this report is designed to get musicians up and running faster than if they had read the entire manual prepared by the engineers. The Quick Start Guide also takes the written description of the circuit and translates it to a graphical model, which might help musicians understand the signal path.

Appendix A: Graphics

Quick Start Guide



Figure 1 - Quick Start Guide cover (H-6.25" x W-5.25")

Signal Flow Chart

One detail the provided materials lacked was a visual representation of the Lyra-8 signal flow. Dan String personally crafted this beautiful flow chart for use in the guide.

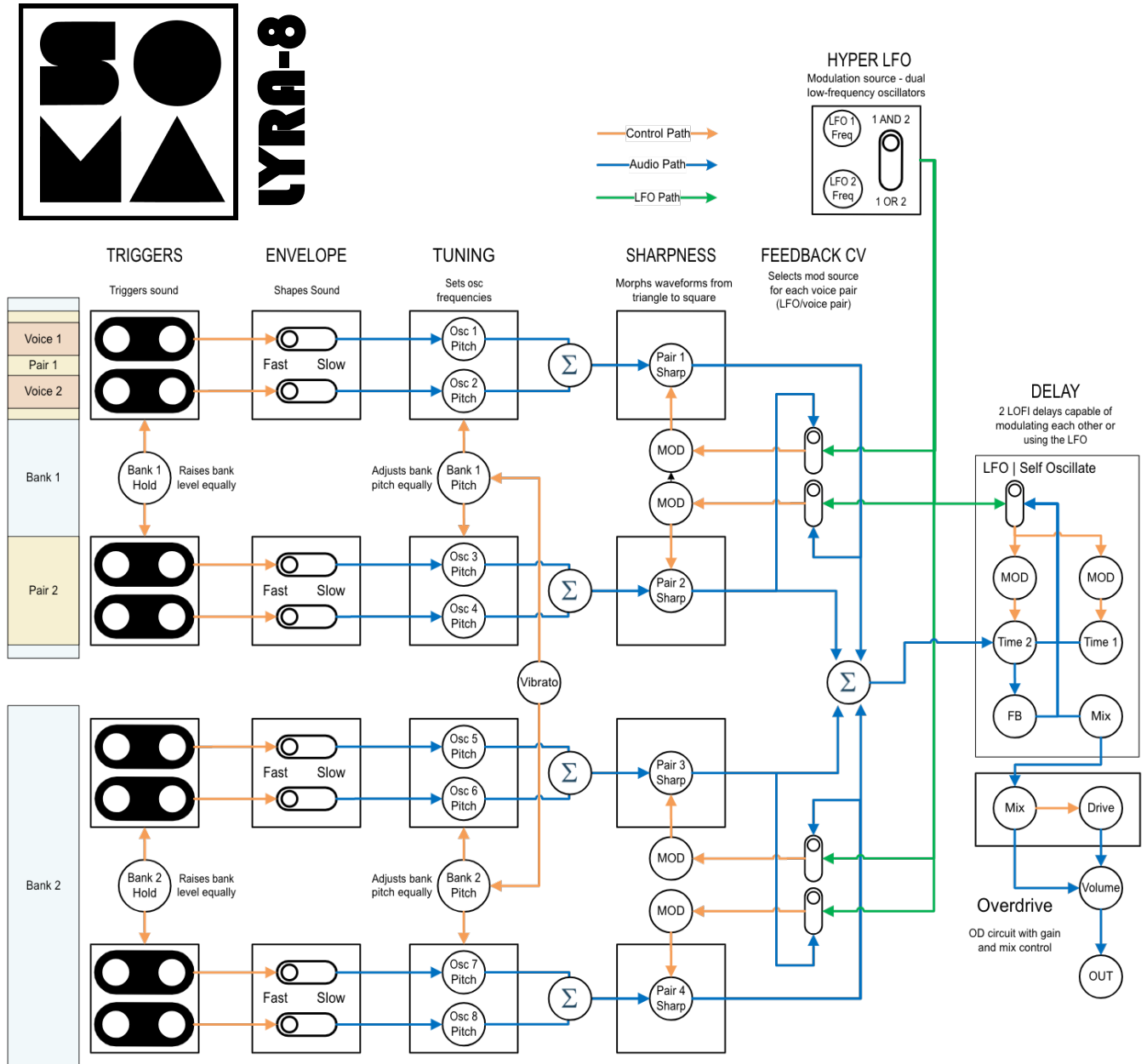


Figure 2 - Custom flow chart detailing the Lyra-8 signal flow

Additional Pictures

These photographs of the Lyra-8 should be provided as a guide. The printer will make a couple of layout options for Soma's approval 1-3 business days after submission. All photos are courtesy of Soma Labs.

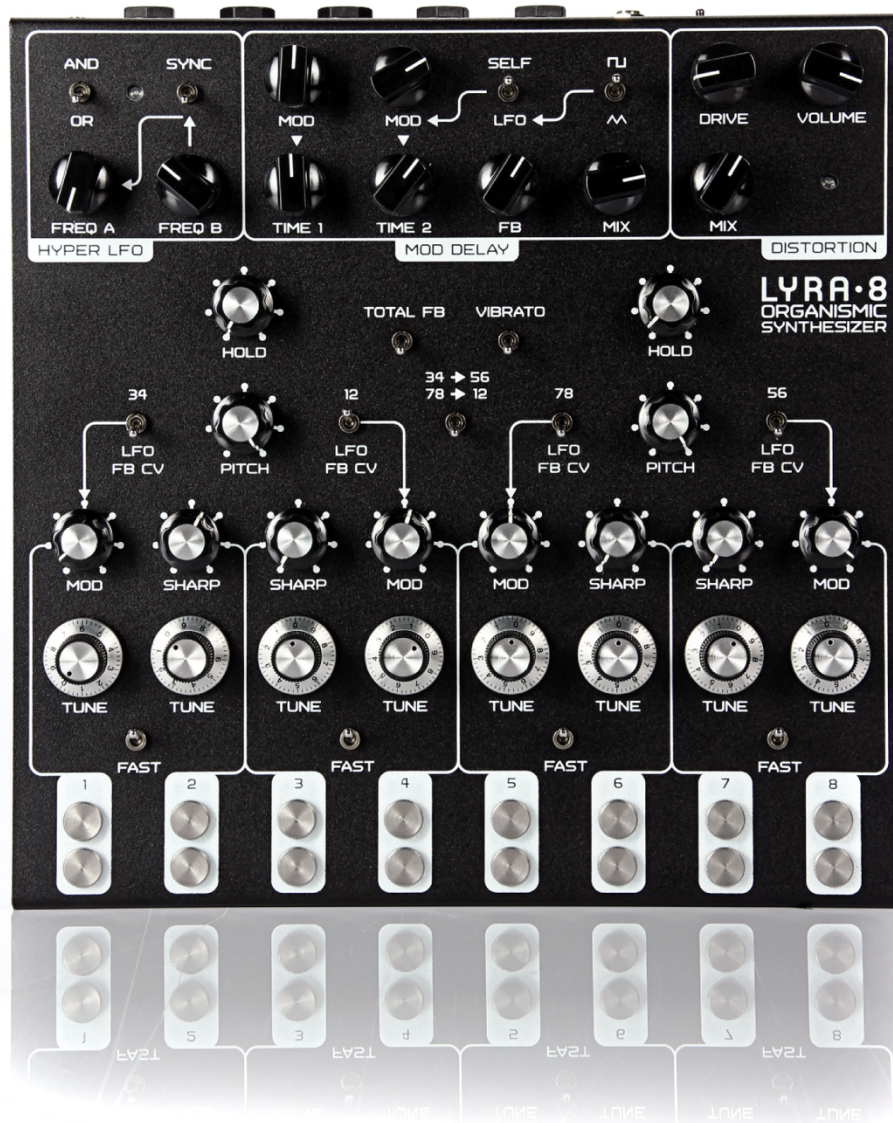


Figure 3 - Black - Front

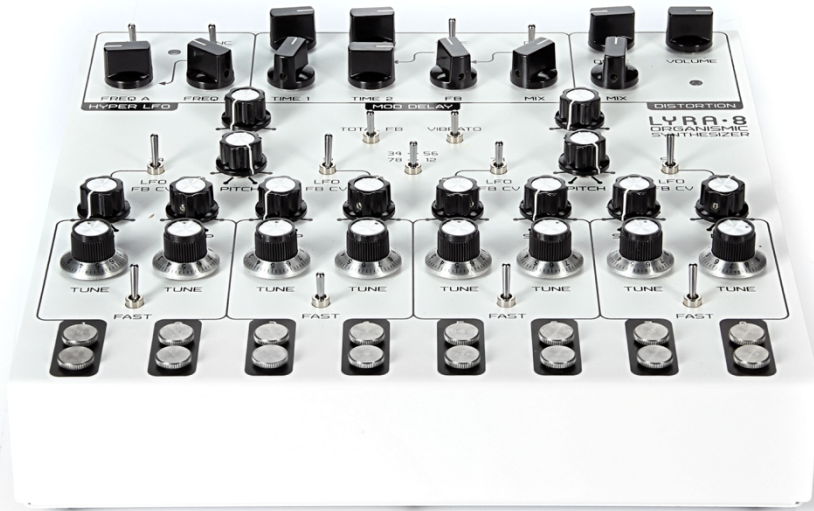


Figure 4 - White - Ortho Front/Top



Figure 5 - Pink - Ortho Top/Right



Figure 6 - Orange Ortho Back/Right



Figure 7 - Black - Ortho Back/Top

Appendix B: Technical Information

Lyra-8 Specifications

Max output voltage.	2 v 0-to-peak
Output connector.	mono 6.3 mm TS or TRS (balanced) jack
Output resistance.	100 Ω
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.	stabilized, +12 V, 0.2 A, center positive
Power Consumption.	2 Watt
Dimensions.266 x 266 x 62 mm
Weight (without power supply and packaging)	2.5 kg

References

Kreimer, V. (2020). Lyra-8 User Manual V2.1. https://somasynths.com/wp-content/uploads/2020/11/LYRA-8_manual_Eng_V2_1.pdf

SOMA LABORATORY. (2020, August 13). <https://somasynths.com/>

SynthSeeker. (2021, July 10). *Lyra-8 drone techniques - three examples*. YouTube. <https://www.youtube.com/watch?v=4CXdzDTwNSA&t=515s>