Lyra 8+ DIY Build Guide

[Intro]
In Dec of 2019 I became aware of the fact that one could buy a PCB kit from Soma Labs to build the Lyra-8 “Organismic Synthesizer.” I lurked on the MuffWiggler.com thread about the build, until a post about pulling all the “tweaks” and modifications suggested by the build docs into one panel. I liked the concept (thanks @VCOscillator !) but I was not thrilled with the replacement of words on the panel with symbols...the build was gorgeous, but a bit incomprehensible.

With a bit of encouragement, mostly from @D.Tilbury on the muffs forum, I started to design my own expansion panel, and it quickly became apparent that some *other* people might want to do this as well!

The Lyra-8+ DIY uses two expansion PCBs to unify all of the possible tweak points into one place. Each “wing” is the same dimension vertically as the original Lyra-8 PCB, and about 3.25 inches wide. The left pcb (Wing A) gathers the Attack mod, Release Fast mod, and Release Slow mod, along with switches that restore the synth to the original, intended Attack and Release values. The right board (Wing B) is for tweaking the frequency range of each Voice, the Vibrato, the Distortion, and the Delay times.

The boards were designed in a similar fashion to the original Lyra-8 PCB. While it would have been possible to make it more compact using regular throughole mounts, I thought the mechanical benefits of the backplane-mounted pots and switches would help stiffen the panel.

[Schematic]

Here is the basic schematic for each type of circuit on the expansion. Each of the 8 voices has a Range, Fast Release, Slow Release, Attack, and Vibrato. The Delay and Distortion circuits modify that portion of the Lyra, rather than individual voices.

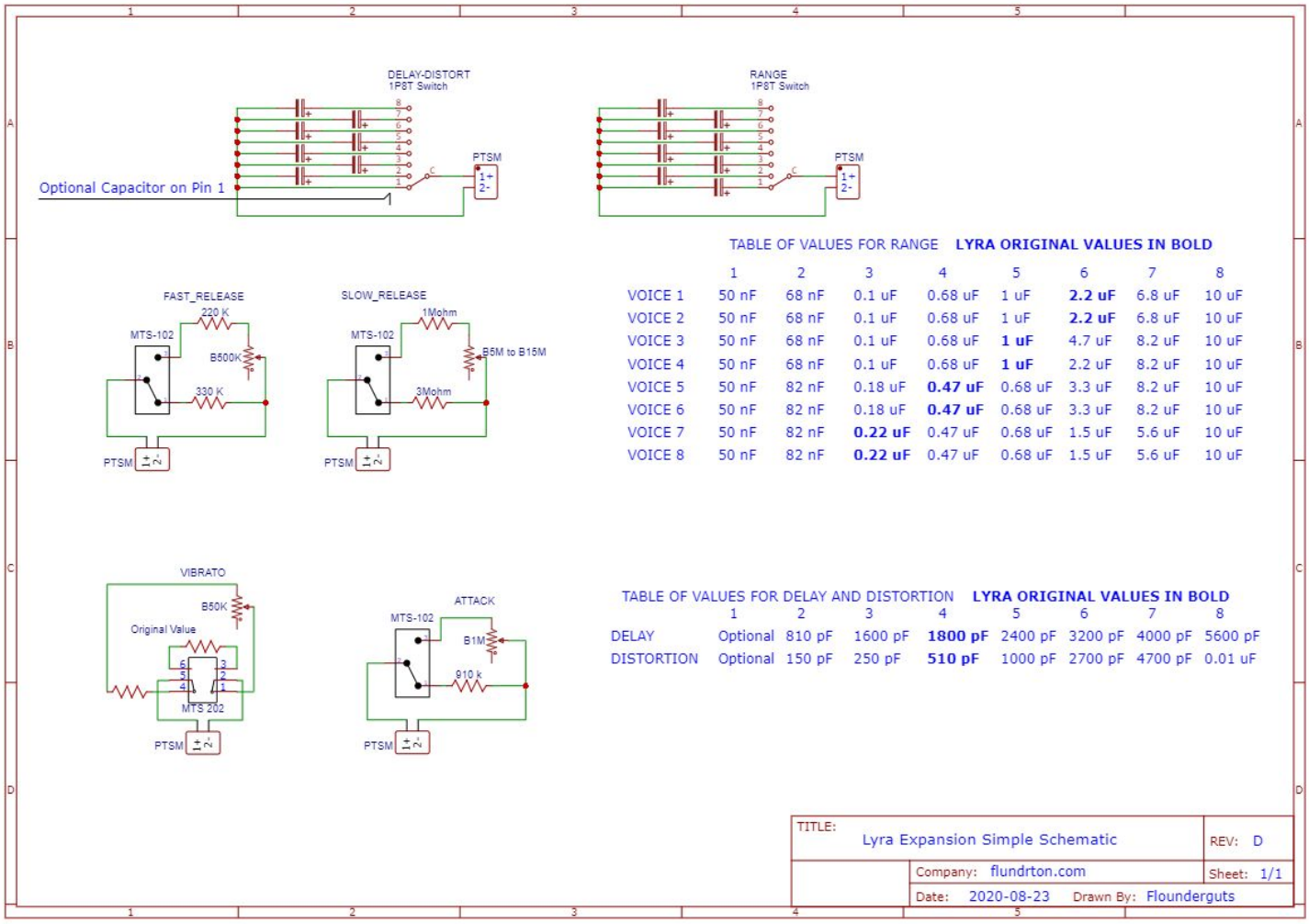


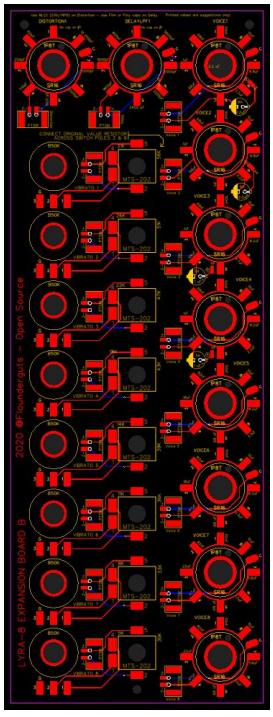
TABLE OF VALUES FOR RANGE **LYRA ORIGINAL VALUES IN BOLD**

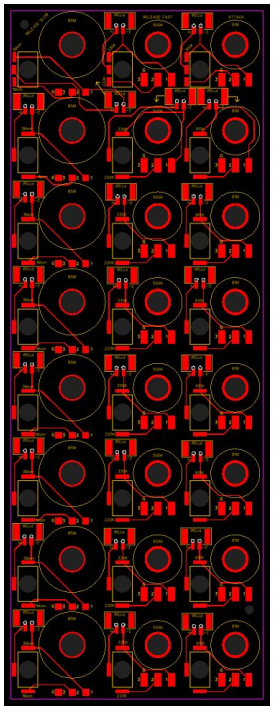
	1	2	3	4	5	6	7	8
VOICE 1	50 nF	68 nF	0.1 uF	0.68 uF	1 uF	**2.2 uF**	6.8 uF	10 uF
VOICE 2	50 nF	68 nF	0.1 uF	0.68 uF	1 uF	**2.2 uF**	6.8 uF	10 uF
VOICE 3	50 nF	68 nF	0.1 uF	0.68 uF	**1 uF**	4.7 uF	8.2 uF	10 uF
VOICE 4	50 nF	68 nF	0.1 uF	0.68 uF	**1 uF**	2.2 uF	8.2 uF	10 uF
VOICE 5	50 nF	82 nF	0.18 uF	**0.47 uF**	0.68 uF	3.3 uF	8.2 uF	10 uF
VOICE 6	50 nF	82 nF	0.18 uF	**0.47 uF**	0.68 uF	3.3 uF	8.2 uF	10 uF
VOICE 7	50 nF	82 nF	**0.22 uF**	0.47 uF	0.68 uF	1.5 uF	5.6 uF	10 uF
VOICE 8	50 nF	82 nF	**0.22 uF**	0.47 uF	0.68 uF	1.5 uF	5.6 uF	10 uF

TABLE OF VALUES FOR DELAY AND DISTORTION **LYRA ORIGINAL VALUES IN BOLD**

	1	2	3	4	5	6	7	8
DELAY	Optional	810 pF	1600 pF	**1800 pF**	2400 pF	3200 pF	4000 pF	5600 pF
DISTORTION	Optional	150 pF	250 pF	**510 pF**	1000 pF	2700 pF	4700 pF	0.01 uF

The images on the right show the traces for each circuit on the early version of the wings (Aug 2020). If you need to modify or drill the wings at all, this will help you determine where it is safe to drill.





Note the wacky placement of the PTSM footprints on Wing A (on the left, the way you would see it when you are building it) This is noted in the build guide, and this may help you navigate, visually.

[Note on parts and values]
It is important to note that other than the original component values for the build (itemized below) all of the capacitor, resistor, and potentiometer values that I chose for the silkscreen legend are *completely arbitrary.* In fact, my own build uses many values that are considerably different from the values printed on the wings. You may find that certain types or values of capacitors are prohibitively expensive, or simply not available! The type of capacitor is also entirely up to you...I used an assortment of aluminum electrolytic, multilayer ceramic, mica, and poly film capacitors in my build, and often in the same voice! However, if you do choose to use ceramic capacitors, I recommend NP0 or C0G type capacitors, as there is an audio signal. In the Distortion circuit, you may want to use cheap X7R or other ceramic caps for additional “dirt.” Personally, I used both Mica and Polystyrene film capacitors there.

Here is a table from my original planning for the values, with the original values marked.

Delay Original value: 1800 pF
Suggested Range: 0-5600 pF

Position				
1	0 pF		5	2400 pF
2	800 pF		6	3200 pF
3	1600 pF		7	4000 pF
4	**1800 pF**		8	5600 pF

Distortion Original Value: 510 pF
Suggested Range: 0-10000 pF

Position				
1	0 pF		5	1000 pF
2	150 pF		6	2500 pF
3	250 pF		7	5000 pF
4	**510 pF**		8	10000 pF

Voice Range Original Values:
1&2: 2.2 uF electrolytic
3&4: 1 uF electrolytic
5&6: 0.47 uF metallized poly
7&8: 0.22 uF metallized poly

Suggested Range: 0.05 uF to 10 uF

New Positions:									
1&2:	.05	.068	.1	.68	1.0	**2.2**	6.8	10
3&4:	.05	.068	.1	.68	**1.0**	4.7	8.2	10
5&6:	.05	.082	.18	**.47**	.68	3.3	8.2	10
7&8:	.05	.082	**.22**	.47	.68	1.5	5.6	10

Attack Original Value: 910k
Suggested Range: 300k to 1M
New range:B1M potentiometer (0-1M) (a resistor is easily added to move the range)

Rel. Fast Original Value 330k
Suggested Range: 220k to 750k
New Range: 220k + B500K (220k-720k)

Rel. Slow Original Value: 3M
Suggested Range: 1M to Infinite
New Range: 1M resistor + B5M potentiometer (1M-6M)

I will also point out that I have found 10Mohm and even 15Mohm potentiometers in the right size (24mm or smaller diameter), but they all had a grainy, gritty feel to them. 5Mohm are relatively easy to find, and feel far better!

In the case of potentiometers, I used Linear (B value) potentiometers because I had a lot of them. If you want to use audio logarithmic (A value) pots instead, go ahead. It might actually enhance controllability. Even reverse-taper pots would work, as we are using them as variable resistors, rather than voltage potentiometers. Note that 16 or 17mm pot bodies are the norm here. Anything much bigger WILL NOT FIT. The exception is for the Release Slow pots, which are 24mm. This is simply because finding values higher than 2Mohm in 16mm bodies is tough. If you do find 5Mohm or higher in a 16mm, go for it. Only email me when you do, cuz I want ‘em!

When buying pots and switches, keep the total thickness of the build in mind. If you are using the expansion front panel, then the minimum bushing height you need is 3.2mm plus the height of the nut. Test a knob on your pot, too...and make sure it’s to your liking. I like my knobs to be close to the panel, and getting that just right took some time.

ALL of the switches in the expansion are of the ON-ON type, and the 1p8t switches are break-before-make. That means that when you are switching, the audio path may be broken momentarily!

[BOM]
This Bill of Materials is provided only as a guide and a set of suggestions. At the time of writing, these components are *untested values* As we get more builds documented, we will update the BOM on the flundrtōn.com website. THIS IS ONLY THE COMPONENT LIST FOR THE WINGS AND I/O...NOT THE LYRA-8 BUILD. I will note which components for the wings are from the Lyra-8 BOM.

For now, there is no Mouser or Digikey BOM or Cart, as there is no hard and fast way to build this. As more builds are completed, we will establish the best parts to use, and link a cart.

Wherever possible, I have been using film-type capacitors. There is no indication that this is necessary in the Soma Labs documentation, and it might be interesting to see how Lyra sounds with different types of caps. The composition of the resistors is also not important. In the BOM I have listed carbon composition or carbon film resistors, but metal film or metal oxide should be fine.

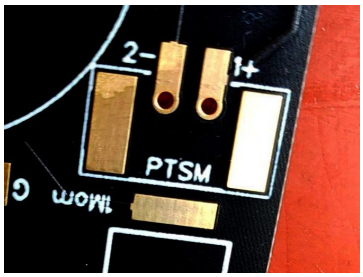
If you find there is a component listed here that you had trouble with, please let me know! I have linked the parts pages to each part number.

Qty	Description	Mouser Part#	DigiKey Part#	Tayda Part #	Other Part #
42	Phoenix Contact PCB Terminal 1771091	651-1771091	277-2072-1-ND		flundrtōn
10	1p8t rotary switch RS-16				**flundrtōn**
8	B5M Potentiometer, 24mm				**Jameco 2268495**
8	B1M Potentiometer, 16mm			**A-3554**	
8	B500K Potentiometer, 16mm			**A-2949**	
8	B50K Potentiometer, 16mm			**A-3572**	
8	MTS-202 DPDT Toggle Switch		2368-54-307PC-ND	**A-3188**	amazon
25	MTS-102 SPDT Toggle Switch (1 for I/O)		2368-54-302PC-ND	**A-3186**	amazon
1	150 pF Capacitor	**23PS115**	1928-1216-ND		
1	250 pF Capacitor	**23PS127**	1928-1268-ND		
1	510 pF Capacitor (FROM LYRA)				
1	1000 pF Capacitor	**23PS210**	493-3377-ND		
1	2500 pF Capacitor	**23PS227**	2368-MLR252K630-ND		
1	5000 pF Capacitor	**23PW250**	338-3356-ND		
1	10000 pF Capacitor	**23PS310**	493-3389-ND		
1	800(820) pF Capacitor	80-R76QF082050H0J	338-1094-ND		
1	1600 pF Capacitor	**23PS215**	493-3379-ND	A-4100	
1	1800 pF Capacitor (FROM LYRA)	**23PS218**		A-4101	
1	2400 pF Capacitor	**23PS222**	P16752-ND	A-1084	
1	3300 pF Capacitor	**23PS233**	493-3482-ND	A-4103	
1	4000 pF Capacitor	**23PS239**	493-3417-ND	A-4120	
1	5600 pF Capacitor	667-ECQ-E6562KF	493-3386-ND	A-4121	
2	33 pF Capacitor (Optional)	581-SA101A391JAR	338-1047-ND	A-1426	
8	50 nF Capacitor	594-2222-365-25563	493-3497-ND	A-4131	
4	68 nF Capacitor	647-QYX1H683KTPT	493-3465-ND	A-4123	
4	82 nF Capacitor	594-2222-365-26823	493-3433-ND	A-4132	
4	100 nF Capacitor	647-QYX1H104KTP	493-3467-ND	A-4110	
2	180 nF Capacitor	594-2222-365-16184	493-3470-ND	A-4135	
2	0.22 uF Capacitor (FROM LYRA)		493-3405-ND	A-4124	
4(2)	0.47 uF Capacitor (2 FROM LYRA)	647-QYX1H474KTP	493-3409-ND	A-4127	
8	0.68 uF Capacitor	505-MKS2.68/63/10	EF1684-ND	A-2561	
4(2)	1 uF Capacitor (2 FROM LYRA)	505-MKS2C041001FMSSD	EF-1105-ND	A-4505	
2	1.5 uF Capacitor	505-MKS2C041501HKSSD	399-6031-ND		

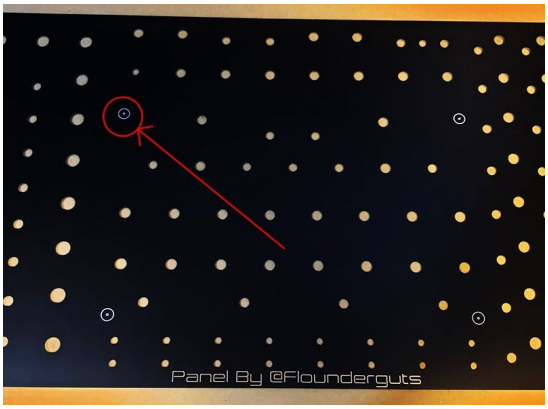
2	2.2 uF Capacitor (FROM LYRA)			A-4532	
2	3.3 uF Capacitor	647-UVP1H3R3MDD	**399-12455-ND**	A-4508	
2	4.7 uF Capacitor	667-ECE-A1VN4R7UB	**1928-1628-ND**	A-4555	
2	5.6 uF Capacitor	710-860160672006	**399-12453-ND**		
2	6.8 uF Capacitor	710-860240672001	**493-10509-1-ND**		
4	8.2 uF Capacitor	710-860160672008	**732-9586-1-ND**		
8	10 uF Capacitor	647-USP1H100MDD	**493-15033-ND**	**A-4216**	
1	5.1 K 1/4W Resistor	791-RC1/4-512JB	RC14JT5K10CT-ND	**A-2096**	
1	8.2 K 1/4W Resistor	791-RC1/4-822JB	2368-QWCC282-ND	**A-2138**	
1	11 K 1/4W Resistor	588-OD113JE	CF14JT11K0CT-ND	**A-2104**	
1	13 K 1/4W Resistor	791-RC1/4-133JB	RC14JT13K0CT-ND	**A-2106**	
1	18 K 1/4W Resistor	791-RC1/4-183JB	2368-QWCC318-ND	**A-2109**	
1	22 K 1/4W Resistor	791-RC1/4-223JB	2368-QWCC322-ND	**A-2111**	
1	27 K 1/4W Resistor	791-RC1/4-273JB	2368-QWCC327-ND	**A-2102**	
2(1)	30 K 1/4W Resistor (1 FROM LYRA)	791-RC1/4-303JB	CF14JT30K0CT-ND	**A-2114**	
1	33 K 1/4W Resistor (FROM LYRA)				
1	36 K 1/4W Resistor (FROM LYRA)				
1	39 K 1/4W Resistor (FROM LYRA)				
1	43 K 1/4W Resistor (FROM LYRA)				
1	47 K 1/4W Resistor (FROM LYRA)				
1	51 K 1/4W Resistor (FROM LYRA)				
1	56 K 1/4W Resistor (FROM LYRA)				
8	220 K 1/4W Resistor	791-RC1/4224KTB	2368-QWCC422-ND	**A-2110**	
8	330 K 1/4W Resistor (FROM LYRA)				
8	910 K 1/4W Resistor (FROM LYRA)				
8	1M 1/4W Resistor	791-RC1/4105KTB	2368-QWCC510-ND	**A-2151**	
8	3M 1/4W Resistor (FROM LYRA)				
8	SPST sub-mini 3/16 toggle switch (I/O)			**A-3643**	**Amazon**

BOLD Values are *verified* parts that have been used in a build.

[General Mechanical Assembly]

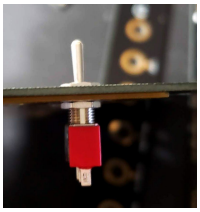


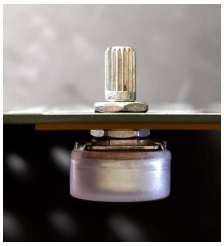
As mentioned before, the wings help to stiffen the structure when bolted to the front panel. If you aren't using the expanded front panel from flundrtōn.com, then you can put the boards in however you like. On the first run of wings, there are through-hole drillings on the PTSM Terminal header pads. This is in case someone wants to use a 2.54 mm spacing through-hole terminal header, or even a pair of pins for DuPont wires. This will be eliminated in later versions because there is plating on the backside of the wing, which could lead to a short if used with a metal enclosure. If you have one of these early versions, and you ARE using your own metal enclosure, insulate those vias using Kapton tape or Electrical tape. Just in case!



If you are using the expansion front panel from flundrtōn.com, then you will notice that there are target markings on the backside of the panel. This is where you can glue posts in (AFTER mounting the Lyra-8 control pcb!!) to hold the Lyra-8 main pcb. Alternatively, if you don't mind having screws visible on the front of the panel, you can use these targets to drill holes for standoffs. There are no traces that carry current in the front panel, so you can drill with abandon!

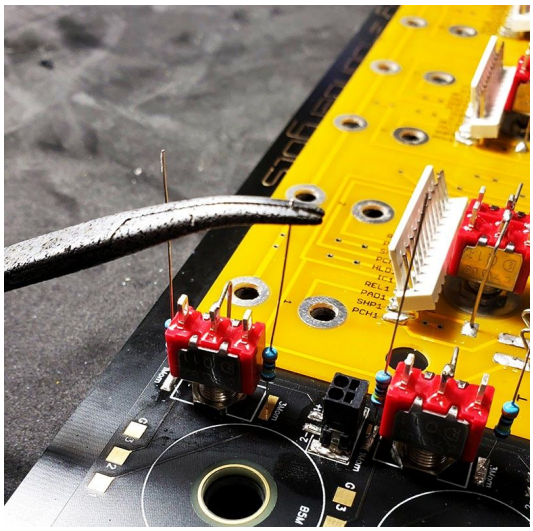
When installing your potentiometers, you will have to clip or break off the index tabs that are cast into the potentiometer body. This is normal, and they break off easily with a pair of pliers or nippers. DO NOT clip the 1p8t switch index tabs...the wing is drilled for these, and it ensures that the switch detents are aligned with the legend on the front panel. I recommend test-installing switches and pots to determine exactly how many bushing threads you want exposed for the nut. Once you have determined that (for each type of potentiometer and switch) then you can pin the wings to your front panel with a few switches, and align the holes as best as you can. The holes are precise, and it's easy to get them a wee bit misaligned at the beginning...if you start soldering before lining stuff up, it can be very hard to get parts to go through both holes! If this DOES happen to you, a bit of sandpaper on a pencil or a reamer can quickly even things up. You can adjust the holes on the wings quite a lot, so that they will line up with the front panel...I made sure that no traces pass too close to the holes. There is an exposed copper circle around the hole, but it is not connected to anything electrically.





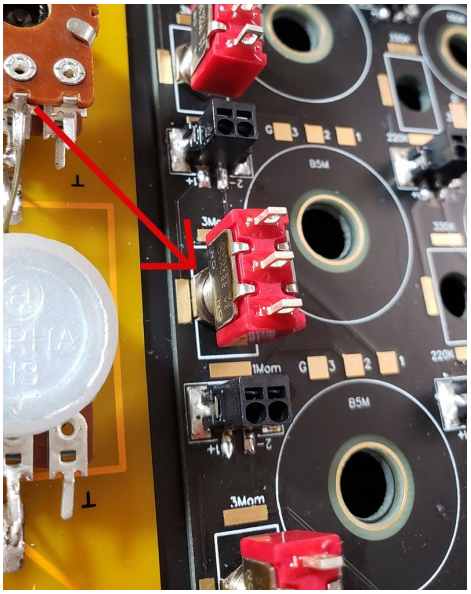
When you are mounting your switches, pay attention to the small groove in the bushing...the groove should point in the direction you want the OFF to be with the toggle (empty circle for me)

[Wing A]



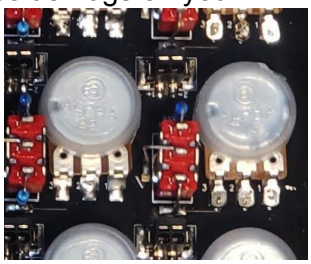
Once you have your panel aligned, and a few pots and switches (usually at each corner) snugged down a bit, you can start assembling it. I recommend starting at the edge nearest the Lyra-8 pcb. Start by soldering the two resistors and a bus wire to the three pads on the first voice of the Release Slow. I found it was best to get a glob of molten solder on the pad, and then just stick a trimmed resistor into the glob. Once it cools, it seems to be plenty strong! Another great technique is to clamp your part to be soldered into a pair of hemostats. They act like a tripod, and will hold your part on the pad, and you can use both hands to solder it in.

Next, solder in the PTSM (if you are using them). The center pads with the holes are the connectors. The larger pads to the side are for mechanical strength.



Now a finicky bit. On the first run of wings, the pad for the common connection is *very* close to the switch...so close that you might end up contacting it with the body of the switch, or the nut. I found that aligning the nut so that the flat of the nut was along the pad, I could hold the switch far enough away while tightening it that it would not contact the pad. Once you get the switch snugged in, you can test for continuity between the switch barrel and the common connector. If you get a beep, then you will have to adjust the switch or jam an insulator between them.
This will be changed in V1.5
Finally, you can solder the resistors and bus wire to the switch, in Lyra style! Once you've done this, everything becomes very solid! Seven more to go!

The potentiometers are easy to do. If you have long solder lugs on your pots, you may find that bending them down to contact the pads is easier than adding bus wire.



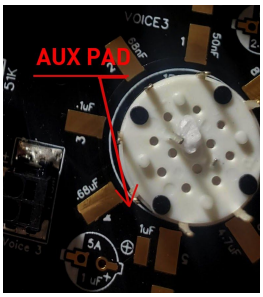
Work from top to bottom to avoid issues.

[Wing B]
The B panel has Delay, Distortion, Voice ranges, and Vibrato. It's pretty crowded.

Begin with aligning the holes using pots and switches, just like Wing A. Snug a few down to hold it in place. Again, start at the Lyra-8 pcb side, which is to the right this time. Put in the switch for Voice 1, and connect the common pin to the common pad, which has rounded edges. On the first version of the wings, you will notice that the common pad is actually on the wrong side of the switch...oops. I used insulated solid connection wire for this instead of bus wire, just to be sure no shorts occur.

Now you can start attaching your capacitors. I found going in this order worked best for me: 1, 2, 3, 8, 7, 4, 5, 6. If you use electrolytic capacitors, the NEGATIVE leg goes to the PAD. On the first version of the wings, there is a pad on voices 1-4 for an electrolytic cap connected to the original position. If you use this pad (for

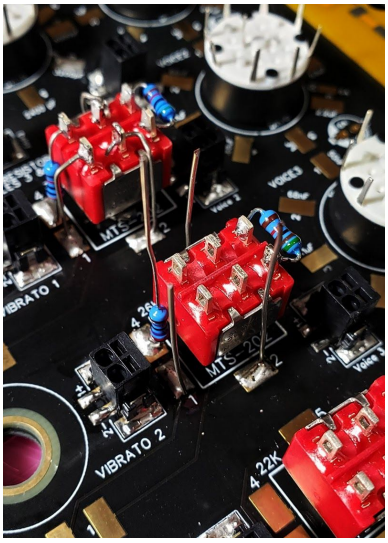
SMT or through-hole) then you can just run a bus wire from the switch pin to the small auxiliary pad beside 5 or 6.



You may have to be a bit creative when positioning your capacitors. I started out with all sorts of weird twists, but I remembered that there is LOTS of room in my rack, and I found that positioning the caps vertically was much easier.
Just like adding bus wire, using a pair of forceps or hemostats to hold the component in place on the pad allows you to use both hands for soldering. I wish I'd figured that out at the beginning.

After you have all your 1p8t voice switches and caps in place, you can put the PTSM connectors in, if you're using them. I'd leave the one for Voice 1 for later, after you have installed the delay switch and caps.

Which is next...go ahead and deal with the Delay and then the Distortion section. On my build, there is no capacitor on pin 1...but if you wanted to use a cap there, you certainly can! In fact, because you can actually turn delay and distortion *off* with the Lyra, you may want to add a low value capacitor here...perhaps 50, 33, or 18 pF.



Before going on to the toggles, finish installing the PTDM connectors for Voice 1, Distortion, and Delay.

The toggles are pretty easy compared to the ones on Wing A. I found it easier to mount the switch before putting in the bus wires and the resistors. One resistor goes to pad 4, and there is a suggested value marked next to it. They are mathematical values and not part of the regular series of resistors, so just use what is close. I think the values I used are 30k, 27k, 22k, 18k, 13k, 12k, 8.2k, and 5.1k. It's really not important, and you could even leave these out. The ones that go across pins 3 and 6 are the resistors that either *came out of* or *didn't go in to* your Lyra-8 main pcb. The values are marked on that side of the switch.

Yeah, well now just put in the remainder of the PTSM connectors, and then the vibrato potentiometers.

[Connections]
Do not solder the connection wires directly to the board. I tried this, and it was impossible to install the shield pcbs afterward. A much better approach is to solder in pins to use as connectors. I ended up using DuPont style connectors with single pin housings. Unfortunately, that means 84 crimped connectors. It might be best to buy DuPont wires that are pre-crimped with a Male on one end, and Female on the other. Then you can put the male pin into the PTSM connector.

It's easiest to start with Wing A, and neatest if you work in the same direction as putting in the components...inside out. Be careful routing to the potentiometer/switch pads...**the PTSM pads to each voice are ABOVE the switch...not closest to the switch**. Refer to the trace images in the [Schematics] section. Because of space limitations, the Voice 1 Slow Release PTSM is actually Below and to the right of the pot

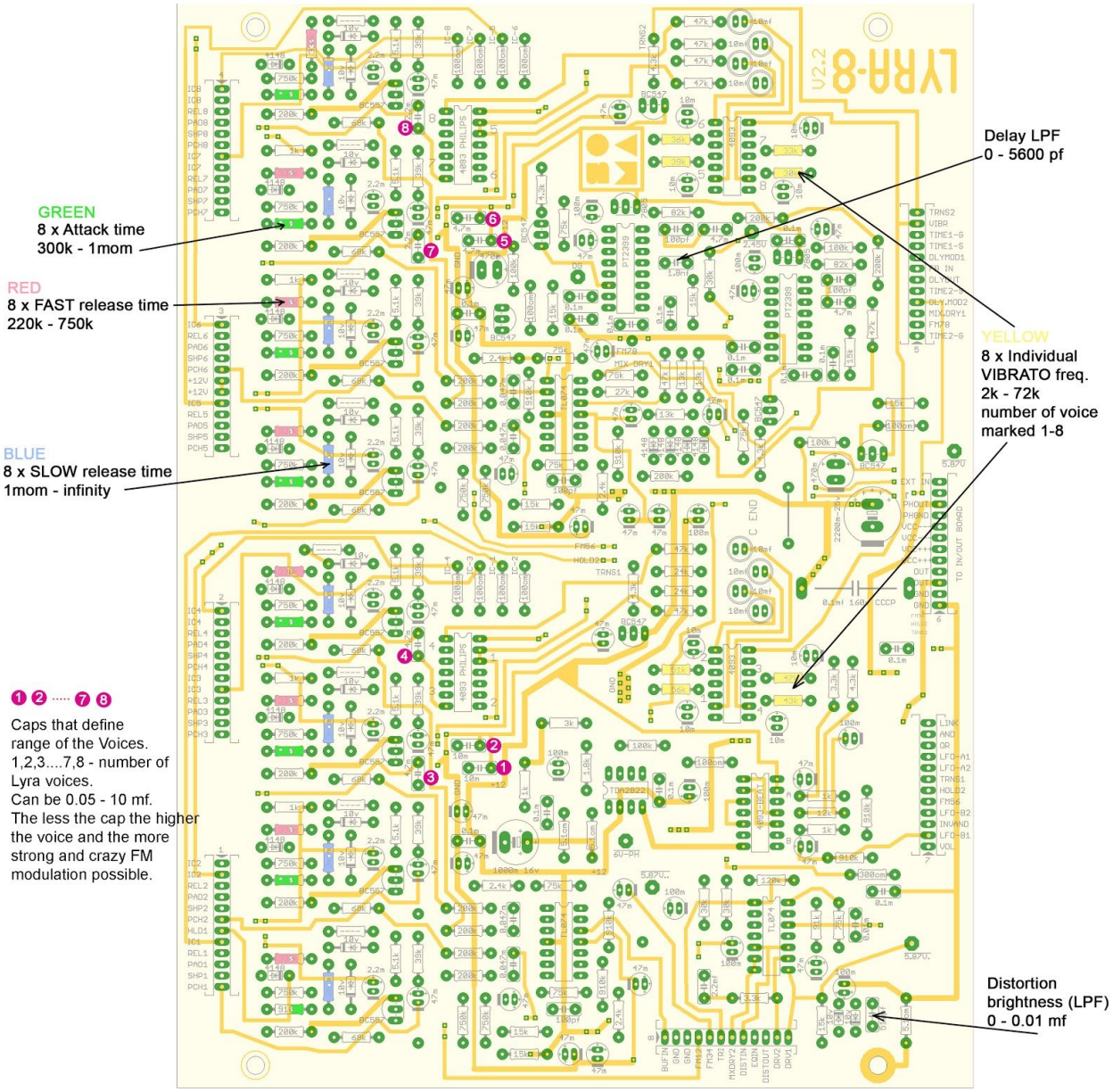
(there is an arrow on the silkscreen). Voice 2 connects to the PTSM to the left of that, just below the Voice 1 toggle, and the rest follow that schema.

Follow with the Release Fast, and Voice 1 is at the top, but Voice 2 jogs over to the right..and again, there is an arrow on the silkscreen legend.

The Attack is easy, just work down from the top!

Wing B is much easier...there is more room, and it is more clearly labeled. However, you must be **careful to wire the + from the capacitor pad on the Lyra main board to the + on the PTSM pad, which is pin 1**. On Wing B, the + is always UP or RIGHT on the PTSM pads. On the Lyra-8 main board, the tweak points from voices 1-4 are all from electrolytic caps, so it is easy to see where to connect. However, the caps on the voice 5-8 silkscreen are all marked as film-type capacitors. **If you use polar electrolytic caps on any contacts of the 1p8t switches for voices 5-8, you have to connect pin 1 on the PTSM to the correct side of these footprints. On 5 and 6, that is the LEFT as shown in the picture below, and for 7 and 8, it is the TOP.**

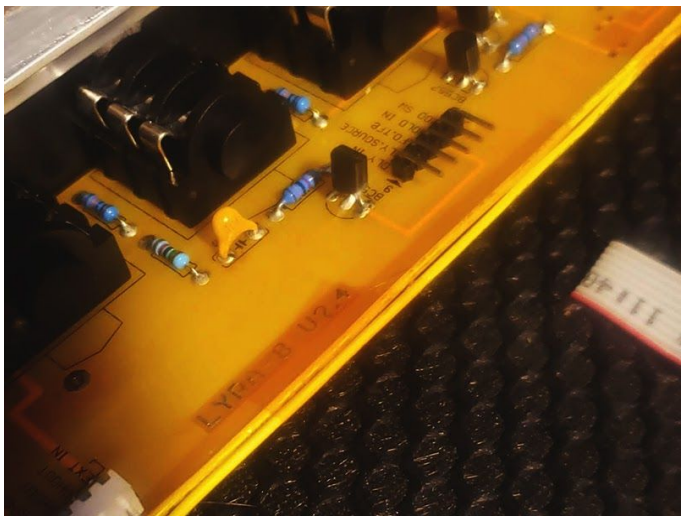
Here is the original picture from the Soma Labs documentation, showing the tweaks.



[IO Board]

The IO pcb from Soma Labs is very accurate. I recommend simply populating it as normal. When it comes time to put in the ¼" jacks, snap them in but don't solder them. Fit the loose jacks into the IO panel, and spin the nuts on a bit. Now you can solder the jacks in, and they won't be so difficult to get lined up with the panel drillings.

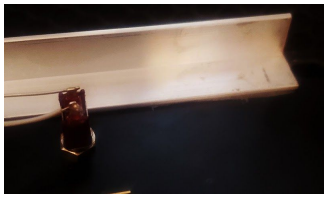
Install a jack for your headphones (I used ¼", but you could use 3.5 mm with a washer) and connect it to the IO pcb as marked.



Unfortunately, the power switch is on the wrong side of the IO pcb. You can use the switch to interrupt the + or the - power lead. Run a hookup wire from the pad on the pcb to one of the lugs on the power switch. I used Kapton tape to attach the wire along the edge of the pcb to keep it neat. Now you can hook up the power connector of your choice...one lead to the pcb, the other to the vacant lug on the switch. If you like, you can run another wire from the switch to the pcb.

The shorting switches on the IO panel simply short the Lyra pads to ground. You can connect all the lower lugs of the toggles to a common bus wire. Then connect each upper lug of the switch to the corresponding voice nut on the Lyra control pcb. I used crimp-on loop connectors like the ones you use on a car. Just slip them under the nut for the upper touch screw. Now run another lead from the bussed together switches to any one of the lower touch screws. You can use a ribbon cable or bundle the wires together for neatness. I used a connector, so that I can unplug my I/O panel if I'm disassembling stuff

When I finished building my first I/O panel and installed it in my rack, I found it flexed far too much to be actually usable. To remedy this, you simply have to glue something rigid to the backside of the panel. I had some very small aluminum angle that I used, glued on with JB Weld. Steel, wood, plastic...anything stiff will work. I glued mine along the top edge of the panel, and it fit without contacting any parts. When you glue and clamp it, put some masking tape on the front of the panel...cleaning JB Weld off the nice part of the panel took me more time than I want to admit!



[Shielding]
LFO bleed is a known issue on some Lyra-8 DIY builds, and can be very hard to track down, as Soma has never released schematics. A metallic shield panel can easily be installed using the standoffs. Aluminum works perfectly, and something as simple as a thin sheet bent and attached to an extended standoff would work. Even some aluminum foil tape stuck to paper or plastic would be fine. If you do have some bleed, and you believe the wings are the culprit, this is an easy fix. You can also run some aluminum tape over the long connection wires. If you want to be fancy, find some old television coaxial cable. You can strip off the insulation, and carefully remove the braided shield section from the core. Then you can slide some of this over your carrier wires. Just be careful not to short anything out!
Also, if you are having problems with LFO bleed, here is what the guys at Soma told a fellow Muffwiggler:

Try disconnecting LFO led and see if the click goes away. The other noise (headphones) is likely from low quality PT2399s or other mistakes in delay section. There shouldn't be any noise when mix is at zero though. The other suspect would be ruptured ground signal, check the continuity from jacks to delay chips and op amps.

You can increase the value of current limiting resistor going from led to ground, start with double the value and work from there, you can find the balance between noise and led brightness experimentally, also throw a wire from that resistor's ground leg directly to the ground of the power supply jack.

I recommend some type of shielding if you plan to mount your expanded Lyra-8+ DIY in a rack with other components. Mixers, amplifiers, effects, patchbays, and equalizers can all have pretty drastic influence on the sensitive circuits of Lyra. I have searched for a rack enclosure that will fit over the entire Lyra-8+ DIY assembly, but to date I have not found one. In my case, I cut a 17 x 10 sheet of aluminum and mounted it to extended standoffs behind the Lyra assembly. I used thumbscrews to hold it to the standoffs, in case I need to repair or disconnect anything behind the shield. YMMV.
It has been suggested that a shield between the panel and the pcbs might also be needed. I am not convinced of this (yet), but it seems like using aluminum foil tape would again be useful. You would have to be careful to trim the tape around the pot, switch, and contact drillings to avoid a potential grounding issue. I would also connect the shield to a chassis ground, but not the ground of the Lyra.

Please send comments, suggestions, and/or edits to:
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