Division 6

Mini Sequesizer Build Instructions

Make sure you have everything before you start soldering!

What You'll Need:

·Mini Sequesizer Kit · Soldering Iron · Solder · Wire Cutters · Small Phillips Screwdriver · 9mm Nut Driver

Polarity doesn't matter

Polarity DOES matter

1

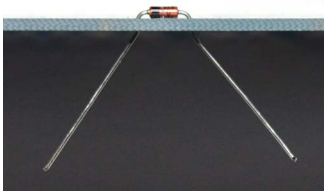
☐ Install Diode

To make assembly easier, we're going to install components from shortest to tallest. This way when you flip the board over to solder them, your work surface will hold them in place. Let's start with the diode.

To prep the leads, hold the body of the diode and bend the two leads 90 degrees.

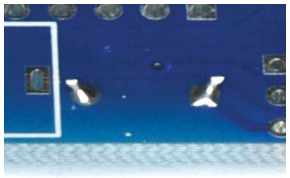
Insert the diode into the holes marked D40 on the main PCB. **Polarity does matter for diodes**, so when you insert it into the board, make sure the black stripe on the diode lines up with the stripe on the silkscreen pattern.

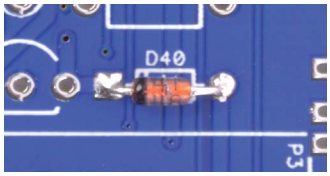
Bend the leads outward underneath the board to hold the diode in place.



Flip the board over, solder the diode leads, then trim them just above the solder joint.

For a quick soldering tutorial, visit **division-6.com/solder**





2

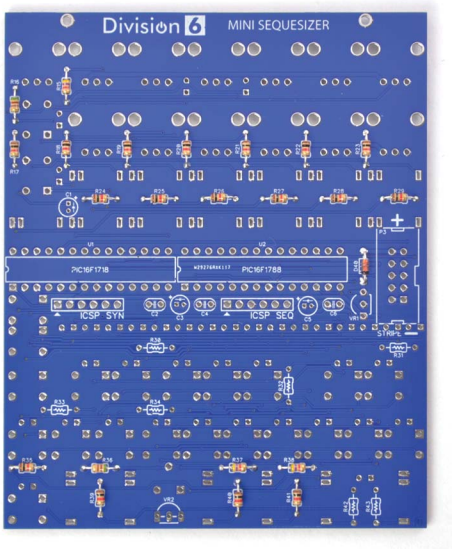
☐ Install Resistors

Working one value at a time, prep the leads of the resistors like you did with the diode.

Insert the resistors into their proper locations (see BOM). Polarity doesn't matter for resistors, but your board will look neater if you line up all the tolerance bands (gold) the same direction. Bend the leads outward underneath the board to hold the resistors in place.

Flip the board over, solder the resistor leads, then trim them just above the solder joint.

Continued...



3

☐ Install Ceramic Capacitors

Install and solder C2, C4, and C6. Polarity doesn't matter for these capacitors.

4

☐ Install IC Sockets

Insert the IC sockets into the board. Note that one end of each socket has a notch in it to indicate which end of the IC has pin 1. Make sure to align these notches with the notches indicated on the silk screen pattern.

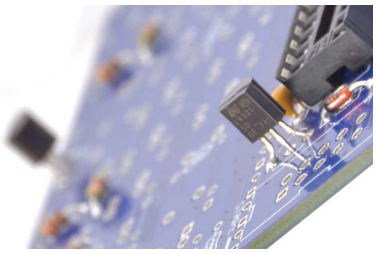
Flip the board over and solder one pin on each corner of both sockets. This makes it easy to reposition the sockets in case they aren't seated all the way down against the board; just reheat the corner pins and adjust the socket positions as necessary.

Once you are happy with the positioning of the sockets, solder the remaining pins. The pins are short enough that they don't need to be trimmed.

5

☐ Install Regulators

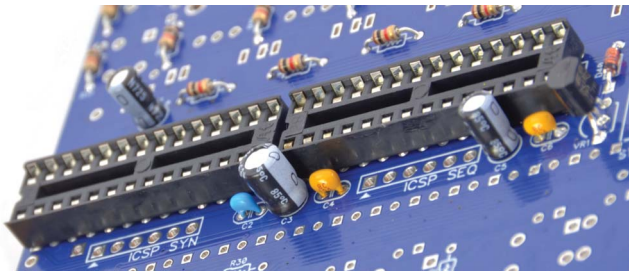
Insert VR1-VR2 into the board, making sure the flat sides of the parts are lined up with the flat sides on the silkscreen patterns. Solder and trim the leads.



6

☐ Install Electrolytic Capacitors

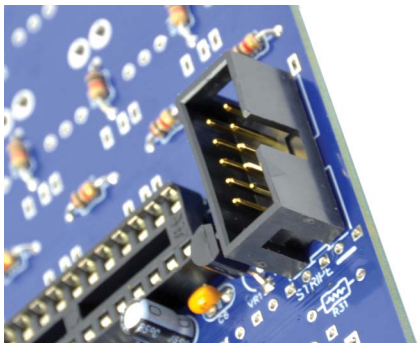
Insert C1, C3, and C5 into the board. **Polarity does matter for electrolytics**, so make sure the (-) stripe is lined up with the - (round) hole on the PCB (and is opposite the "+" marking on the silkscreen pattern). Solder the capacitors into place and trim the leads.



7

☐ Install Power Connector

Insert P3 into the board, aligning the notch in the connector with the notch indicated on the silkscreen pattern. Make sure the connector is flat against the board, then solder it into place. The pins are short enough that they don't need to be trimmed.

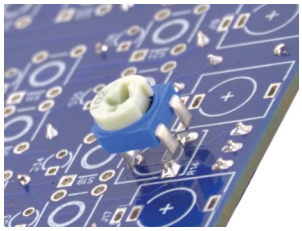


Flip the board over! From here on out, all the parts go on the other side

8

☐ Install Trim Pot

Insert R14 into the PCB and solder it into place.



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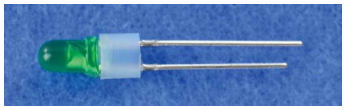
☐ Install LEDs

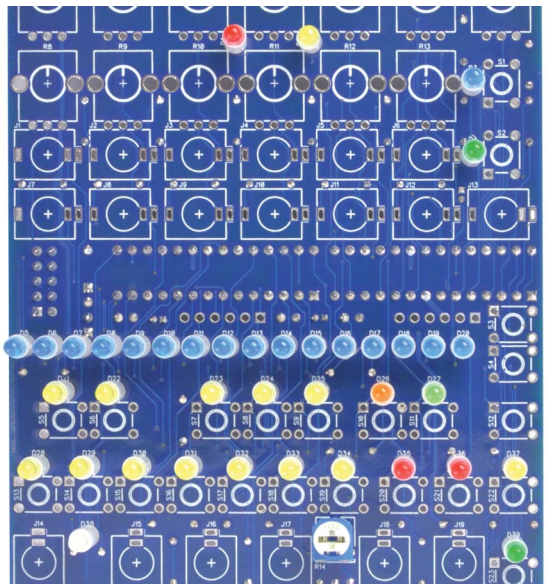
Slip an LED spacer onto each LED D1-D39.



Insert the LEDs into the PCB and bend the pins outward to hold the LEDs into place. **Polarity does matter for LEDs**; you'll notice that they all have a flat side on their package. If the flat side is hard to see, each LED also has a long and a short pin to indicate polarity.

FLAT SIDE = SHORT PIN = NEGATIVE (-) = SQUARE PAD ON PCB

It doesn't really matter which color you put where, but the LEDs in your kit were chosen with the following layout in mind:



You may want to temporarily fit the front panel in place to make sure all the LEDs are straight and line up with the LED holes in the panel. Solder and trim the leads.

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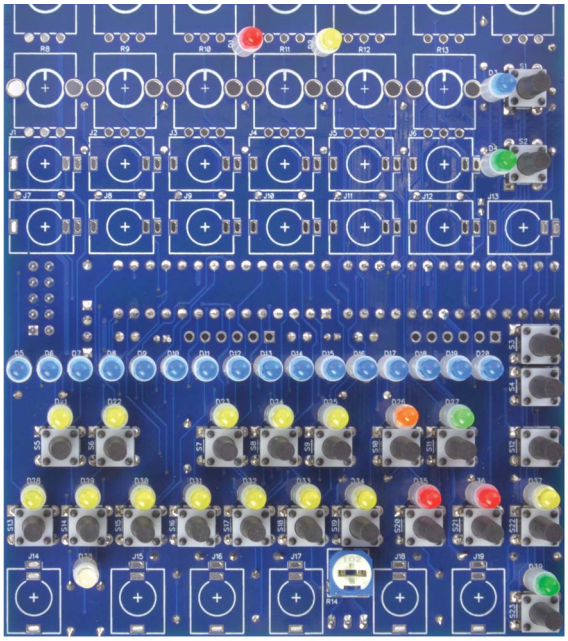
☐ Install Buttons

Insert tact switches S1-S23 into the PCB. They fit 2 different ways, and either way is fine. They will snap into place, making it easy to flip the board over and solder them. Make sure they are flat and straight as you insert them. You may want to temporarily place the the front panel to make sure the buttons line up with the holes in the panel. Once everything is lined up, solder the button pins. The pins are short enough that they don't need to be trimmed.



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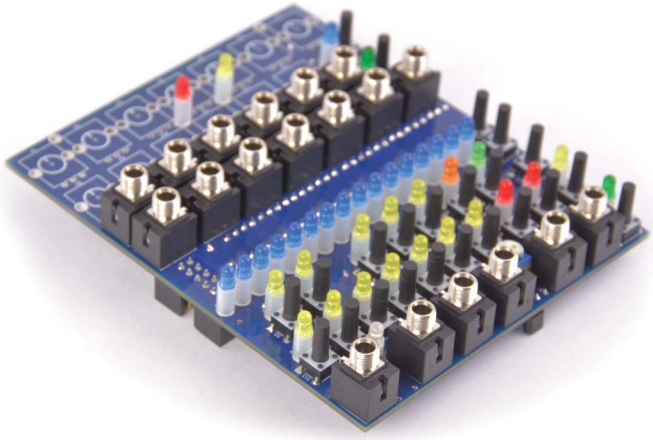
☐ Install 3.5mm Jacks

Insert J1-J26 into the main PCB, soldering one pin of each as you go to hold it in place. Check to make sure that they are flat against the board and lined up with the silkscreen pattern; reheat and reposition if not. Place the front panel on the jacks to ensure alignment, and solder the remaining pins.



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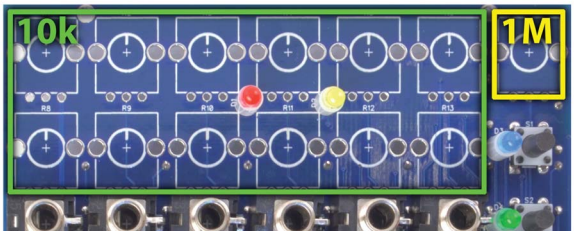
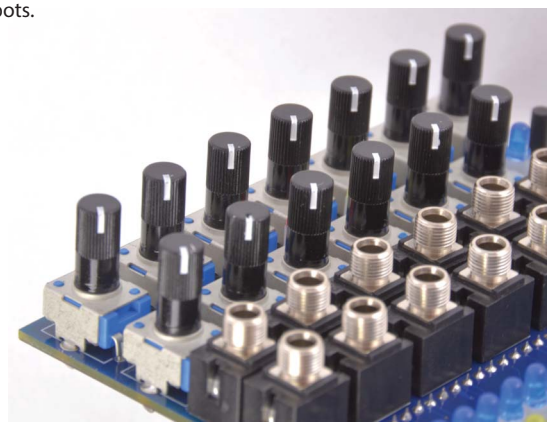
☐ Install Pots

Be careful here, because there's one pot that's different from the rest! R7 is 1M (say B105 on the bottom), where all the others are 10k (say B103 on the bottom).



Insert all the pots, making sure they are as straight and flat to the PCB as possible. Solder one mounting tab on each pot. Temporarily install the front panel to ensure all the pot shafts are poking through the center of their holes. If any pot needs adjustment, simply heat up the one tab you soldered and adjust the positioning of the pot.

Once all the shafts are lined up to your satisfaction, solder the remaining pins on the pots.



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☐ Attach Standoffs

Using 2 silver screws, attach the 2 standoffs so that they protrude from the same side of the board you just installed the pots on. The holes for the standoffs aren't labeled, but they have thick silver rings around them.

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☐ Install Front Panel

Place the front panel on the module. Install the hex nuts on all the jacks. Screw the two black screws into the standoffs to hold the top of the panel in place.

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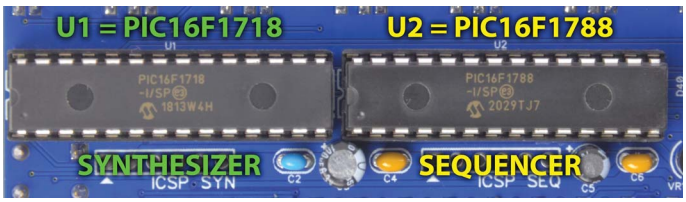
☐ Install Microcontrollers

Before inserting U1 and U2 into their sockets, you may need to bend the pins inward a bit so that they'll line up with the holes. Lay each IC on its side on a flat surface, then gently press down on the top of the chip so that the pins bend evenly. Repeat for the other side of each chip.

Insert the chips into their sockets, making sure that the pin 1 notches on each chip and socket are aligned with each other. Make sure the synthesizer chip and the sequencer go into their respective sockets!



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☐ Power Up

That's it, you're finished! It's time to test out your handiwork. Connect the module to a Eurorack power supply using the provided cable. Turn on the power.

The synthesizer and sequencer should go through their power on test routine and blink their firmware revisions on their LEDs. After this the synthesizer's LFO LEDs should start blinking at LFO rate, and the sequencer's white clock and blue STEP 1 LED should be blinking.

Connect the synthesizer's OUT jack to an amplifier/speaker. Make sure the FILTER pot is all the way up and LFO>VCO and LFO>VCA are set to the 12:00 positions. Press the GATE button; you should hear some audio.

Press the RUN button on the sequencer; it should now be sequencing through all 16 steps and you should hear notes coming from the synth since the GATE and CV from the sequencer are normalled to the synth.

Press RUN again on the sequencer to stop it. You should be able to manually play notes on the sequencer keyboard.

Calibration instructions can be found at **division-6.com/sequesizer**

Troubleshooting:

- If the module has no power at all, check to make sure the diode is installed the right direction. Also use a voltmeter to verify that your Eurorack power supply is working.
- If any LED seems to be stuck on, it may be installed backwards.
- For any other problems, start by checking all your solder joints. They should look shiny and smooth, not dull. Look for blobs and shorts between adjoining pads.

Still have problems? Email us at **support@division-6.com!**

— THE END —