EuroDuino Kit

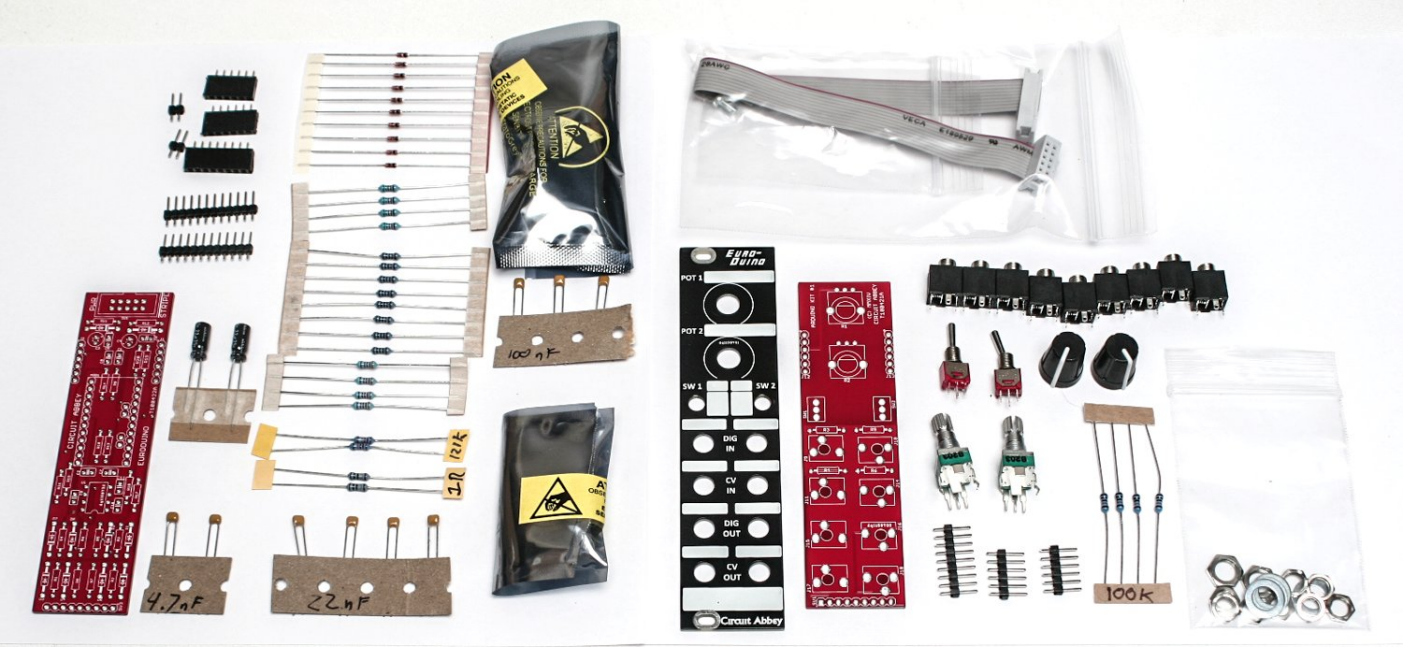
Assembly Instructions

Circuit Abbey

Main Board Assembly

First unpack the components and lay them out as shown:

Make sure all of the components are present. If you are missing components, email support@circuitabbey.com for replacements.



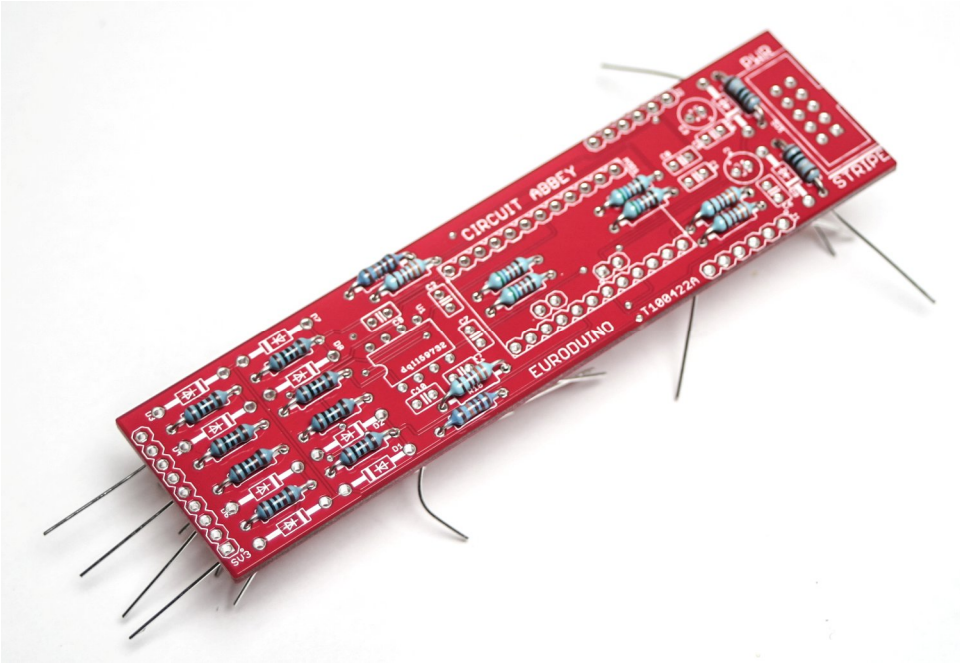
Parts List:

Front Panel	1
Main Board	1
Jacks	16
Nuts	16
Headers	4
Jumpers	4
M3 Screws	3

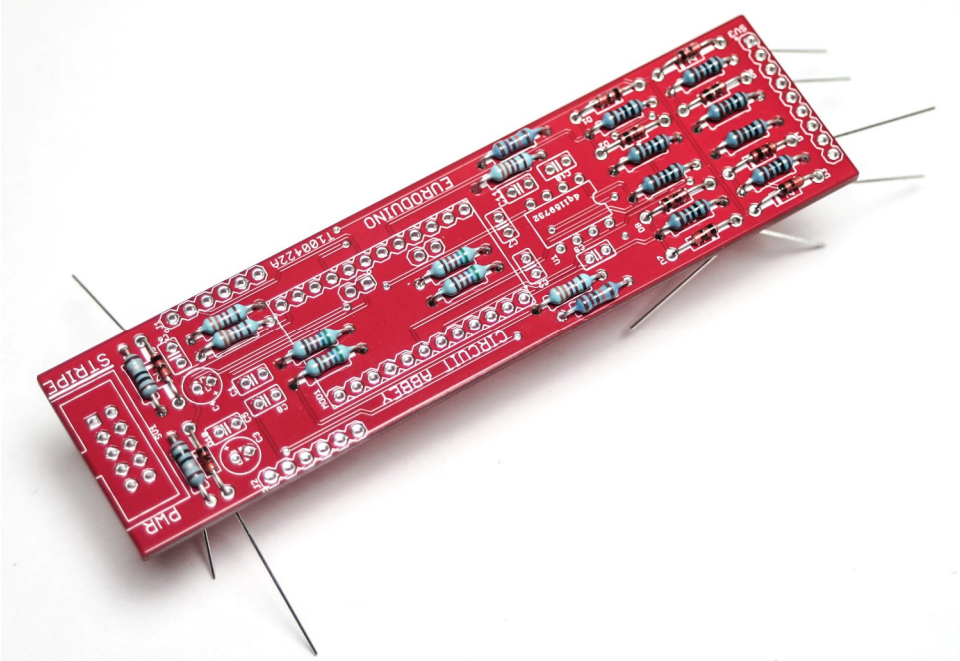
Note that all the passive components are marked with either their values or their item number from the BOM. This makes identification easier.

Main Board Assembly

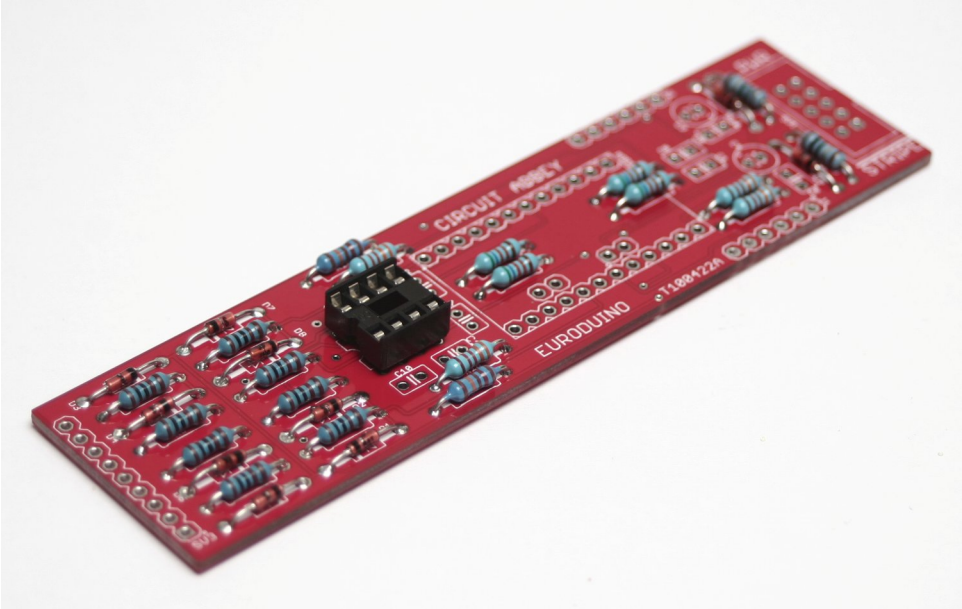
Locate the main board and start adding components to the main board, soldering and trimming leads as you go. Start with the resistors.



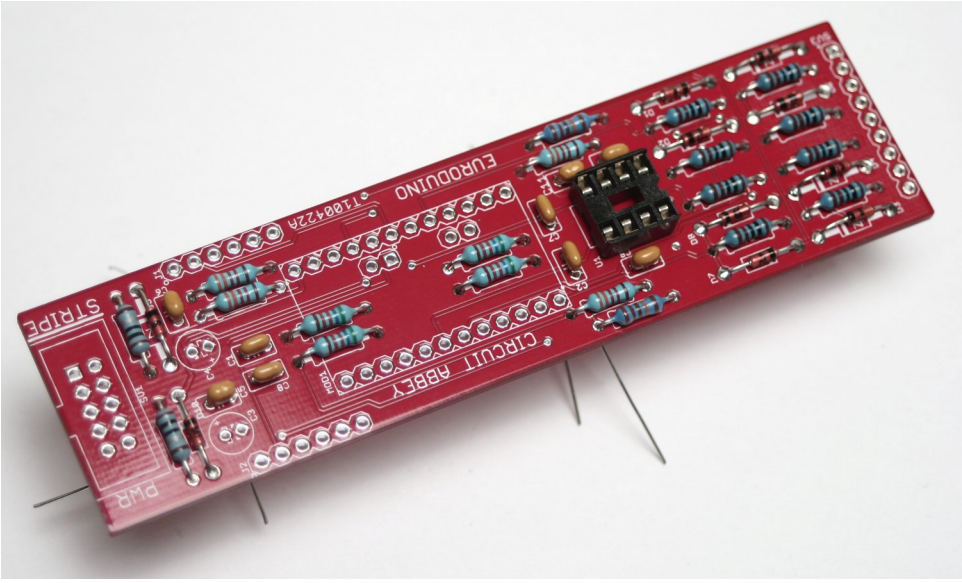
Next do the diodes, making sure to follow the polarity markings on the board.



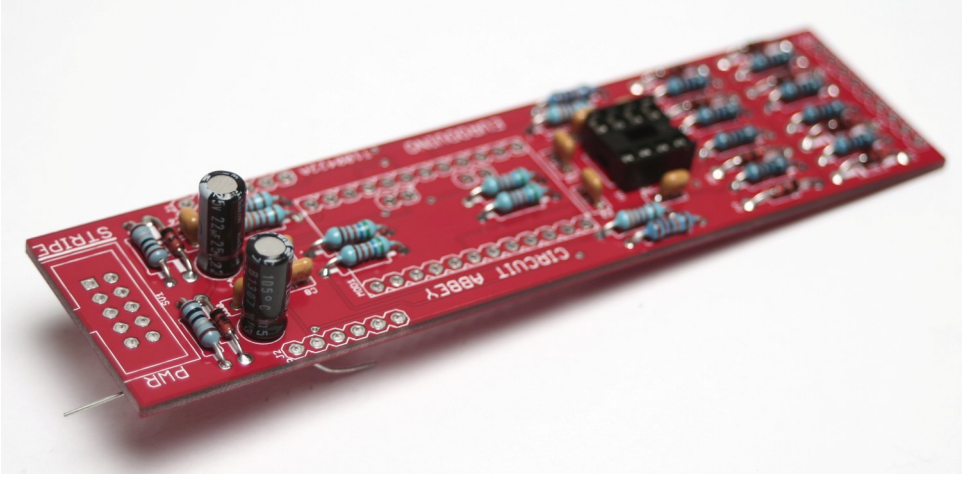
Next add the IC socket. It is in the bag marked “TL082 & Socket”.



Now add the small capacitors. These are non-polarized so they can go in either way.

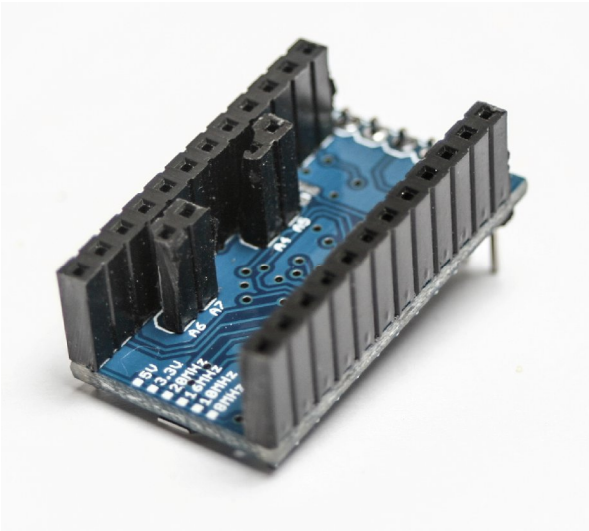


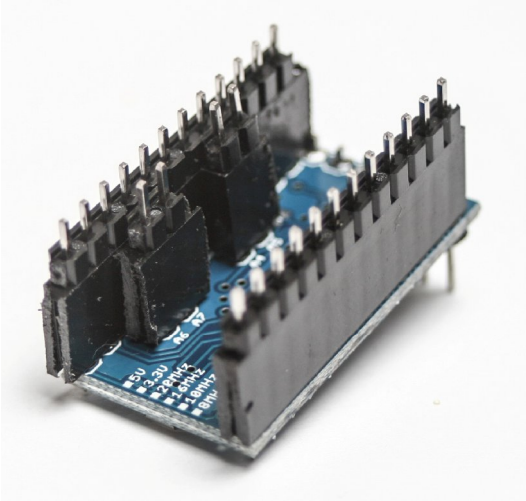
Add the electrolytic capacitors. These are tricky because they are polarized and can only go in one way. This is complicated by the fact that the board has the positive lead marked and the capacitors have the negative lead marked. On the capacitor the longer lead is positive.



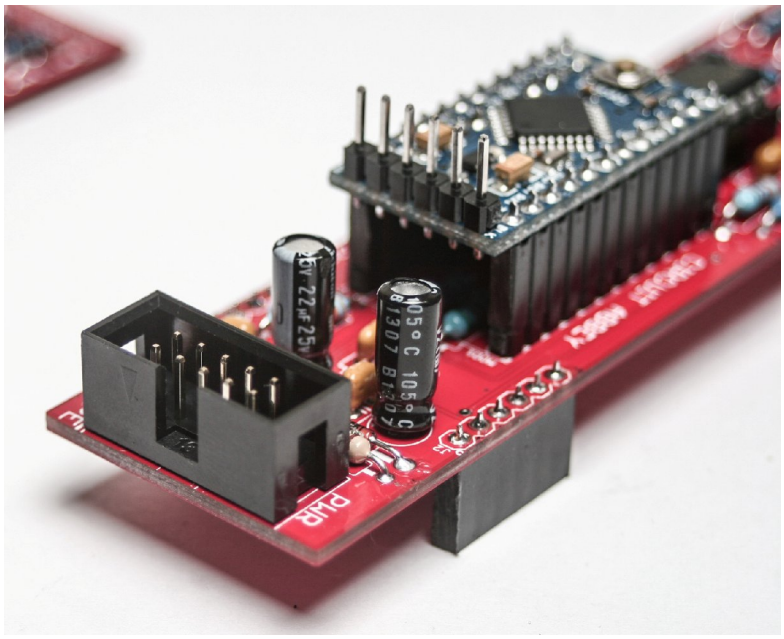
Add the headers for the Arduino module, marked “MOD1”. There are 2 12-pin and 2 2-pin male headers in the marked “Connectors for EuroDuino”.

Note: these headers must be in straight or the Arduino module will not fit. The best way we’ve found to do this is to take the Arduino module and insert the headers into the female connectors.





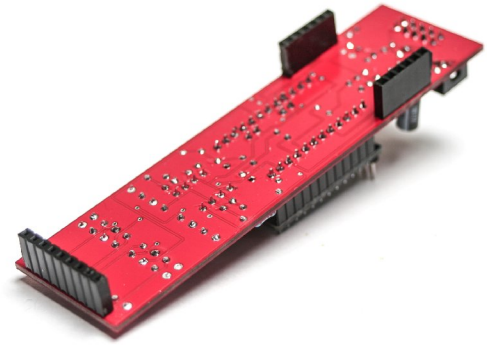
Then insert the Arduino module into the holes on the main board. It might take a little adjusting of the connector alignment but it will eventually go int. Now flip the board over and solder.

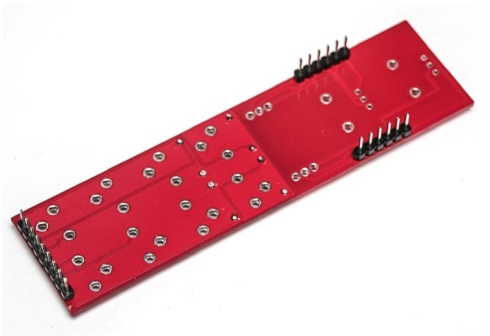


Add the shrouded 2x5 power connector.

Now add the female header connectors. There is one 9-pin and two 6-pin connectors in the bag marked “Connectors for EuroDuino”.

Note: once again, the best way we’ve found for doing this is to insert the male headers into the female sockets. Then inset the connector pairs into the main board. Flip it over and add the control board. Now you should have a connector sandwich. Now solder the connectors, first on the main board then on the control board. Once all the pins on the connectors are soldered you can separate the boards and continue work on the main board.

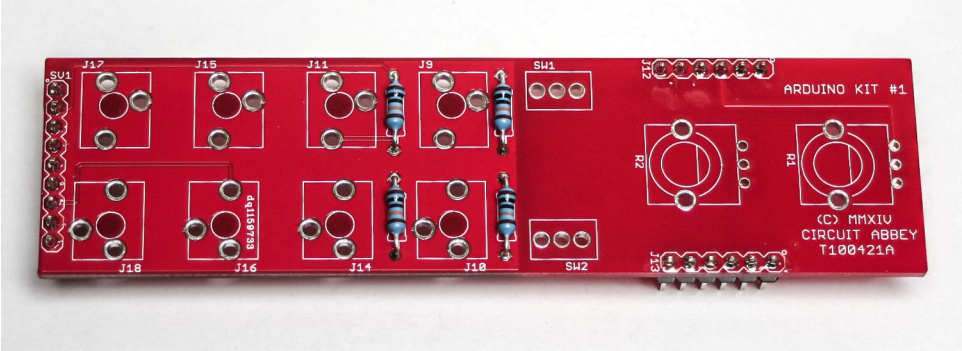




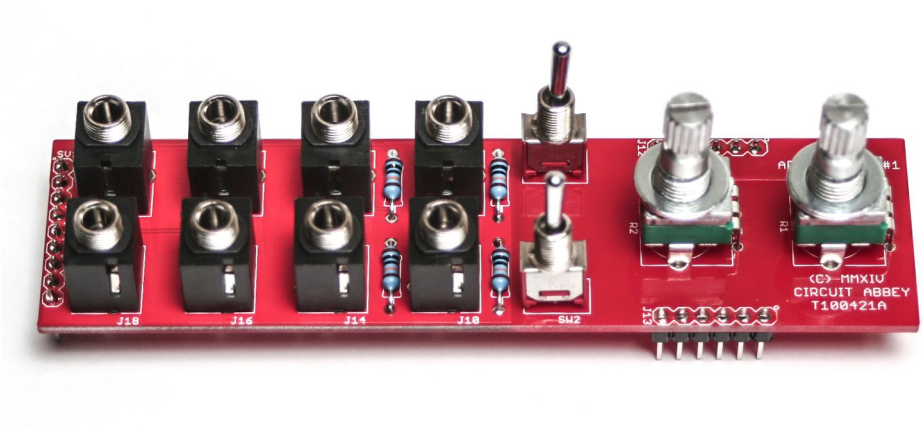
Add the TL082 IC to the 8 pin socket. This completes work on the main board. Re-attach the Arduino module.

Control Board Assembly

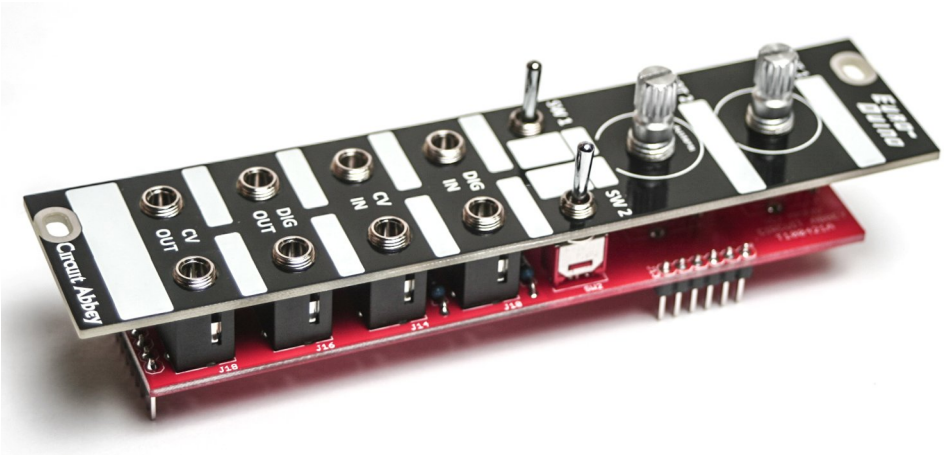
Locate the control board and add the 4 100K resistors.



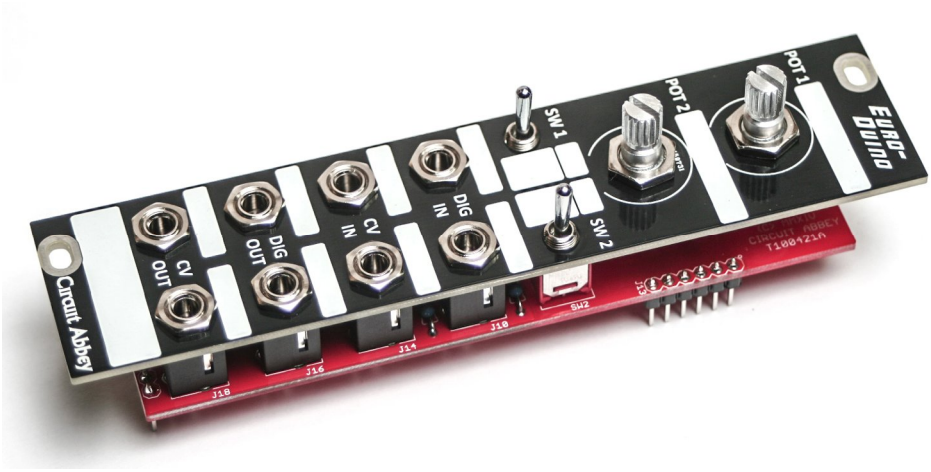
Now add the 8 jacks, 2 pots and two switches. Add 2 washers to each pot as shown:



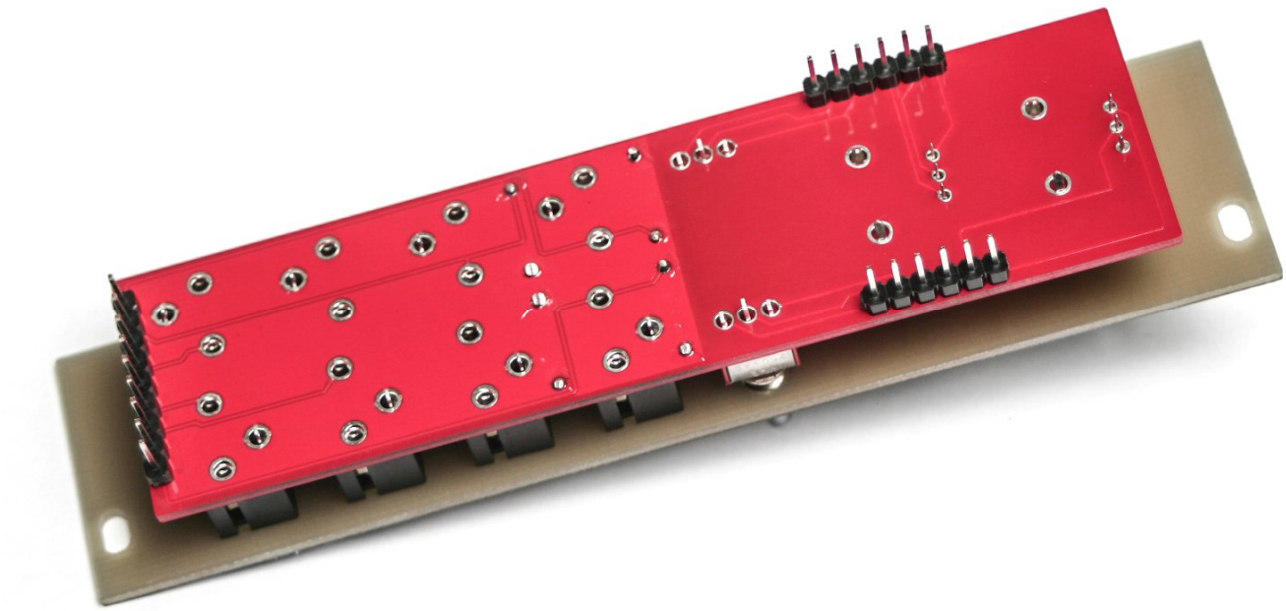
Add the front panel which will serve as a jig to hold the components in alignment during soldering:



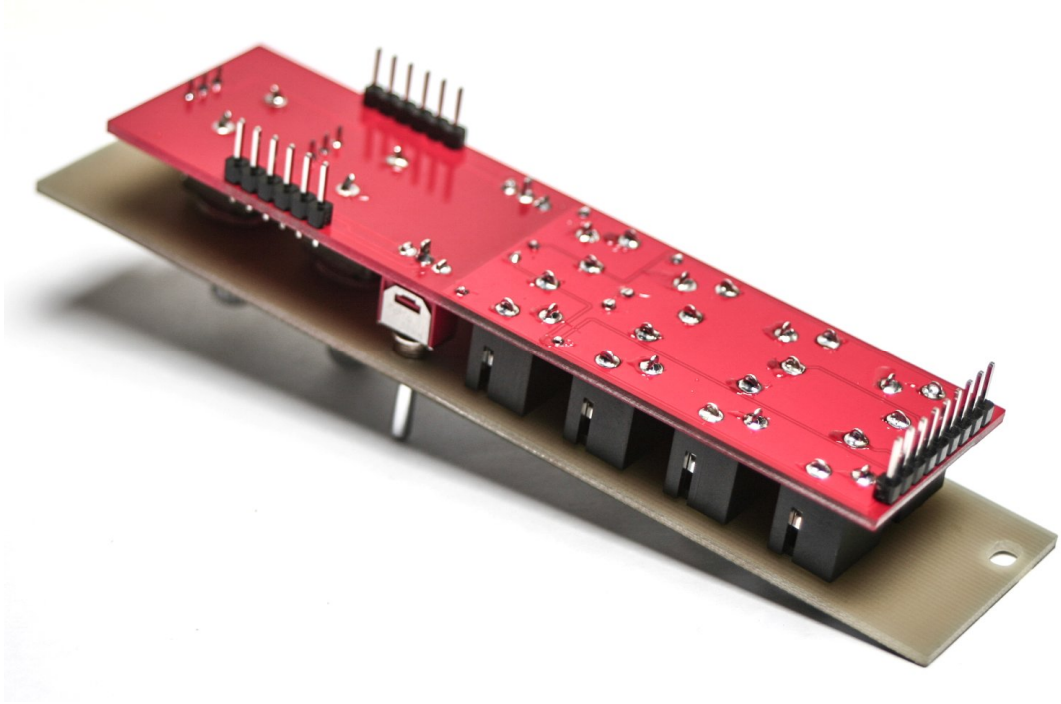
Add the nuts from the hardware bag and finger tighten. Note: the switches do not get nuts.



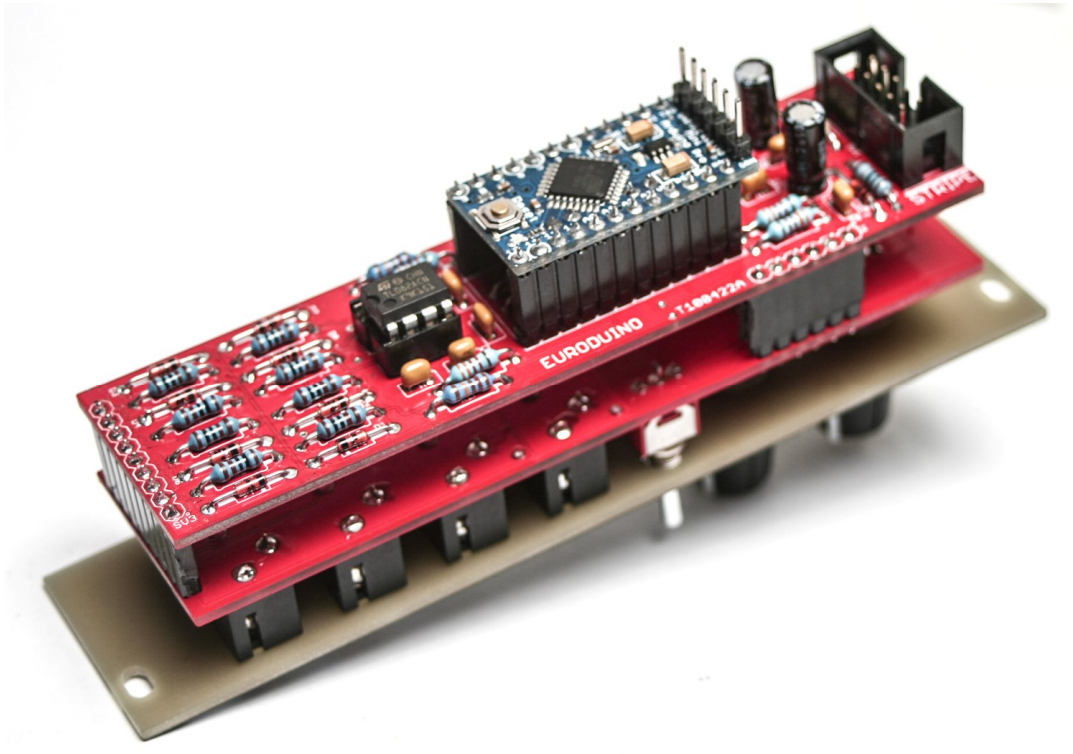
Now invert the assembly and start soldering. Make sure all the components are pressed down all the way, especially the switches.



When soldered it should look like this:



Now the main board can be attached to the control board.



Testing

Your Euro-Duino is now complete. Next comes testing. The Arduino module comes with the Dual LFO sketch programmed in to it to facilitate testing.

1. Install your module and power it up
2. Run the CV Out of channel 1 to the input of a VCO. You should hear the VCO swing wildly in frequency. Vary Pot 1 to change the LFO rate. Run a CV source into the CV In jack and make sure the rate varies.
3. Move the toggle switch and make sure the waveform is switching from sine to ramp to triangle
4. Change to the Dig Out jack. You should hear high then low frequencies.
5. Run a gate to the Dig In jack. A high gate should put the LFO into reset.
6. Perform the above on the other channel.

Troubleshooting

It's a bummer, but it happens. Your shiny new kit does not work. Don't despair; we are here to help.

The first step in troubleshooting you build is to inspect it. Look at all the component values and make sure they are correct. Look for backward diodes, an easy thing to mess up.

Next, check all the solder joints. The most common cause of failures is a missed solder joint. Look for cold solder joints (dull instead of shiny), joints with too little solder, and solder bridges.

If all of that seems okay, power up the unit outside of the rack and make sure the light on the Arduino module is on.

Next is to isolate the function that is not working. For example if the Dig Out on channel 2 is dead, this isolates the problem to a few components. Refer to the schematics and placement documents to trace down the issue. In this case there is the jack, a resistor, some connector pins, and the arduino itself. If you have a multi-meter, you can use it to "beep" out the signal path.

If you get stuck, feel free to contact us at contact@circuitabbey.com.

Bag contents:

Item	Qty	P/N	Title
1	1	T600034	Kit,Ardiono #1 Main board
2	1	T600035	Kit,Ardiono #1 Cntl board
3	1	T600003	Goodie Bag,4 Screw
4	1	T100428	PCB,Raw,Arduino 1 FP
5	1	T100421	PCB,Raw,Arduino 1 Cntl
6	1	T100422	PCB,Raw,Arduino 1 Main
10	1	T600037	TL082&Socket for EuroDuino
11	1	T600038	Hardware for EuroDuino
12	1	T600039	Connectors for Euroduino

Main Board Parts:

Item	Qty	P/N	Title	Reference(m)
1	3	T100248	Cap,100n,Cer,50V,Y5V,2.5mm PTH	C5,C6,C11
2	2	T100433	Cap,4.7nF,Cer PTH	C9,C10
3	2	T100151-121K	Res,1/4W,1%,MF.PTH	R16,17
4	8	T100151-1K00	Res,1/4W,1%,MF.PTH	R1,2,3,4,5,6,7,8
5	2	T100151-1R0	Res,1/4W,1%,MF.PTH	R11,12
6	4	T100151-33K2	Res,1/4W,1%,MF.PTH	R15,18,19,20
7	4	T100432	Cap,22nF,Cer PTH	C1,C2,C7,C8
8	2	T100424	Cap,22uF,25V,Elect PTH	C3,C4
9	4	T100151-56K2	Res,1/4W,1%,MF.PTH	R9,10,13,14
11	10	T100426	Diode,BAT85,Schottky	D1,2,3,4,5,6,7,8,9,10
17	1	T100390	Header,2x5,shrouded	SV1

Control Board Parts:

Item	Qty	P/N	Title	Reference(m)
1	8	T100284	Jack,3.5mm,Stereo,Vert	J9,10,11,14,15,16,17,18
2	2	T100394	Pot,9mm,vert,20K linear,knurled	R1,2
3	2	T100243	Knob,6mm,Black/White,Knurled Shaft	R1,2
5	4	T100151-100K	Res,1/4W,1%,MF.PTH	R3,4,5,6
6	2	T100447	Switch,Toggle,SPDT On-Off-On Sub Mini	SW1,2

Connectors Bag:

Item	Qty	P/N	Title
1	2	T100437	Header socket,1x6,0.1" PTH
2	1	T100438	Header socket,1x9,0.1" PTH
3	2	T100436	Header,1x12,0.1" PTH
4	2	T100074	Header,1x2,0.1" PTH
5	2	T100434	Header,1x6,0.1" PTH
6	1	T100435	Header,1x9,0.1" PTH

Hardware Bag:

Item	Qty	P/N	Title
1	2	T100197	Nut,7mm,Hex
2	8	T100174	Nut,Hex,for J-352 Jack
3	4	T100198	Washer,7mm
4	3	T100165	Screw,M3x6,Panhead philips