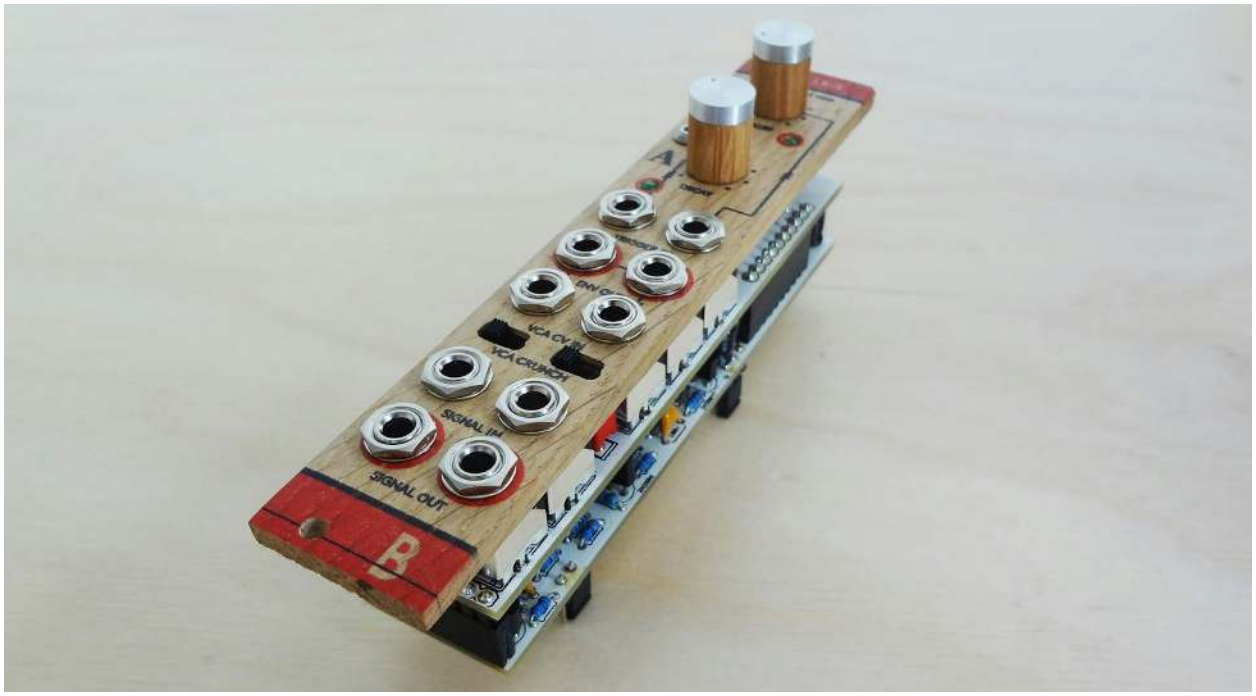


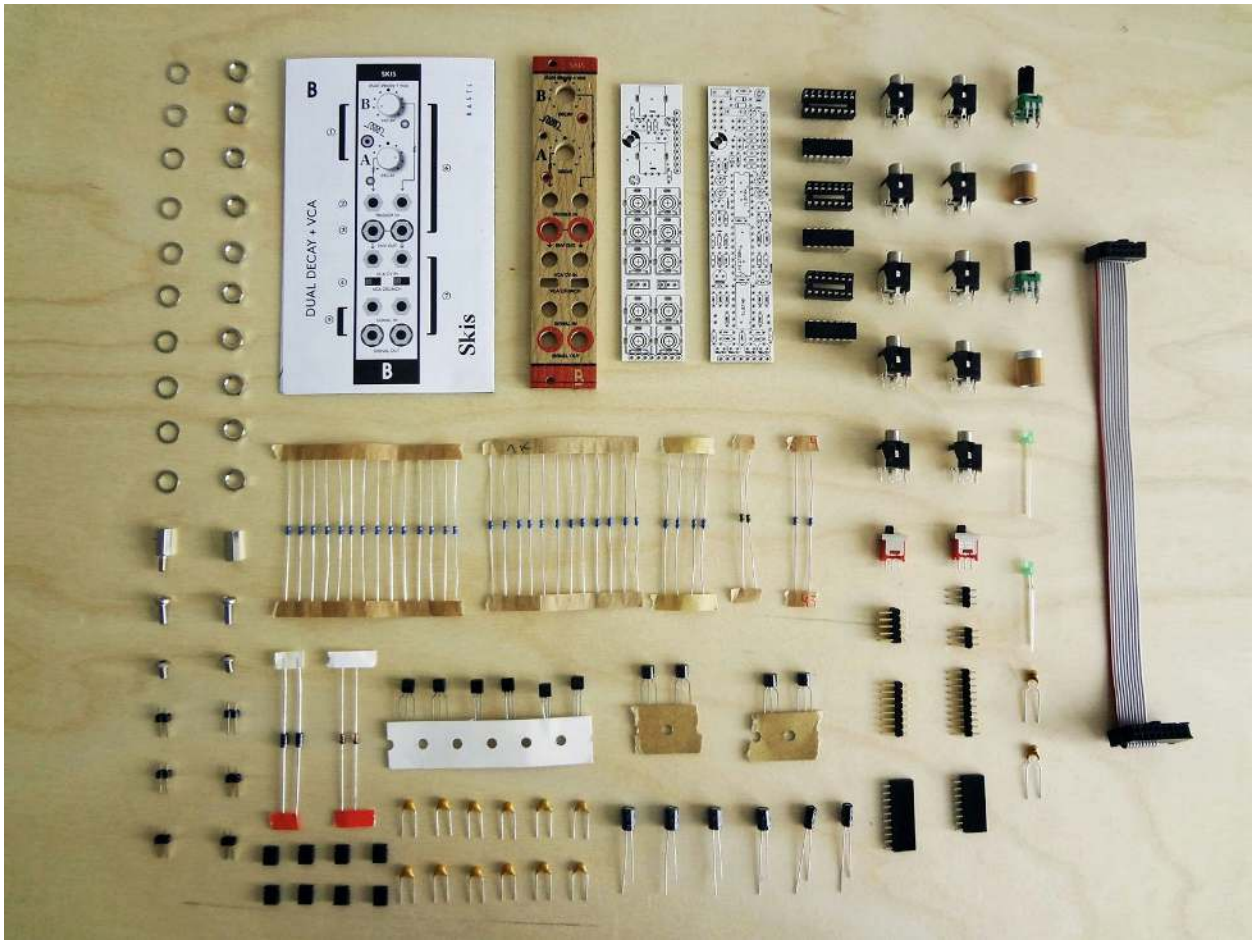
SKIS V1.0 ASSEMBLY

Before starting this kit, prepare the following tools: Soldering iron (15-20W will do), flush cutters, small hex screwdriver or allen key and phillips screwdriver. Also briefly go through this guide and make sure that you understand all the steps, if you are having any troubles don't hesitate to seek help at the forum. We suggest that you work in a clean and a well lit environment to avoid accidents or losing any of the small components.

IMPORTANT!

If you have never soldered before, check out this great tutorial first.

And please check that your boards are the same version as this guide and that your kit contains the following items:



BOM – BILL OF MATERIALS

14 x 100k resistor	10 x jack	1 x 8 pin DIL socket
4 x 10k resistor	6 x BS170	1 x ribbon cable 10pin
16 x 1k resistor	1 x LM13700N	2 x pot knob
2 x 47k resistor	2 x TL74	1 x nut - nut spacer
2 x 4k7 resistor	2 x 500k pot	1 x nut - screw spacer
2 x 1N4148 diode	2 x green LED	10 x jack washers
2 x 1N4007 diode	2 x switch	10 x jack nuts
8 x 100nF capacitor	2 x 100mA fuse	2 x 6mm screws
4 x 10n capacitor	1 x 18pin female header	2 x 8mm panel screws

4 x 10uF capacitor	1 x 26pin male header	2 x PCB
2 x 1uF capacitor	1 x 2x5pin male header	1 x Front panel
2 x 2N3904 transistor	2 x 14 pin DIL socket	
2 x 2N3906 transistor	1 x 16 pin DIL socket	

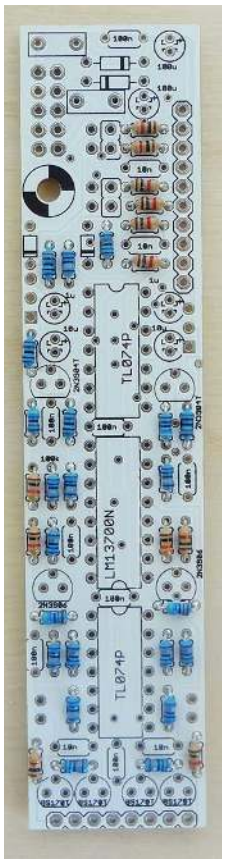
The SKIS module consists of two boards, the top board is used for all of the UI components and the bottom board is the heart of the sound processing circuit.
We even included some of the best quality solder we found to help you solder everything faster.

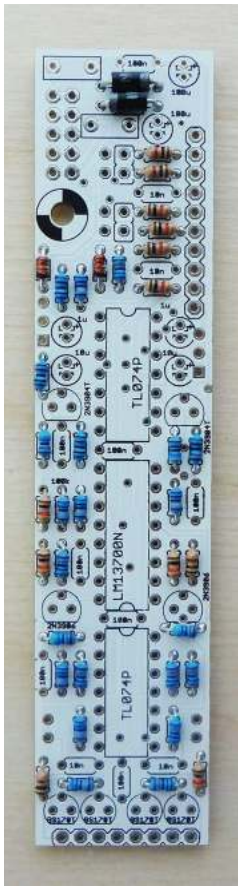
BOTTOM BOARD

Lets start with the bottom board, with the shortest and smallest parts.
Take a strip of resistors and look up the values printed on the circuit boards. Start with the 100K, since there are 14 of them it will be easier to locate the rest on the board. Place them through the board, solder them and clip off the excess leads. Do the same for the rest of 10k, 1k, 47k and 4.7k resistors. (The color of the resistor body may defer from the pictures, but its the color code of the values that matters).
Your board should look like this (click on the images to enlarge):

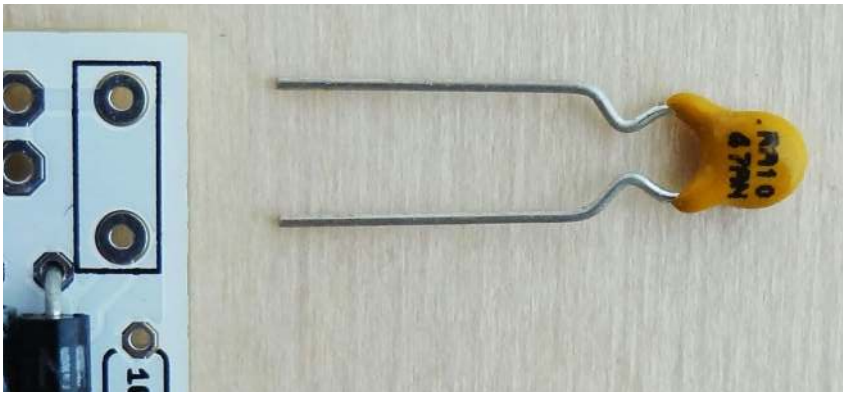
Next populate the board with the diodes and solder them in. Be careful though, diodes are **polarized!** Make sure that the marking ring on the diode body matches the marking on the circuit board.

By now your board should look like this:



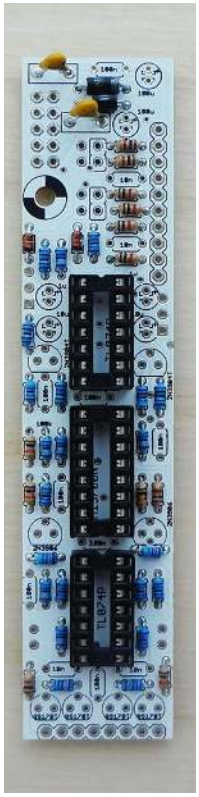
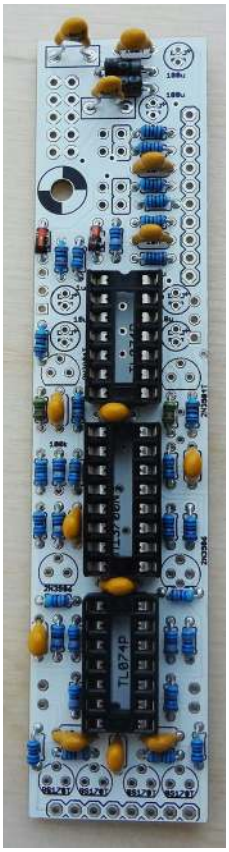
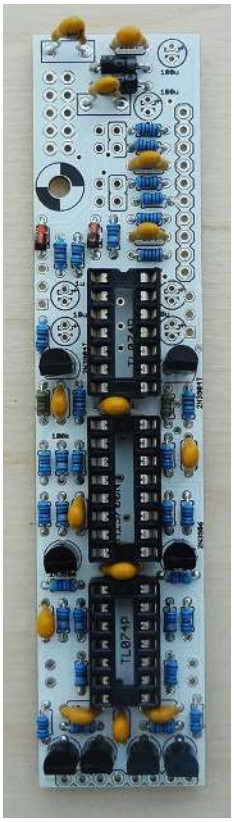


Now move on to the protective fuses. They look quite similar to ceramic capacitors and are placed in the blank rectangular markings on the board around the diodes.



Next place and solder the sockets. Make sure that the notch is in the **same direction** as printed on the circuit board.

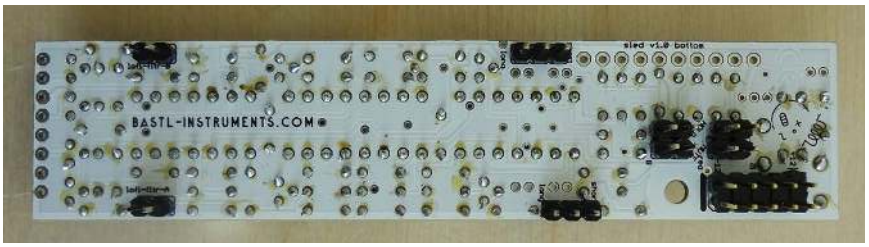
Then add the capacitors, there are eight 100n capacitors (marked 104) and four 10n (103). They might be in ceramic or polyester film package, don't worry they are not polarized.

Next solder in the four BS170 unipolar transistors, two 2N3904 NPN transistors and two 2N3906 PNP transistors. Take care that they are oriented the same way as printed on the board.

BOTTOM BOARD BACK SIDE

Take the 10 pin power connector and place it also on the back side of the board. It might be tricky to solder it straight, but you can place something like your cutter under the board to hold it level. Also first solder in just one of the pins, then take the board in your hand and re heat that pin while pressing down on the header to align it (be careful though, you don't want to touch the pin you are heating up) wait for it to cool and solder the rest of the pins. Do the same for eight jumper headers.



ATTENTION!

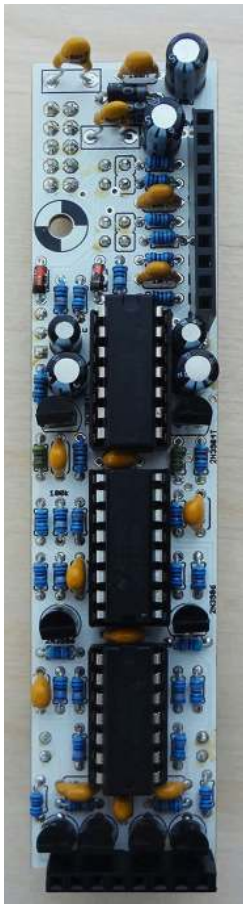
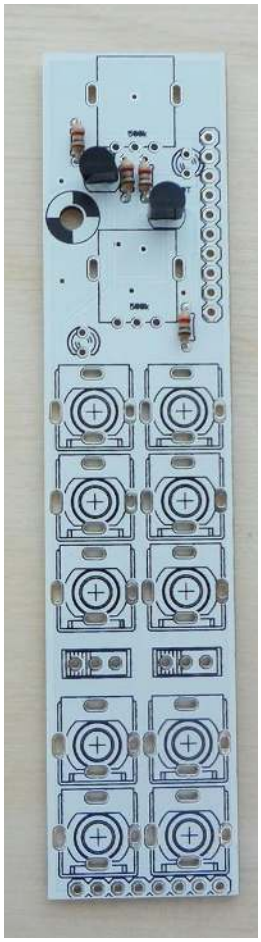
Wrong label on the board. The 100uF electrolytic capacitors are replaced with 10uF.
Now, it's time for more capacitors. Take the four 10uF and two 1uFcapacitors and place them on the front side of the board. Be careful, these are **polarized!** capacitors and should be soldered the **right way**in. There is a + marking on the circuit board that should match the long lead of the capacitor, the – side is also marked on the body of the capacitor with a white strip. You might have to clip a little the jumper header if they are in the way of the capacitors.

SUPER MEGA IMPORTANT!!! RESPECT CHIP POLARITY.

Next insert the IC chips into their sockets of the bottom board. Again make sure that the **notch** on the chips is **facing the same direction** as the notch on the sockets.

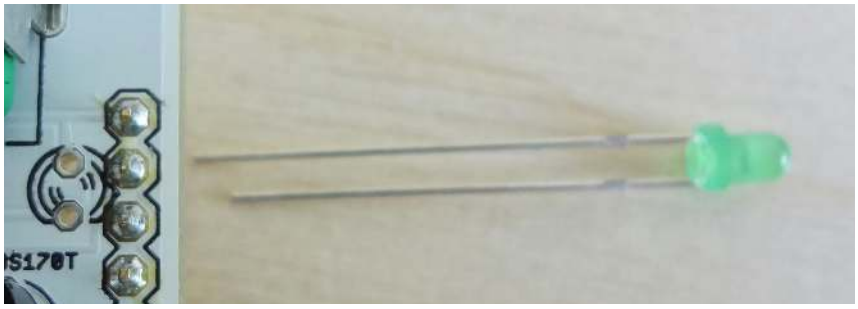
TOP BOARD

Now populate the top. Again start with the remaining 1k resistors and solder them in as well as the transistors.


Now to ensure that the headers are properly aligned, screw the hex screw and the standoff on bottom board. Place the female headers on button board with the male pins inserted. Now place top board, screw with the standoff screw and finally, solder the headers to both boards. Just like in the image below.

Unscrew the top spacer again and disconnect the two boards.
Place the three potentiometers to their respected places on the board. Push them well until they **sit absolutely flat on the board**, but don't solder them yet.
Next, place the mono jacks on the board, the LEDs and the switches.
The LEDs are **polarized** so make sure that the long leg (+) is facing upwards. Also the notch on led and circuit board should match. Still don't solder anything yet.



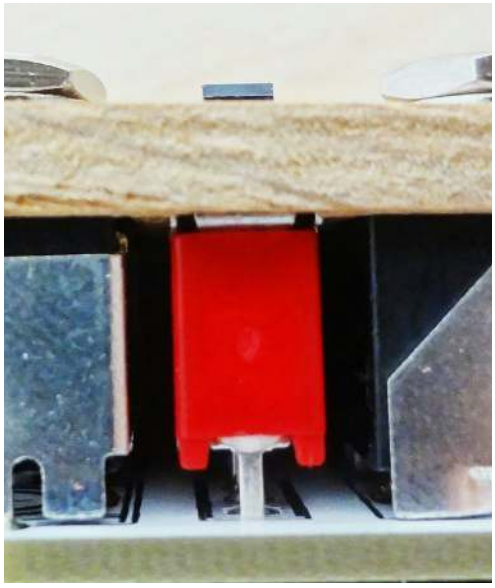
ENCLOSURE ASSEMBLY

Again we want to make sure that all the **components are properly aligned** with the front panel, so take the standoff and place it in the opening. Check that all the components came through and then screw the wooden front panel with the second hex screw. Also secure the jacks to the panel with the washers and the nuts.

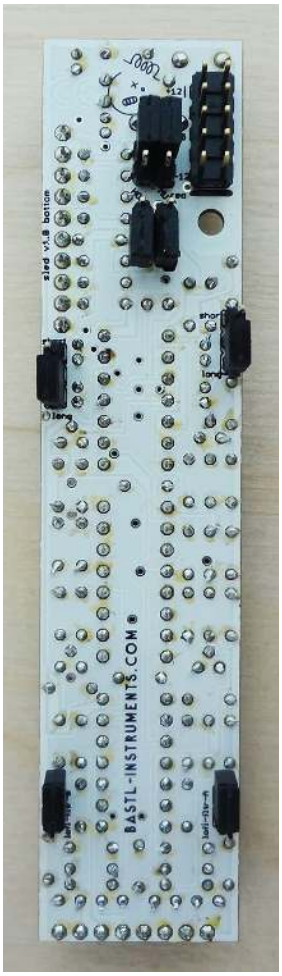
IMPORTANT

Don't tighten the screws and jack washers too much as you may damage them!

The switch and the LED **should have some space** off the board, or else they won't come through the panel, like in the image below. Solder the LEDs, the switches and the rest of the components.



Congratulations! You have made it through, now just connect the bottom board, add the knobs, the jumpers to your preferred configuration and you are ready to enjoy your new module.
The default jumpers setting is like this



Before you connect anything, make sure that your system is disconnected from power. Also double check the polarity of the ribbon cable, the red cable should match the -12V rail both on the module and on the bus board!

TROUBLESHOOTING

did you plug it in?

RELEASES

- 1.0 – Original release.