THE BUMBLEBEE
ASSEMBLY TUTORIAL

REV 2. 15/10/2014

PLANKTON ELECTRONICS

Thank you for purchasing The Bumblebee. In this step by step tutorial we will show you how to assemble the machine.
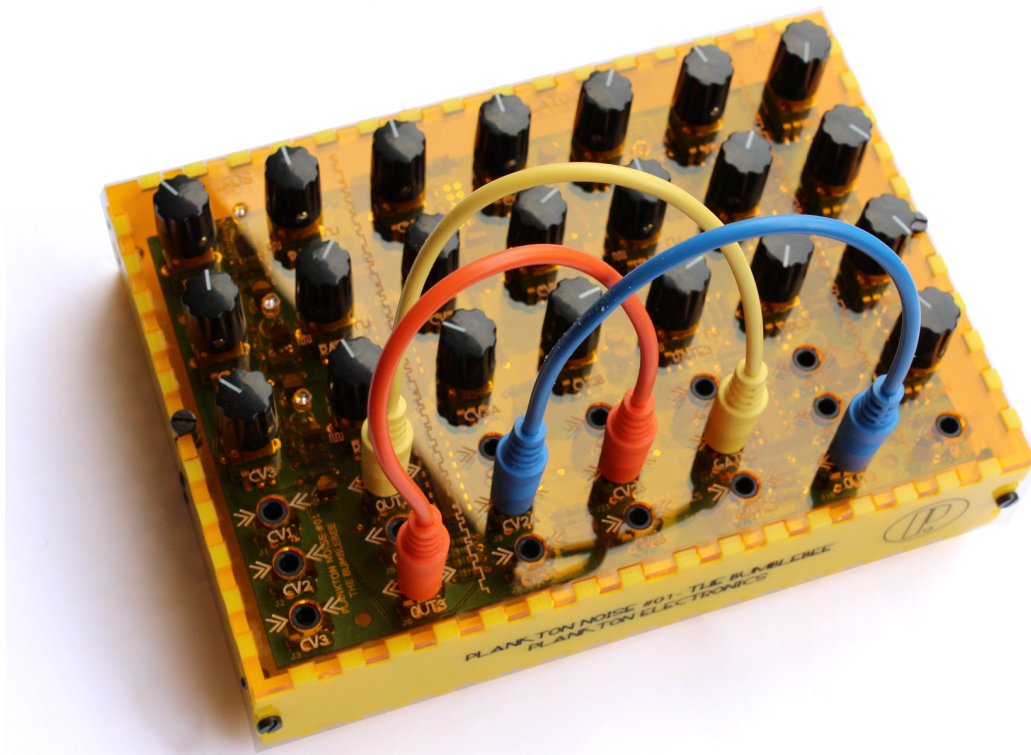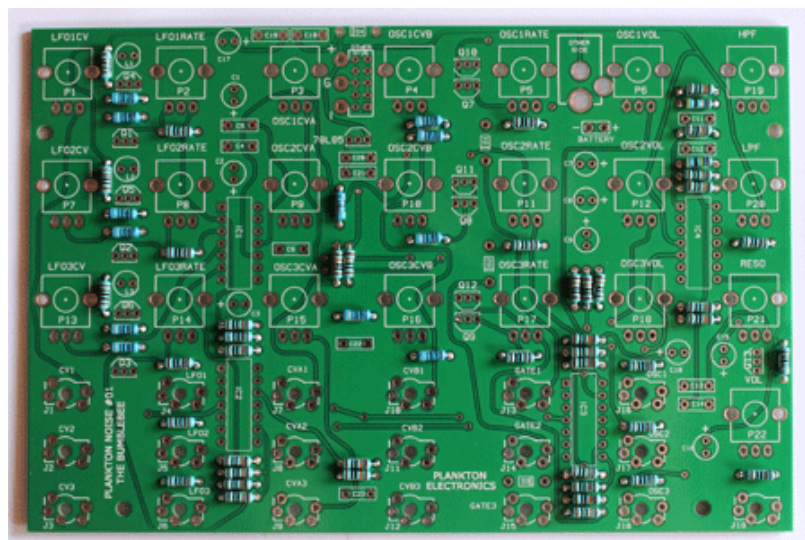
Before start: **Ensure that you work in a well ventilated area and that you have all the necessary tools (soldering iron, solder, cutting pliers, etc.). If you have very little or no soldering experience make a search on the www. There are many tutorials on how to solder.**

We will start soldering the resistors. Take the BOM (Bill Of Materials) document and start with the 4R7 resistor. Put it in place, turn the PCB, solder and cut. Continue with the 1K resistors and so. Go by groups, don't solder all the resistors at a time. If you don't know how to identify the different resistors here you have a tip.

This is how the PCB will looks like after soldering all the resistors.

We will follow soldering the film capacitors (the rectangular ones). Start with the 10n (103) and continue [82n (823), 100n (104), 220n (224) & 330n (334)]. Then we will solder the 4 diodes. Note that the diodes have an orientation marked with a stripe that's also on the PCB.
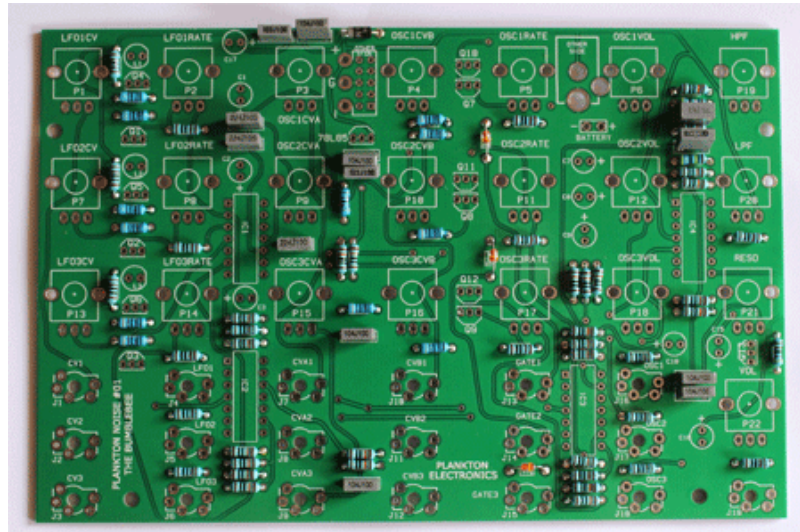

Solder the electrolytic caps. These are the cilindric ones. But we will solder these ones to the rear part. Take in mind that these capacitors are polarized, so you must respect the orientation. The long led corresponds to the positive "+" side. The negative "-" side is also marked with a visible white line.


NEGATIVE
-
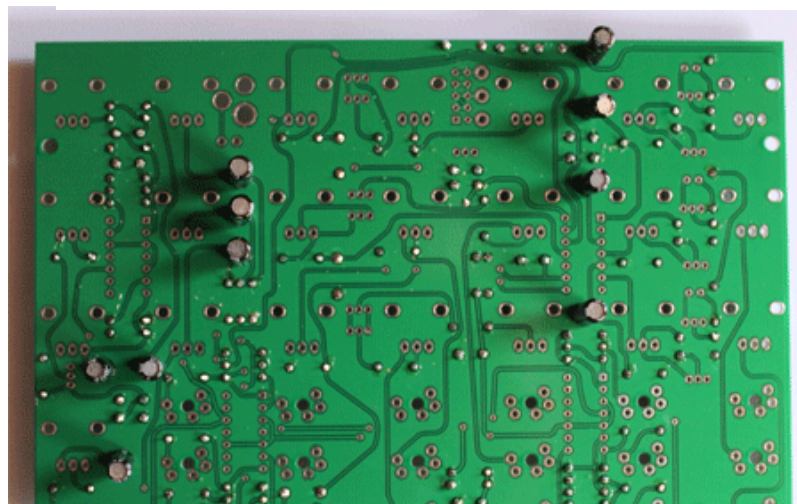
POSITIVE
+

Time for the transistors now and the 78l05. It have an orientation also, just follow the shape of the drawing. Transistors are heat sensitive, don't sleep when soldering. We recommend to mount all the transistors on the PCB and then solder all the left legs. After that continue with the middle leg following the same order and finally do the same with the right leg. This way you will let the transistors to cool down avoiding high temperatures.
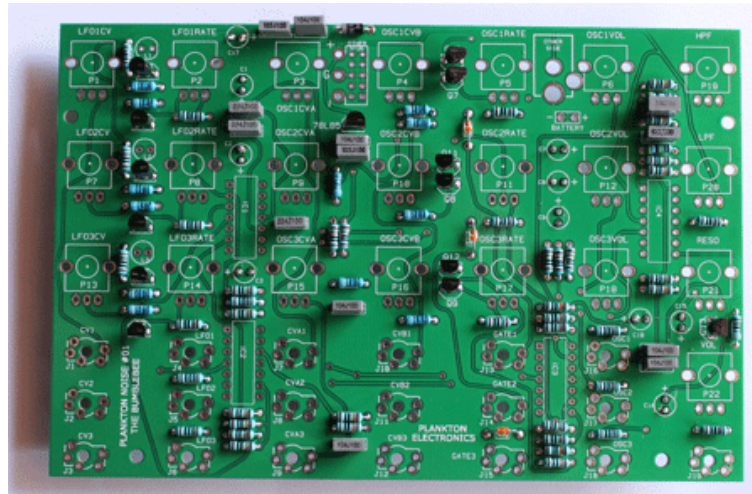

Now solder the IC sockets. The mark on one of the sides points to the first and last pin. This one should face up.
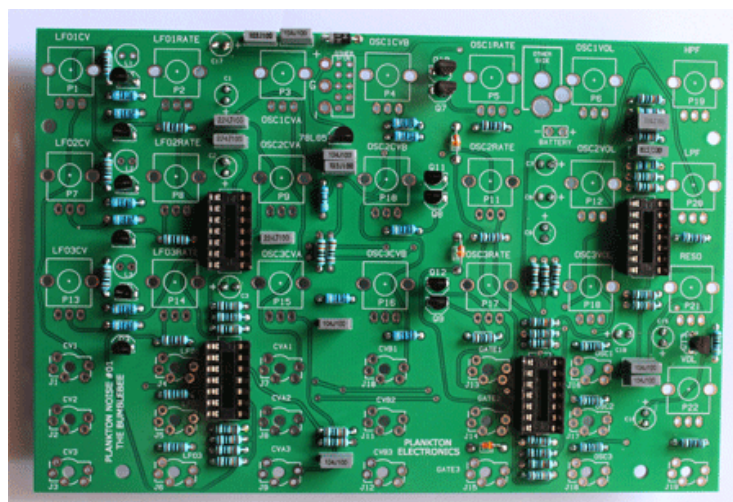
Now it's time to solder the 3,5mm connectors. Before solder place all of them in place. Then take the front panel and insert all the connectors to its hole. After that turn the whole piece and solder all the connectors. Take special attention to make strong solderings here. These are mechanical parts where you will be switching in and out the jacks, so you want that these parts be very solid.
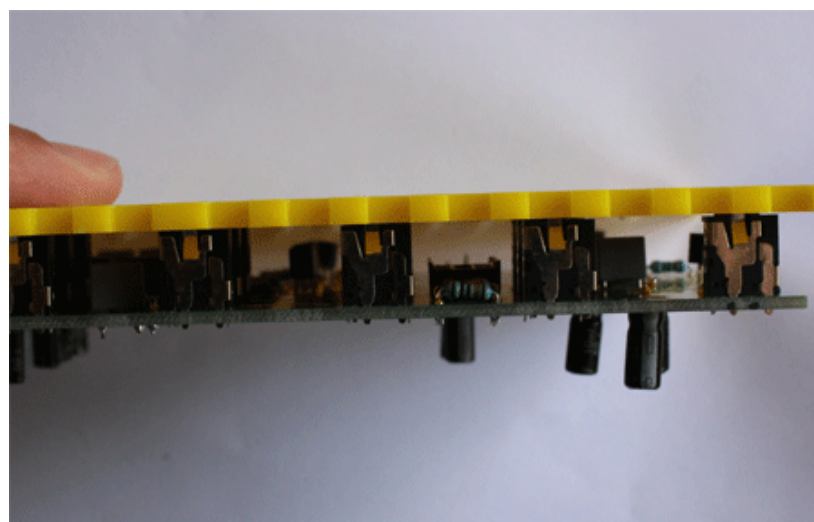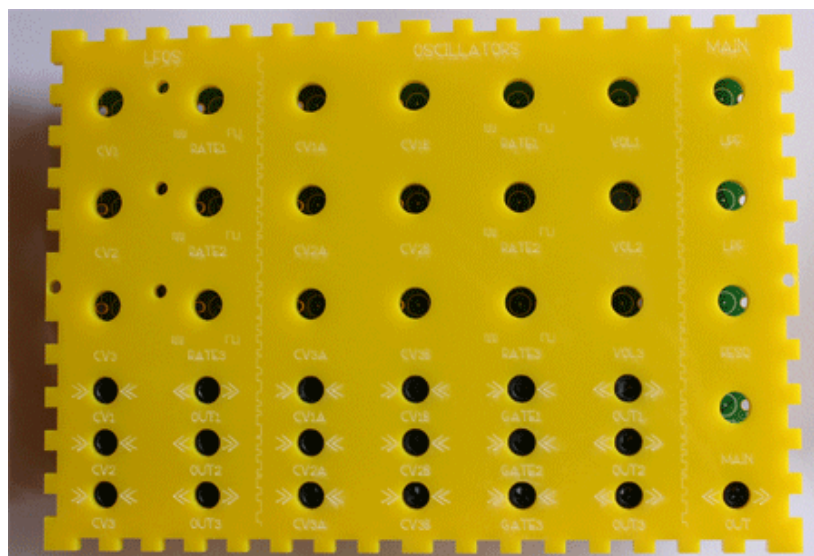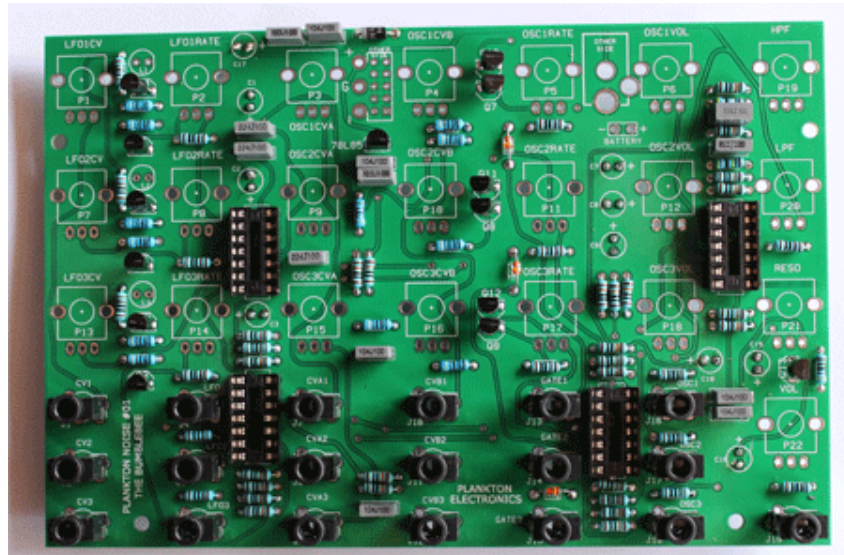
Time for the potentiometers now. First of all we need to take the nut and the washer off. Then we have to remove the small tab in the top part of the potentiometer. Use a small pliers to do it.
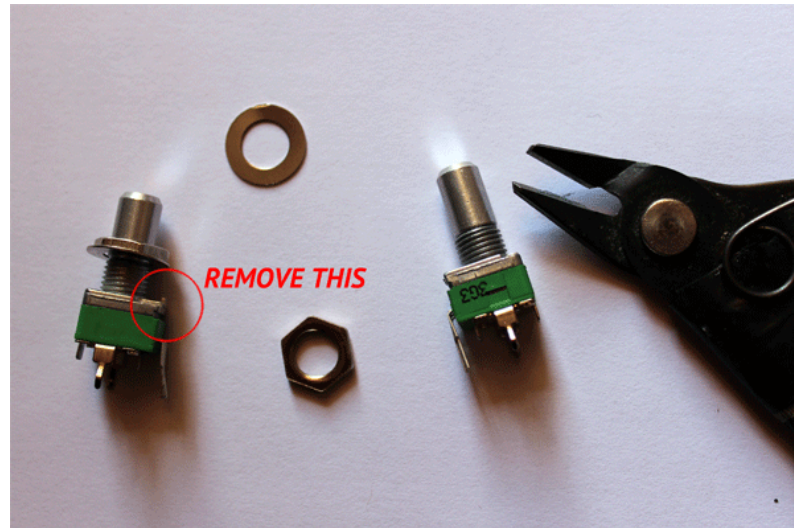

Now put all the pots in place on the PCB and insert the front panel. Put the nuts to every potentiometer (without the washer) and then solder.
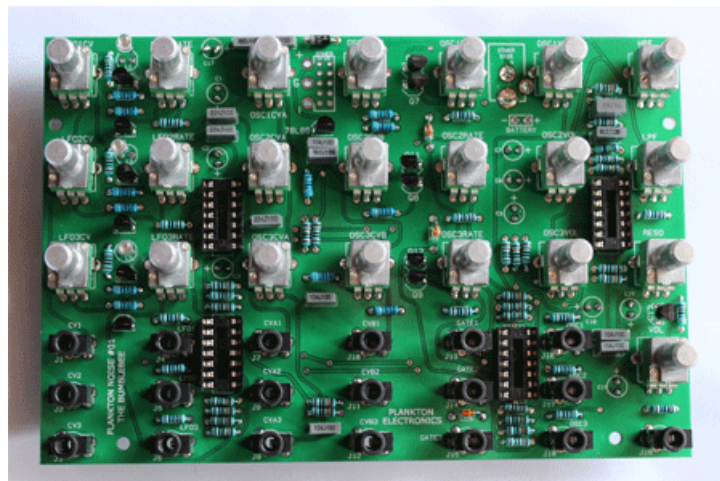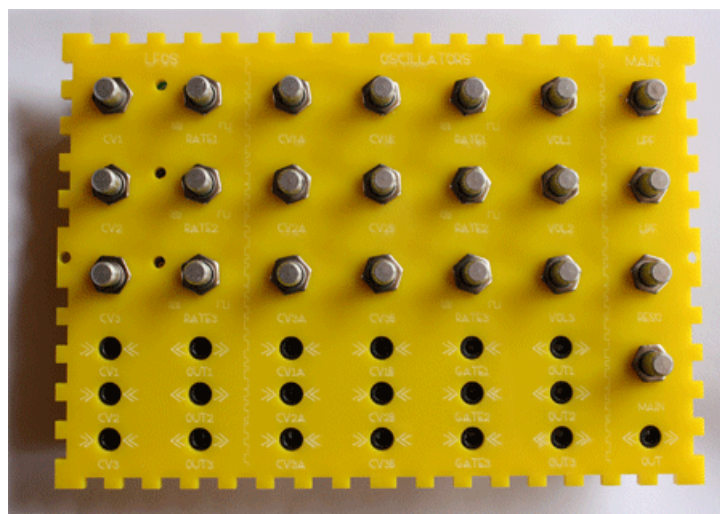
Now solder the power connector. If you want to use The Bumblebee with the desktop case solder the 2,1mm. If you want to use it on an eurorack system solder one of the 2 other connectors. Insert the ICs. Check polarity!
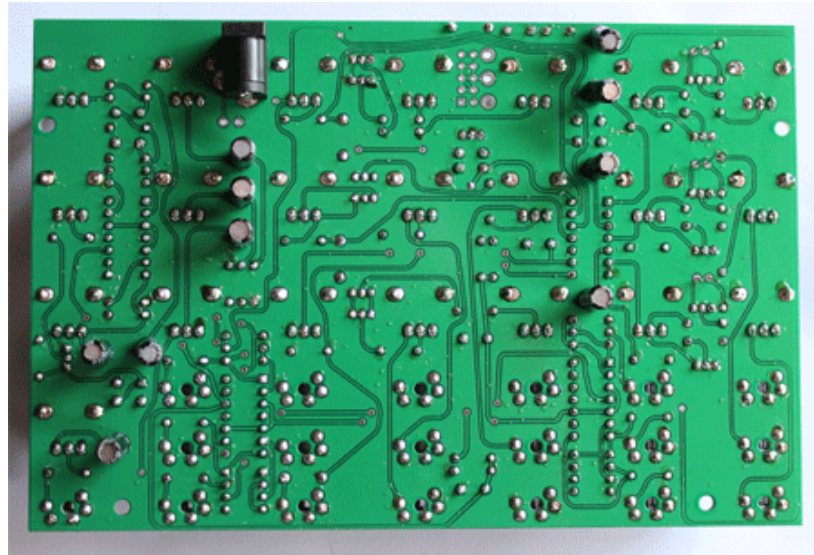
Finally we will solder the leds. These are polarized components. The short led must go where the circle is cutted. First we insert it inside the holes of the front panel. Then we insert it through the PCB and solder.
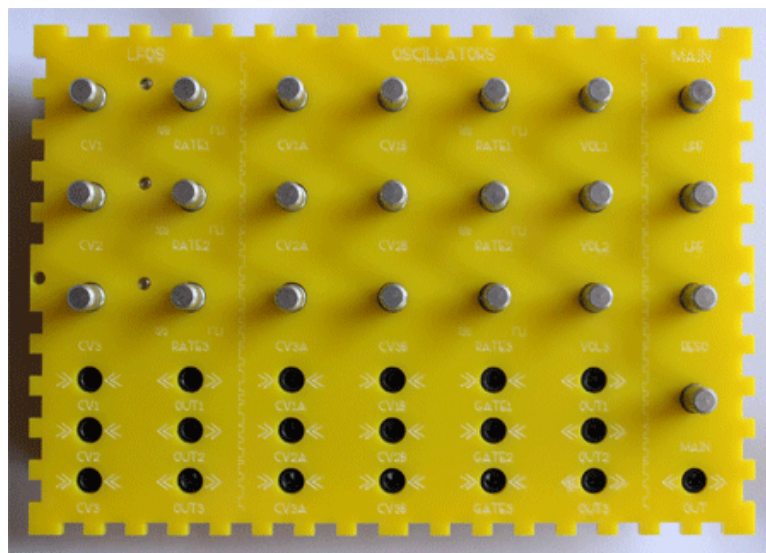

Time to test The Bumblebee! Plug it with a power chord (+@ring, -@tip for the 2.1mm connector) and check that all its elements are working .

Now it's time for the case. If you have bought an opaque yellow case I recommend to paint the engraved symbols. Use a black permanent pen or acrylic paint and fill all the engravings. Then take a cloth with alcohol or isopropil and wash the surface. The paint will remain inside the engravings while it will disappear from the surface.

If you have bought the translucent case I don't recommend to paint it. If you do it don't use black paint, use a white or a light color one.

If you have some trouble here you have some pictures of the case mounting process. Peel of the thin plastic protector that is in one of the sides, specially for the translucent cases!
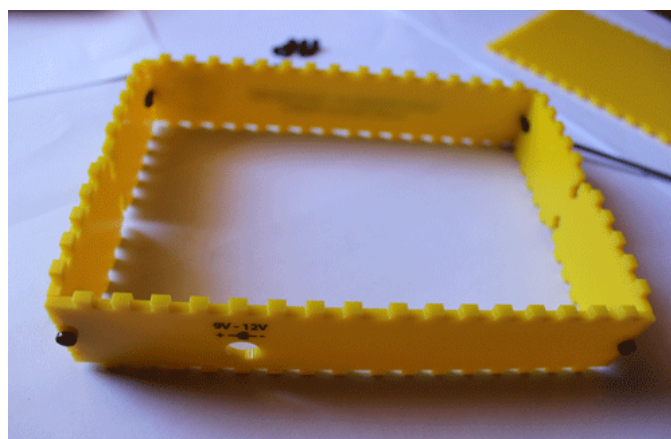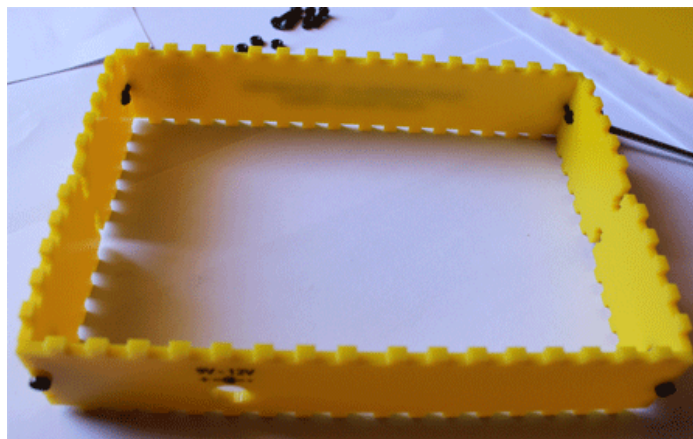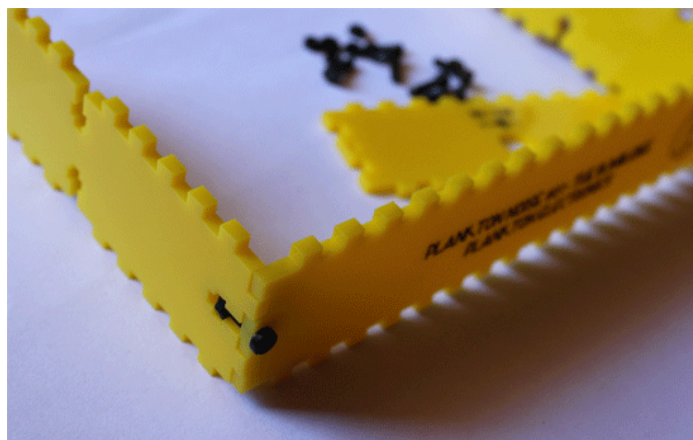
As you can see, before insert the top panel you have to screw the PCB to it via the potentiemeters with its nuts. You can mount the knobs when the case is ready.

If you have arrived here congratulations!

Enjoy *The Bumblebee!*

http://www.planktonelectronics.com