


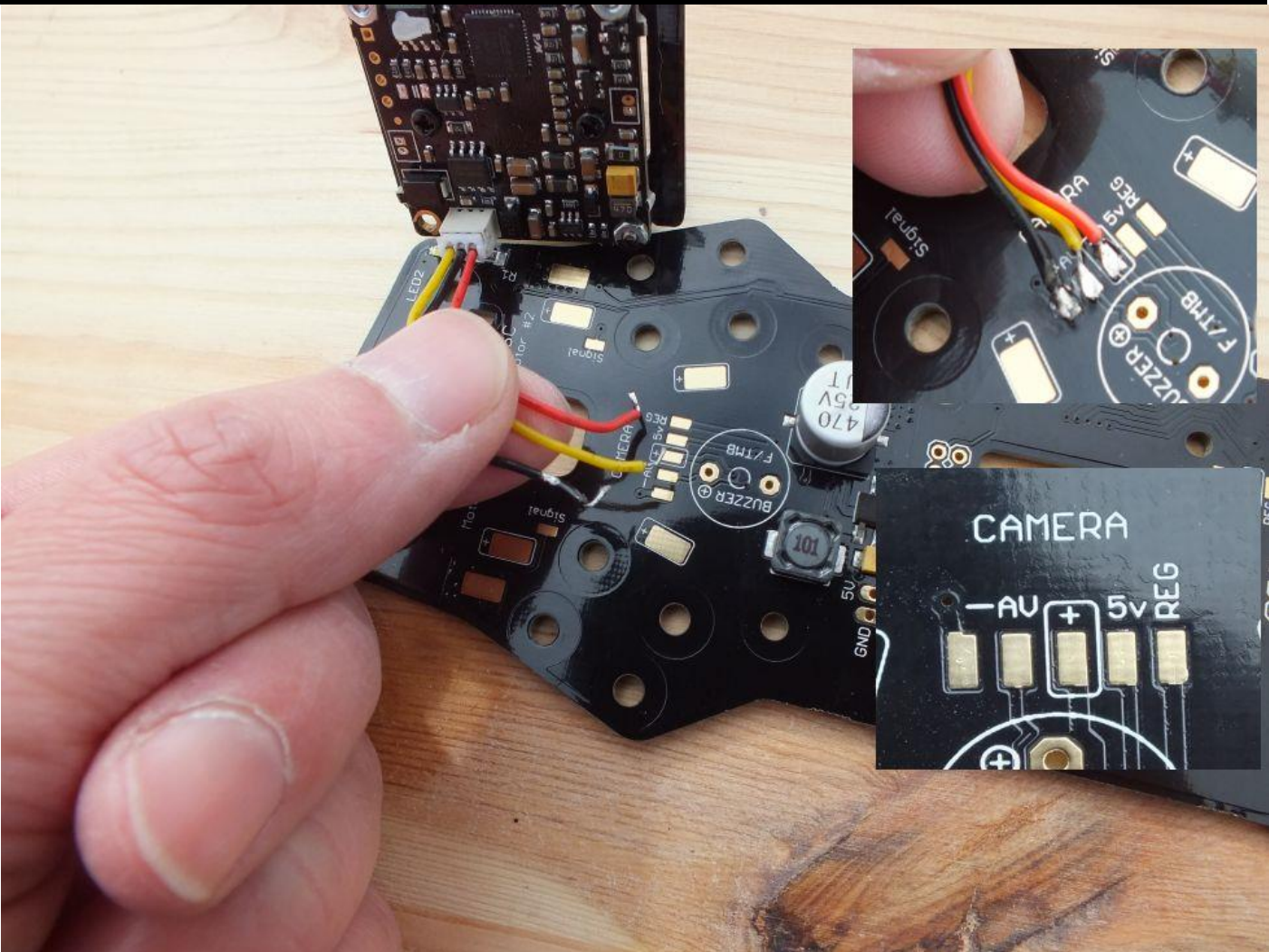
Assembly Tutorial:

Note*: new version could have more stuff on the board

You can follow this tutorial to wire your board in the best way. It is made thinking in the easiest way to solder all of them. A different order to solder the components is possible, but if you follow this tutorial you won't get to a point that you have to unsolder things to solder the next component because you forgot the first one.

#1 start to connect your camera.

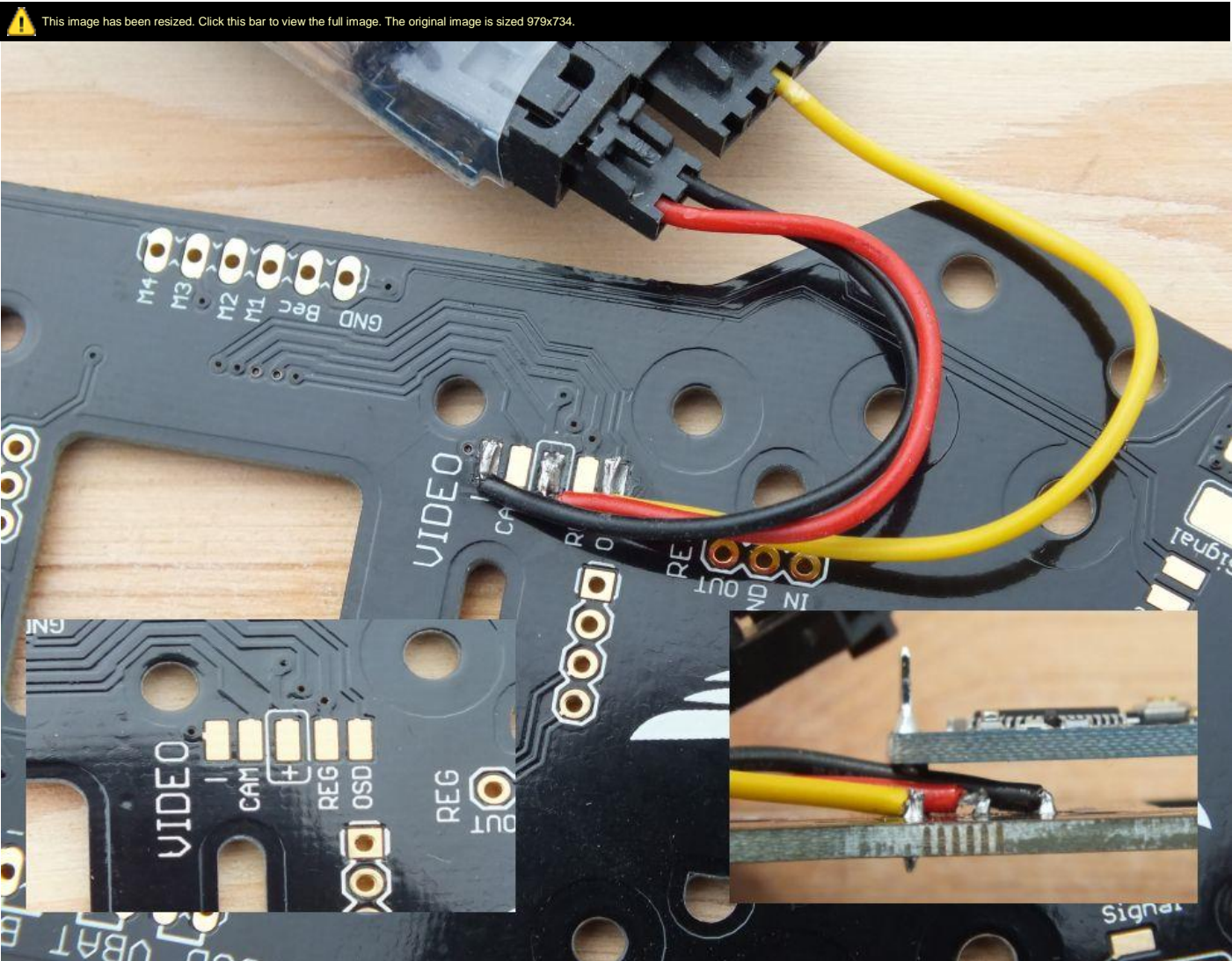
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Connect your black wire to the symbol "-"
Connect your yellow (video) wire to the symbol "AV"
Depending on your camera voltage, you have 3 options to power it.

- -Same voltage as my battery. If your camera supports your battery voltaje, connect the red wire to the "+".
- -5V: if your camera uses 5V, connect it to "5V".
- -Regulated voltaje. If you want to connect your camera at a different voltaje than 5v and different than your battery voltage, then you have to put a external regulator, and solder your red wire to the "reg" pad. Check STEP #3

#2 Connect your video transmitter



The video transmitter its similar to the camera connection.

Connect your black wire to the "-" pad.

Connect your red wire to match your video voltaje:

- -If your video transmitter support the same voltage as your battery, connect it at the "+" pad. InmmersionRC supports 3s and 4s, so thats your pad if you are running this one. If you are running a boscam, use this pad only if you are using a 3s battery.
- -If your video transmitter uses a different voltaje than your battery, then you have to place a external regulator, and solder the red wire to the "reg" pad. See STEP #3.

Your yellow wire (video) has 2 different options.

- -OSD: if you are using the minimOSD, connect your yellow wire to the OSD pad.
- -No OSD: if yo aren't using a OSD, connect the yellow wire to the CAM pad.

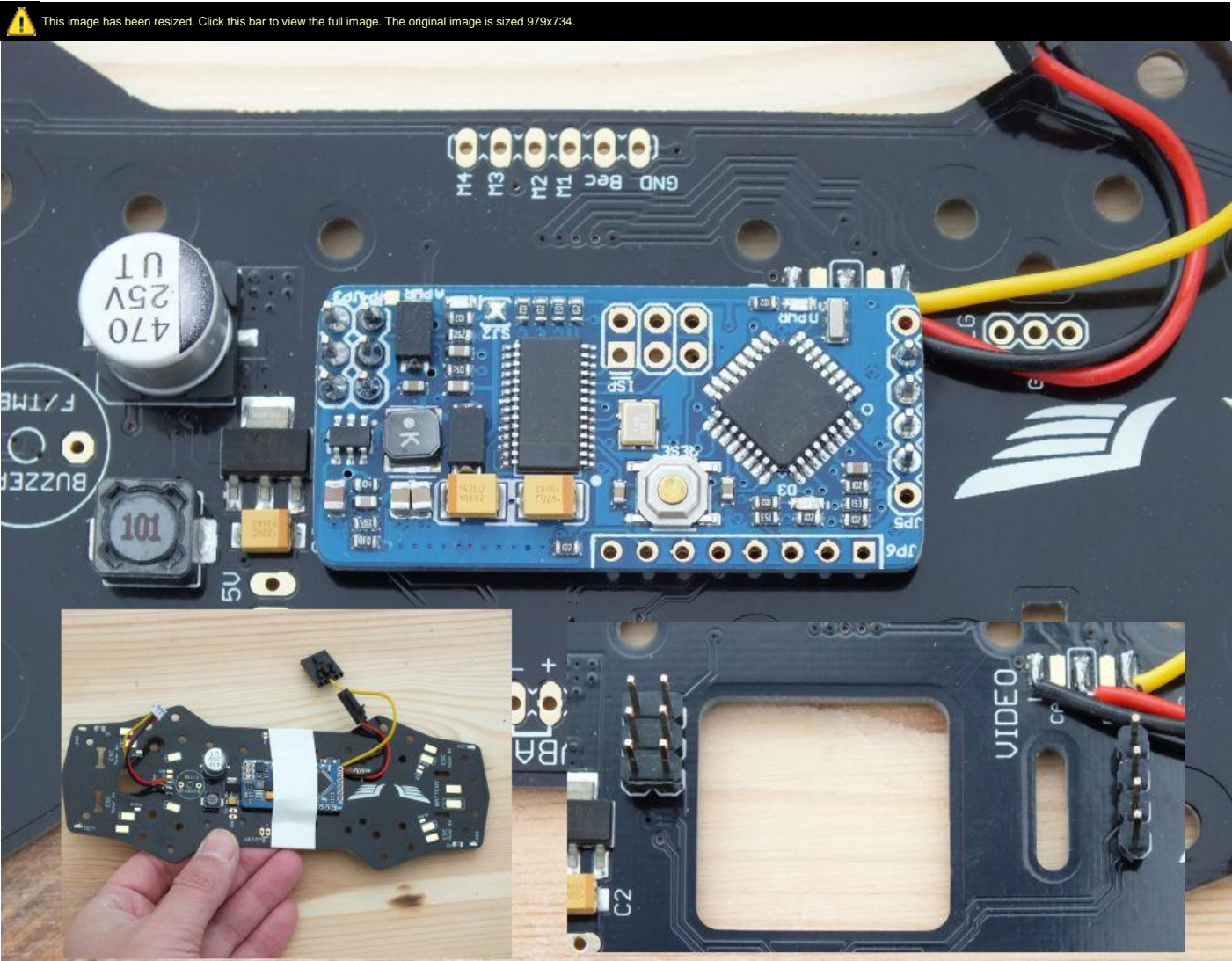
The minimOSD will not touch the wires, so you can place them in any way, dont worry about that.

#3 Your FPV regulator:



If you need a external regulator for your camera o for your video transmitter, then solder your video regulator there. It should match with the pololu regulators. Any other regulator could be solderd there, but maybe it doesn't fit as well. For common setup you dont need this.

#4 Connect the minimOSD.



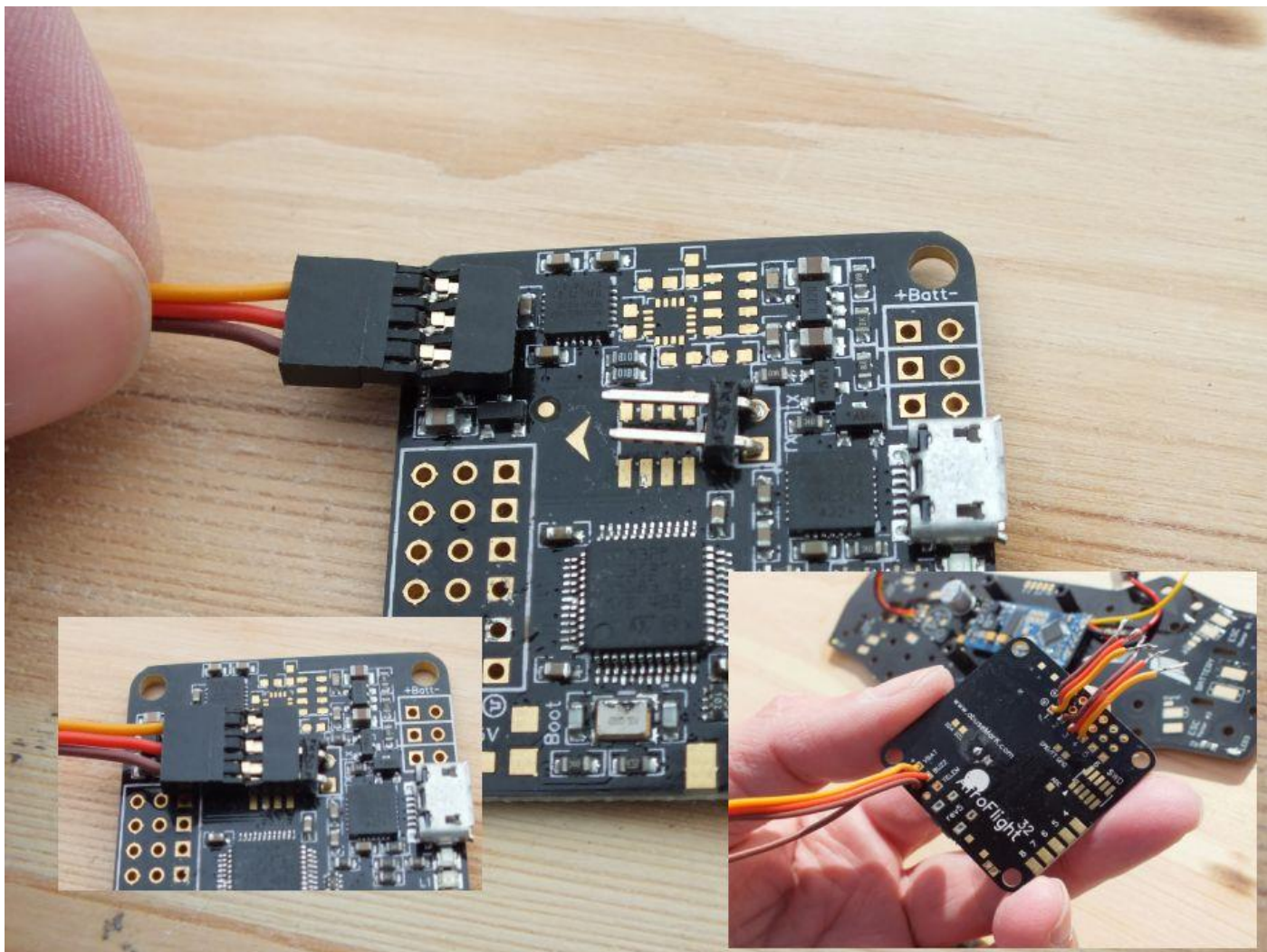
Start to solder the vertical pin headers in place. Then attach the OSD before solder anything, and place the OSD with tape. With this method your pins will match perfectly to your OSD, and they won't move during solder.

Remember to solder the jumper on the minimOSD to use 5V on that board, this PCB power the OSD with 5V.

No more. Later when you wire your flight controller, you only need to solder 2 wires to use the minimOSD called rx and tx.

#5 Prepare your flight controller:



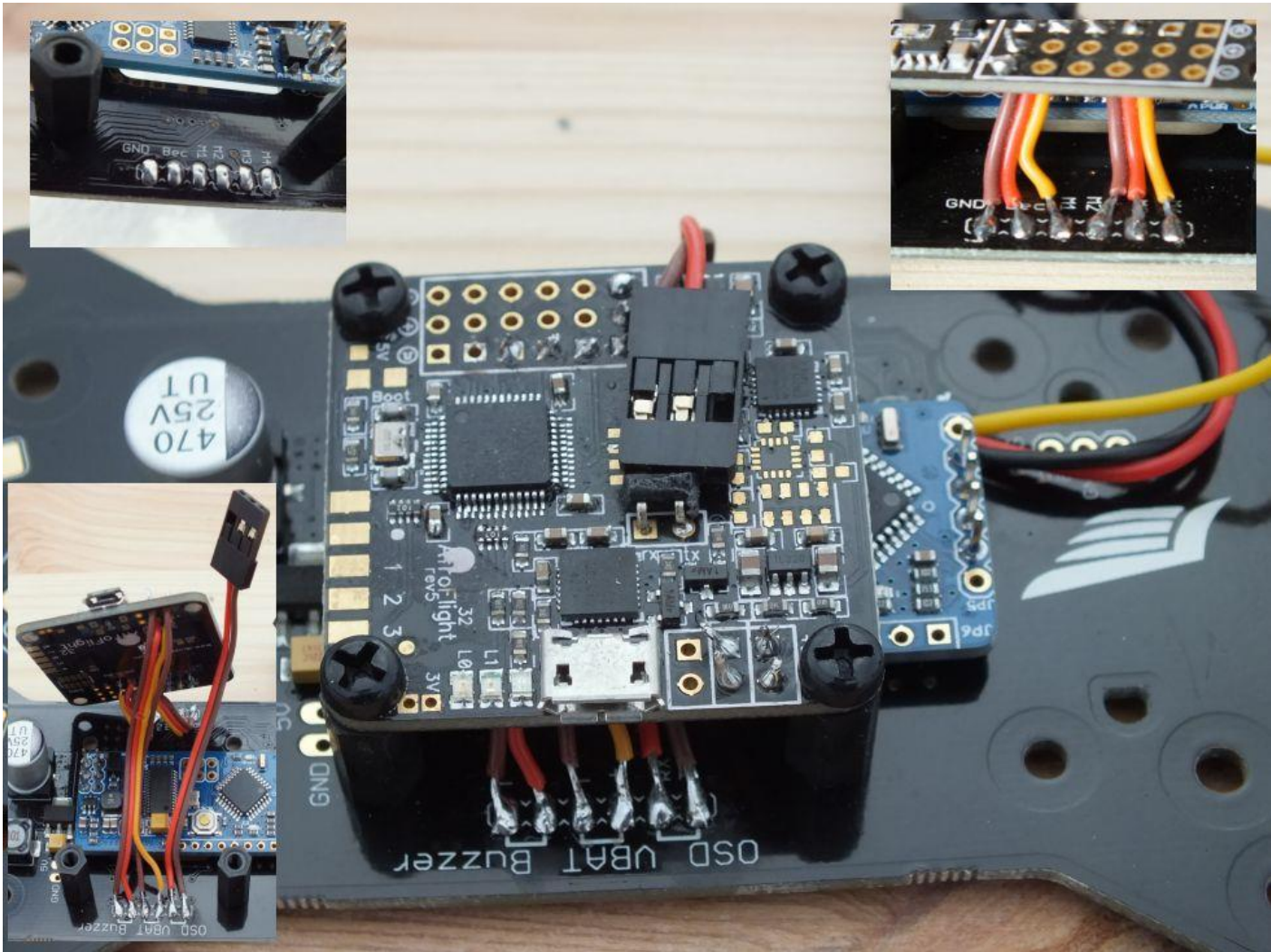


Depending on your flight controller, you have to solder pin headers to it or not. But to make a good clean setup, I usually solder the wires directly on the flight controller. Other clean method could be use angled pin headers, but not any flight controller support this.

On my setup, I solder the servo wires from the esc that you will have to cut later, and I solder them into the naze32 with no connectors. Except for the tx and rx of the OSD.

Remember that you cannot plug into the computer the fc with the minimOSD connected, because the usb uses the rx and tx too, so I use a angled 2 pin header on top of it. I plug there the servo connector removed from a ESC, so I can connect and remove it very easy. Any other way its OK, just find what is better for you.

#6 Connect the Flight Controller




There are 12 pins to connect to the fc, but they are simple.

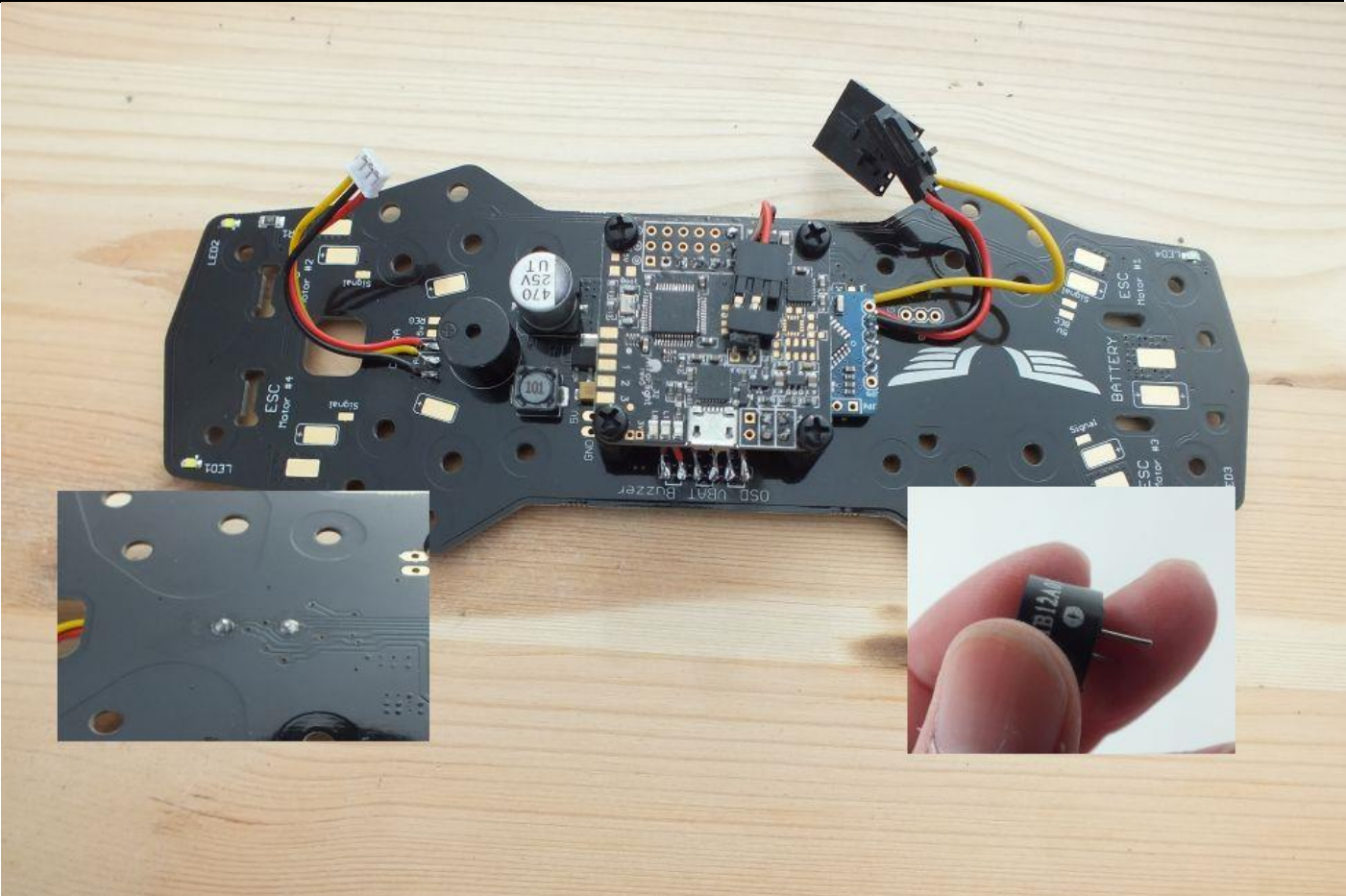
1. M1,M2,M3 and M4 are the signal wires from the motors. Connect them to your FC place. For the first motors M1, you need to use power too (only for this motor, not for the others.) So for the M1 ground connect the "-" pad, and for the positive, use the "BEC" pad.
2. The "bec" pad uses the bec from your ESC #1. If you are running OPTO ESC, you probably need to use the onboard 5v regulator. In this case, instead of place your positive wire from the "BEC"pad, use the 5V marked on the board. Other way could be use a wire jumper from the 5V to the bec (at the bottom of the boards), and from the "BEC" to your FC.
3. Connect Vbat your your flight controller VBAT pads, and buzzer to your Buzzer pads.
4. To connect the OSD rx and tx, remember you have to cross them. RX->TX and TX->RX.

We finished. You can solder the wires to the pcb, or you can use pin headers. I like to use wires. There is a hole in each pad but forget them if you solder the wires there, just presolder the pads before solder them.

(Note, To solder my naze32 with the wires with no connectors, I leave one side with the wires longer than the other. That way I have plenty space to operate in any case, check image.)

#7 Solder the buzzer.

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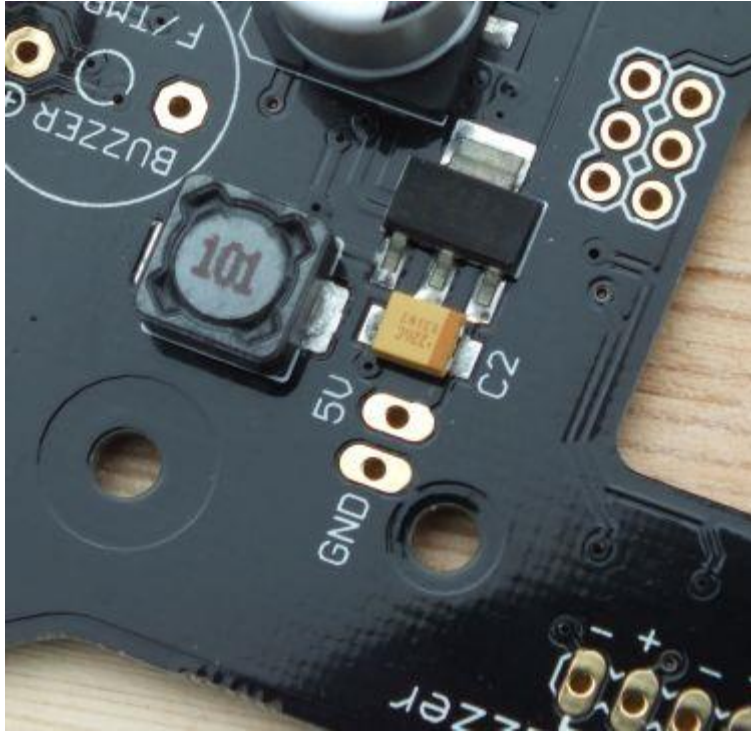


This pcb have a loud buzzer than could help you to know when you battery voltage its too low, and also you can use a switch on your FC to make them sound in any case, usefull when you lost it.

The buzzer has a mark with a (+) symbol. Match that symbol with the (+) on the pcb (facing the camera). There is also a sticker on the buzzer, remove it !!! and dont trush the sticker. Also the longer leg on the buzzer its the possitive, its a alternative metodh of mark the component.


Legs are a bit long, so you can cut them one time you had solder it.

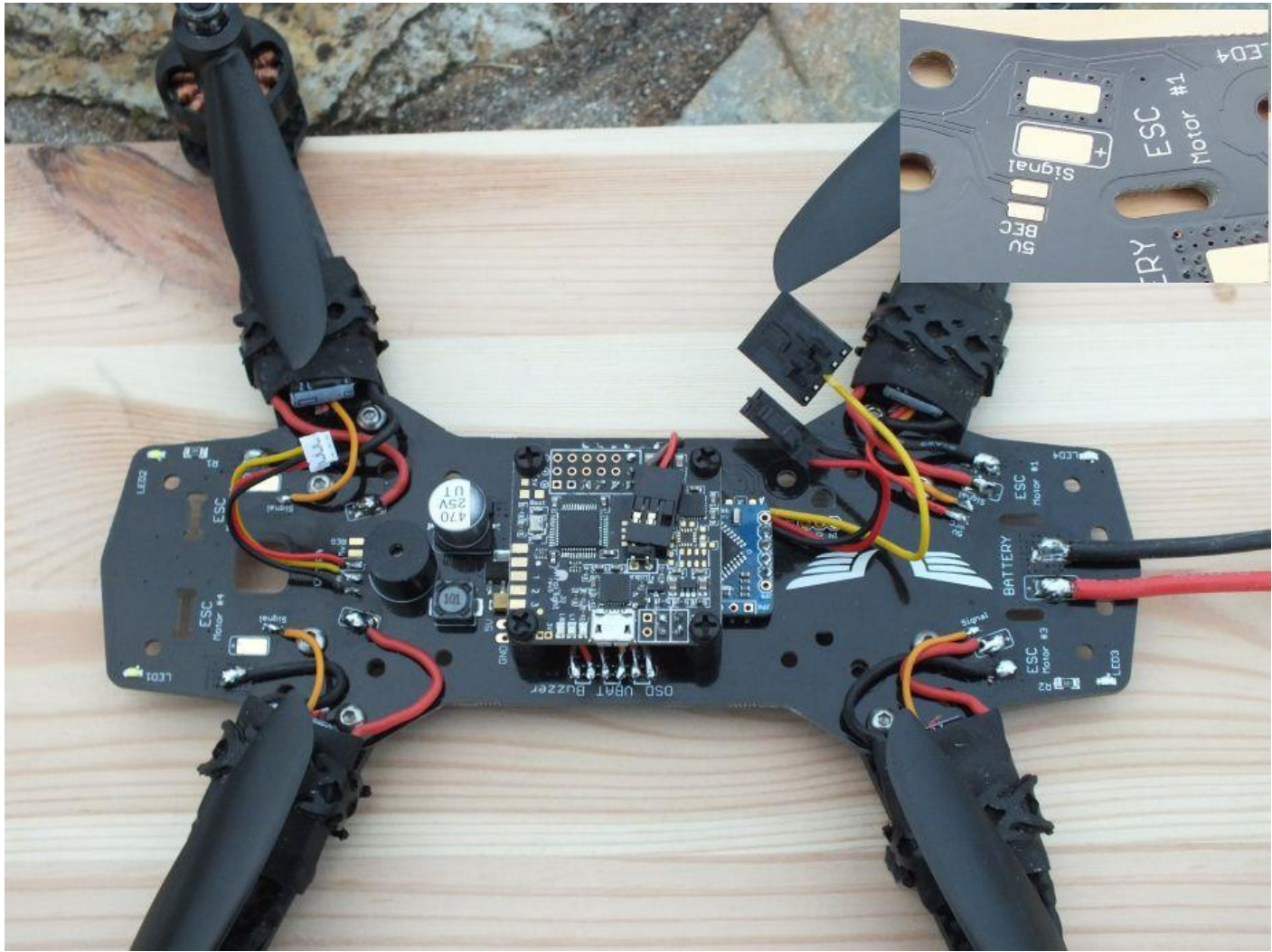
#8 other wires.



You have a 5v pads on the PDB to connect other things on it. For example leds strips. Connect the VCC of you led strip there in the 5V, and the GND on the GND pad. The signal or DIN into your flight controller pin 5 (using PPM SUM). But remember that you can handle only 1A on the onboard regulator, so if you have plans to place a lot of leds, or power severals things on it, maybe its better to use the BEC of other ESC to make this.

#9 Connect your ESC and battery connector and you are done!

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Last but not least, connect your ESC to the pcb. Just place the red wire into the (+) pad, and the other its ground connected to your black wire.

Also cut your servo wire, and strip all the wires except the yellow wire (signal) on your ESC #2,#3 and #4, and solder the yellow wire to the signal PAD.

For your ESC #1, leave the yellow wire, and the red wire and strip the black wire.

Solder the yellow to the signal, and the red to the BEC 5V (this will power the FC, but if you are using a OPTO esc, then check STEP #5 and don't place that wire).

Front esc have a alternative (+) pad connector. In case your camera hit the regular (+) connector for the front ESC, then use this pad. Both pads are similar, get any you like.

#10 Congratulations.

You read all the tutorial and you are alive! 🤖

Time to fly!

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