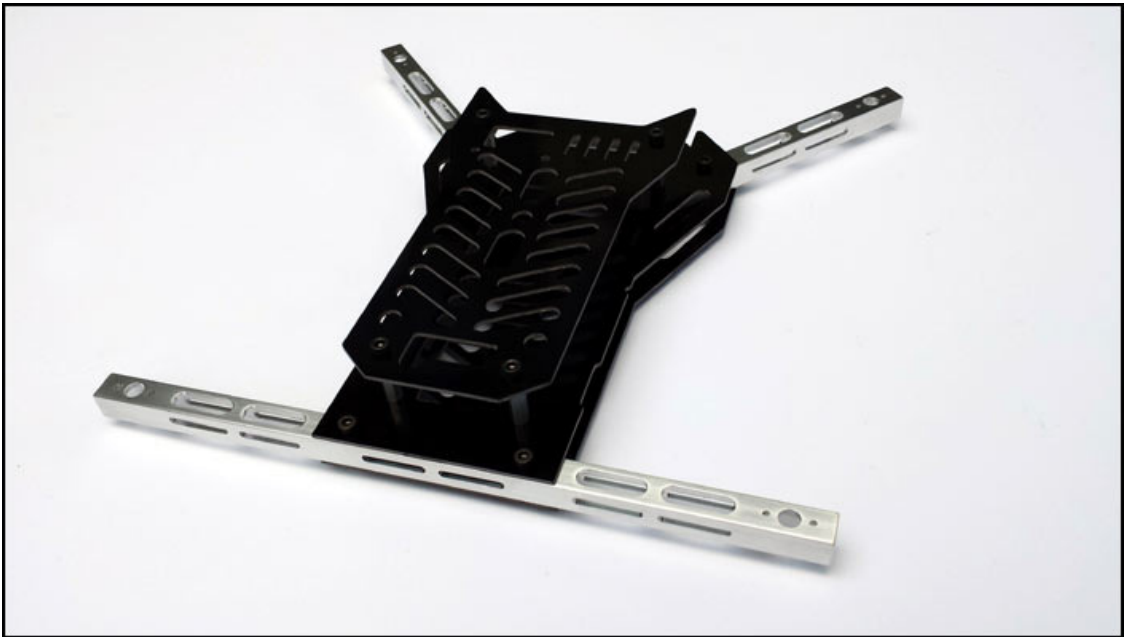




Mini FPV Quadcopter Frame

Instruction Manual





Contents:

1. Frame assembly
2. CG
3. Electronics
4. Specifications



1. Frame Assembly

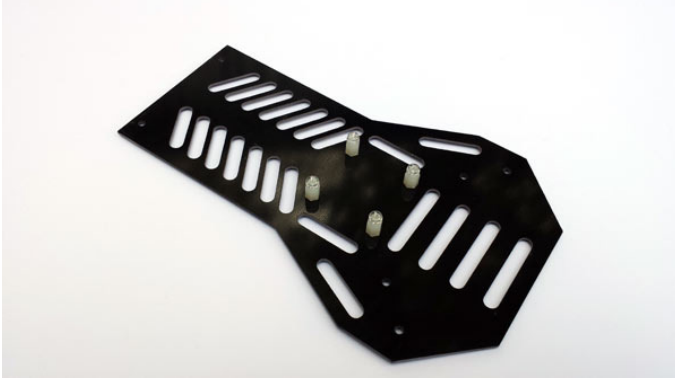
The fixing hardware consists of the following items.
Arrange them in the following order for easy installation.



- 1. Outside bolts for rear arms**
2 x M3 16mm Hex Head Bolts
2 X x M3 Nylocks
- 2. Inside bolts for rear arms, rear standoffs and top plate bolts**
2 x M3 25mm Socket Head Cap Bolts
2 x 18mm M3 Threaded Aluminium Standoffs
2 x M3 5mm Socket Head Cap Bolts
- 3. CC3D Mounting (Bottom Plate)**
4 x 6mm M3 Threaded Nylon Standoffs
8 x M3 4mm Polycarbonate Bolts
- 4. Front standoffs and bolts**
2 x 18mm M3 Threaded Aluminium Standoffs
2 x M3 5mm Socket Head Cap Bolts
- 5. Front arm bolts**
2 x M3 16mm Socket Head Cap Bolts
2 x M3 Nylocks



First install the CC3D nylon standoffs and screws onto the base plate. (number 3)



Then install the 2 front standoffs into the top of the middle plate. (number 4)



Next install the front arm between the middle and base plate, using the number 5 bolts and Nylocks. (Nylocks on the bottom)

HINT: Don't over tighten these as you may damage the G10 Base plate.





Next push in the rear arms and get the bolts from **number 2** ready.



Push the two bolts through the rear arm holes from the bottom of the base plate. They should go through the inside rear arm holes and then through the middle plate. Then thread on the standoffs and secure. Now install the **number 1** bolts in the outside rear arm holes. (Nylocks on the bottom)

HINT: Don't over tighten these as you may damage the G10 Base plate.



Next place the top plate on and install the remaining 4 bolts.



Now you know how the frame fits together you can pull it apart and install your electronics ☺



2. Centre of Gravity:

The CG is the exact centre of the CC3D as shown below in red.

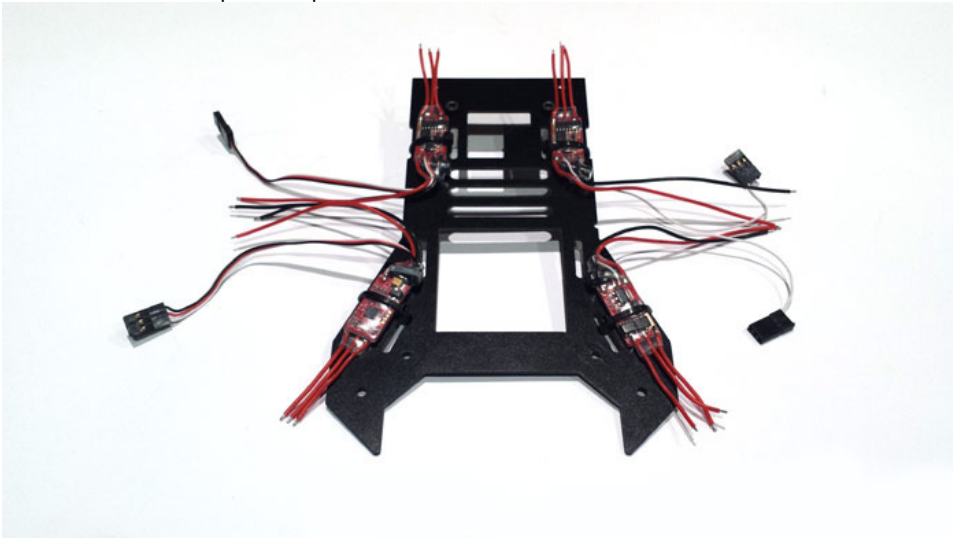




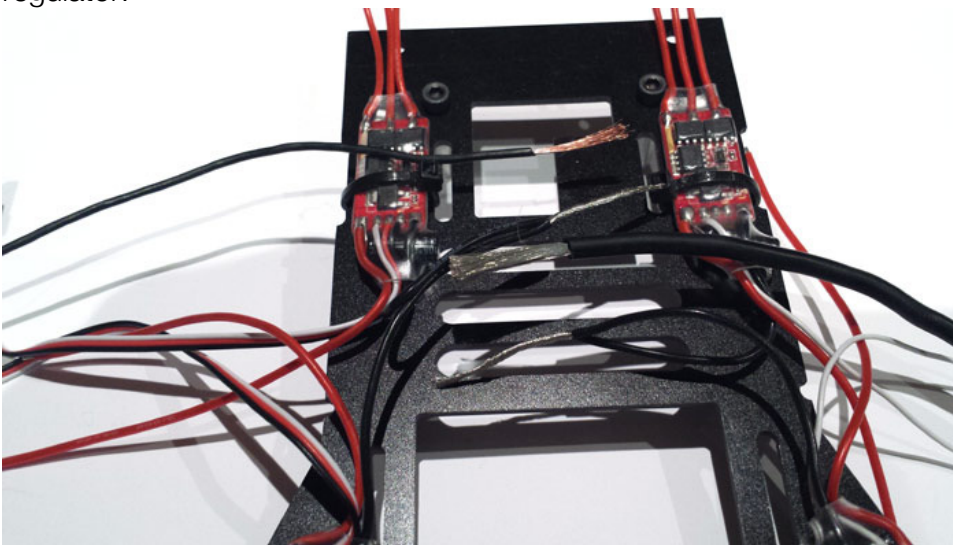
3. Electronics

Remember to program your ESC's before attaching them to the frame. It can be done either by using your transmitter or by a programming card. Follow the instructions that came with your ESC's. Flashed ESC's do not need any programming. (See ESC settings at the end of this manual.)

Turn the middle plate upside down and cable tie the ESC's as shown.

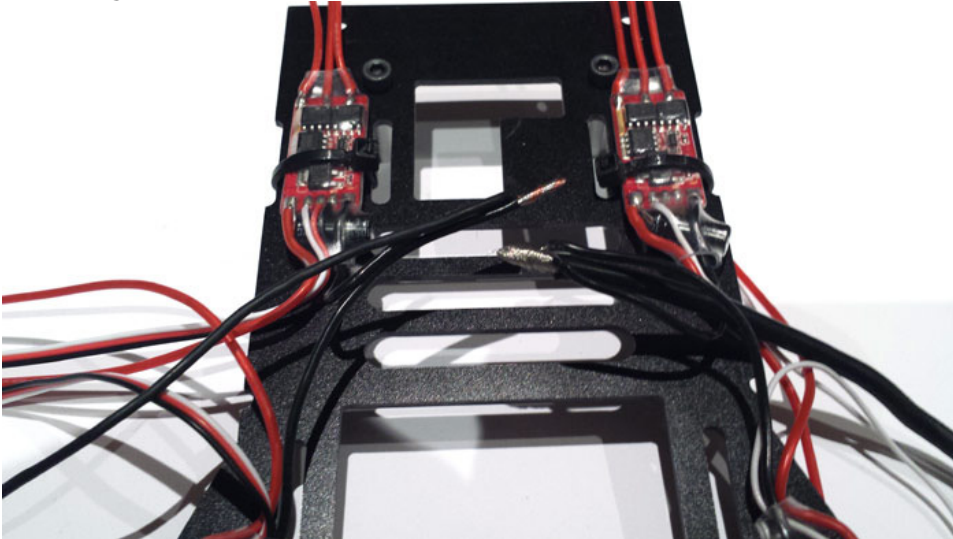


Strip the negative cables so that they meet in the middle. Also include a spare to go to the Step up regulator. You should have 4 x ESC's cables, your battery cable and one to go to the regulator.

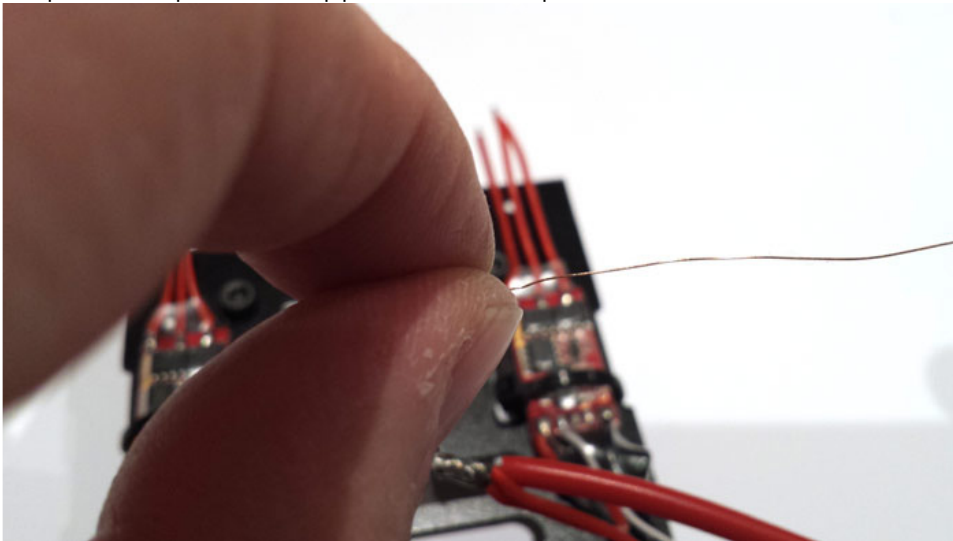


The KWAD

Twist together the wires from each side and add some solder to each end.

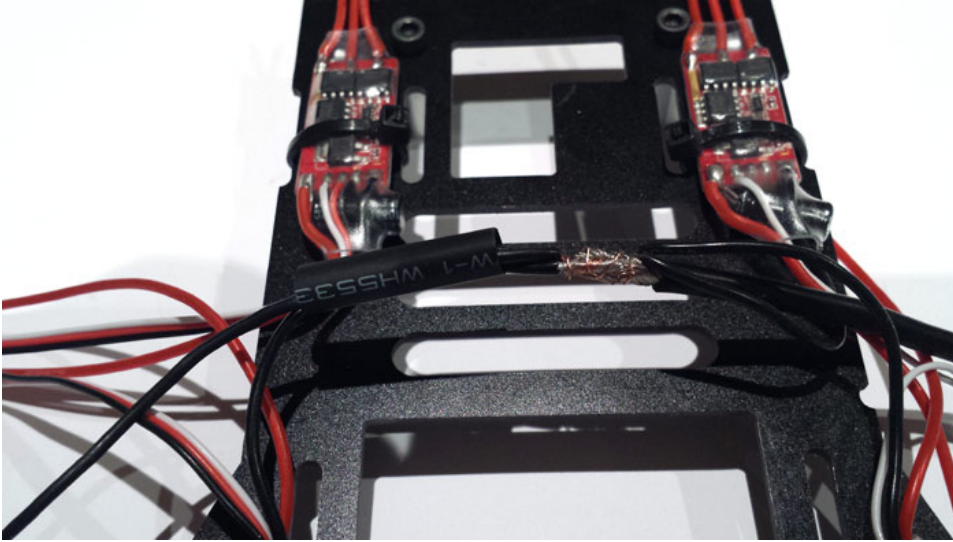


Strip a small piece of copper wire to wrap around and hold the 2 ends together.

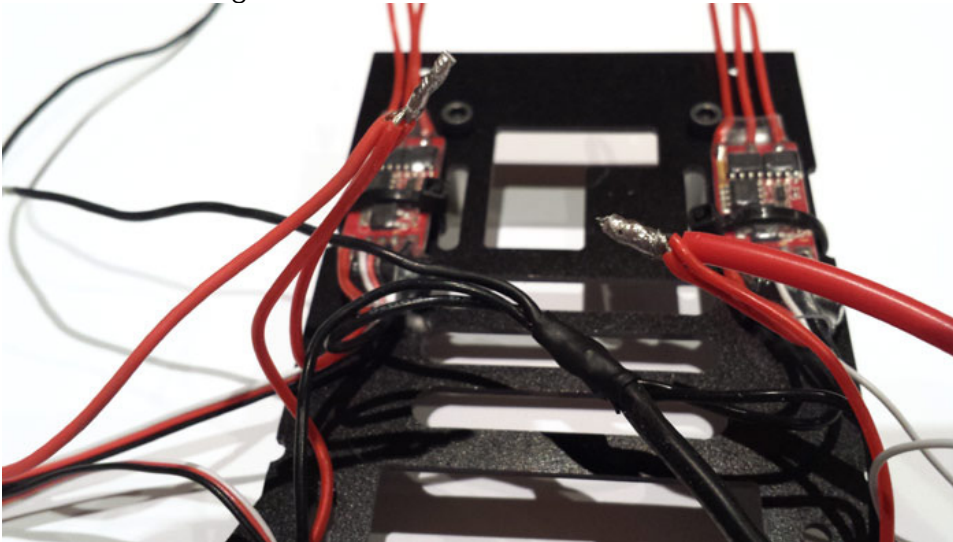




Slide over some heat shrink and then twist them together with the copper piece.

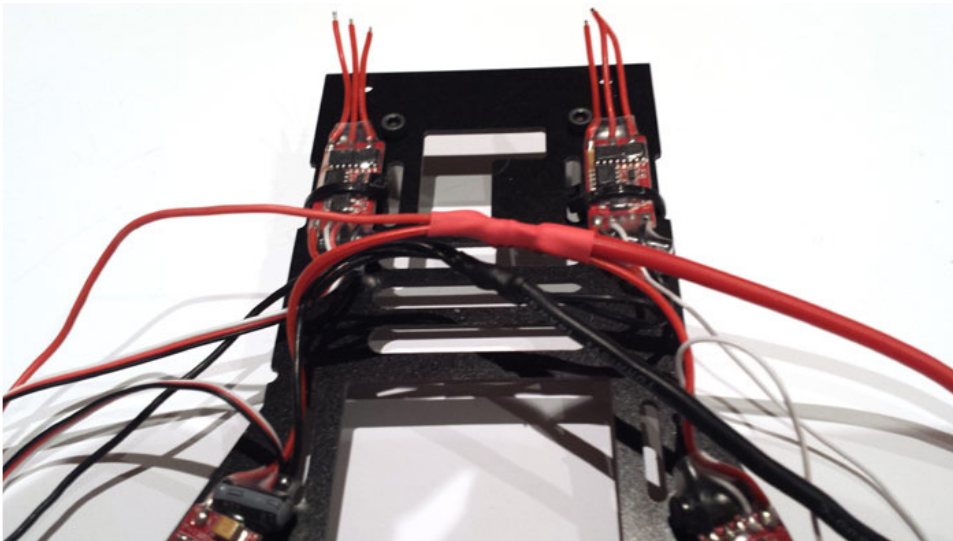


Solder them up and then shrink the heat shrink.
Do the same thing with the Positive wires.



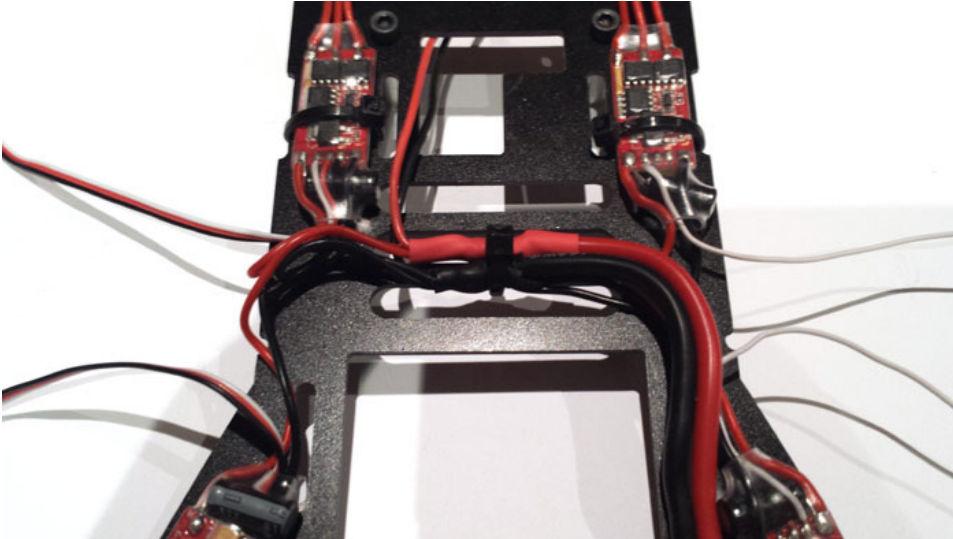
The  KWAD

Twist, solder then heat shrink.

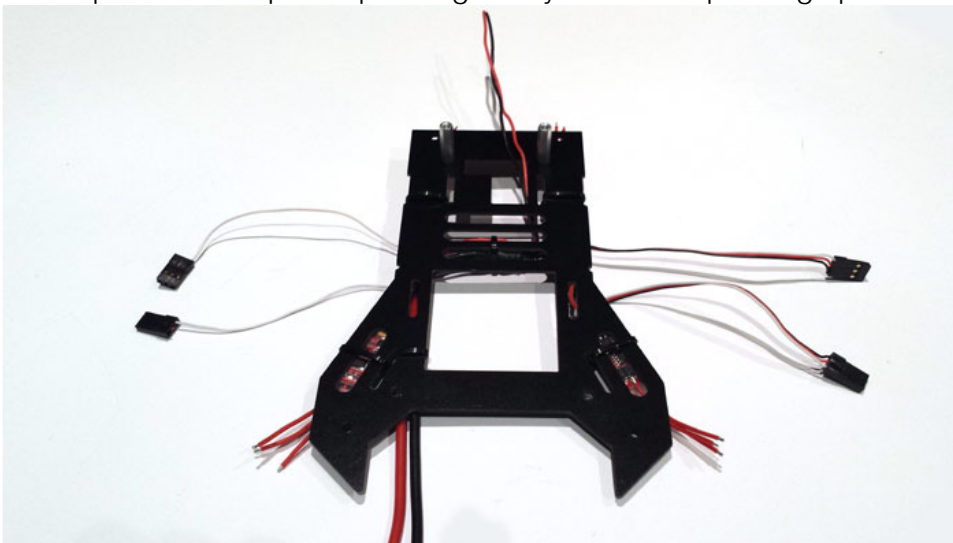


The KWAD

Next secure the joins onto the frame with a cable tie to hold them in place.

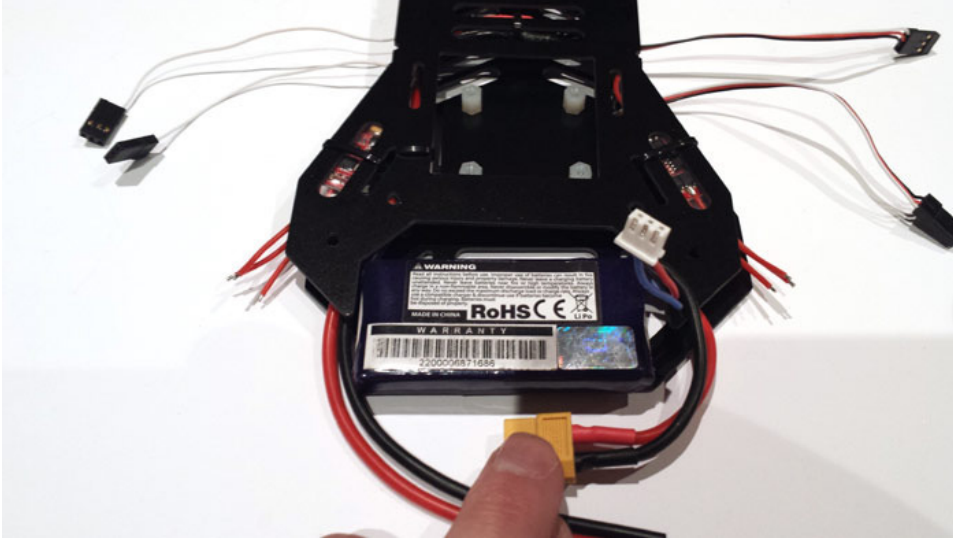


Now flip the middle plate up the right way with the top facing up.

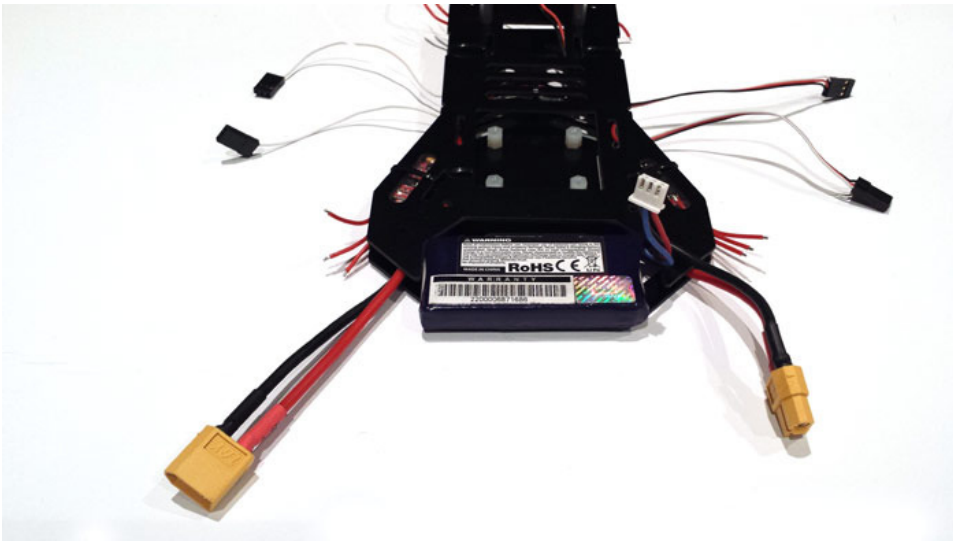


The  KWAD

Sit the bottom plate underneath the middle plate and then place the battery in position. Now you can measure the correct length to install the XT60 connector.

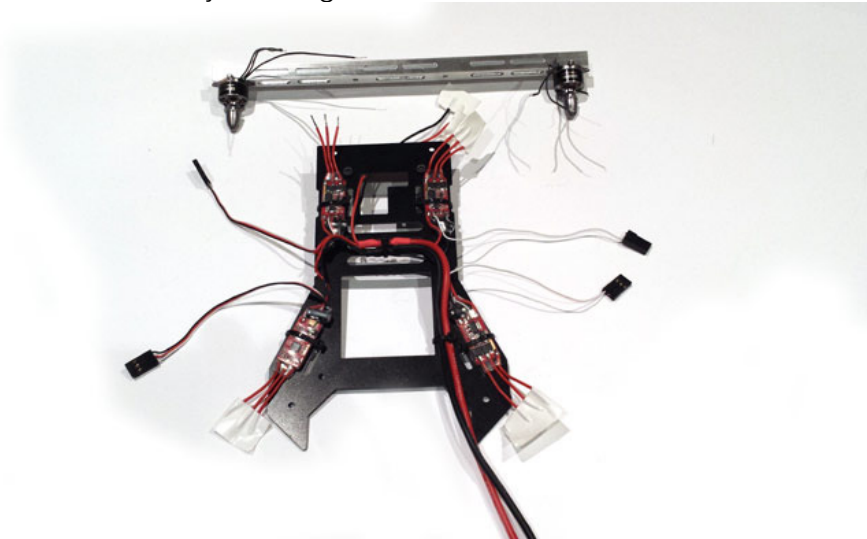


XT60 installed ☺

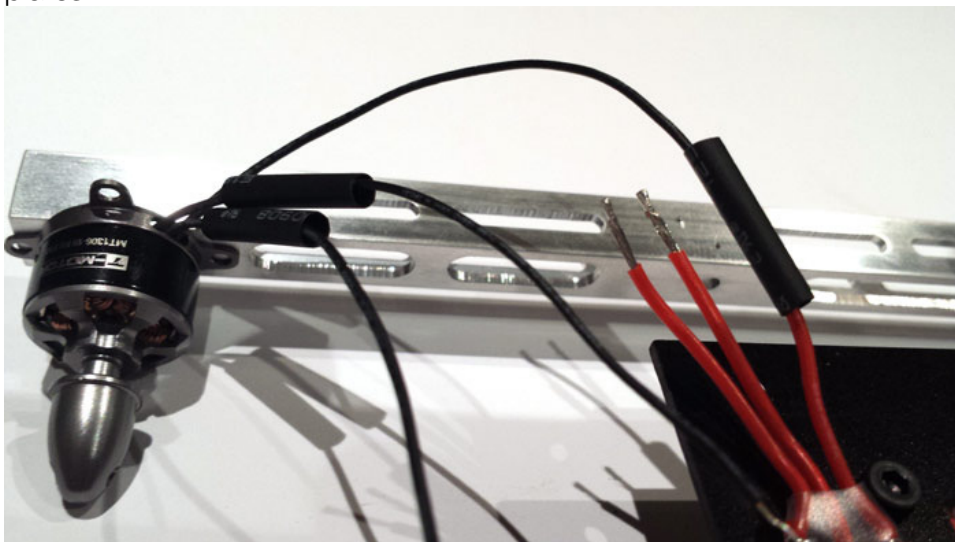


The KWAD

Now flip the middle plate upside down again so you can see the ESC's and attach the motors to the front arms. Put some tape on the bare ESC's cable to protect them from accidentally shorting out.



Solder your first cable and apply the heat shrink. Don't worry too much about the length as you can hide it in between the frame plates.

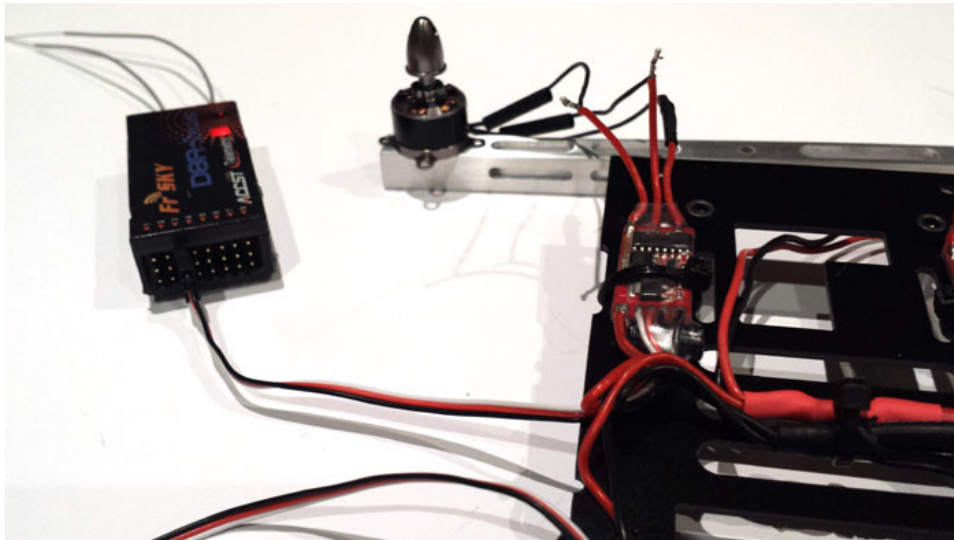


The KWAD

Now just twist the other 2 cables together to check the direction of the motor. Be extra careful not to let the two wires short out.

Remember that the frame is upside down so you are looking at motor #2!!

It should be spinning anti clockwise. If it is backwards swap the 2 cables around and re-test. Once correct solder them up and apply the heat shrink.

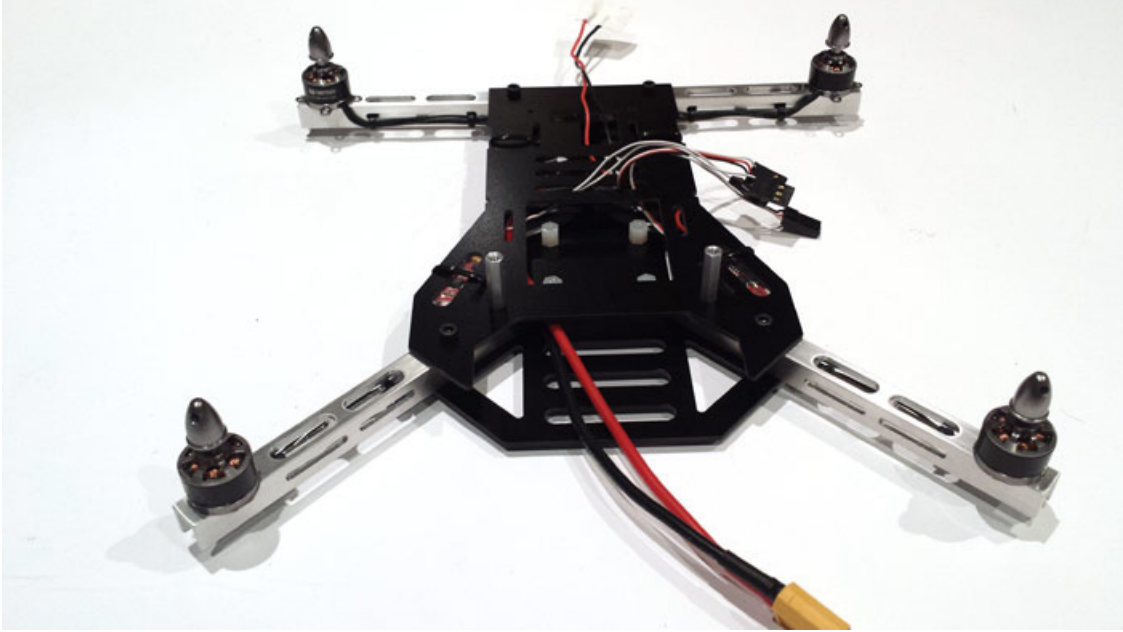


Now do the same for the rest of the motors. Check all the motor directions before you solder it all up. Refer to the CC3D setup instructions for more info.

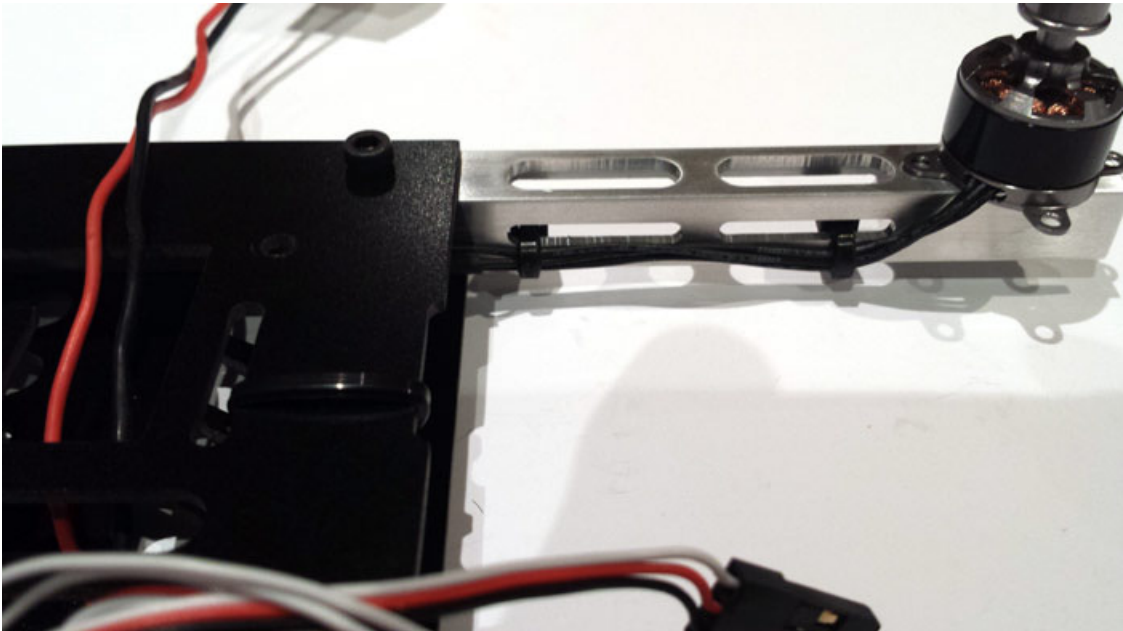


The KWAD

Now you can screw the frame back together and cable tie the motor wires to the arms. Just tuck the excess cable in between the frame plates.

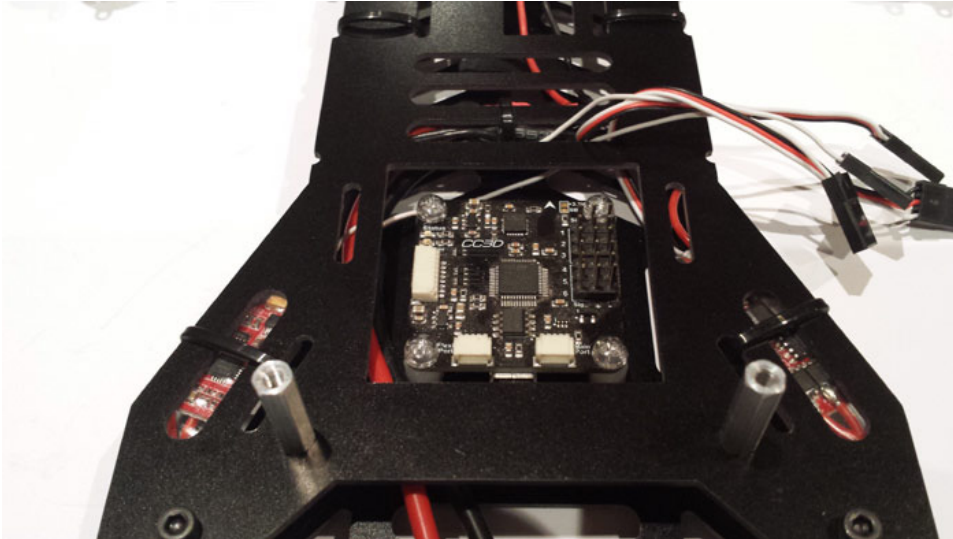


Nice!



The  WAD

Now you can install the CC3D.

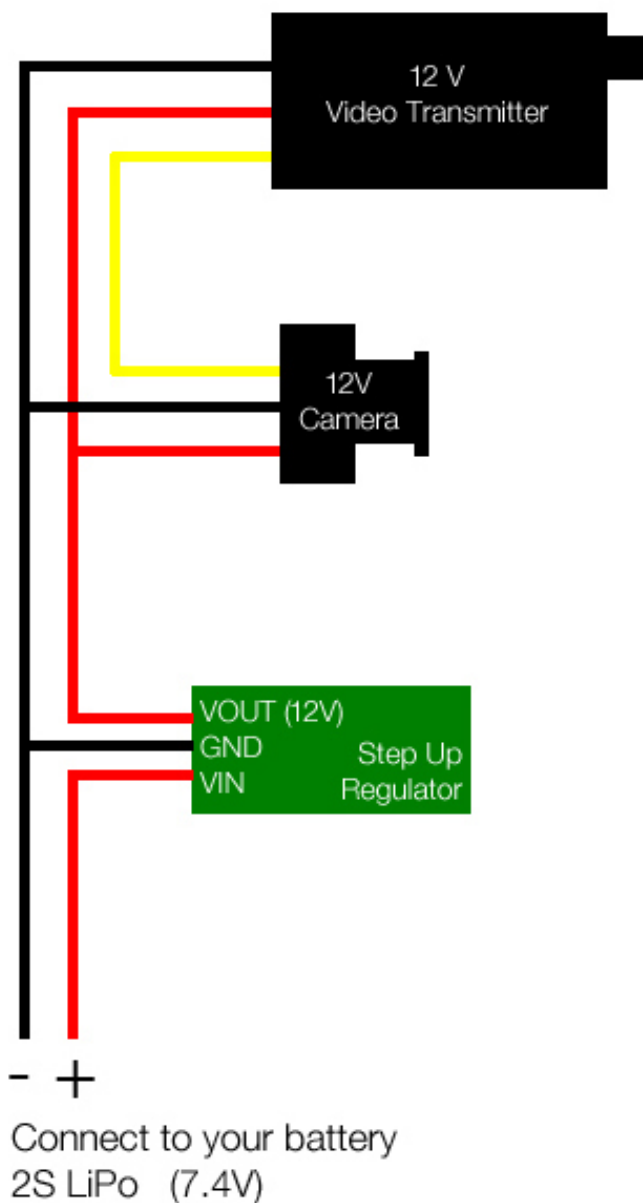




Now it's time to connect the Step up voltage regulator.

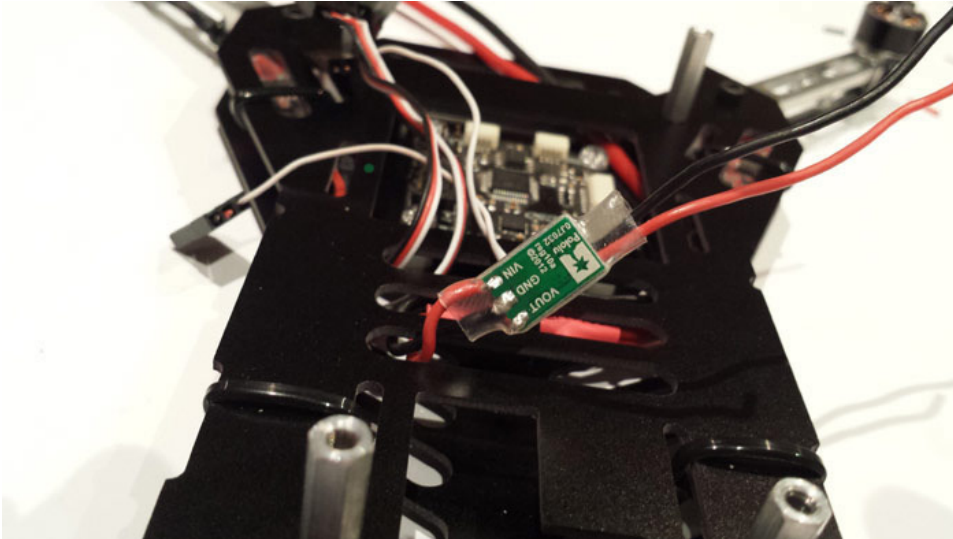
Voltage Step Up Regulator – Never power the regulator with anything bigger than a 2S Lipo pack. It can be damaged! You can cover with heat shrink once connected.

- VIN Connect this to the + of your 2S LiPo
- GND Connect this to the – of your 2S LiPo, Camera and VTX
- VOUT Connect this to the + of your Camera and VTX

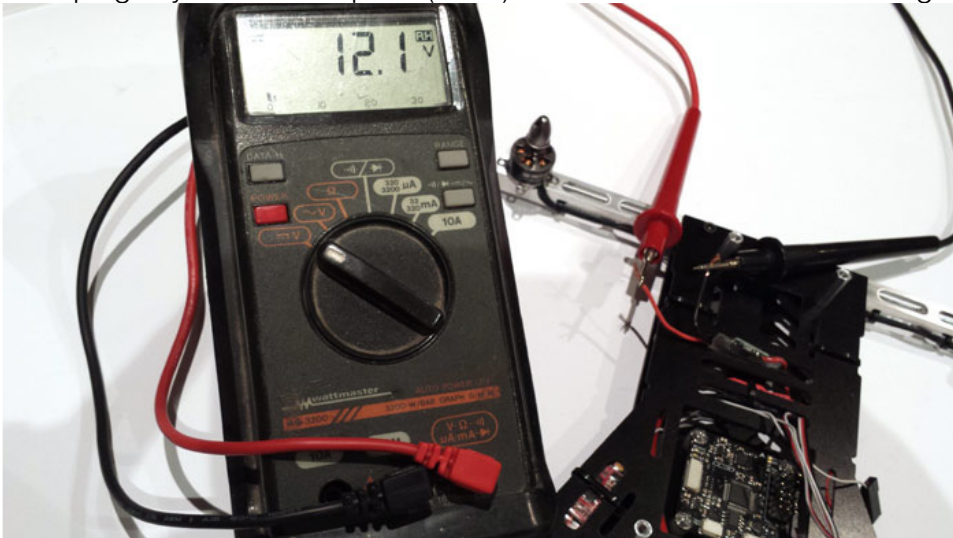


The KWAD

Once soldered install some heat shrink on it for protection.



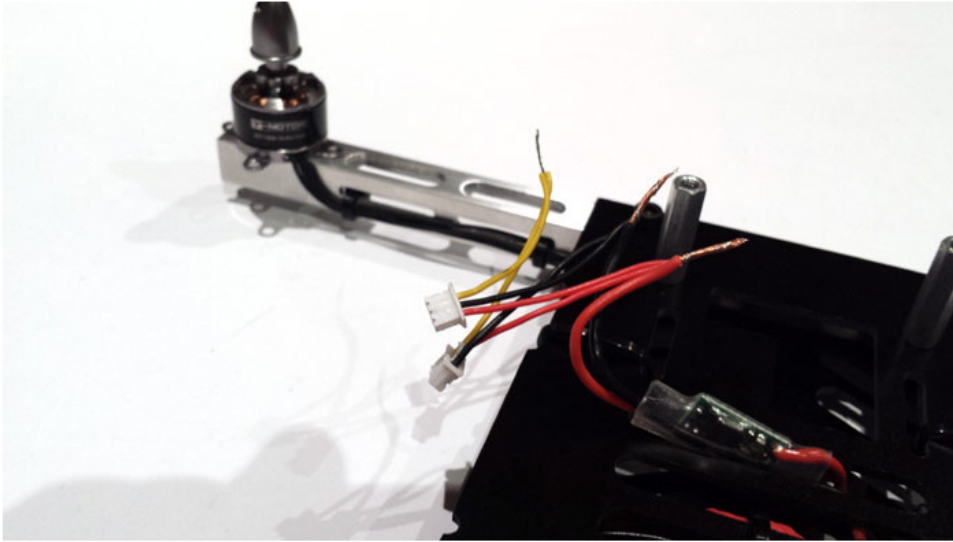
Now plug in your 2S LiPo pack (XT60) and check for 12V from the regulator.



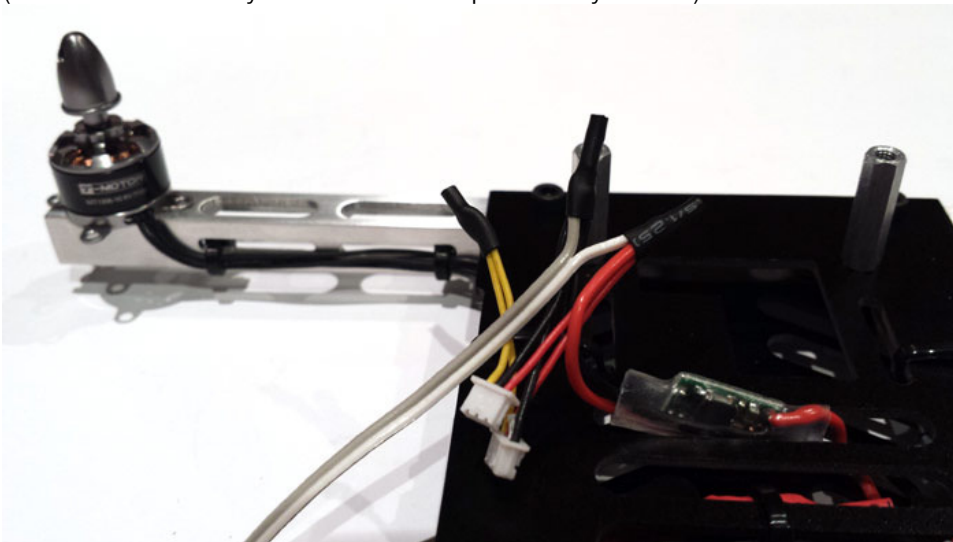
Perfect ☺

The KWAD

Now join your Camera and VTX cables to the 12V Regulator output. If you are planning on having a few 12V Strip LED's you can also connect them to the 12V Positive and Negative here. (The Yellow is the Video line.)

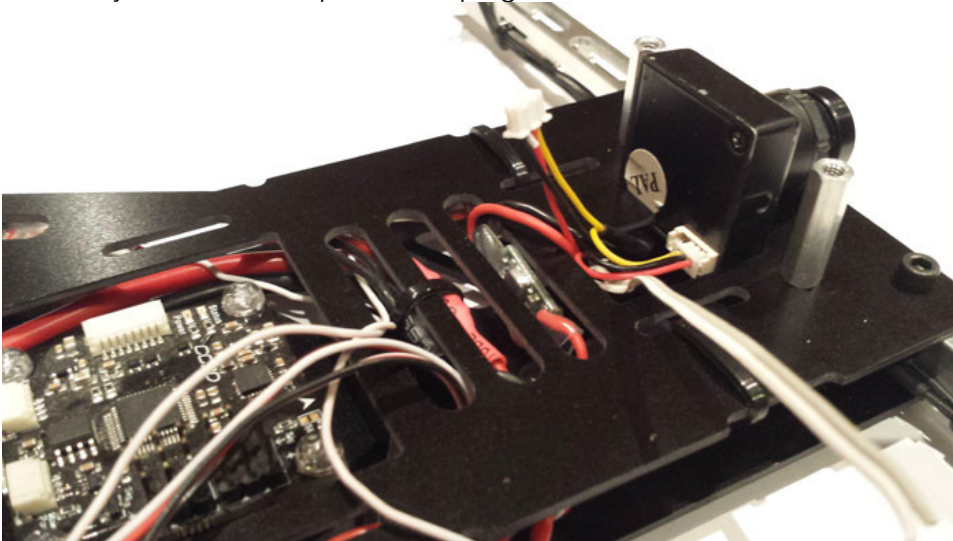


Solder them up and add some heatshrink. (I have used a Grey/White cable to power my LED's)

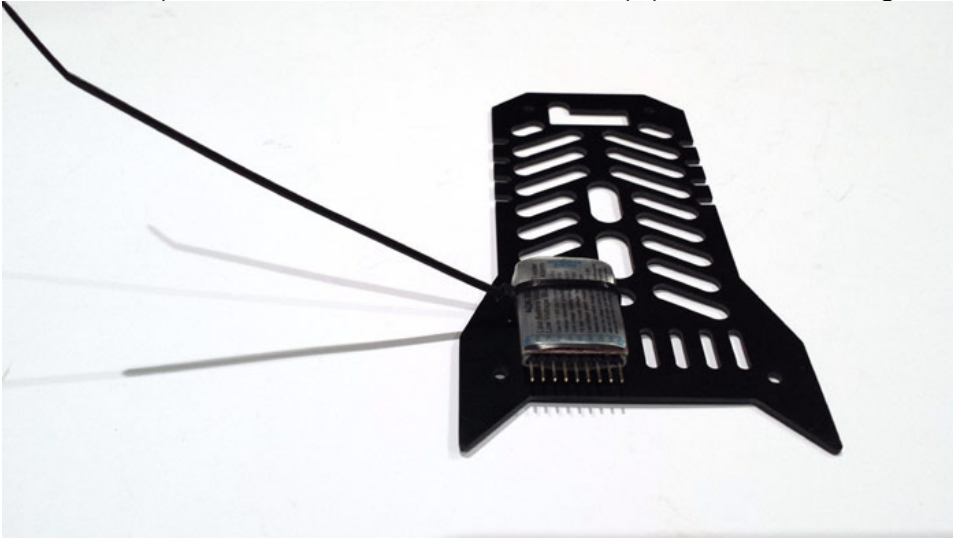


The KWAD

Get your camera out and set it up with the programming cable supplied with the camera. (We have a setup video on our Vimeo channel)
Now sit your camera in place and plug it in.

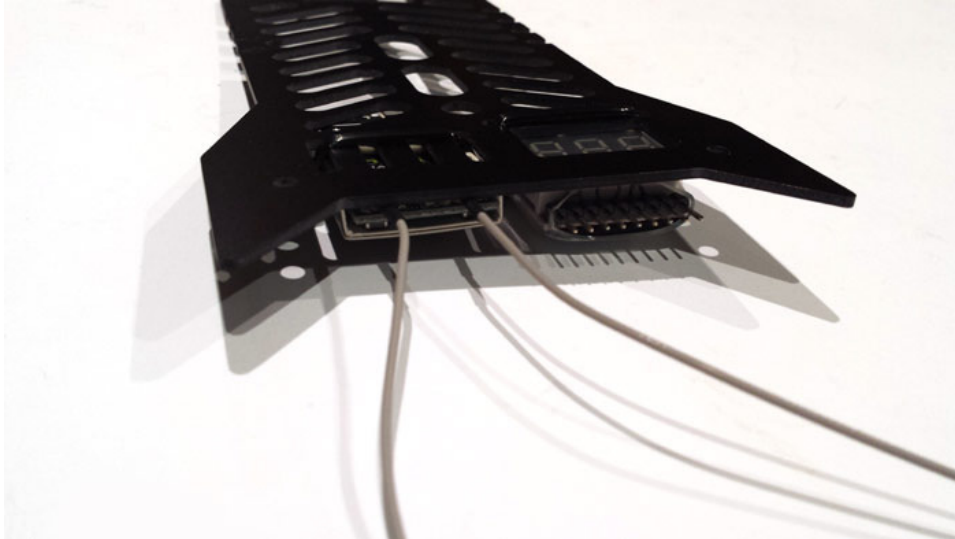


Attach the lipo alarm to the underside of the top plate with the long cable tie.

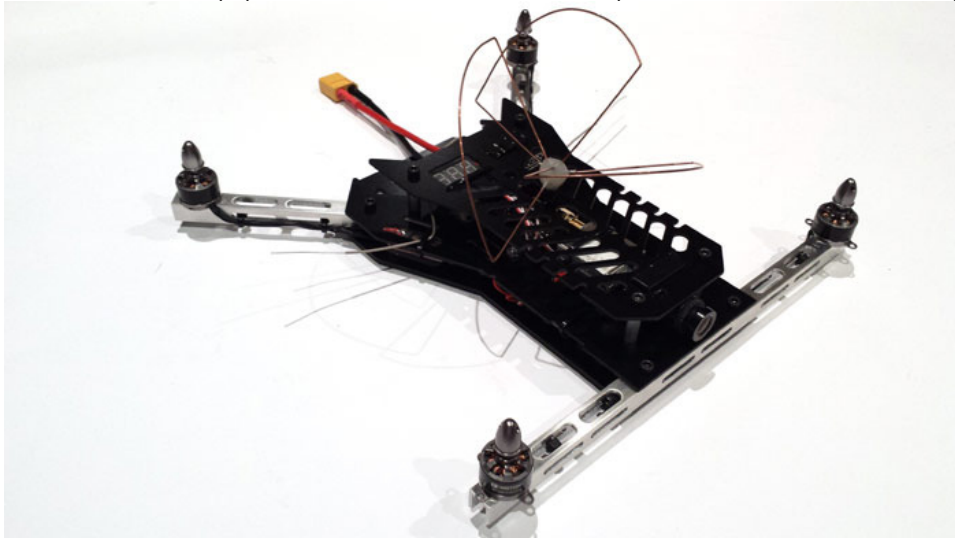


The KWAD

Now attach your RC receiver next to it.
(FrSky D4Rll shown)



Next Plug in your VTX and also your RC receiver to the CC3D.
Screw on the top plate and add a few thin strips of velcro on the battery tray.



Set up the CC3D and get your props on!
Now get out there and have some fun!!!!

If you have any questions please contact us at info@multirotorgear.com



4. Specifications

- Frame Weight: 138 Grams
- Frame Size: Length 200mm, Width 200mm, Motor to Motor 282mm
- Material: G10 and milled C channel Aluminium
- CG: Exact centre of the CC3D mount

Recommended Components:

- Open Pilot CC3D
- T-Motor MT-1306 Motors
- 6/10A ESC's
- Micro RC receiver
- Turnigy Nanotech 2S 1000mAh 25-50C LiPo
- FPV Camera (See website for link)
- Battery Strap
- 5 x 3 Props

ESC Settings (for non flashed)

Brake =	Off
Battery Type =	Ni xx
Cut off =	Soft
Cut off voltage =	Low
Start mode =	Normal
Timing mode =	MED
Music =	D
Governor mode =	Off

V1.3 - 20/Sep/2013