Thank you for purchasing the ARRIS X-Speed 250.

Be sure to read through this entire manual before starting your build. If you bought the ARRIS X-Speed 250 Frame, or ARRIS X-250 Super combo, this manual will provide you the necessary information to complete the build with a minimum amount of effort.

1. What is in the package?
   ARRIS X-Speed 250 Frame comes with the following parts in the package:
   1.1 Screw Bag x 1
   1.2 PDB Board x 1
   1.3 Lower Plate x 1
   1.4 Battery Plate x 1
   1.5 Arms Bag x 1
   1.6 Accessory x 1
   1.7 User Manual x 1

2. Additional parts needed to complete the model? (We use the following items as an example)
   ARRIS 2204 Brushless Motor x 4
   ARRIS 12A ESC x 4
   Tarot CC3D flight Controller x 1
   700TVL Mini Camera x 1
   ARRIS Mi600s Video TX x 1

3. Suggested tools for the assembly:

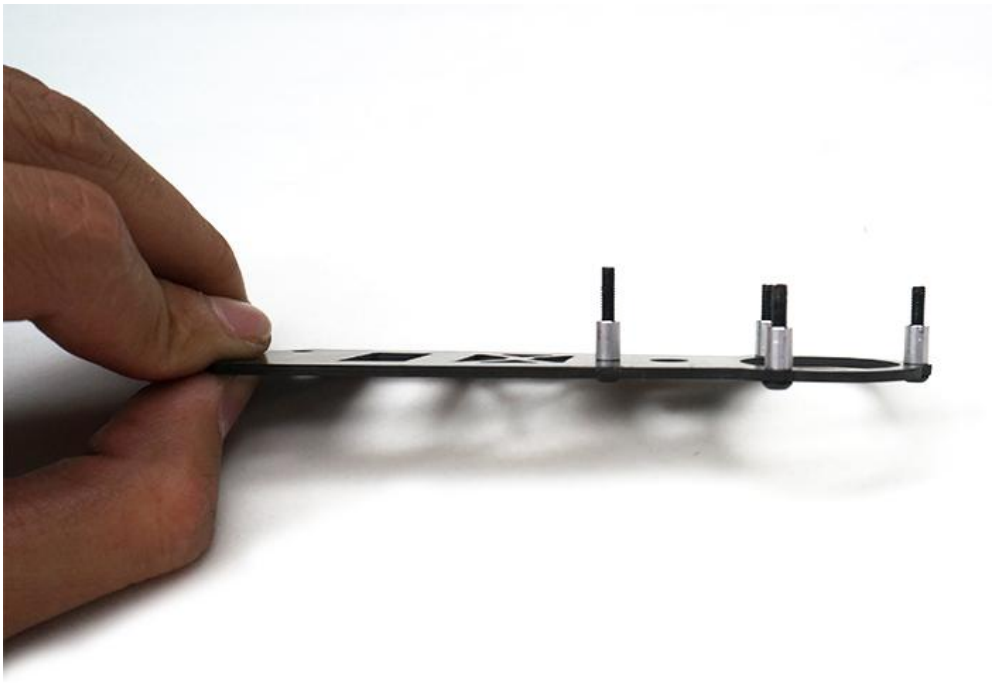
2.0mm Hexa screwdriver x 1
1.5mm Hexa screwdriver x 1
Scissor x 1
Tweezers x1
M2.5 socket wrench x 1
3M tape and cable tie

4. Install the Arms

4.1 Parts needed: Upper plate of the arm, 3 pieces of M2.5 x 14 screws, 1 piece of M2.5 x 16 screw, 4 pieces of M2.5 x 4 x 6 aluminum standoffs

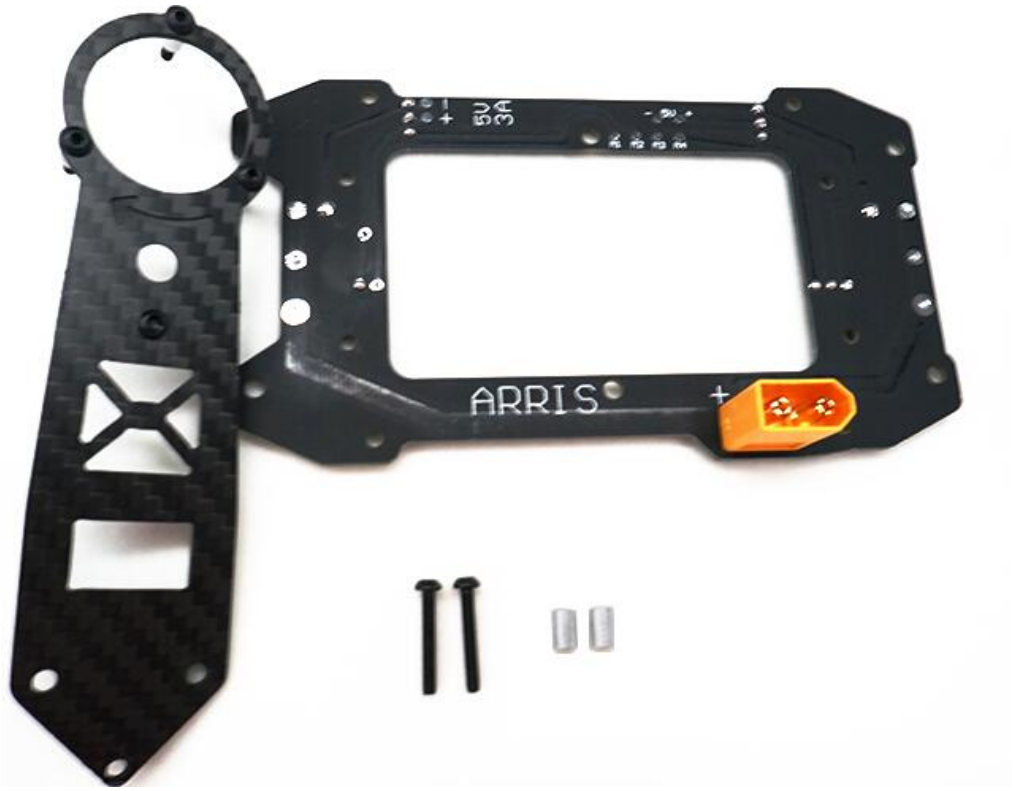
4.2 Assemble them according to the picture below, when you install the screw, remember to use some thread lock. (NOTE: the topside of each arm is etched with the motor rotation direction, make sure that the standoffs are installed on the opposite side)

4.3 Assemble all of the four arms.



5. PDB Board

5.1 Take the PDB board from the bag, the XT60 (female) plug has soldered on it



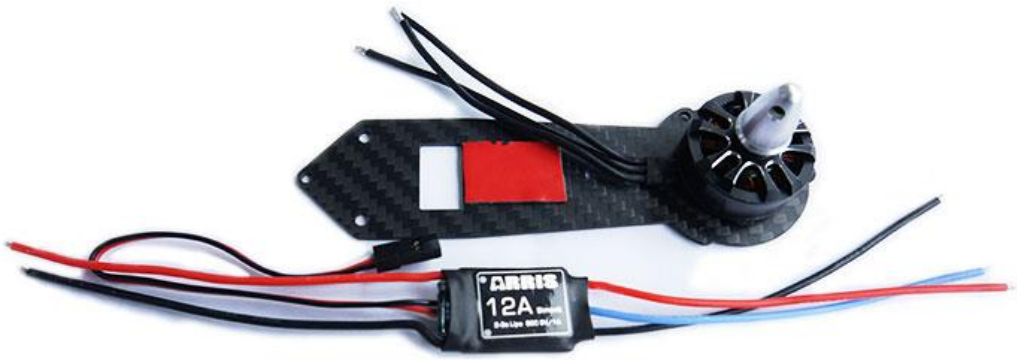
5.2 Connect the PDB with the upper arm plate. Here we need 2 pieces of M2.5 x 16 screws and 2 pieces of M2.5 x 4 x 6 standoffs.

5.3 Install the remaining three arms to the PDB. NOTE: The etching on the arms should face up as in the photo below. For CC3D: the left front motor rotation is CW, the one next to it is CCW, and the one opposite to it is CW.

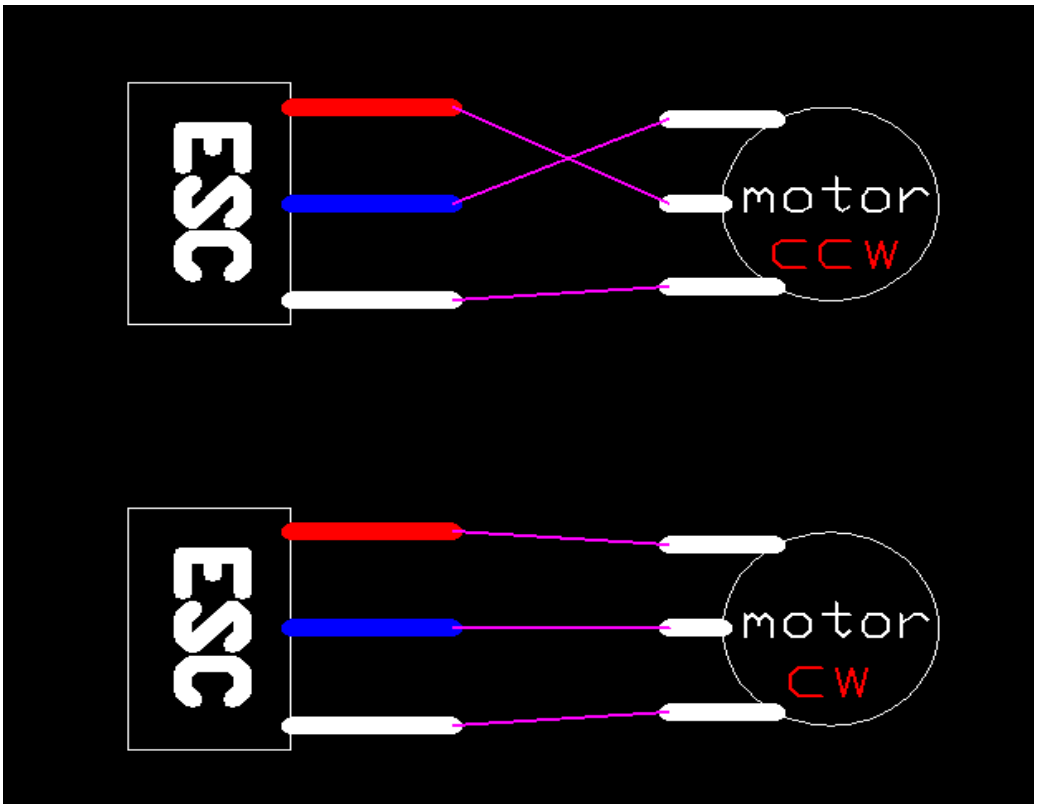
Picture from the back:

6. Install the motor on lower plate of the arm.
   Prepare M3 x 6 screws, when you install the screws, remember to put on some thread locker.

Use M3 x 6 screws to attach the motor. Apply some 3M double sided tape to the arm on to hold the ESC as the picture below:



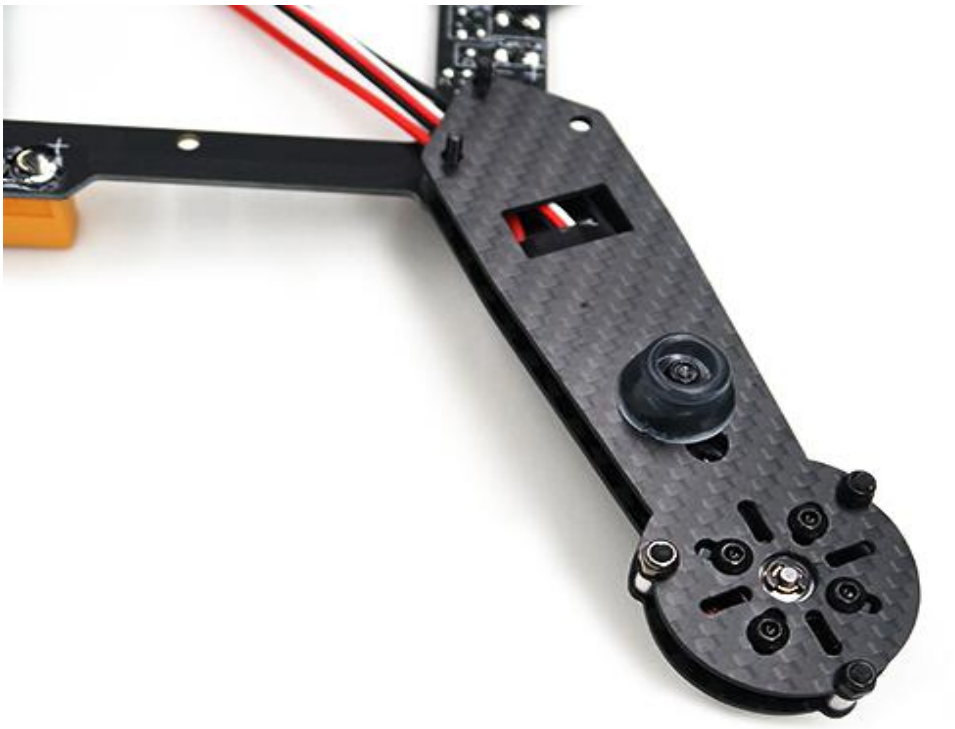
7. Install the ESC on the lower plate with the logo side up, as this will help in subsequent steps to ensure the correct motor rotation. Solder the ESC wire to the motor wire. NOTE: Pay attention to the diagrams below to ensure that the motor will turn the correct direction when assembled. As an example, the ARRIS 2204 and ARRIS 12A should have two of the CCW motor wires crossed when connected to the ESC. For the CW motor, the wires should not cross and go directly to the corresponding esc wire. The picture below is the CW motor.



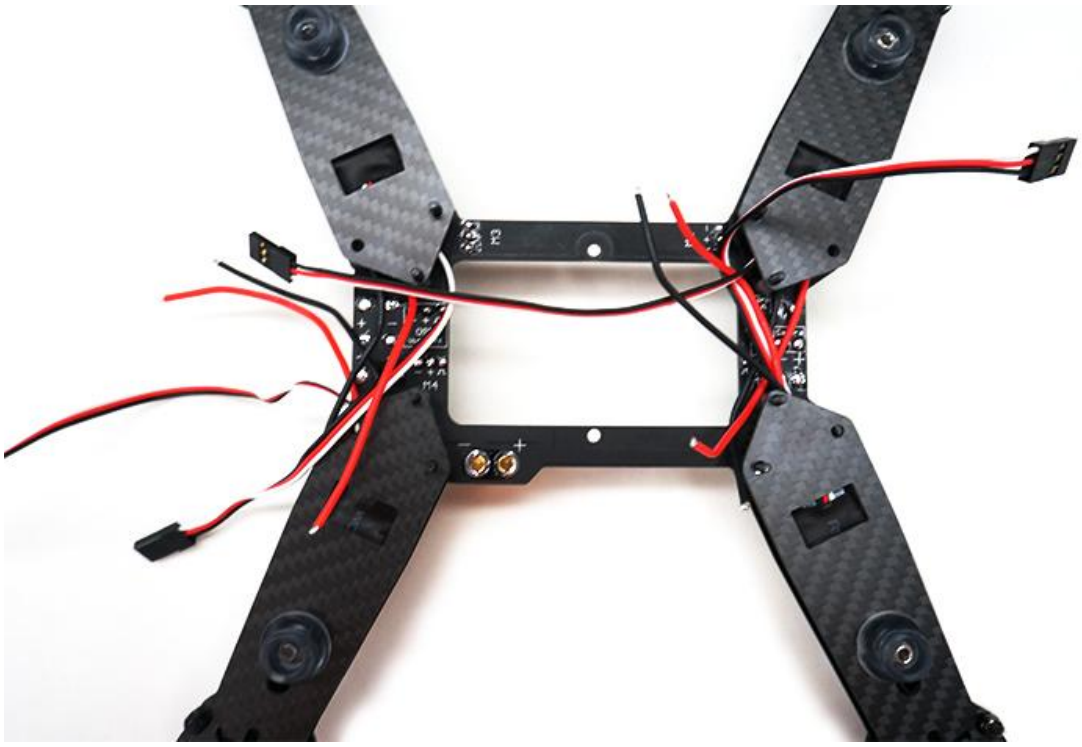
To check the motor rotation, the best way is to power it and check. If the direction is opposite, you just need to change any two of the wire, that will be OK.
Install the rest of the three arms like this.

8. Connect the lower plate arm with the upper plate arm.
   Parts needed: 4 pieces of M2.5 self-locking nuts, rubber landing bumper.

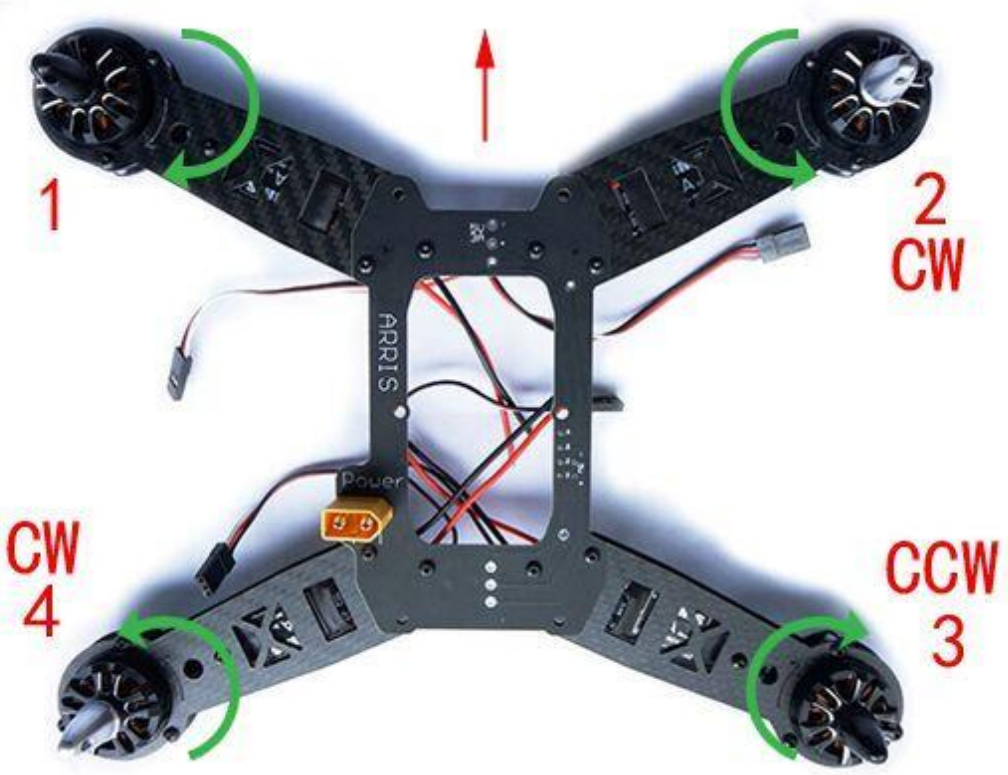
Pay attention to the motor and ESC wires. Tighten the nut with a socket wrench.



Install the remaining arms in the same fashion.

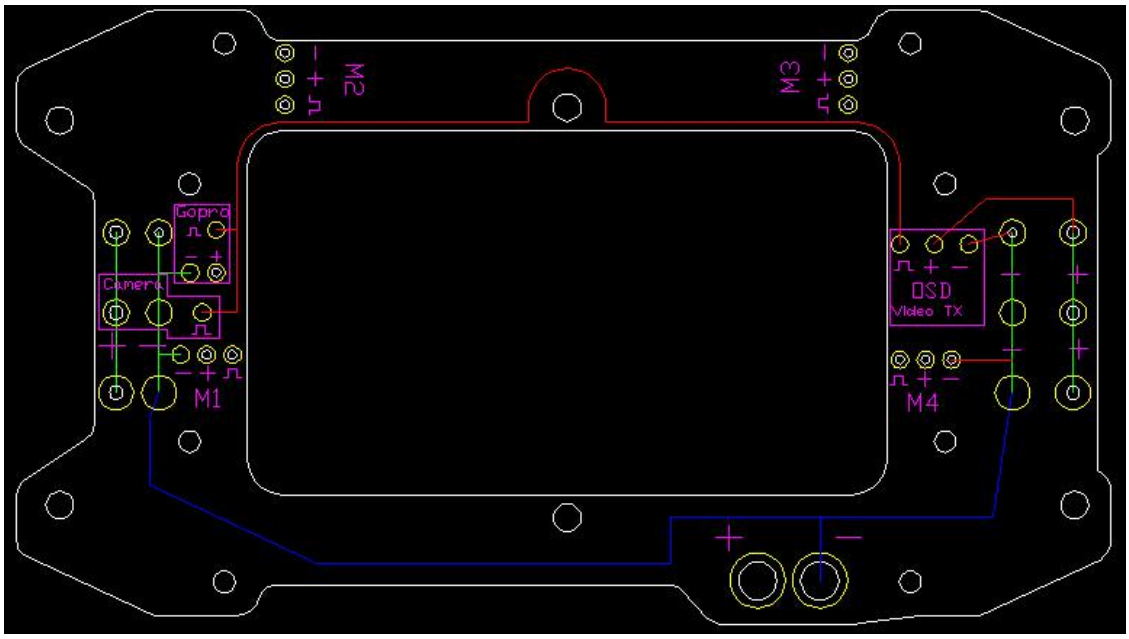


Pay attention to the motor rotation direction. The green arrow refers to the motor rotation direction. CW or CCW in the following pictures means the thread CW or CCW.



9. PDB – Power Distribution Board

   The picture below shows the soldering diagram. White lines represent the outline of the PDB. The yellow lines/circles refer to the location of solder trace/pads. Red defines the trace/pad.



10. Mini Camera and Video TX

   First, prepare two wires as in the picture above.

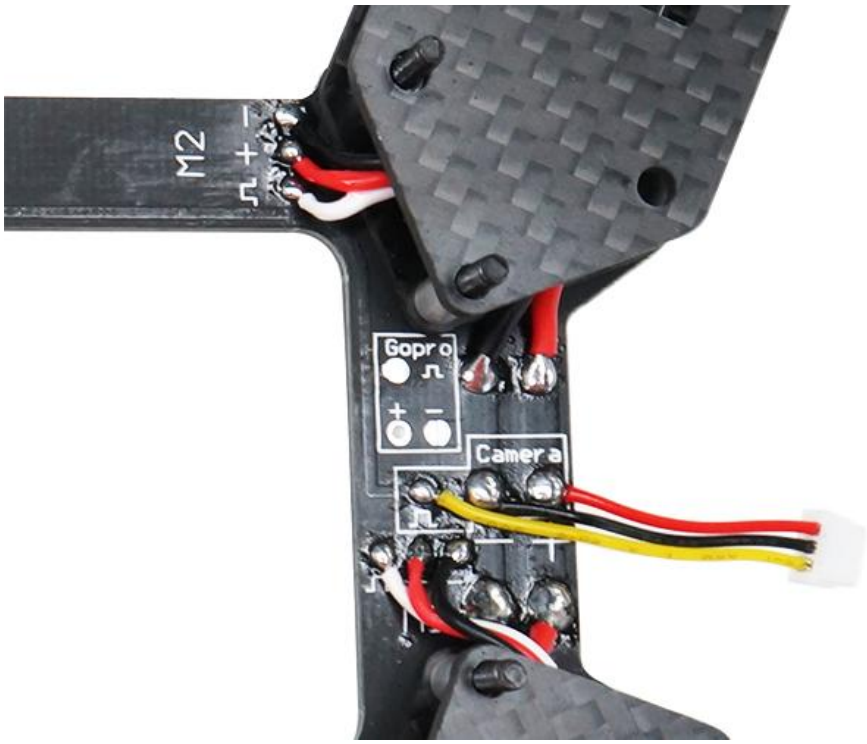
   The first wire is in the top of the diagram and comes with the Video TX.

   On the black plug port: Yellow ---- camera signal input, Red ---- 5V “+” output, Black ---- 5V “-” output

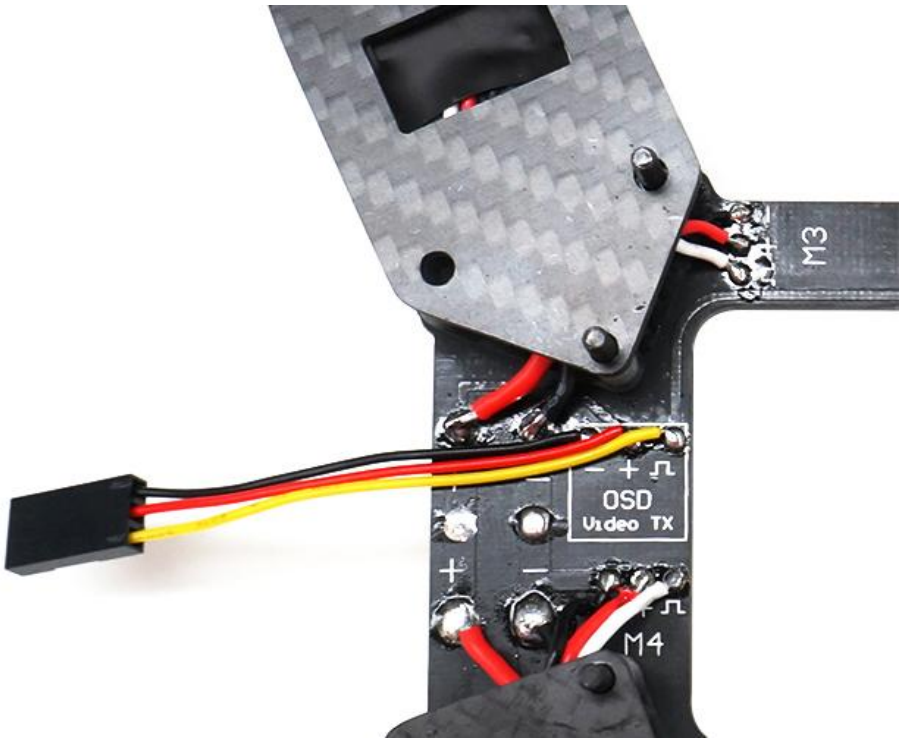
   On the red plug port: Red ---- video TX power “+” input (12V), Black ---- Video

TX power “-” input
The second wire is in the lower position comes with the camera.
Yellow ---- camera signal output, Red ---- camera power input “12V”,
Black ---- camera power “-” input

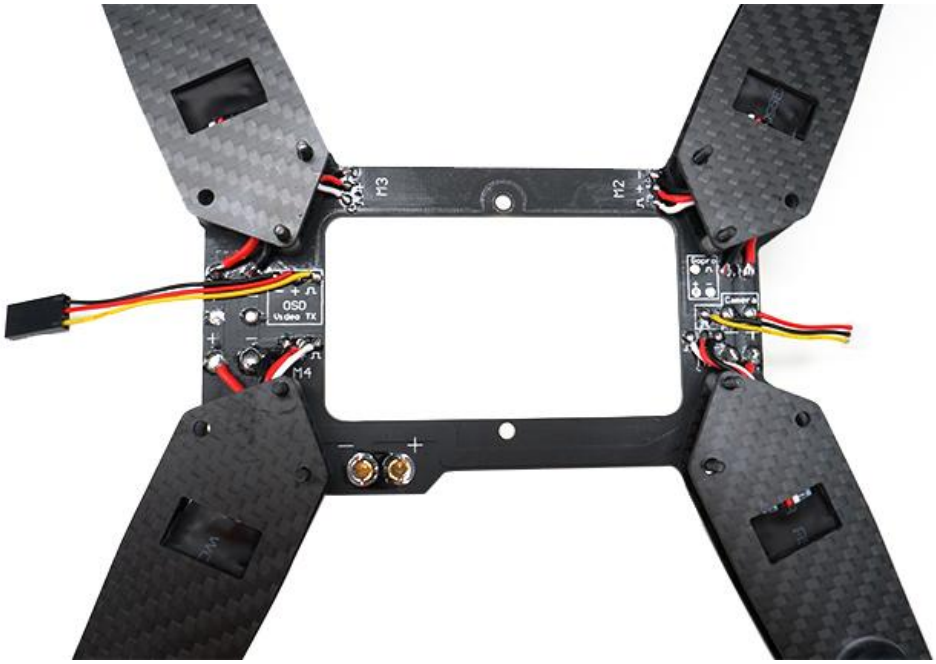
Solder the camera wire in front



The tail part

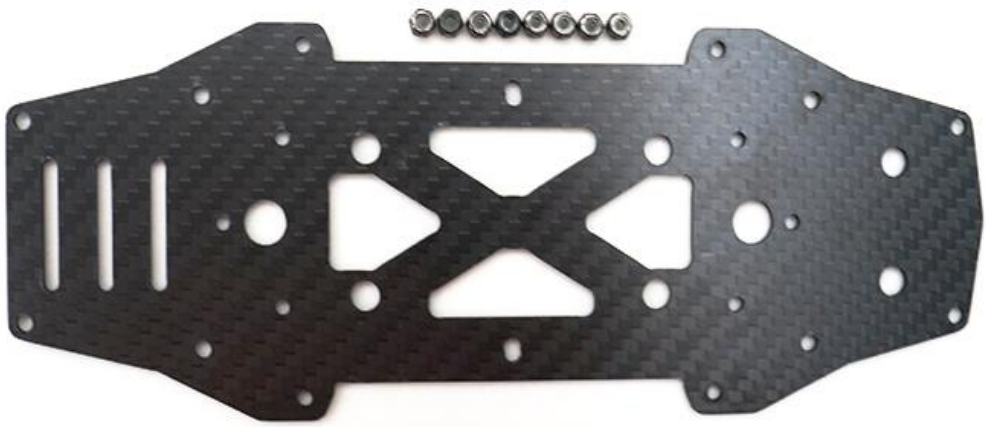


Once finished soldering, be sure to check for mistakes. The picture below shows how the finished step should appear.



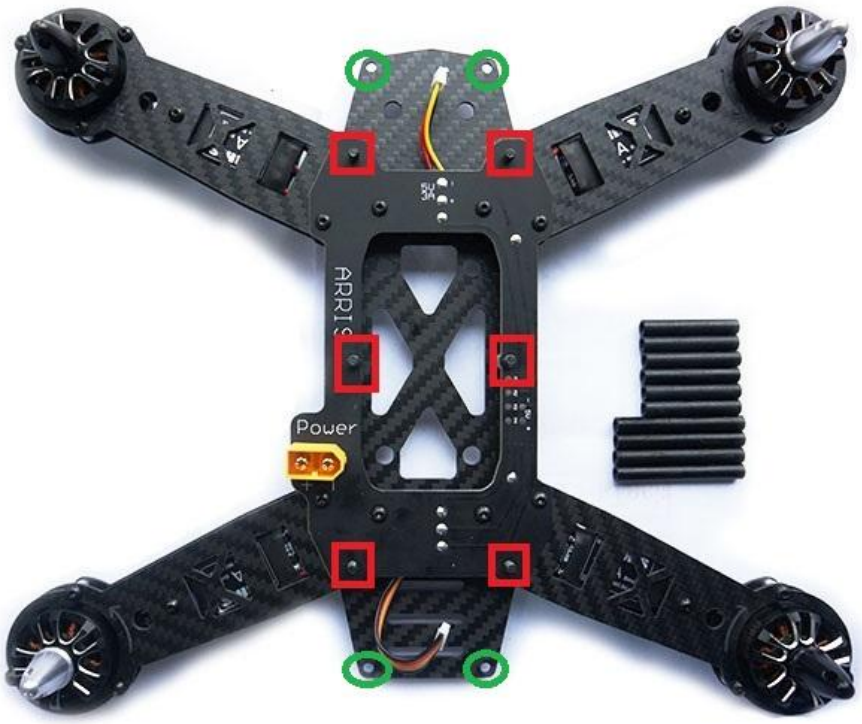
11. Install the Lower Plate

    Parts needed: Lower plate; 8 pieces M2.5 self-lock nut; 6 pieces of M3 X 16 screws; M3 X 30 Aluminum double thread standoffs; 6 pieces of 3 X 7 X 6 nylon standoffs; 2 pieces of 3 X 7 X 9 nylon standoffs

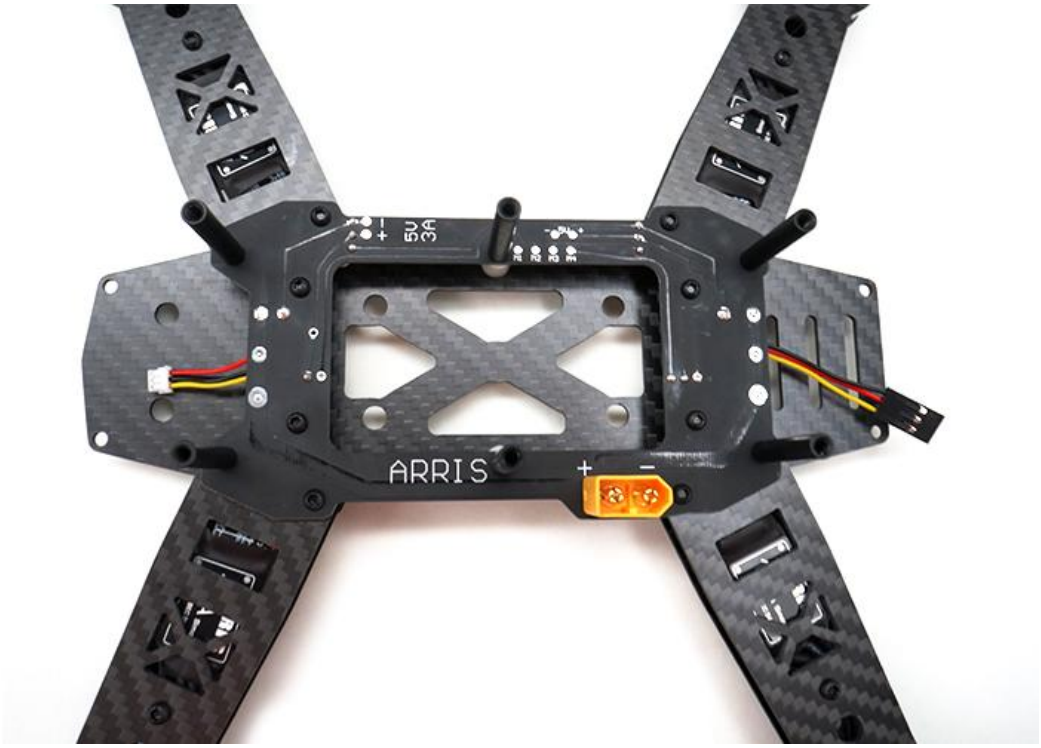


Use tweezers to hold the nylon spacer while inserting the appropriate screw. Remember to use thread lock for the screws.

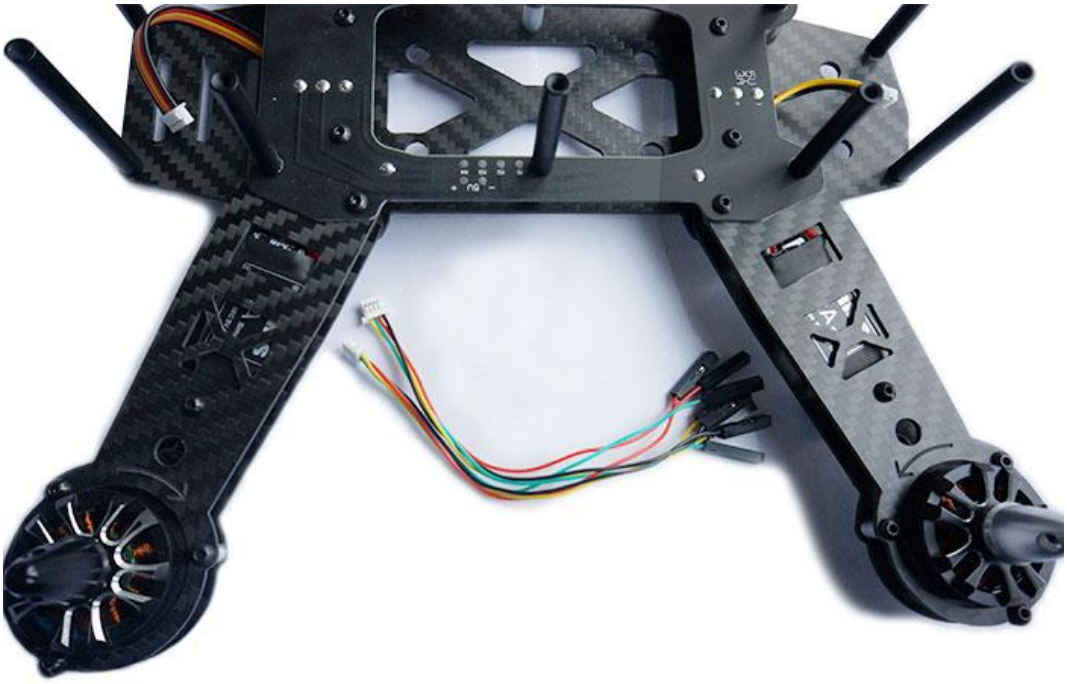
12. Install the aluminum standoffs using M3 x 8 screws.
    Intall the M3 x 30 aluminum standoff's to the red mark location.
    Install the M3 x 40 aluminum standoffs to the green mark holes.

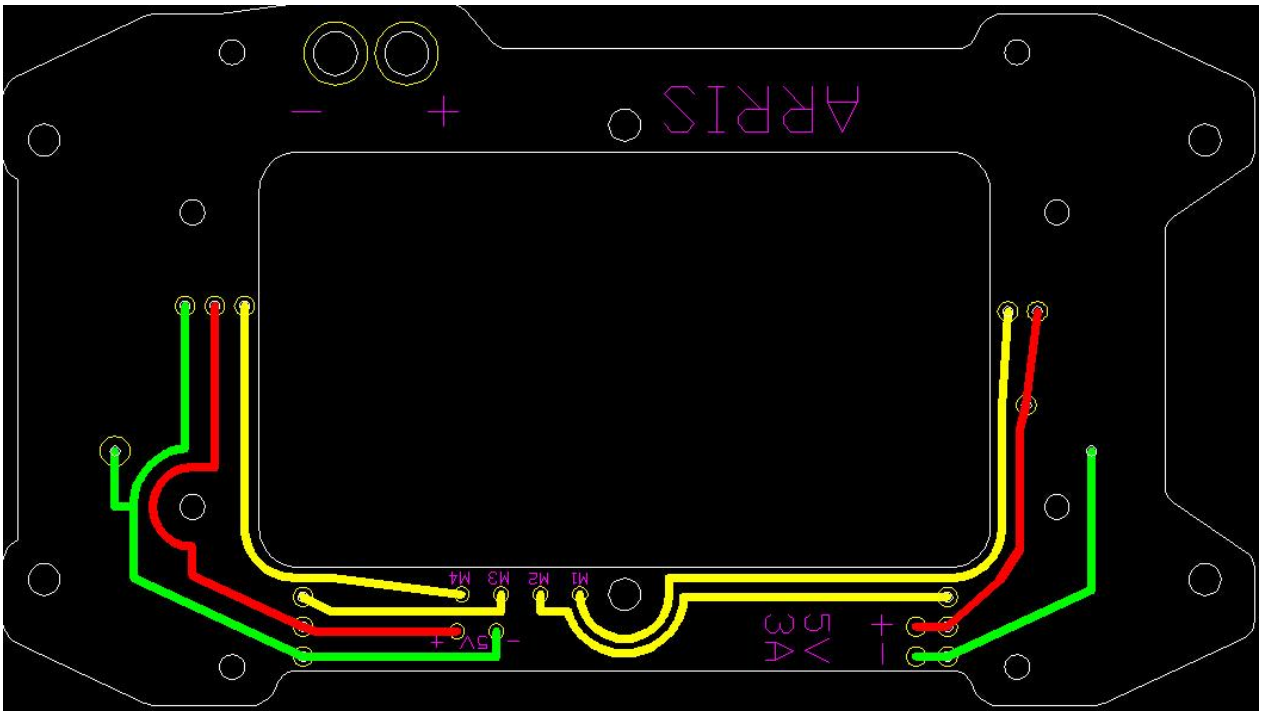


After you installed the aluminum standoff, it should look like this:



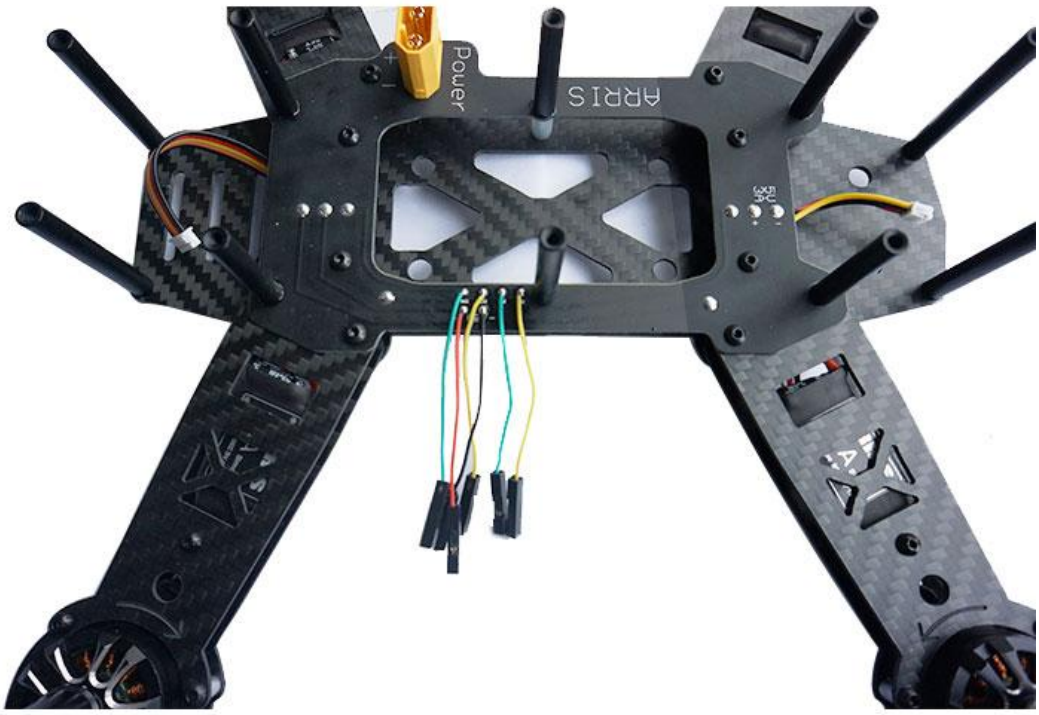
13. Solder the CC3D flight controller wire to the PDB board.





Solder the wire according to the above pictures.
Red ---- 5V power “+” electrode
Black ---- 5V power “-” electrode

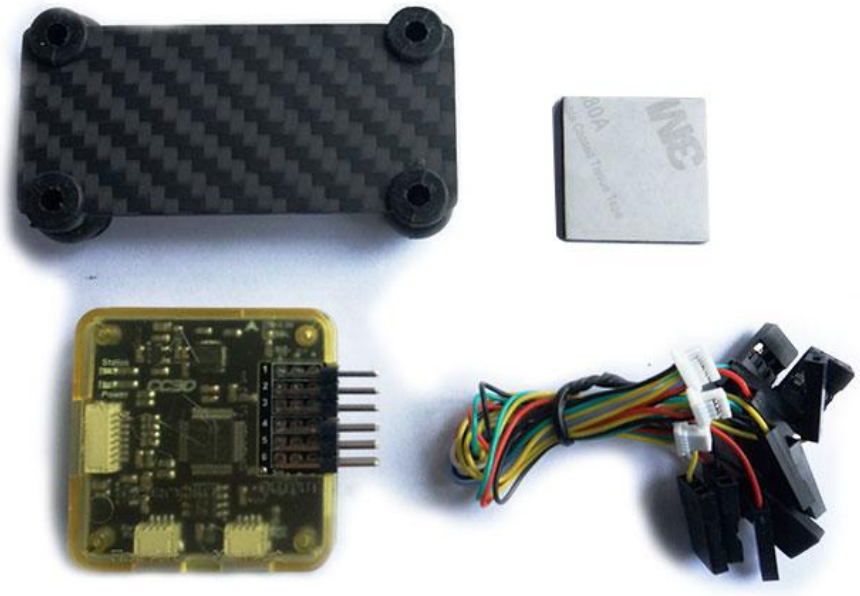
From right to left: yellow, green, yellow, green---- throttle signal wire of motor 1,2,3,4



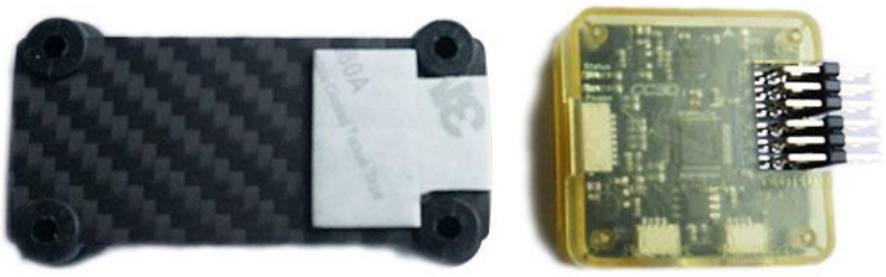
14. Install the flight controller plate.

14.1 Take out the No 14 parts damper ball and the flight controller board out. Mount the No. 14 damper ball to the flight controller plate. (With the damping system, it decreased the interference of the vibration during the flight.)

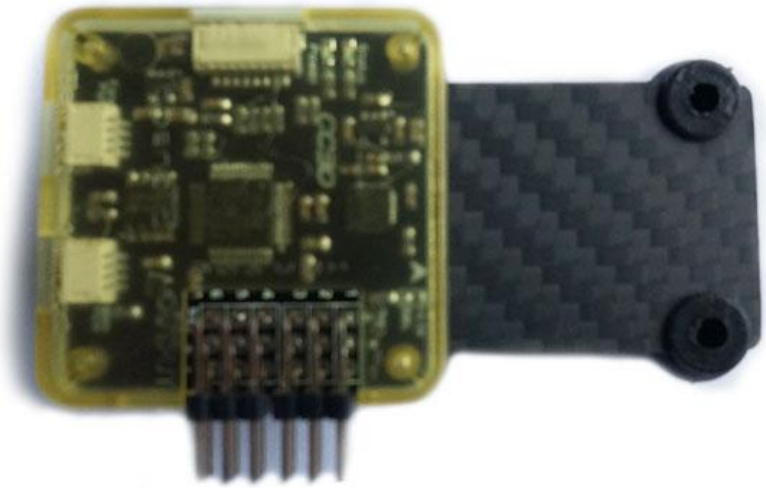
14.2 Take the CC3D flight controller board out. During this process, we need to use on piece of the 3M tape.



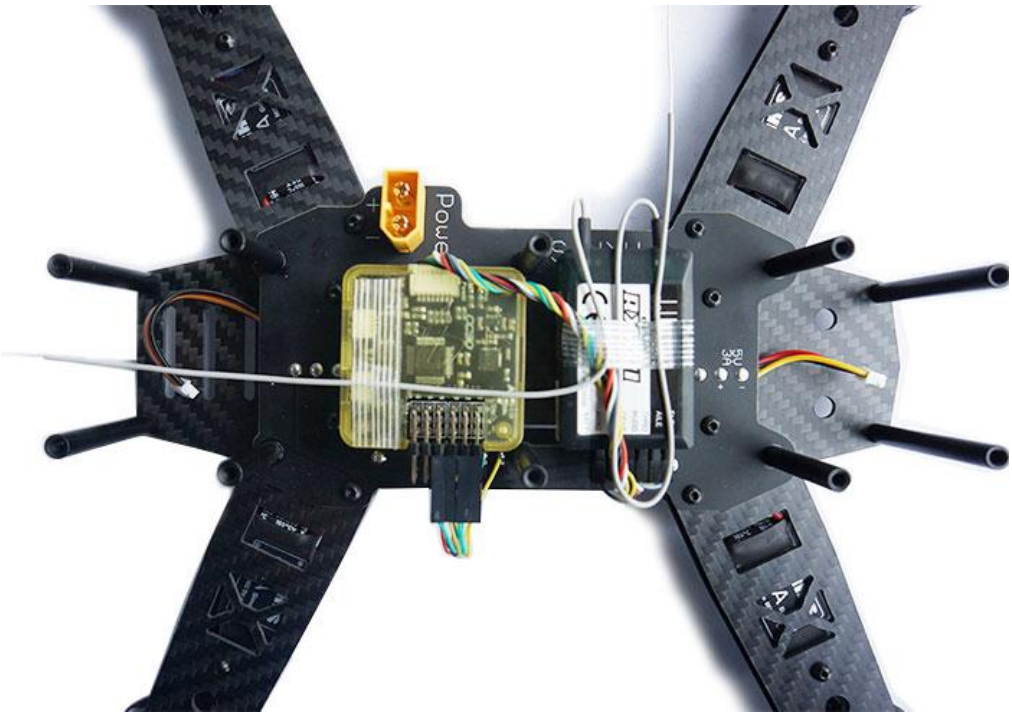
14.3 Cut the 3M tape to match the picture below and paste it on the flight controller plate.



14.4 Paste the CC3D to the 3M tape on the controller board plate with the pins as shown below.



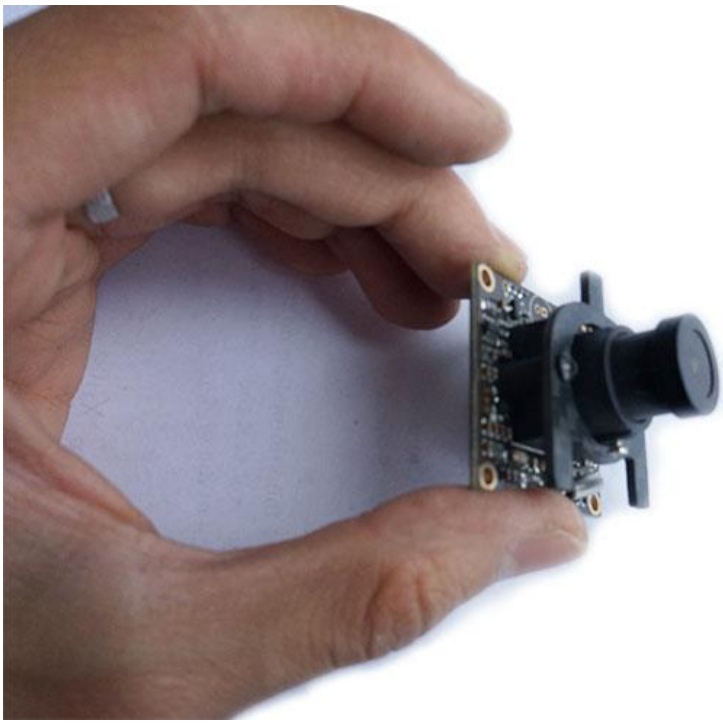
14.5 Intall the plate to the frame. Use a fine wire wrapped around the anti-vibration ball to pull the rubber through the hold in the frame. Install the receiver. here we used the RX701. For the receiver, you can attach it with double sided tape. (The antenna of the receiver can be installed at 90 degrees)



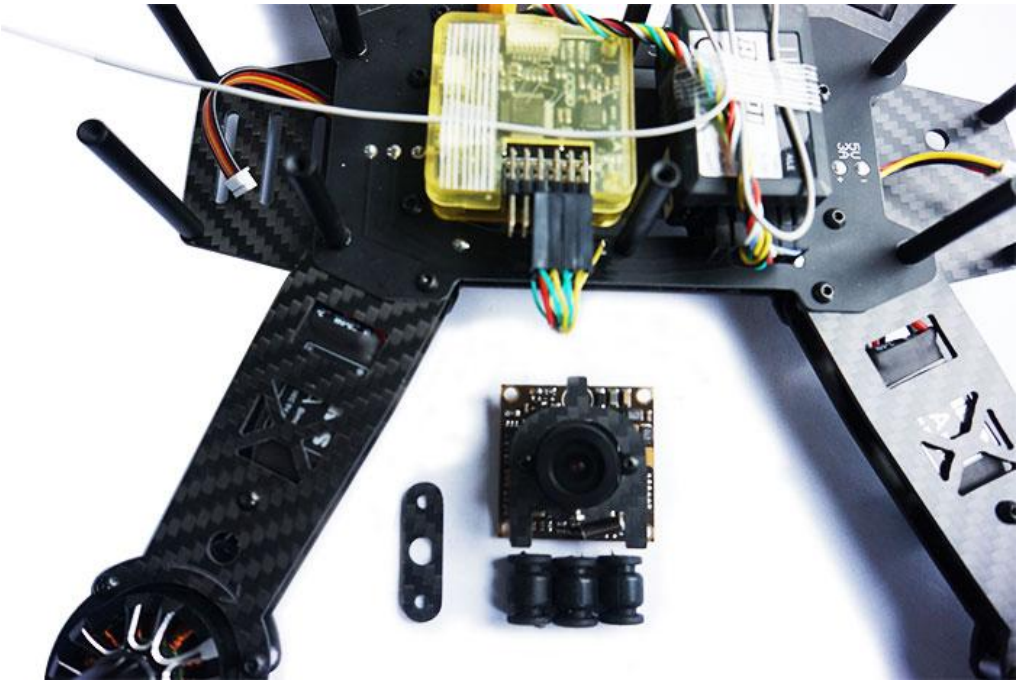
15. Install the Mini camera

15.1 Prepare the parts: Mini camera, Camera mount plate (No 16 parts), 2 pieces of M2 x 5 screws

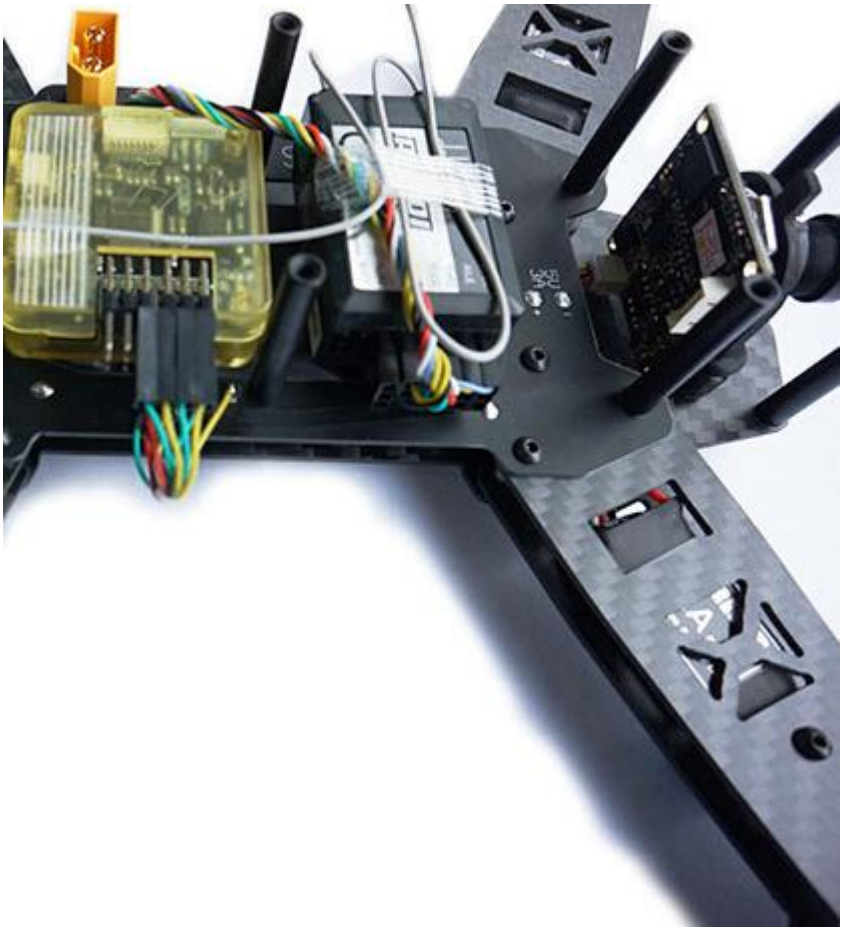
15.2 Install the camera to the camera mount plate as in the following picture. Pay attention to the direction of the camera. The rear part of the camera is next to the connection wires.



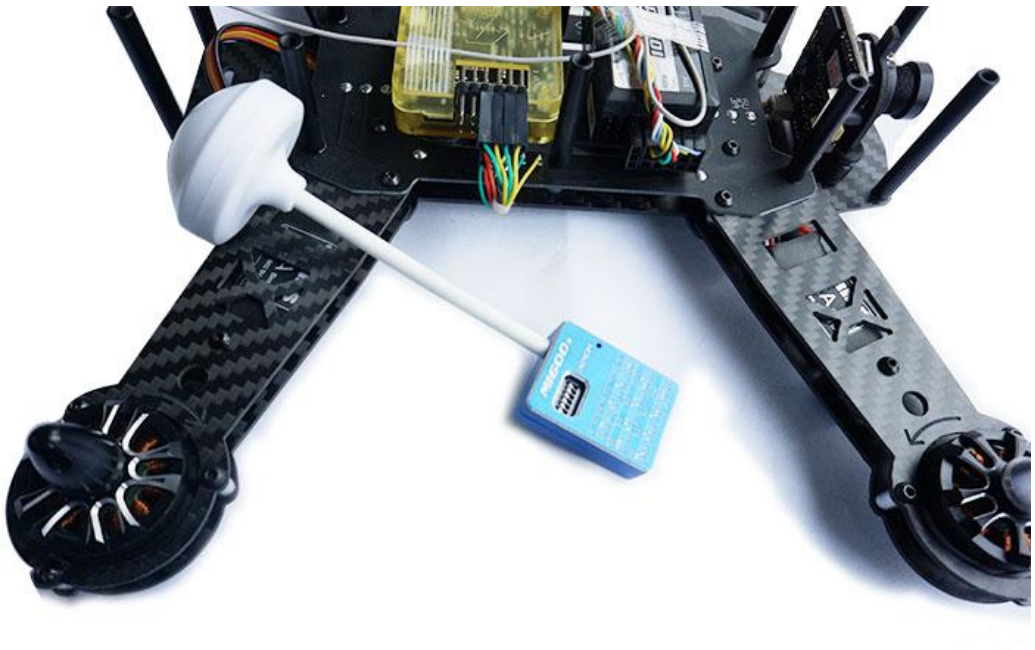
15.3 Take out the 14—01 damper ball. (Note: This one is not the same as the one installed on the flight controller plate.)



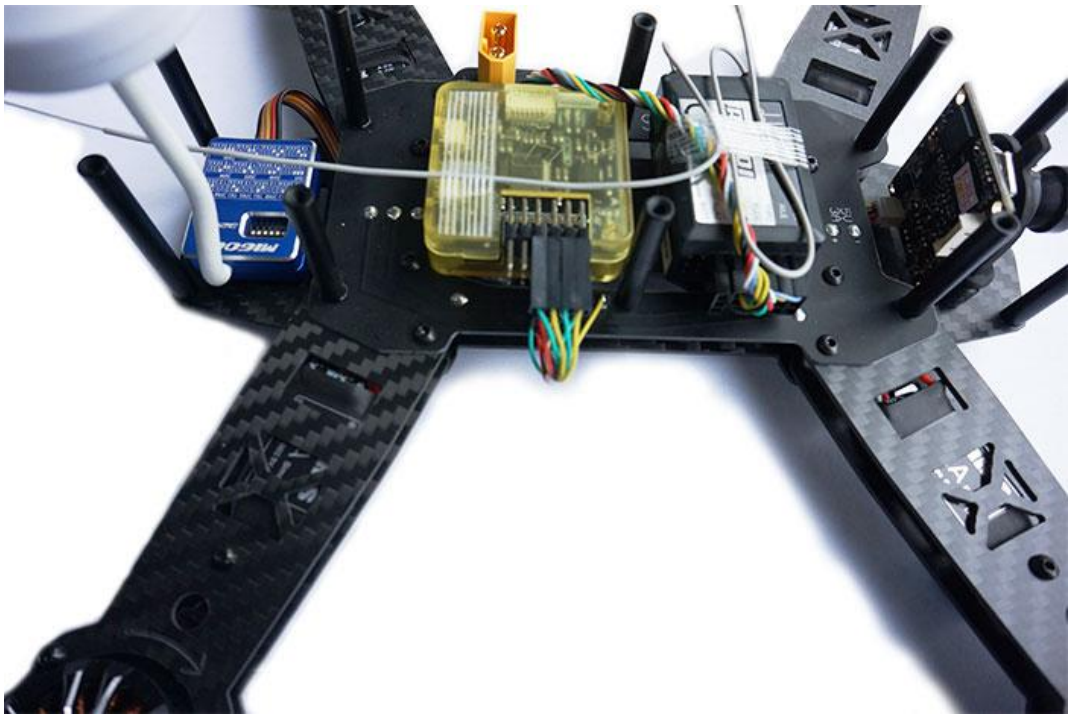
15.4 Install it as in the picture below. Remember to connect the camera plug.



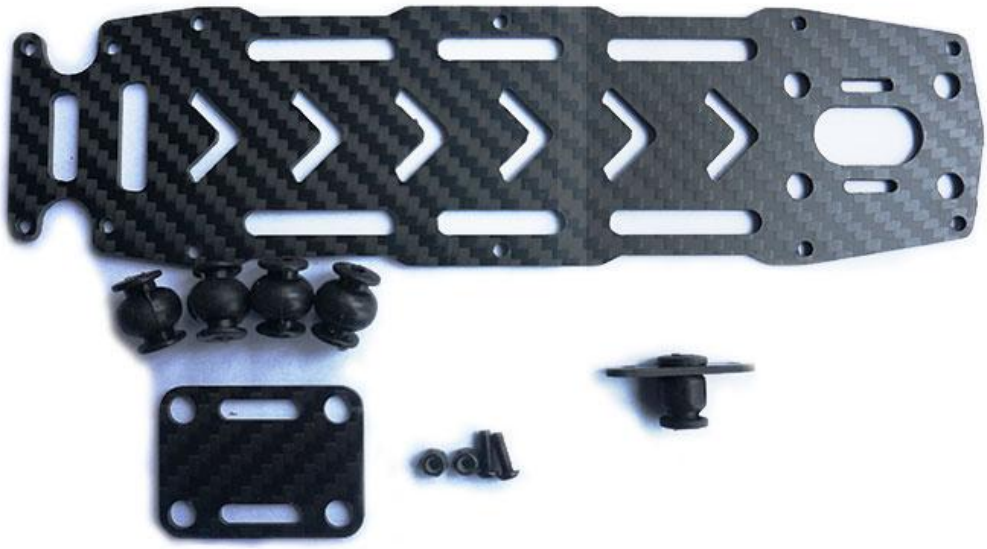
16. Install the Video TX. (Take ARRIS Mi600s as example)
    Prepare the video TX and 3M double sided tape.
    Cut the 3M tape to the proper shape, and paste it to the bottom of the Video TX.



Install the video TX to the 250 frame, you can bend the antenna as in the picture below. This is neccassary for future steps. Plug in the video TX wire. The ESC throttle signal wire is plugged in, in the pictures, but before you do that, you need to calibrate the throttle travel. For the detailed process, the ESC user manual is a good referenece.



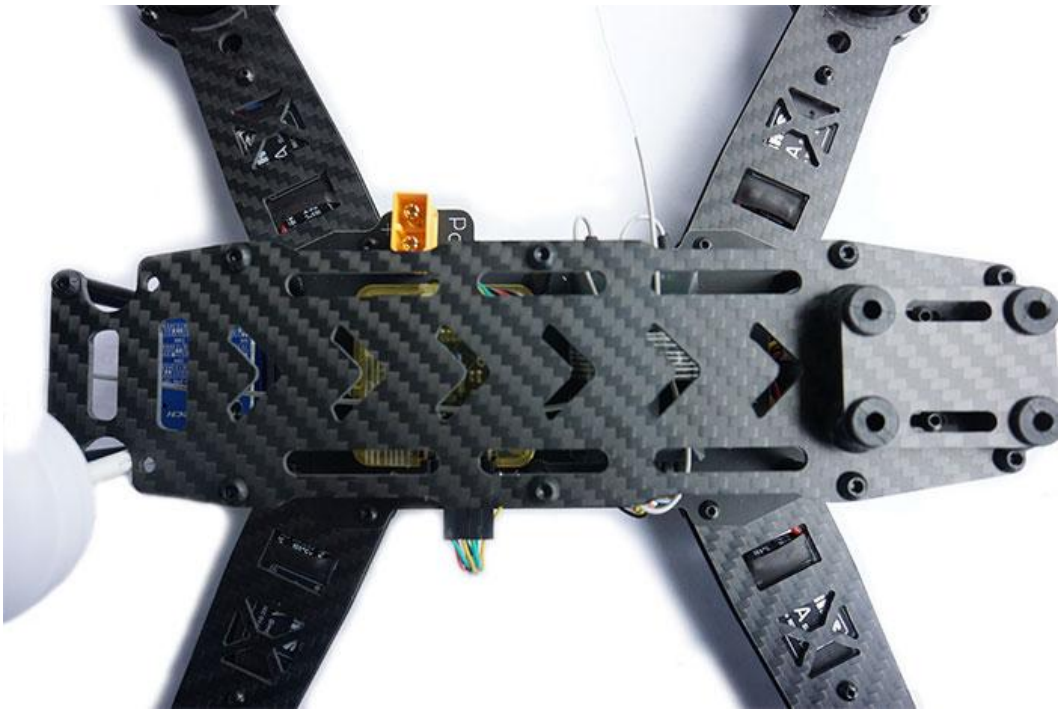
17. Install the battery plate.
    Prepare the parts in the following picture.



Install them as shown below:
This is the vibration damper plate for the second camera, camera angle ajustment plate plate on battery plate.

18. Connect the battery plate with assemled parts

    Here you need 10 pieces of M3 x 8 screws, remember to use the thread lock when you tighten the screws.



19. Attach the video TX antenna hold plates.
    Take out the following parts:
    M3 x 8 screws x 2
    M3 self-lock nut x 1

After you fit the Antenna, the assembling is finished.

Now you need to connect the CC3D to a computer and install the “openflight” software and pair your radio and reciver. Please refer to the user manual for 250 BNF without radio.