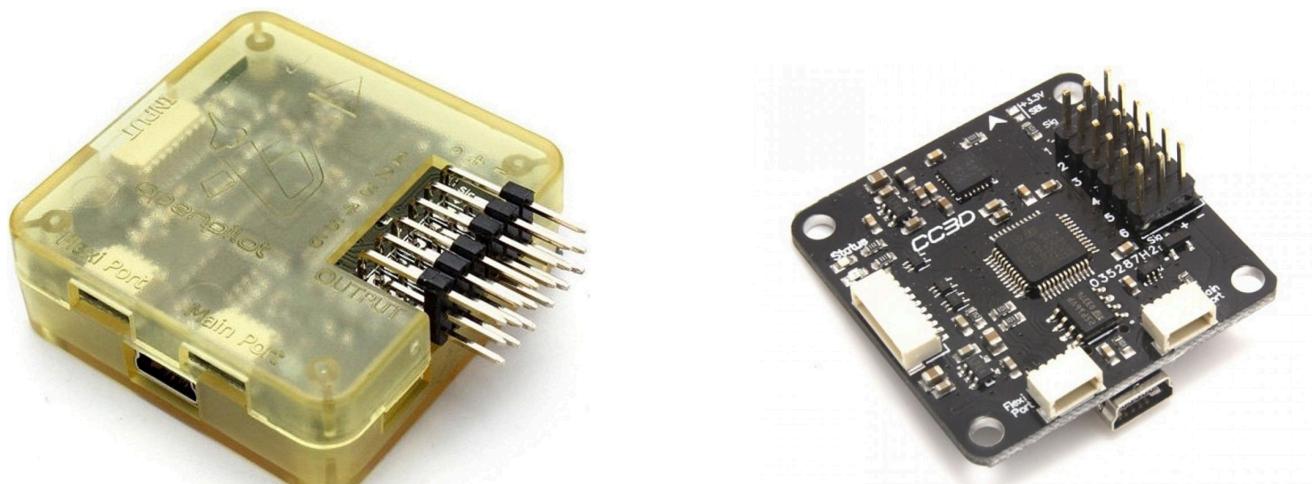


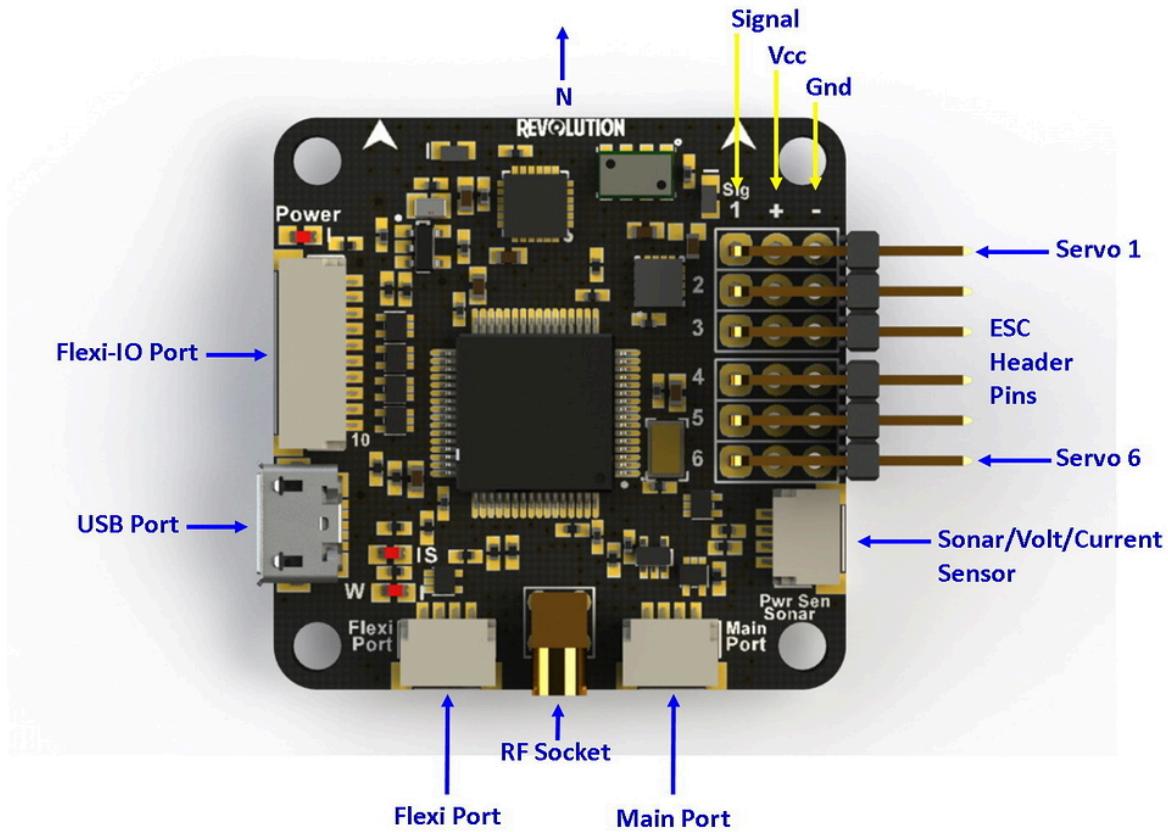
Robotics And Aviation Club, RBU

Project - QuadCopter

Topic - CC3D Flight Controller and Esc Setup



Few boards might have a little different layout due to different manufacturers.



Port diagram

Esc Wire color code

Red = +5V

Brown/Black = Gnd

White/Yellow = Signal

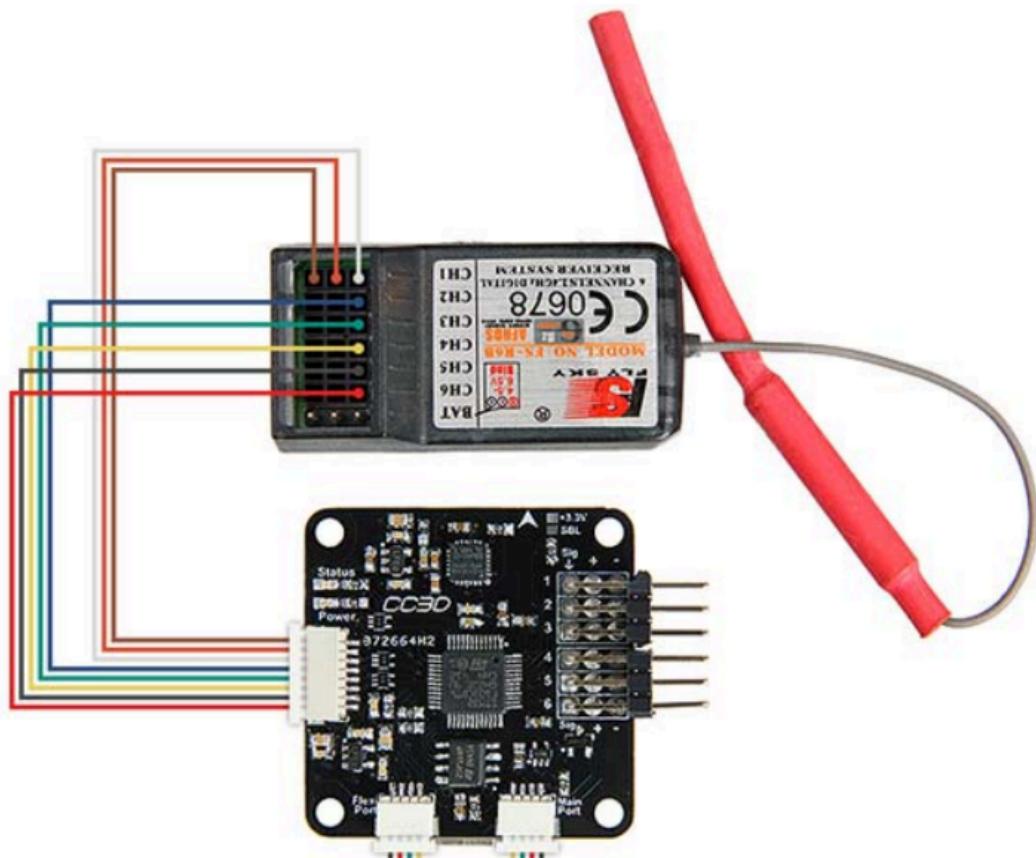
● Connections

The connections will be divided into 2 parts

1. CC3D and Receiver
2. CC3D and Esc Connections

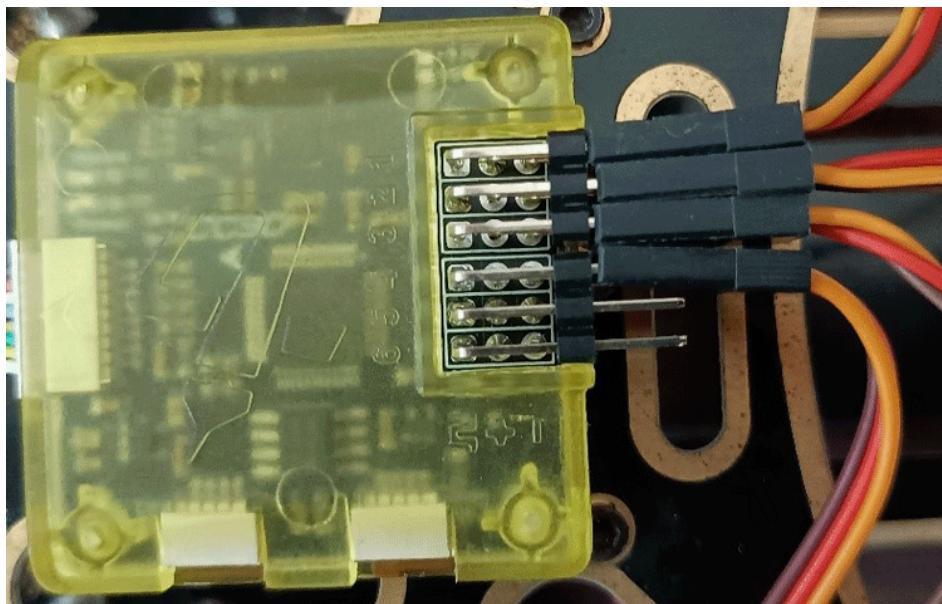
Step 1 : connect the I/O Flexi Cable

Step 2 : Start connecting each wire to receiver as shown in diagram below

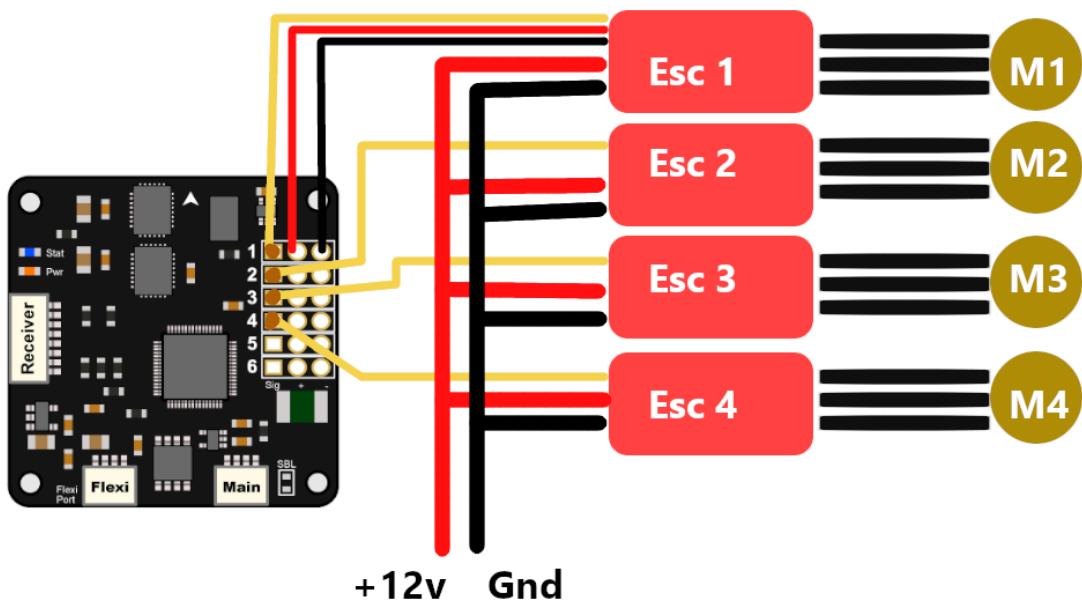


Receiver connections are done.

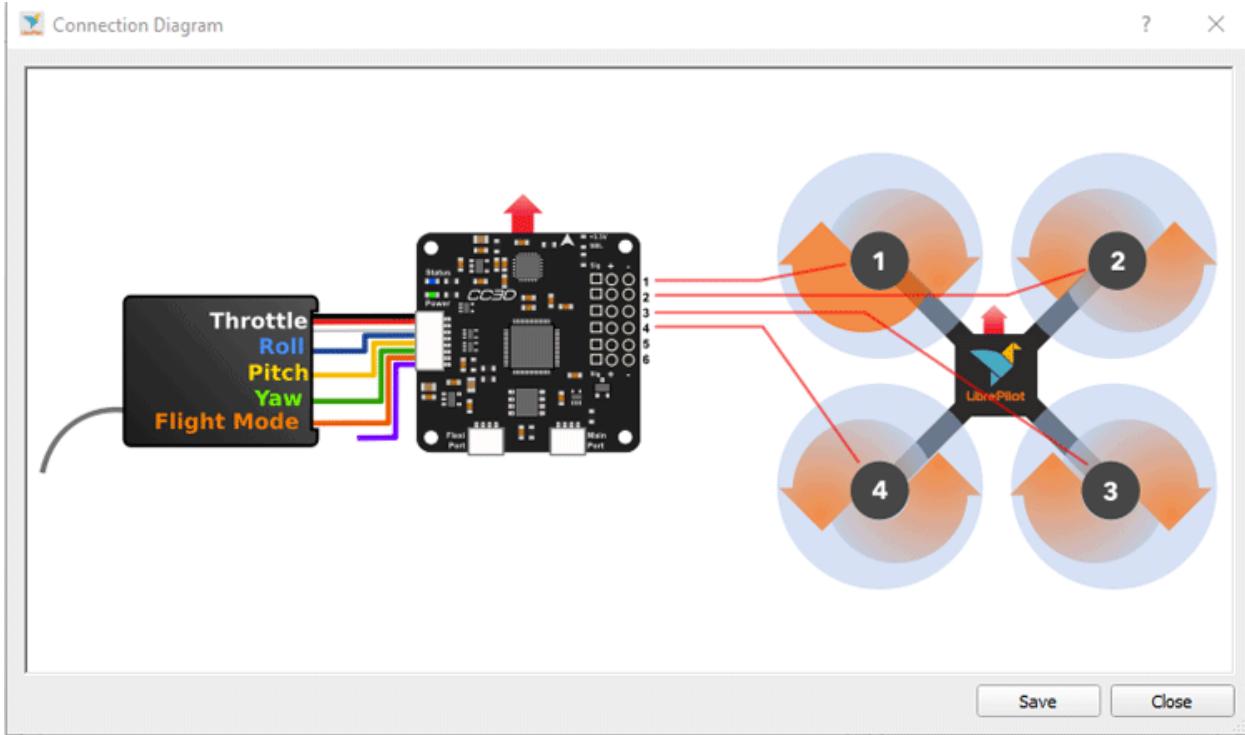
Step 3 Connect the 3 pin cable from ESC
To the signal port as shown in fig below



Make sure Signal cable of Esc(Yellow/White) is connected to S pin and not reversed.



Now Every flight controller has a different motor placement configuration whereas CC3d for Quadcopter has this kind of placement

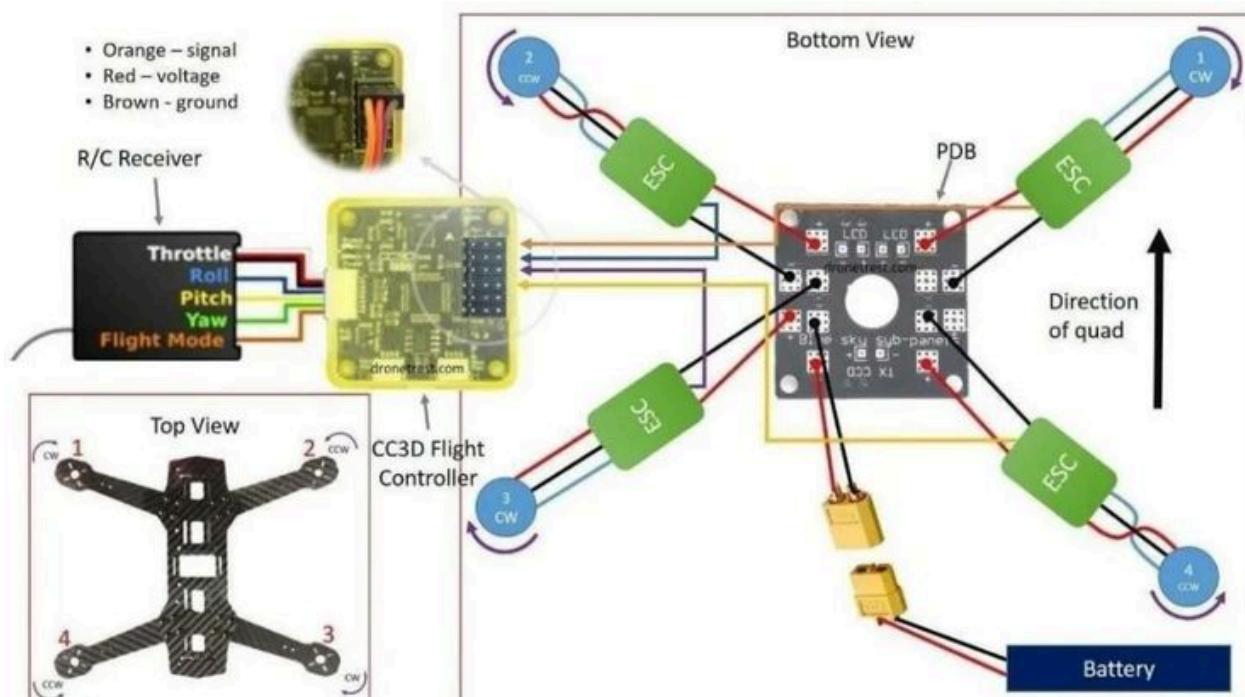


Make sure your signal wire of motor1 (top left) is connected to 1st port of Esc port and likewise with other

- The 2,4 motors should run in anticlockwise direction whereas 1,3 should run in clockwise direction, this makes sure that the motor friction of opposite pairs counter each other and doesn't add up, or else it would make the drone go in continuous Yaw change.
- The direction of drone is controlled by varying the speed of different pairs of motors
For eg if you want to go forward the motor in the back 4,3 will rotate faster to produce more thrust, thus changing its angle to move forward

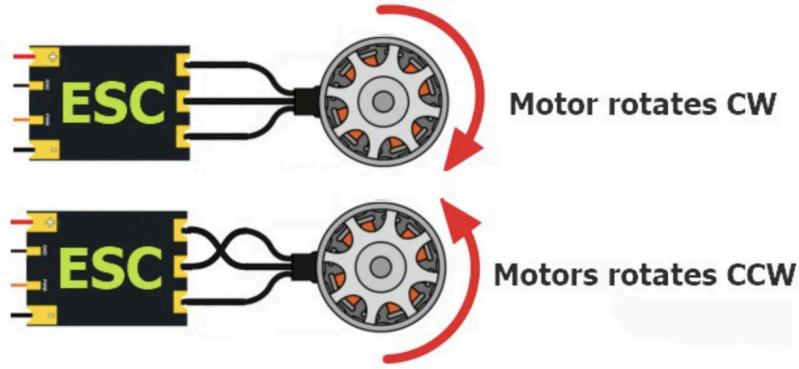
To Roll left the motors on the Right pair rotates faster.

- And to Yaw the opposite pair motor slows down or speeds up changing its angular inertia making it to yaw left or right.
- The Flight controller has an inbuilt accelerometer and gyroscope which collects data of drone's orientation and helps drone stabilize in mid air on top of commands from the pilot.



This is how your connections should look.

Tip- If your motor is not rotating in the right direction as shown in fig above, Since it's a 3 phase motor inverse any two cables of that brushless motor, and the direction of the motor will change.



**** Do Not attach propellers if you power up drone while programming or setup****

Note- Make sure the direction of the arrow on the FC board is in the forward direction of the motor.