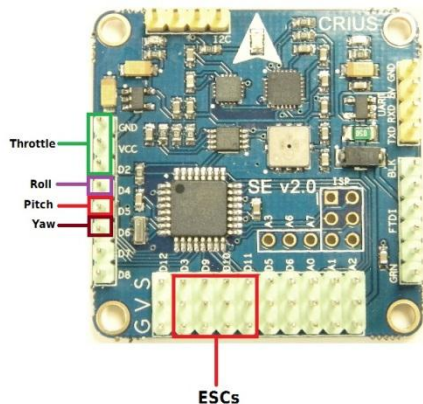


## MultiWii SE v2.0 Control Board Set-Up

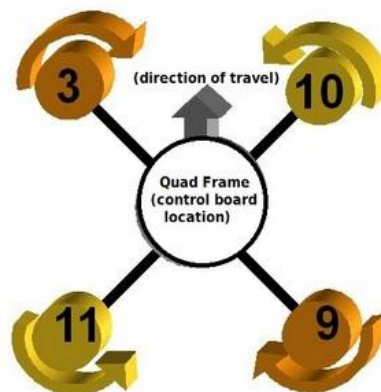
### For Quadcopter

The following are basic instructions for setting up the MultiWii SE control board for a quad-copter. For additional information, please refer to [www.multiwii.com/connecting-elements](http://www.multiwii.com/connecting-elements).

MultiWii SE v2.0 Control Board

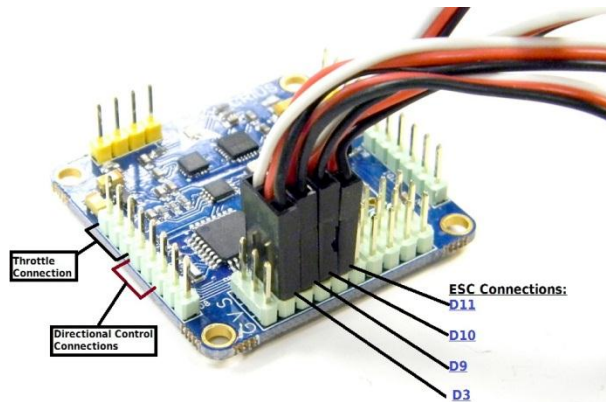


1. Before making connections to the control board, be sure that all motors are properly balanced and that the throttle range has been set for each ESC.
2. The following diagram shows the configuration of the four motors for a classic x-style quadcopter.

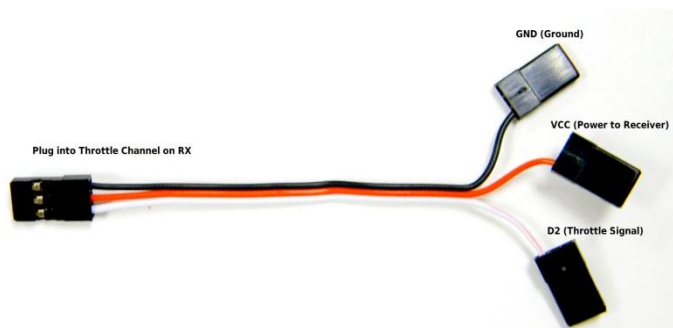


Please note that the motor numbers will correspond to their ESC connections on the MultiWii control board, as follows: 3 = D3, 9 = D9, 10 = D10, 11 = D11. The above illustration also indicates the correct direction of rotation for each motor; these directions of rotation can be changed by swapping motor wire connections between motor and ESC.

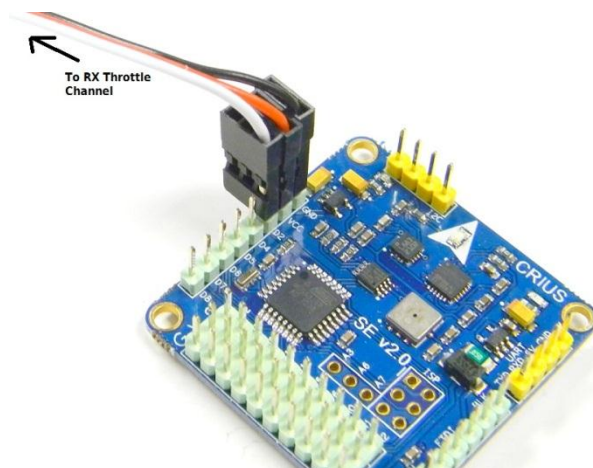
3. Connect each ESC to its appropriate position as illustrated below. Be aware of polarity: Ground (G) = Black; Voltage (V) = Red; Signal (S) = White



4. Next, install the throttle cable on the board. This cable consist of three JR plugs with one wire each, grouping to a single JR plug at the opposite end which will be plugged into the throttle channel of your receiver.

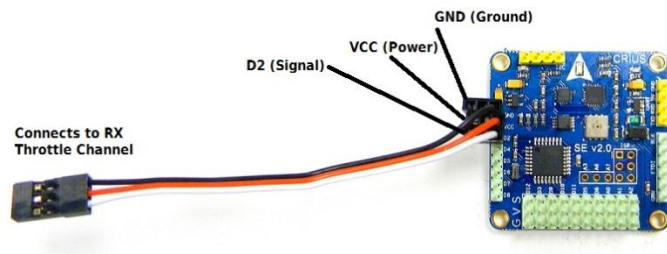


Install the throttle cable on the board as shown in the below illustration:



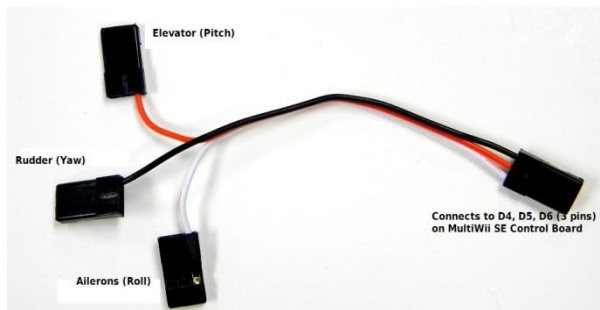
(previous ESC connections are not illustrated in the photo for sake of clarity)

Here is another view of the throttle cable connections on the control board:

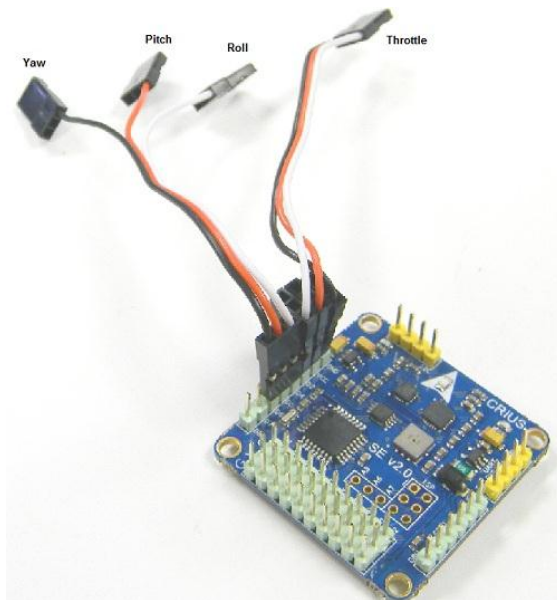


(previous ESC connections are not illustrated in the photo for sake of clarity)

5. Next, connect the cables for your directional controls (side-to-side [roll], forward/backward [pitch] and left/right [yaw]), using the cable shown below:



The connections on the board are illustrated as follows; note that the throttle cable is shown attached in this photo:



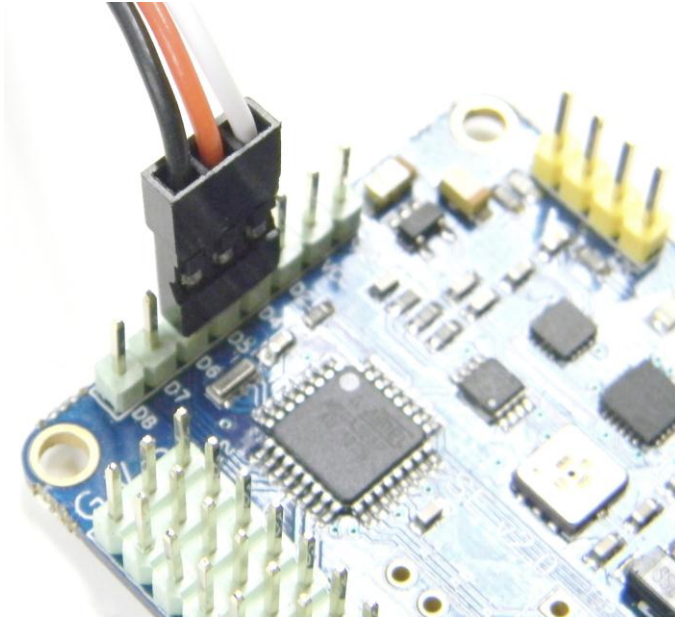
(for sake of clarity, the ESC connections are not shown in this photo)

White (Ailerons/Roll): Connect to D4 on the board / Connect to Aileron Channel on RX

Red (Elevator/Pitch): Connect to D5 on the board / Connect to Elevator Channel on RX

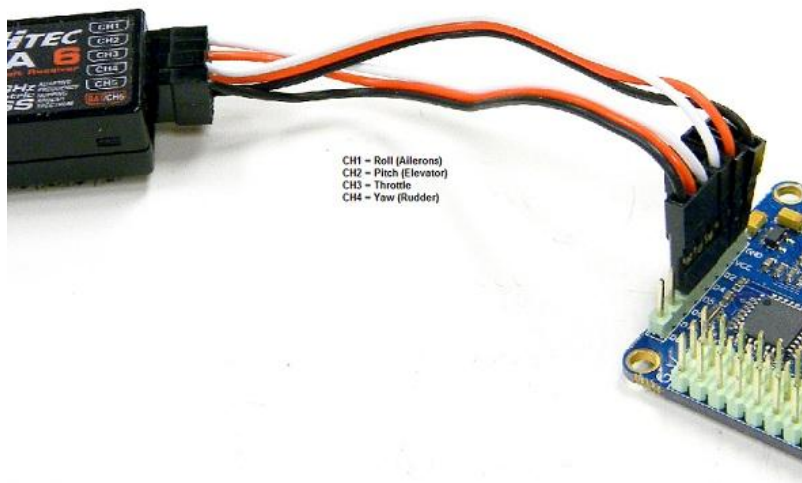
Black (Rudder/Yaw): Connect to D6 on the board / Connect to Rudder Channel on RX

**Here is another illustration of the control cable connections:**



Each pigtail (roll, pitch, yaw) connects to the appropriate channel on your receiver (rudder, elevator, ailerons)

**The below illustration shows the completed control board, with all connections in place, including the connection to the receiver:**



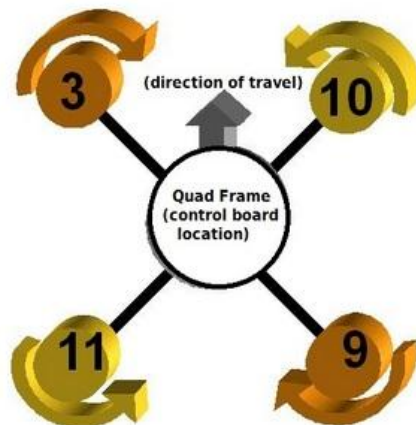
6. To test the control board, proceed as follows:

\*Perform this test without propellers installed on your motors, for the sake of safety.

- Turn on your transmitter. Be sure that your left (throttle) stick is all the way down.
- Make sure all control trims are set to neutral.
- Adjust your end points (EPA) to at least 125%.
- Adjust your exponential (EXPO) to 30 for Roll, Pitch and Yaw (Ailerons, Elevator, and Rudder)
- Turn on high rates.
- Plug in your flight battery.
- To arm the quad-copter, push your left (throttle) stick to the lower right. The blue light on the control board will come on and remain lit.



- Once the copter is armed, move the left (throttle) stick up about  $\frac{1}{4}$  of the way. All four motors should begin rotating simultaneously. Check to be sure that each motor is rotating in the proper direction according to the diagram below. The direction of motor rotation can be changed by swapping out motor wire connections between each motor and ESC.



(the arrow at the top of the drawing indicates the forward direction of travel, or the front of the quad-copter)

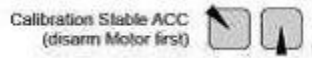
7. Once you have verified that the connections on the control board are correct and that all motors are responding correctly, disarm the quad-copter by moving your left (throttle) stick to the lower left quadrant on your transmitter.



- Unplug your flight battery.
- Turn off your transmitter.
- Install your propellers on each motor, paying attention to standard-rotation (counter-clockwise motor rotation) and reverse-rotation (clockwise motor rotation).

11. With all propellers installed securely, it is now time for your test-flight and the calibration of your gyro and accelerometer. Be sure to perform this testing outdoors in an open area free of obstructions such as buildings, vehicles, trees, power/telephone lines and unwitting bystanders.

- a. Turn on your transmitter.
- b. Plug in your flight battery.
- c. Calibrate your accelerometer (ACC), by moving the right stick (pitch) all the way down, and your left stick (throttle) to the upper right quadrant on your transmitter.



- d. Next, arm the quad-copter, by moving your left (throttle) stick to the lower right quadrant on your transmitter.



- e. To calibrate the gyro, move the right (pitch) stick all the way down, and the left (throttle) stick to the lower left quadrant.



- f. If necessary, rearm the quad-copter, and take your first test flight (throttle up slowly with your left stick, and be prepared to control pitch and yaw with your right stick):

**Left Stick**

**Throttle:** Up = Ascend

Down = Descend

**Yaw:** Left = Pivot Left

Right = Pivot Right

**Right Stick**

**Pitch:** Up = Forward

Down = Backward

**Roll:** Left = Move Left

Right = Move Right

For more information including alternative configurations, control for GPS and/or camera, and advanced programming options please refer to [www.mutiwii.com](http://www.mutiwii.com)