Setting-Up your Board a way to adapt KK2.0 and upgrade with sonar.

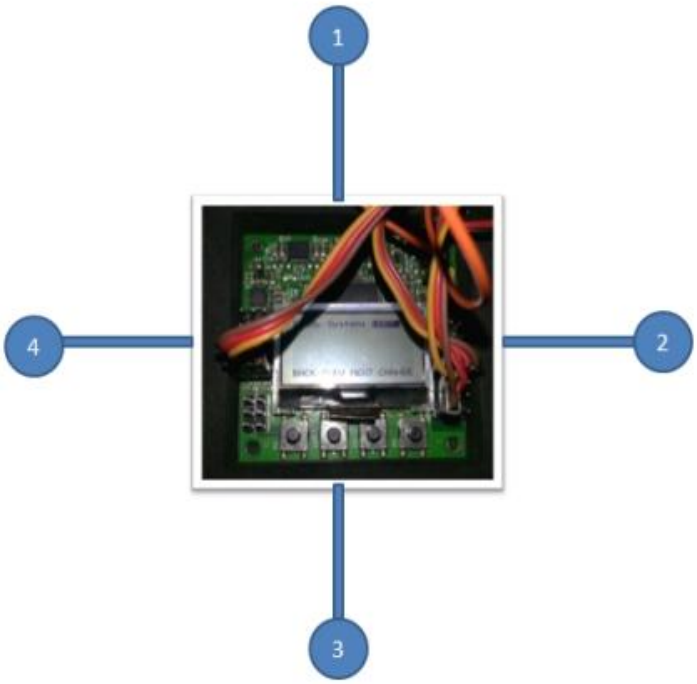
Hobbyking KK2.0 Multi-rotor LCD Flight Control Board (PRODUCT ID: 9171000073)

Ultrasonic Module HC-SR04 Arduino (PRODUCT ID: 387000005)

"It is strongly recommended to take off propellers before setting up your board at least especially for the first time. Although there is some safety internal code for known scenarios, however it does cover all possible scenarios."

Step #1 - Connecting Your Board

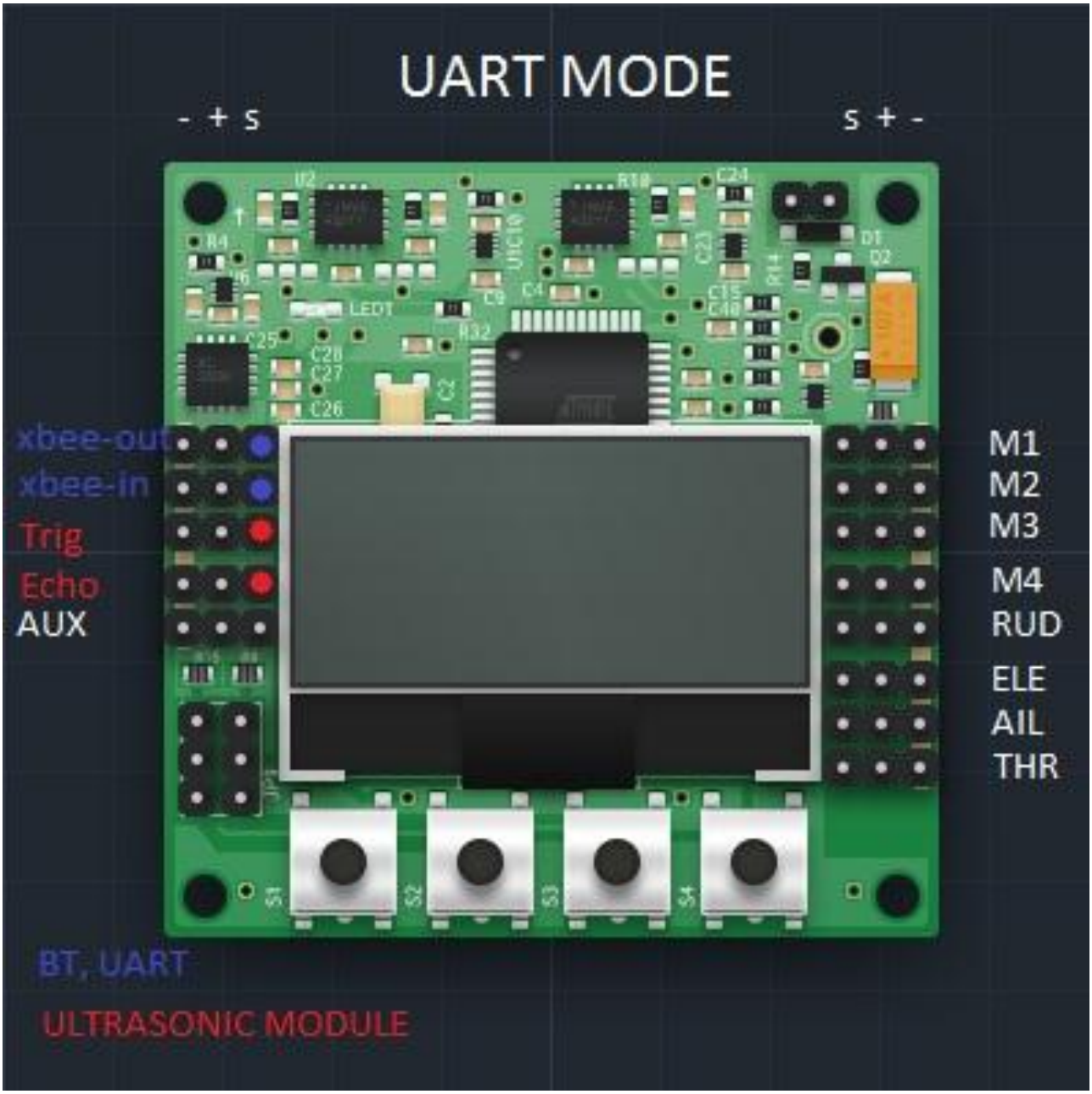
1. Put the board with the right orientation. The LCD screen top can be perpendicular to your front motor as in below figure. This orientation is fixed regardless the flying mode you choose to fly in X-mode or Plus-mode.



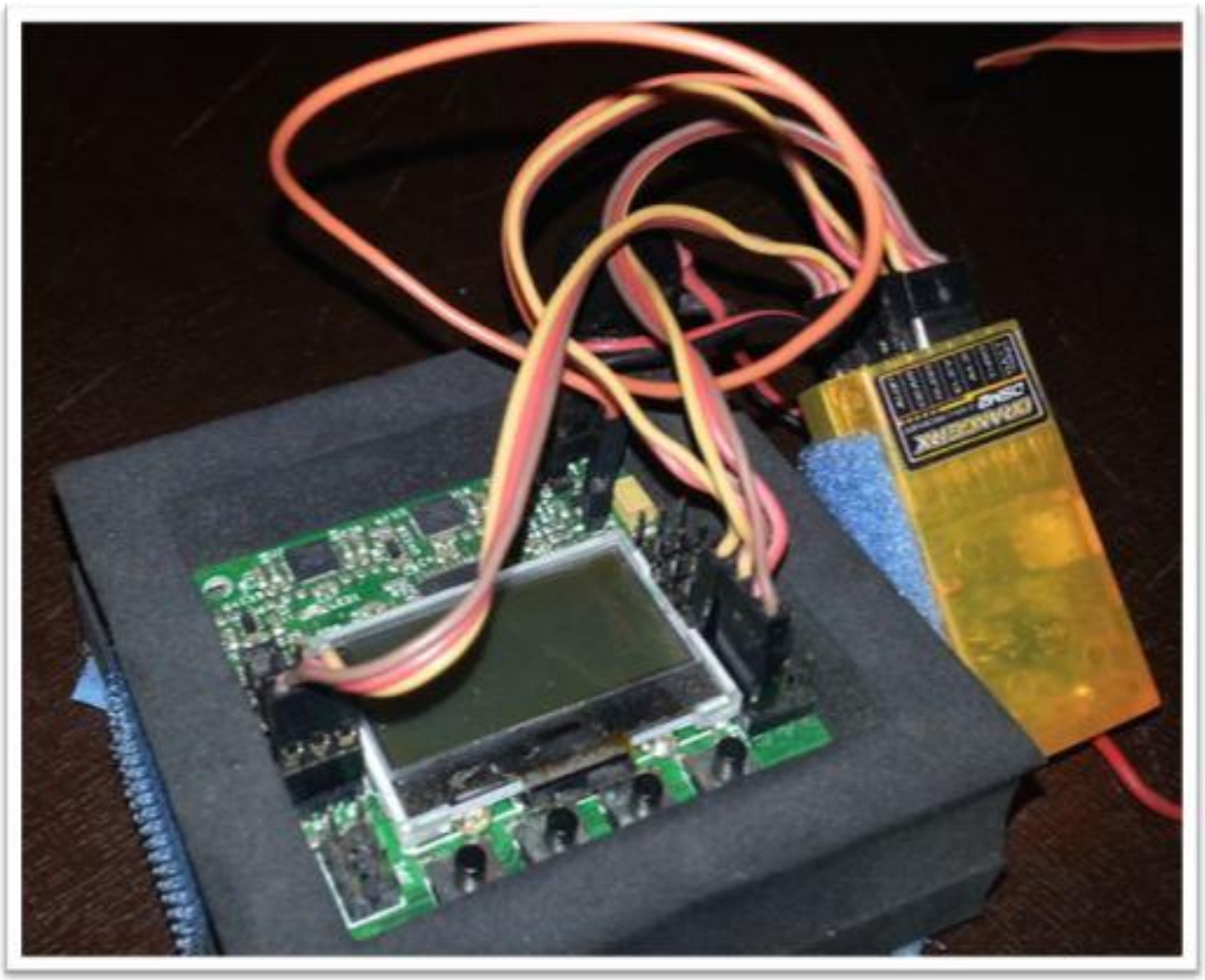
You may also want to install the board in X orientation and still be able to fly X or Plus.

2. Connect ESC motors in order M1,M2,M3,M4 clockwise where M1 is your front motor.

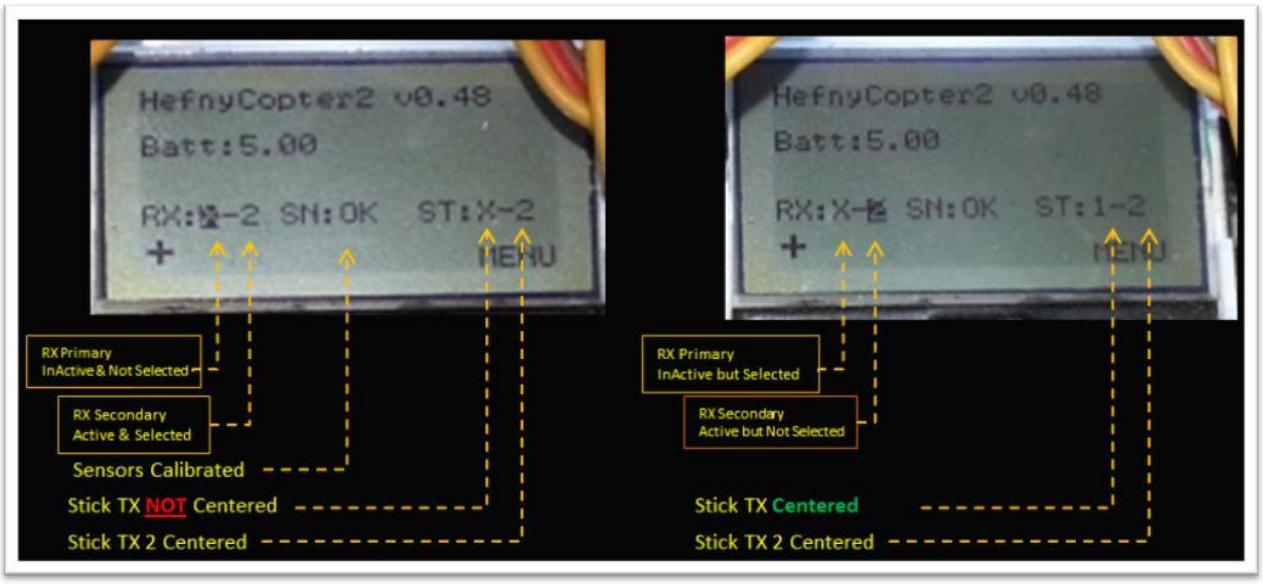
3. Connect your Primary Receiver [RX-2] to pins RUD – ELE – ALI – THR. These are the pins originally known as M5,M6,M7,M8. The following figure shows the pin assignments for HefnyCopter2.


UART MODE
- + s
s + -
xbee-out
xbee-in
Trig
Echo
AUX
M1
M2
M3
M4
RUD
ELE
AIL
THR
BT, UART
ULTRASONIC MODULE


XBEE-OUT
XBEE-IN
AUX
M1,2,3,4
RUD
ELE
AIL
THR



Please note that Primary Receiver is the [2] in the above figure.



The above figure shows two different screens to explain different status and connections.

The LCD on the left is typical when using XBEE, as secondary RX is not selected and no signal detected and primary RX is selected and signal detected. "RX: [X]-2" where X means no signal detected and the dark background means disabled and not selected.

The LCD on the right is typical when buddy mode is enabled and there are two RX connected. secondary RX is selected however no signal detected - you can open the second transmitter to swicth it to RX: 1-[2] instead of RX: X-[2]. ST:1-2 means that both RX primary & secondary have been sticks centered.

Step #2.1 - Sensor Calibration

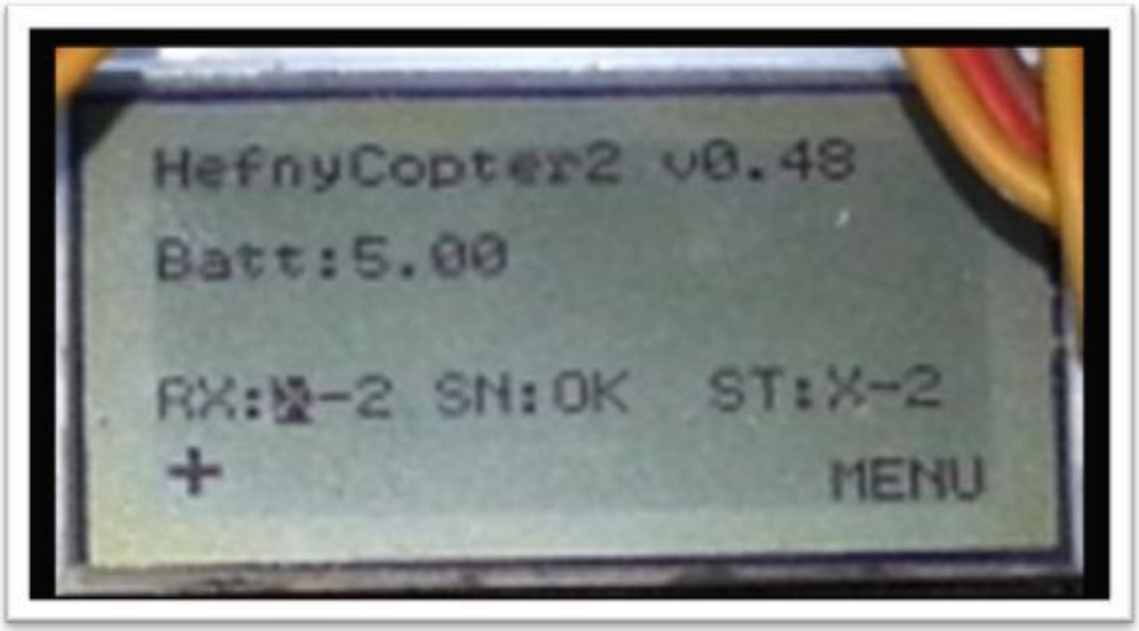
1. Turn-on Transmitter.
2. Turn-on Board. If you never calibrated sensors before you should find on LCD “SN:Err” which refers to sensor status.
3. Put your Quadcopter on a flat horizontal surface.
4. Navigate to “Sensor Calibration”.
5. Press Continue. Once you hear the beep you can press back.
6. The homepage now should have “SN:OK”.

You may repeat this operation as much as you want.

Step #2.2 – Stick Centering

1. Turn-on Transmitter.
2. Whenever you make calibration make sure that TX trims are all ZEROs.
3. Turn-on Board.
4. If you have never calibrated your receiver before you should find on LCD “ST:X-X” which means no calibration made to either receivers RX-1 & RX-2 *"RX-2 is the primary receiver"*.
5. Use buttons on board to navigate to “Stick Calibration”.
6. You can use this screen to calibrate primary & secondary receivers in buddy mode.

7. Now move sticks up & down, left & right. Moving speed is not a factor, but you need to leave the stick for a second or two on each corner to ensure you read the extreme values on both sides.
8. The AUX channel should be toggled as well. You can connect it to switch or tri-switch as you wish.
9. Press Continue and you will hear a long beep. If you hear three short beeps then there is an error. That means you forgot to move one of the sticks or one of channels are not activate so check wiring.
10. After successful calibration, you may press back to go to main menu.



AUX channel is something for Primary RX only. For Secondary TX just ignore it. This is the only PIN from the left side of the board that is connected to the primary RX. Others are left not connected if there is no Secondary TX.

This is a Video that shows necessary setup for flying
http://www.youtube.com/watch?feature=player_embedded&v=JZIKjgY8NcY