Note: This manual is prepared for mission planner software version 1.3.62

Step 1: Software Installation

Open the Mission Planner.msi file and install (make sure internet is connected)

Step 2: Firmware Installation

1. Connect the flight controller to a laptop using a micro cable.
2. Open the Mission planner software, click initial setup.

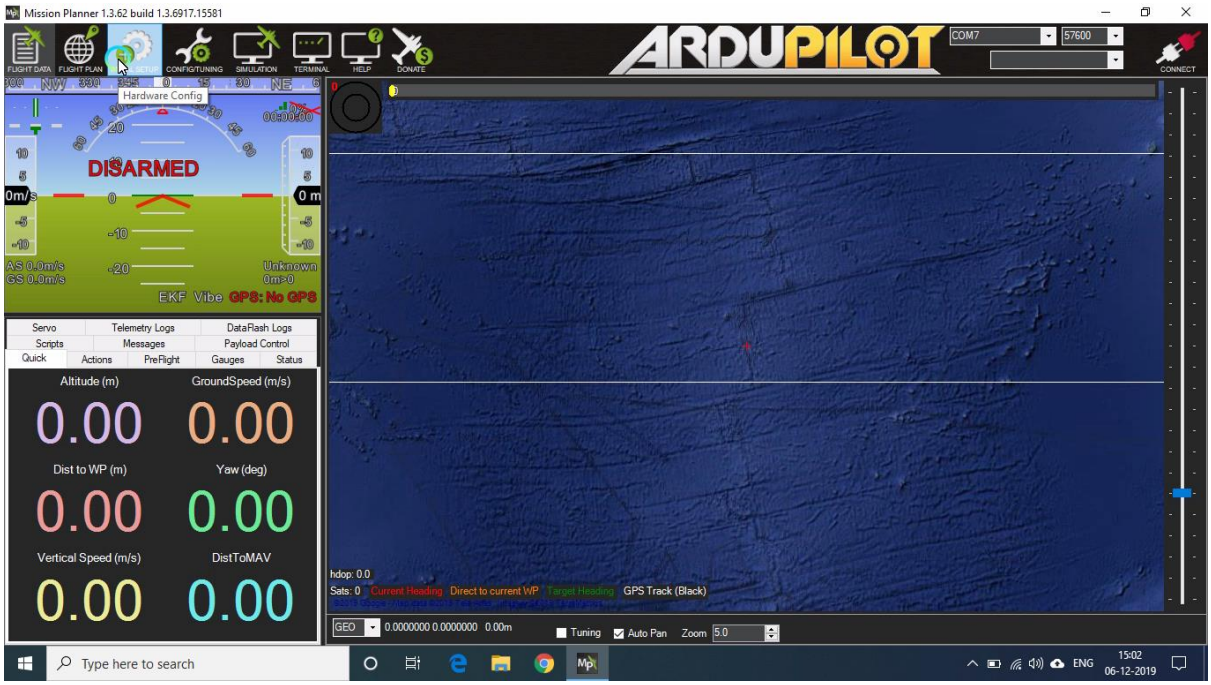

Fig.2.1

3. Then click Install firmware (make sure the internet is connected) it will update the firmware.

Fig.2.2

4. Now select the configuration (Quad). It will ask for conformation, click yes.

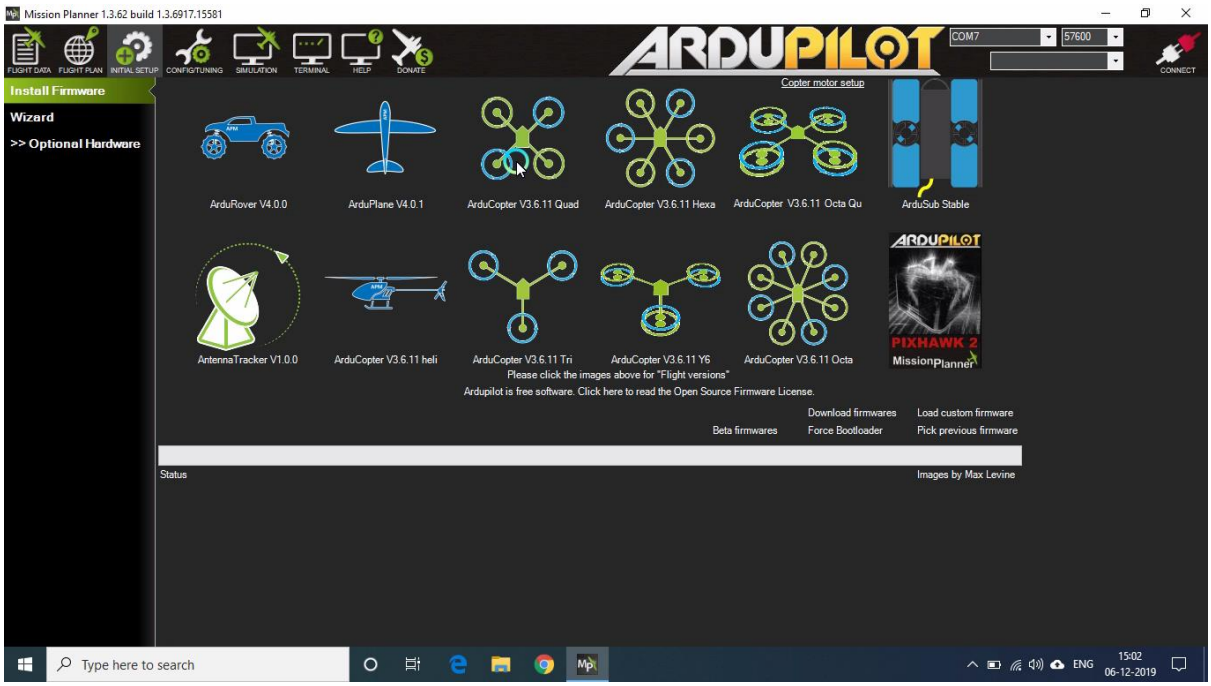

Fig.2.3

5. You will get a pop up saying “Unplug the board and then press OK and plug back in”. Do the same as per the instruction.

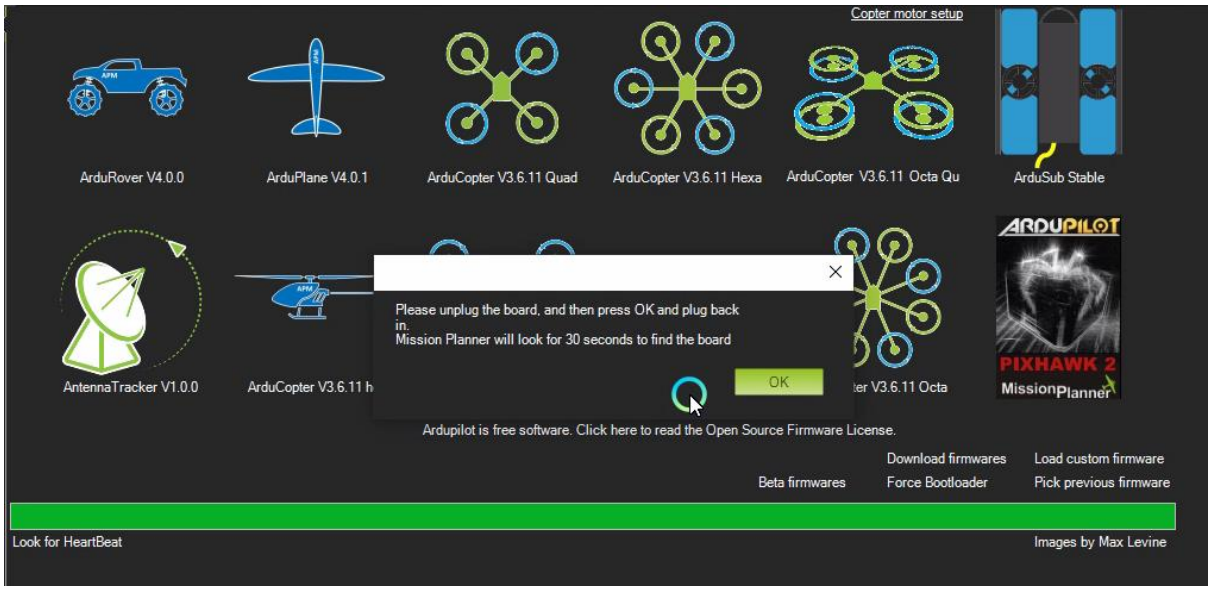

Fig.2.4

6. Now the firmware will get uploaded. If the firmware is already on the board, you will get a message like “No need to upload, already on the board”.
7. Unplug the flight controller from the laptop.

Step 3: Connections

1. Fabricate the frame and fix the motor’s, ESC’s, Flight Controller board, GPS module, Battery, Power distribution board, Telemetry module (Air), Power module, etc.

Note: Don’t fix the propellers.

2. Now, connect the motors and ESCs. Refer Fig.3.1.

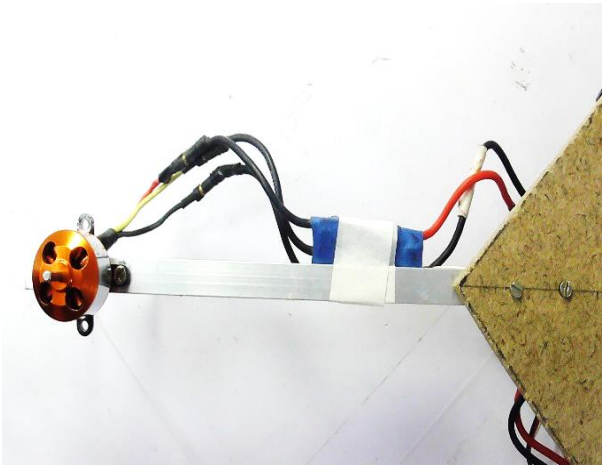

Fig.3.1

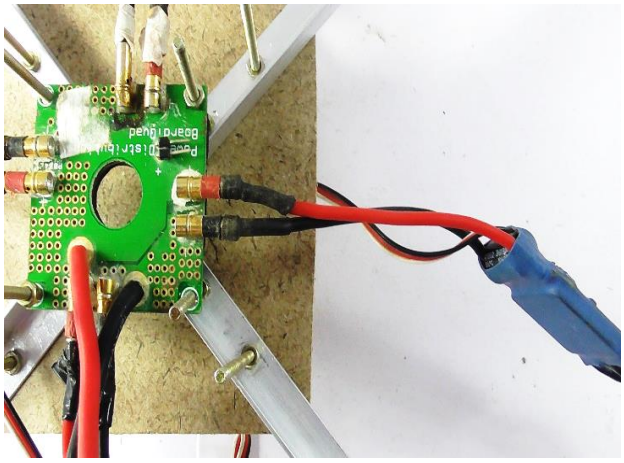

Fig.3.2

3. Then, connect the ESC to the power distribution board. Maintain the polarity (i.e. positive to positive, negative to negative) Refer Fig.3.2.
4. Connect the ESC and Flight controller as per the motor layout. Refer Fig.3.3

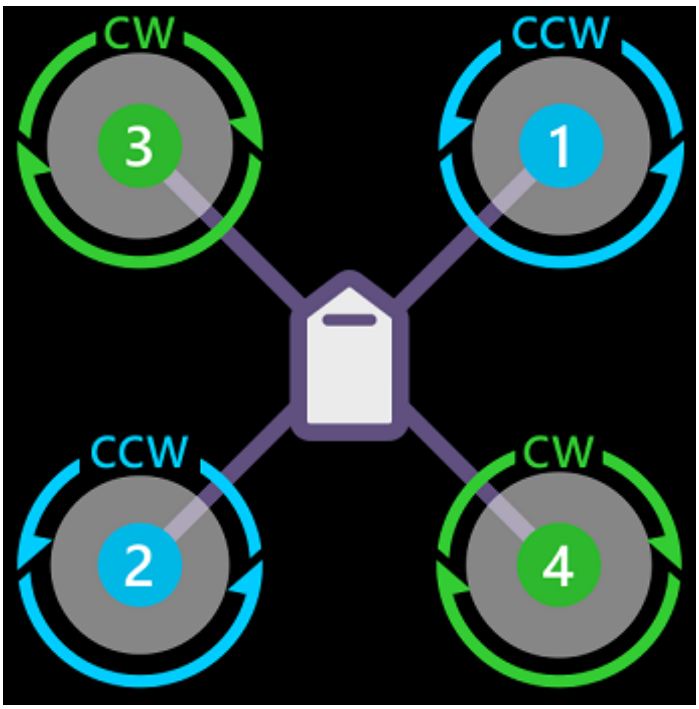

Fig.3.3

5. Connect the Motor 1 to Main out 1 (Refer Fig.3.4).

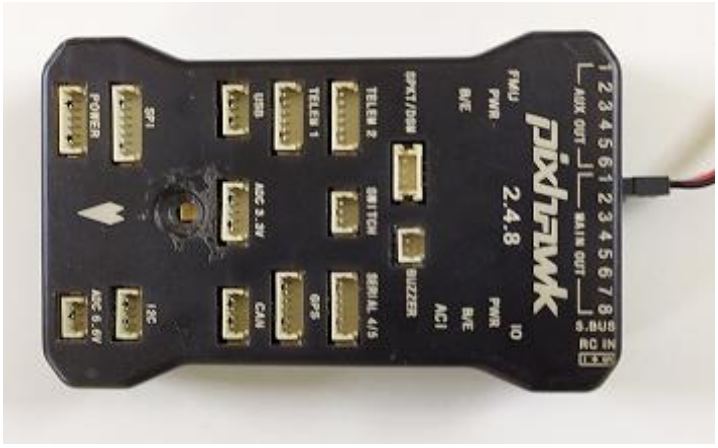

Fig.3.4

6. Similarly, Connect the other motors also.
7. Connect the Receiver (CH1) to Flight Controller (RC IN). Refer Fig.3.5.

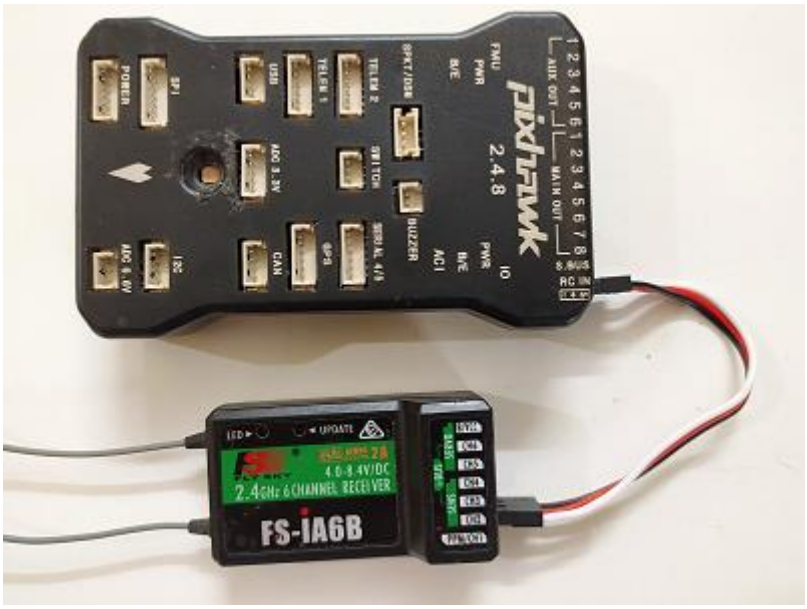

Fig.3.5

8. Now, connect the GPS module to I2C and GPS port of the Flight Controller. Refer Fig.3.6.

Fig.3.6

9. Connect the telemetry module (Air) to the Flight Controller (TELEM 1). Refer Fig.3.7.

Fig.3.7

10. Connect the power module to the Flight controller (POWER). Refer Fig.3.8.

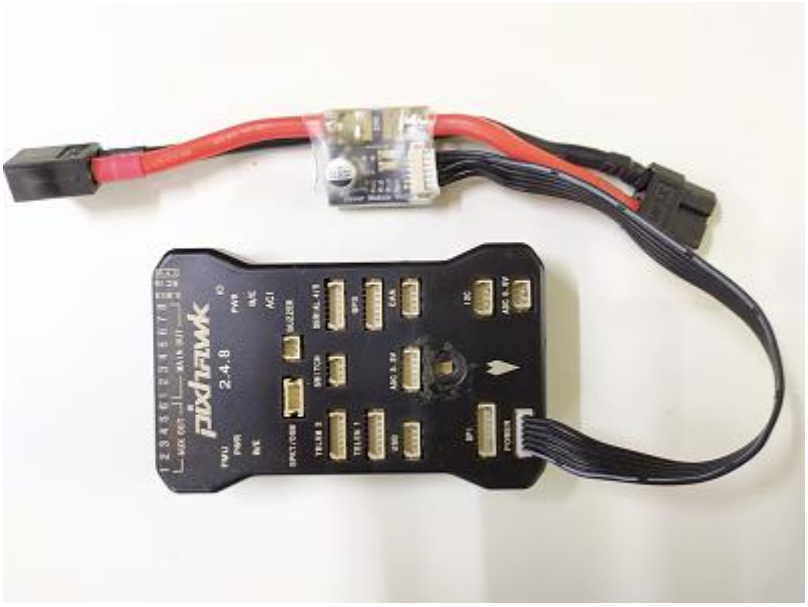

Fig.3.8

11. Now, connect one end of the power module to the power distribution board and the other end to the battery. Refer Fig.3.9.

Fig.3.9

Step 4: Initial Setup

1. Connect the Telemetry module (Ground) to the laptop.
2. In the mission planner, select AUTO and click Connect. Refer Fig.4.1.

Fig.4.1

3. Now, the telemetry module (Ground) receives the parameters from the Flight controller. Refer Fig.4.2.

Fig.4.2

4. After successfully connecting, you will get the battery details in the display. Refer.4.3.

Fig.4.3

5. Now, go to initial setup and click wizard. Then, select the frame type (Quad) and click next. Refer Fig.4.4.

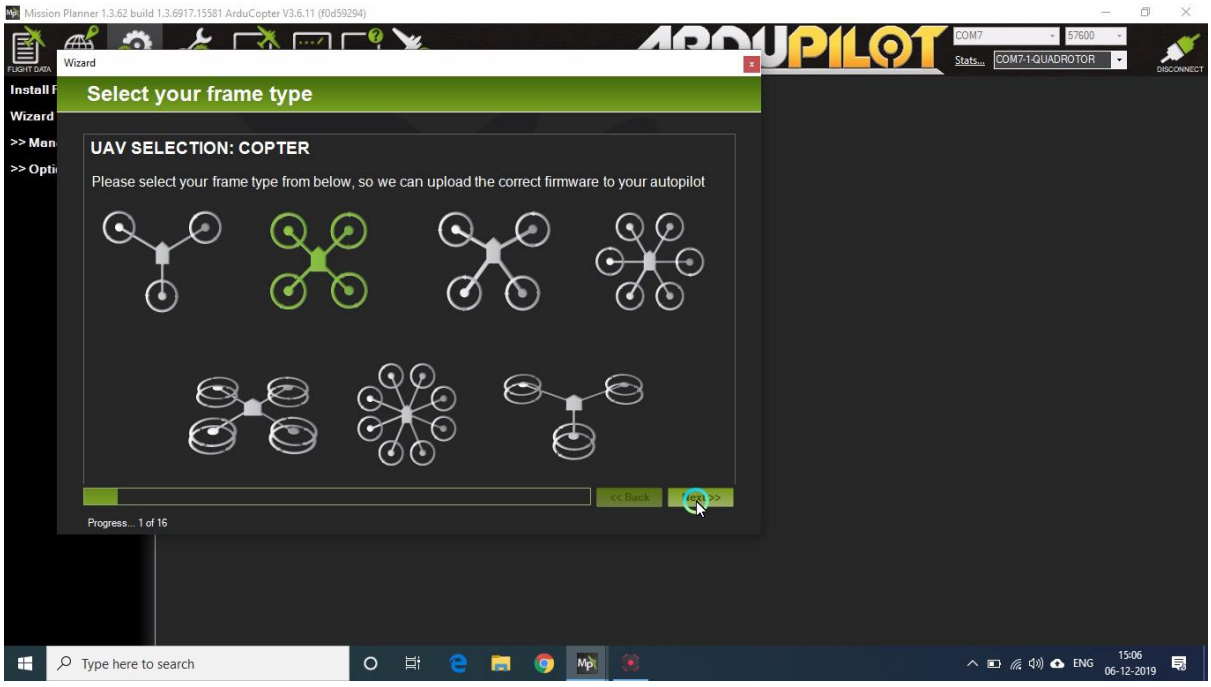

Fig.4.4

6. Select the frame layout (Quad) and click next. Refer Fig.4.5.

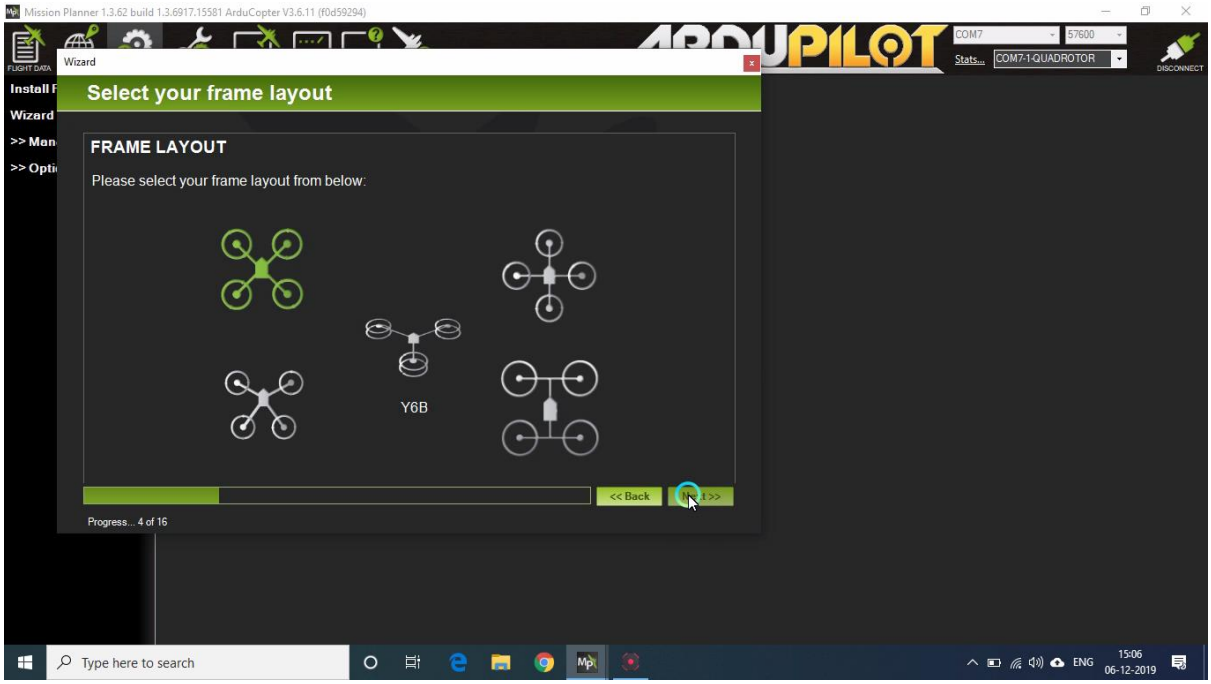

Fig.4.5

7. Now click start and do the accelerometer as per the instruction. Refer Fig.4.6. Place the vehicle level click continue. Similarly, place the vehicle left, right, nose up, nose down and upside down.

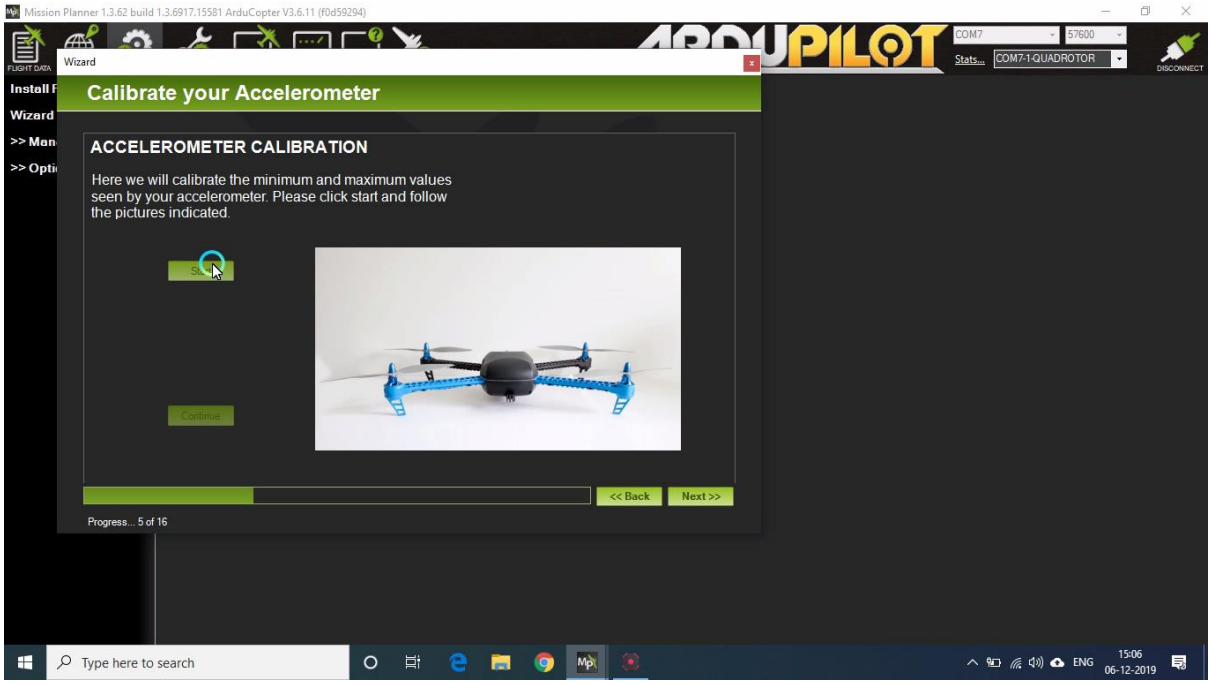

Fig.4.6

8. After successfully calibrated, it will show done. Now, click next. Refer Fig.4.7.

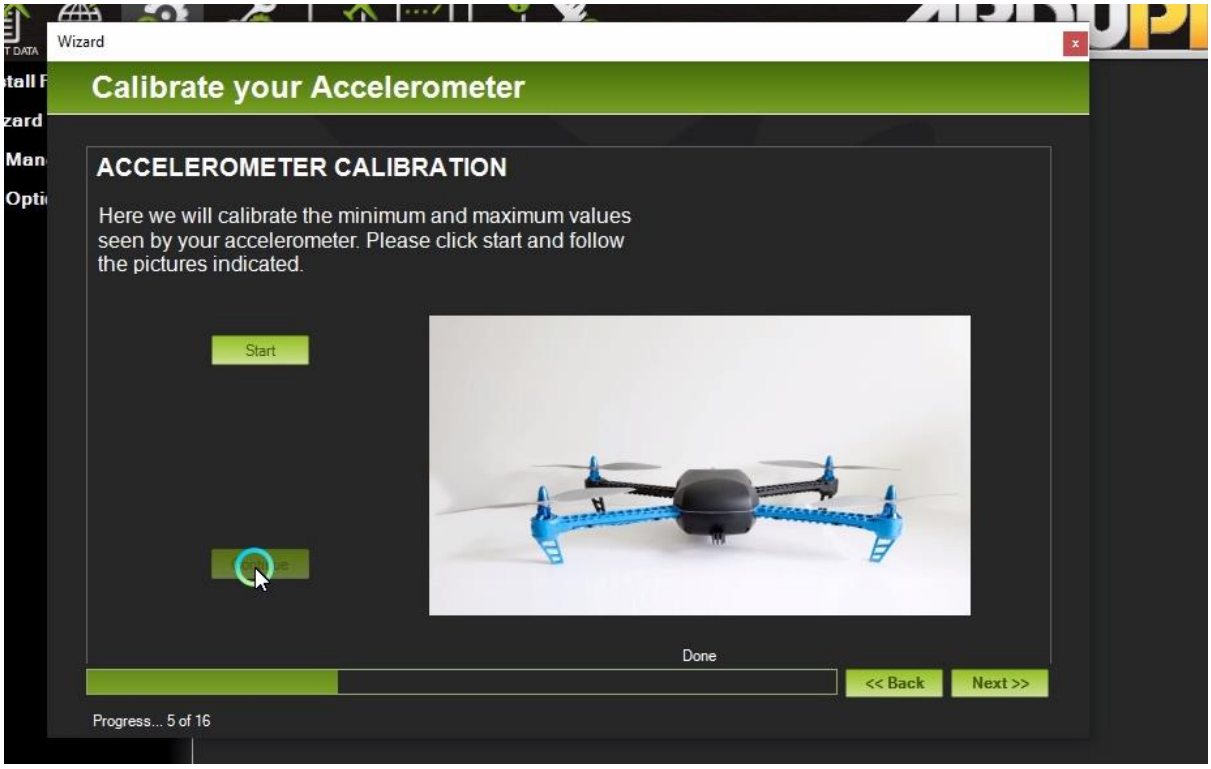

Fig.4.7

9. Next is compass calibration. Click on live calibration, then click OK. Refer Fig.4.8.

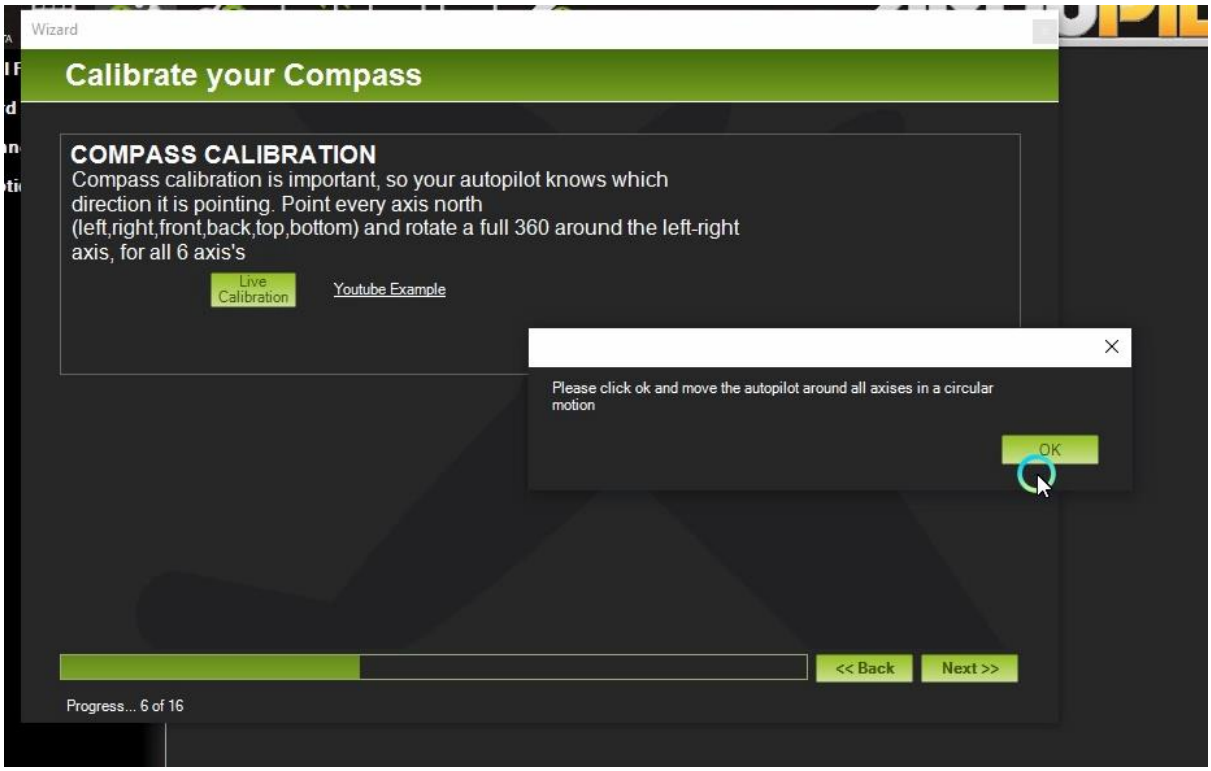

Fig.4.8

10. Now, a new window will open. (Refer.Fig.4.9) Rotate the model (360 degrees) till the window gets automatically closed/calibrated successfully. It will show the new offset values. Now click OK and then Next.

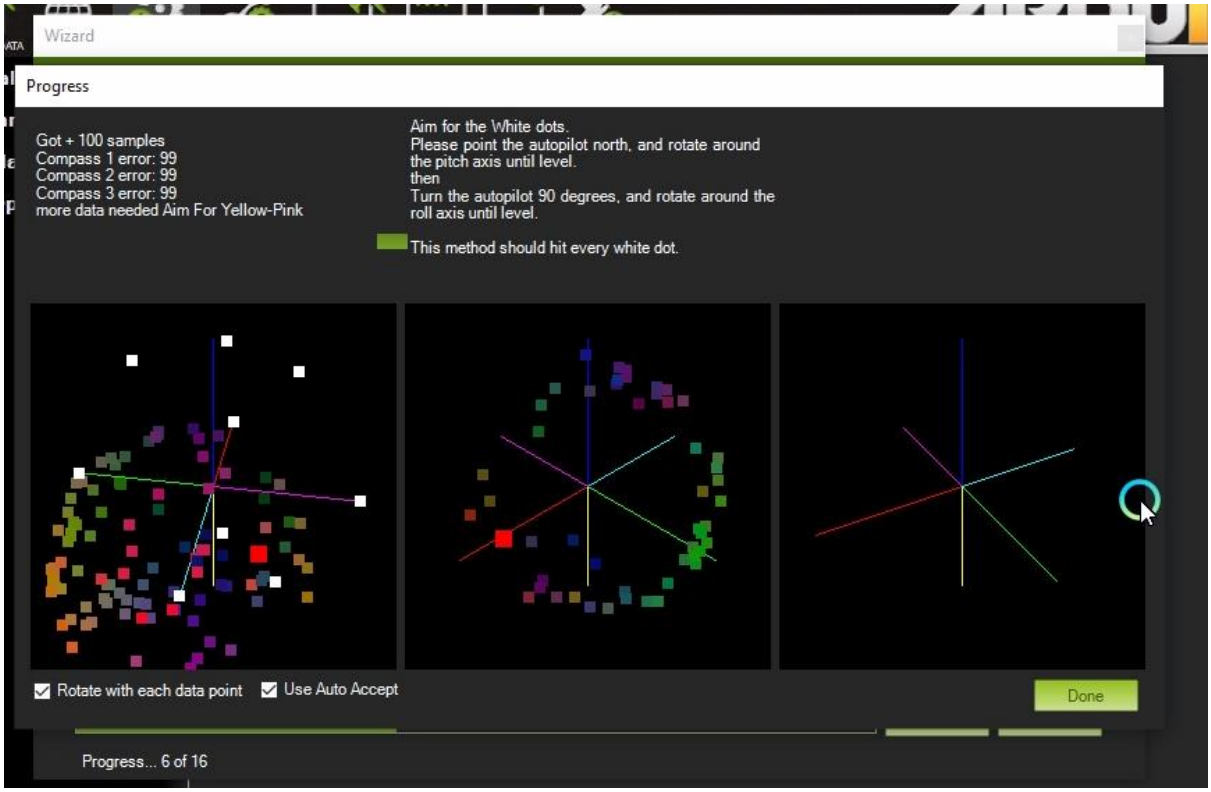

Fig.4.9

11. Now, select the autopilot version (PixHawk), sensor (3DR Power Module) and battery capacity (2200, 4400, etc. as per the requirement). And click next. Refer Fig.4.10

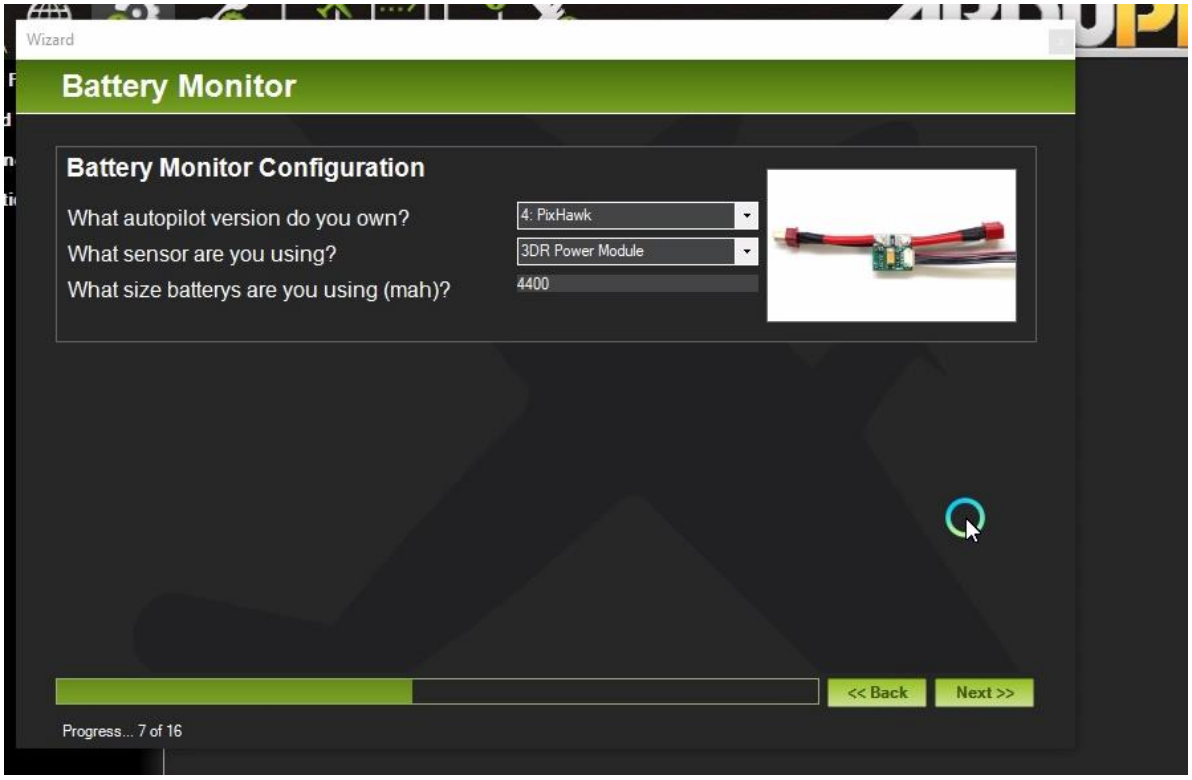

Fig.4.10

12. We are not going to attach any sonar sensor so keep it as none. Click Next. Refer Fig.4.11.

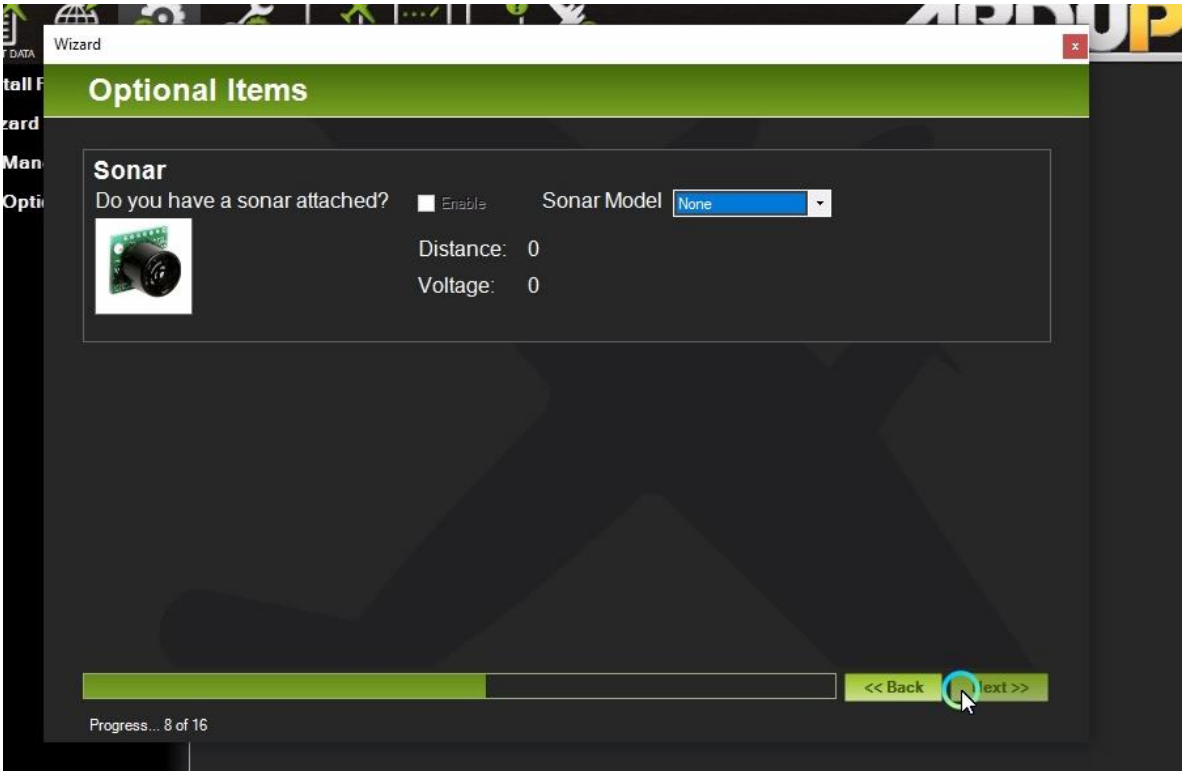

Fig.4.11

13. Now click continue and then click calibrate Radio. It will ask you to turn ON the transmitter. Turn it ON and press OK. Refer Fig.4.12.

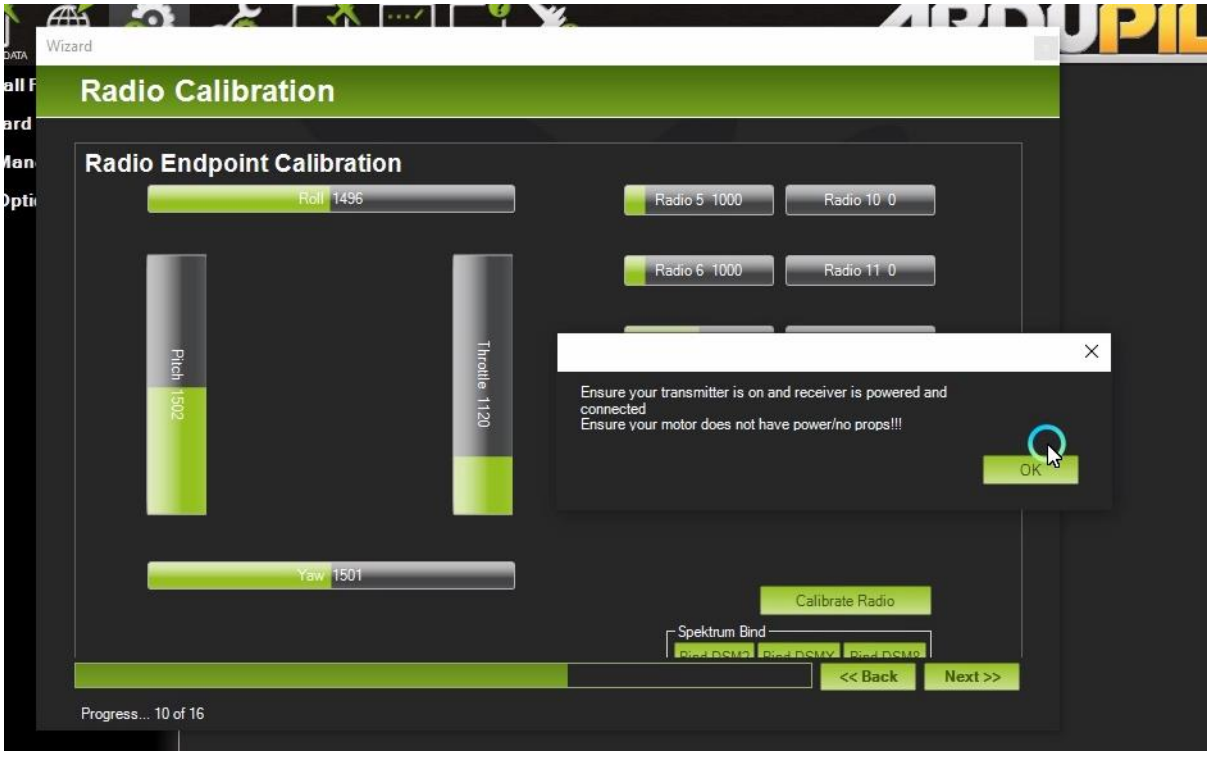

Fig.4.12

14. Now move all the sticks to the extreme limit including the auxiliary sticks.
15. After moving all the sticks, you will see a red line at the endpoints. (Refer Fig.4.13). Now, click done.

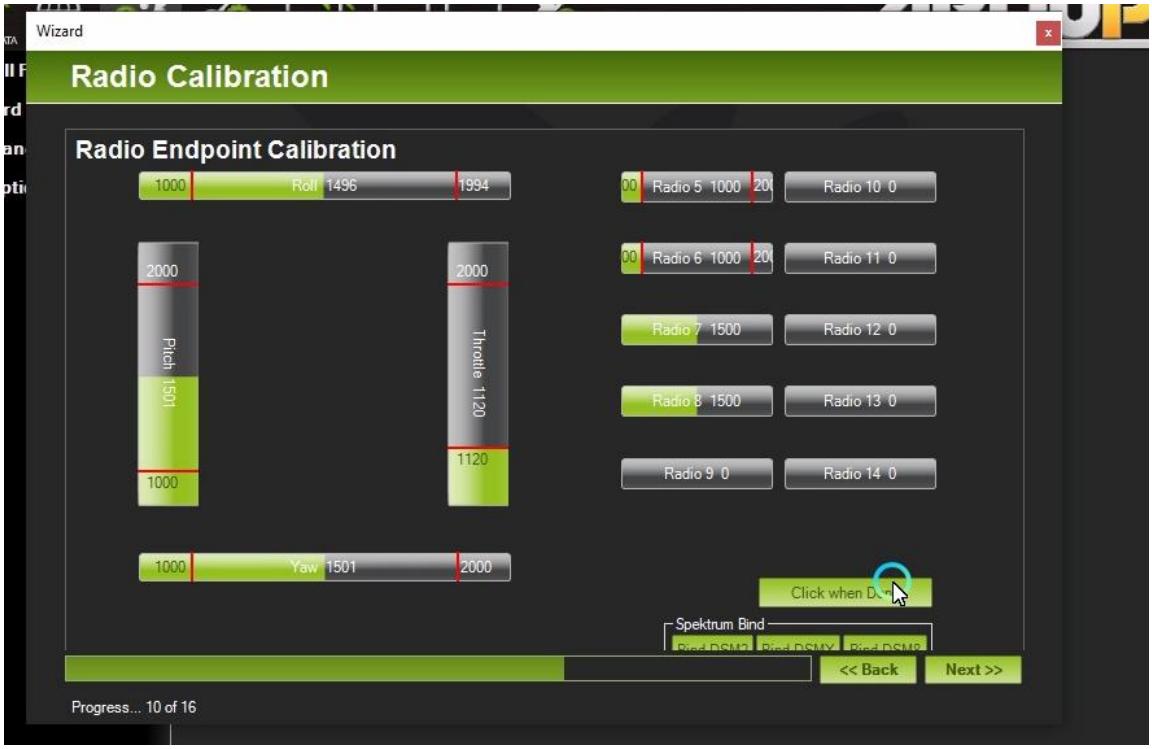

Fig.4.13

16. Now, you will see all the channel values. Press OK. Refer Fig.4.14.

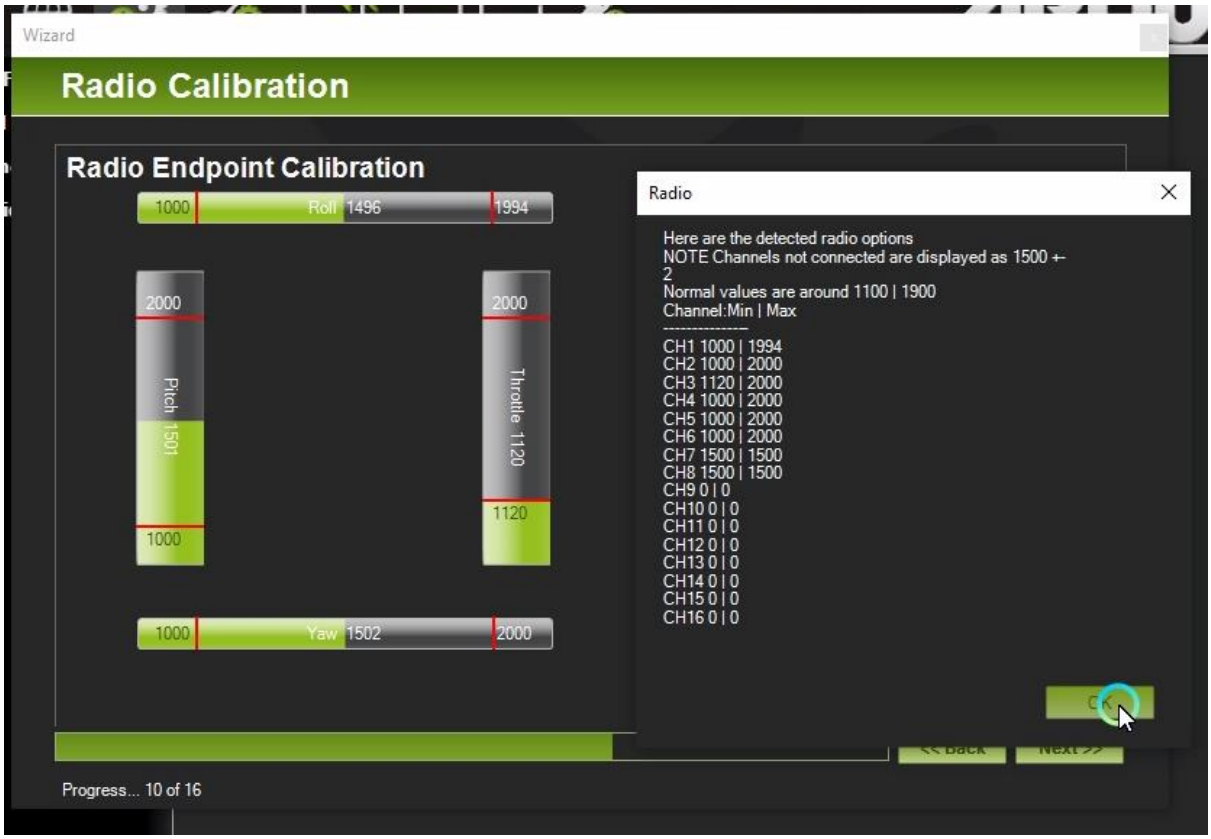

Fig.4.14

17. Now select the flight modes; Flight mode 1 – Stabilize, Flight mode 4 – PosHold and Flight mode 6 – RTL. And, click Save Modes and then click Next. Refer 4.15.

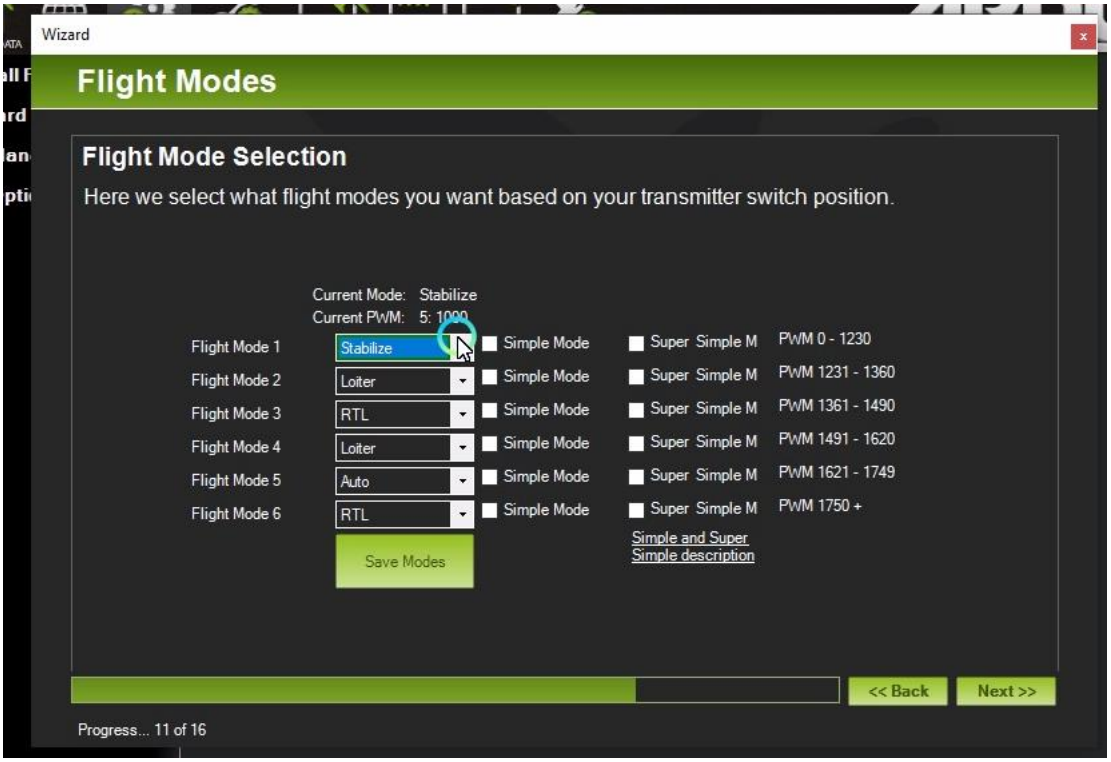

Fig.4.15

18. Now the verified things will change to green and others will be in red. Refer.Fig.4.16. Click Next.

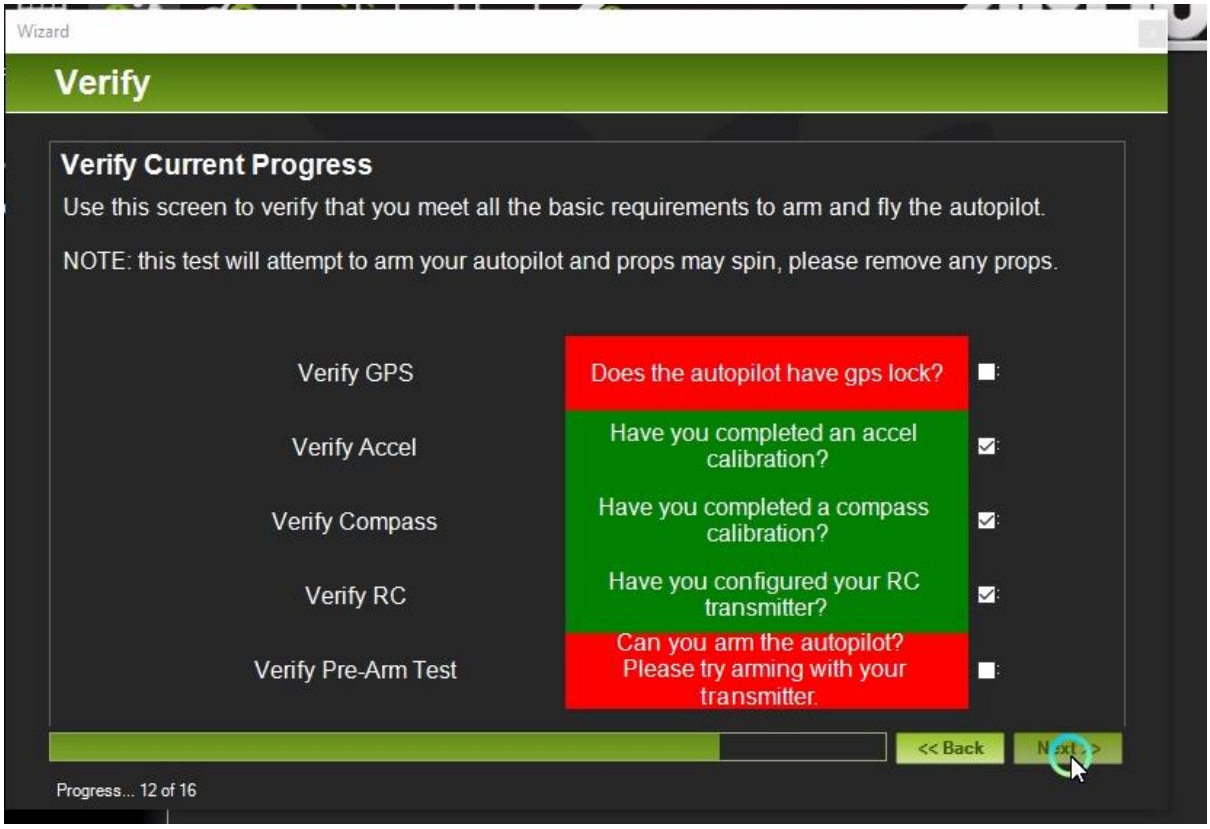

Fig.4.16

19. Now, Keep the Failsafe options to “Enable always RTL” and click Next. Refer Fig.4.17.

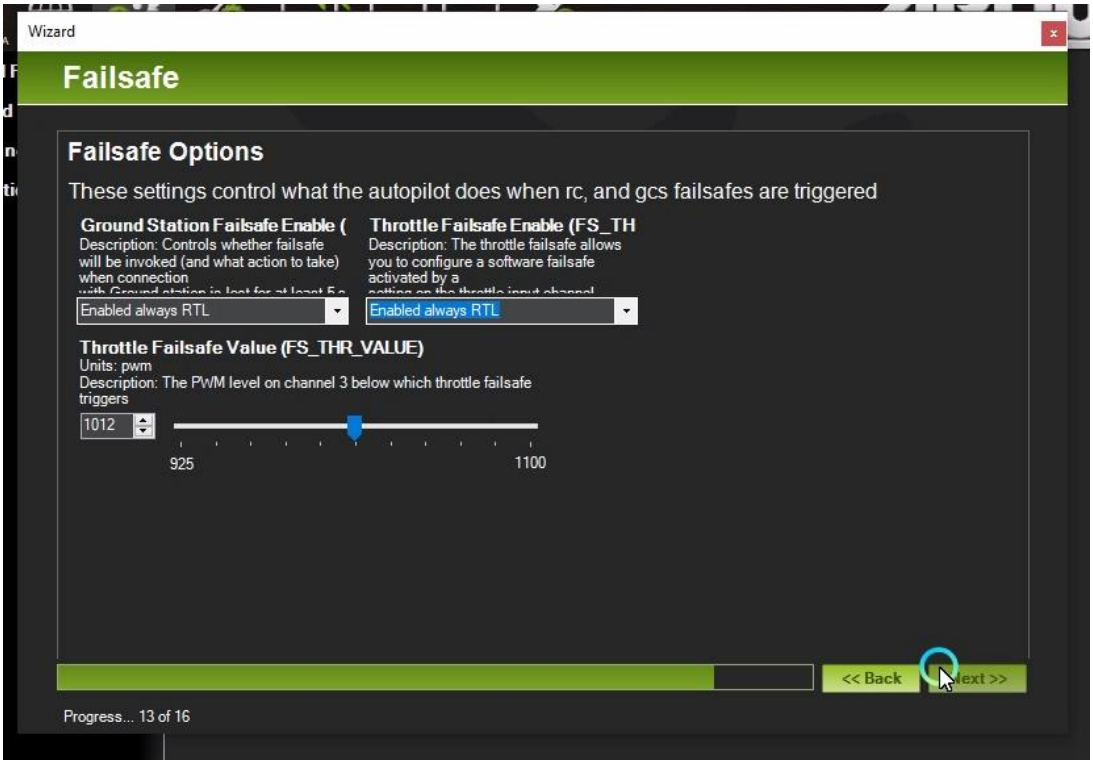

Fig.4.17

20. Enable Geo fence settings and keep the remaining things unchanged. Click Next. Refer Fig.4.18.

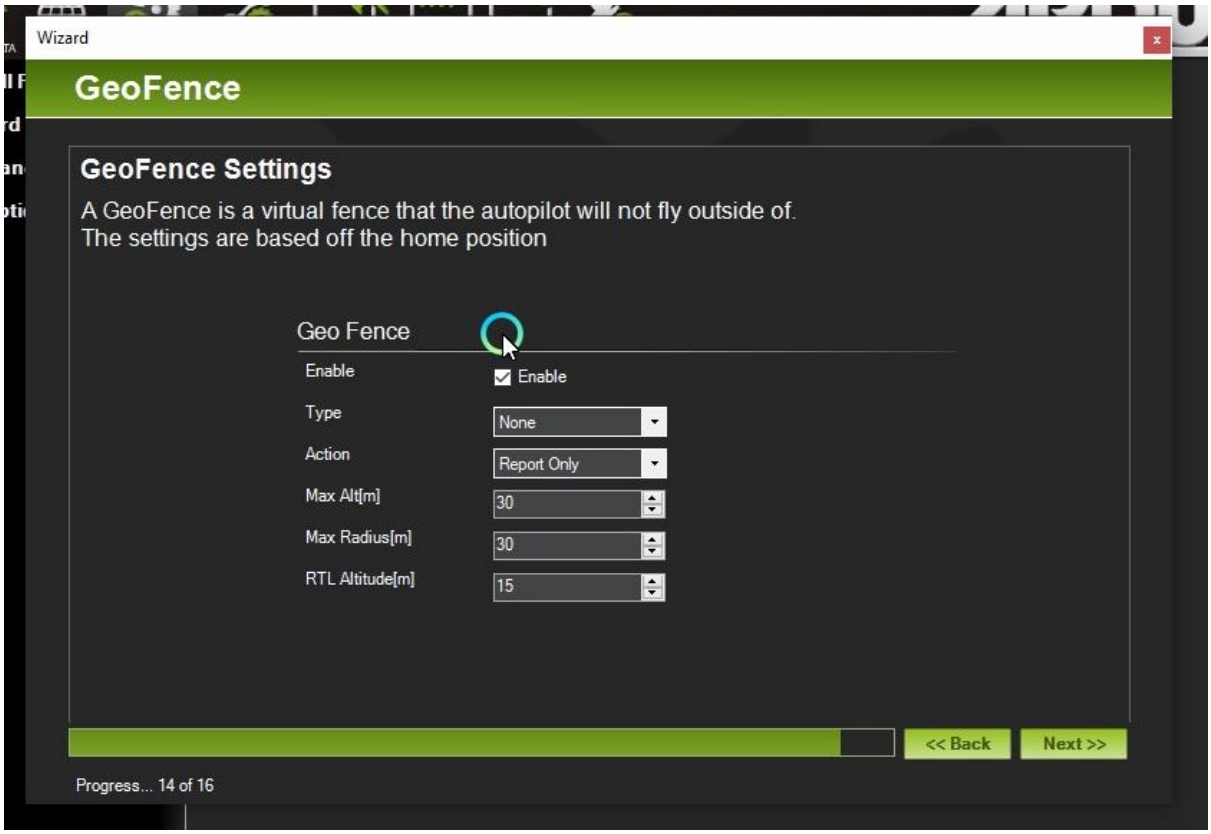

Fig.4.18

21. Finally, the initial setup is done click Finish. Refer.4.19

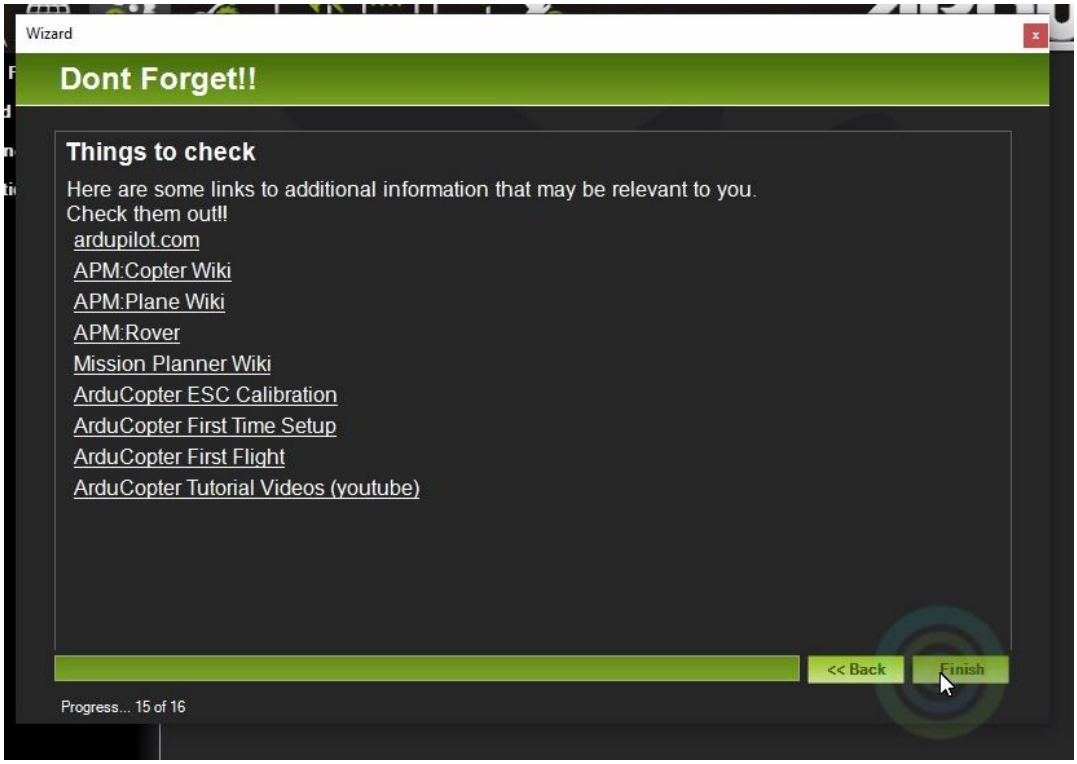

Fig.4.19

22. If you can't able to finish the setup, do it once again.

Step 5: ESC Calibration

Note: Remove all the propellers

1. Keep the Throttle stick at Max position.
2. Now, connect the battery you will hear a beep after that disconnect the battery. Again, connect the battery you will hear a beep then move the throttle stick from **max to low**. Now, you will hear two beeps continuously and one final long beep.
3. Great the ESC is now calibrated.
4. Check that all the motors are starting at the same time by giving throttle (without propellers).