

# Synerduino Shield , Surface Vehicles, FlywiiGUI

QUICK START GUIDE

## Arduino Board Preparation

Ensure insulation from the Arduino board add tape on these areas



2560 MEGA



UNO 328

Firmware/sketch must be uploaded at this point before connecting the Arduino to the shield

## Download and unzip the Xloader and Synerduino Fiemware

XLoader for Hex files upload to Arduino board\*

XLoader [Download](#)

Synerduino Firmware-Multirotor [Download](#)

## Unzip the Xloader and open Xloader.exe

Name	Date modified	Type	Size
avrduke.conf	18/03/2012 4:49 PM	CONF File	408 KB
avrduke.exe	18/03/2012 4:49 PM	Application	1,878 KB
devices.txt	18/03/2012 4:50 PM	Text Document	1 KB
libusb0.dll	18/03/2012 4:49 PM	Application extens...	43 KB
license.txt	18/03/2012 5:03 PM	Text Document	1 KB
<b>X XLoader.exe</b>	18/03/2012 4:44 PM	Application	271 KB

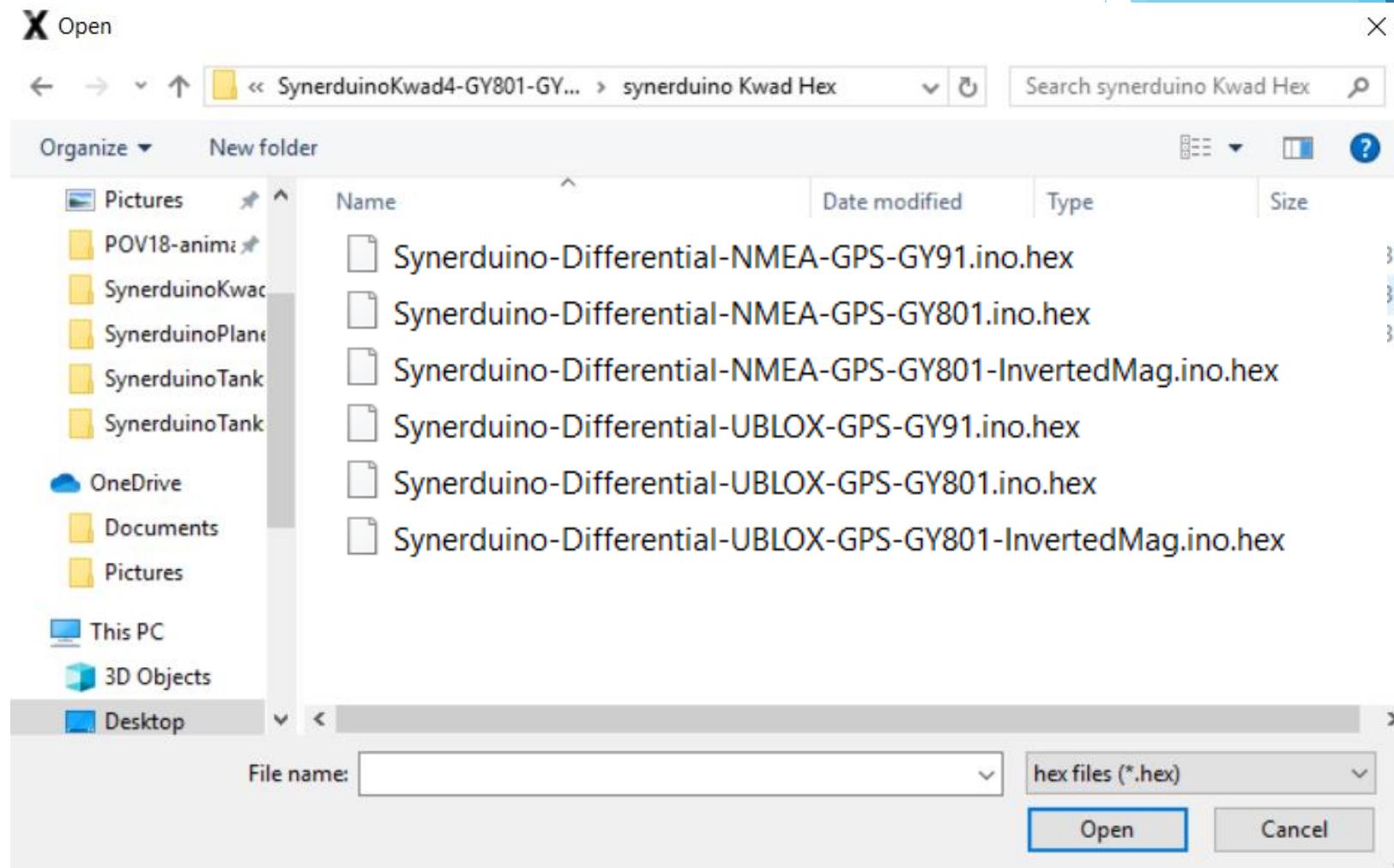
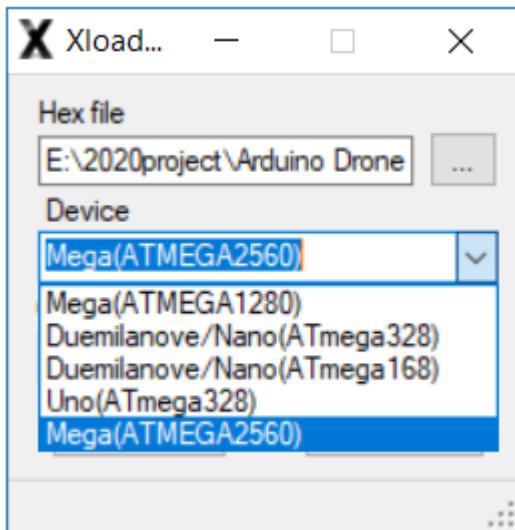
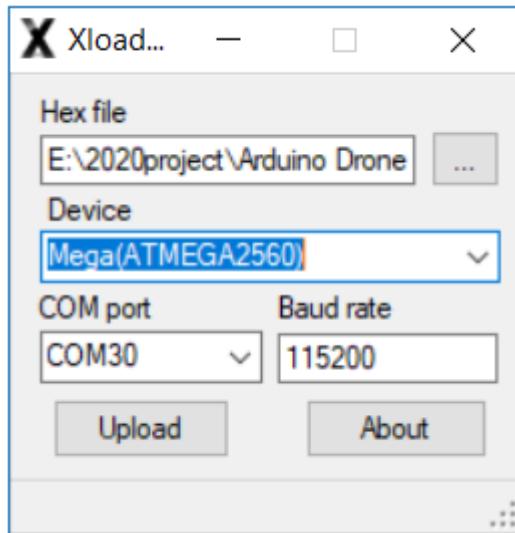
## Unzip the Synerduino Firmware files Differential drive and steering drive

-  Differential drive
-  Steering drive
-  Firmware Read.txt

Each folder corresponding to your Board model and your GPS used inside which constrain vehicle types

-  Synerduino-Differential-NMEA-GPS-GY91.ino.hex
-  Synerduino-Differential-NMEA-GPS-GY801.ino.hex
-  Synerduino-Differential-NMEA-GPS-GY801-InvertedMag.ino.hex
-  Synerduino-Differential-UBLOX-GPS-GY91.ino.hex
-  Synerduino-Differential-UBLOX-GPS-GY801.ino.hex
-  Synerduino-Differential-UBLOX-GPS-GY801-InvertedMag.ino.hex

Select the matching Model Hexfile and the Arduino device to load the firmware to.



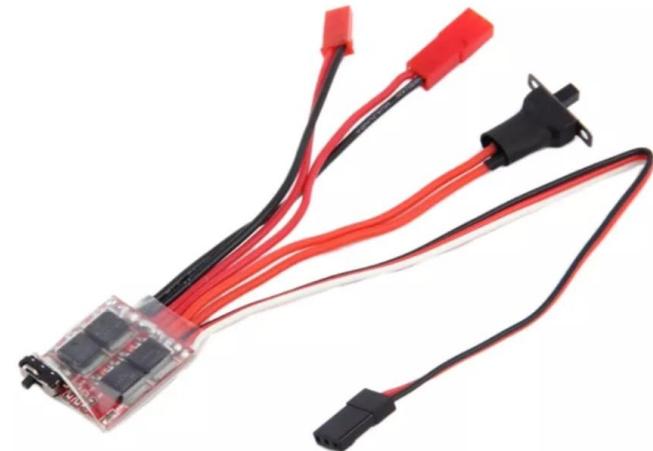
To tell that you loaded the correct Hex file when the FlywiiGUI Graphs and Dashboard shows correct orientation on all instruments and sensors after calibration

Wheel and Geared motor



Car/Tank 2pcs

ESCs with Bi-Directional function



2 Pcs of each

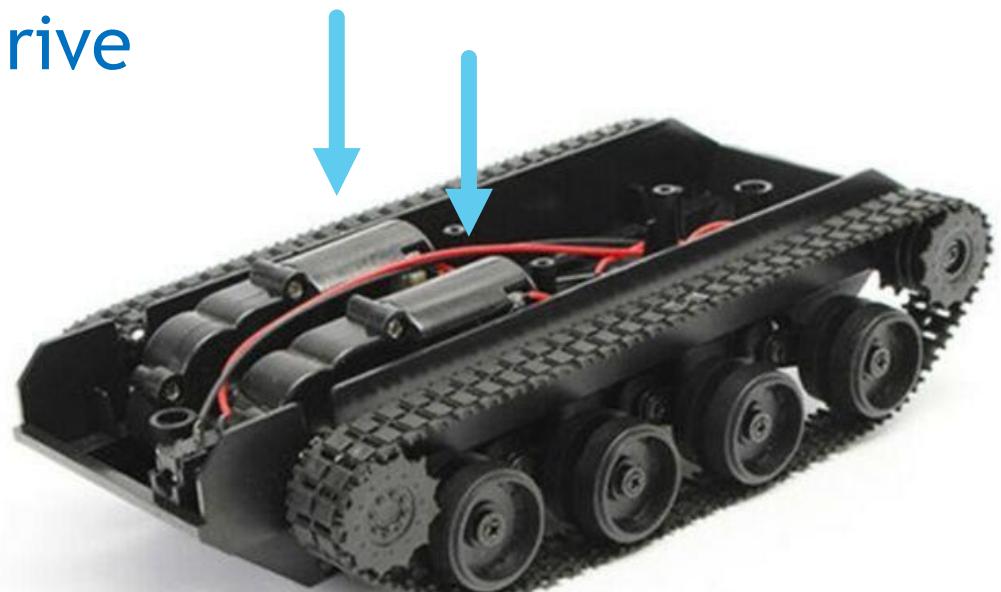
Boat Propeller with Waterproof motor Pods



Boat 2pcs

Brushed or Brushless the BLDC motor should match your Electronic Speed controller

2pcs Motor Differential  
drive



2pcs Motor Differential  
drive

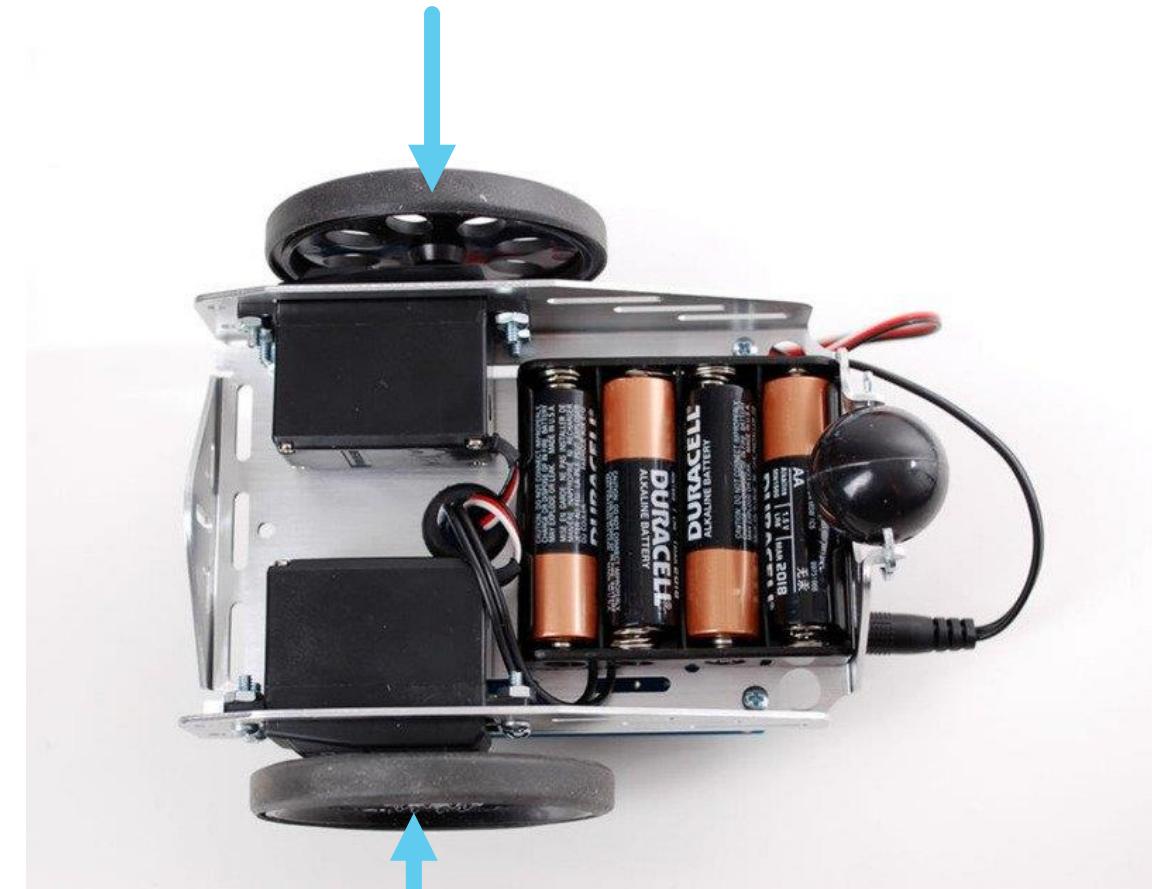
Motor & Steering Servo



Motor & Rudder Servo

## Differential Drive with CR Servos

Continues Rotational Servo



Servos Design to rotate 360Degrees  
with proportional speed and directional control



Continues Rotational Servo

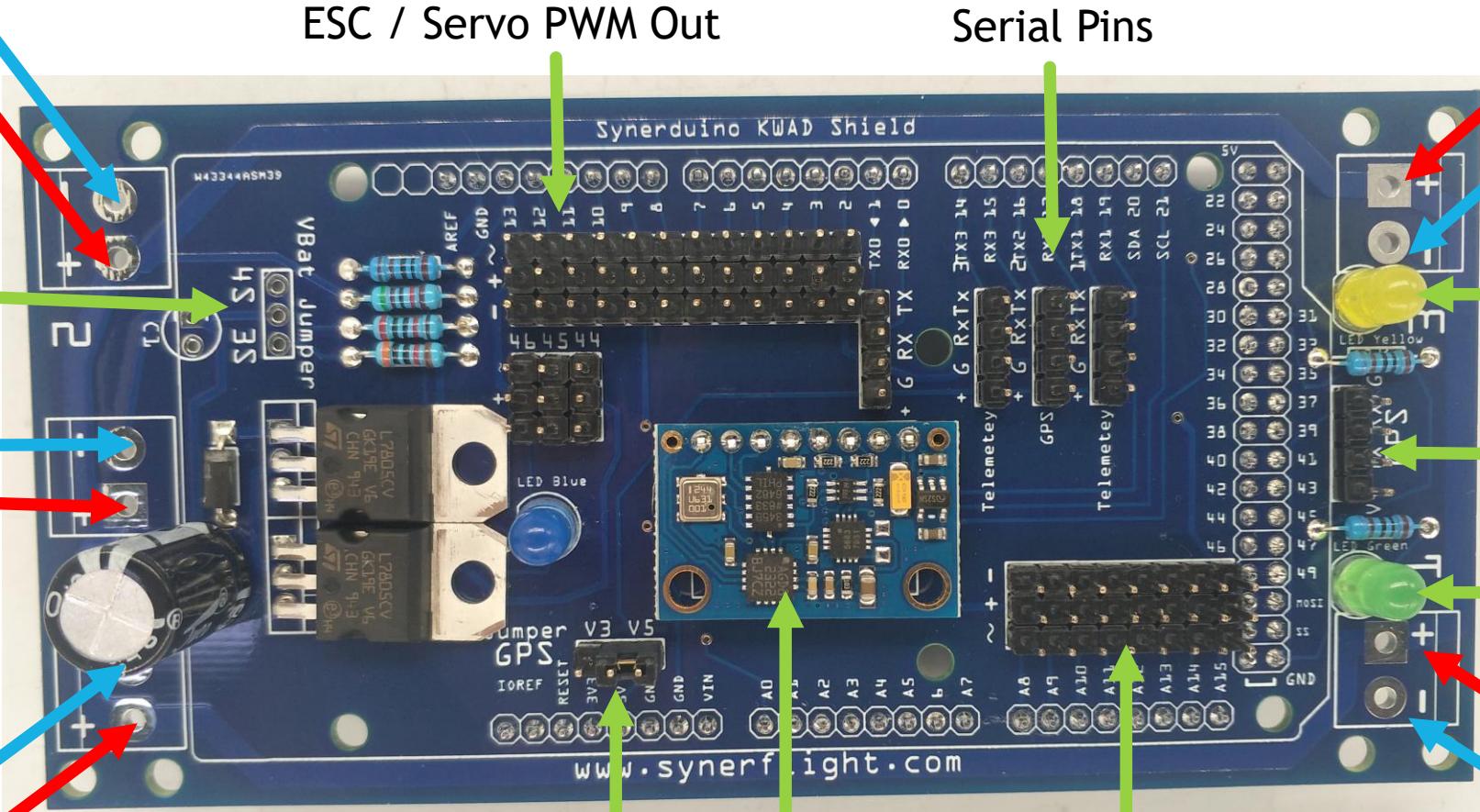
For 4wD configuration pair up two servos with a Servo Y splitter

1000ms Reverse - 1500ms Neutral - 2000ms Forward

# Synerduino Kwad Shield

ESC is  
Solder on  
Top side  
only

Note : surface mount your solder ESC wire make sure it doesn't penetrate to the bottom of the board



GPS Voltage Jumper

ESC is  
Solder on  
Top side  
only

Serial Pins

ESC is  
Solder on  
Top side  
only

GPS LED

Power  
input  
3s 11.1V

GPS Serial Pins

Status LED

RC PWM in

ESC is  
Solder on  
Top side  
only

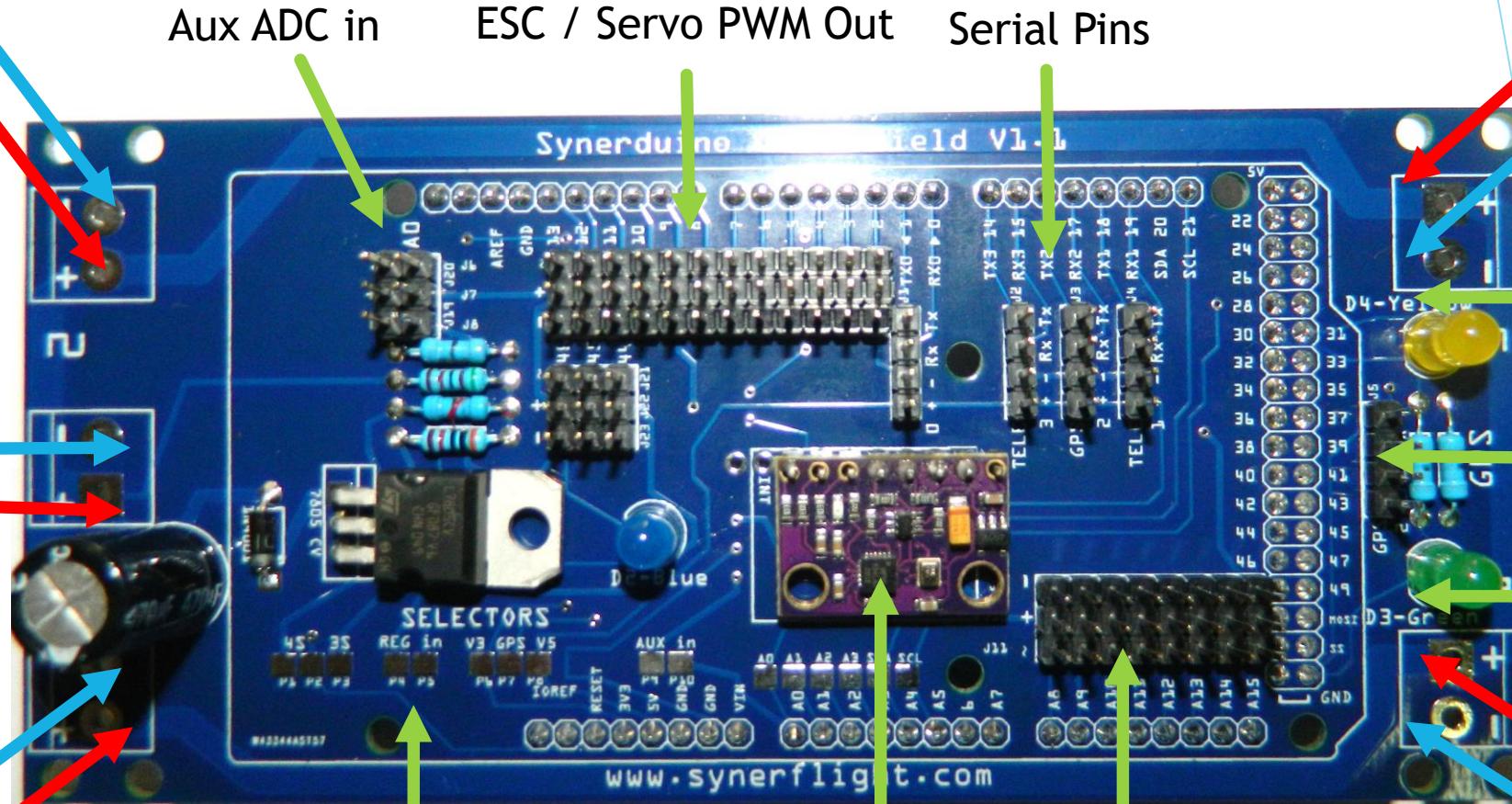
For improve performance IMU must be protected from the Environment

IMU : L3G4200D Gyro / ADXL345 Accelerometer / BMP180 - 85 Baro / MMC5883 Mag

# Synerduino Kwad Shield V1.1 GY91

ESC is  
Solder on  
Top side  
only

Note : surface mount your solder ESC wire make sure it doesn't penetrate to the bottom of the board



Power  
input  
3s 11.1V

ESC is  
Solder on  
Top side  
only

IMU : MPU-9250 & BMP280

ESC is  
Solder on  
Top side  
only

GPS LED  
GPS Serial Pins

Status LED

ESC is  
Solder on  
Top side  
only

RC PWM in

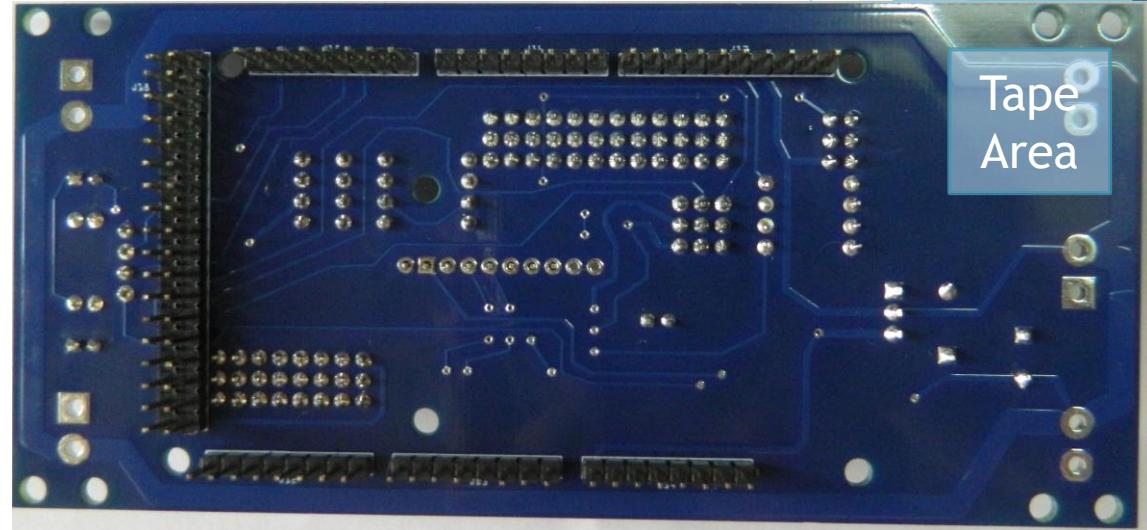
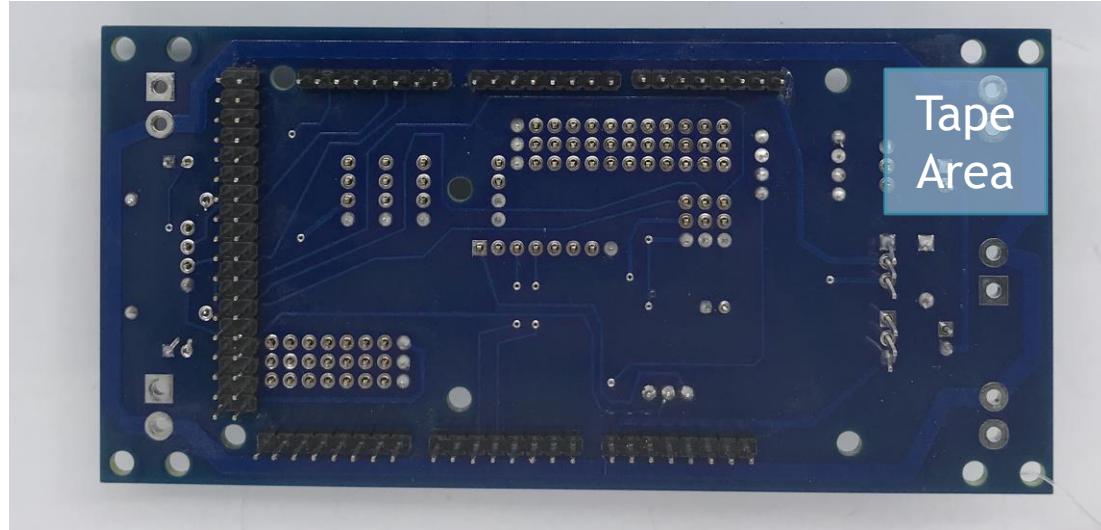
Jumper Pads Selector Zone

For improve performance IMU must be protected from the Environment

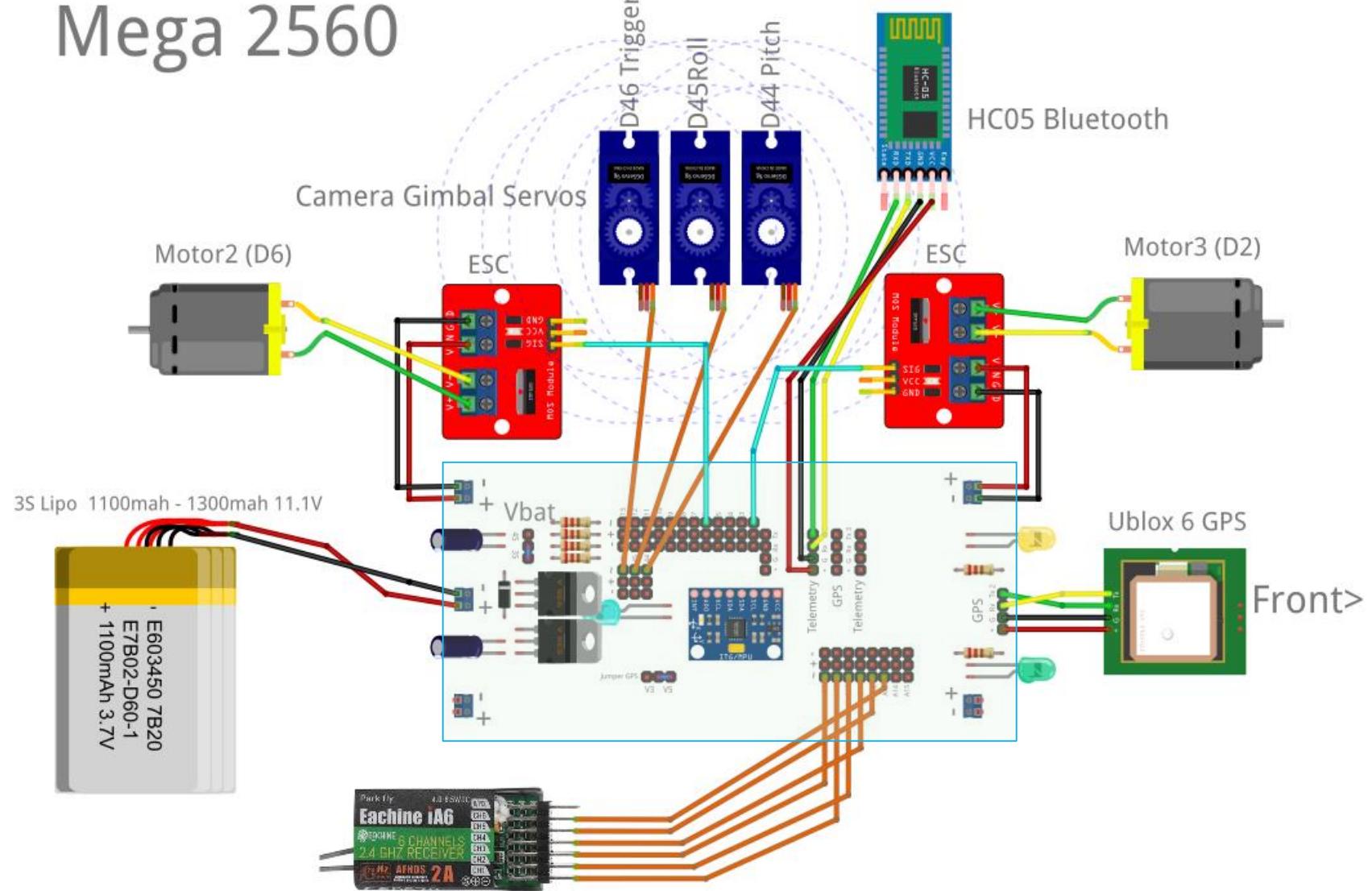
## Synerduino Kwad Shield Preparation

Ensure insulation from the Arduino board add tape on these areas

**BETA GY801 & V1.1 GY91**



# Mega 2560

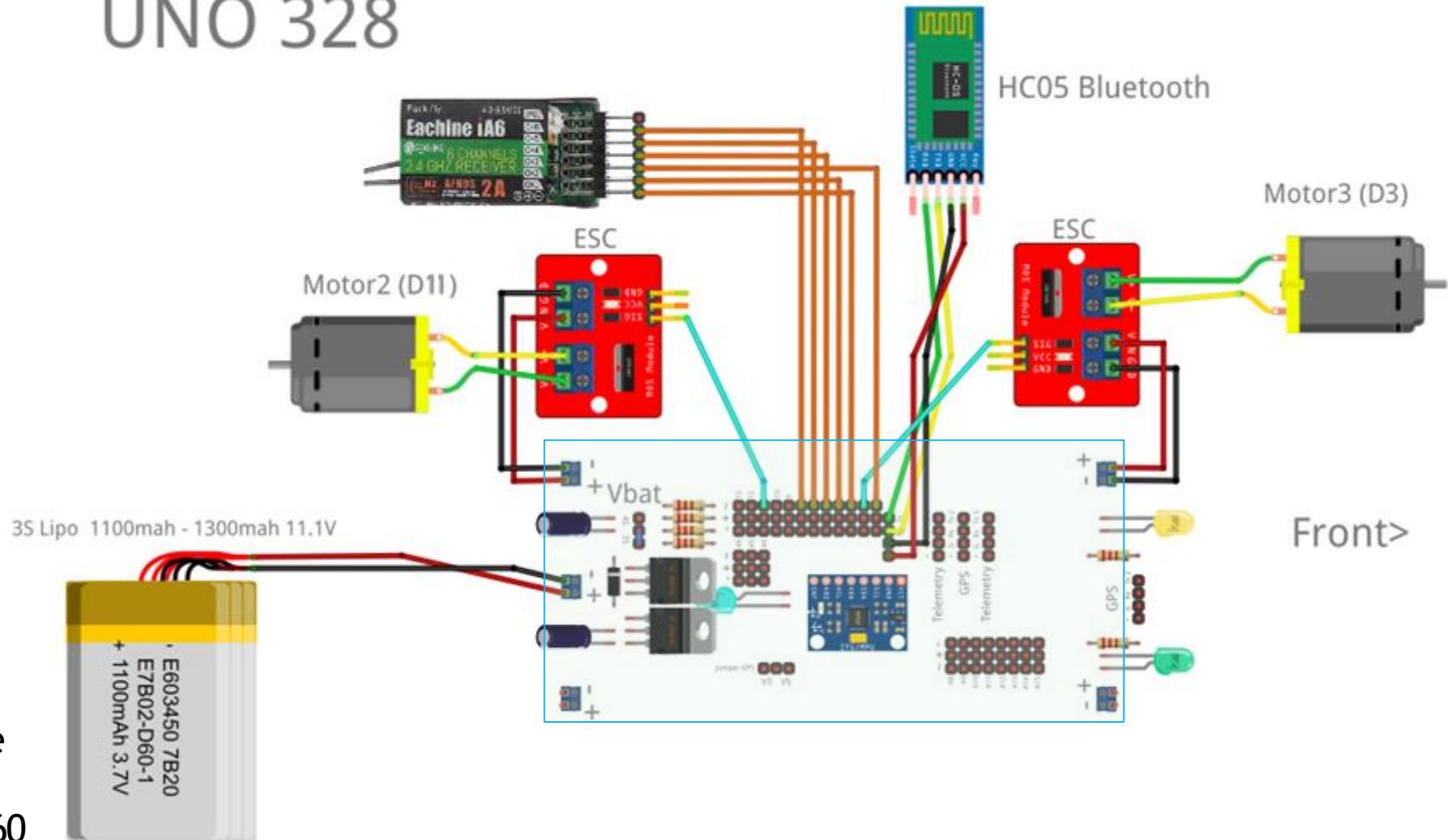


Differential Drive

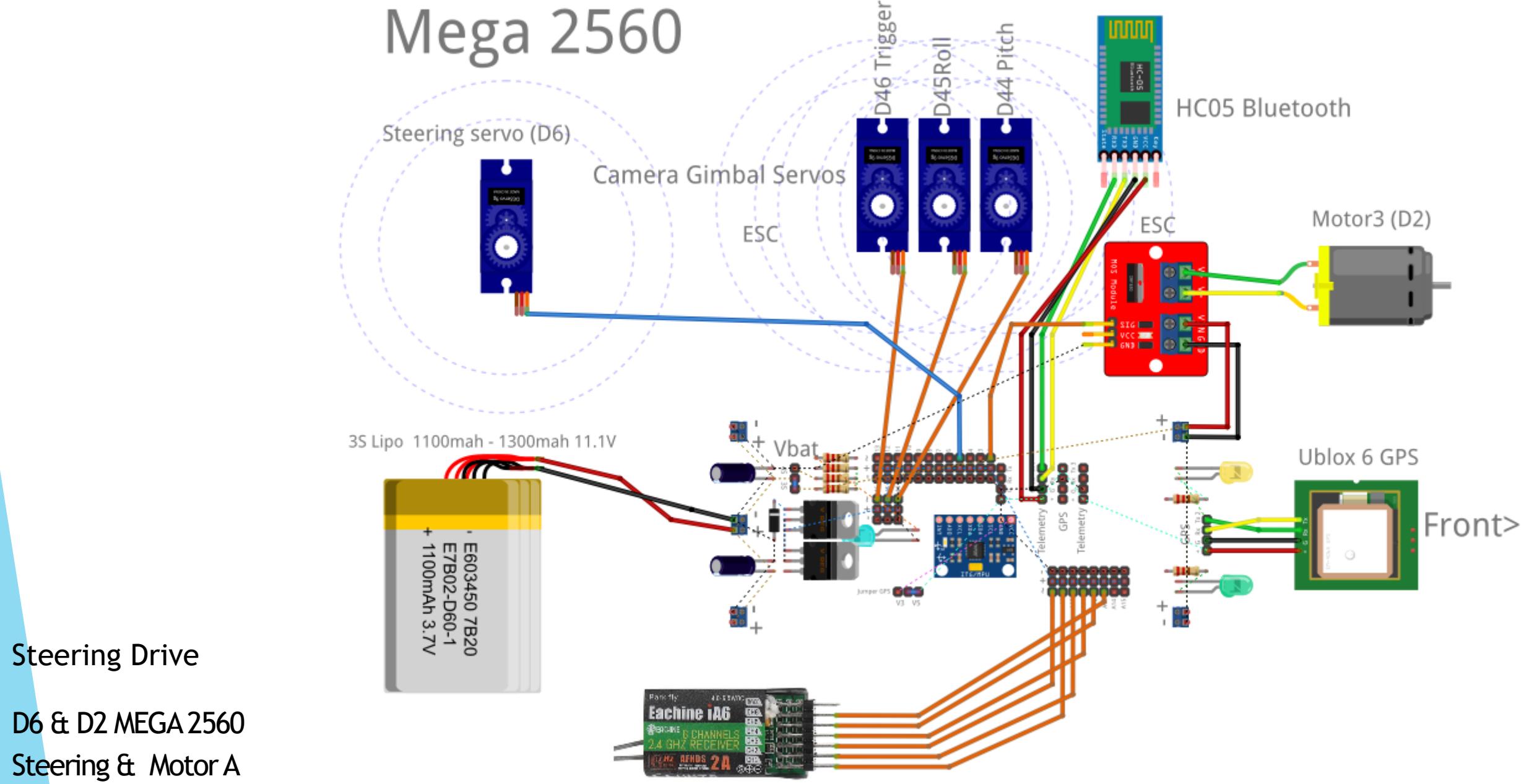
D6 & D2 MEGA 2560

Motor A & Motor B

# UNO 328



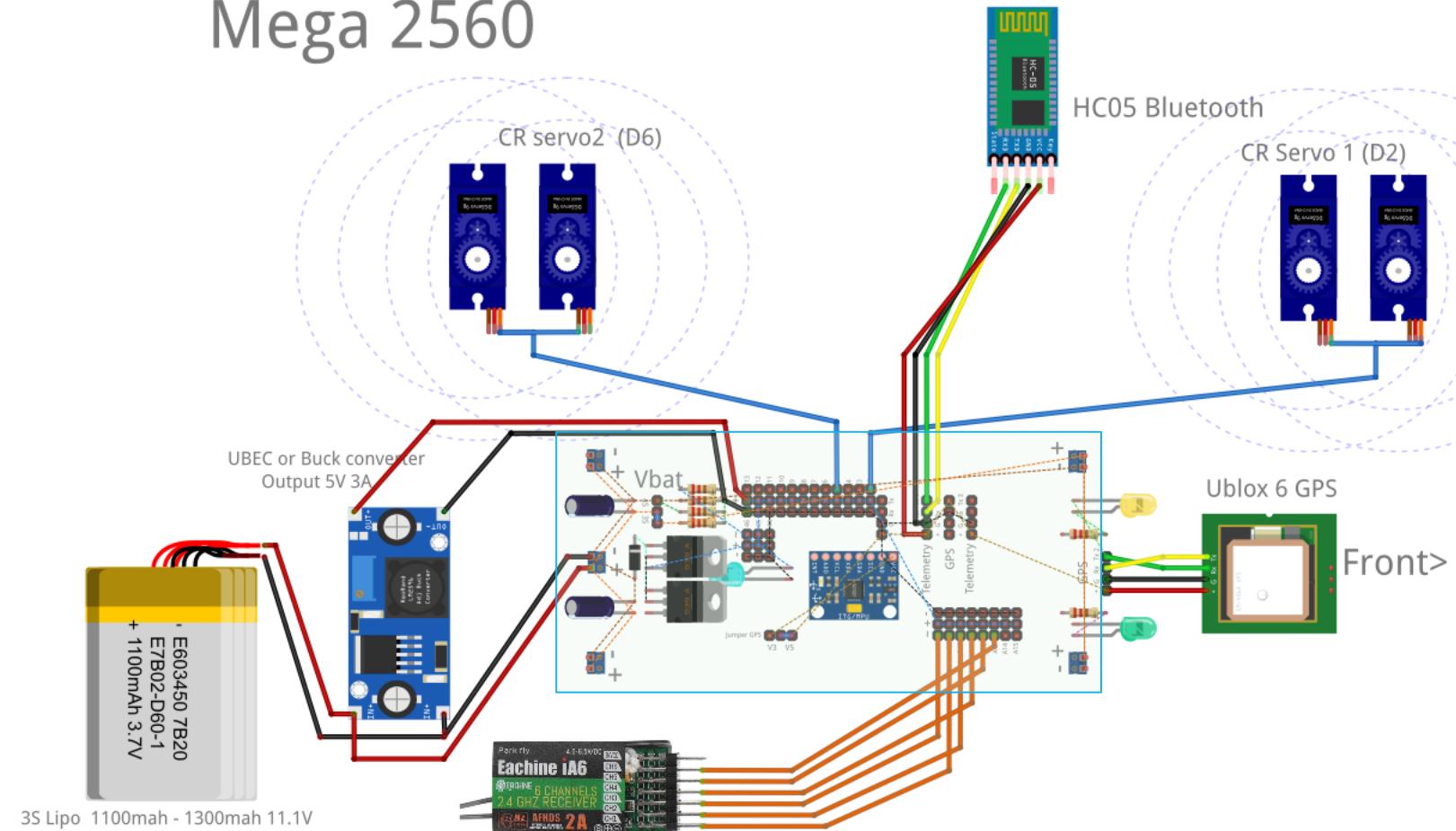
# Mega 2560



# Conventional Differential Drive - using Continuous Rotation Servos



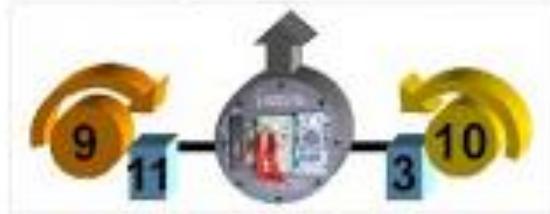
Mega 2560



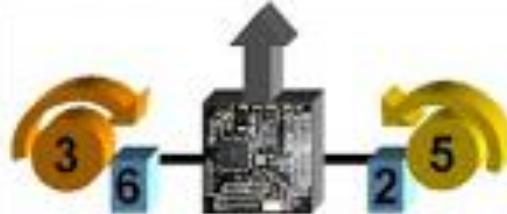
For 4wD configuration pair up two servos with a Servo Y splitter

## BICOPTER avatar style

for Arduino 328p:



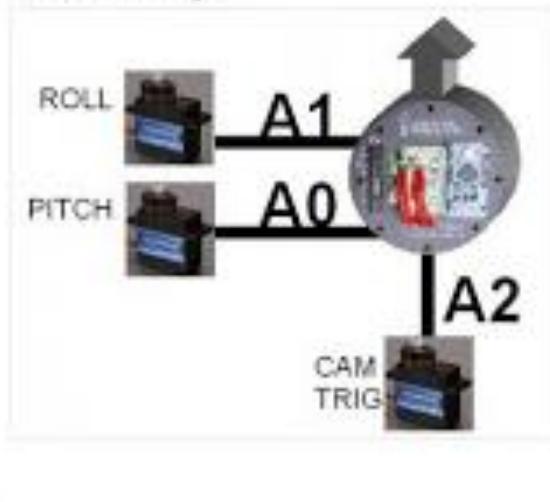
for arduino mega:



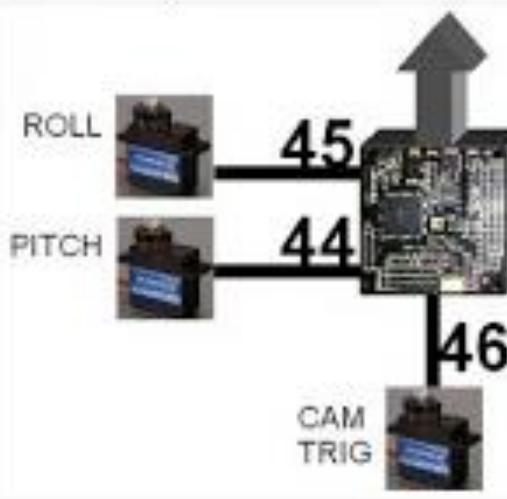
## Pure stabilized gimbal system

For this setup, you need a GYRO + ACC setup (not possible with a gyro only setup)  
A RC system is optional for this setup.

for Arduino 328p:

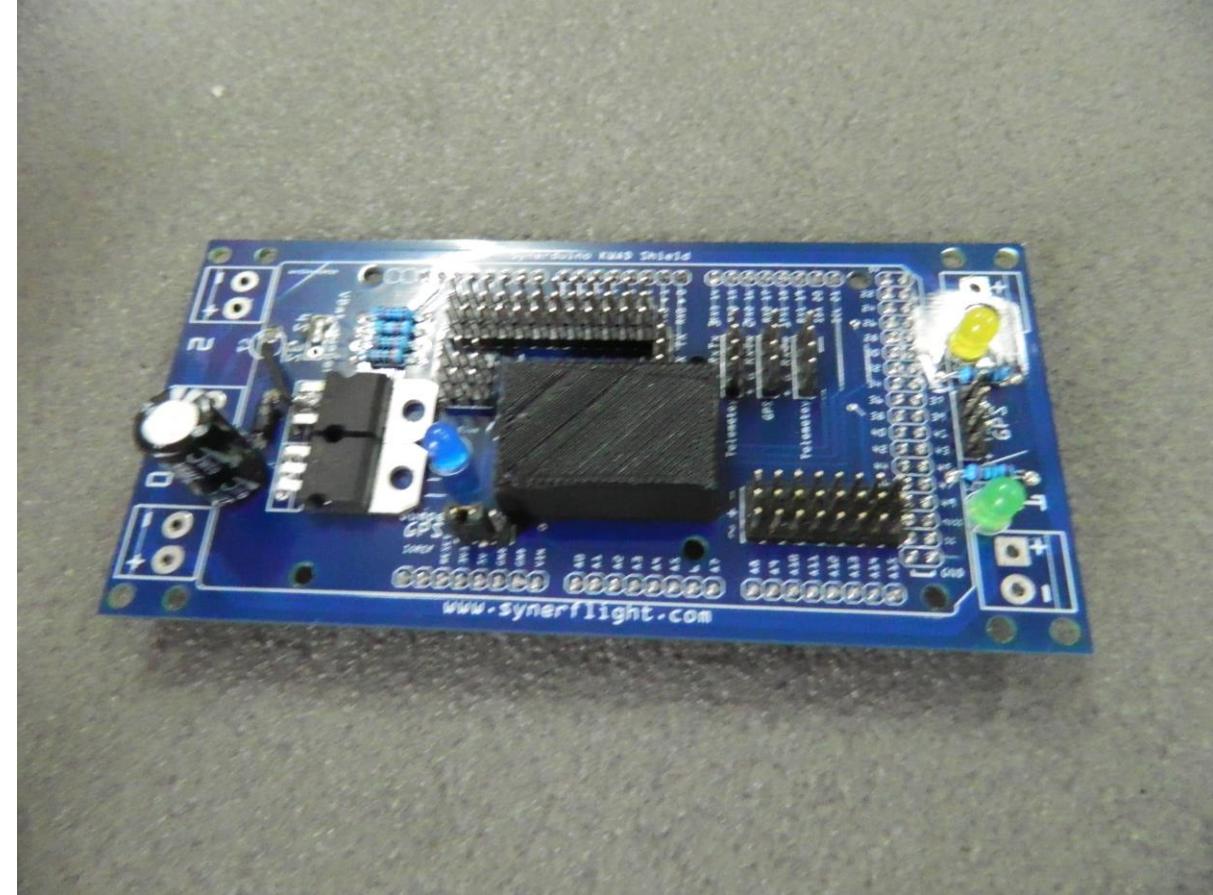


for arduino mega:



## Synerduino Kwad Shield Preparation

Seal the cover on to the sensor using PVA glue and let it dry



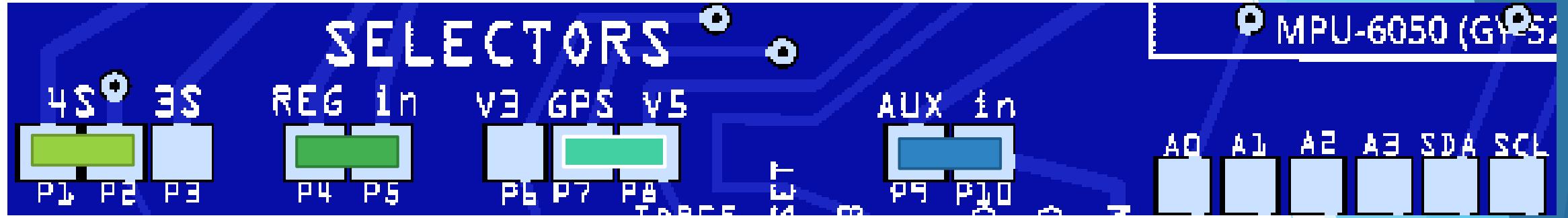
Same time Use small amount of PVA white Glue to Thread Lock the bolt in place Preventing it from going loose

## Synerduino Kwad Shield V1.1 (GY91)

Added the Selector Jumper Pads to the main board

Require you only put a small blob of solder to join the selected Pads





Battery cell  
monitoring  
4s or 3s

REG in

V3 GPS V5

AUX in

A0 A1 A2 A3 SDA SCL

Analog 0 pin Auxin  
/ Battery monitor

Analog 0-3 & I2C  
external sensors

To use onboard battery monitoring with Aux in Set to 3s if your running 1s-3s battery / set to 4s if your running 4s battery / **Leave it open** when using Aux in as External sensors or using 5s to 6s

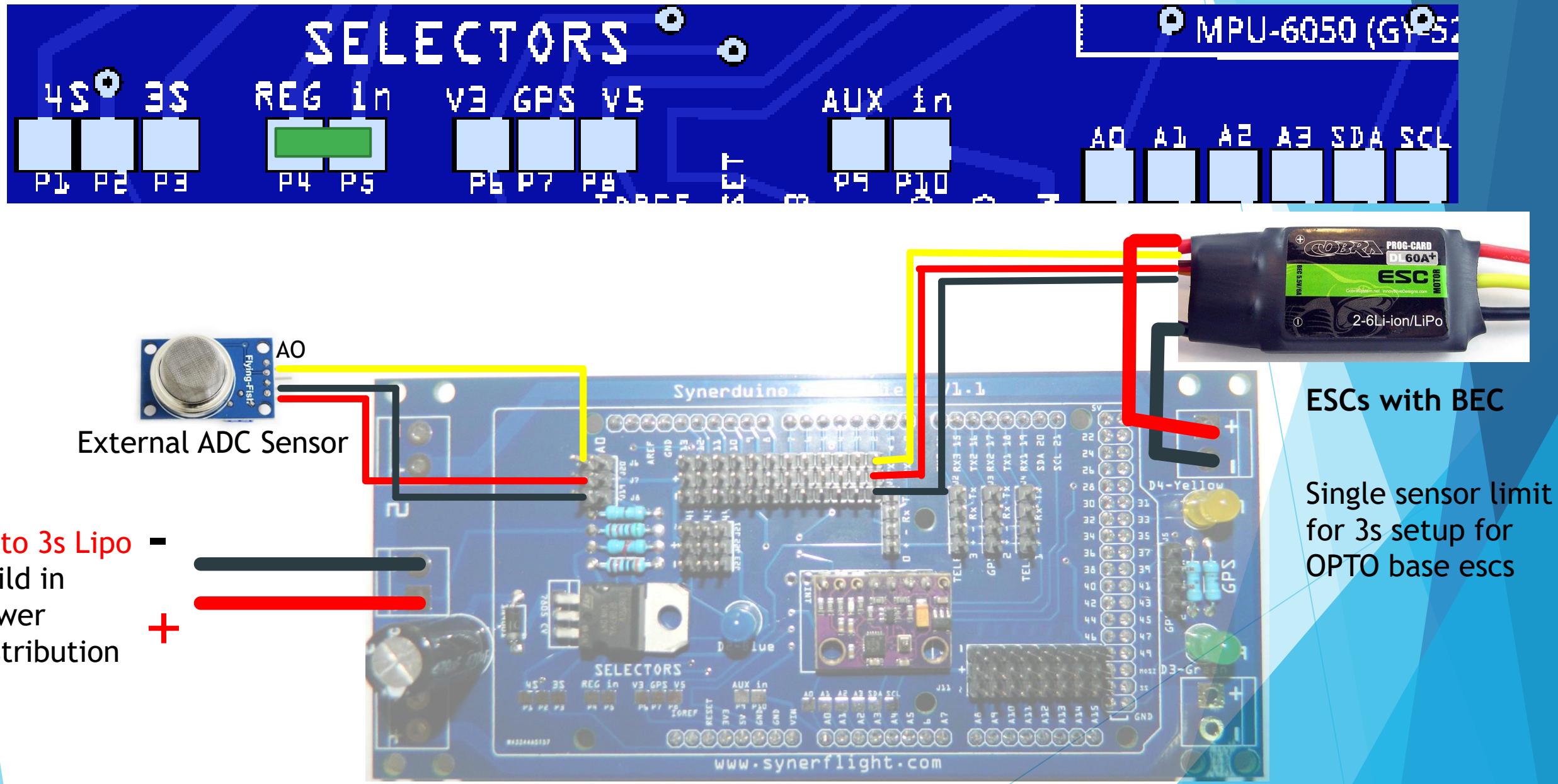
Reg In - short the Pads for using regulator to power and build in power distributor the synerduino and Arduino board

2<sup>nd</sup> GPS pin with voltage selector 5V for Regular GPS / 3V for external I2c sensor such as Magnetometer

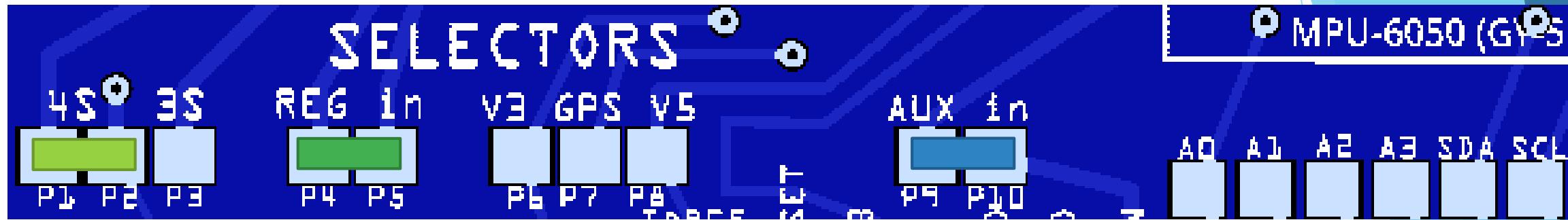
Aux in- **leave it open** for utilizing the A0 Pins for External ADC sensors / Short the Pads to use build in battery monitoring . Cell Selector must be set to 4s or 3s

SDA SLC - I2C input for external sensors such as GPS with build in Magnetometer

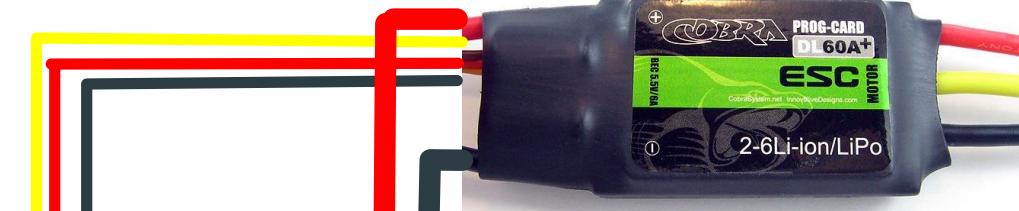
Reg in only - A0 External ADC sensor , ESC BEC or OPTO applied to the 5V PWM pins



Reg & Vbat - A0 as Battery voltage monitor , ESC BEC or OPTO applied to the 5V PWM pins



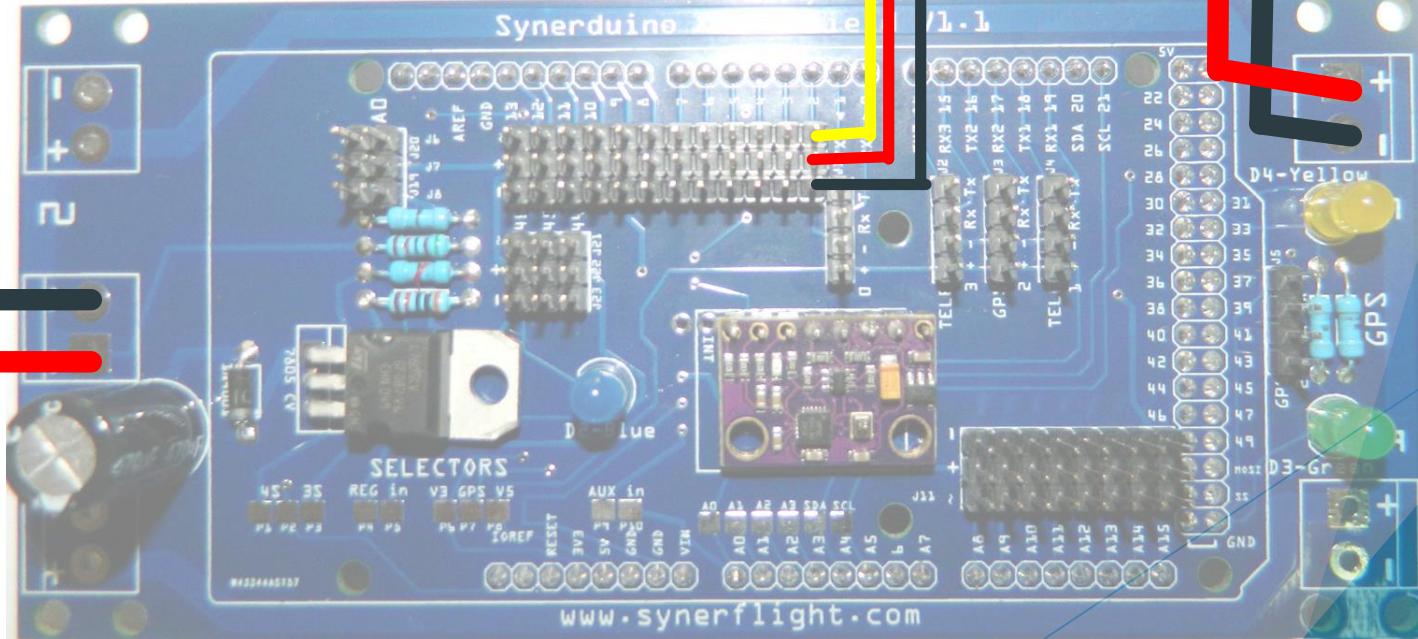
For those who would use the build in battery monitoring circuit upto 4s lipo ensure the Cell Count and Aux in is jumped before powering up



ESCs with BEC or Opto

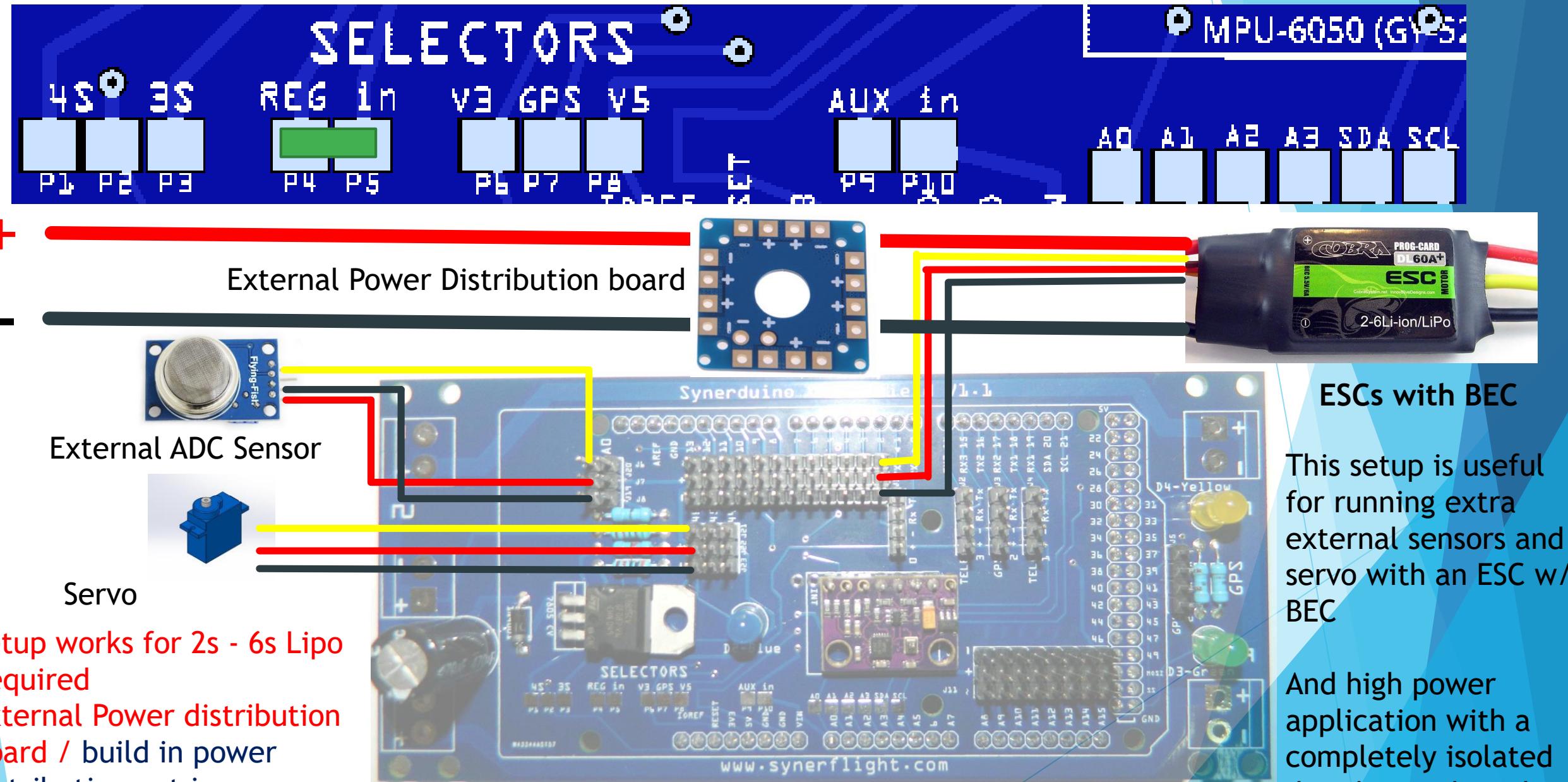
This option is possible if your not hooking anything else to the board apart from GPS and bluetooth

2s to 4s Lipo  
Build in Power distribution

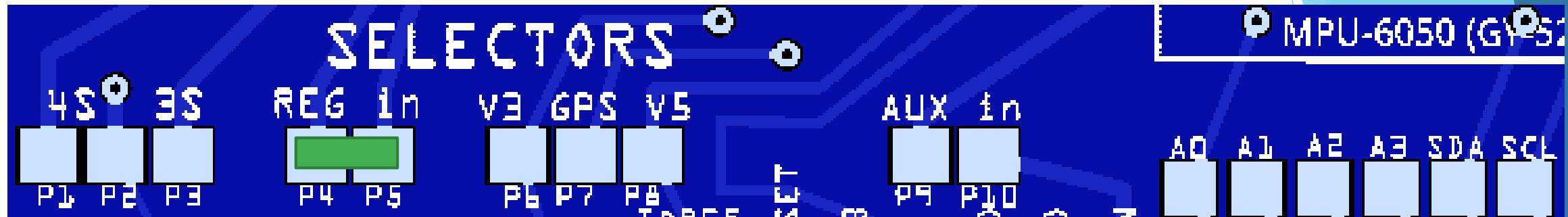


Recommended setup for beginner

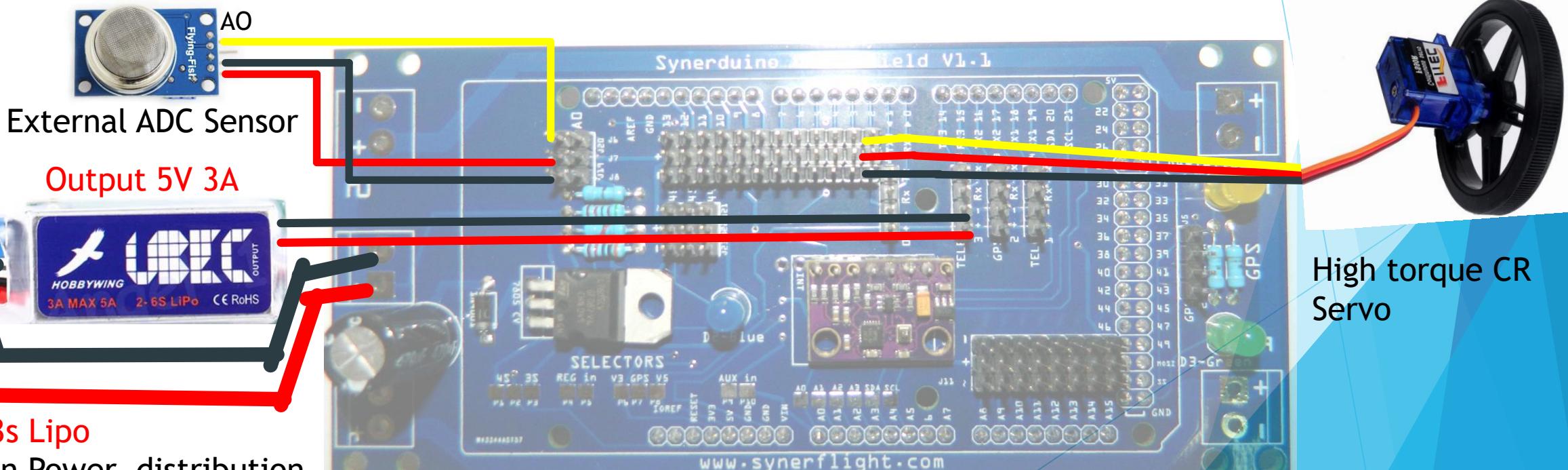
Reg in only - A0 External ADC sensor , Require ESC with UBEC applied to the 5V PWM pins



ISOLATED - A0 External ADC sensor , ESC BEC or OPTO applied to the 5V PWM pins



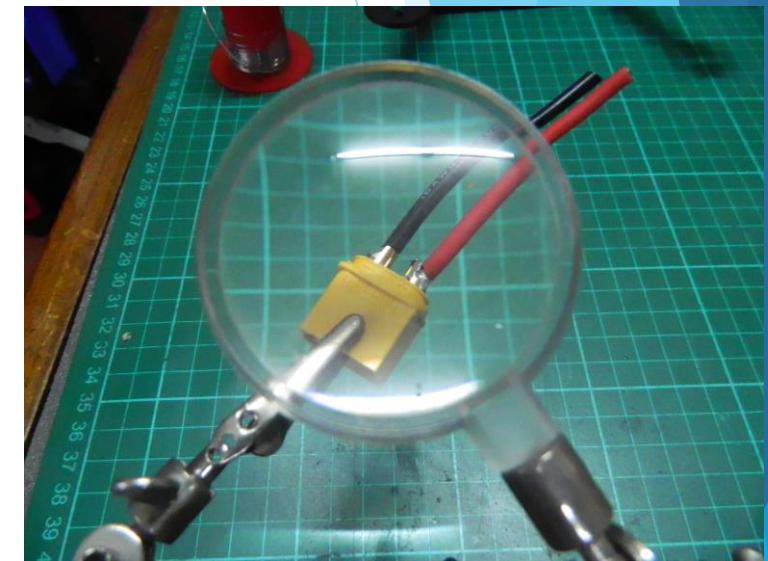
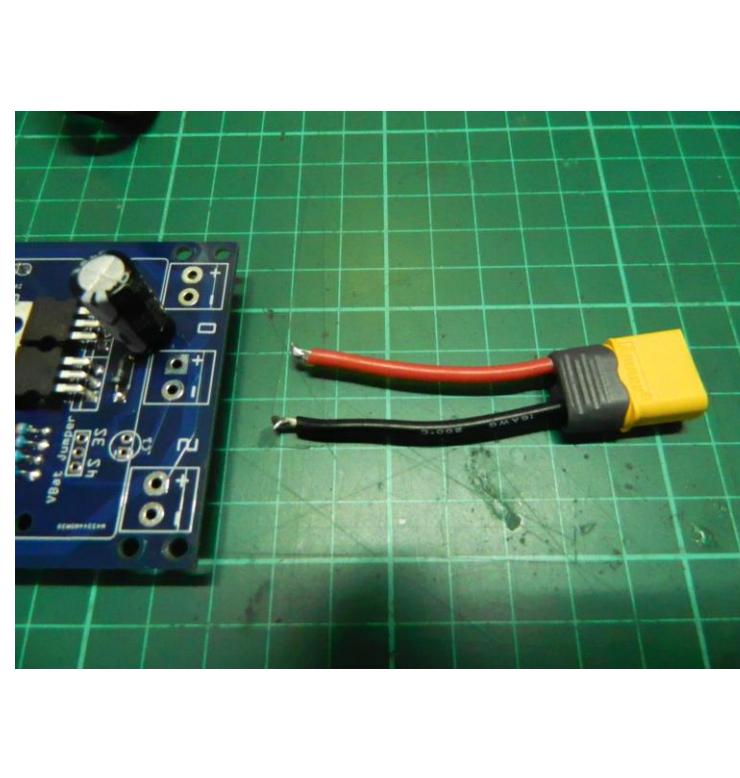
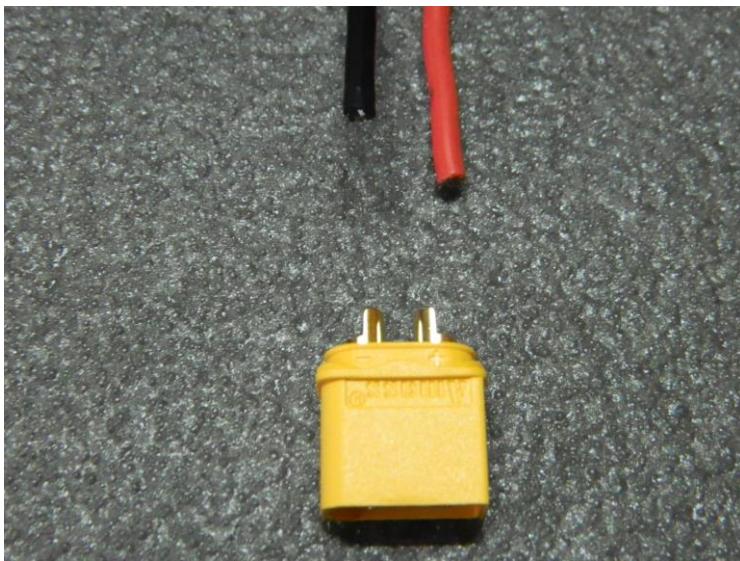
This setup is ideal for Servo or Sensor Intensive application that requires higher current driven across the power rails  
Application such as Continues Rotational Servos and several ADC sensors

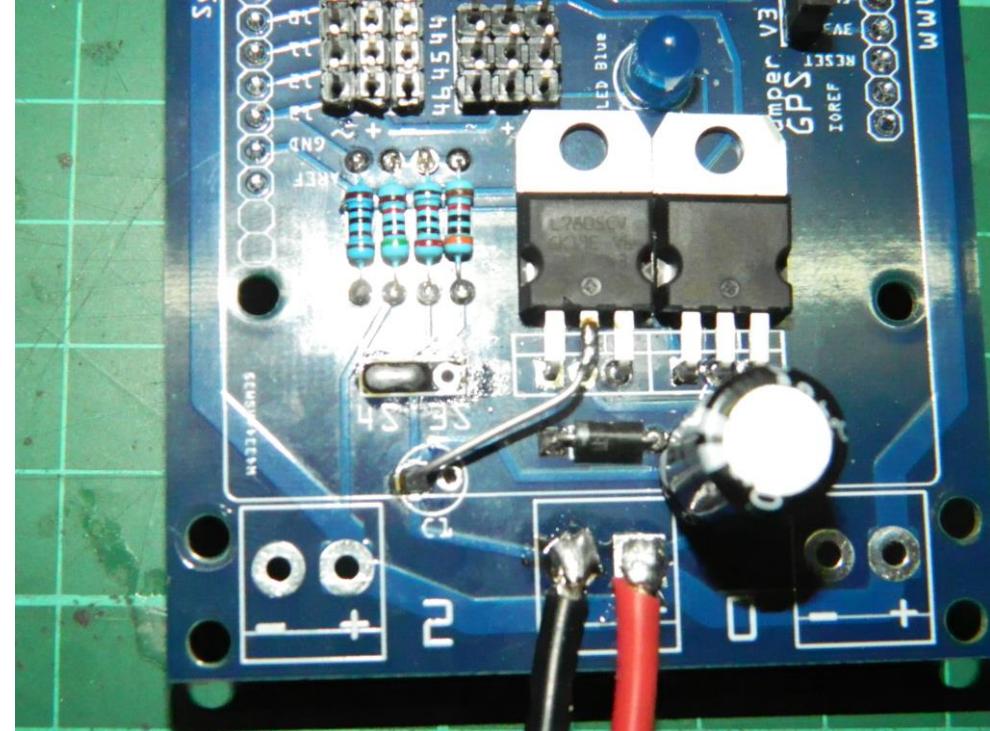
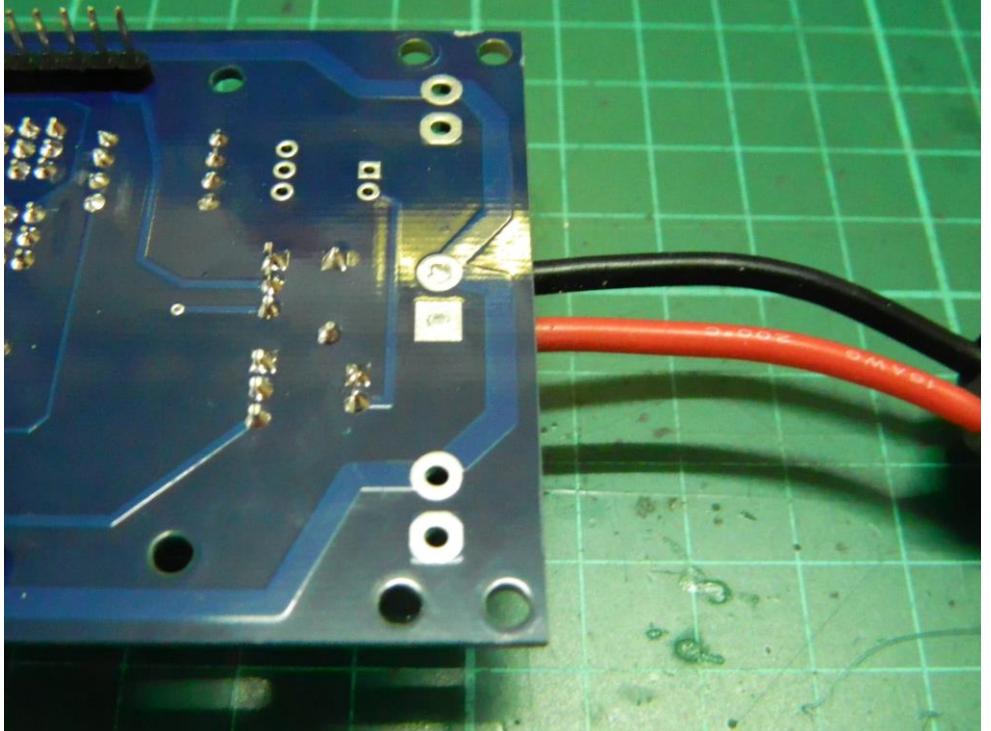


2s to 3s Lipo

Build in Power distribution

Recommended setup for beginner

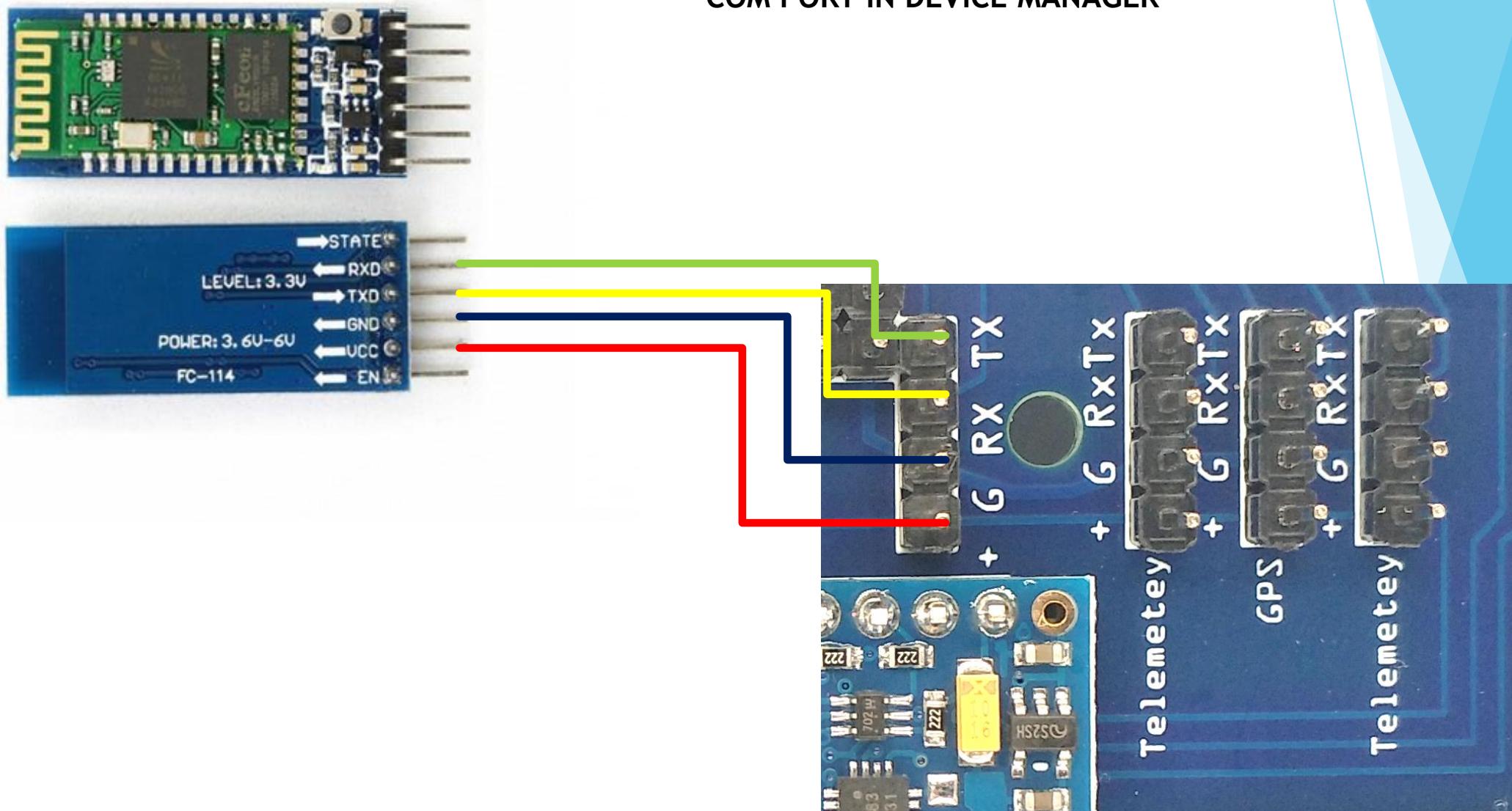




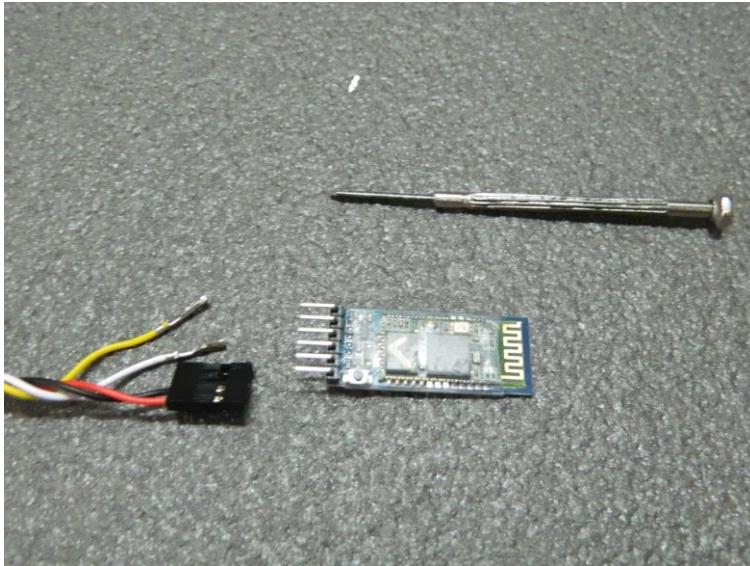
**ONLY SURFACE MOUNT THE SOLDER WIRE  
MUST NOT PROTRUDE THE HOLE**

# Bluetooth

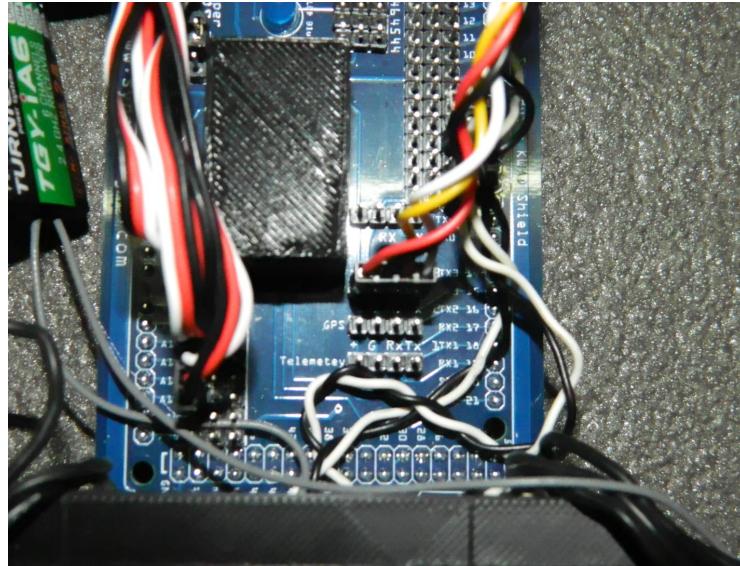
NOTE: USING 0 AT BAUD115200 APPLICABLE BOTH UNO AND MEGA BOARDS REQUIRES THE BLUETOOTH ONLY TO BE PLUG IN AFTER THE SKETCH/FIRMWARE HAS BEEN UPLOADED TO THE BOARD . AND PAIRING USING THE BLUETOOTH CONNECTED COM PORT IN DEVICE MANAGER



# Bluetooth



**BLUETOOTH PLUG INTO SERIAL 1  
OR SERIAL 3  
115200 FOR BLUETOOTH HC-05**



## ATTENTION:

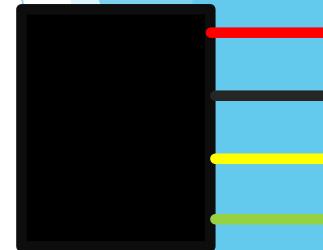
YOU MAY NEED TO REARRANGE THE HEADERS  
TO CONNECT THE BLUETOOTH MODULE TO THE  
SHIELD BOARD ACCORDINGLY

**VCC >> +**

**GND >> G**

**TX >> RX**

**RX >> TX**

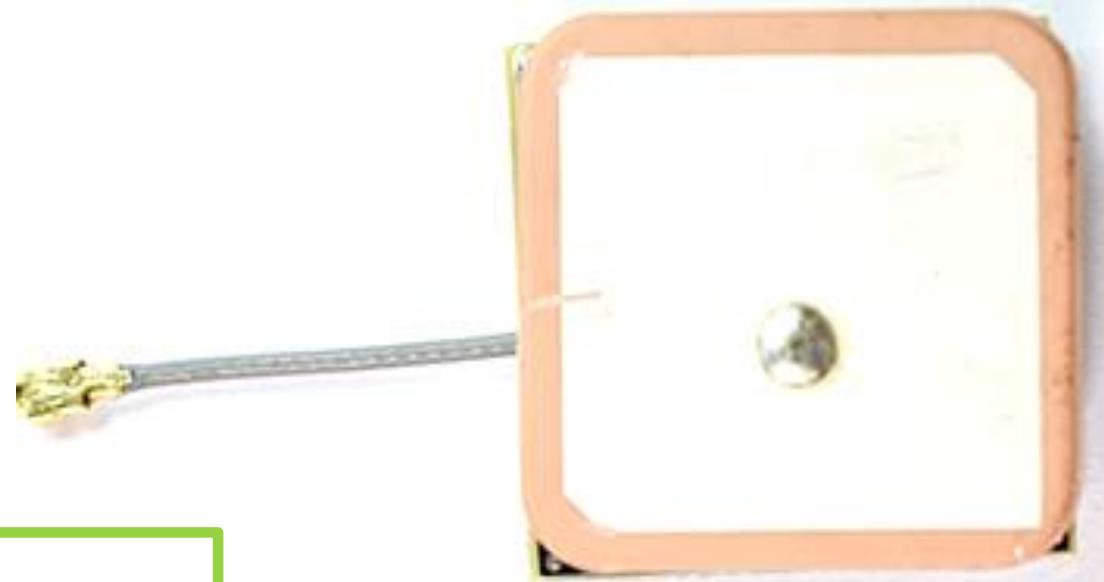
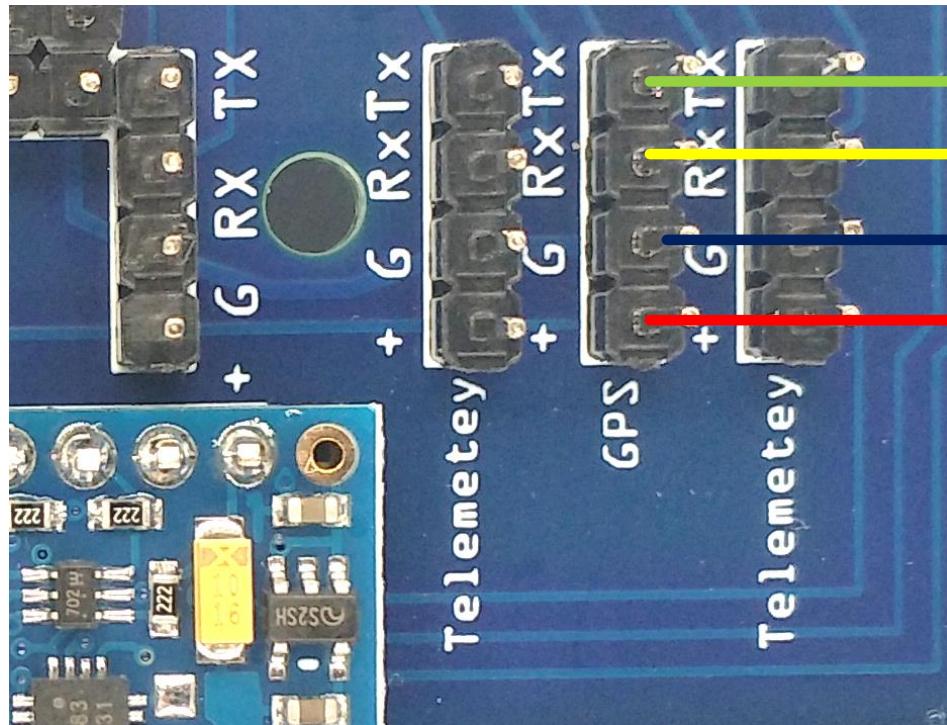


SEE TO IT THE WIRES COLOR CODE MATCHES  
THE MARKINGS

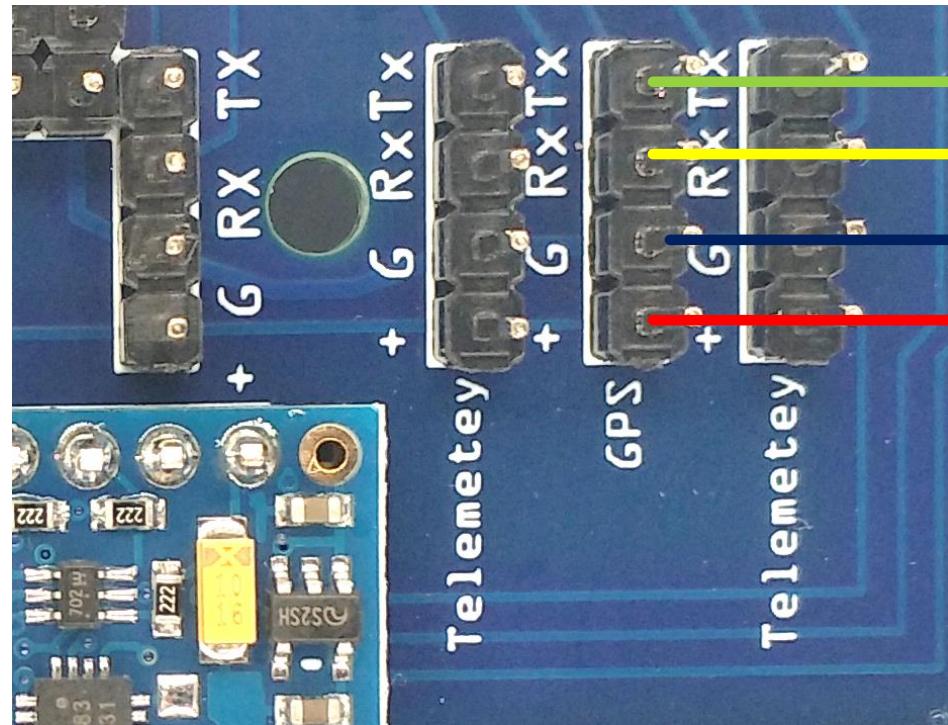
IMPROPER INSTALLATION MAY CAUSE DAMAGE  
TO THE ARDUINO BOARD AND SHIELD DUE TO  
REVERSE POLARITY

NOTE: WE PRESET THE BLUETOOTH FOR YOUR  
CONVENIENCE TO THE PROPER SETUP BUT  
SHOULD YOU WISH TO CHANGE THE SETTING  
ON YOUR DIGRESSION

# GPS NEO6



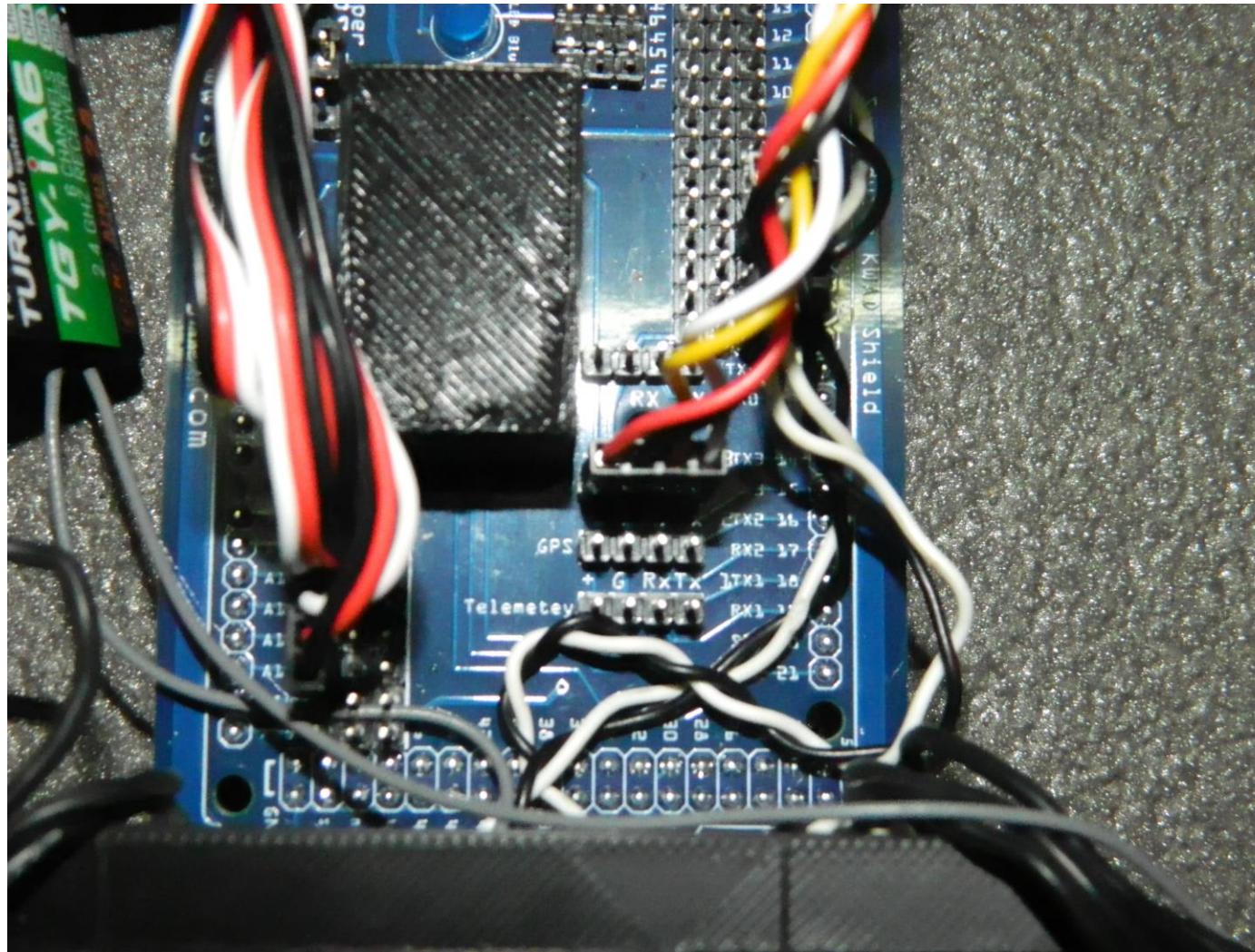
# GPS BEITIAN



4.VCC  
3.RX  
2.TX  
1.GND

PIN	PIN Name	I/O	Description
1	GND	G	Ground
2	TX	O	Serial Data Output.
3	RX	I	Serial Data Input.
4	VCC	I	DC 3.0V - 5.5V supply input,Typical: 5.0V





**ATTENTION:**

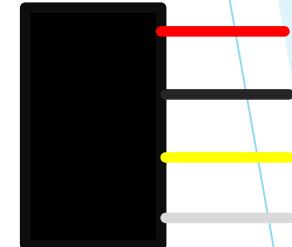
YOU MAY NEED TO REARRANGE THE HEADERS TO CONNECT THE BLUETOOTH MODULE TO THE SHIELD BOARD ACCORDINGLY

VCC >> +

GND >> G

TX >> RX

RX >> TX



SEE TO IT THE WIRES COLOR CODE MATCHES THE MARKINGS

IMPROPER INSTALLATION MAY CAUSE DAMAGE TO THE ARDUINO BOARD AND SHIELD DUE TO REVERSE POLARITY

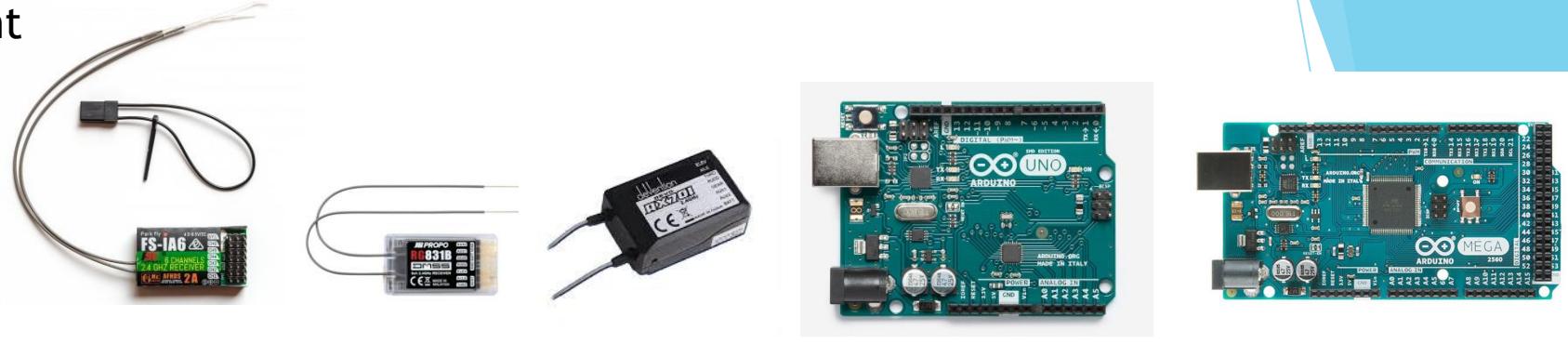
NOTE: WE PRESET THE BLUETOOTH AND GPS FOR YOUR CONVENIENCE

SHOULD YOU WISH TO CHANGE THE SETTING ON YOUR DIGRESSION SEE: SYNERDUINO BASIC

BLUETOOTH ON THE TELEMETRY PIN SERIAL1  
GPS IN THE GPS PIN SERIAL2

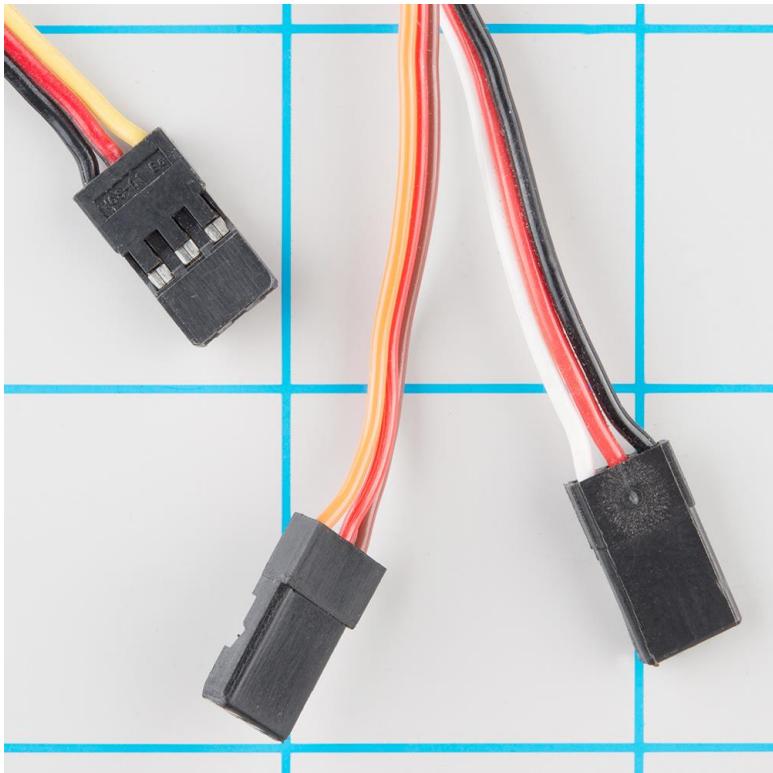
## PWM INPUT Assignment

Pls Check the output pin from your Radio Rx manual



<b>RX &gt; Arduino / PWM in</b>	<b>Futaba Format</b>	<b>JR Format</b>	<b>Walkera Format</b>	<b>UNO 328 Input</b>	<b>Mega 2560 Input</b>
Throttle	Ch3	Ch1	Ch3	D2	A8
Aileron	Ch1	Ch2	Ch2	D4	A9
Elevator	Ch2	Ch3	Ch1	D5	A10
Rudder	Ch4	Ch4	Ch4	D6	A11
Aux1	Ch5	Ch5	Ch5	D7	A12
Aux2	Ch6	Ch6	Ch6	D8	A13
Aux3	Ch7	Ch7	Ch7	N/A	A14
Aux4	Ch8	Ch8	Ch8	N/A	A15

# SERVO HEADER



~ + -

End view

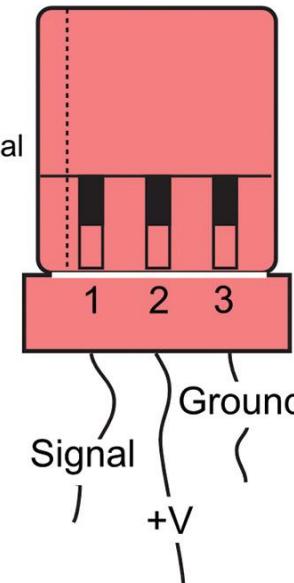


J-type (Futaba)



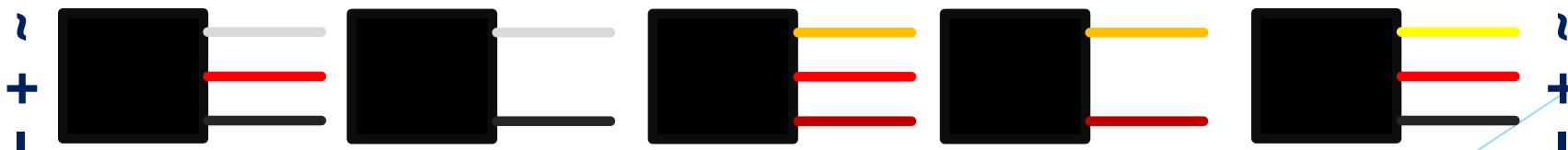
S-type (Hitec, JR)

Keyway =  
signal terminal



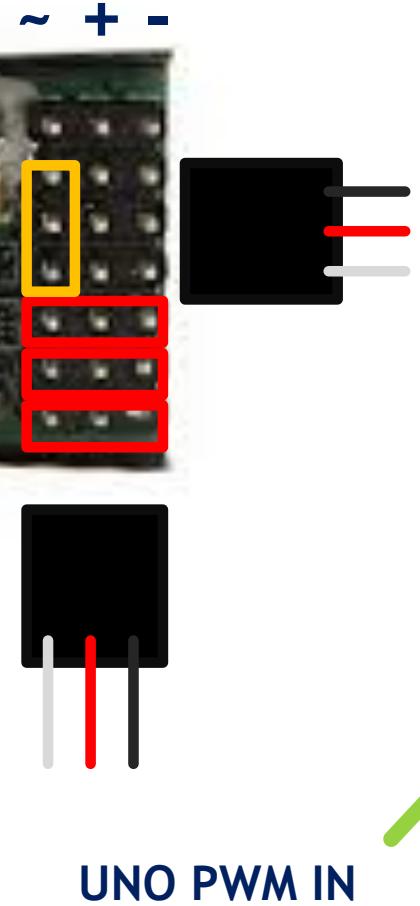
They may come with  
different coded wire but  
layout are always same

OPTO Wires may only have  
Signal and Negative Wires o



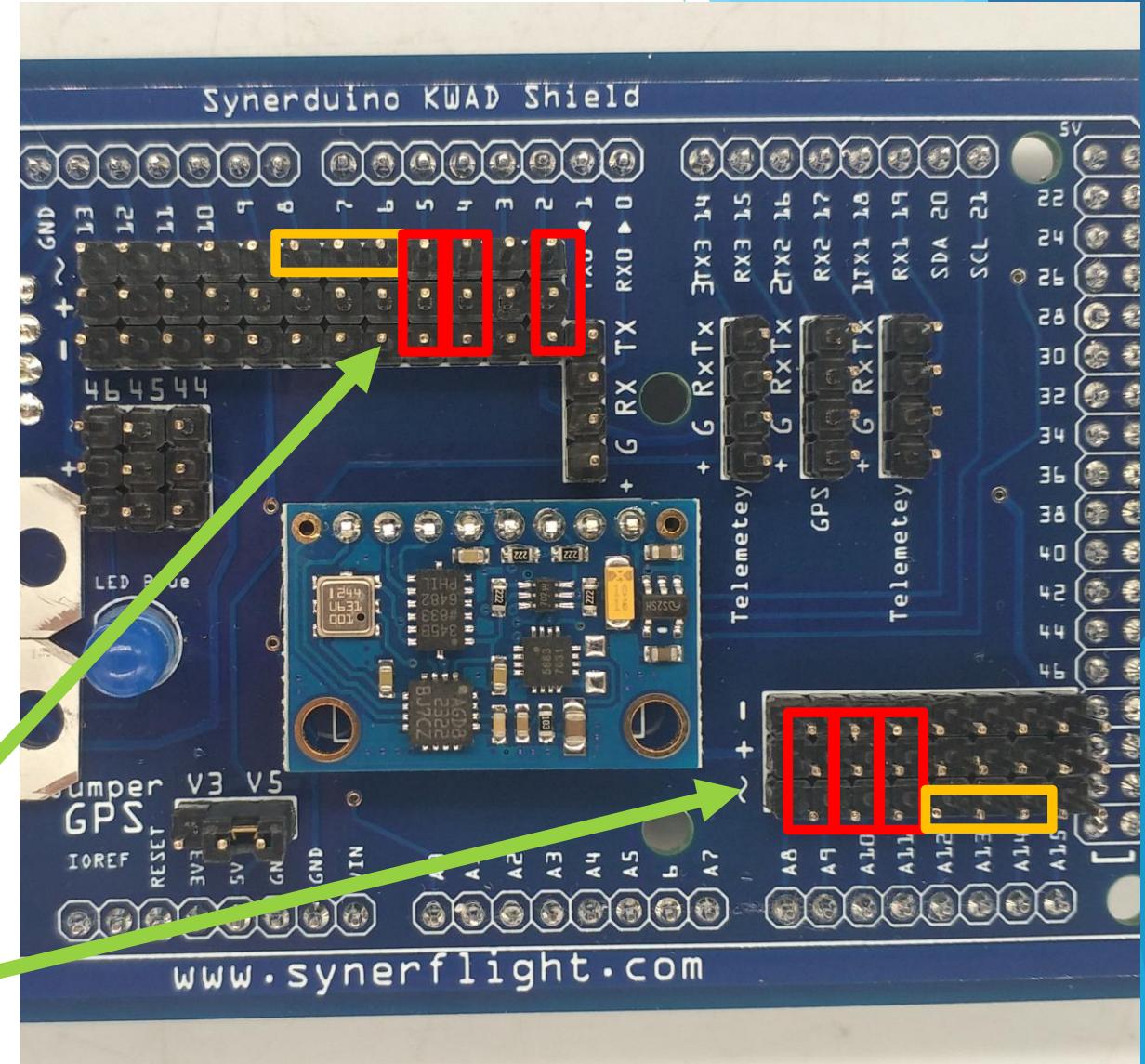


INCASE YOU'D ASK WHY THE SERVO CONNECTORS WERE DONE THIS WAY , ITS SIMPLY YOU DON'T NEED TO PLUG ALL THE PWM POWER RAILS ON ALL CHANNELS YOU JUST NEED THE PWM SIGNAL PIN ALONE  
MOSTLY RUDDER AUX1 AND AUX2



UNO PWM IN

MEGA PWM IN

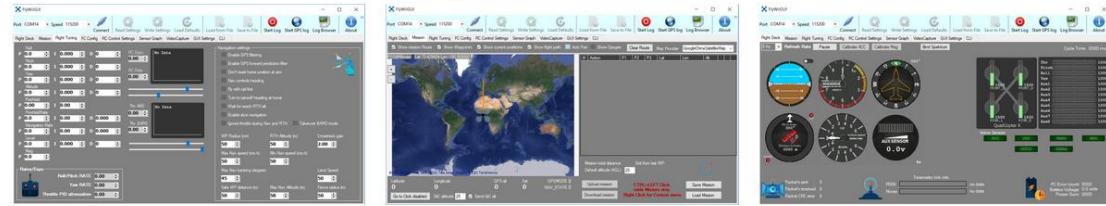


Download the FlyWiiGUI groundstation and open FlywiiGUI.exe

Name	Date modified	Type	Size
210130-0301	30/04/2021 3:01 PM	File	3 KB
210814-0408	14/09/2021 4:08 PM	File	3 KB
212812-0428	12/06/2021 4:28 PM	File	3 KB
214012-0340	12/06/2021 3:40 PM	File	3 KB
AForge.Controls.dll	25/01/2015 1:15 PM	Application extens...	44 KB
AForge.dll	25/01/2015 1:15 PM	Application extens...	17 KB
AForge.Imaging.dll	25/01/2015 1:15 PM	Application extens...	248 KB
AForge.Math.dll	25/01/2015 1:15 PM	Application extens...	67 KB
AForge.Video.DirectShow.dll	25/01/2015 1:15 PM	Application extens...	52 KB
AForge.Video.dll	25/01/2015 1:15 PM	Application extens...	19 KB
AForge.Video.FFMPEG.dll	25/01/2015 1:15 PM	Application extens...	60 KB
avcodec-53.dll	25/01/2015 1:15 PM	Application extens...	13,181 KB
avdevice-53.dll	25/01/2015 1:15 PM	Application extens...	342 KB
avfilter-2.dll	25/01/2015 1:15 PM	Application extens...	870 KB
avformat-53.dll	25/01/2015 1:15 PM	Application extens...	2,405 KB
avutil-51.dll	25/01/2015 1:15 PM	Application extens...	135 KB
<b>FlyWiiGUI.exe</b>	30/10/2021 11:41 ...	Application	6,945 KB
FlyWiiGUI.exe.config	28/02/2017 5:31 PM	CONFIG File	1 KB
FlyWiiGUI.exe.manifest	30/10/2021 11:41 ...	MANIFEST File	30 KB

The FlyWii GUI is a free updated version of the MultiWii WinGUI. It serves as the ground control station for the MultiWii 2.4 controller software.

FlyWii GUI is currently only supported for Windows 7/8/10



[Download](#)

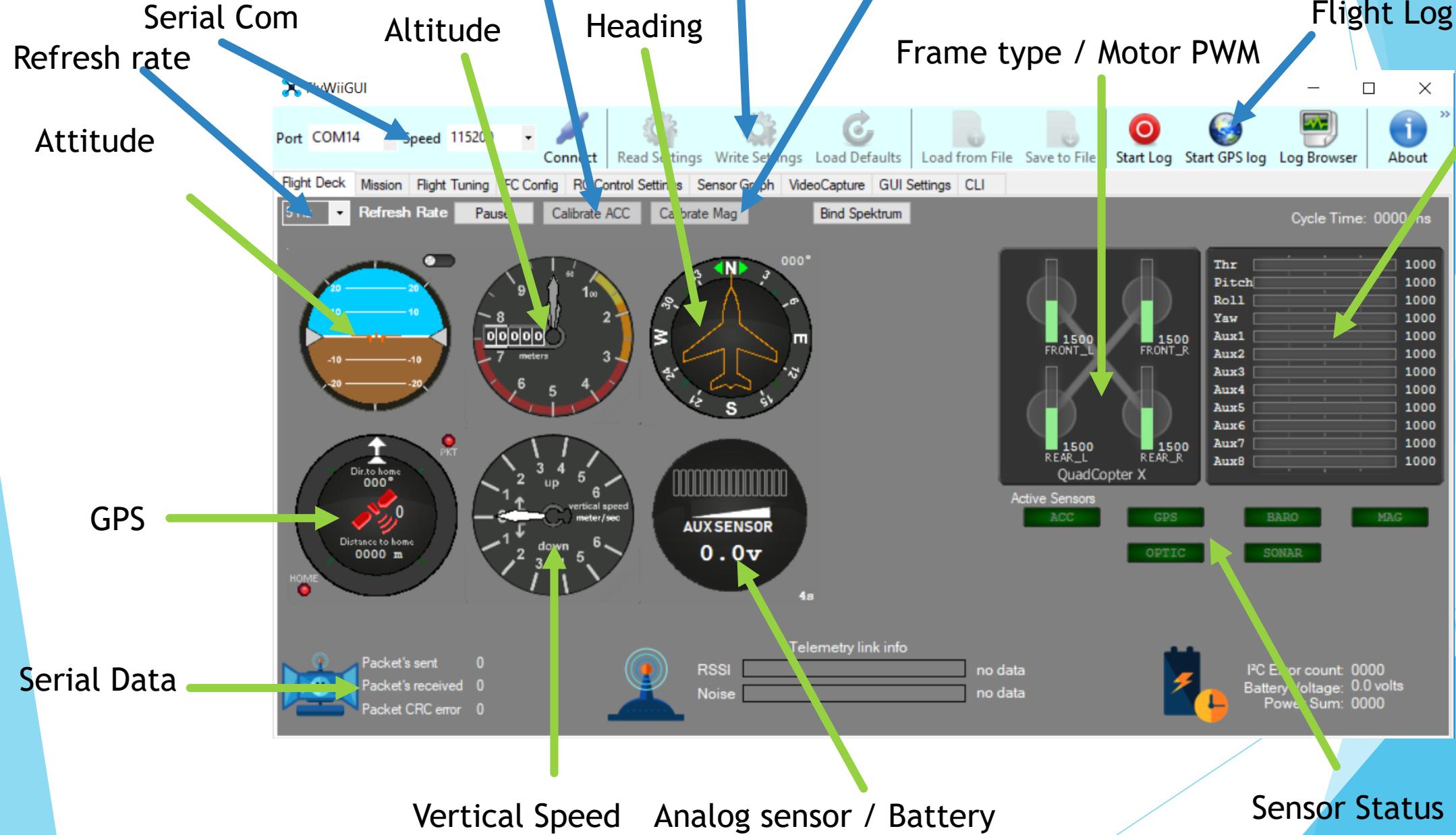
**FlyWii GUI Ground Station Software .EXE**

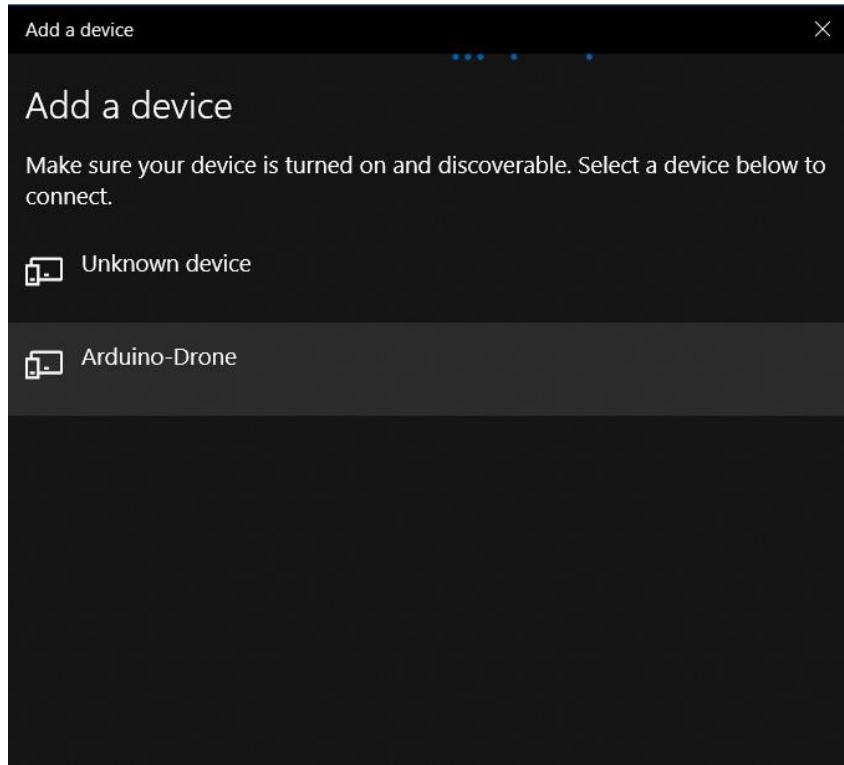
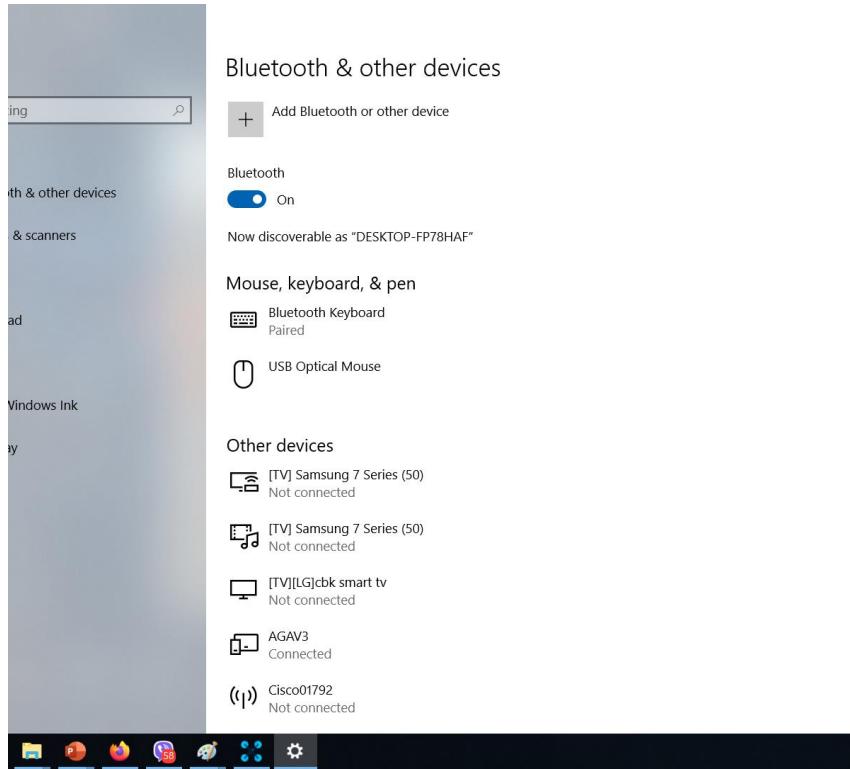
**Ground Station FlyGUI19**

[Download](#)

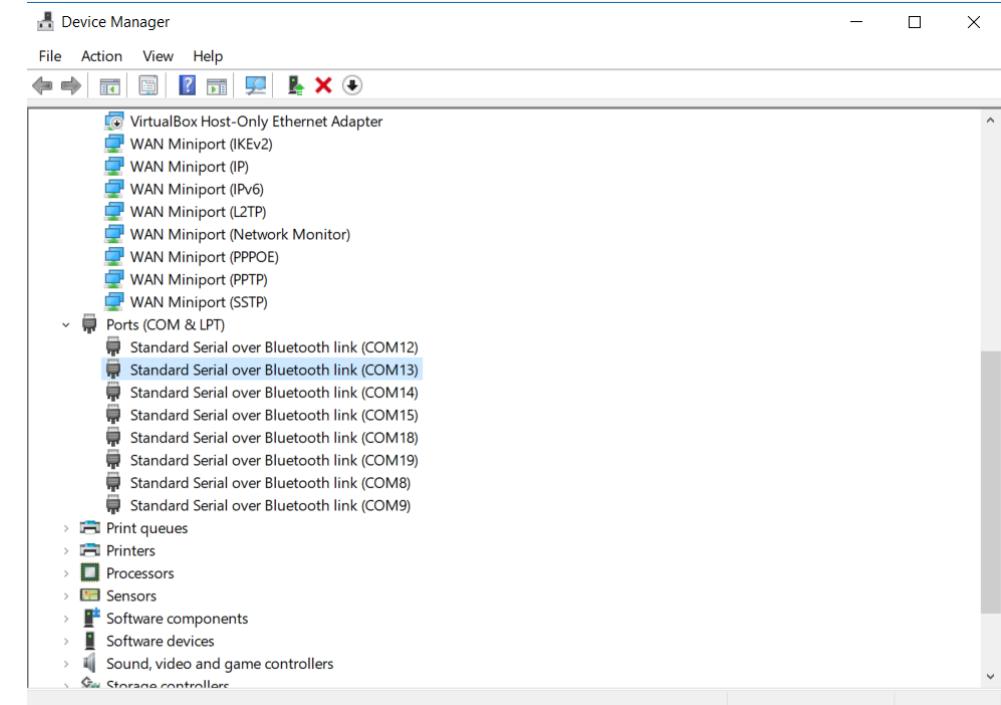
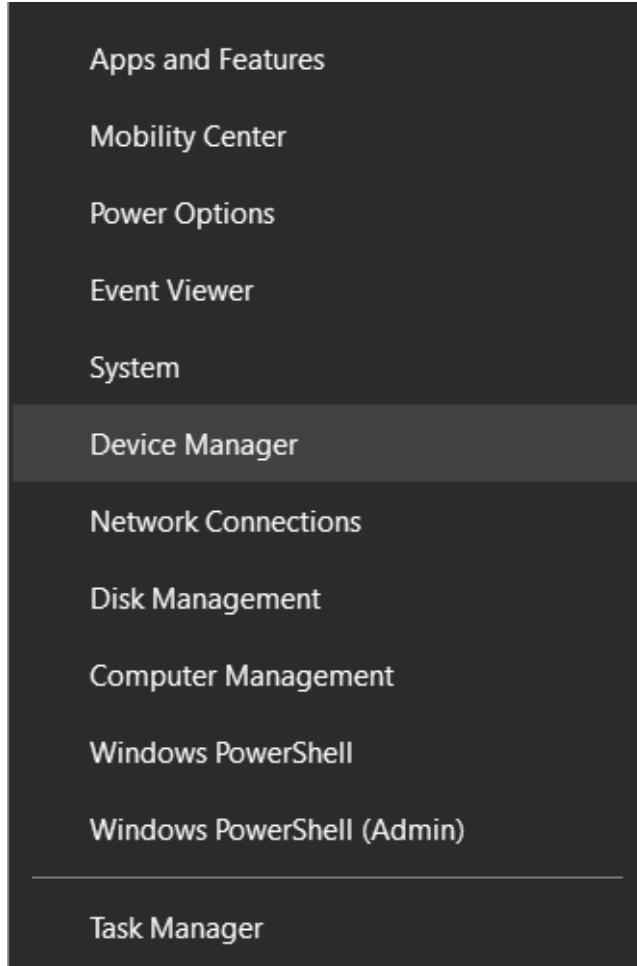
Calibration Acc - Drone must be on level surface

Write settings after changes made in any of the parameters





Adding Bluetooth on Windows Device Manager look for Arduino-  
Drone BT device  
Take note on which Serial Com port its added to in Device Manager



in Device Manager Located in COM & LPT

Download the Preset PIDs from

250mm Version 2 (3d printed kwad frame)

PID Parameters

tank PID

[Download](#)

tank PID 2

[Download](#)

boat PID

[Download](#)

boat PID 2

[Download](#)

Name

Date modified

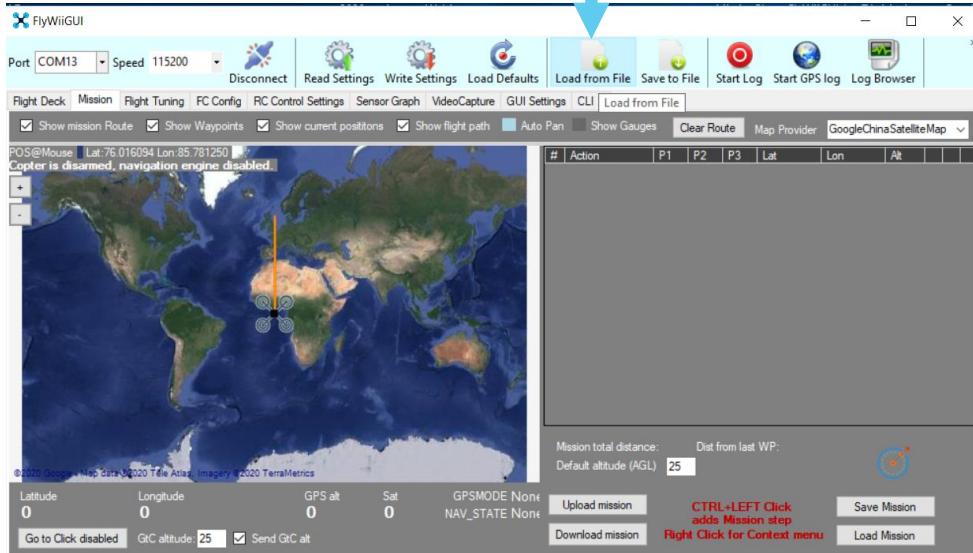
Type

^  
Size

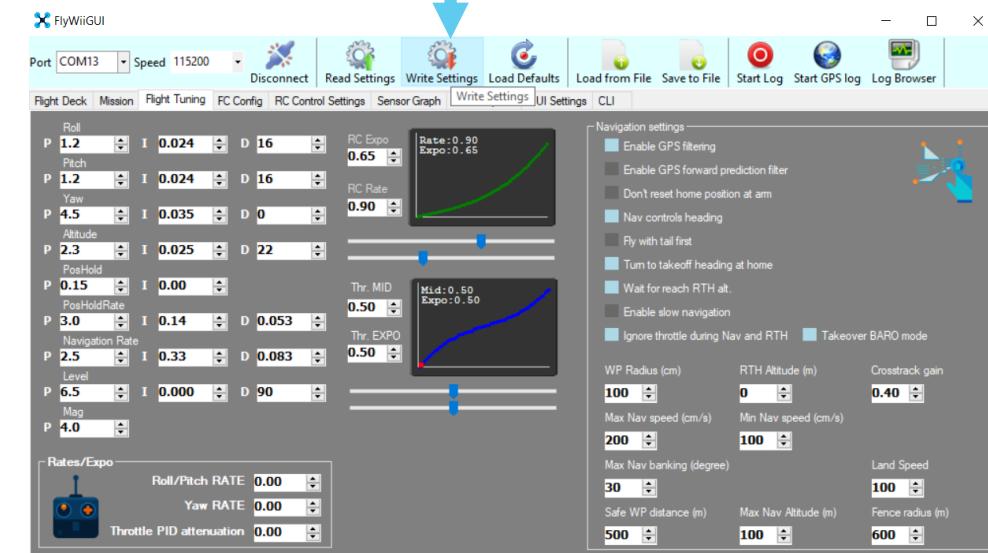
 boat pid 2021 2.mws	14/09/2021 4:10 PM	MWS File	3 KB
 boat pid 2021.mws	10/06/2021 9:21 PM	MWS File	3 KB
 tank pid 2021 2.mws	14/09/2021 4:09 PM	MWS File	3 KB
 tank pid 2021-13-6.mws	12/06/2021 9:55 PM	MWS File	3 KB

Load the PID file and Write settings after changes made in any of the parameters

Load the PID file



Write PID Parameter to drone



## Aux Switches



Flight modes allows for additional access functions to your drone's capabilities

And can be setup using the Aux switch

ARM  
Baro  
Altitude  
GPS Hold  
Mag  
GPS Home  
Mission  
Trigger  
Land



PWM 1000 1500 2000

## FS or TYG i6 remote example for Assigning Aux switch

Press OK for 1 sec

Enter Function setup

Choose Aux Channels

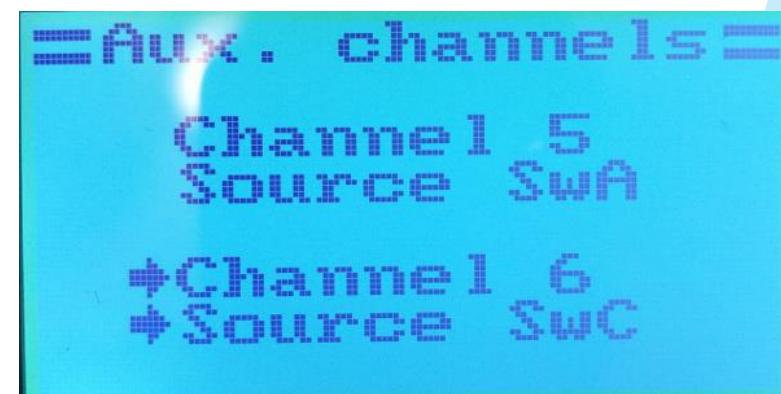
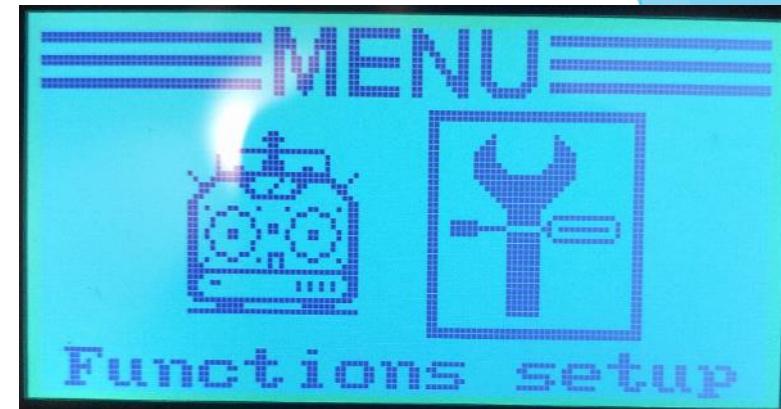
Hit ok button

Choose Channel to switch assignment on the  
remote

Up/down button to select assignment

Hold Cancel Button for 3sec to set when exiting  
the Aux Channel menu

You may enter in again to see if its set properly



## FS or TYG i6 remote example for Fail safe

Press OK for 1 sec

Enter Systems

Choose RX Setup

Choose Failsafe

Choose Channel to set failsafe to

Move the stick or Aux switch to its fail safe position

Eg. GPS Home Mode (Ch5 or Ch6 where ever you set that mode in ) or throttle down Stick on Ch3

Hit ok button

Hold Cancel Button for 3sec to set when exiting the failsafe menu

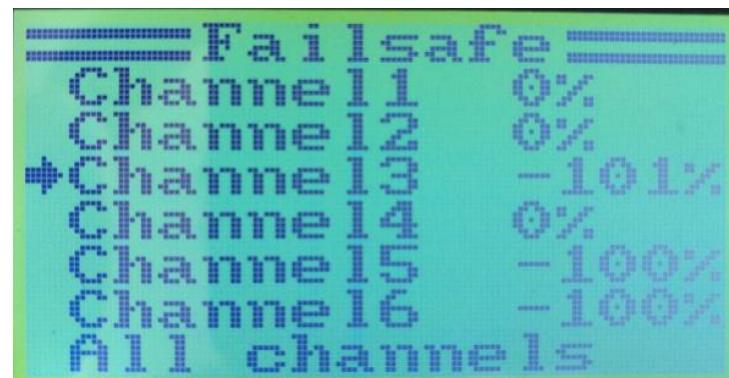
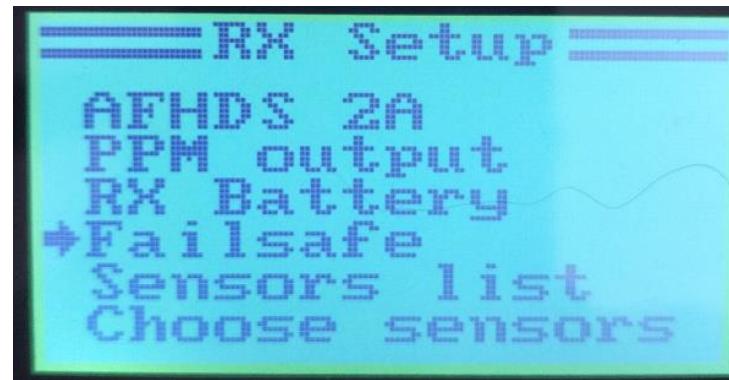
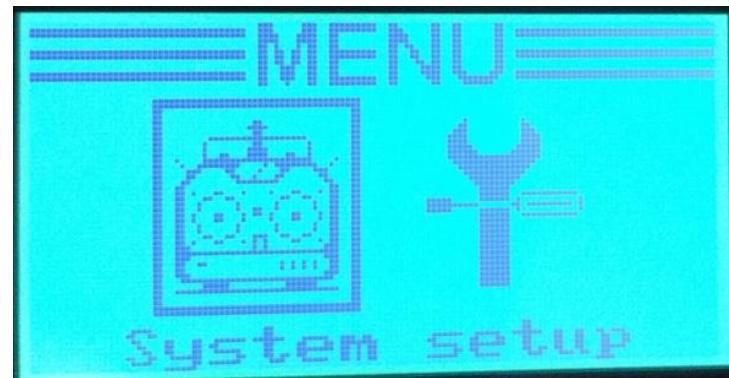
You may enter in again to see if its set properly

### Attention:

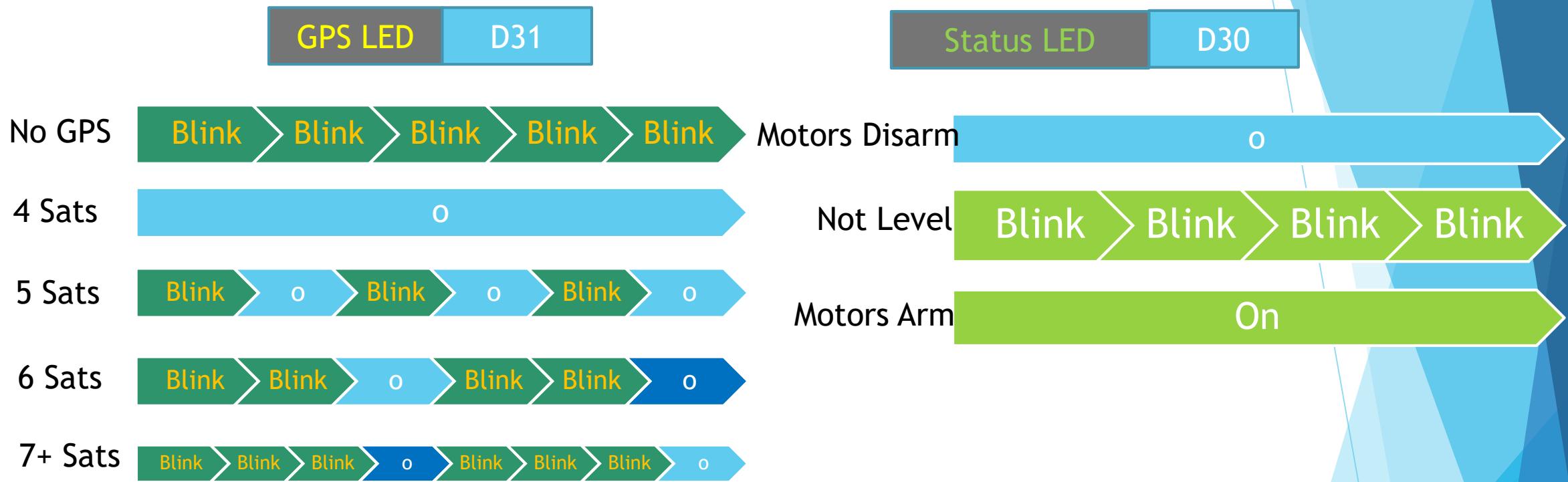
The Receiver will enter this mode when radio link is lost from the Transmitter

Switch transmitter off to test this function

Make sure props are remove before doing so

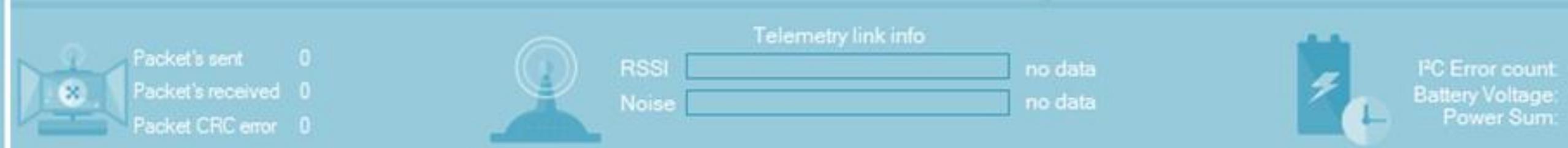


## LED Indicator



indicate a valid GPS fix by flashing the LED

- led work as sat number indicator
- No GPS FIX -> LED blinks constant speed
- Fix and sat no. below 5 -> LED off
- Fix and sat no. >= 5 -> LED blinks, one blink for 5 sat, two blinks for 6 sat, three for 7 +





FLIGHT DECK - IF THIS DOESN'T LOOK RIGHT CHECK YOUR SENSORS ORIENTATION AGAIN USING THE SENSOR GRAPH

TELEMETRY CONNECTION SEE YOUR CHECK YOUR BLUETOOTH RADIO OR USB ON WHERE IS THE VIRTUAL COM PORT IS

COMPASS (MAG AND GYRO)

PWM OUTPUT INDICATOR

PWM INPUT INDICATOR

SAVE CONFIG

FLIGHT & GPS LOGS

ALTITUDE (BARO)

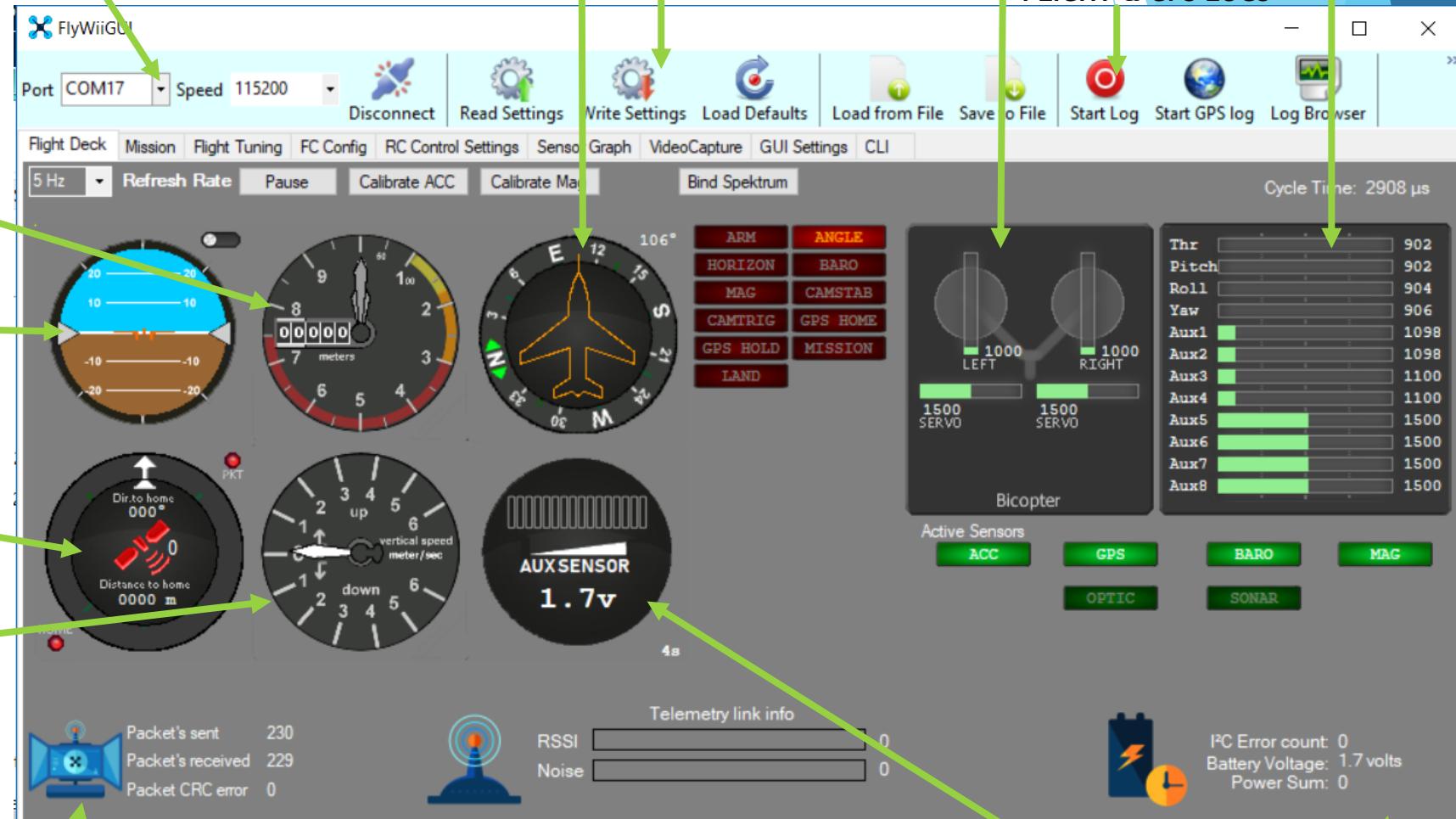
ATTITUDE (ARTIFICIAL HORIZON)  
(GYRO XYZ AND ACC XYZ)

GPS SATELLITE COUNT  
(4 SATS FOR 3D FIX - IDEAL 7 SATS)

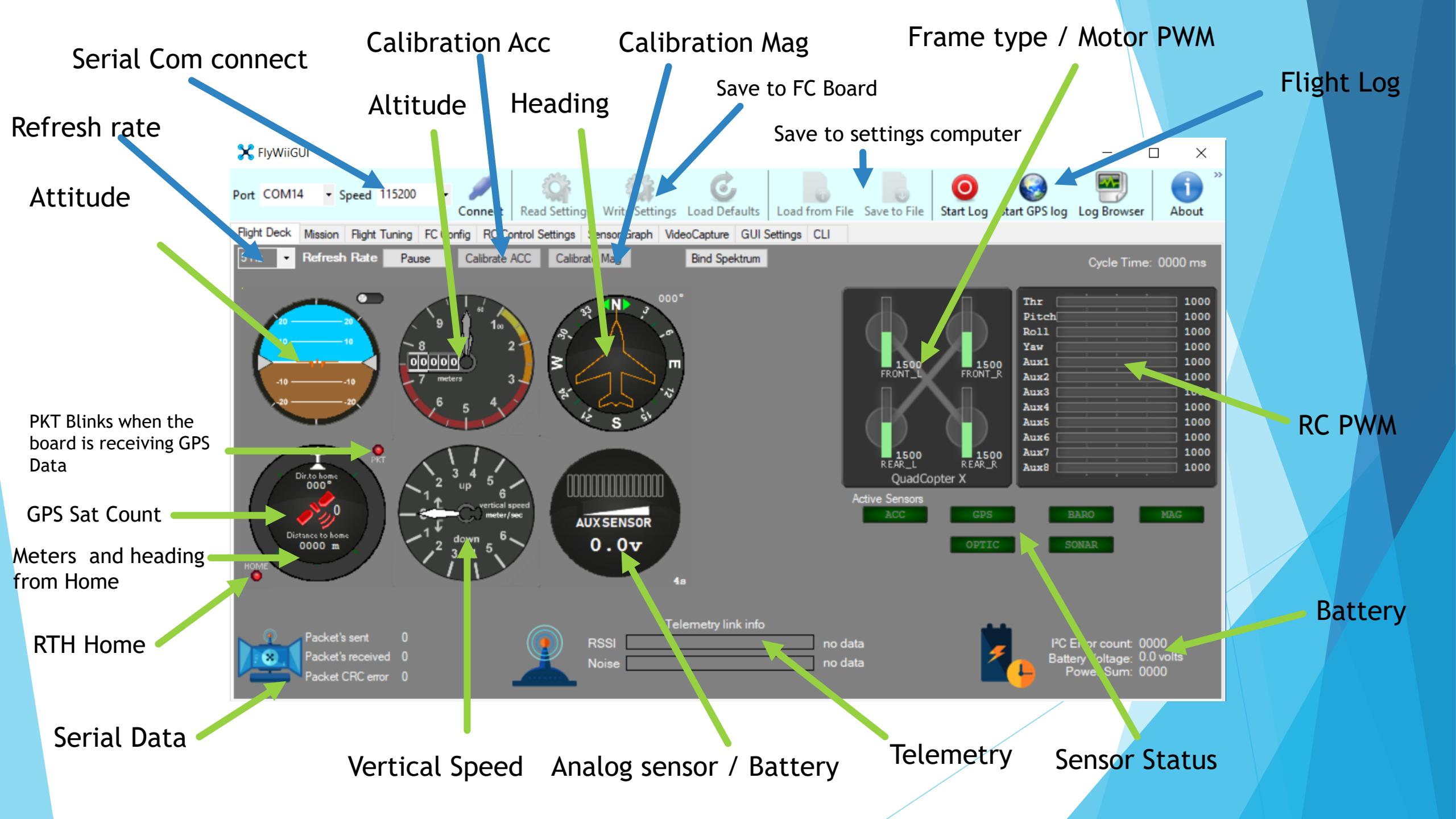
VERTICAL SPEED INDICATOR  
(ACC Z AXIS )

PACKETS STATUS

(IF THE ERROR NUMBERS ARE HIGH PLS  
CHECK YOUR TELEMETRY CONFIG)



POWER STATUS / AUX SENSOR  
ALSO KNOWN AS FUEL GAUGE  
(VBAT )





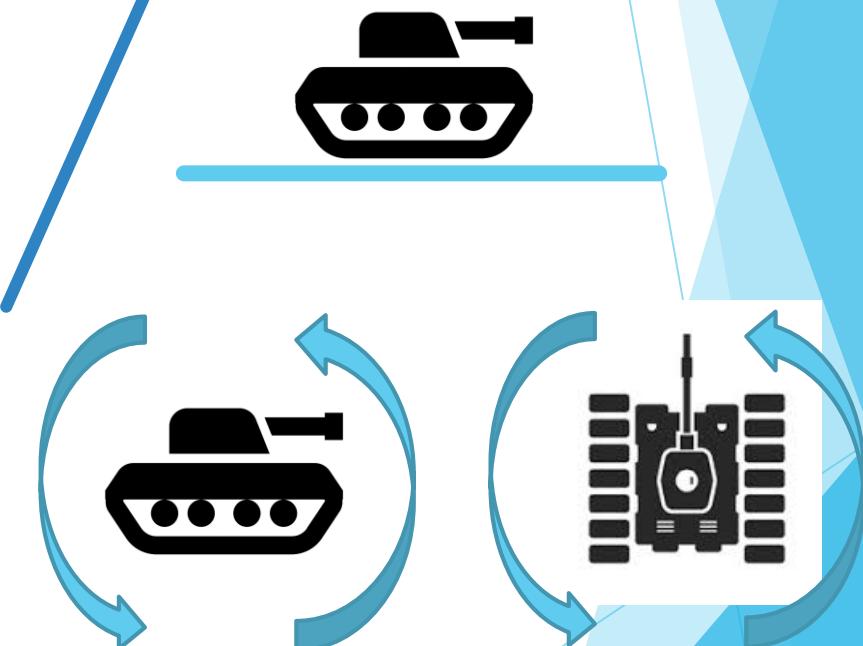
Refresh Rate . Telemetry update speed

Acc Calibration . Set the vehicle down on a level surface  
. Away from any metal objects for 10 secs.

Mag Calibration . rotate the vehicle 360 degrees in all  
axis within 30sec - 1 min. while the blue Led flashes

Mag Calibration must be perform when running your  
vehicle in a new location for the first time. Pls verified  
the Compass if the drone heading matches your compass  
app in your phone.

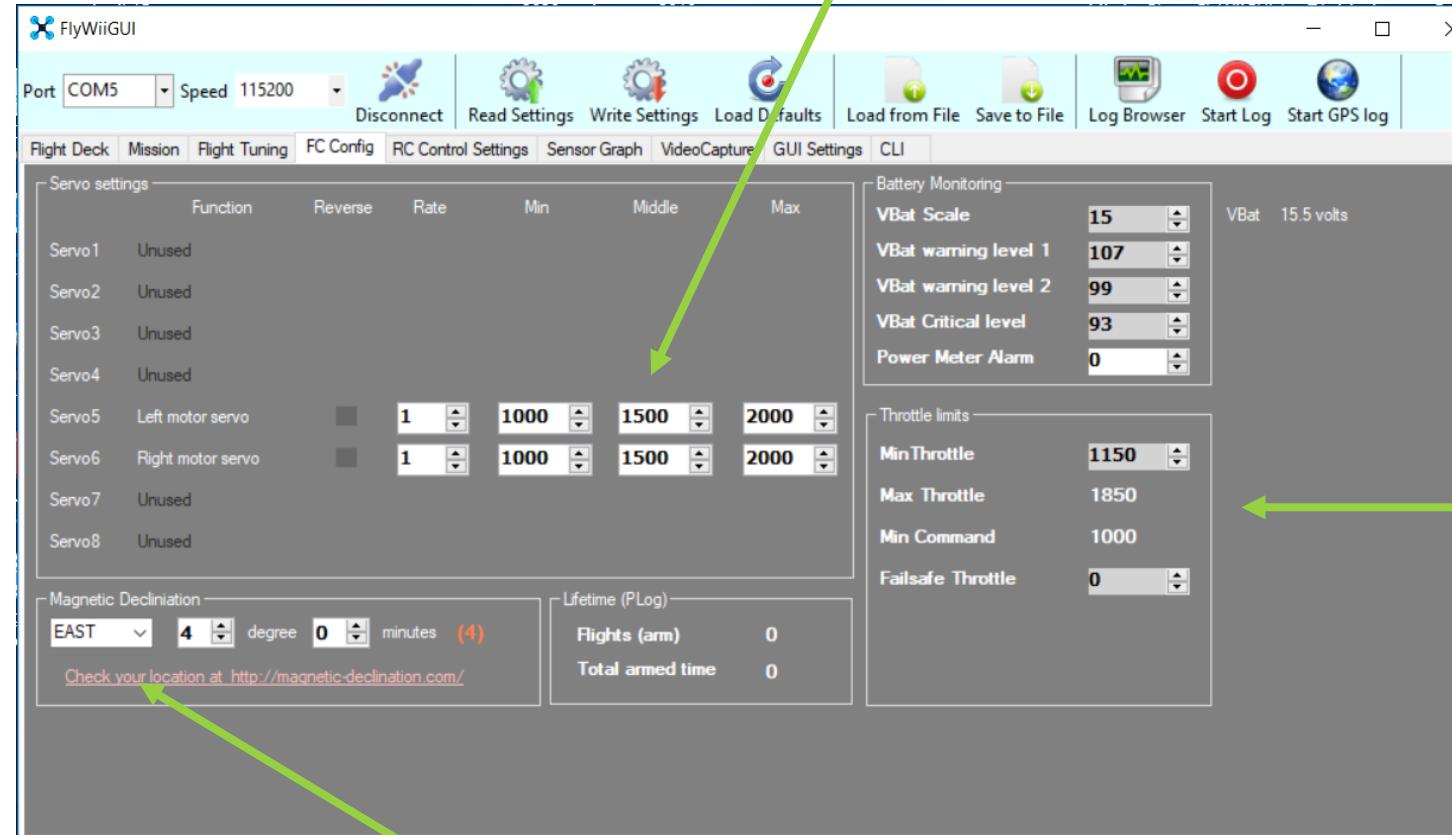
These Calibration must be perform after Parameter  
updates after Flushing the firmware  
Blue LED would flash during these calibration processes



# Other Navigation Functions

## FC Config

SERVO REVERSE OPTION - IF THE SERVO / REVERSABLE ESCS  
IS OPERATING IN THE WRONG DIRECTION FROM CONTROLS



IMPORTANT TO KNOW THE MAGNETIC DECLINATION OF YOUR REGION

THIS AID ANY AUTONOMOUS FUNCTION THAT REQUIRES COMPASS

- HEADING HOLD
- GPS HOLD
- RTH
- MISSION

CALIBRATE COMPASS AT THE FLIGHT DECK TAB AFTER SETTING THIS UP

MOTOR THROTTLE RANGE PWM TO THE MOTOR  
THIS ALSO CONTROLS THE MOTOR IDLE SPEED ON ARM



# FLYWII GUI

Battery Monitoring

VBat Scale	120
VBat warning level 1	110
VBat warning level 2	110
VBat Critical level	109
Power Meter Alarm	0

VBat 15.4 volts

Battery Cell Count

4s	▼
1s	
2s	
3s	
4s	
5s	
6s	
7s	
8s	
9s	
10s	

(FC CONFIG TAB)

BATTERY MONITORING

VBAT SCALE - ADJUST THIS TO MATCH THE BATTERY VOLTAGE OUTPUT USING THE VOLTAGE ALARM INDICATOR

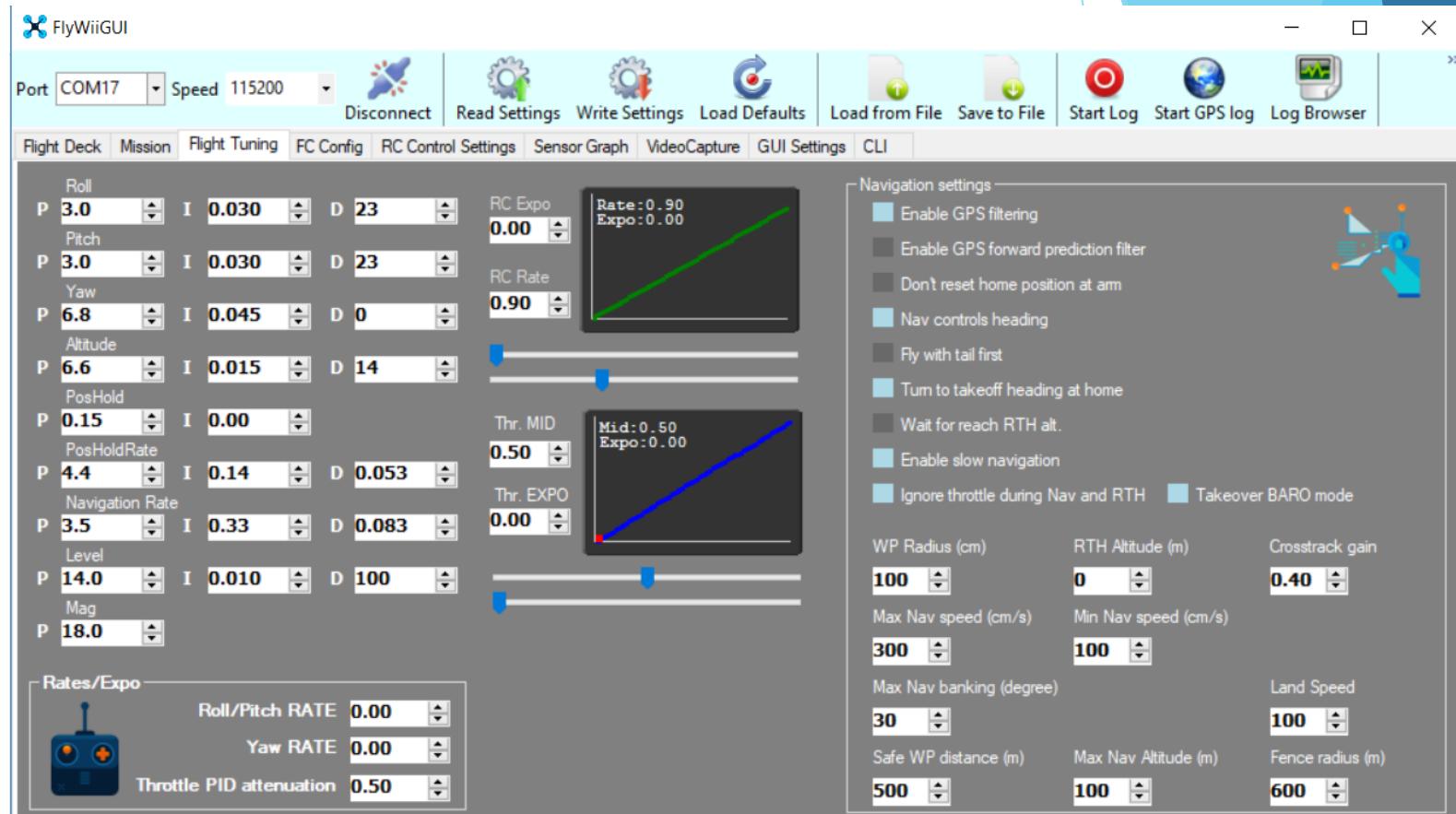
VBAT WARNING LEVEL - IDENTIFY THE NOTICE WHEN THE BATTERY DROPS TO THIS VOLTAGE

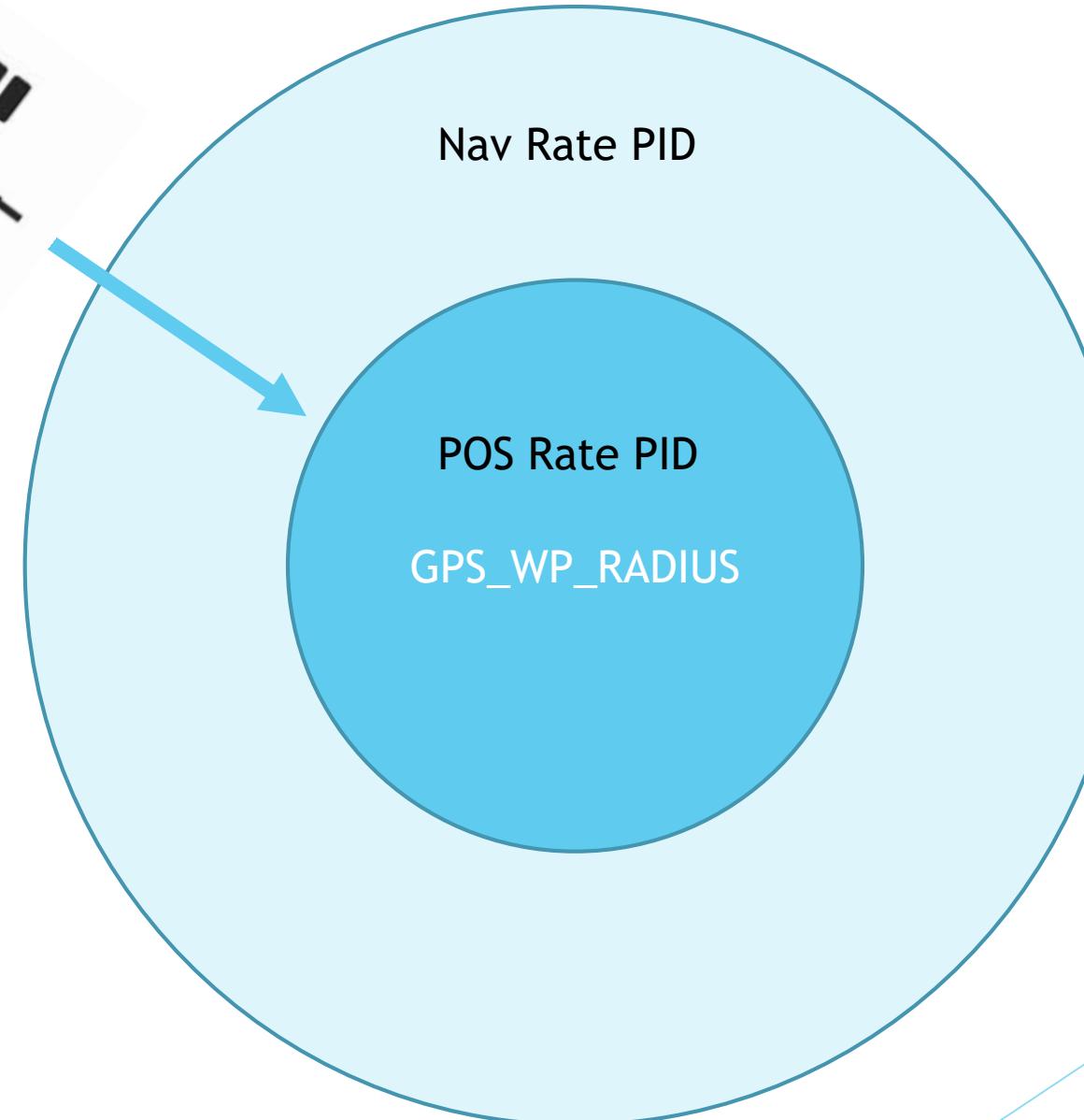
(GUI SETTINGS TAB)

BATTERY CELL COUNT- ADJUST THIS DEPENDING ON THE NUMBER OF CELLS

THIS BOARD SUPPORTS 2S-4S BATTERY

# BATTERY

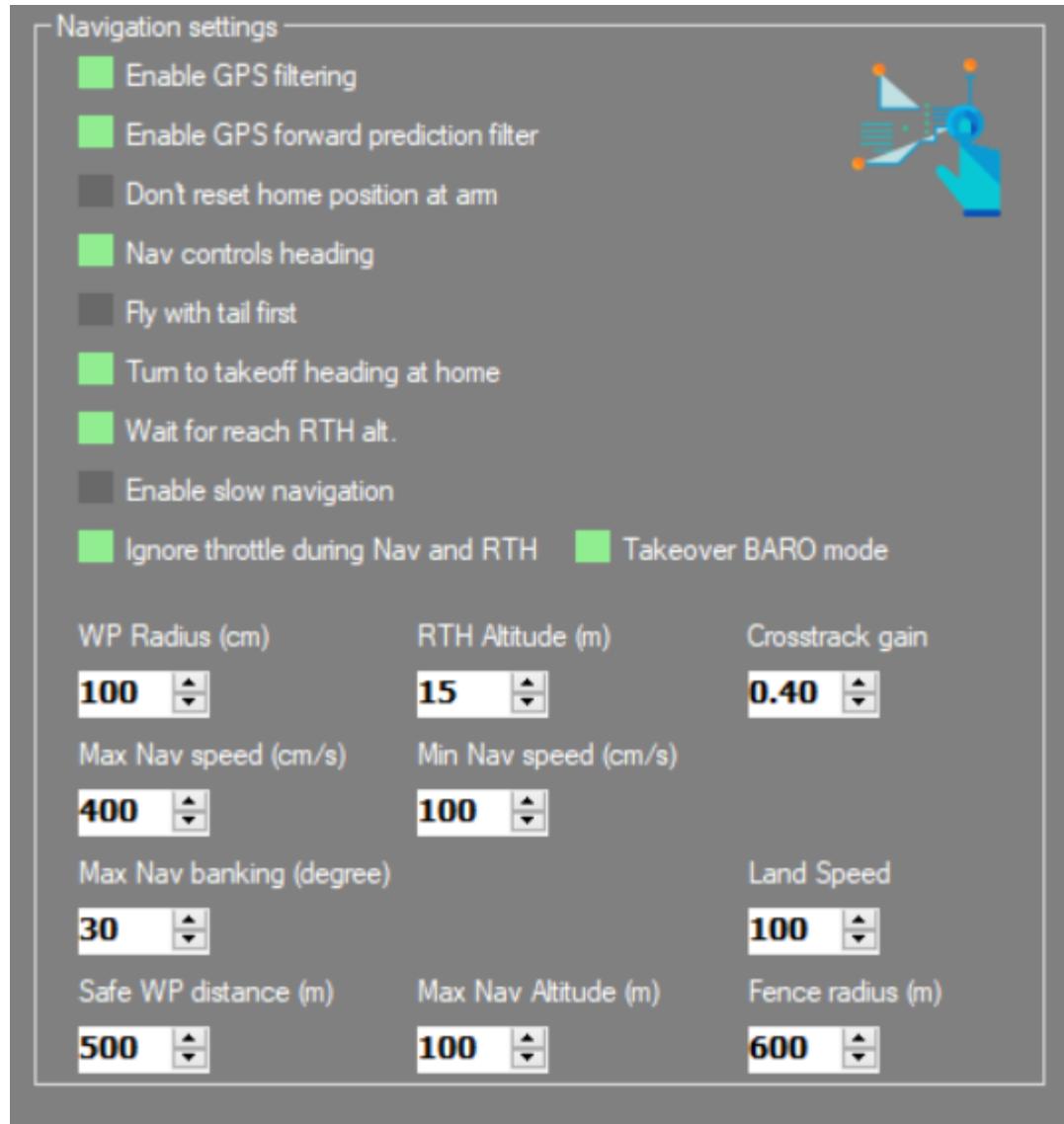




PosHold	P <b>0.15</b>	I <b>0.00</b>
PosHoldRate	P <b>3.4</b>	I <b>0.14</b> D <b>0.053</b>
Navigation Rate	P <b>2.5</b>	I <b>0.33</b> D <b>0.083</b>

The Navigation responds is the vehicle will orientate to the direction of the waypoint  
It will proceed to drive straight until it reach the WP\_Radius and stop  
With multiple waypoint it will repeat the process till it completes the mission

# Other Navigation Functions



**WP Radius** - the radius of the area the Pos PID will trigger it has reach the waypoint

**Max Nav Speed** - Maximum speed the Vehicle travel between waypoints (too fast and you likely over shoot your target) *for first mission flight test Nav speed of 100cm/s with (“Enable Slow Navigation “Active)*

**Min Nav Speed** - the speed the drone travel when with in the WP Radius

**RTH Altitude** - (Zero Value for surface vehicle)

**Max Nav Banking** - the max allowable pitch and roll the drone will be set too while traveling between waypoints (tune this along with Max Nav Speed to take account with Environment conditions ) *(not applicable for surface vehicle)*

**Max Nav Altitude** - Max altitude the drone is cap to fly at (Zero Value for surface vehicle)

**Land Speed** - speed of descending for Landing cm/s *(not applicable for surface vehicle)*

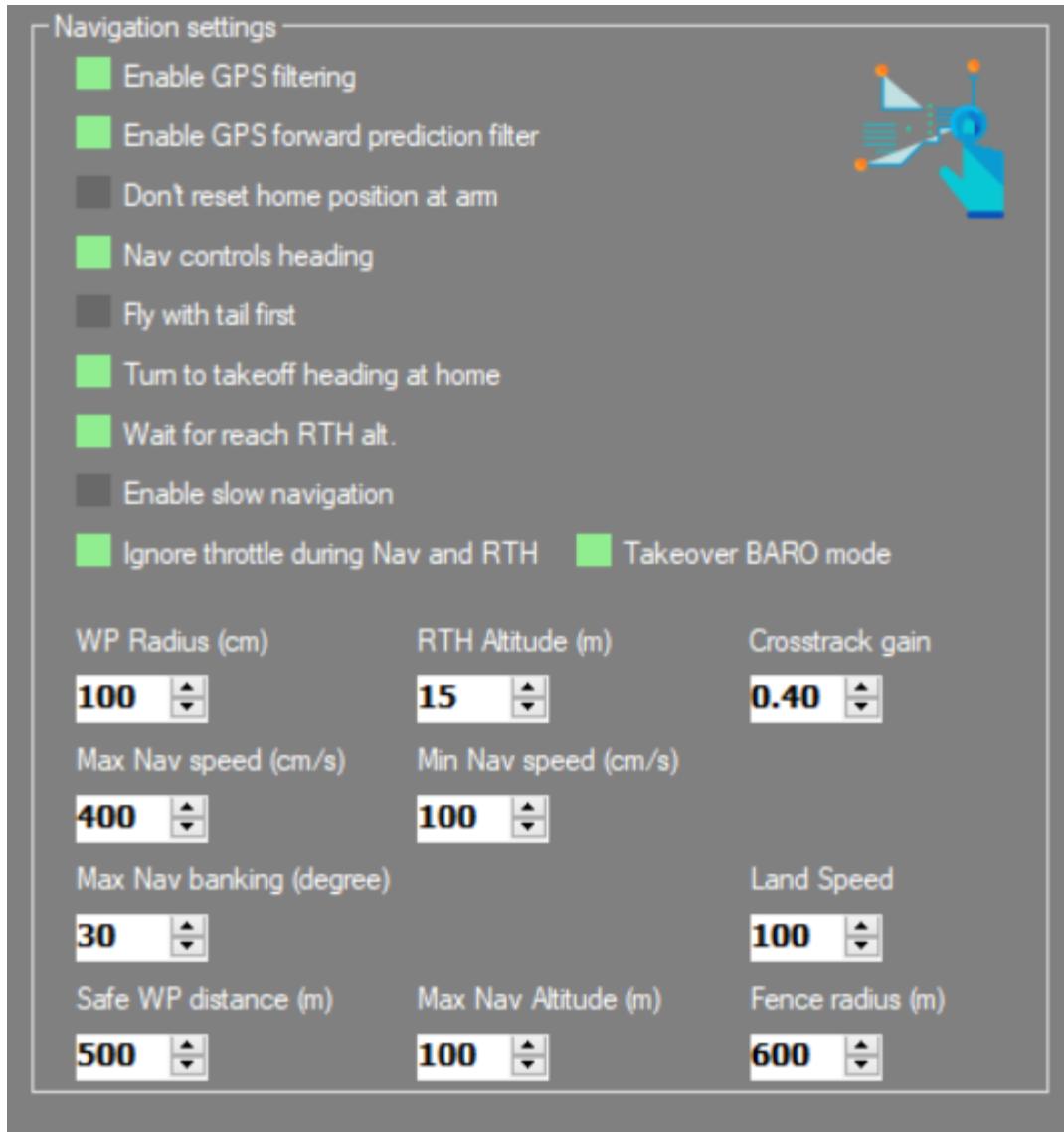
**Safe WP Distance** - max distance between waypoint before its null out

**Fence Radius** - Geo Fence to keep the drone with in the perimeter in relation to home position

**CrossTrack gain** - this tune the GPS and Nav sensitivity

**GPS Filtering** - use to enhance GPS accuracy

**GPS Forward Prediction Filter** - predicting the Vehicle’s location and to compensate for lag . (optional) - not necessary for most application



**Don't Reset Home position at Arm** - this retains the home position where you first plug power on your Vehicle

**Nav Controls Heading** - this points the Vehicle to its next waypoints (Keep this on ) exception for omnidirectional vehicles

**Fly tail first** - makes the Vehicle drive reverse

**Turn take off heading at Home** - when drone arrives at home position it orientates to its heading right after arming

**Wait to reach RTH** - this works with RTH altitude command which the drone would climb to the said altitude before initiating the flight to home position  
(turn off for surface vehicle) **(not applicable for surface vehicle)**

**Enable slow navigation** - this works with keeping the drone to its **Min Nav speed**

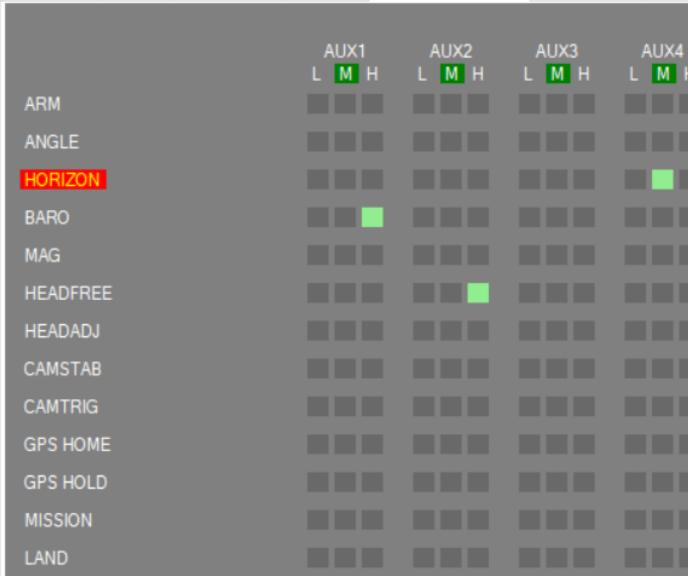
**Ignore throttle and Take over Baro** - Not applicable



WiiGUI



Flight Deck Mission Flight Tuning FC Config RC Control Settings Sensor Graph VideoCapture GUI Settings CLI



## RC Control Settings

Use Aux switch to setup flight modes and Navigation functions

ARM - this is option should you decided to use a Aux switch oppose to the Combination Stick input to Arm/Disarm Vehicle

BARO - Not applicable

MAG -Heading Hold

HEADFREE - Course Lock regardless of orientation

GPS Home - Return to Home Vehicle returns to where its armed

GPS Hold - Hold Position

MISSION - run a waypoint mission



Live RC data



## Missions

Note: Only functional for Mega 2560 Boards with GPS

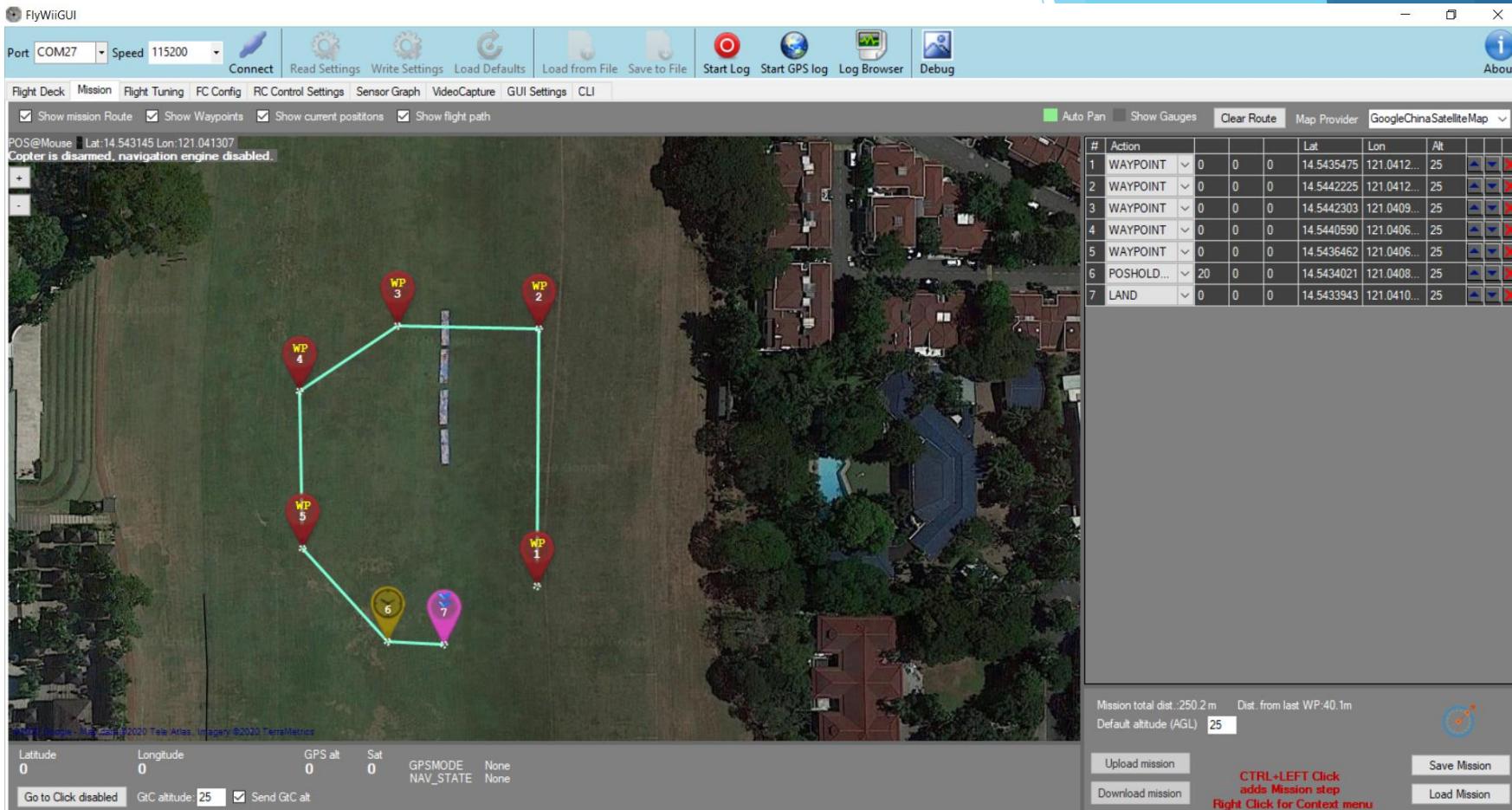
Waypoint - the Vehicle with travel between those points

Time PosHold - Vehicle will wait X number of 00:00:00 then move to the next waypoint

Unlimited PosHold - once the Vehicle reach this point it will hover and wait till you switch out of Mission mode

Land - the Vehicle Stop when has reach this point (**Must be place at the end of the mission**)

RTH - the Vehicle will go back to home position (**Must be place at the end of the mission**)



RC Control Setting Tab - activate Baro , Mag , Mission

To start mission takeoff aircraft in stabilize mode up to 1-2meter altitude then switch the aux switch to mission mode .

Any time you can switch out of it on hold or stabilize mode



## Missions

Note: Only functional for Mega 2560 Boards with GPS

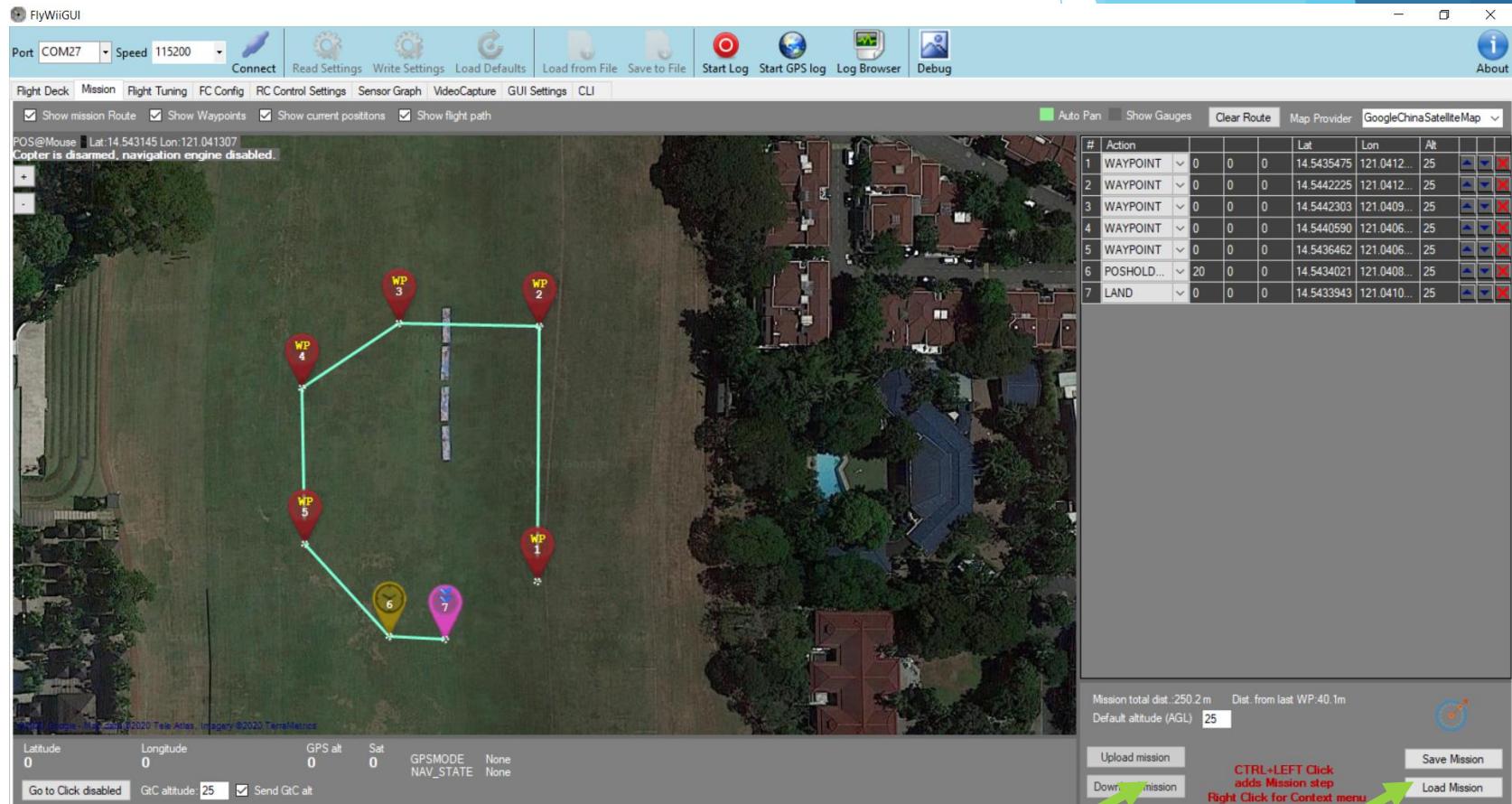
Waypoint - the Vehicle with travel between those points

Time PosHold - Vehicle will wait X number of 00:00:00 then move to the next waypoint

Unlimited PosHold - once the Vehicle reach this point it will hover and wait till you switch out of Mission mode

Land - the Vehicle Stop when has reach this point (Must be place at the end of the mission)

RTH - the Vehicle will go back to home position (Must be place at the end of the mission)



Mission upload to / download from Vehicle

Mission Save to / Open from File



## Graphs and Sensors

Upload the sketch to the Arduino attach to the drone shield and open the FlywiiGUI sensor Graphs tab and hit connect to the appropriate COM your drone is connected to



the correct orientation

Roll Right + no#

Pitch nose down + No#

Z up + No#

Roll Right + no#

Pitch nose down + No#

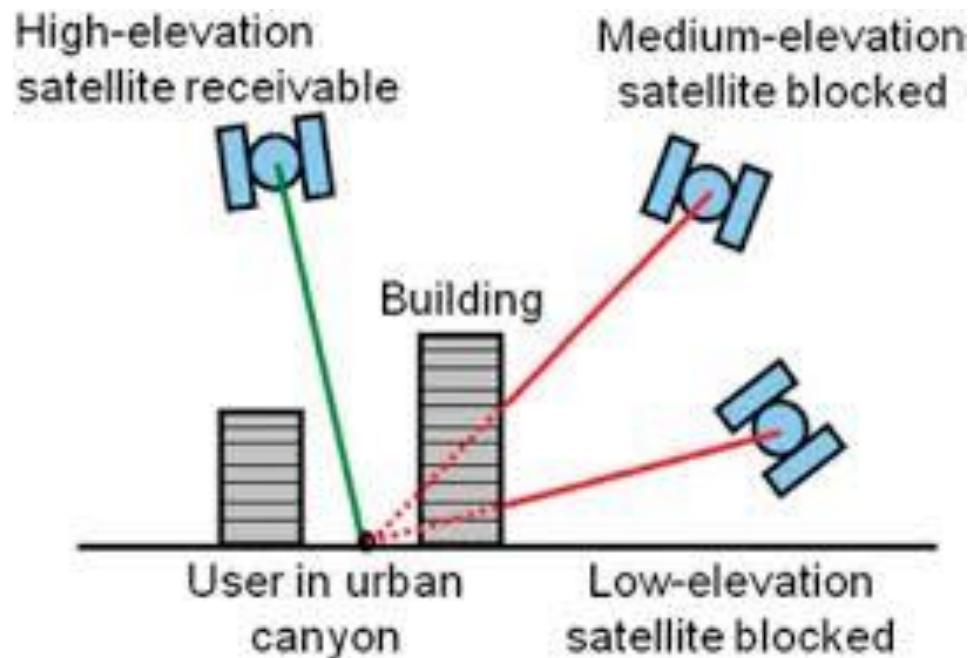
Yaw Right +No#

Mag & HEAD degrees  
corresponds to the compass  
(0 degrees = North)

Alt up +no#

Example : if roll the drone to the right the Accelerometer and Gyroscope graphs would show positive numbers and to the Left Negative numbers

If Lift the drone up Vertically the accelerometer Z axis should shows positive numbers and altitude should show a climb in meters



**Note :** GPS require a clear open area to get a proper fix and accuracy minimum 7 satellites but 10+ are Ideal

**operating next to a building can distort satellite signal deteriorating accuracy**

**Which in this case its better to not use GPS modes and operate Manual**

And your much Done on  
your setup

**Cannot Arm Motors**

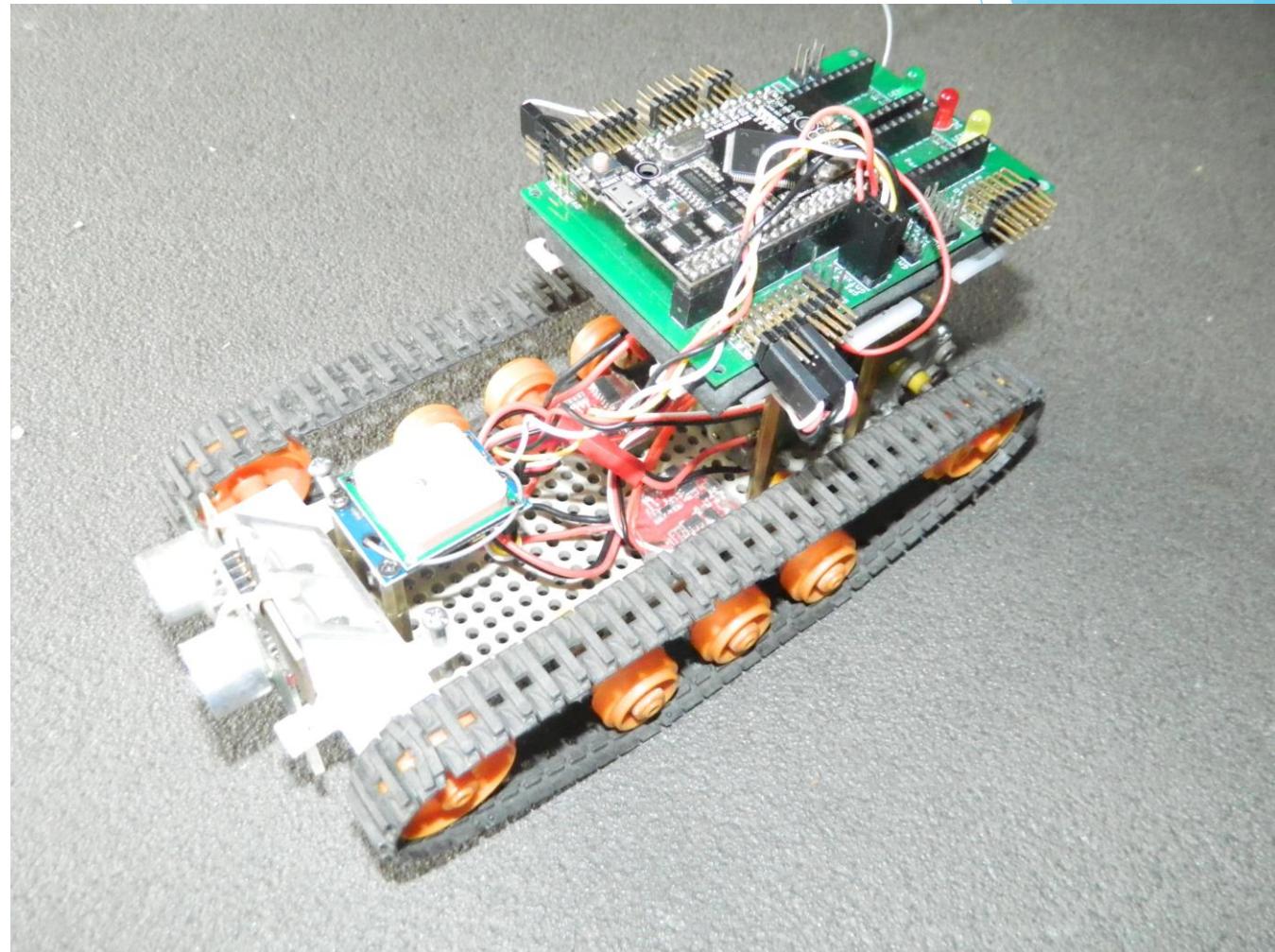
when on GPS Home , GPS Hold ,  
Mission Flight modes & when  
USB is plugged in . (pls use  
Bluetooth telemetry)

You can Test with the Vehicle's  
wheels off the ground first

**Pls calibrate ACC and Mag in  
the FlyWii GUI Dashboard**

**Ensure the compass is facing  
the correct orientation**

**Set Aux1 as Arm Switch at RC  
control**



**For surface vehicles at RC  
control settings**

**Set Aux1 as Arm Switch at RC  
control**

**Boats must be plug in on level  
surface first before placing on  
water**

