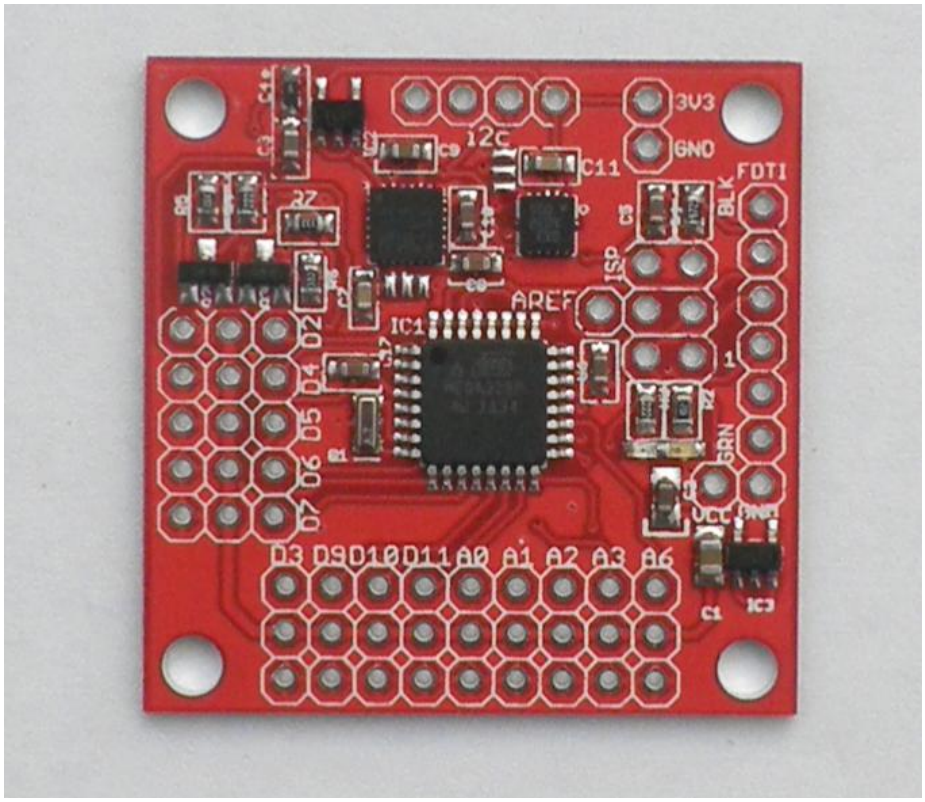
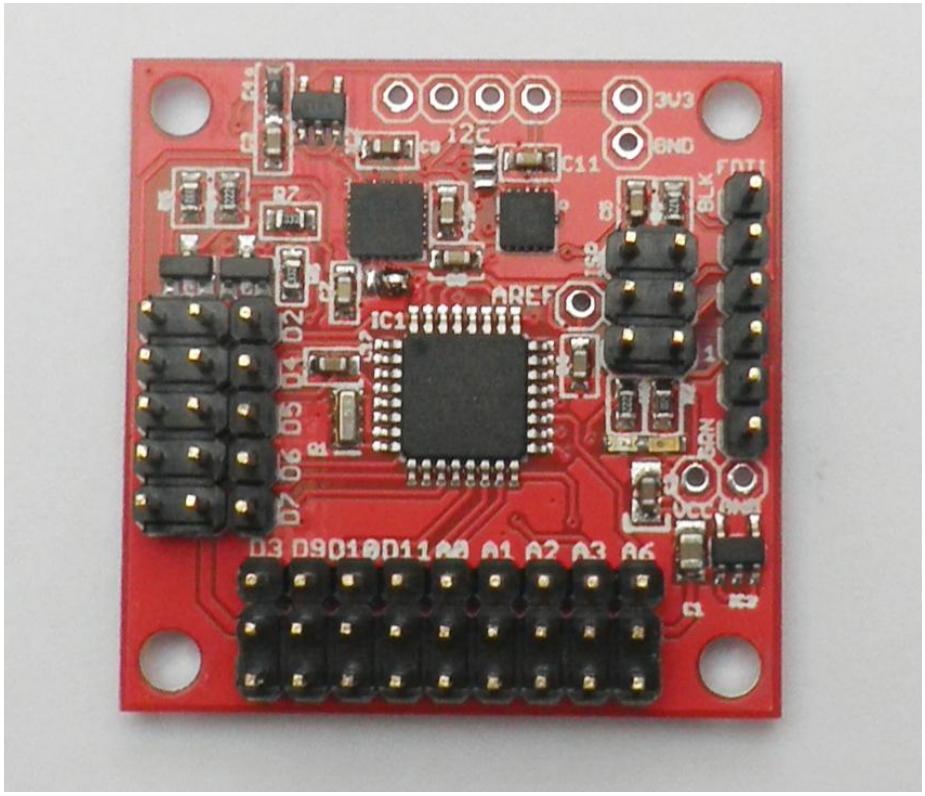
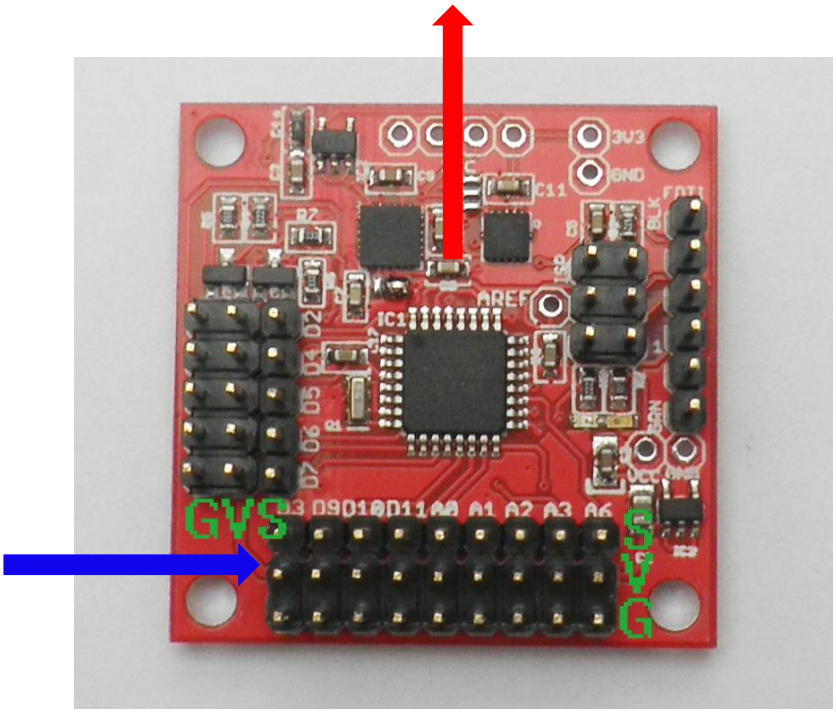
MWC Flying Control Board





Section 1 : Wiring your hardware

1. Rotation direction of motors and the connection between flying control board and motors



The direction of setting up the flying control board showing as the red arrow, it should always fowarding to the front of 4-axis flight!!!

Connect motors and ESCs following the relevant number to the area showing with blue arrow of flying control board

In example of 4 axis mode:

4 axis + mode:

Front motor,routing on clockwise, reverse propeller(1045R etc.) connect to D3

Back motor, routing on clockwise, reverse propeller(1045R etc.) connect to D9

Left motor, routing on anticlockwise, normal propeller(with out R) connect to D11

Right motor, routing on anticlockwise, normal propeller(with out R) connect to D10

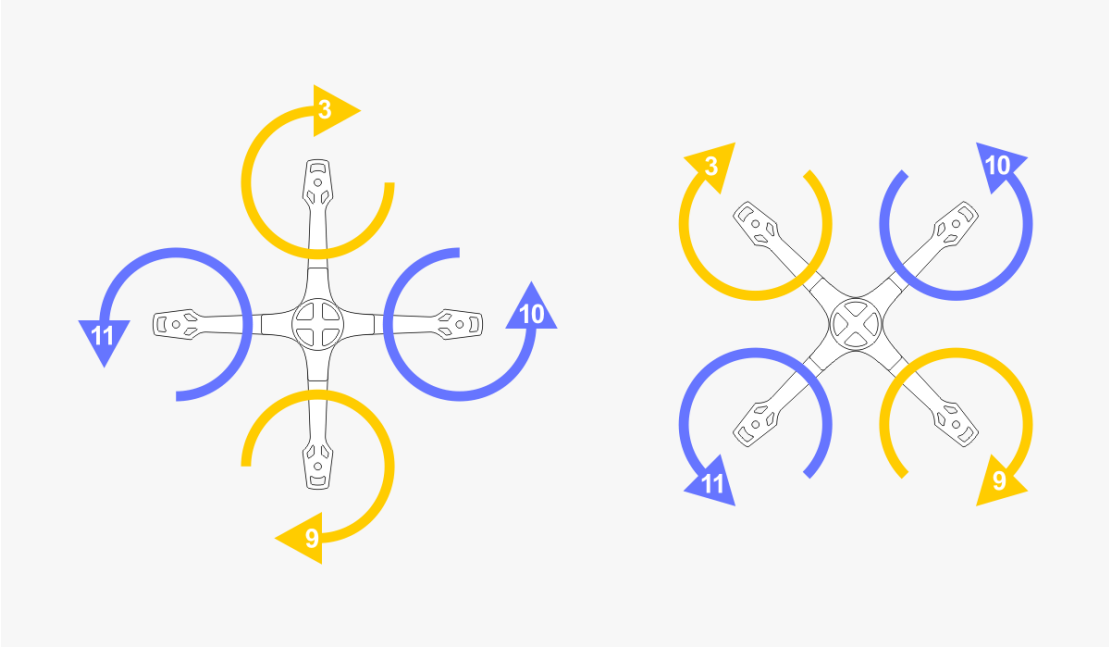
4 axis x mode:

Left-front motor,routing on clockwise, reverse propeller(1045R etc.) connect to D3

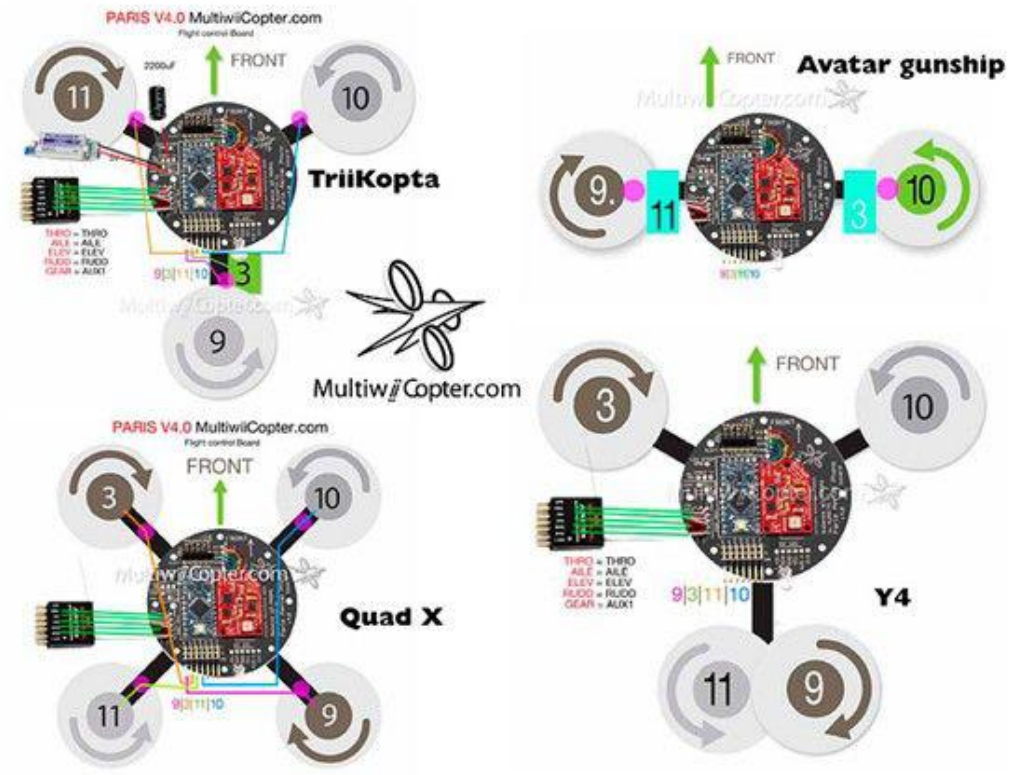
Right-front motor, routing on anticlockwise, normal propeller(with out R) connect to D10

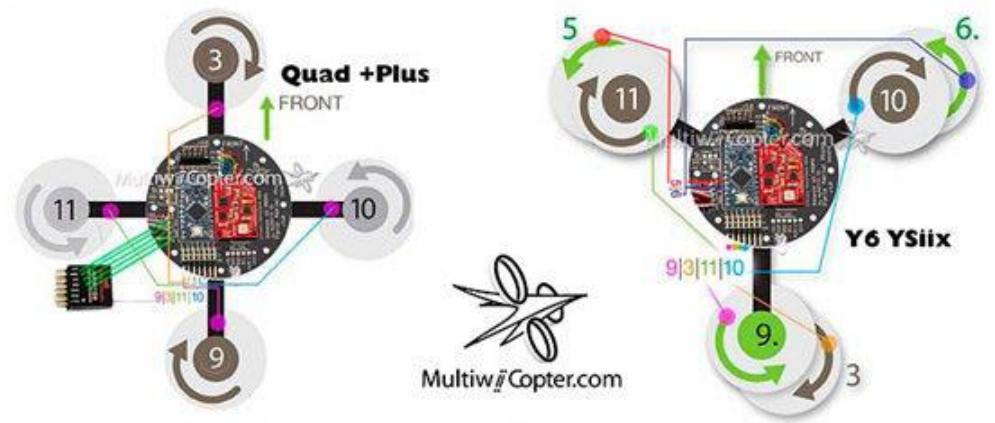
Left-back motor, routing on anticlockwise, normal propeller(with out R) connect to D11

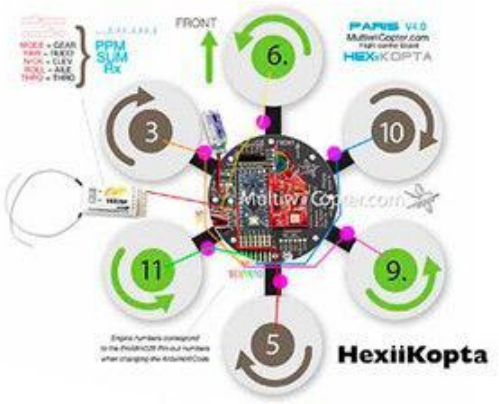
Right-back motor, routing on clockwise, reverse propeller(1045R etc.) connect to D9



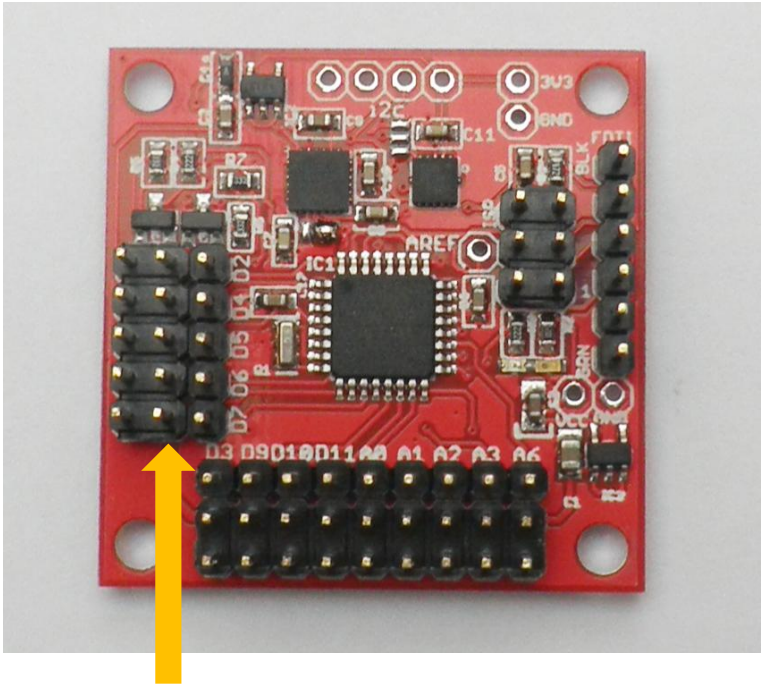
please check the following pictures as reference for other modes







2.Connections of flying control board and your receiver



Connect your receiver to flying control board with Dupont wire showing with the orange arrow

D2: Throttle channel of your receiver(channel 3)

D4: Aileron(routing) channel of your receiver(channel 1)

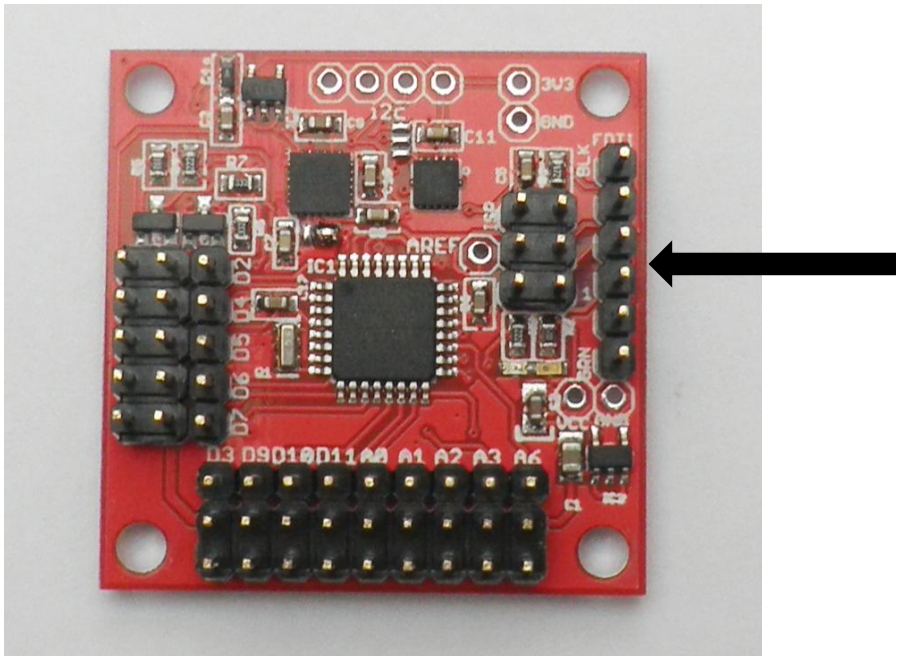
D5: Elevator(pitch) channel of your receiver(channel 2)

D6: Rudder channel of your receiver(channel 4)

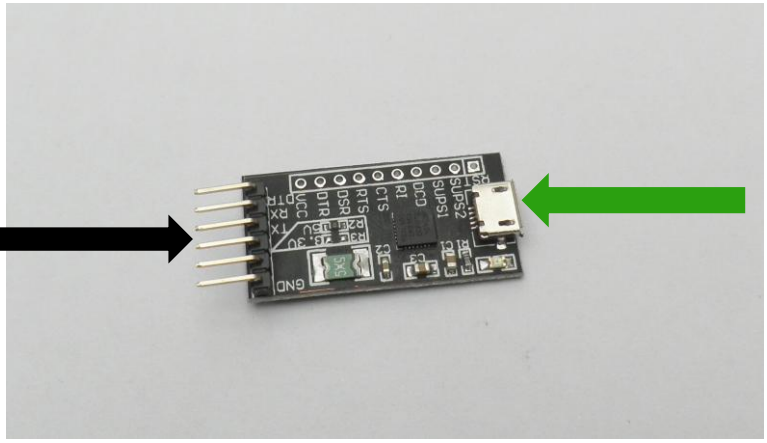
D7:AUX channel, for custom the mode of flying control board, for example: altitude control with air pressure, autostable on/off.

Note:Channel no. could be different in different vender of receivers, please check manual of your receive.

3.Connections of USB-RS232 card to flying control board



Use 6P Dupont wire connect the USB config card to the black area(showing with black arrow) of your flying control board (please check the mark on the config card and flying contorl board, never connect inversed)



Connect config card to your computer with usb-mini usb cable

Section 2: burning firmware of the flying control board

1.Connect your flying control board-config card to your computer showing on sectioin 1

2.Open the software

Download link of the software for firmware burning:

http://arduino.googlecode.com/files/arduino-0022.zip

The driver of usb config board is also in the package \drivers\cp210x

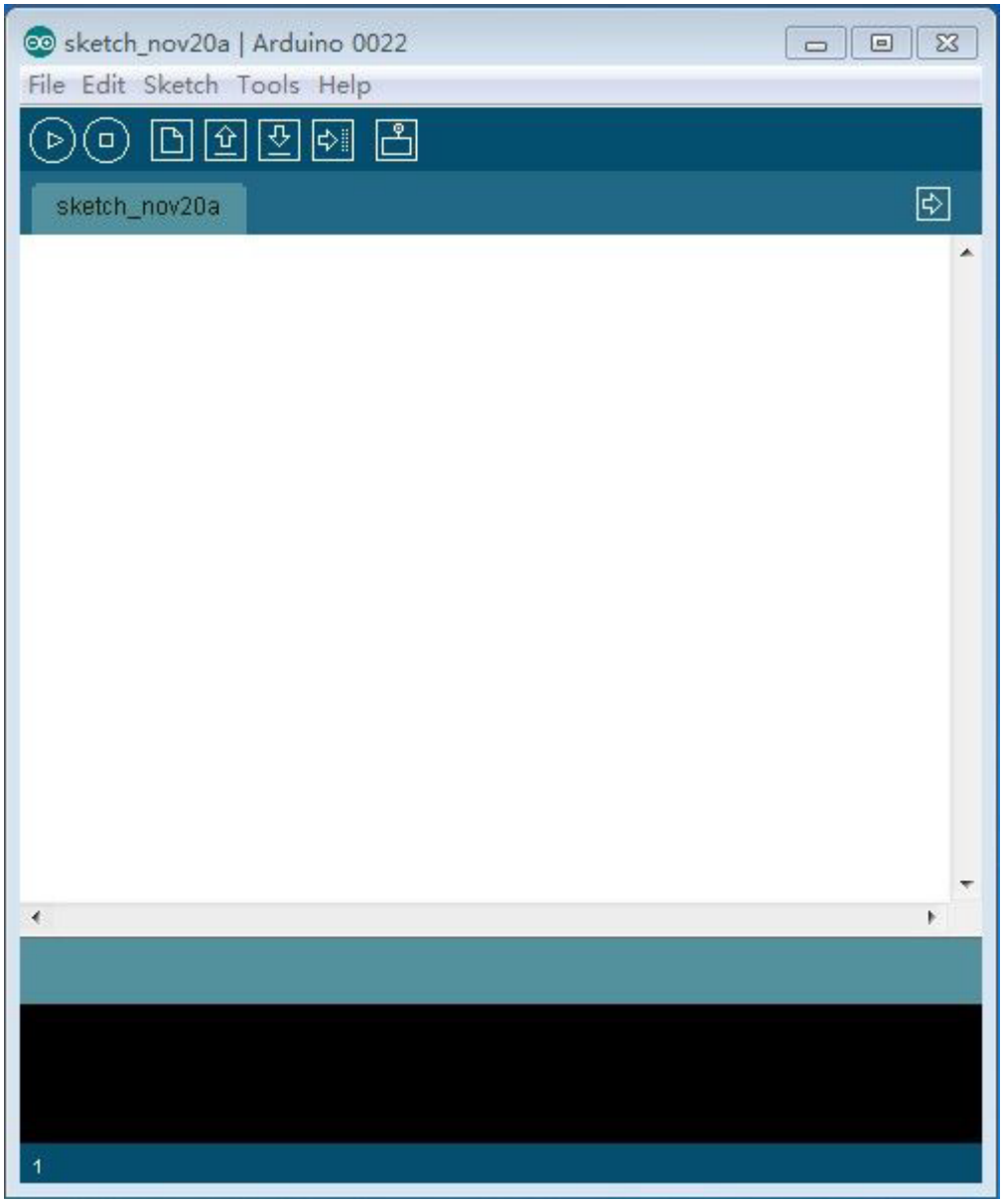
Note: connect usb config card to your computer and then search for the driver.

Download link of software for config and firmware:

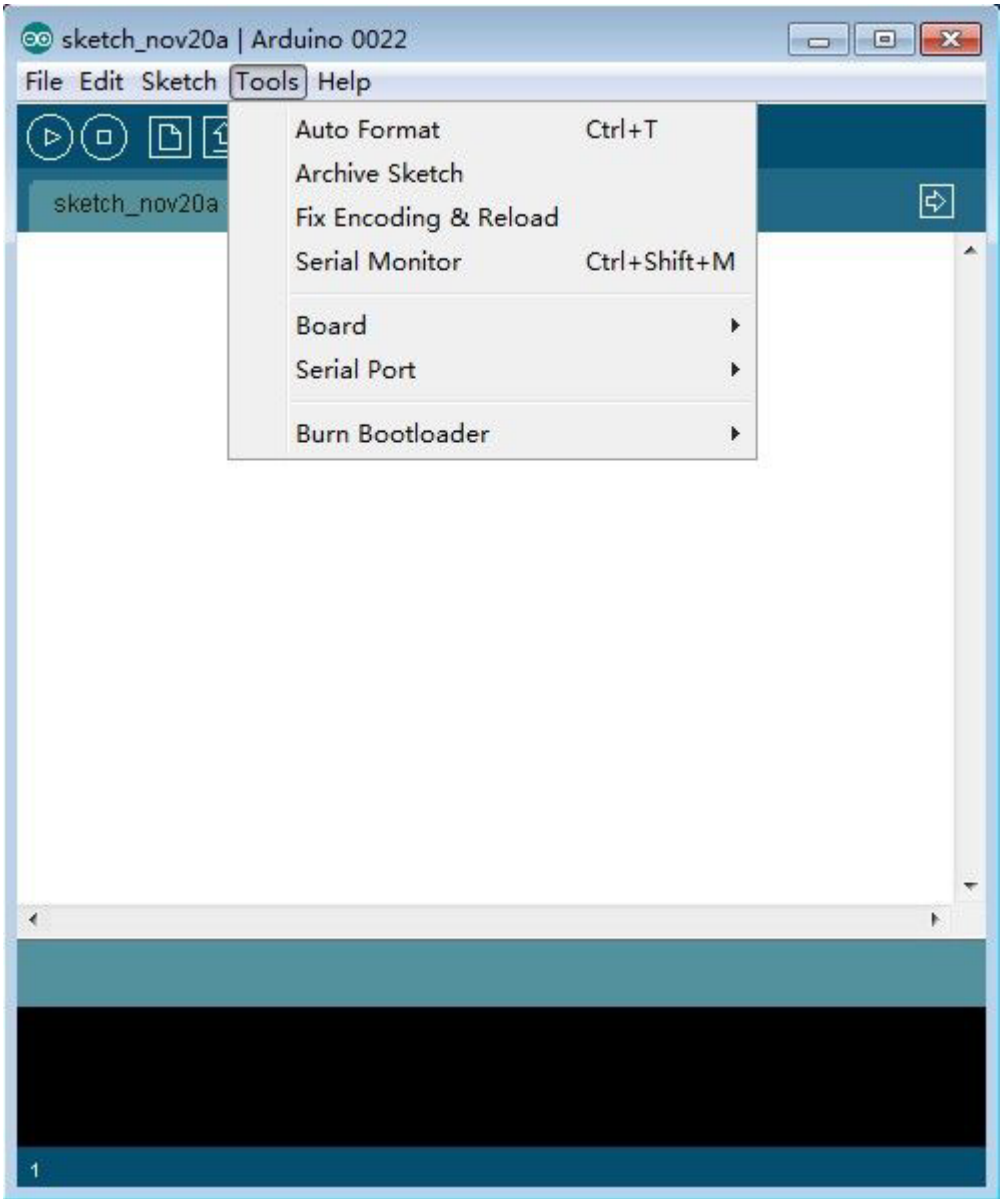
http://code.google.com/p/multiwii/downloads/list

3.Burning firmware of your flying control board

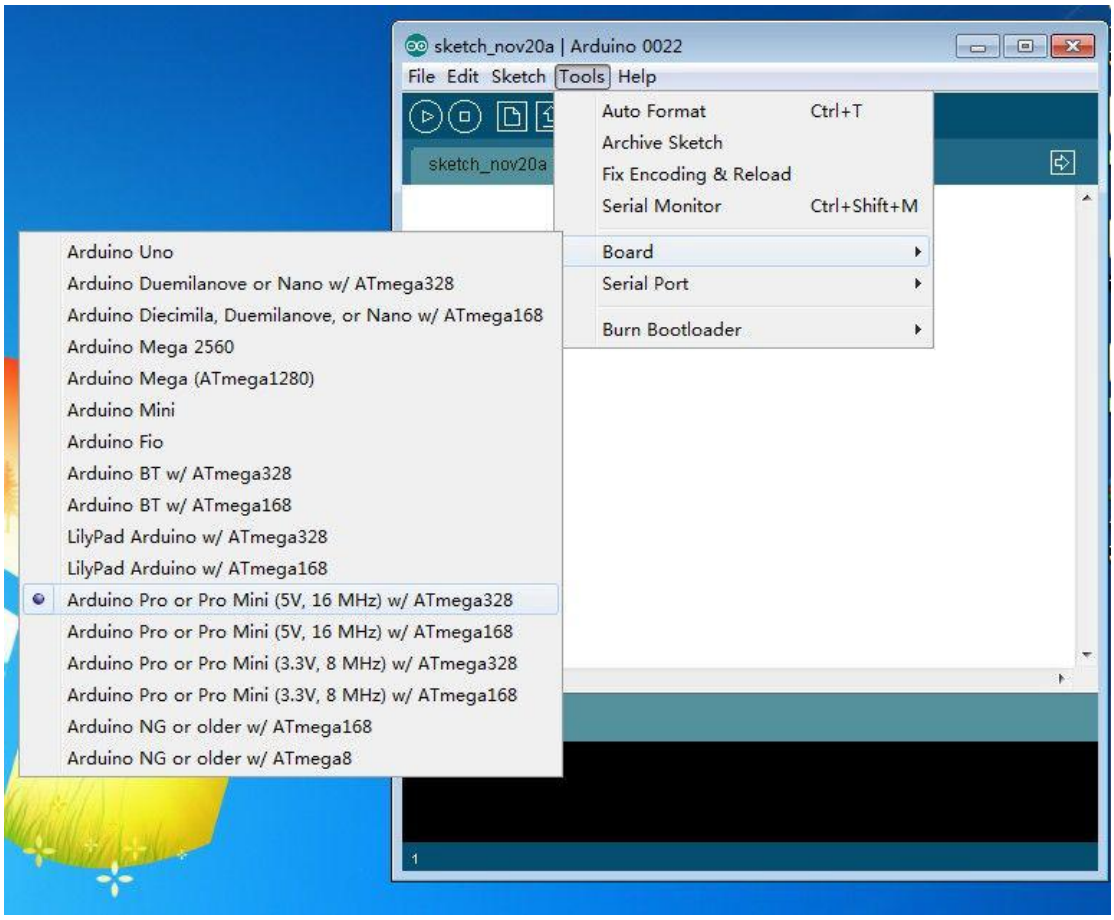
Step 1:open your burning software



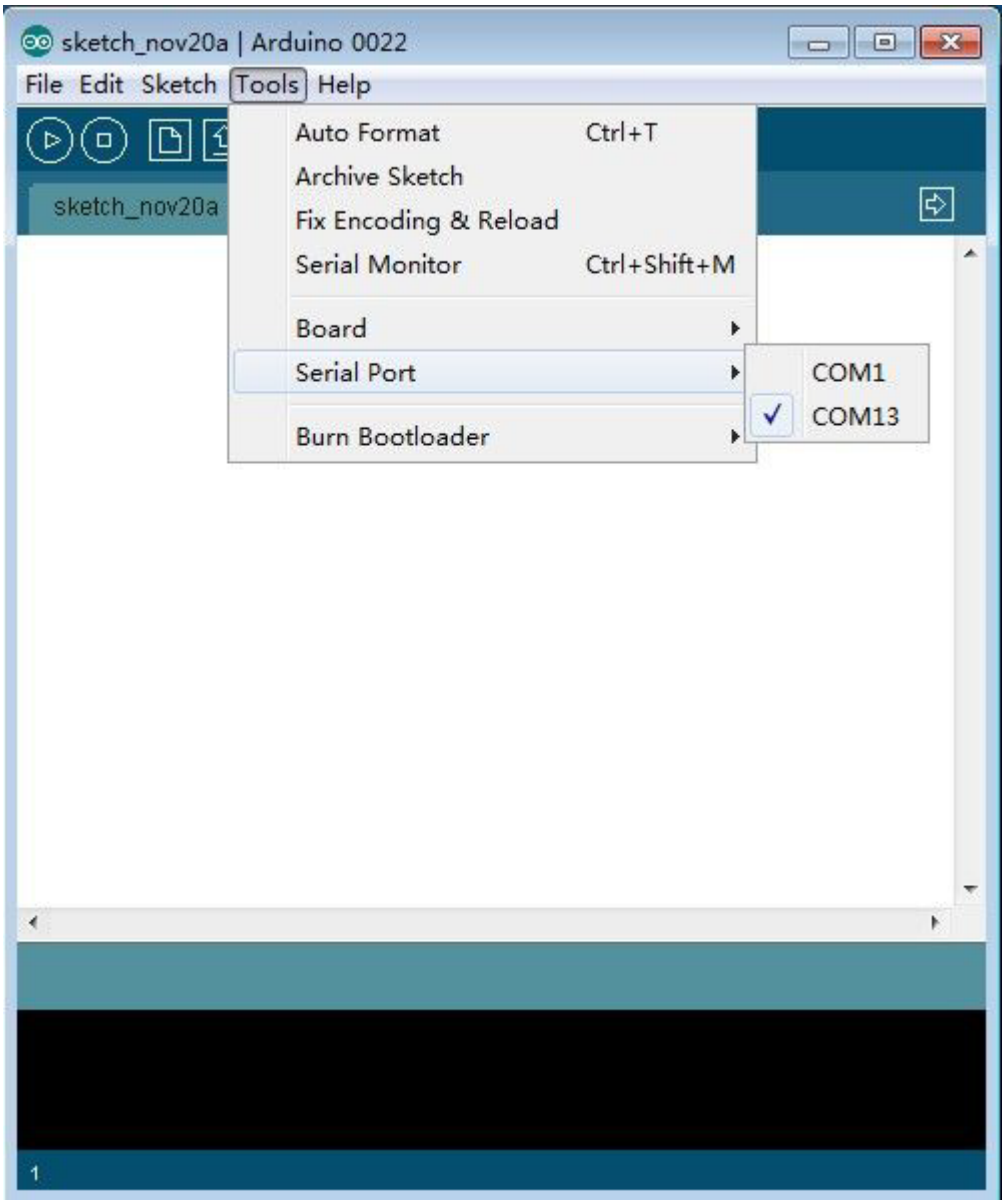
Step 2: click Tools and select port no. of burning card and the mode of flying control board



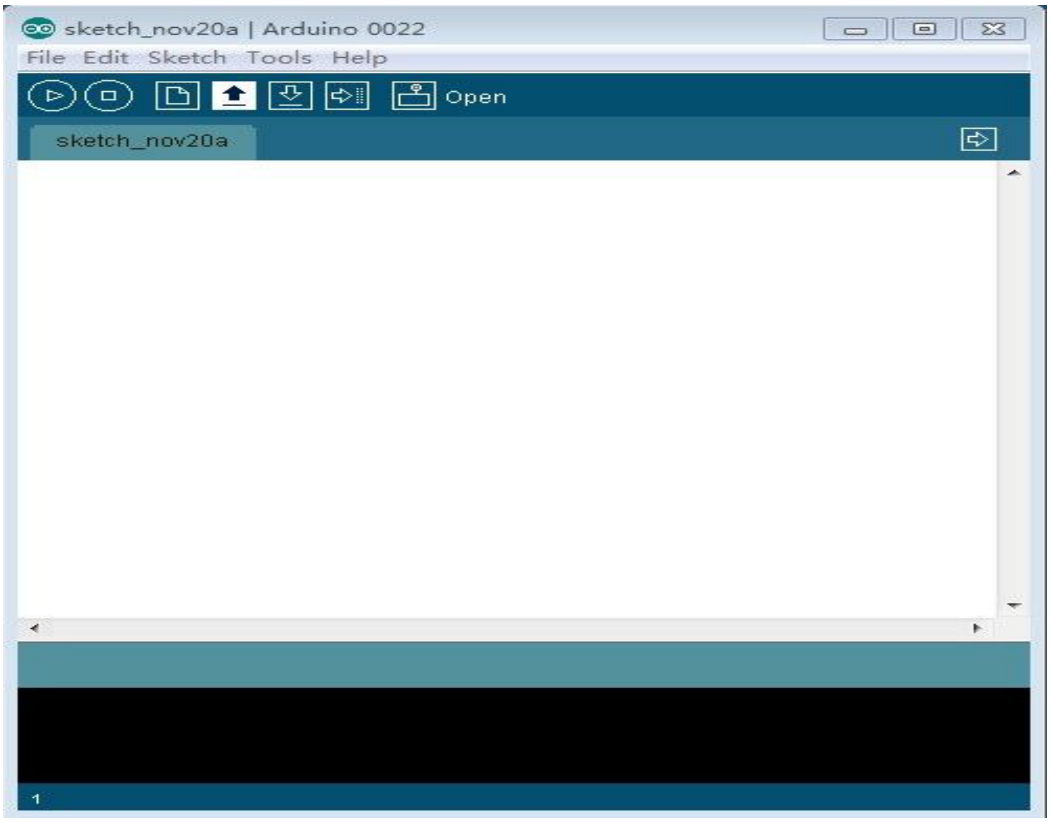
click Board to choose the type of your flying control Board

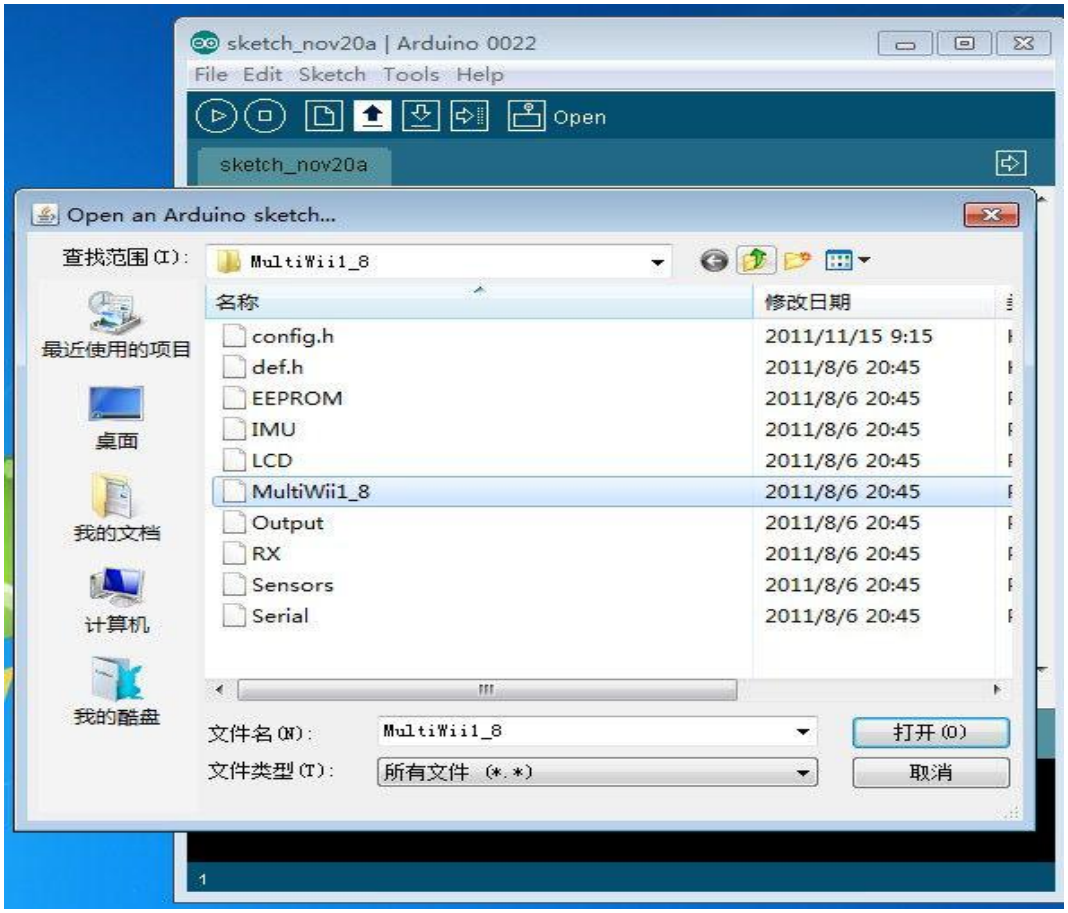


Click Serial Port to choose the port of config card(you can check and found it on your device manager)

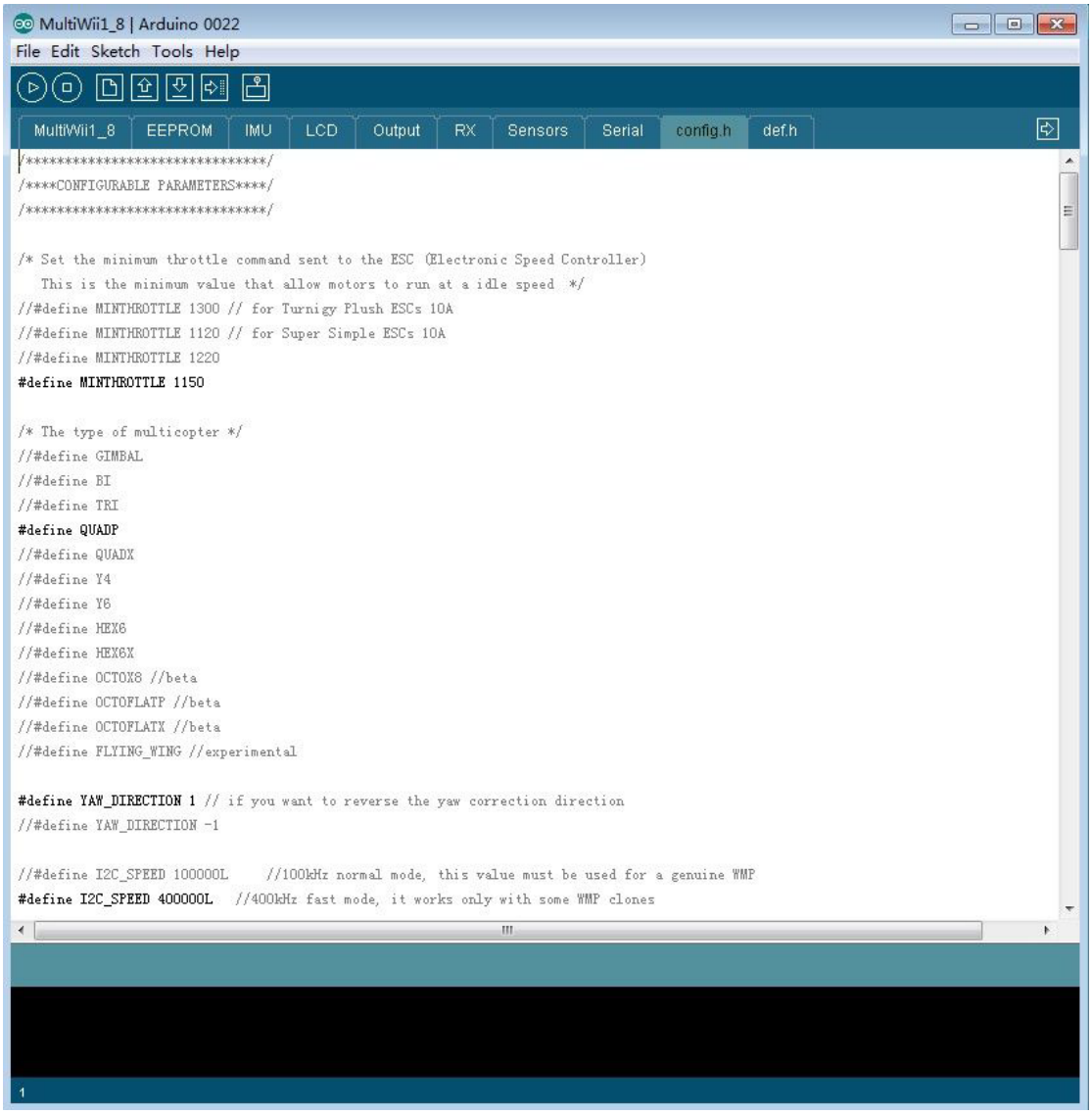

sketch_nov20a | Arduino 0022
File Edit Sketch Tools Help
sketch_nov20a
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Serial Monitor Ctrl+Shift+M
Board
Serial Port
Burn Bootloader
COM1
COM13
1

Step 3:open firmware and modify





Click config.h



Choose your flying mode in this section (remove the // of the mode what you need)

```
/* The type of multicopter */
//#define GIMBAL 云台（独立自稳模式）
//#define BI 2轴阿凡达
//#define TRI Y3模式
#define QUADP 四轴十字模式
//#define QUADX 四轴X模式
//#define Y4 Y4模式
//#define Y6 Y6模式
//#define HEX6 H6模式
//#define HEX6X
//#define OCTOX8 //beta
//#define OCTOFLATP //beta
//#define OCTOFLATX //beta
//#define FLYING_WING //ex 固定翼模式
```

Choose your sensors in this section(`#define FREEIMUv035_BMP // FreeIMU v0.3.5_MS`)

```
/* if you use a specific sensor board:
   please submit any correction to this list.
     Note from Alex: I only own some boards
                     for other boards, I'm not sure, the info was gathered via rc forums, be cautious */
//#define FFIMUv1          // first 9DOF+baro board from Jussi, with HMC5843                  <- confirmed by Alex
//#define FFIMUv2          // second version of 9DOF+baro board from Jussi, with HMC5883      <- confirmed by Alex
//#define FREEIMUv1        // v0.1 & v0.2 & v0.3 version of 9DOF board from Fabio
//#define FREEIMUv035      // FreeIMU v0.3.5 no baro
//#define FREEIMUv035_MS   // FreeIMU v0.3.5_MS
#define FREEIMUv035_BMP // FreeIMU v0.3.5_MS
//#define PIPO             // 9DOF board from erazz
//#define QUADRINO         // full FC board 9DOF+baro board from witespy                      <- confirmed by Alex
//#define ALLINONE         // full FC board or standalone 9DOF+baro board from CSG_EU
//#define AEROQUADSHIELDv2
//#define ATAVRSBIN1       // Atmel 9DOF (Contribution by EOSBandi). The board requires 3.3V power.
```

You can choose any sensor what you need and set it on/off

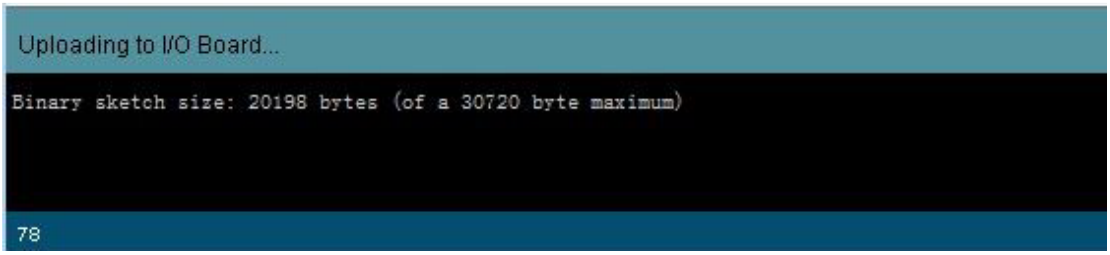
```
//if you use independent sensors
//leave it commented it you already checked a specific board above
/* I2C gyroscope */
//#define ITG3200
//#define L3G4200D

/* I2C accelerometer */
//#define ADXL345
//#define BMA020
//#define BMA180
//#define NUNCHACK  // if you want to use the nunckuk as a standalone I2C ACC without WMP
//#define LIS3LV02

/* I2C barometer */
//#define BMP085
//#define MS561101BA  //non tested

/* I2C magnetometer */
//#define HMC5843
//#define HMC5883
//#define AK8975
```

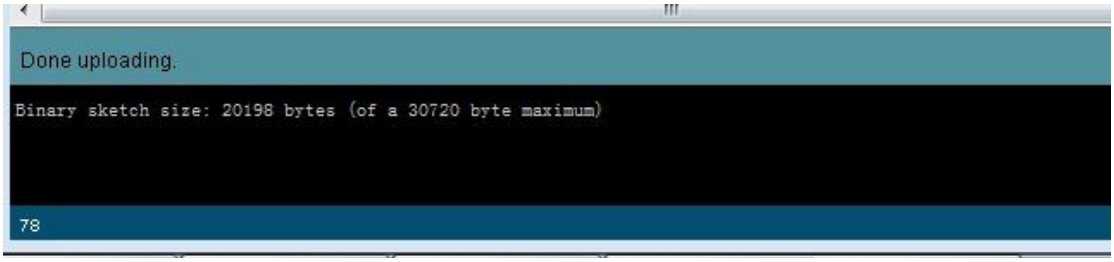
Sensors we choosed here are:

Gyro: ITG3200(3205)

Accelerometer: BMA180

Click the white button(upload) showing on the picture and burn your firmware, the red LED will flash 3 times when it's done.





Section 3: config your flying control board

1.Connect your flying control board-config card to your computer showing on section 1.

2.open the config software:

Download link of config software:

http://code.google.com/p/multiwii/downloads/list

Here we have MultiWii_1.9 as example, we can see 2 folders when we open it

MultiWii_1_9(firmware) and MultiWiiConf_1_9(config software))

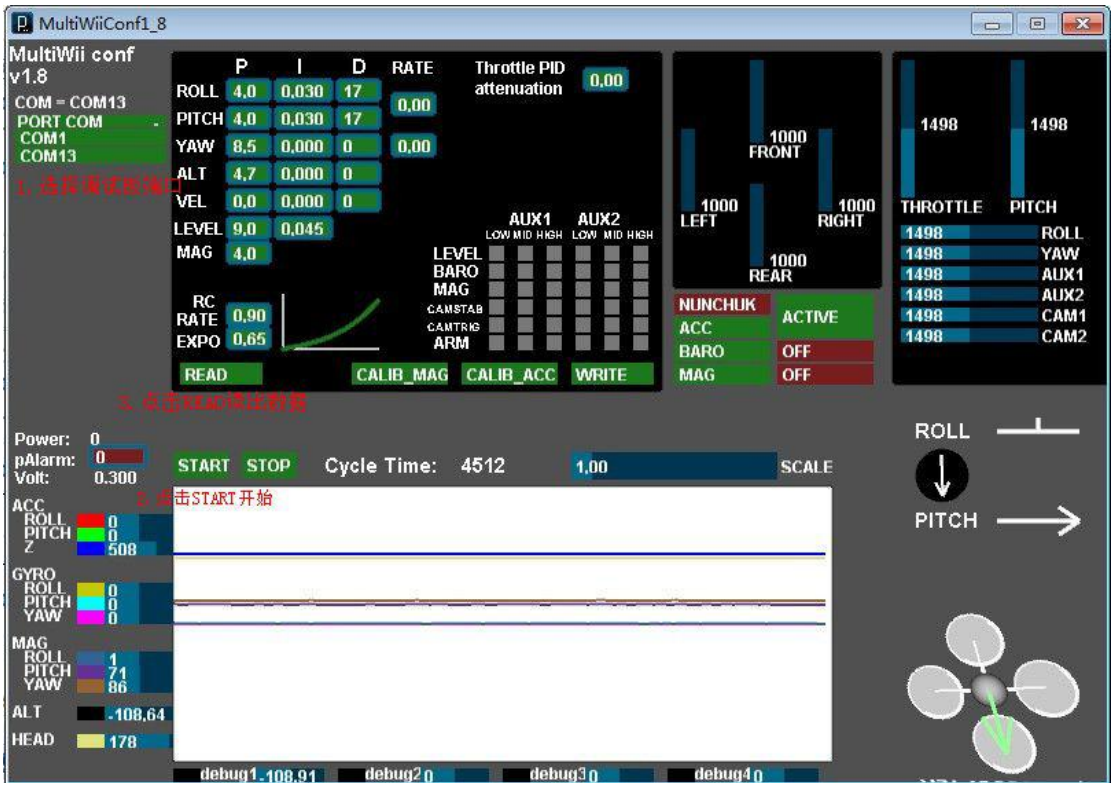
Open MultiWiiConf_1_9/application.windows/MultiWiiConf_1_9

Please install java plugins first if needed

You can download it here:

http://www.java.com/zh_CN/download/windows_ie.jsp?locale=zh_CN

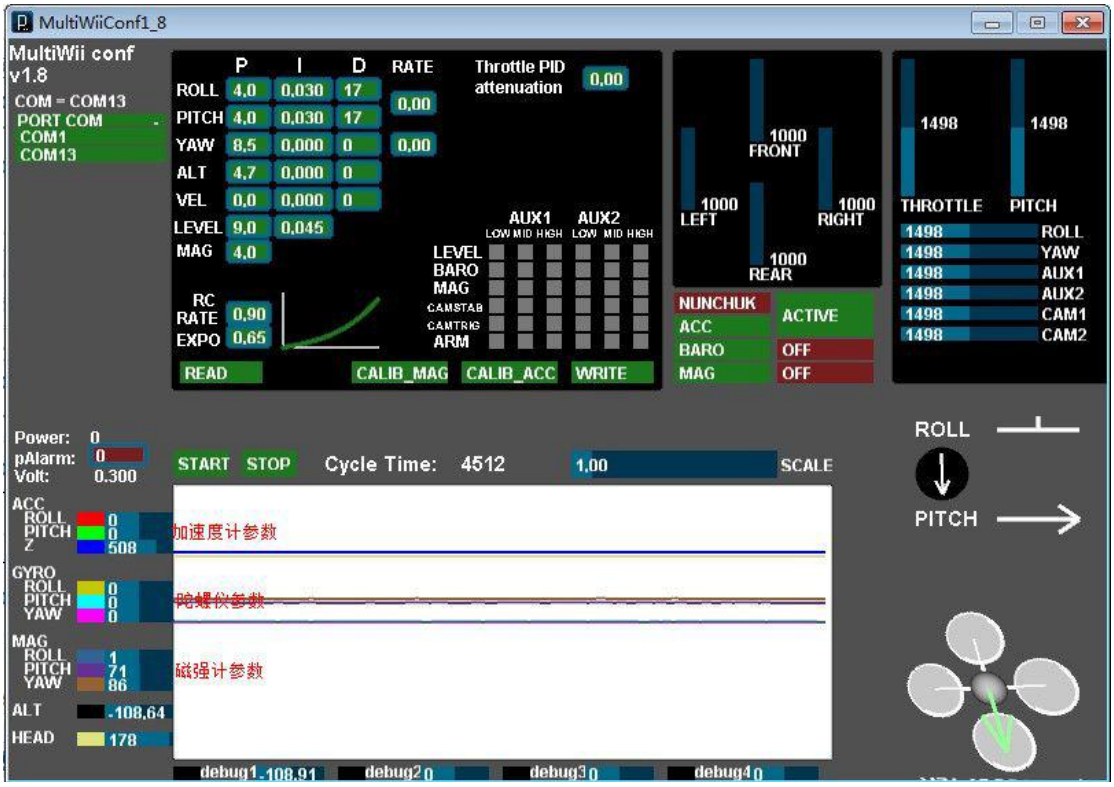
3.You can see this window:



(1)Choose port of config boad

(2)ClickSTART, curve should shown on the blank form and it should be changed when you shake the flying control board

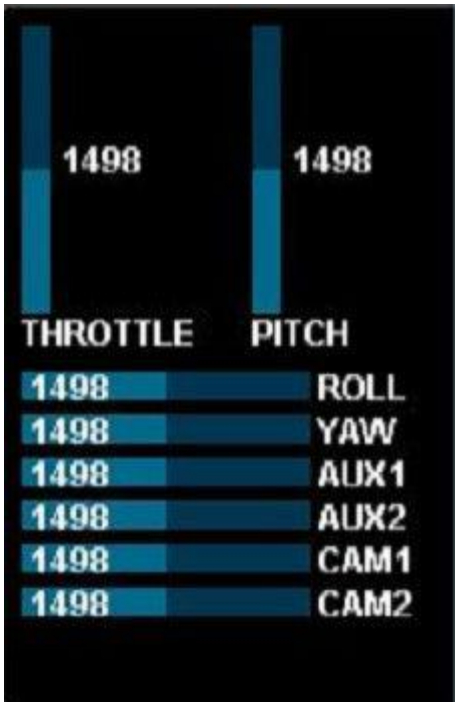
(3)Click READ to read the configration of your flying control board



As the MWC flying control board has gyro and accelerometer, you can see the data of ACC and GRYO.

You can see the flying mode of current firmware on the right of this window.

4.first of all, check the direction of controls of your transmitter and config the travel.



(1) Throttle up(state bar of throttle up) throttle down(state bar of throttle down)

(2) Elevator up(state bar of pitch up) elevator down(state bar of pitch down)

(3)Aileron left(state bar of Roll left) aileron right(state bar of Roll right)

(4) Rudder left(state bar of YAW left) rudder right(state bar of YAW right)

(5)Check your AUX switch if you connected AUX with your flying control board

Please set the channel reverse if needed

Config the travel of your transmitter

(1)Center your controls and check GUI window to see if it is on 1500(+-5)

(2)Down your controls and check GUI windows to see if it is on 1095(+-5)

(3)Up your controls and check GUI windows to see if it is on 1905(+-5)

+ - 5)

please config travel of your transimitter if it's not

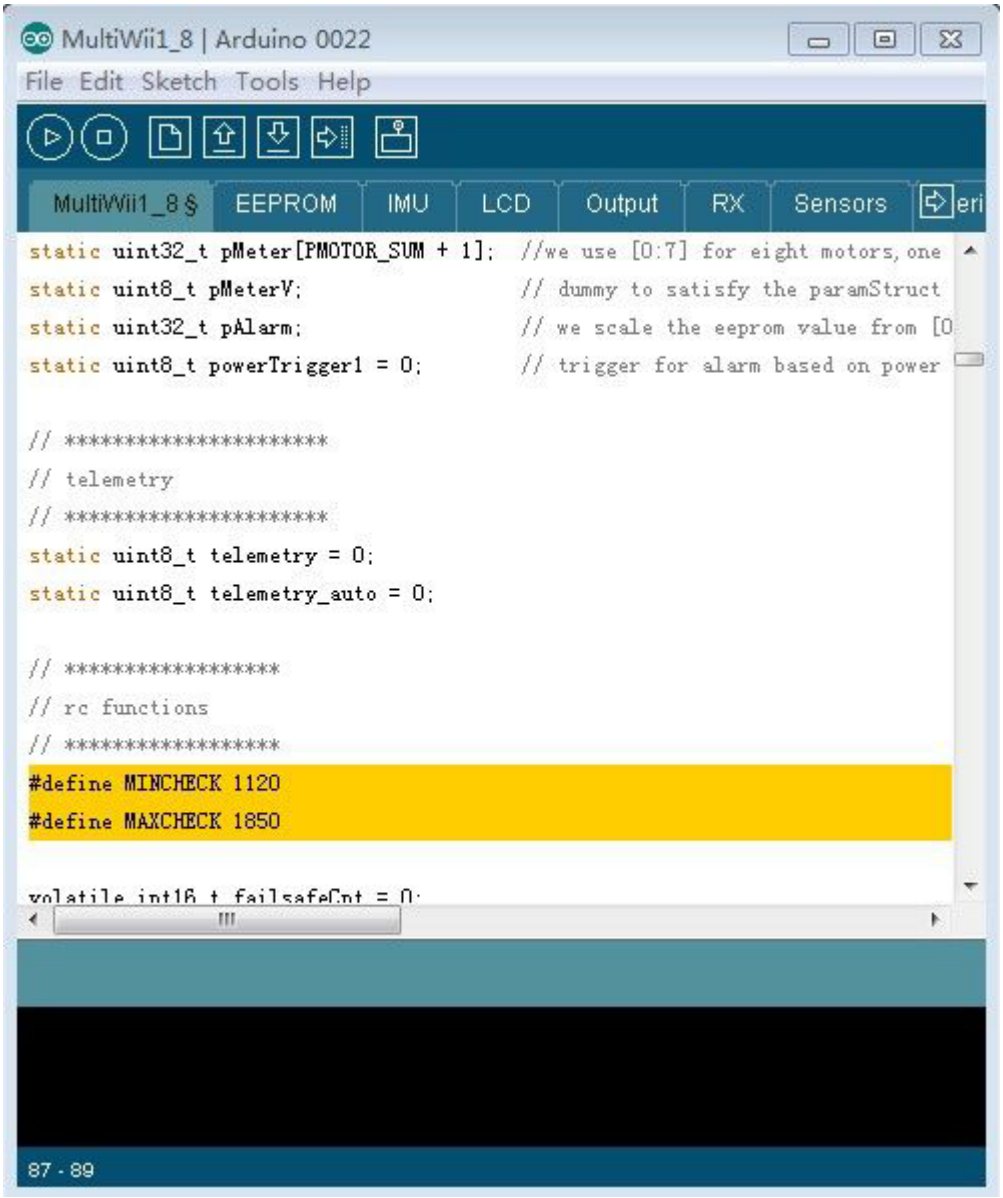
如果有些控，舵量无法同时满足最小小于 1100 和 最大大于 1900，那么请在主程序文件，如 multiwii_1.8.pde 中修改 MINCHECK 和 MAXCHECK.

建议设置为：in some case you can not set the travel to 1100-1900,then you must modify MINCHECK and MAXCHECK on the file multiwii_1.8.pde

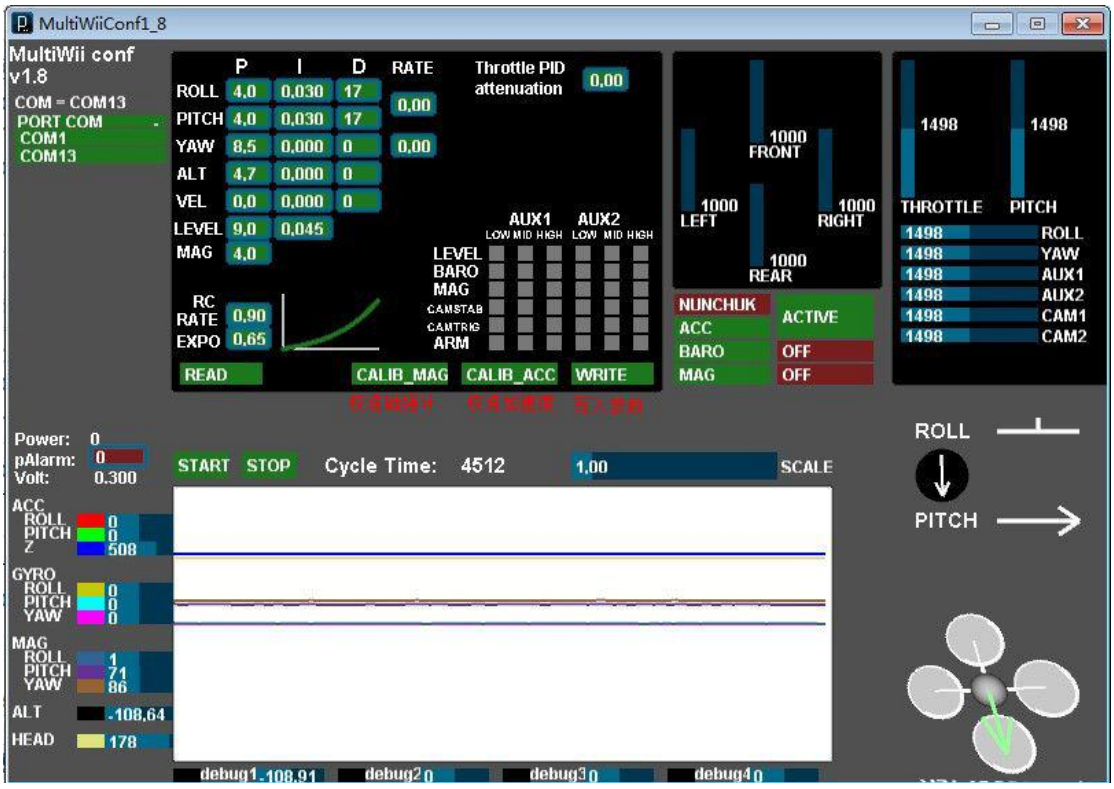
suggestion:

#define MINCHECK 1120

#define MAXCHECK 1850

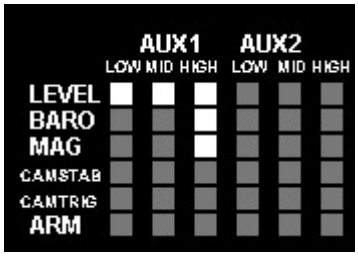


5. calibrate sensors



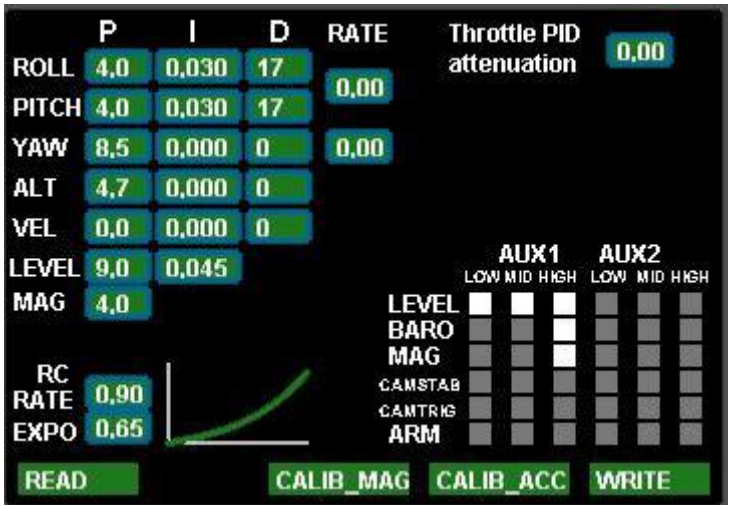
Celibrate each sensor you have(put your flying control board horizontal and click CALIB_ACC CALIB_MAG) after 10 seconds, it's done.

6.set AUX1



LEVEL: auto balance BARO: air pressure MAG: magnetometer CAMSTA0: camera auto stable CAMTRIG:shutter trigger ARM:lock/unlock

7.PID and others



(1) RC RATE: sensitivity of PITCH and roll

RC EXPO: EXP travel of PITCH and ROLL, you can set it on your transmitter or here.

(2)RATE:sensitivity of controls

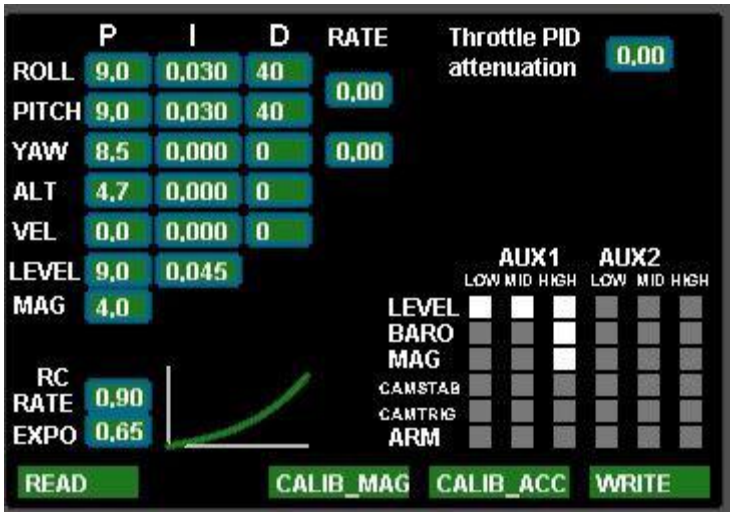
0.00 for beginner 0.40-0.70 for stunt flying 1.00 for loop

default as 0.00

(3)Throttle PID: stable your flight when it is on climb with full throttle

default as 0.00

(4)PID



Section 4: lock/unlock and sensors calibration

Put your flight on the floor horizontal, green LED on flying control board on, red LED flashing, please wait for the red LED off.

Unlock the flying control board

1.

2.

3.

Red LED always on, unlock successfully.

Lock the flying control board

1. 

2. 

3. 

Red LED off, lock successfully.

Calibrate GYRO

1. 

2. 

3. 

4. 

Red LED flashing, when red LED always on, GYRO celibrate successfully.

Celibrate ACC

1. 

2. 

3. 

4. 

Red LED flashing, when red LED always on, ACC celibrate successfully.

Config ACC

1.


MODE 2
MultiwiiCopter.com

2.


arm
MODE 2
MultiwiiCopter.com

3.


MODE 2
MultiwiiCopter.com

4.


disarm
MODE 2
MultiwiiCopter.com

5.


disarmed
MODE 2
MultiwiiCopter.com

6.


MODE 2
MultiwiiCopter.com

7.


Acc.trim.learn
MultiwiiCopter.com

8. 

9. 

10. 

11. 

Red LED flashing when you config operation

Lock/unlock on 3 axis mode

Unlock

1. 

2. 

3. 

Red LED always on, unlock successfully.

Lock

1. 

2. 

3. 

Red LED always off, lock successfully.

Ok,enjoy it!