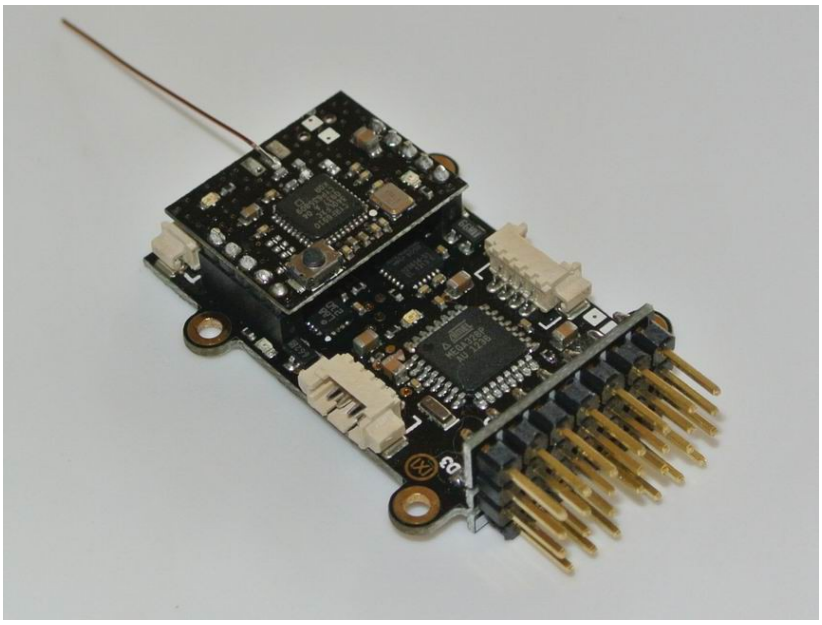
MINI MWC Flight control board V1.2



The MINI MWC Flight Control Board did great improvement on PCB design, the board becomes smaller and cute, it is convenient for use, the improvements are the followings:

1) The ESC port changed to right angle (There are 9 output ports: D3, D5,D6,D9, D10, D11, A0, A1, A2), it applied immersion gold pin connectors;

2) The ESC port board applied double 2OZ copper PCB board, max current is 16A, in this case, no need extra power board when its power supply is 2S lipoly battery;

3) It comes with a 7CH receiver that compatible with DSM2 (the receiver output signal is PPM SUM)

4) Self-voltage checking(A2 port)

5) The layout of components and each ports is newly designed and arranged;

6) FTD1 protection is added to avoid the conflicts between outside power supply and USB power supply;

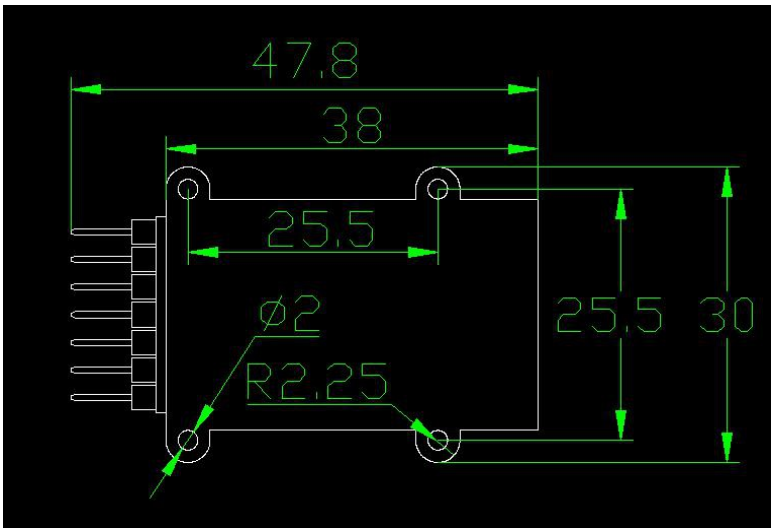
MINI MWC physical parameters:

1） Size： 47.7 *23.5 *11.0mm （ not including mounting holes ）， 48.0*30.0 *11.0mm （ including mounting hole）；

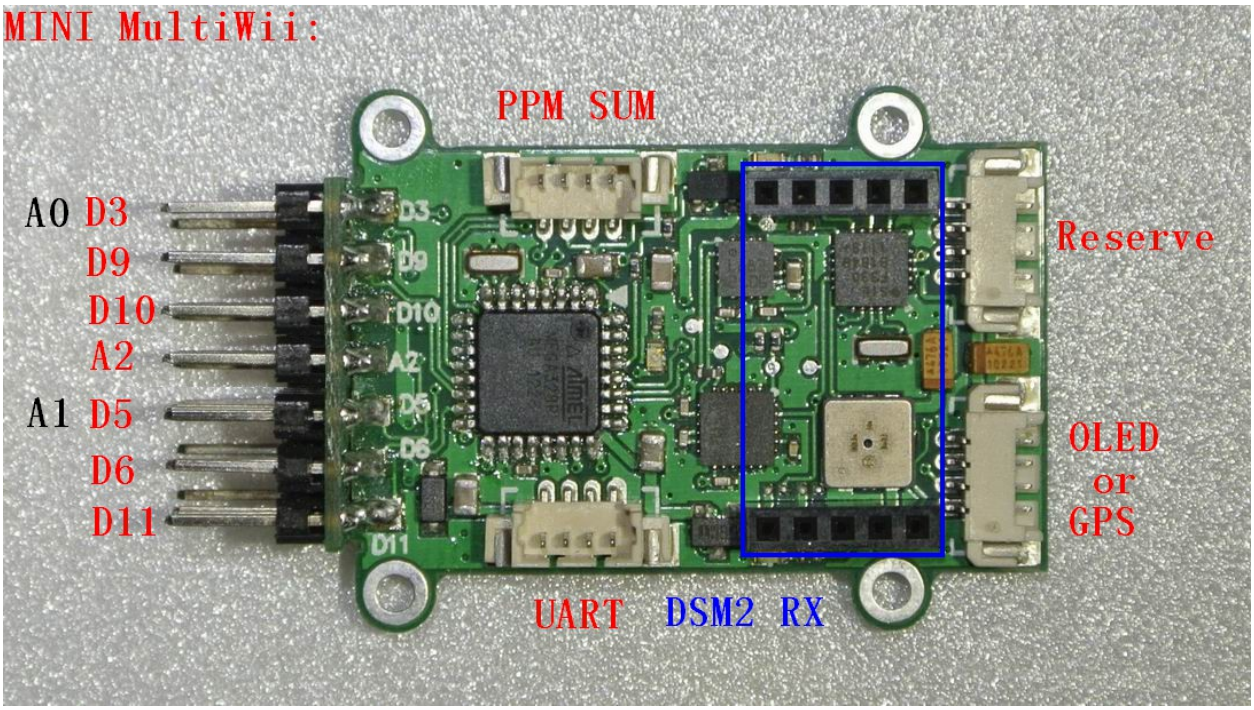
2） Weight：7.8g（including DSM2 receiver and antenna)

3） Size of mounting hole：Φ2.0mm

MINI MWC board diagram(mm):

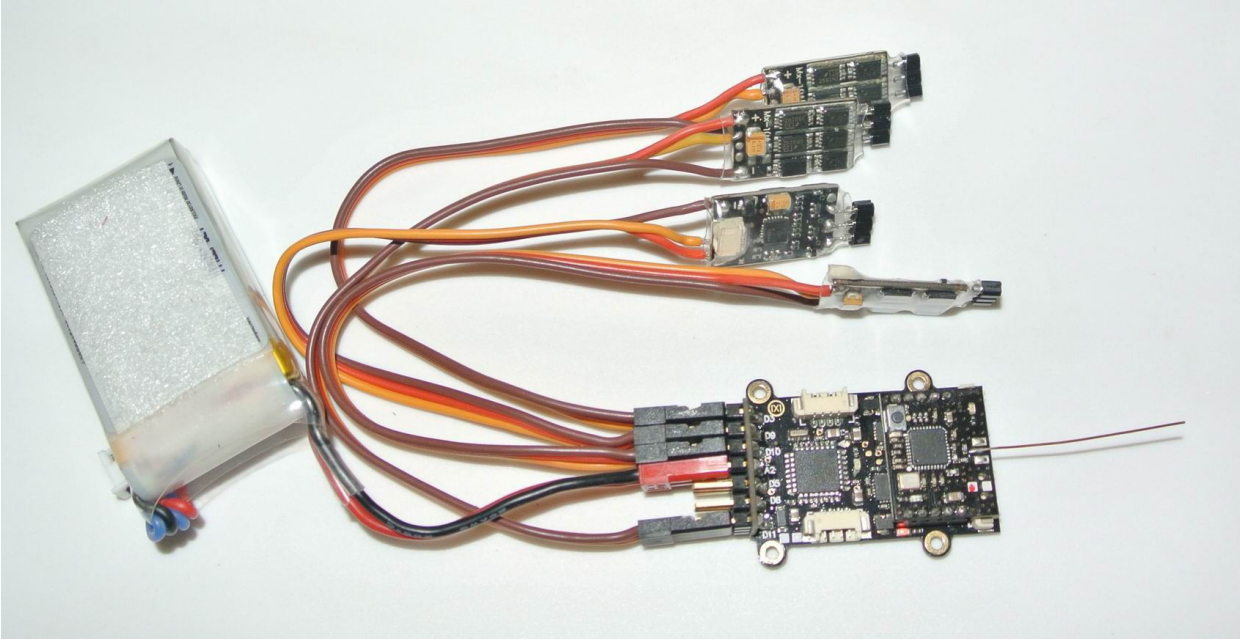


MINI MWC Flight control board ports for connection(photo taken by a sample):



The connection way for brushless ESC and Lipoly battery on MINI MWC Flight control board:

If it is powered by a 2S lipoly battery and max working current is less than 16A, you can connect the brushless ESC and battery directly without extra power board(so it can reduce the weight on 4-axis such as QUADX, QUADP and Y4), please check the following picture (The battery should be connected with A2 port (negative and positive pole, the brushless ESC on the picture is OVERSKY-10A-Mul ESC)

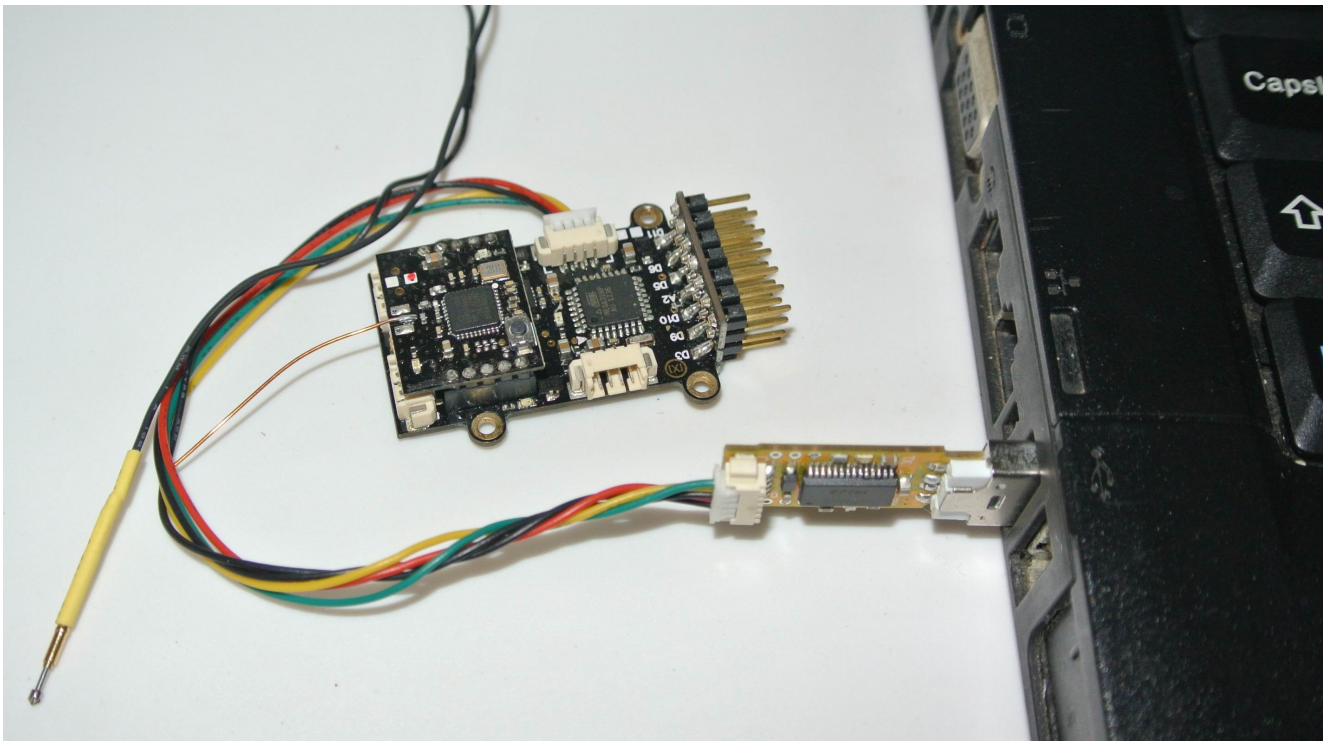


ATTN: OVERSKY-10A-Mul is a kind of high speed brushless ESC, its frequency for controlling signal is 1K-8KHz.

If it is powered by a 3S lipoly battery or the working current is more than 16A, the brushless ESC and the 3S lipoly battery must be connected with a outside power board or soldered together, the signal wire of the ESC connects with the flight control board, the flight control board is powered through the BEC of one of the ESC, just look the following picture for details:

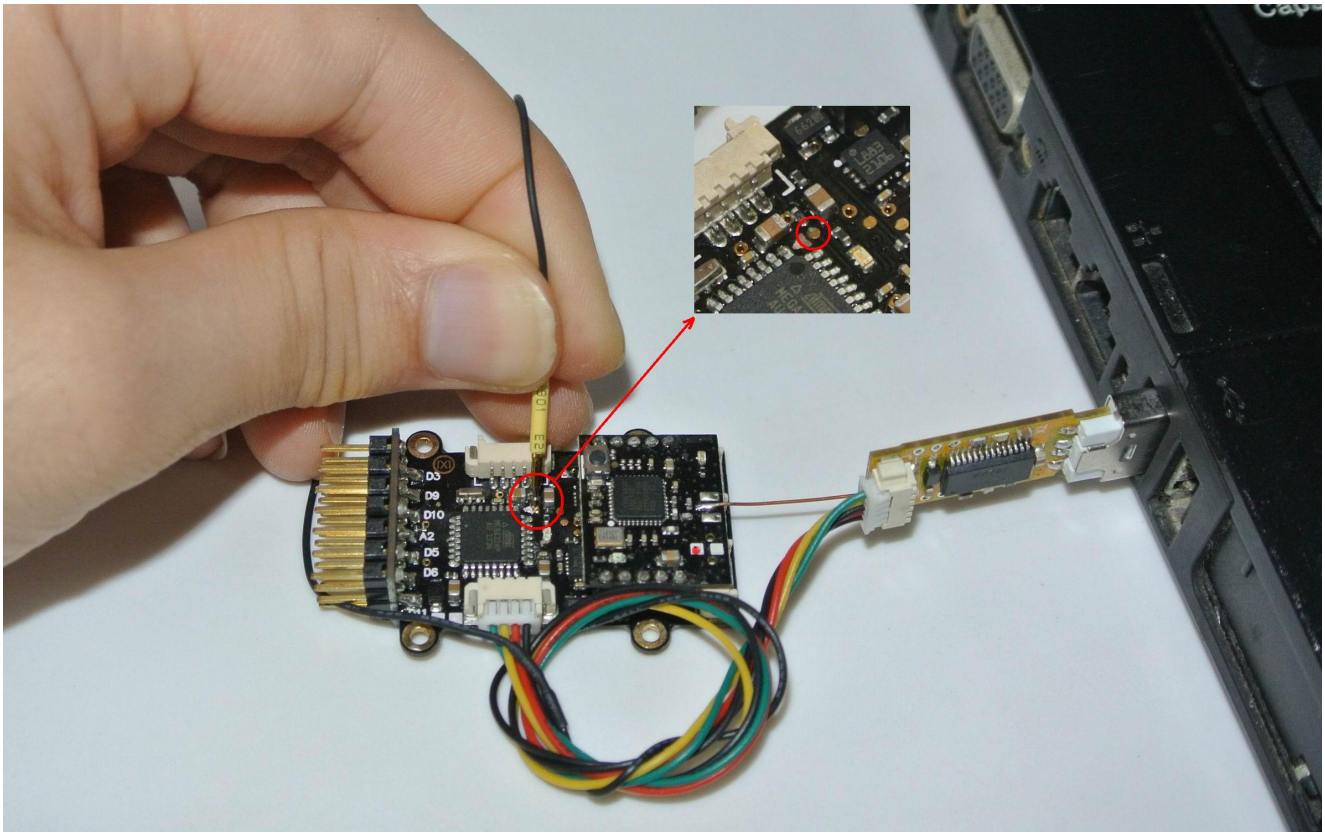
How to change and modify the parameters of MINI MWC flight control board:

Open the software of "MultiWiiConf exe", connect MX-FTDI programming stick tool with MINI MWC flight control board and computer, change and modify the parameters according to your request.



How to flash a different software:

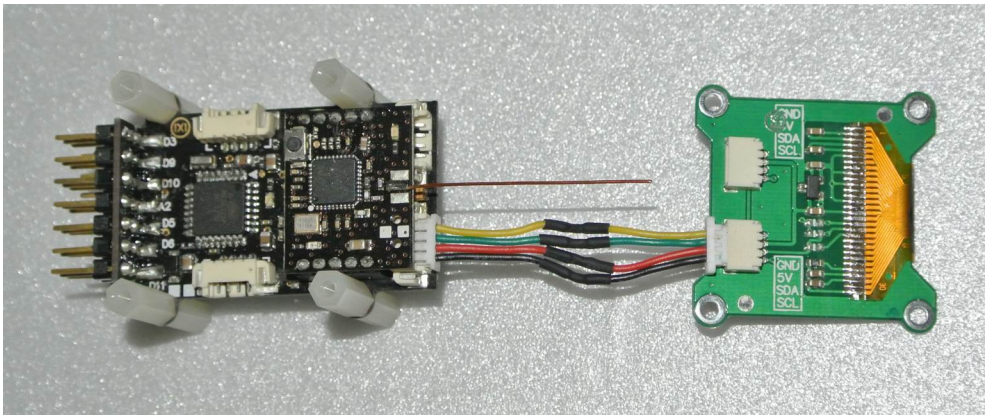
Open " arduino. exe" connect FTDI programming stick tool with MIN MWC and computer, press the probe pin of the flash stick tool onto the position showed on the picture of below, click  (ATTN: everything have been ready before this step) and then flash the software, as soon as the red and green LED lights on the programming stick tool blinks constantly, you can release the probe pin, when the red LED and green LED blink no longer and prompt "Done uploading" appears, it indicates that the software flashing process has been completed.



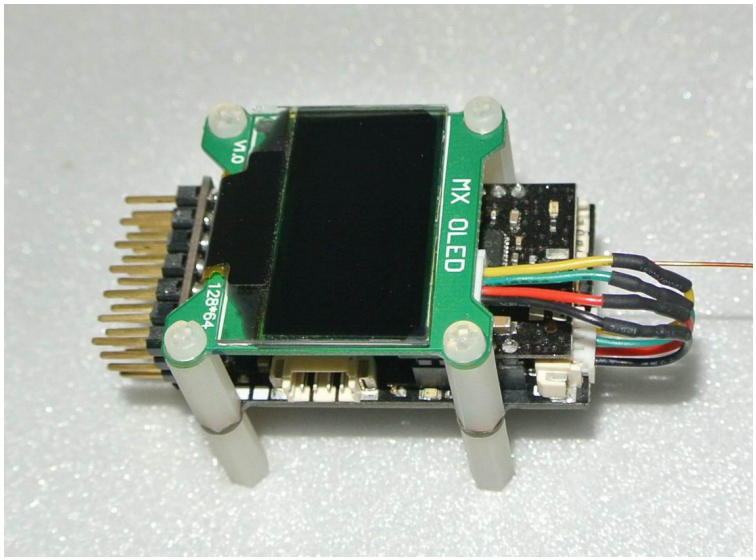
How to connect and mount OLED screen:

Connect the wires come with the OLED screen with MINI MWC flight control board according to picture A, and then mount the OLED screen on the MINI MWC flight board (you need to buy the four columns for mounting separately)

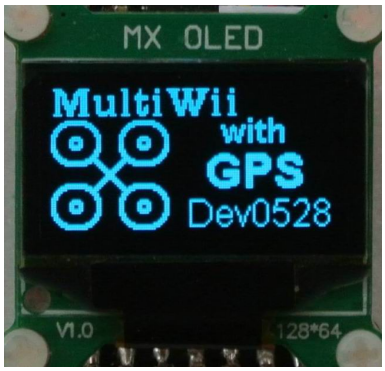
A:



B：



Showed on the screen：



Attn: before using OLED, please change "//#define OLED_I2C_128x64" to "#define OLED_I2C_128x64" from "config.h"

How to connect GPS module:

The followings are the major components of MINI MWC flight control board:

1） ATMEGA328P；
2） MPU6050；
3） BMP085；
4） HMC5883L；
5） C8051F330；
6） CYRF69103；

MINI MWC working voltage: 5~8.4V;

Transmitter for MINI MWC flight control board: it supports DSM2 compatible 4CH or above (we recommend 6CH or above transmitter)

The following functions can be realized through our MINI MWC flight control board:

1) auto stabilization,
2) Stabilize the altitude
3) Fixed heading course
4) HeadFerr
5) Hovering at an identified position (needs 12C-GPS converter board and supports by GPS)
6) Return flight automatically (needs 12C-GPS converter board and supports by GPS)

MINI MWC flight board supported modes:

1）GIMBAL——individual cradle head stabilization 独立云台增稳；

2）SINGLECOPTER——VTOL single axis；

3）BICOPTER——BICOPTER Avatar

4）Tricopter

5）FLYING WING

6）VTAIL4——

7）AIRPLANG——Fixed-wing airplane

8）4-Axis（QUADX，QUADP，Y4），cradle head stabilization can be applied at the same time: connects the ESC to D3/D9/D10/D11, connects the servo for stabilization toA0/A1, connects the servo for shutter toA2;

9） 6-Axis（Y6，HEX6，HEX6X）, cradle head stabilization can be applied at the same time: connects the ESC to D3/D9/D10/D11/D5/D6，connects the servo for stabilization to A0/A1，connects the shutter servo to A2；

Related devices:

1）**MX-FTDI programming stick tool**: small and convenient for use, it can be plug on the USB port of a computer directly for changing and modifying the parameters of MWC flight control board and flash its software as well.

2）**OLED scree:** 128*64 lattice, double IIC ports, can be mounted on MINI MWC flight control board directly;

3）**OVERSKY 10A-Mul brushless ESC:** it is a light and specially designed high speed controller for MINI MWC, small and light (18*12.6*5.5mm, 0.95g not including the wires), working voltage: 3.7V-7.4V, Max working current:7A

4）**IIC&UART converter board:** it is for changing the UART signal of GPS to IIC signal which is special for MWC. Size:23.4*16.6*3.8mm, weight:1g;

5）GPS module