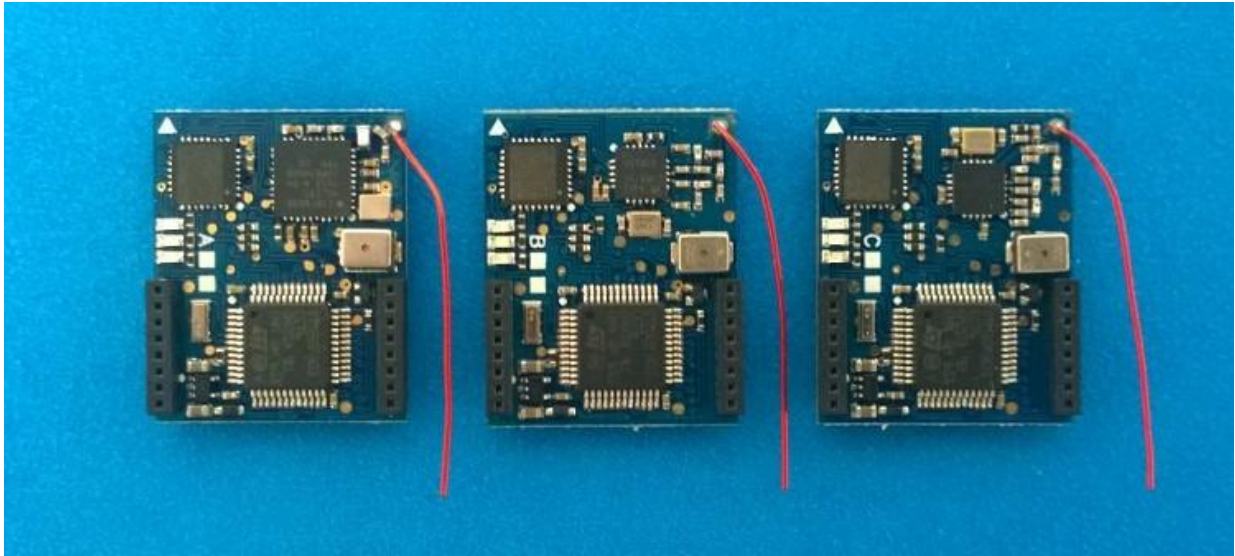


Scisky F3 & RX 无刷飞控板说明书

Scisky F3 & RX Brushless Flight Control Board Manual



Scisky F3 & RX 无刷飞控板的飞控部分是基本于 F3 EVO 的硬件，支持 CleanFlight 和 BetaFlight 固件。板载可在线升级固件的兼容接收机，其接收机硬件分为三种：A---CYRF6936，B---CC2500，C---A7105。兼容接收机协议分为 7 种：1->A1- DSMX/2；2-> A2-DEVO（测试中）；3-> B1- Futaba-SFHSS；4-> B2-FrSky-D8；5-> C1-FS-AFHDS；6-> C2-FS-AFHDS -2A；7->C3- Hubsan；

Scisky F3 & RX Brushless Flight Control Board is based on F3 EVO hardware, supports both CleanFlight and BetaFlight firmware. Online firmware upgrade is available for embedded receiver. There are 3 types of hardware for embedded receiver A --- CYRF6936, B --- CC2500, C --- A7105, from which come out receivers of 7 different protocols:

1-> A1-DSMX / 2;

2-> A2-DEVO (test);

3-> B1- Futaba-SFHSS;

4-> B2-FrSky-D8;

5->C1-FlySky-AFHDS;

6-> C2-FlySky-AFHDS-2A;

7-> C3- Hubsan;

特性:

- 1) STM32F303CCT6 主控;
- 2) MPU6500 传感器 (SPI 方式);
- 3) 传感器使用独立 LDO 供电;
- 4) 以费焊接方式扩展 VTX 和 OSD;
- 5) 板载多种兼容接收机可选 (接收机输出方式可选 SBUS 和 PPM 信号, 注 1);
- 6) 板载兼容接收机支持固件在线升级;

- 7) 图传工作频率表支持在线升级;
- 8) 板载超微型蜂鸣器 (注 2);
- 9) 重量: 1.8g;
- 10) 体积: 25*20*4.5mm

Features:

- 1) STM32F303CCT6 main control;
- 2) MPU6500 sensor (SPI mode);
- 3) The sensor uses independent LDO power supply;
- 4) Plug and play for VTX(video transmitter) and OSD module;
- 5) 7 optional embedded receivers (receiver output mode is SBUS or PPM for choice, Note 1);
- 6) Online firmware upgrade is available for embedded receiver and VTX;
- 7) Onboard ultra-miniature buzzer (Note 2);;
- 8) Weight: 1.8g;
- 9) Size: 25 * 20 * 4.5mm

注 1: 在 BF3.0.1 以下固件兼容接收机刷 SBUS 方式输出固件, 如果用户想升级到 BF3.1.0 以上固件则要刷兼容接收机 PPM 方式输出的固件;

注 2: 因蜂鸣器过小, 所以发音也不大。

Note 1: The output of the receiver should be SBUS when it is flashed BF3.0.1 firmware or below version; If customer wants to upgrade to BF3.1.0 firmware or above, output of receiver should be PPM.

Note 2: Because the buzzer is very small, its voice is not loud enough.

对频操作:

长按 BIND 开关 2S 秒后 Scisky F3 & RX 无刷飞控板上板载兼容接收机自动进入对频模式中 (在对频模式中 LED1 快闪, 注 3), 然后让遥控器进入到对频模式中 (注 4)。当然对频完成后板载兼容接收机自动进入到等待接收状态中, 无需断电重启。

注 3: 除兼容 Hubsan 以外, 其它兼容接收机对频操作都是如此;

注 4: 对于遥控器如何进入到对频模请用户参考遥控器的说明书。

Binding operation:

Long press BIND button for 2 seconds, receiver on Scisky F3 & RX Brushless Flight Control Board enter binding mode automatically (LED1 blinks quickly, note 3), then make sure your transmitter enter the binding Mode (Note 4). As soon as the binding operation is completed, the receiver will enter the waiting state of receiving signal, no need to disconnect power and restart.

Note 3: The binding operation way for all of the compatible receivers is same except Hubsan compatible receiver.

Note 4: How to enter binding mode on the transmitter, please refer to its manual accordingly.

图传频率设置:

当用户在 Scisky F3 & RX 无刷飞控板上安装了我们的 VTX, 那 VTX 工作频率是由 Scisky F3 & RX 无刷飞控板上电路控制的。如果用户安装的是独立 VTX, 则忽略这一步。

连续按两次 FR/B 开关后进入到图传频率设置模式中 (在此模式中按键音变短), 按 FR/B 开关图传频率序号按顺序加 1, 按 BIND 开关图传频率序号按顺序减 1, 当设置到合适的频率后约 10S 后自动保存数据并退出图传频率设置模式 (蜂鸣器长音提示)。

在图传频率设置模式中，若长按 FR/B 开关图传频率恢复出厂设置（频率序号 25，对应频率 5705M），并退出图传频率设置模式。

Frequency set up on Video Transmitter:

When user install our VTX on Scisky F3 & RX Brushless Flight Board, VTX working frequency is controlled by the circuitry of Scisky F3 & RX Brushless Flight Control Board. If customer wants to install a independent VTX, please ignore this step.

Press the FR / B button twice, it will enter VTX frequency turning mode (button tone becomes short), press the FR / B button each time, the frequency order number will increase one, press BIND button each time, the frequency order number will decrease one, as soon as the right frequency is chosen for 10 seconds, it will save the data automatically and exit frequency set up mode. (long tone from buzzer)
Long press FR/B button when VTX is on frequency set up mode, VTX will return default frequency (default frequency number is 25 , 5705M), then VTX frequency set mode is exited.

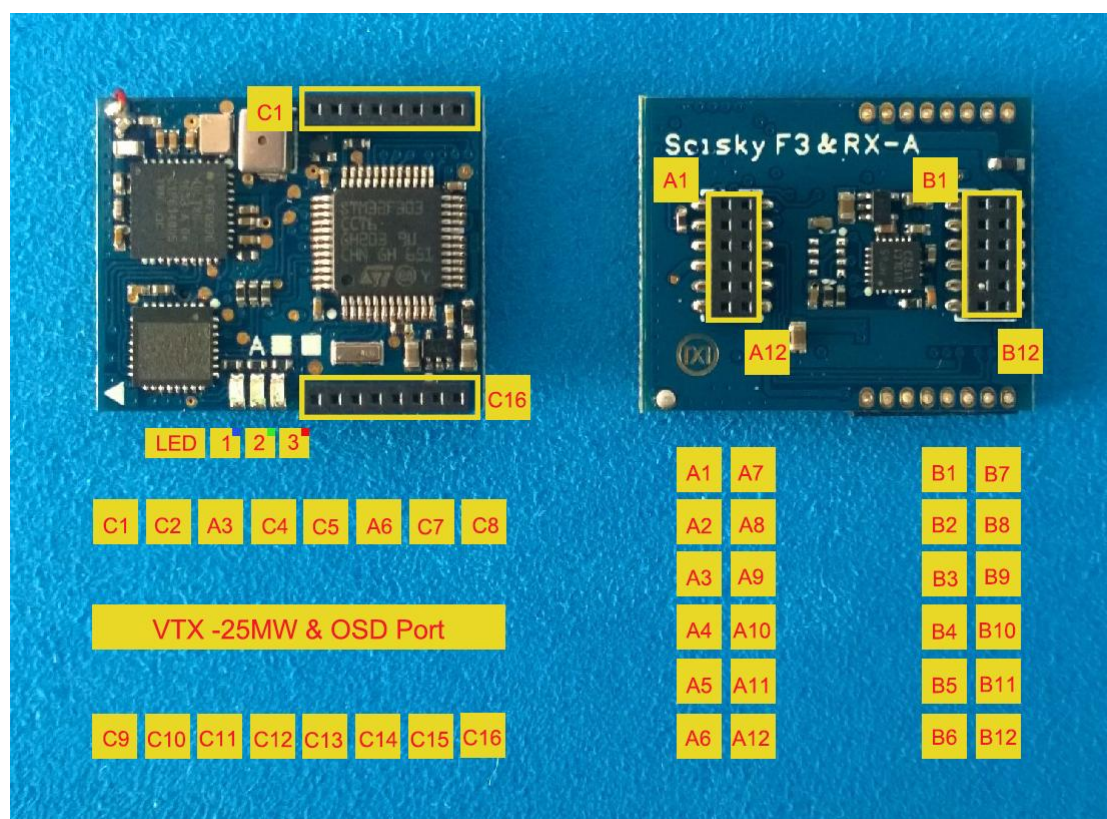
VTX frequency number order	VTX frequency table							
1~8	5740M	5760M	5780M	5800M	5820M	5840M	5860M	5880M
9~16	5865M	5845M	5825M	5805M	5785M	5765M	5745M	5725M
17~24	5733M	5762M	5771M	5790M	5809M	5828M	5847M	5866M
25~32	5705M	5685M	5665M	5645M	5885M	5905M	5925M	5945M
33~40	5658M	5695M	5732M	5769M	5806M	5843M	2880M	5917M

注 5： 如果用户手上的产品没有开关提示音，请把板载兼容接收机固件升级到最新版本。

Note 5: If no tone at all from video transmitter board could be heard, please upgrade the onboard compatible receiver firmware to the latest version.

Scisky F3 & RX 无刷飞控板端口分布：

Port Distribution on Scisky F3 & RX Brushless Flight Control Board :

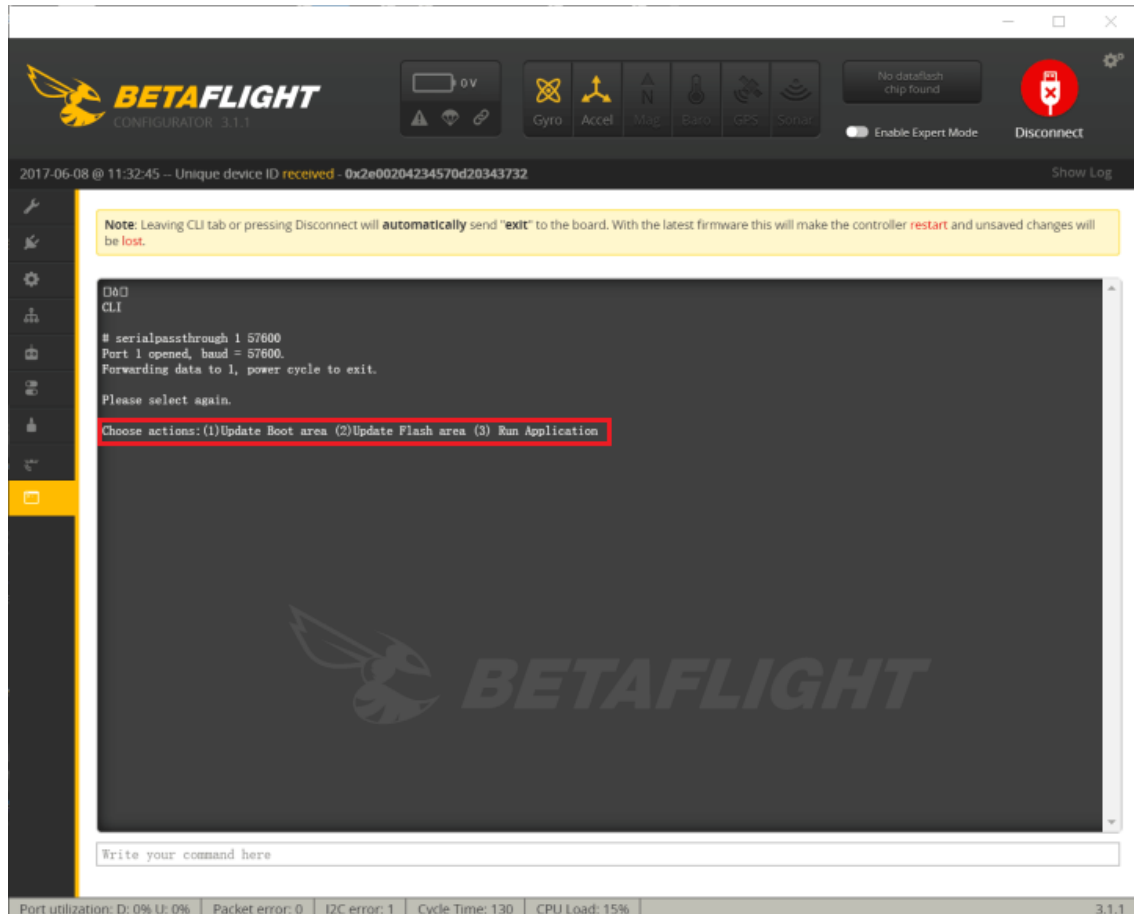


兼容接收机固件升级操作:

- 1) 打开 CleanFlight 或 BetaFlight GUI, 按下 BIND 开关, 然后通过 USB 线把飞控板连接到 PC 上;
- 2) 点 CleanFlight 或 BetaFlight GUI 上的 Connect, 然后把接收机信号模式改成 PPM 模式 (如果已经是 PPM 模式, 那忽略这一步)。
- 3) 进入到 CLI 模式中, 在命令行输入“serialpassthrough 1 57600”, 等待出现“Choose actions: (1)Update Boot area (2) Update Flash area (3) Run Application” 信息;

How to upgrade compatible receiver firmware:

- 1) Open the CleanFlight or BetaFlight GUI, press the BIND button , and then connect the flight control board to PC via the USB cable;
- 2) Click “connect” on CleanFlight or BetaFlight GUI, and then change the receiver signal mode to PPM (if it is already PPM mode, please ignore this step).
- 3) Enter CLI mode, enter "serialpassthrough 1 57600" , "Choose actions: (1) Update Boot area (2) Update Flash area (3) Run Application" will be on screen.

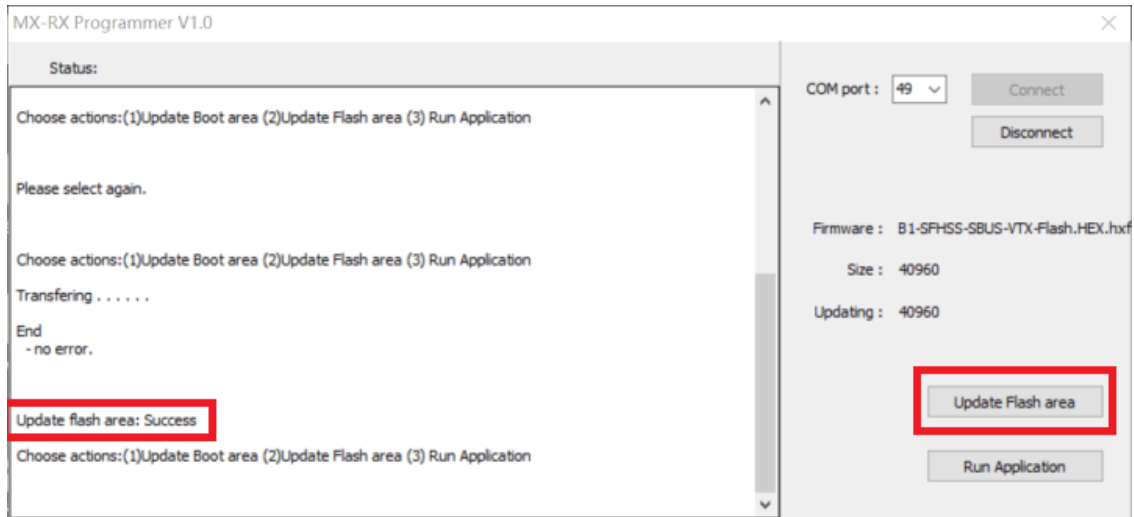


- 4) Click Disconnect on CleanFlight or BetaFlight GUI to disconnect the control board from the CF GUI



(do not disconnect the USB cable), then open the MX-RX Programmer software;

- 5) Select the serial port, click Connect, select the compatible receiver firmware, wait for the RX firmware upgrade to complete, when the upgrade is completed, then quit MX-RX Programmer software, disconnect the flight control and PC connection;



目前可以提供的兼容 RX 固件有以下 12 种，其中以 SBUS 格式输出 有 6 种：

Currently available compatible RX firmware are the the following 12 types, 6 of them are SBUS output:

1. A1-DSMX/2-SBUS-VTX-Flash.HEX;
2. B1-SFHSS-SBUS-VTX-Flash.HEX;
3. B1-FLYSKY-D8-SBUS-VTX-Flash.HEX;
4. C1-AFHDS-SBUS-VTX-Flash.HEX;
5. C2-AFHDS-2A-SBUS-VTX-Flash.HEX;
6. C3-HUBSAN-SBUS-VTX-Flash.HEX;

以 PPM 格式输出 有 6 种：

6 of them are PPM output:

1. A1-DSMX/2-PPM-VTX-Flash.HEX;
2. B1-SFHSS-PPM-VTX-Flash.HEX;
3. B1-FLYSKY-D8-PPM-VTX-Flash.HEX;
4. C1-AFHDS-PPMVTX-Flash.HEX;
5. C2-AFHDS-2A-PPM-VTX-Flash.HEX;
6. C3-HUBSAN-PPM-VTX-Flash.HEX;

6) 重新连接飞控和 PC，打开 CleanFlight 或 BataFlight GUI 恢复 RX 模式设置（如果兼容接收机出 PPM 信号则忽略这一步）

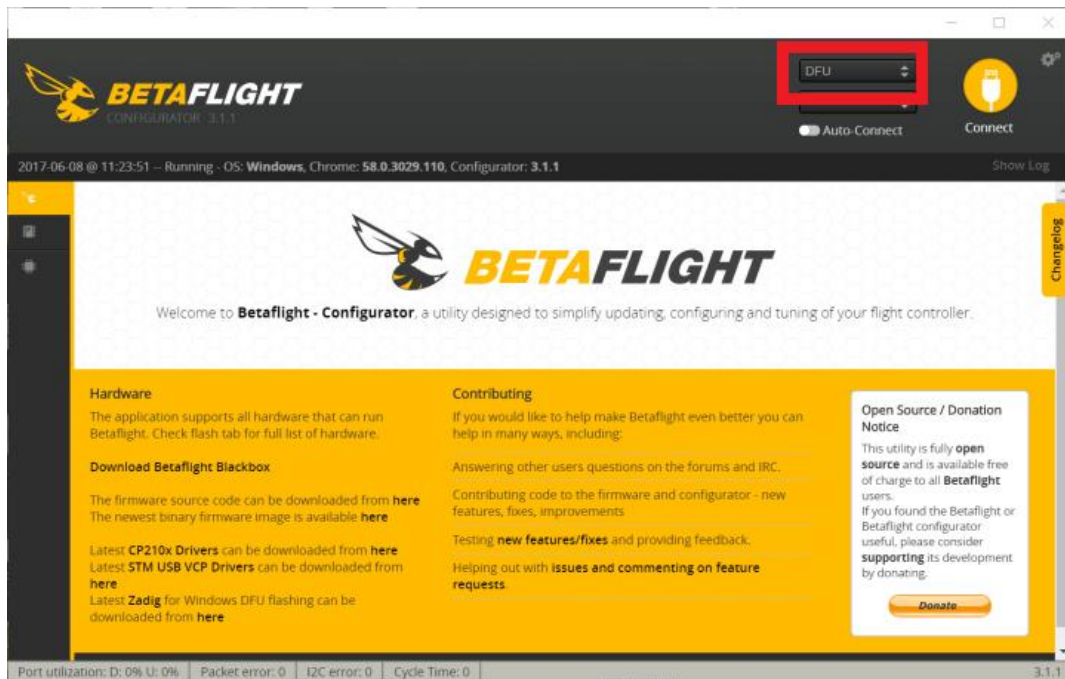
6) Reconnect the flight control board and PC, open the CleanFlight or BataFlight GUI to restore the RX mode setting (ignore this step if the compatible receiver is already PPM)

How to upgrade the firmware of the flight control board

1) 打开 CleanFlight 或 BataFlight GUI，按下 FR/B 开关，然后通过 USB 线把飞控板连接到 PC，此时 GUI 左上角显示 DFU（同时蜂鸣器一直响）；

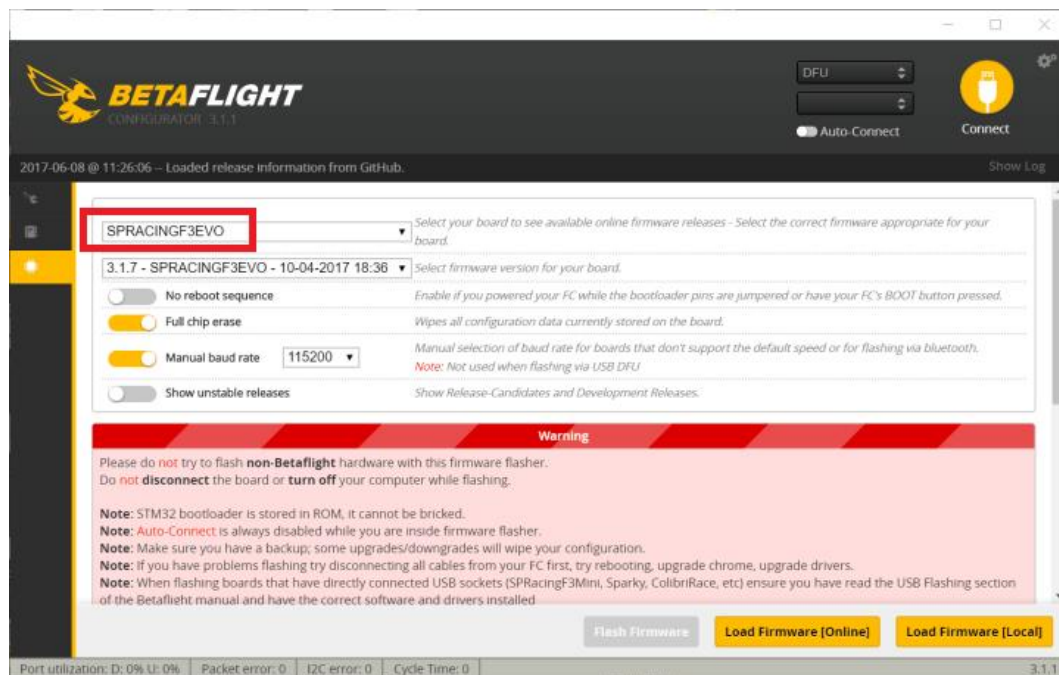
Flight control firmware upgrade operation:

1) open CleanFlight or BataFlight GUI software, press the FR / B button, and connect the flight control board to PC by USB cable, then DFU appears on the upper left corner of GUI (while the buzzer is on ringing);



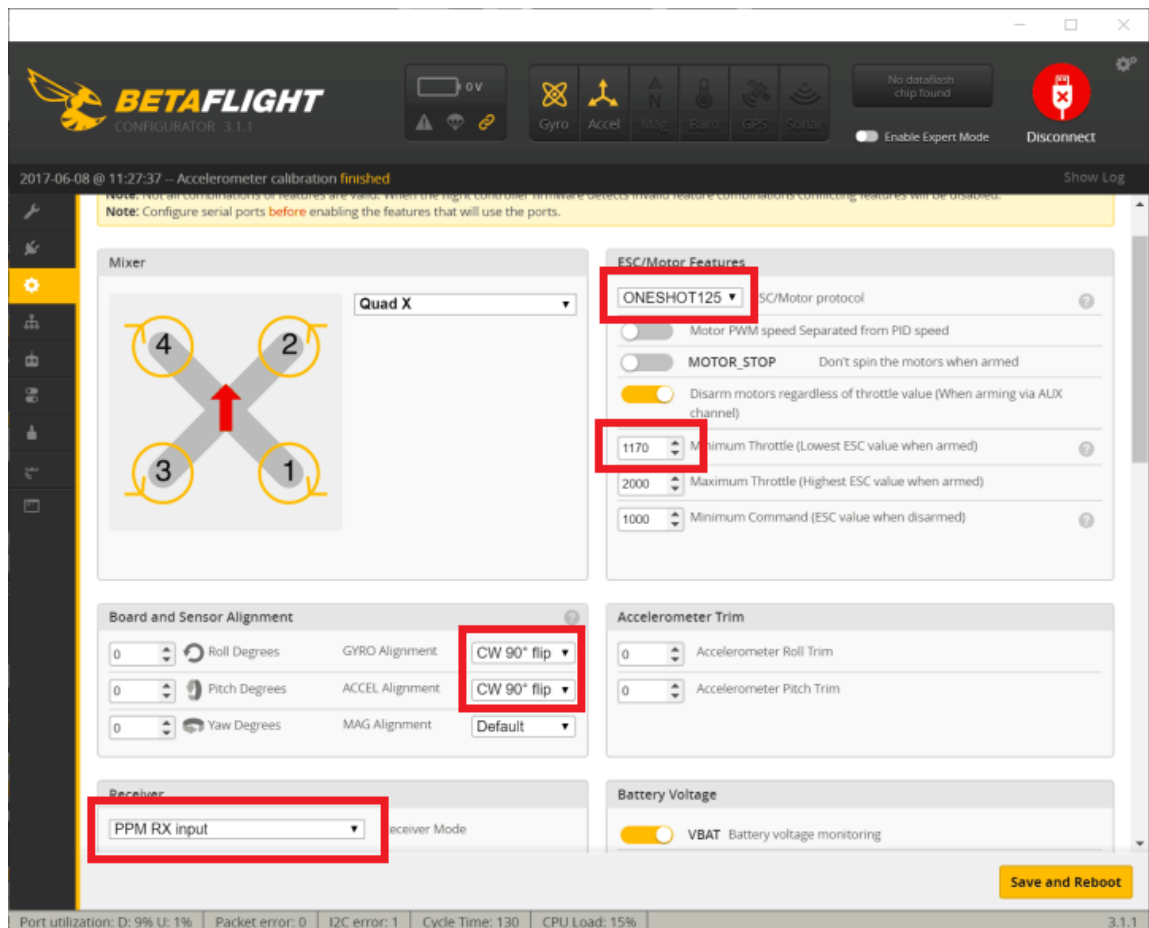
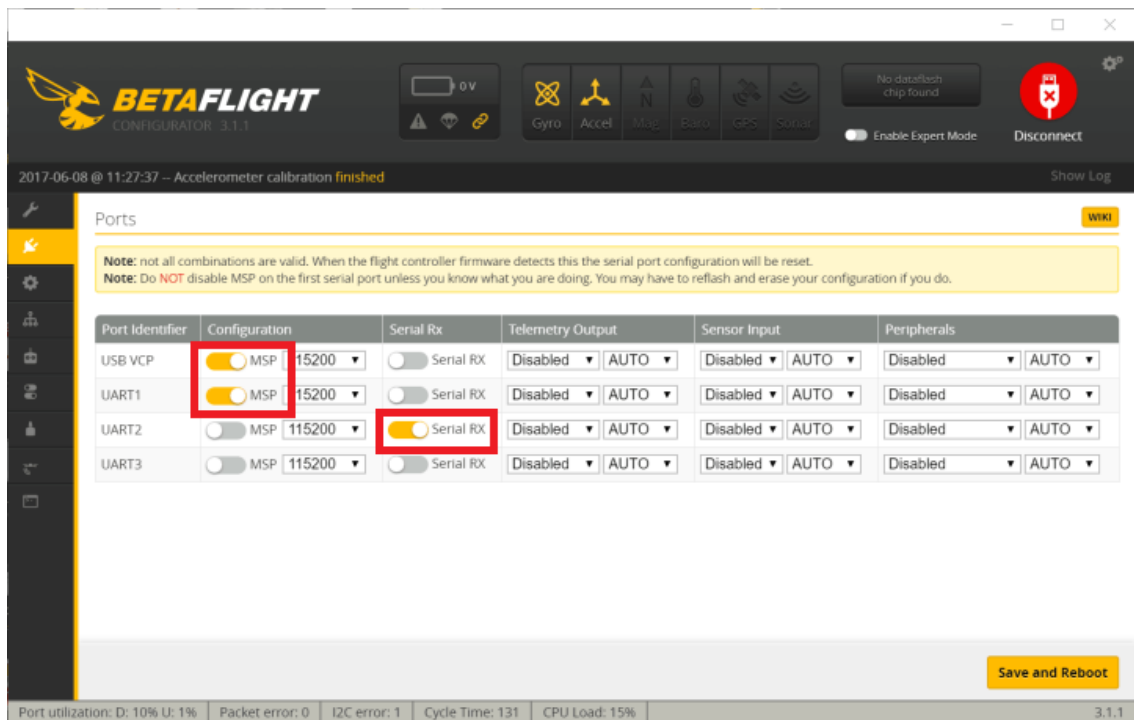
2) 进入固件升级界面，选取硬件版本和软件版本

2) Enter the firmware upgrade page, select the hardware version and software version



3) 加载固件后点“Flash Firmware”，固件刷完后蜂鸣器关闭。根据下图设置飞控上接收机和传感器等参数（如果使用 BF3.1.0 以上的固件，兼容接收机固件必需要更换成 PPM 输出的版本，同时飞控上 RX 模式也要相应的设置成 PPM 模式）：

3) After loading, click the "Flash Firmware", the buzzer will be turned off after the firmware flashing is completed. (If you are using BF3.1.0 or above firmware, the firmware of the compatible receiver must be changed to PPM output version, while the RX mode on flight control board should also be set to PPM mode accordingly):



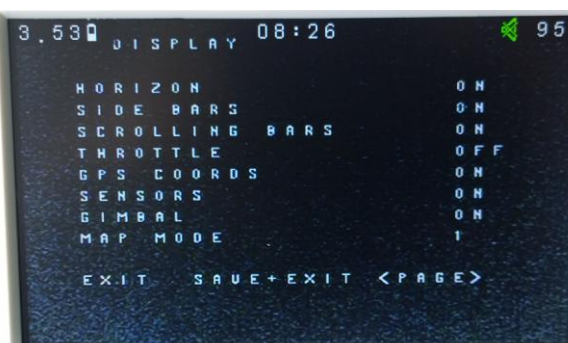
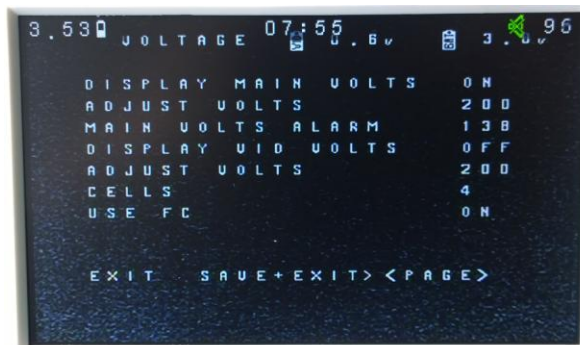
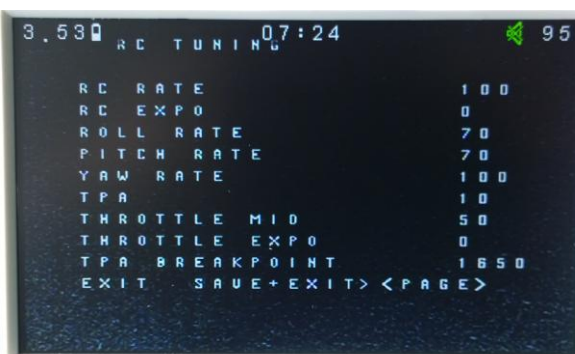
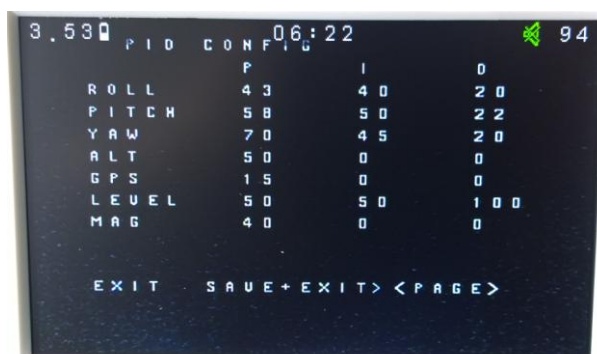
如何通过 OSD 进入飞控参数设置菜单:

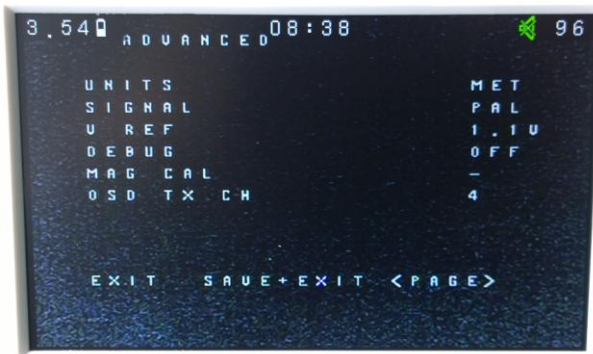
How to enter the menu for the flight control parameters set up through OSD:



根据上图提示：THR 操纵杆推到中间位置，YAW 操纵杆推到最右，PIT 操纵杆推到最上，然后就会进入飞控参数设置模式中。下图是所有的设置项：

According to the above diagram: push THR stick to the middle position, push YAW stick to the right most, push PIT stick to the topmost, and then it will enter the flight control parameter setting mode. The following pictures show all the settings:



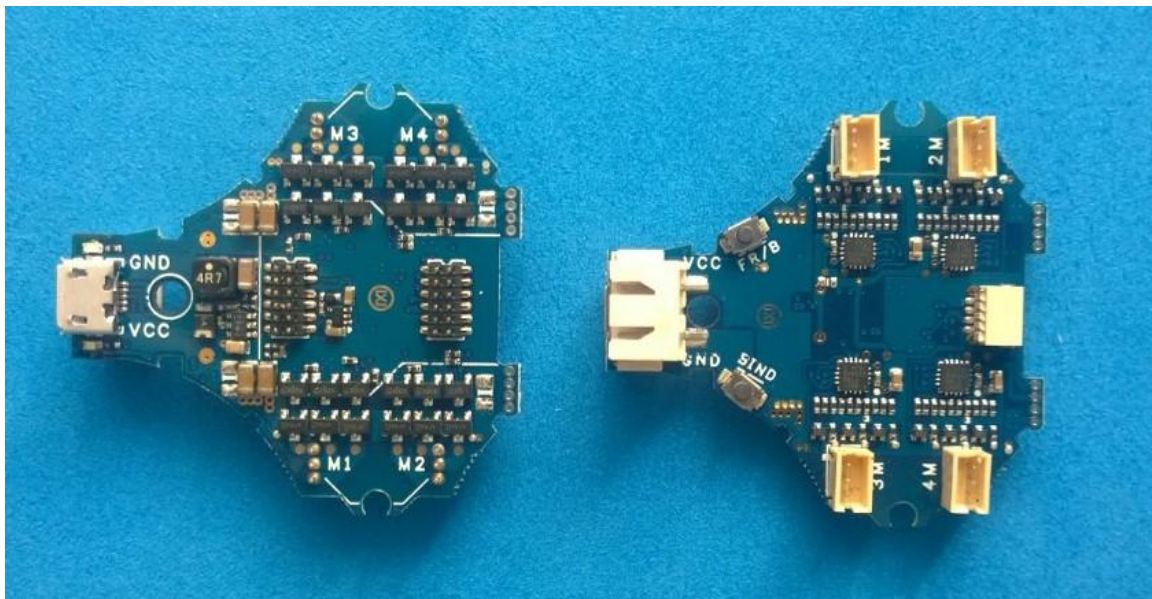


- 注：1)关于各个设置项的解释请参考 CleanFlight 和 BetaFlight 说明；
2)关于 OSD 的说明请参考 MW OSD；
3)上图中背景是人为做成黑色的。

Note: 1)The explanation of each setting option, please refer to the instruction of CleanFlight and BetaFlight .
2) Please refer to the MW OSD for the instruction of OSD.
3) The black background in the pictures were made purposely.

4 合一无刷电调端口分布：

4-in-one brushless ESC port distribution:



特性：

- 1) BLS 固件;
- 2) 支持 DSHOT, Oneshot125, Oneshot42, Multishot 等信号;
- 3) 重量: 5.0g;
- 4) 单路持续 4.5A 电流 (最大 6A@5S);
- 5) 最高工作电压 8.4V;
- 6) 集成 1.5A/5V DCDC 电源 (给飞控, 图传, 镜头等设备供电);
- 7) 以费焊接方式安装 Scisky F3 & RXA/B/C 飞控板;
- 8) 板载接收用 BIND/BOOT 开关, 飞控和 VTX 用 FRE/BOOT 开关。

- 1) BLS firmware;
- 2) support DSHOT, Oneshot125, Oneshot42, Multishot and other signals;
- 3) Weight: 5.0g;
- 4) 4.5A continuous current for each ESC (Max 6A @ 5S);
- 5) Maximum working voltage is 8.4V;
- 6) Integrated 1.5A / 5V DCDC power (supply power for flight control board, video transmitter, camera and other devices);
- 7) Install Scisky F3 & RX A / B / C flight control board by plug and play without any soldering.
- 8) BIND / BOOT button is for binding receiver, flight control board and VTX are with FRE / BOOT button.