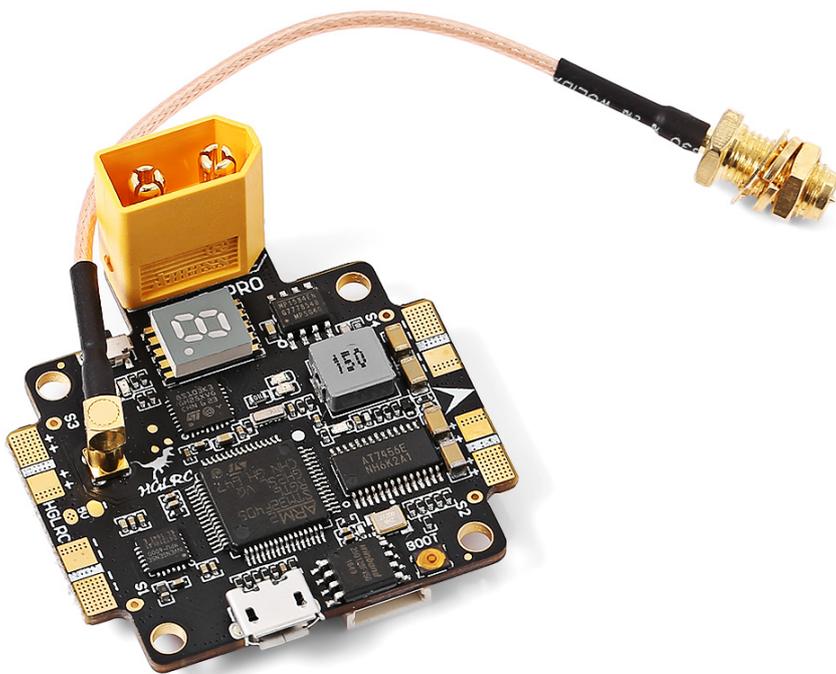




# HGLRC F4 V5PRO Manual



**Introduction:**

HGLRC F4 V5PRO is a high-performance all in 1 flight controller which is designed for racing drone players. Not only there is pdb combining with the flight controller perfectly, but also there is OSD, current sensor, voltage sensor, built-in high power BEC, Switcher VTX 0/25/200/600MW power and so on. HGLRC F4 V5PRO can give all that you want as a flight controller, it is perfect for FPV competition, aerobatic flight and aerial photography!

## **Specifications:**

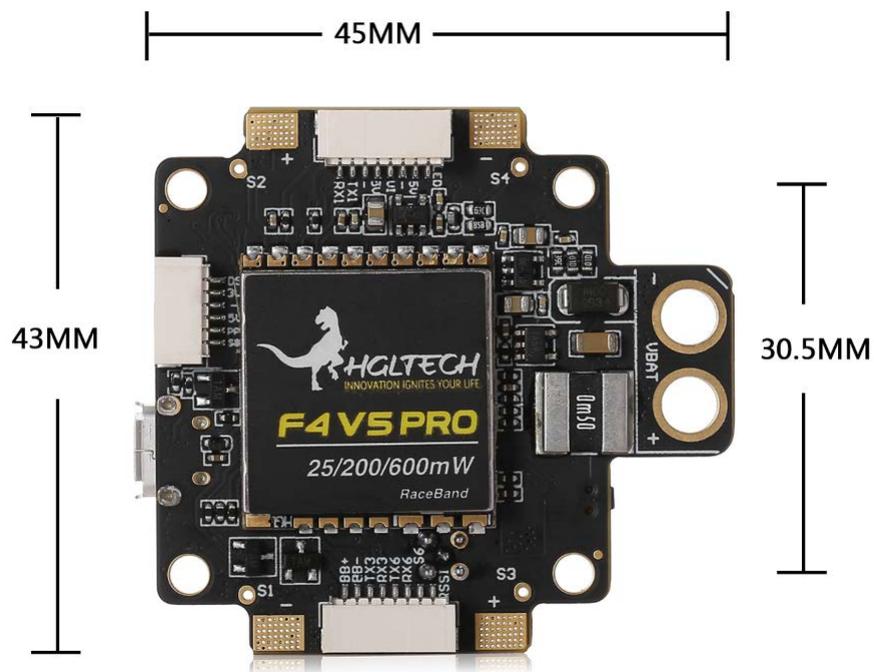
- OMNIBUSF4 firmware
- Master STM32F405 GRT6, refresh rate up to 8K
- PCB 3OZ copper enhance current stability and cooling fast
- 5V 3A BEC output; 3.3 V Voltage output
- Exposed pad for easy soldering
- Compatible with all ESCs
- Integrated OSD, no need to flash firmware additionally, debug OSD via BF ground station.
- Integrated current meter to monitor the real-time power consumption
- Adjust the PID by OSD via remote control
- Switcher VTX 0/25/200/600MW power digital display
- 2-6s lipo support
- Net weight: 13g (exclude wire)
- Size: L45 \* W43mm, hole distance: 30.5\*30.5mm

## Warning:

Please read the cautions as follows, otherwise stability of your flight controller cannot be ensured, your flight controller will even get damaged.

- Keep focus on the polarity. Check carefully before power supply.
- Cut off the power when you connect, plug and pull anything.
- Don't connect 5V or electrical power interfaces, otherwise your flight controller will catch fire.
- The refresh rate of PID and Gyroscope is up to 8K.

# 1、 Flight control characteristics:



## Technical Parameters:

Size: L45 \* W43mm, hole distance: 30.5\*30.5mm

Master: STM32F405 GRT6

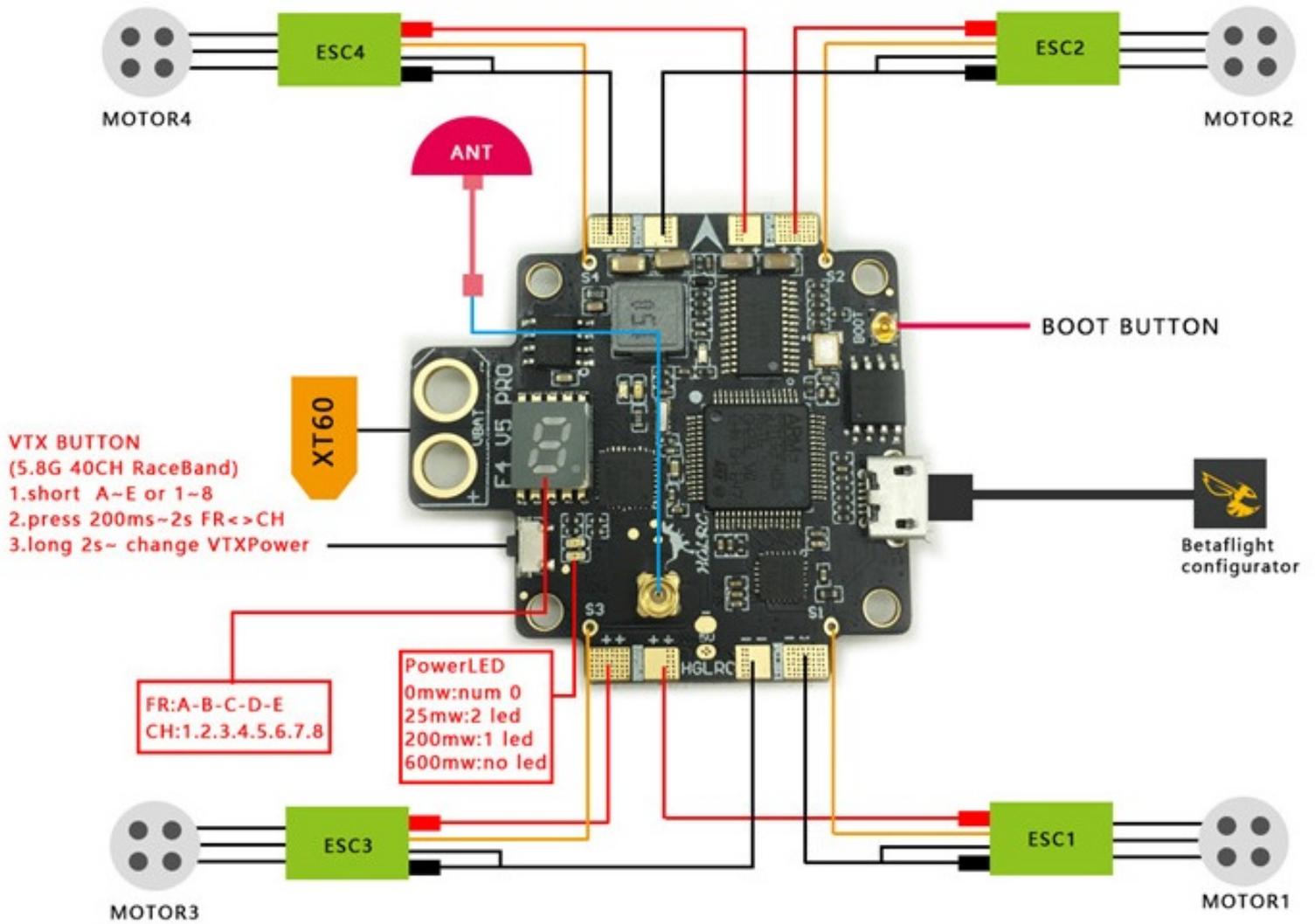
Voltage: 2-6S Lipo support

MAX Current: 200A

5v bec: 3A

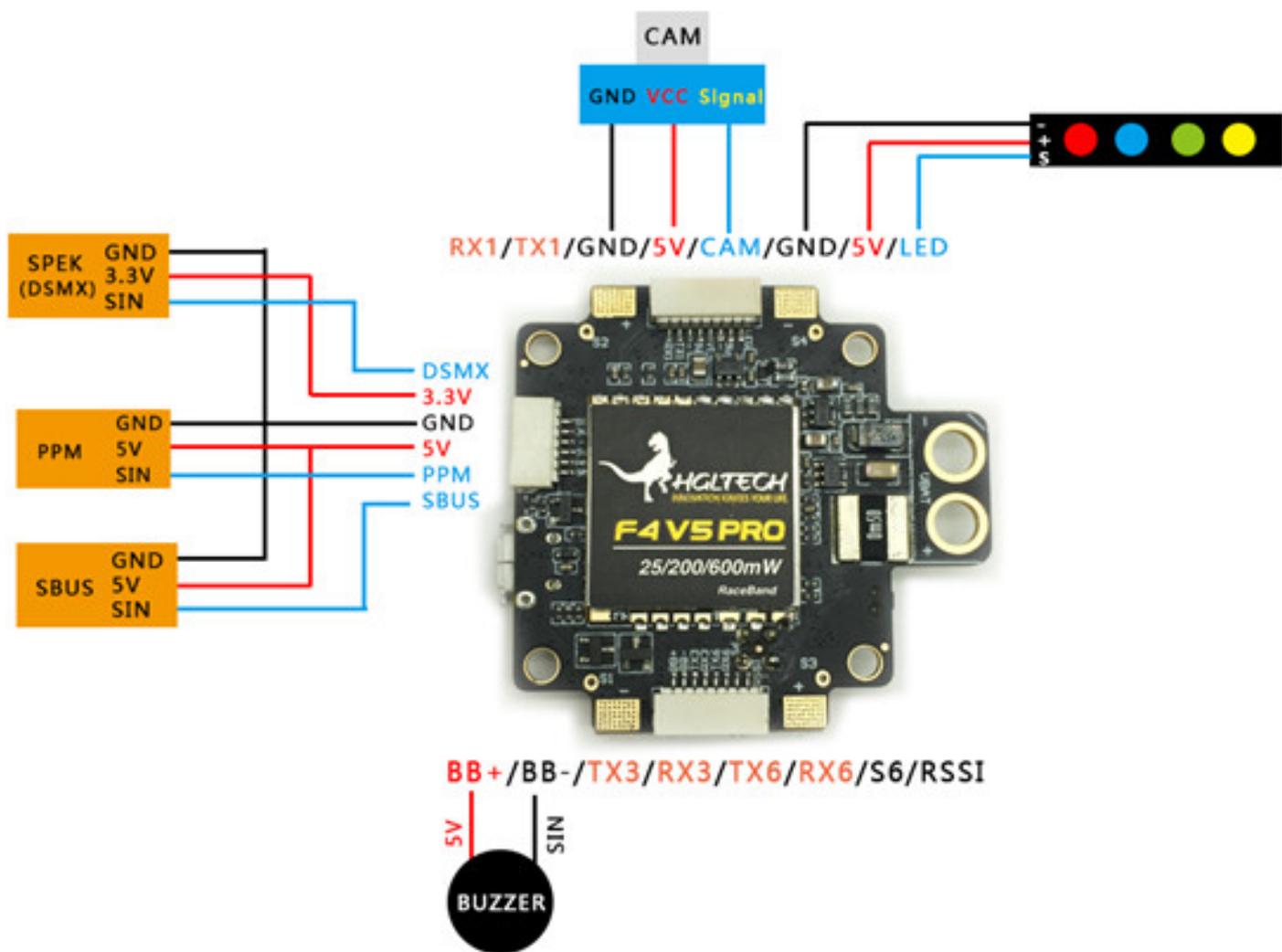
Net weight: 13g (exclude wire)

## 2、Wiring Diagram:



### Push-button Usage:

1. Channel selection: short press(1-8) or (A-E);
  - 2.band selection: press and hold for 500ms-2 seconds
  - 3.Output power selection: press and hold for more than 2 seconds.
- 0mW: Numeric Display '0';  
 25mW: two LEDs on;  
 200mW: one LED on;  
 600mW: LED off



### Frequency Table:

FR CH	A	B	C	D	E
CH1	5740MHz	5733MHz	5705MHz	5865MHz	5658MHz
CH2	5760MHz	5752MHz	5685MHz	5845MHz	5695MHz
CH3	5780MHz	5771MHz	5665MHz	5825MHz	5732MHz
CH4	5800MHz	5790MHz	5645MHz	5805MHz	5769MHz
CH5	5820MHz	5809MHz	5885MHz	5785MHz	5806MHz
CH6	5840MHz	5828MHz	5905MHz	5765MHz	5843MHz
CH7	5860MHz	5847MHz	5925MHz	5745MHz	5880MHz
CH8	5860MHz	5866MHz	5945MHz	5725MHz	5917MHz

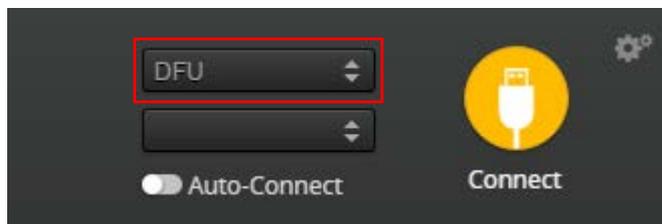
### 3、 FC firmware FLASH and Settings

FC firmware FLASH:

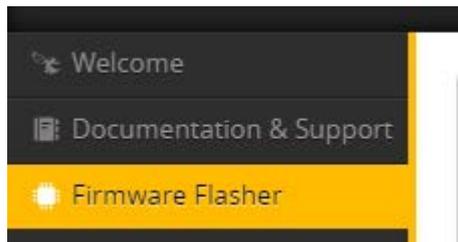
- 1、 Long Press BOOT buttons, connect USB, The system automatically install the driver



- 2、 open betaflight configurator, enter DFU mode



- 3、 betaflight configurator, select “Firmware Flasher”,



- 4、 Don't open the Settings

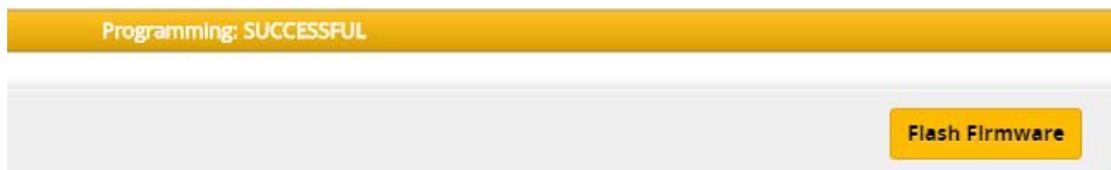


- 5、 click “Load Firmware[Local]” Select the firmware

“betaflight\_3.1.6\_OMNIBUSF4.hex” (The firmware version according to the actual situation)



6、click “Flash Firmware”, progress bar “Programming:SUCCESSFUL”  
Finish!

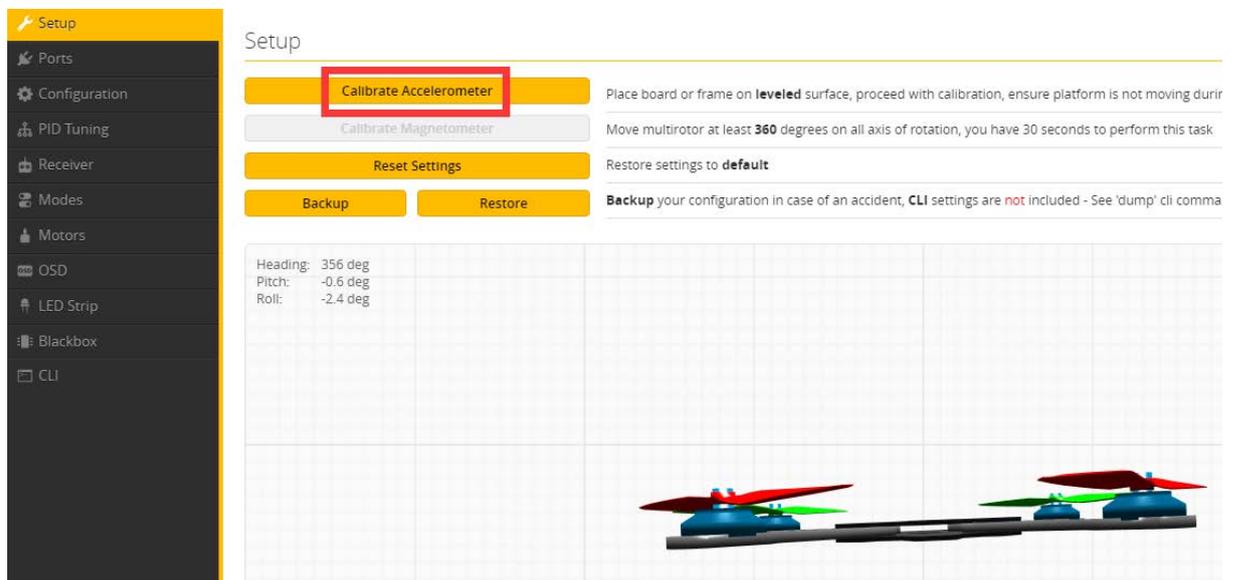


7、Betaflight Automatically assigned port, click “Connect” Enter setup interface (Different computer COM)



## F4 Flight control parameter Settings

1、FC horizontal , The acceleration of calibration



2、 2.4G sbus receiver:open UART1 RX option, then click “save and reboot” (Each set needs to be saved)

Ports

**Note:** not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.  
**Note:** Do NOT disable MSP on the first serial port unless you know what you are doing. You may have to reflash an

Port Identifier	Configuration	Serial Rx
USB VCP	<input checked="" type="checkbox"/> MSP 115200 ▼	<input type="checkbox"/> Serial RX
UART1	<input type="checkbox"/> MSP 115200 ▼	<input checked="" type="checkbox"/> Serial RX
UART3	<input type="checkbox"/> MSP 115200 ▼	<input type="checkbox"/> Serial RX
UART6	<input type="checkbox"/> MSP 115200 ▼	<input type="checkbox"/> Serial RX

**Save and Reboot**

**Note:** click save after will jump to the startup screen, reconnect!

3.choice of receiver SBUS mode

Receiver

Serial-based receiver (SPEKSAT, S) Receiver Mode

**Note:** Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX\_SERIAL feature.

SBUS Serial Receiver Provider

Open the voltage current detection

Battery Voltage

VBAT Battery voltage monitoring

Onboard ADC Battery Meter Type

3.3 Minimum Cell Voltage

4.3 Maximum Cell Voltage

3.5 Warning Cell Voltage

110 Voltage Scale

0.0 Battery Voltage

Current Sensor

CURRENT\_METER Battery current monitoring

Onboard ADC Current Meter Type

400 Scale the output voltage to milliamps [1/10th mV/A]

0 Offset in millivolt steps

0.00 Battery Current

Enable support for legacy Multiwii MSP current output

Open the black box, osd, article LED lights set (choose) as required

Other Features

**Note:** Some of the features of the firmware are not shown in this list any more, because they have been moved to other places in the configurator.

<input type="checkbox"/>	INFLIGHT_ACC_CAL	In-flight level calibration
<input type="checkbox"/>	SERVO_TILT	Servo gimbal
<input type="checkbox"/>	SOFTSERIAL	Enable CPU based serial ports
<input type="checkbox"/>	SONAR	Sonar
<input type="checkbox"/>	TELEMETRY	Telemetry output
<input checked="" type="checkbox"/>	LED_STRIP	Multi-color RGB LED strip support
<input type="checkbox"/>	DISPLAY	OLED Screen Display
<input checked="" type="checkbox"/>	BLACKBOX	Blackbox flight data recorder
<input type="checkbox"/>	CHANNEL_FORWARDING	Forward aux channels to servo outputs
<input type="checkbox"/>	TRANSPONDER	Race Transponder
<input type="checkbox"/>	AIRMODE	Permanently enable Airmode
<input type="checkbox"/>	SDCARD	SDCard support (for logging)
<input checked="" type="checkbox"/>	OSD	On Screen Display
<input type="checkbox"/>	ESC_SENSOR	Use KISS ESC 24A telemetry as sensor

After set up parameters on this page, save the Settings.

4、 set up the function of remote control switch across the channel

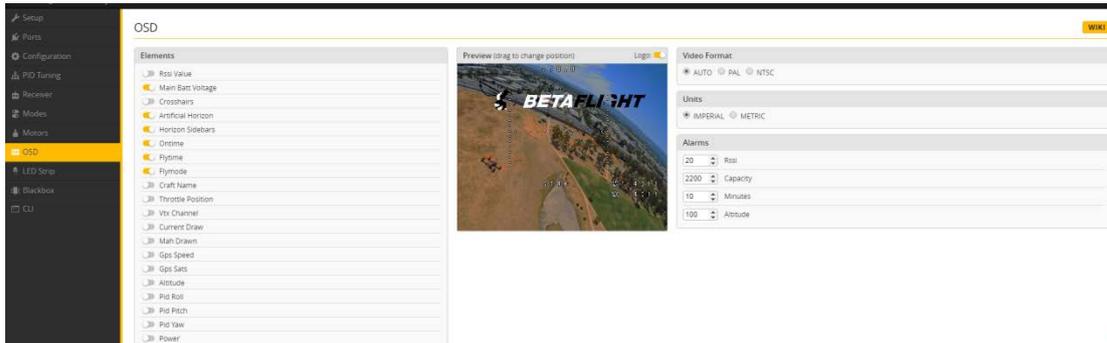
(below are for reference only)

Modes

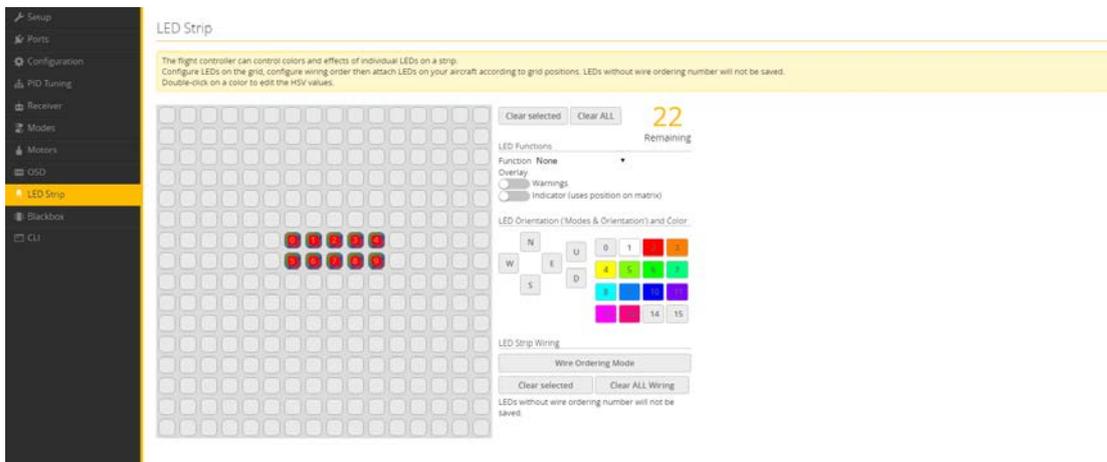
Use ranges to define the switches on your transmitter and corresponding mode assignments. A receiver channel that gives a reading between a range min/max will activate the mode. Remember to save your settings using the Save button.

ARM	AUX 1	Min: 1500 Max: 2100	900 1000 1200 1400 1500 1600 1800 2000 2100
AIR MODE	AUX 2	Min: 1475 Max: 2100	900 1000 1200 1400 1500 1600 1800 2000 2100
ANGLE	AUX 2	Min: 900 Max: 1650	900 1000 1200 1400 1500 1600 1800 2000 2100

5.the OSD Settings, according to the need to choose, drag the OSD schematic diagram of the parameters can be adjusted.



6.LED Strip configuration, set according to need



So far, flight control basic setup to finish.

F4 FC test

1, can connect the computer to download firmware & adjustable parameters

2, good connection test, after testing all functions

buzzer sound

OSD display is normal

Have a camera

The remote control can be unlocked

4 if motor rotation

LED light