

## 幻影灯带控制板使用说明书



### 规格参数

- 输入电压: 6~18V (2~4S)
- 输出电压: 5V
- 输出电流: 3A
- 灯珠类型: WS2812B RGB幻影LED
- 灯珠数量: 最大支持128颗
- 输入/输出端子: SH1.0mm-3Pin

### 按键使用说明

KEY1	长按	切换模式	10种模式 (Betaflight模式; 单色呼吸模式; 单色呼吸模式; 单色跑马模式; 双边跑马模式; 单色导向模式; 单色增长模式; 彩虹呼吸模式; 彩虹渐变模式; 双边彩虹模式)
	短按	切换速度	快、中、慢
KEY2	长按	切换亮度	100%、75%、50%、25%
	短按	切换颜色	白色、红色、黄色、蓝色、绿色、青色、品红色、关闭

### Betaflight模式

由于Betaflight固件最大仅支持64颗RGB灯珠 (F411或更低的MCU最大仅支持32颗), 无法满足大多数2英寸及以上Whoop整机的灯带长度和LED数量, 因此控制板设定了3种显示比例, 分别为1:1、1:2和1:4, 用于倍数显示Betaflight上RGB的灯珠设定。  
切换显示比例后, 灯带起点位置会闪烁相应颜色的灯珠, 灯珠颜色与比例关系如下:

灯珠颜色	显示样式	显示比例
绿色		1:1
红色		1:2
蓝色		1:4

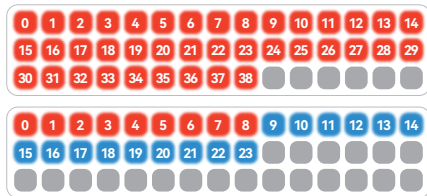
### 灯珠数量标定模式

该模式用于标定所使用灯带中的灯珠的实际数量, 以确保除Betaflight模式之外的其他模式都能够正确显示。

- 进入模式: 按住任意按键的同时接通电源, 灯带会亮起相应数量的白色灯珠。
- 设置方法: 进入该模式后, 在Betaflight Configurator中的“LED灯带”页面设置特定数量和颜色的灯珠即可, 灯珠基础设置如下:



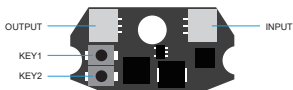
每颗红色灯珠代表实际有2颗灯珠, 每颗蓝色灯珠代表实际有4颗灯珠。例如: 一条灯带实际有78颗灯珠, 则可以设置为“39颗红色灯珠”, 也可以设置为“9颗红色灯珠”加“15颗蓝色灯珠”。



- 退出设置: 按任意按键退出灯珠数量标定模式。

注意: 仅在灯珠数量标定模式下设置LED, 才会改变控制板中实际灯珠数量的设定。未进入或已退出标定时, 可正常使用Betaflight的LED功能。

## Manual for RGB Light Strip Control Board



### Specification

- Voltage Input: 6 - 18V(2 - 4S)
- Voltage Output: 5V
- Current Output: 3A
- LED Beads Type: WS2812B RGB LED
- LED Beads Quantity: at most 128
- Input/Output Connectors: SH1.0mm-3Pin

### Usage Instruction for Key

KEY1	Long Press	Switch Mode	10 mode (Betaflight Mode, Solid Color Mode, Single Color Breathing Mode, Single Color Marquee Mode, Bilateral Marquee Mode, Single Color Oriented Mode, Single Color Gradient Mode, Rainbow Breathing Mode, Rainbow Gradient Mode, Bilateral Rainbow Mode)
	Short Press	Switch Speed	Fast, Medium, Slow
KEY2	Long Press	Switch Brightness	100%, 75%, 50%, 25%
	Short Press	Switch Color	White, Red, Yellow, Blue, Green, Cyan, Magenta, Off

### Betaflight Mode

Due to the firmware of Betaflight only supporting a maximum of 64 RGB LED beads (F411 or earlier version MCUs support up to 32 RGB LED beads), it can not meet the light strip's length and LED quantity for most 2-inch whoop quadcopters and larger. Therefore, three display ratios (1:1, 1:2, and 1:4) are set in the control panel to scale the RGB settings of Betaflight.

After switching display ratios, the LED beads with corresponding color flash at the start of the light strip. The connection between color and display ratios is as follows:

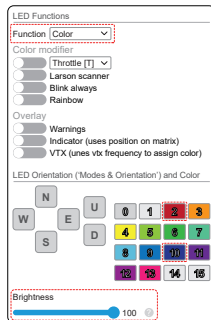
LED Beads Color	Display Pattern	Display Ratio
Green		1:1
Red		1:2
Blue		1:4

### Quantity of RGB lights Calibration Mode

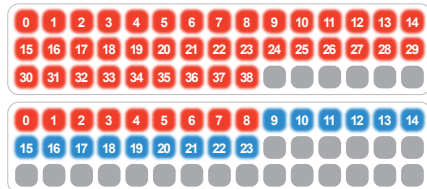
This mode is used to calibrate the actual number of RGB LED in the used LED light strip, in order to be displayed correctly in other modes except betafight mode.

Enter mode: turn on the power while pressing the arbitrary key, and then the strip lights up with a number of white beads correspondingly.

Setting method: After entering this mode, set the specific quantity and color of beads on the Betaflight Configuration on "LED Strip Light" page. The basic setting of beads is as follows:



Each red bead represents two actual LEDs. Each blue bead represents four actual LEDs. For example: there are 78 actual LEDs in one light strip. So it can be set to "39 red beads", or "9 red beads" + "15 blue beads".



Exit setting: press arbitrary key to exit this mode.

Note: the actual bead quantity in the control panel can only be changed in LED Beads Quantity Calibration Mode. If the quadcopter has not entered or has exited the calibration, the LED function in Betaflight can be used normally.