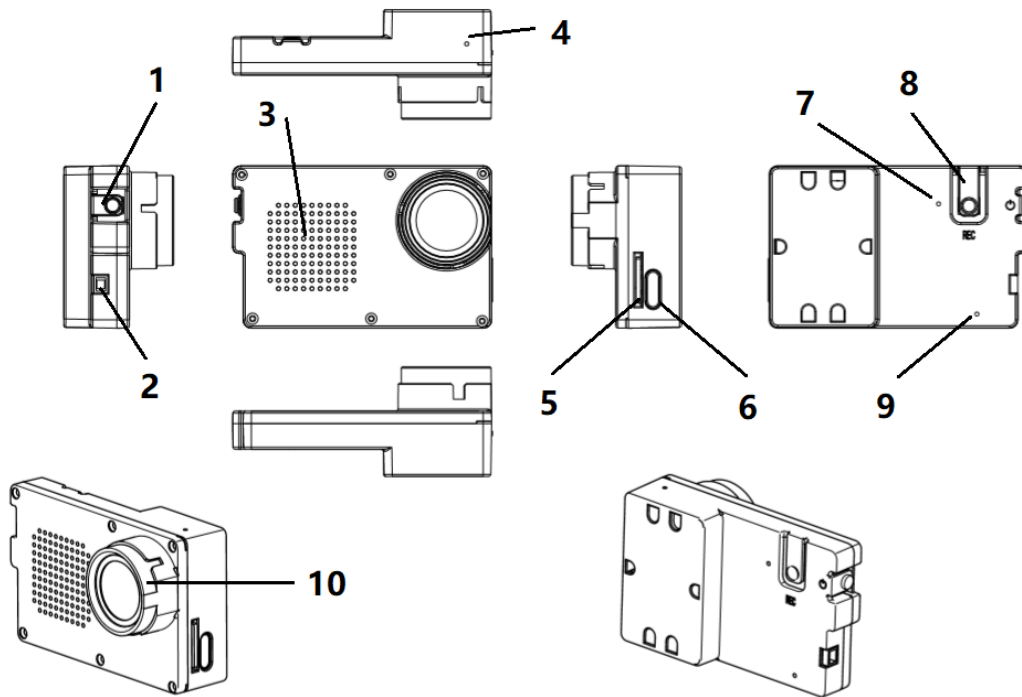# 飞萤
FIREFLY

Explore the new world!

FIREFLY X LITE II FPV CAM

- 4K 60FPS
- Only 34g weight
- Ambarella H22S85 chipset
- Gyro 4.0 Image Stabilization
- WiFi + BT4.1 Remote control
- SONY IMX577   12 Mega WDR CMOS
- Support Gyroflow v1.0 and RS go stabilization
- Support 1080p200fps high frame rate video recording
- support flat color, which is more flexible in post-processing

Features：

1. POWER BOTTON；
2. 2p power port(5V IN)；
3. Cooling hole；
4. Microphone hole；
5. TF card slot；

6. Type C USB port；
7. Video indicator（flash when recording）；
8. record button；
9. WiFi indicator（Light on when WiFi is on）；
10. Lens(Nd16 filter available)；

Performance and Specifications:

	resolution	1080P200FPS/4K60FPS/2.7K60FPS /2.5K60FPS...
	RC and AV OUT	YES
	Kind of MicroSD card supported	U3(**Note:Low speed sd card will cause unstable**)
	Maximum size of MicroSD card supported	512G
Specifications	Camera size	61×38×26 MM
	Weight	34G
	Compressed format	H.264
	Video format	*.MP4
Optical Parameter- Wide angle version	Diaphragm	F=2.8 ，7G1IR LENS
	Angle	Diagonal 150 degrees
Electric Parameter	Working Voltage	5V
	Power supply	1A

Button Functions

Name	Functions	Descriptions
Power Button	Turn on/off camera and wifi	Press once, camera ON; Press and hold for 3 seconds to flip the image
Record Button	start/stop recording	Long press to switch four resolutions

Operating instructions:

Use the 5V power supply on the drone to supply power to the camera, then press the power button to start the machine, and the buzzer will ring once. After power on, the default resolution of the camera is 2.5k60fps (EIS on). If you want to switch the resolution, long press the recording key to switch. The switching sequence is: 4k60fps(buzzer rings once) /2.7k60fps 4:3 (buzzer rings twice) / 4k30fps 4:3 (buzzer rings three times) / 2.5k60fps EIS on(buzzer rings four times). If the camera needs to be flipped 180 degrees for installation, long press the power button for 3 seconds after turning on the camera, and the camera will turn on the image flipping function. After the camera is turned on, you can turn on the WiFi function by briefly pressing the power key, and then connect the WiFi hotspot of the camera with your mobile phone (firefly_x_...) to connect with Firefly app (the initial password of the app is 12345678). App can set camera time and parameters, preview and download videos.

Description of buzzer sound:

After power on, if the card is not inserted or full, the camera will beep all the time; If there is a plug-in card but no video recording, it will beep twice every 6 seconds to prompt the pilot to record before taking off; A short press of the power key will sound once, indicating that the WiFi function is on. Press it again, and sound twice, indicating that the WiFi function is off. Long press the power key for 3 seconds, the buzzer rings three times, indicating that the image flipping function is on. Long press for 3 seconds, the buzzer rings four times, indicating that the image flipping function is off.

Four parameter adjustment methods:

1, The camera's own buttons are simple to adjust parameters;

2, Adjusting parameters through lite_config.txt document by computer;

3, Adjusting parameters through Firefly APP.

4, Through the parameter adjustment cable.

For more information or update the firmware, please visit the official website：**www.Hawkeyefpv.com.cn**.

Please download APP from:

Apple Store: **Firefly Cameras**

Google Play: **Hawkeye Firefly**

How to use power cables?
The power cables has been provided with the hardware function of anti connection. Only when it is inserted in the right direction, the LED on the board will be on, and the wrong direction will not burn the machine. The negative pole is aligned with the black cable of the balance head, as shown in the following:

支持3S-6S电池
Support 3s-6s battery

- +

+5V power supply

Appendix---Firefly x lite FPV CAM parameter tuning method

A、 The camera's own buttons are simple to adjust parameters; the functions of the two buttons on the camera are as follows:

1、Short press the power button to turn on, then short press again to turn on the WIFI function, and short press again to turn off the WIFI function; long press to turn on the image flip function, then the camera can be installed upside down;

2、Short press the video button to start or stop the video. (If you accidentally lose power during video recording, the video file will be damaged. You can power on again and the damaged files will be repaired automatically! However, CSV files cannot be repaired.) Long press the video button to switch between 4K60FPS 16:9,2.7K60FPS 4:3, 4K30FPS 4:3, 2.5K60FPS 16:9 EIS on, these four resolutions.

B、 Computer or smart phone OTG tuning method:

1、After power on, the parameter adjustment document "lite_config. TXT" will be automatically generated in the root directory of the camera TF card. You can use computer or mobile phone OTG to change the value for parameter adjustment. As shown below:

```
Type=FIREFLY X
Version=2021-12-29
Update=N                        Set options, Y is the update setting, N is not update.
DCORR=0                         Only red numbers can be modified according to the rules.
GYRO=0
AE=1
AWB=0
SCM=0
COLOR=0
EV=0
SHRP=1
ISO=11
STT=0
VRES=10
VQAL=0
VSTP=0
APO=0
VOS=0
FOV=0
AREC=0
MICM=4
DUALF=1
WDRE=1
DT=2021-12-29 10:41:13
CONFIG_END
-----------------------------------------------
```

DCORR (Distortion Correct) : 0 ~ 1

   (0)OFF (1)ON

GYRO　(GYRO 4.0) : 0 ~ 1(If EIS is on, CSV gyro data document will not be output)

   (0)OFF (1)ON

AE   (AE meter) : 0 ~ 2

        (0)Center (1)Average (2)Spot

AWB   (AWB mode) : 0 ~ 8

        (0)Auto (1)Incandescent (2)D4000 (3)D5000 (4)Sunny (5)Cloudy (6)D9000 (7)D10000 (8)Fluorescent

SCM   (Scene mode) : 0 ~ 12

        (0)NORMAL (1)Night (2)Sports (3)Landscape (4)Portrait (5)sunset (6)Sand&Snow (7)Fire work (8)Back Light (9)Blue Sky (10)Dynamic light (11)Beach (12)Indoor

COLOR (Color) : 0 ~ 8(If set to 8, the flat color will be turned on to increase the flexibility of post-processing)

        (0)Normal (1)Painting (2)Sepia (3)Negative (4)B&W (5)Hawkeye (6)70Film (7)Popart (8)HLOG

EV   (EV bias) : -2,-1,0,1,2

        (-2)-2EV (-1)-1EV (0)0EV (1)+1EV (2)+2EV

SHRP (Sharpness) : 0 ~ 2

        (0)Soft (1)Normal (2)Strong

ISO   (Video ISO) : 0 ~ 12

        (0)100 (1)200 (2)400 (3)800 (4)1600 (5)3200 (6)6400 (7)MAX200 (8)MAX400 (9)MAX800 (10)MAX1600 (11)MAX3200 (12)MAX6400

STT   (Shutter Time) : 0 ~ 9

        (0)Auto (1)1/60 (2)1/120 (3)1/240 (4)1/480 (5)1/960 (6)1/1200 (7)1/1440 (8)1/1920 (9)1/2160

VRES (Video Resolution) : 0 ~ 12

        (0)4K 30 (1)4K 60 (2)4k 30 4x3 (3)4K 30 SV (4)2.7K 30 (5)2.7K 60 (6)2.7K 30 4x3 (7)2.7K 60 4x3 (8)2.7K 30 SV (9)2.7K 60 SV (10)2.5k 60 (11)1080P 60 (12)1080P 60 4X3

VQAL (Video Quality) : 0 ~ 2

        (0)Super Fine (1)Fine (2)Normal

VSTP (Video Stamp) : 0 ~ 3

        (0)Off (1)Date (2)Time (3)Date&Time

APO   (Auto Power Off) : 0,180,300,600

        (0)Off (180)3Min (300)5Min (600)10Min

VOS   (Video Output System) : 0 ~ 1

        (0)NTSC (1)PAL

FOV   (Field Of View) : 0 ~ 2

        (0)Wide (1)Medium (2)Narrow

AREC (Auto Recording) : 0 ~ 1

        (0)Off (1)On

MICM (Microphone Mute) : 0 ~ 6

        (0)Mute (1)50% (2)60% (3)70% (4)80% (5)90% (6)100%

DUALF (Dual File) : 0 ~ 1

(0)OFF (1)ON

WDRE (WDR ENHANCE) : 0 ~ 1

    (0)OFF (1)ON

DT (Date Time) : YYYY-MM-DD hh:mm:ss

    Example: 2021-12-29 10:41:13

2、Use smart phone OTG to adjust parameters. The tuning method is the same as that of a computer, but it requires an OTG adapter and a text editor APP installed on the phone. After the camera is connected to the phone through the OTG adapter, an Ambarella U disk will appear in the phone's file management. Click in and there will be a lite_config.txt file at the bottom. Long press to select to open and modify the parameters with a text editor. Then save it as a file named lite_config.txt in the phone memory directory. Finally find the file saved as, copy it to the U disk and overwrite the previous file.

C、Firefly APP tuning method:

1、After the camera is turned on, press the power button again to turn on the WIFI function. Then connect the camera's WIFI hotspot (Firefly_X_...) with your mobile phone. Open the Firefly APP downloaded on your phone and you can use the APP to participate in viewing images. After successfully connecting to the APP, the camera will automatically synchronize the system time on the phone.
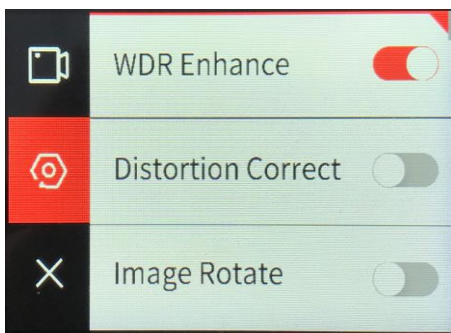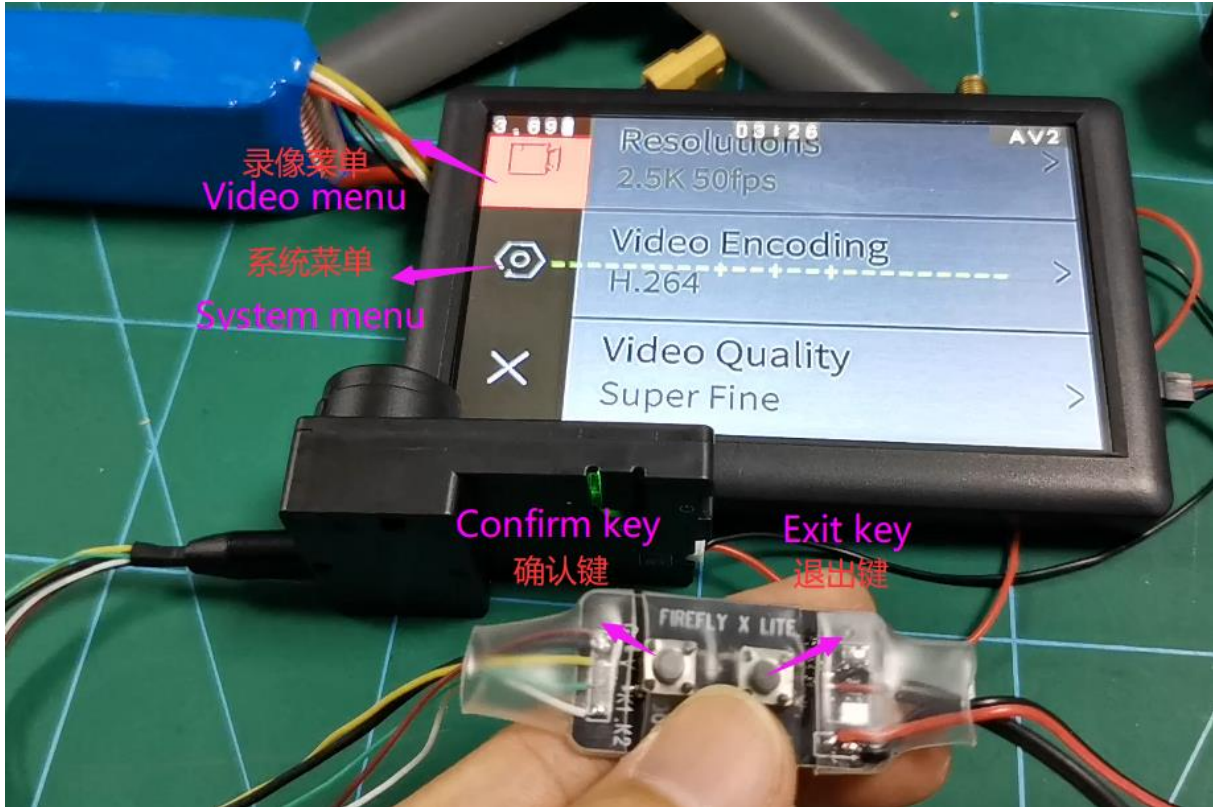
Because FIREFLY APP is compatible with all Firefly Action cameras, there may be some functions that are not compatible.If you have any questions or suggestions, please email us. thank you!
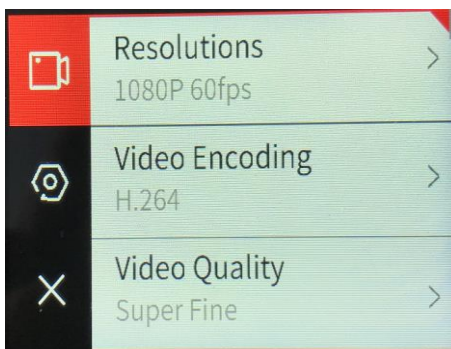
sales@hawkeyefpv.com.cn

D、Through the parameter adjustment cable:

As shown in the figure above, after connecting the parameter adjustment cable, you can use FPV glasses to see the real-time video of the camera and adjust parameters;
After the camera is turned on, press any key on the parameter adjustment board to enter the parameter adjustment mode; Short press to move up and down Select the menu option, and long press to confirm or exit the menu option.

Has entered the system menu, and the current option is WDR Enhance

Entered the video menu. The current option is resolution