Hawk eye FPV

鷹眼弘创

Hawkeye 4K Split/NakedCam 3D/Gyroflow V4

- Low latency TV output
- WDR
- Video repair
- RC trigger to capture

Ver 1.0

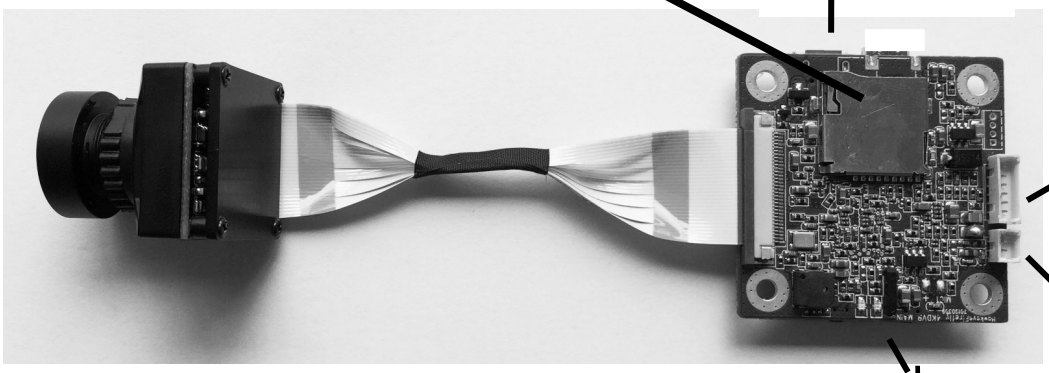
Contents

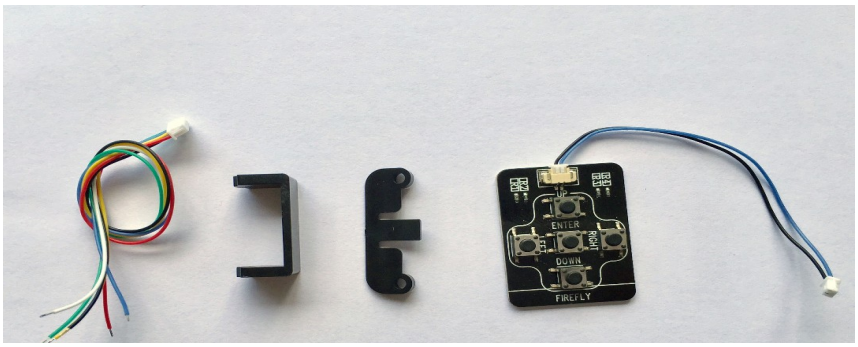
Safety Guidelines：

Please read the instruction manual carefully before using the camera for the first time. **Please check the latest version manual on our website.**

1.It’s a high-precision product, do not drop or crash it.
2.Do not expose the camera to strong magnetic objects, such as magnets or electrical motors. Avoid exposing the product to strong radio waves. Strong magnetic fields may cause the products breakdown or image/audio damage.
3.Never leave the products exposed to high temperatures and direct sunlight.
4.In case of overheating, smoke,or unpleasant smell, unplug your device immediately to prevent fire hazard.
5.Keep the product out of children’s reach. Power cable may cause children accidental suffocation or electric shock.
6.Keep the device in cool, dry and dust-free places.
7.Please do not throw the product or it’s battery to the garbage, find a specific recycling place for it.

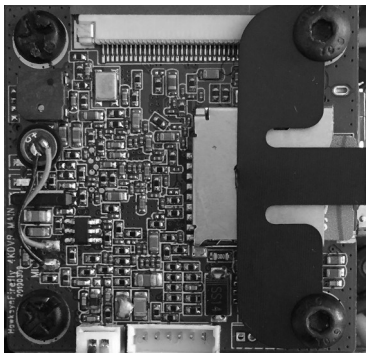
Features：





Power/video Cable Converting Mount (19 to 28mm) SD Protection Cover Key board

SD Protection Cover：



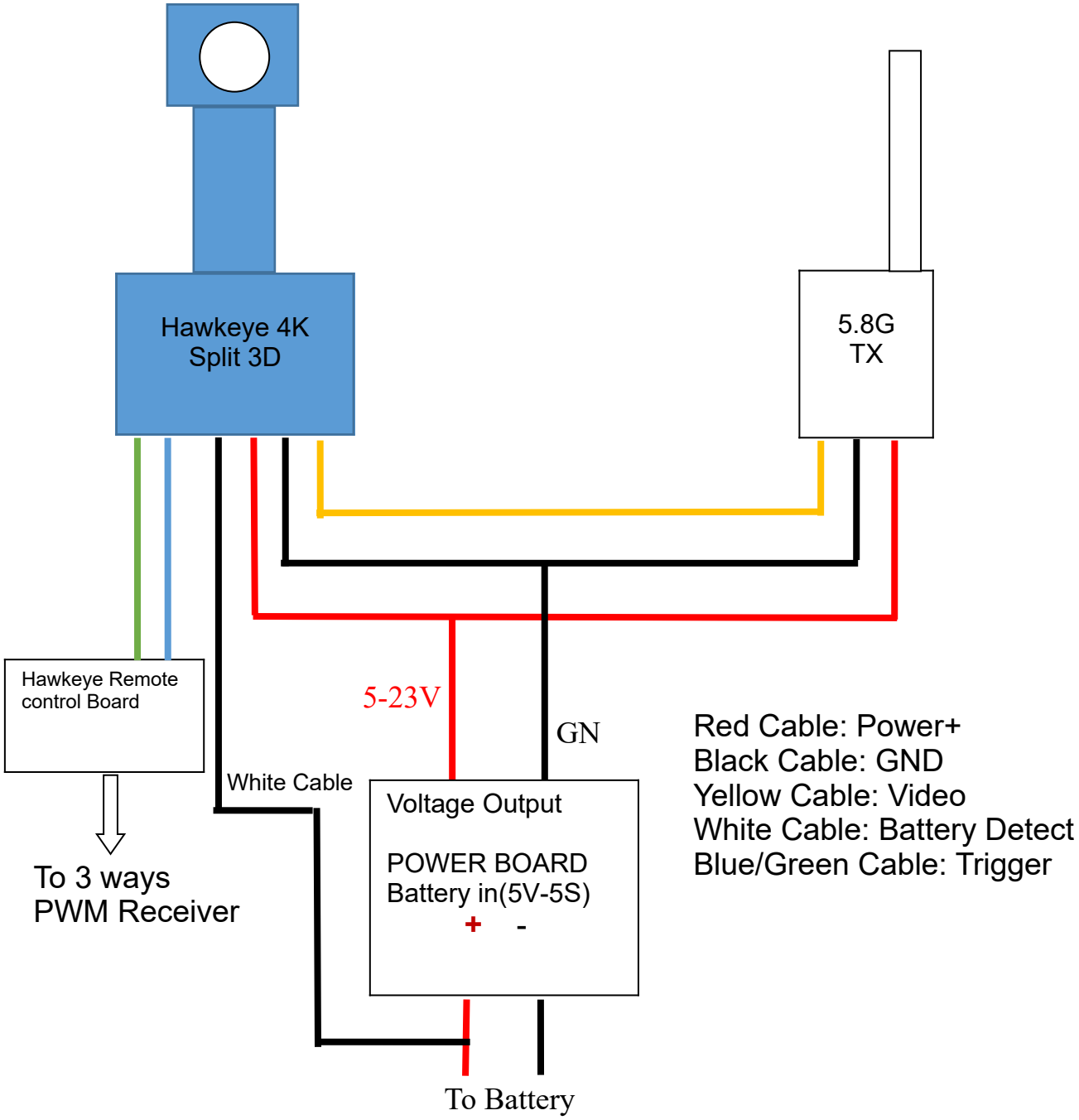
LED indicator：

	LED
2.5K 4：3	Red + Blue
2.5K 50FPS	Red
1080P 50FPS	Blue

Wires:

Red: 5-23V DC input +
Black: GND
Yellow: Video Out
White: Battery detect (6-25v)
Blue: Video trigger
Green: Photo trigger

Note: Never connect video/trigger port to power+!!!



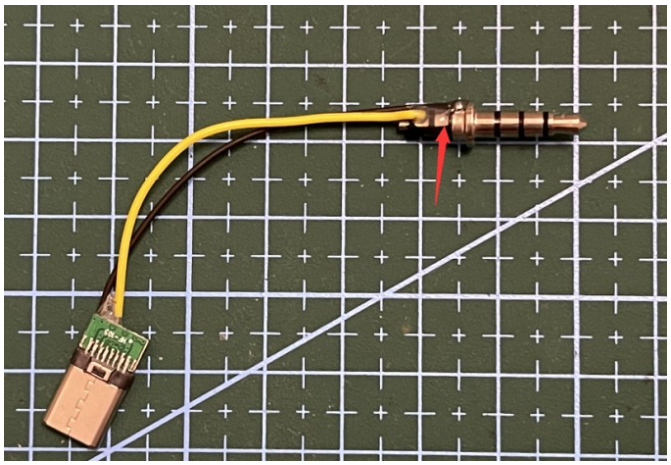
Note:

You can just only connect Red(Power +) and Black (GND) wires to battery+、- (<= 5S) or FC's 5V output to use this camera to record videos.

Video pin:

To DJI 3.5mm hole:

Yellow wire(video) change to the next point (Red point)



NakedCam: **3MM hole**

Mode button

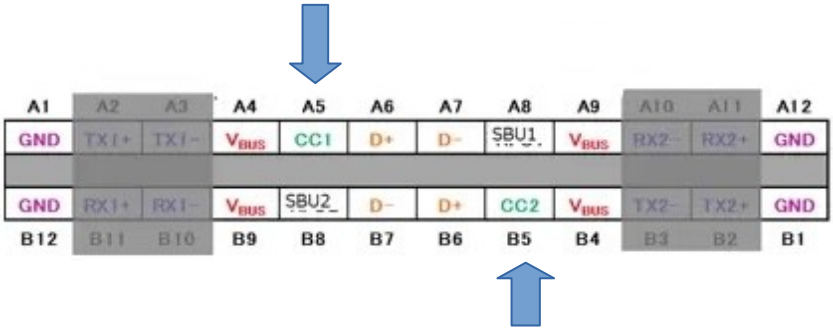
OK Button

5MM Hole

°

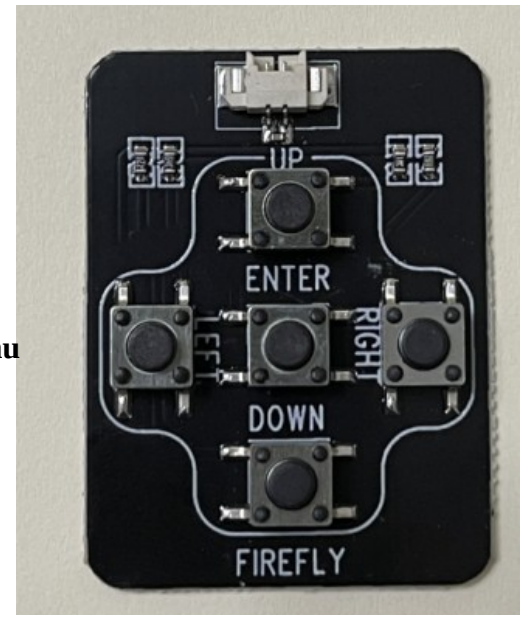
Type C Port:

A5,B5 : TV output (16pin or 24pin)



OSD key board:

Up button: switch to video mode



Left: Menu settings
Double click: system menu

Right: Playback

Enter： OK/recording

Down: switch to photo mode

Performance and Specifications:

	Resolutions	4K 50FPS(4:3 ,2880*2160) 4K 30FPS/ 1080P 50FPS/ 2.5K 50/30FPS/ 2.5K 50/30FPS 4:3
	AV output	PAL/NTSC PAL has lower latency!
	Micro SD card	U1 Sandisk recommend
	SD card supported	8-64G
	Size	38 ×38 MM 30.5×30.5 M4 holes
	Weight	19G split cam/ 26.8g nakedcam
	File format	*.MP4/H.265
	Lens	F/2.0 ， 7 glasses
	Angle	Diagonal 170 degrees
	Voltage	7-25V
	Current	500mA

Buttons:

Name	Functions	Description
Power/ OK Button	Power ON/OFF; Start/Stop Recording	Press Once to power on; Press once to start/stop recording after power on.
Mode Button	Toggle between	Press and hold for 2 seconds to toggle different resolutions.

Format SD Card:

You need to format SD card to FAT32 for the first time. On firmware 2022-05-13, there's short cut key to format SD card. You can hole UP BUTTON of the keyboard for 5 seconds to format SD card.

PC CAM:

Hold M button, then connect USB to computer for about 8 seconds, the camera will enter PC CAM mode.

On firmware 2022-05-13, you can set USB mode(U disk or PC CAM) in the menu.

Video Settings:

Resolution：4K 50/30fps、2.5K 50fps, 2.5K 48/30(4:3)fps, 1080p 50fps, 1080p 30fps. **Note: High frame rates make the TV output more smooth! We advice to use >=50fps for FPV!**
Note: 4K 50FPS can't log the gyro data!

Loop recording：Off、1、3 minutes. When the SD card is full, video will be auto loop recording. When the SD card is full, video will be auto loop recording. The oldest file will be deleted first.
WDR：Off、On. WDR effect will be On/Off. **Note: When this function is turned on, the image will not become dark even toward the sun. The image would not looks so clear if this function is ON sometimes. As a FPV cam, this function should be turned ON.**
Exposure： +2.0、+5/3、+4/3、+1.0、+2/3、+1/3、0、-1/3、-2/3、-1.0、-4/3、-5/3、-2.0.Note:Higher value for brighter image. If you want brighter image, set this value higher. If the image is over exposure, set the value smaller.

Record Audio：Off、On.
Date Stamp：off、On. Set the date time stamps on the video.
Time-lapse record：Off、0.05、0.1、0.5、1、3、5、10，30、60sec.Note: Time-lapse is a video recording mode that captures video at a very low frame rate: around one to two frames per second, although this depends on the length of the recording. When

played back, time-lapse video is almost the opposite of slow motion. Higher value for shorter video. There's no voice in this mode.

Slow Motion：Off，720P 120.Slow motion (commonly abbreviated as slo-mo or slow-mo) is an effect in film-making whereby time appears to be slowed down.

Metering: Average、Center-weighted、Spot.

Sharpness：Strong、Normal、Soft.

Contrast：High、Medium、Low.

Auto Recording：Off、On.**Note: The camera will turn on and record automatically without pressing button.When you stop recording, you need to press the record button. When the power is suddenly cut off or the stop recording button is not pressed, the file will be damaged. You need to use the keyboard to enter the playback mode. When you play back the damaged file, the file will be repaired automatically.**

Fixed frame rate：ON: the frame rate will not drop in dark condintions.

Electronic shutter：**Fix the shutter speed**.

Gyro log：off, on. Save the gyrolog and stable the image in PC.

Gyro calibration：Please place the camera horizontally and keep it sate still, press OK button to start.

Snapshot in recording：Off、5、10、30sec. Video + photo mode.

Photo Settings:

Resolution：60M、40M、24M、20M、16M、12M、10M、8M、5M .

Burst photo：Burst 3，Burst10.

Self Timer：2、5、10 sec.

Quality：Fine，Normal,Economy.

Sharpness：Strong、Normal、Soft.

Contrast：High、Medium、Low.

Date Stamp：Off、Date、Date&time. Set the day time on the image

Exposure： +2.0、+5/3、+4/3、+1.0、+2/3、+1/3、0、-1/3、-2/3、-1.0、-4/3、-5/3、-2.0.

Metering:Average、Center-weighted、Spot.

System Settings:

Date time setting. Set daytime.

Auto power off：Off、1、2、3、5、10minutes.The camera will turn off when there's no operation.
Beep sound：Off、On。Set the beep sound on/off.
Language：Muti languages.
Frequency：50、60HZ. Light frequency indoor. **When the video flickers indoor, change this setting.**
TV mode：PAL、NTSC. **NTSC is 60fps, PAL is 50fps. NTSC is smoother than PAL.**
TV Sacle：16：9、4：3、 4：3 Full. Adjust the TV output scale.
OSD Mode：Off、On. OSD on TV output.OSD on TV output. To disable the OSD, turn this Off.
Logo watermark： Off、On.
ISO:Auto、100、200、400、800、1600、3200. The term was carried over from film, when the ISO rating was known as the "film speed" and "ASA." Having a standard of sensitivity is important, as it allows you to shoot the same ISO on different cameras and trust that the exposure value will be equal. Lower ISO, darker image, less noise.
Image effect：Color，Black&white，Sepia。
White balance：Auto、Daylight、Cloudy、Tungsten、Fluorescent、Diving mode。White balance affects the image, warmer or cooler. Different Lens should use different white balance too. We recommend Hawkeye 4 for the stander lens.
White balance auto lock：When start recording, the current white balance will be locked.
FOV：Large,Medium,Small. Field of view of the video.Crop the edges of the video to avoid capturing the propellers.

Image rotation：Off,On。Turn the image upside down.
Format：Format the SD card.**Note: format the SD card at the first time,or the camera can’t recognize the SD card.**

Default settings.**if you have any question, you can set to default settings.**

Version. Version number. Check its the newest firmware on www.CNfpv.com.

Triggers:

The trigger pins need to be connected to the trigger control cable. Scan to watch.

Note: Don’t connect the trigger pins to any power. If you want to control it by a MCU, connect it to a 3.3V GPIO through a 1K resistance.

Installation:

Soft mount is needed between the camera and the drone frame. Use TPU Mount or 3M double-sided tape.

Record videos:

Please insert SD card, then press Power/OK button once to record. Please use U1 speed SD card at least(8-128G). Format the SD card in the camera at the first

time.

Transferring Files:

1. Connect the camera to a computer via micro USB cable or card reader, and then turn on the camera.
2. Double click “My Computer” and locate “Removable Disk”. Enter “Removable Disk” and you will find all photo and video files in the folder.

Update Firmware:

1.Delete all the files and folders in the SD card(suggest:8G/16G).
2.Download the bin firmware to SD card .
3.Insert the SD card into the camera.
4.Power on the camera and it will update firmware automatically.
5.When updating, the LED will flash.
6.When the update process is finished, the LED will stop flashing.
7.The camera will reboot again.
8.Please check on www.CNfpv.com for new firmware updates.

Firmware:

Scan to watch how to update:

FCC STATEMENT：

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for

compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE:

Check on www.CNfpv.com for new firmware/Manual updates.

For more information please check our

***Youtube/Facebook/Instagram** channel:*

Hawkeye Firefly Official

Youtube ***Facebook***

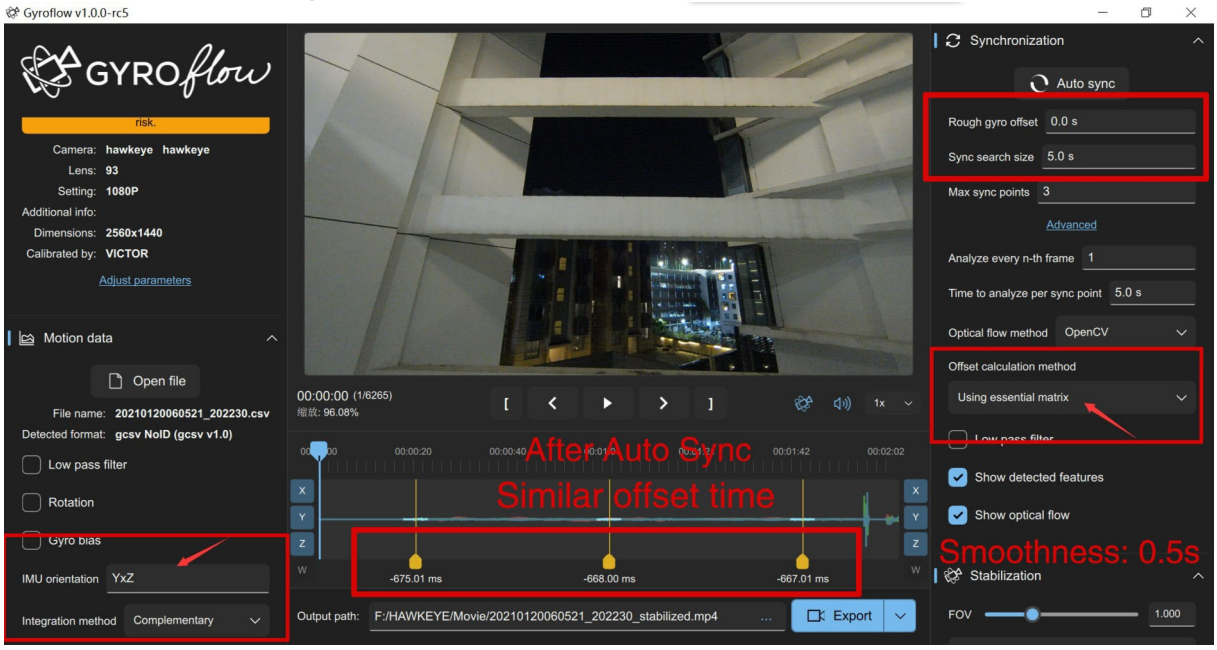
Instagram :

Software download:

Tutorial:

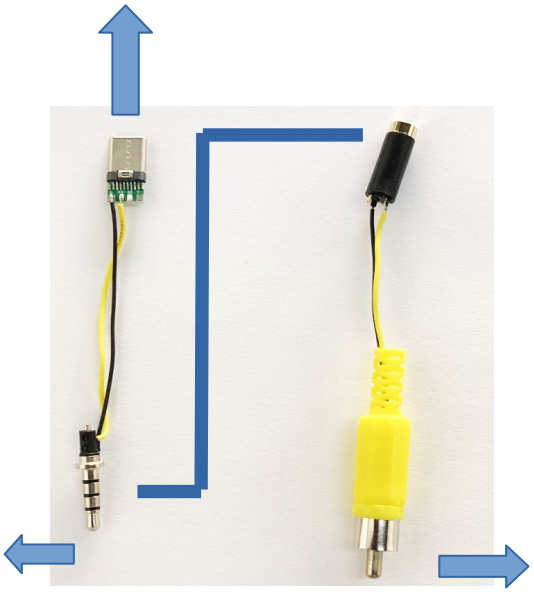
RC5 settings:

1.Select video ,Lens file, and gyro data;
1.IMU rotation: **YxZ** (NOTE: small x , big YZ).
2.Offset calculate: using essential matrix
3. Click Auto sync. The sync points should be very close time number. Then Export video.



TV Cable:

To Camera USB port



To Little pilot Master:
Hold – button for 2 seconds to switch to AV IN

To Little pilot 4 r:
Hold – button for 2 seconds to switch to AV IN

How to replace FPC cable:

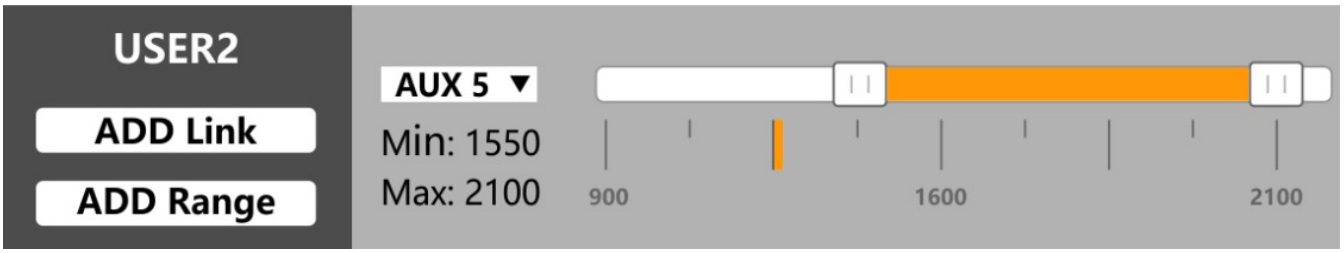
Remote control to record video 1:

The following example uses Betaflight F405 flight controller to illustrate how to configure the remote control to turn on/off the video recording function. Use the TX1 pin on the flight controller to control the recording and connect the Naked Cam's **Blue wire**(video trigger). If you use other flight controllers, there may be available TX pads instead of TX1, and they may use different resource allocations. You need to adjust the configuration accordingly for your specific flight controller.

Configure the PINIO function of the TX1 pin through the following Betaflight commands.

resource SERIAL_TX 1 NONE // Close the serial port function of TX1 spindle
resource PINIO 2 A09 // Configure TX1 pin (A09 pin) as PINIO function No. 2
set pinio_box = 40,41,255,255 // Set the PINIO function interval
Save // Save configuration

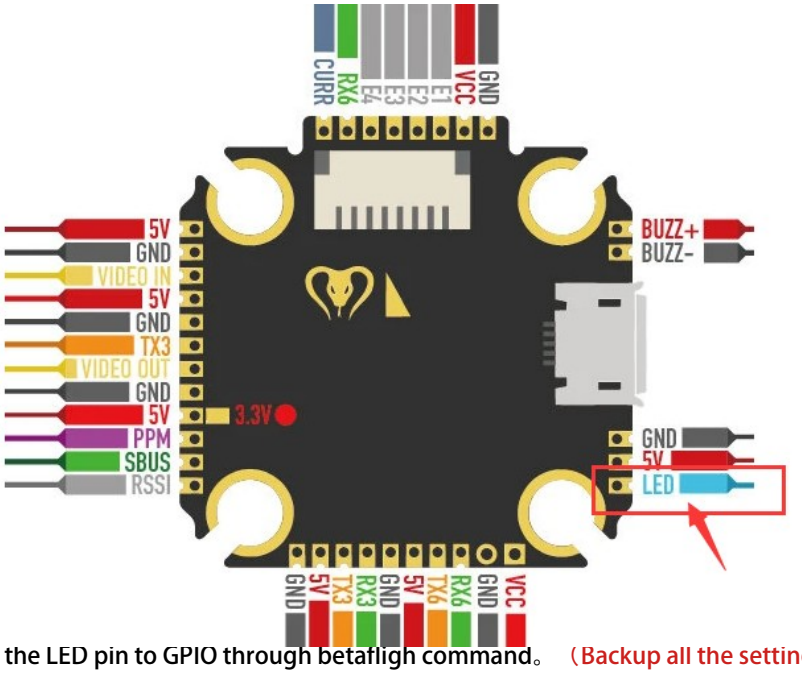
The following figure configures the PINIO function mapping relationship between the remote controller and the flight controller. In Betaflight configuration, PINIO No. 2 function (ie USER2 in the figure below) corresponds to the AUX5 channel of the remote control.



To activate or deactivate functions on the camera, you need to move the switch from the inactive state (white area) to the active state (yellow area), and then back to the inactive state (white area). To
The switch configuration of the flight controller and radio controller must match the settings of your own device. Before configuring, make sure you know what you are doing. If you are not using the remote control function, please cut off or insulate the yellow and green wires separately, and do not connect them to any location.

Remote control to record video 2:

Connect the FC′ S LED PIN to Hawkeye 4K naked Blue wire (Video trigger pin).

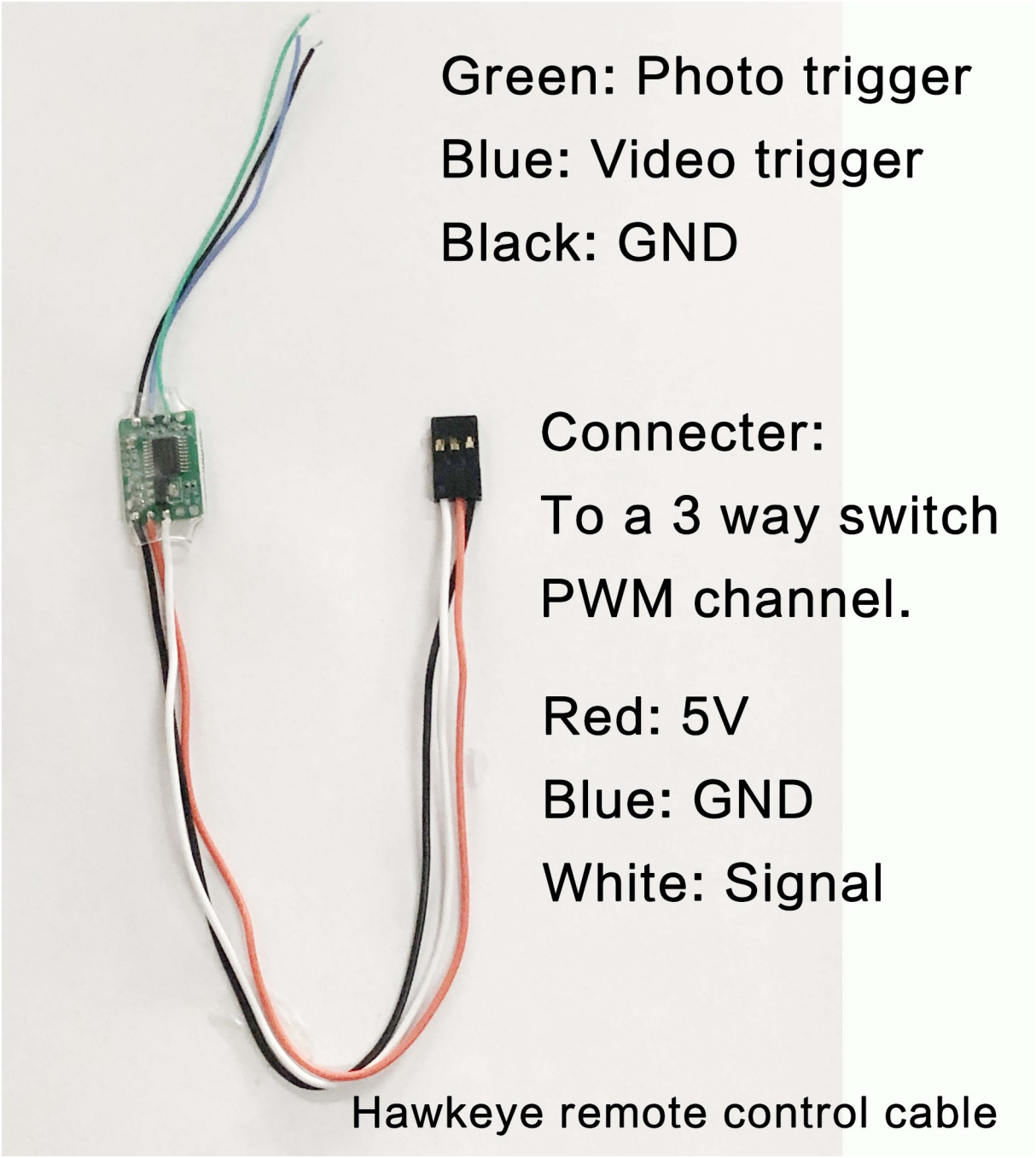


Change the LED pin to GPIO through betafligh command。（Backup all the settings before modify。）

resource LED_STRIP 1 NONE // turn off LED function
resource CAMERA_CONTROL 1 NONE // release CAM function
resource CAMERA_CONTROL 1 A00 // set LED（A00 PIN）to cam control
save // save settings

Throttle set middle，pitch push down to trigger recording（Note: don′ t push to other direction）。

The control Board(OPTIONAL):



How to focus Lens: