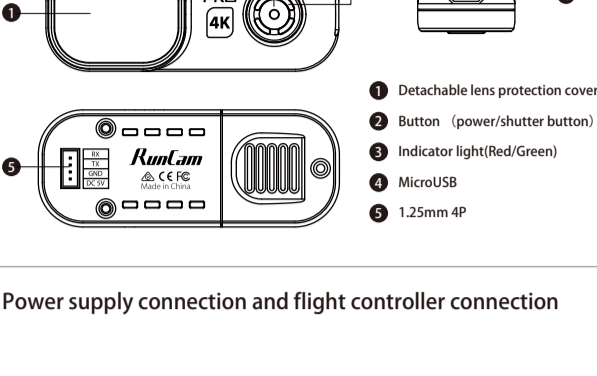# RunCam Thumb Pro Camera manual

THUMB

Please read this manual carefully before use and keep it in a safe place

Function indication

1. Detachable lens protection cover
2. Button （power/shutter button）
3. Indicator light(Red/Green)
4. MicroUSB
5. 1.25mm 4P

Power supply connection and flight controller connection

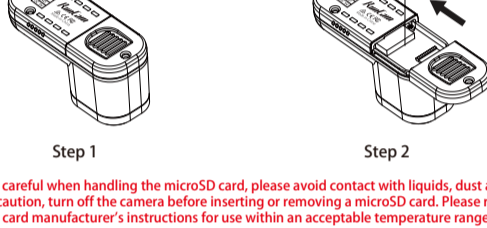flight control

Camera basic operations

Power on/off	Automatically turn on when powered on, the red light is always on Cut the power or long press the button to power off
Start/Stop recording	Click the shutter button to start recording, the red light flashes slowly／Click the shutter button again to stop recording, the red light is always on
Mode switch	Double-click the shutter button quickly to switch between the recording mode (the red light is always on) and the parameter settings mode (the green light is always on)
Parameter settings mode	Scan the QR code in the Runcam APP to operation
Remote control mode	Thumb Pro Connect ThumbPro to flight controller for operations
SD card error	Red light keeps flashing fast

Attention: SD card error includes card full, slow card speed, card damage and etc.

Micro SD Card

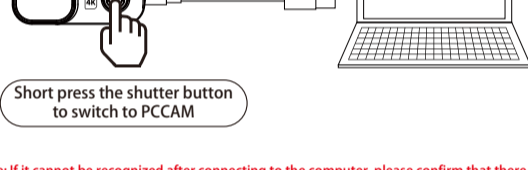U3 card is recommended (4K@30FPS/2.7K@60FPS/1080P@120FPS requires U3 or above)

Supports up to 128G microSD card

MicroSD Card

Step 1   Step 2

Note: Be careful when handling the microSD card, please avoid contact with liquids, dust and debris. As a precaution, turn off the camera before inserting or removing a microSD card. Please refer to the microSD card manufacturer's instructions for use within an acceptable temperature range.

Computer Connection

Connect the computer via Micro USB, it will be recognized as a U disk.

Short press the shutter button to switch to PCCAM

Note: If it cannot be recognized after connecting to the computer, please confirm that there is a microSD card inserted; if the microSD card cannot be read normally, please try to replace the USB cable or the computer USB interface.

Firmware Update

To ensure optimal performance of the camera, please use the latest firmware version.

Check the link below to update for reference:
https://www.runcam.com/download/ThumbPro

Firmware upgrade status (Red and green lights flashing fast; when the upgrade is completed, the camera automatically shuts down.)

Android and IOS APP

Search "RunCam" on Google play and Apple Store,
or download on our website http://www.runcam.com/download

Technical Support

Please visit: https://support.runcam.com

Video Bitrate and Codec

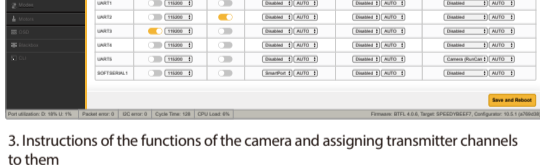| Resolution	Video Quality			Codec
	High	Medium	Low	
4K@30fps	60Mbps	50Mbps	40Mbps	H.264
2.7K@60fps	60Mbps	50Mbps	40Mbps	
1440P@60fps	40Mbps	30Mbps	20Mbps	
1080P@120fps	60Mbps	50Mbps	40Mbps	
1080P@60fps	45Mbps	50Mbps	22Mbps	

Flight Controller UART Control

Preparation
· Firmware: BetaFlight Firmware (≥3.2.0),CleanFlight Firmware(≥2.1.0)，
    KISS Firmware (≥1.3-RC30) or INAV Firmware (≥1.7.3).
· Any available UART interface on the Flight Controller

1. Connect the Runcam Thumb PRO with the UART interface of the Flight Controller
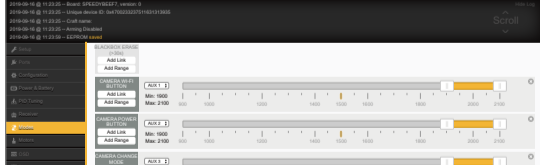2. Make the Flight Controller recognize the Runcam Thumb PRO
For example, we connect the Runcam Thumb PRO to the UART 5 interface on the Flight Controller: connect the Flight Controller to the computer, then open the configurator software of the Flight Controller. (Open up the configurator that matches the firmware you are running, Betaflight Configurator for Betaflight, Cleanflight Configurator for Cleanflight). In the Peripherals column of the line UART 5 (on the Ports tab), select Camera (RunCam Protocol) and click Save And Reboot.
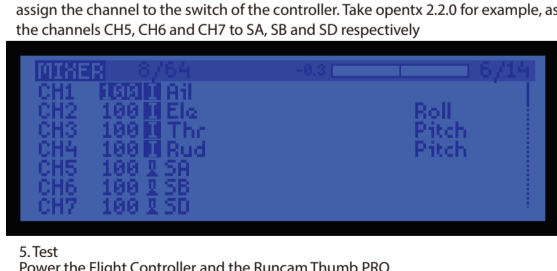
3. Instructions of the functions of the camera and assigning transmitter channels to them
In the Flight Controller Configurator, navigate to the Modes tab. There are new CAMERA WI-FI, CAMERA POWER and CAMERA CHANGE modes
· CAMERA POWER: start/stop the video. When in the OSD of the camera, this is used to move to the next menu item.
· CAMERA CHANGE MODE: Switch between the recording mode and the QR code setting mode.
Assign any available channel to the function you need, for example:
· Assign the AUX2 to the CAMERA POWER, range 1900-2100
· Assign the AUX3 to the CAMERA CHANGE MODE, range 1900-2100

4. Assign the channel to the switch of the controller
Please choose your Model on the controller, then access to the MIXER interface and assign the channel to the switch of the controller. Take opentx 2.2.0 for example, assign the channels CH5, CH6 and CH7 to SA, SB and SD respectively

5. Test
Power the Flight Controller and the Runcam Thumb PRO
· Set the SA to the bottom, the camera starts/stops the video
· Set the SD to the bottom, the camera switches among the two modes:
  video and OSD setting mode

Specifications

Mode	Runcam Thumb Pro
Resolution	4K@30fps\2.7K@60fps\1440P@60fps\ 1080P@120fps\1080P@60fps
Video Format	MP4
Gyro	Built-in
Communication Interface	Micro USB
Micro SD Card Capacity	256G Max
USB Power Input/ Terminal Power Supply	DC 5.0V
Remote Control	Uart
Power Consumption	500mA@5V Max
Dimension	54mm*25.5mm*21mm
Net Weight	16g