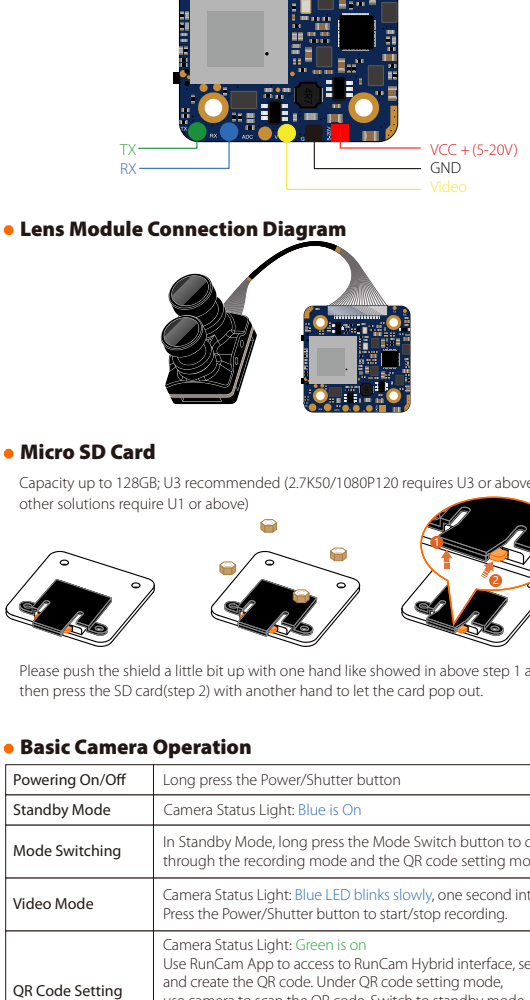
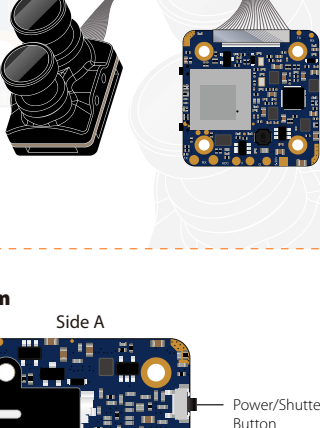
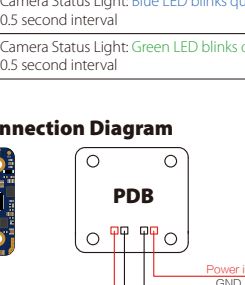


RunCam Hybrid 2

User Manual

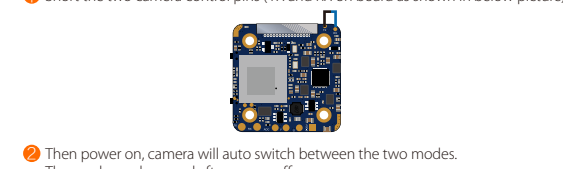
An illustration of the RunCam Hybrid 2 camera, which is a black, cylindrical device with a lens at the front. It is connected to a smartphone via a black cable. The smartphone screen displays the RunCam app interface, showing a live video feed and various settings. The background is a blurred cityscape at night.

HD Recording	Camera Status Light: Green LED
Firmware Update	one second interval
	Camera Status Light: Blue LED



- **FPV Flight Controller**

1 Short the two camera control pins (TX and RX on board as shown in below pin



The mode can be saved after power off.

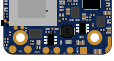
JOYSTICK CTRL	CARD ERROR
4K 30FPS	

UART CTRL	CARD ERROR
4K 30FPS	

5 After switching to the desired mode, please unplug the short-circuit cable.

UART Control works with Flight Controllers:
BetaFlight 3.3 or above / ButterFlight 3.4 or above / CleanFlight 2.2 or above

Joystick Control



1x OSD Key-press Board
(Not Included)

FPV OSD Menu

JOYSTICK CTRL CARD ERROR
4K 30FPS

0123456789ABCDEF GHI
KLMNOPQRSTUVWXYZ&=;/
 RUNCAM_ _ _

CLR

PILOT : OFF POS ←

SHARP VIEW : ON

WIDESCREEN : 4:3

SYSTEM : NTSC

EXIT

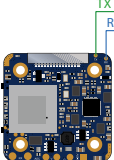
- JOYSTICK CTRL: Camera is under Joystick Control and the icon remains for 5 seconds.
- CARD ERROR: Card error or no SD card
- CARD FULL: SD card is full
- 4K 30FPS: Current video resolution, remains for 10 seconds

Quick Setting (Long press the upper button to enter the menu)

- Press the middle button to switch ON / OFF
- CLR: Clear RUNCAM logo or pilot's name
- POS: Move to POS to adjust position
- SHARP VIEW: Turn on, it will increase the image details, but also noise
- WIDESCREEN: Switch image ratio between 16:9 and 4:3.
- SYSTEM: Press the middle button to switch NTSC/PAL. It will work only after you exit the menu and reboot.
- EXIT: Exit and saved.

UART Control

- Flight controller wiring (Take UART3 for example)



2. Betaflight 3.3 or above setting

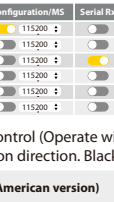
Just need to choose "Camera (RunCam Protocol)" on UART 3 as shown in below screenshot.

Identifier	Configuration/MS	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USBCP	115200 2	Disabled	Disabled	AUTO	Disabled
UART1	115200 2	Disabled	Disabled	AUTO	Disabled
UART2	115200 2	Disabled	Disabled	AUTO	Disabled
UART3	115200 2	Disabled	Disabled	AUTO	Camera (RunCam)
UART4	115200 1	Disabled	Disabled	AUTO	Disabled
UART5	115200 2	Disabled	Disabled	AUTO	Disabled

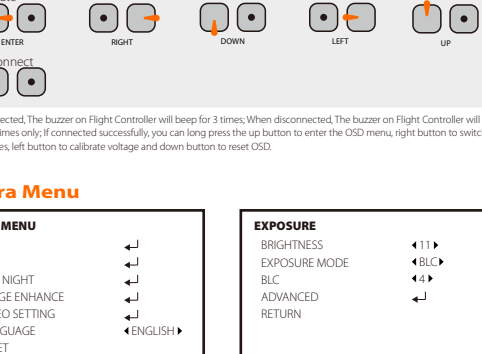
- UART Control (Operate with your remote controller. Yellow icon to indicate bar operation direction. Black dot means centering control)

Mode-2 (American version)

- Connect
- Operate
- Disconnect



Operate

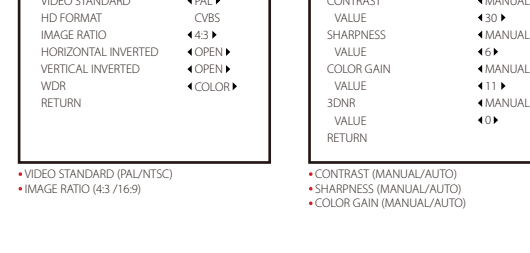


SAVE XEIT			
EXIT			

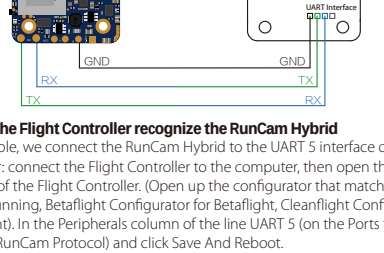
MODE	◀MWB▶
RGAIN	◀20▶

BGAIN RETURN	◀ 19 ▶			
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- MODE (MWB/ATW)
 - MODE (COLOR / BW / EXT / AUTO)



- ### HD Flight Controller Set
- #### Preparation
- Firmware: BetaFlight Firmware (≥3.2.0), CleanFlight Firmware(≥2.1.0) , KISS Firmware (≥1.3-RC30) or INAV Firmware (≥1.7.3).



```
2019-09-16 @ 11:22:53 - Board: SPICEDY1963F7, version: 0
2019-09-16 @ 11:22:53 - Unique device ID: 0a70023323751183
2019-09-16 @ 11:22:53 - Craft name:
2019-09-16 @ 11:22:53 - Arming Disabled
```

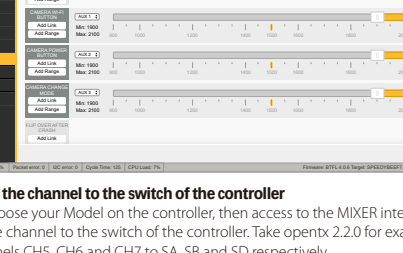
NOTE: Not all combinations are valid. When the Flight Controller firmware detects this the same pop configuration will be shown.

NOTE: If you enable Wi-Fi you may lose some power control power when you are flying. We have been notified that some pop configuration if you do.

Mode	Camera	Power	Mode	Camera	Power	Mode	Camera	Power
STANDBY			STANDBY			STANDBY		
ARMED			ARMED			ARMED		
CLIMB			CLIMB			CLIMB		
LANDING			LANDING			LANDING		
LANDING			LANDING			LANDING		
LANDING			LANDING			LANDING		
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LANDING			LANDING					

```
2019-09-16 @ 11:23:25 -- Board: SPEEDYBEEF7, version: 0
2019-09-16 @ 11:23:25 -- Unique device ID: 0x700233237511
2019-09-16 @ 11:23:25 -- Craft name:
```

- 2019-09-16 @ 11:23:25 ~ Attch Disabled
2019-09-16 @ 11:23:59 ~ GEPROM saved



-
- | CH1 | CH2 | Roll |
|------|-----|------|
| 1000 | A4 | |
| 199 | E4 | |
- MIKER 8/54 -0.3 6/14

CH3 100% Thr
CH4 100% Rud
CH5 100% SA
CH6 100% SB
CH7 100% SD
Pitch

- **Technical Support**
Please visit: <https://support.runcam.com>

Parameter	
HD sensor	SONY 8MP
Analog sensor	SONY 1.3MP
Field of View(FOV)	HD Recording FOV 145°; (FPV FOV 150 ° @4:3)
Video Resolution	4K@30fps / 2.7K@60fps / 2.7K@50fps / 1080P@120fps / 1080P@60fps / 1080P@50fps / 1080P@30fps
Video File Format	MP4
TV Mode	NTSC (720*480)/PAL (720*576) Switchable
Interface	HD supports UART remote control; FPV (Analog) supports UART firmware update.
Max Micro SD Card Supported	Up to 128G. Samsung's U3 card is recommended (2.7K60/1080P120 requires U3 or above; other solutions require U1 or above) Please make sure that the file format of the SD card is FAT32, otherwise, it will easily cause errors.
Mounting Holes Distance	20*20mm
PCB Size	29*29mm
Lens Module Size	19*25mm

Working Current	480mA @5V /
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Weight