Mini Gimbal Camera

Introduction:

Arkbird Mini Gimbal Camera is specially designed for small fixed-wing FPV planes. It's extra light and its maximum resolution is 2K.

This gimbal is equipped with a special "Shock Protection Function": When the unit detects a sudden hit, it will stop recording video.

Specs:

- Total weight: 80g
- Working voltage: 9-12.6V (3S battery). If you're planning to use a higher voltage, you may need to add an external BEC module, supporting 14v-26.2v (4-6s)
- Dimensions:
  - Width：55mm / 2.28 inches
  - Length：58mm / 2.17 inches
  - Height：60mm / 2.36 inches
  - Working Area: Spherical area. Diameter: 75mm

Camera parameters:

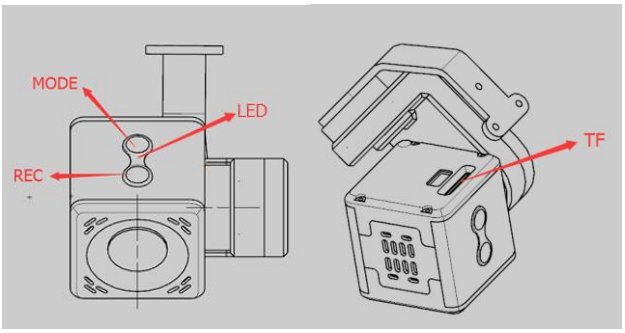
- Video: 2K@30fps / 1080p@60fps
- Supports PWM control camera shooter
- Supports PAL/NTSC output
- Lens: 140 degrees

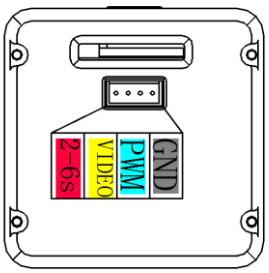
Gimbal function:

- Supports PWM (pitch) control
- Supports PWM shooter control
- Pitch angle: -180 degrees to 90 degrees
- Roll angle: -90 degrees to 90 degrees

Details:

- REC → Video button
- MODE → Function button
- LED → Status
- TF Card Slot → At the back of the camera





The port behind the camera is: Power , Video , PWM , Ground
(This port supports 7-26V, you can use 2S-6S battery (only for camera!))

Usage：

- Video function：

The camera will start recording automatically when it's power up, and the red led light will flash at the same time indicating so. Short pressing “REC” key you can start/stop video.

- How to switch camera resolution ratio:
  - Step 1： Press “REC” key, the red led light will flash;
  - Step 2： Press “MODE” key for 3 seconds, both the red and blue led lights will flash 3 times.

How to distinguish current resolution ratio:

1. Red led light flash 1 time/second, the resolution ratio is 1080p/60fps;
2. Red led light flash 2-3 times/second, the resolution ratio is 2k/30fps.

How to switch PAL/NTSC Mode:

- Step 1： Disconnected camera power;
- Step 2： Press the “MODE”key and power up at the same time, waiting for the indicator light flashes, then loose the key.

How to distinguish the current Mode:

1. The blue led light is ON. → PAL Mode
2. The blue led light is flashing. → NTSC Mode

PWM control function:

First, please connect the PWM signal line with ground wire to the channels which are controlled by the three-positions switch of your radio receiver. When switched to the center position, the camera will be on STAND-BY. One end of the 3 position switch will be record video, the other one end will be take a picture . NOTE: This is not an automatic shooter. The camera will take only one picture at a time. After you take a picture, the camera will come back to the STAND-BY status automatically. For taking the next picture, please move the switch to the center position and then switch it again to the “take picture” position.

Gimbal Details: (Wires description)

A	Yellow	Video Output
	Red	Power input (9-12.6V)
	Black	Ground wire
B	White	Camera shooter control (PWM signal)
	Blue	Gimbal pitch control (PWM signal)
	Black	Signal wire

PWM Shooter Control:

The gimbal has two channels to control the pitch angle and video start/stop. The white line controls the camera shooter, using your radio's three-position switch.

Switch position	Channel range	Definition
Center	0	Stand-by
Max position	+50% or up	Video
Smallest position	-50% or less	Photograph
Pay attention: There's burst pictures function. The next photo should be started after moving switch back to the center position.		

PWM Shooter Control:

The blue line will be used to control camera pitch angle and neutral position. Please level the camera, when your pitch control channel is 5% or more, the camera will be up, and when it is -5%, the camera will be down.

Calibration:

Step 1: Disconnect the gimbal.

Step 2: Short connect the blue and black wires.

Step 3: Put the camera on a level surface.(Notice: Camera only, not Gimbal, The buttons should be facing upwards like the right picture)

Step 4: Power up.

Step 5: Wait for 10 seconds (The blue led light will flash fast).

Step 6: Finished (The blue led light will flash slowly).

You don't need to calibrate the gimbal every time you power up. Do the calibration only if the gimbal stopped working for a long time and cannot come back to the neutral position or need to do level calibration at some point.

There are one blue LED and one red LED at side of gimbal, both flash slowly in normal condition. The red LED is indicator light, if it double flashes, that means it need to be re-calibrated. The blue LED will flash fast when calibrate sensor.

Gimbal reverse-install:

At first,mark the screw hole on the top of motor, then unload the four screws, rotate the aluminum sheet 180 degrees at the back of motor, then re-install it while keeping the motor and the top screw hole position static.

By the same way, the gimbal can be side-installed.

FAQ:

Q: Gimbal cannot go back to center or gimbal shaking, what we should do?
A: Check the red LED light on the gimbal rocking arm if double flash or not, if double flashes, that means the sensor is not initialized successfully. If the red LED light normal flash slowly, please short connect the blue wire and GND wire, then power on and re-calibrate sensor.