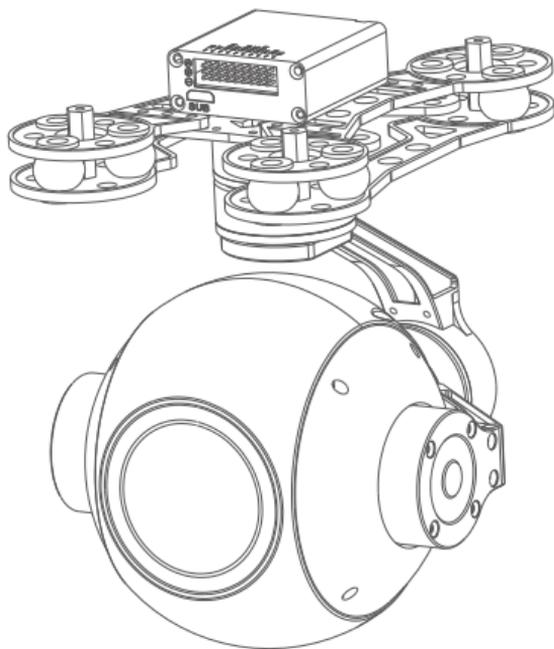




User manual

Q30F

30x Optical Zoom Camera Gimbal



Images are for reference only, please subject to the actual product.

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Q30F Pinpoint-precision Gimbal

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Q30F Camera

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Gimbal Introduction

Q30F is a pinpoint-precision professional 3-axis gimbal which features high stability, small size, light weight and low power consumption. The 3-axis gimbal based on FOC motor control technology, adopts pinpoint-precision encoder in each motor.

The speed of Q30F gimbal is adjustable, LOW speed mode is used for large zoom range, the control will be more accurate; Fast speed mode is used for small zooming range, which makes the gimbal control sensitive and quick. Also the one-key to center function will allow the gimbal return to initial position automatically and rapidly.

Q30F supports PWM, S.BUS and serial command control, suitable for close range remote control or remote data command control.

Object Tracking Function (optional)

1.Function description

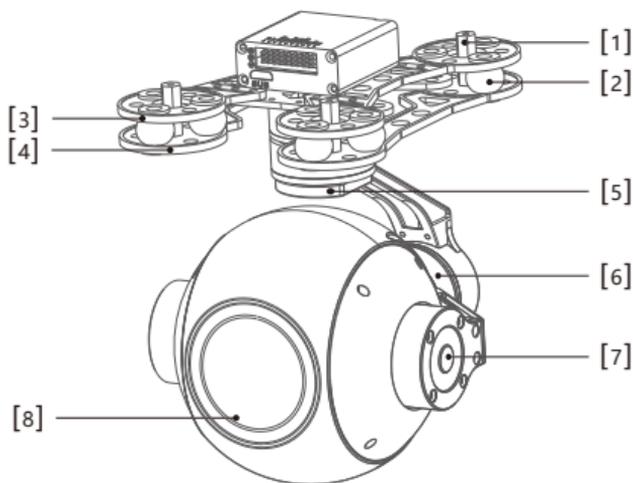
Build-in normalization, cross-correlation and tracking algorithm, combining with object missing recapture algorithm, achieve stable track of the target.

Support custom characters of user OSD, adaptive gate, cross cursor, tracking information display.

2.Tracking performance

- 1)Update rate of deviation pixel 50Hz
- 2)Output delay of deviation pixel <15ms
- 3)Minimum object contrast 5%
- 4)The minimal signal-to-noise ratio (SNR) 4
- 5)Minimum object size 16*16 pixel
- 6)Maximum object size 160*160 pixel
- 7)Tracking speed 32 pixel/frame
- 8) The mean square root values of pulse noise in the object position<0.5 pixel

Gimbal Description



[1] Gimbal fixed copper cylinder

[2] Damping ball

[3] Upper damping board

[4] Lower damping board

[5] YAW axis motor

[6] Roll axis motor

[7] Pitch axis motor

[8] HD zoom camera



Please make sure that the motor is not stopped by any object during the rotation, if the gimbal is blocked during rotation, please remove the obstruction immediately.

Packing list

Gimbal*1



Screw pack*1

M3*5mm button head hexagon screw*12
(fixed copper cylinder and damping plate)

Copper cylinders*4

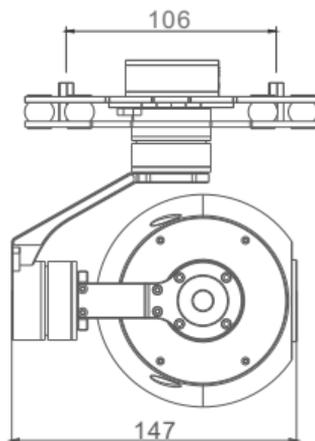
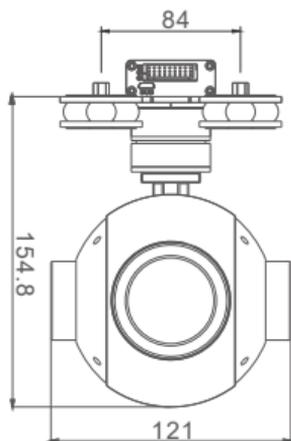


Damping balls*12

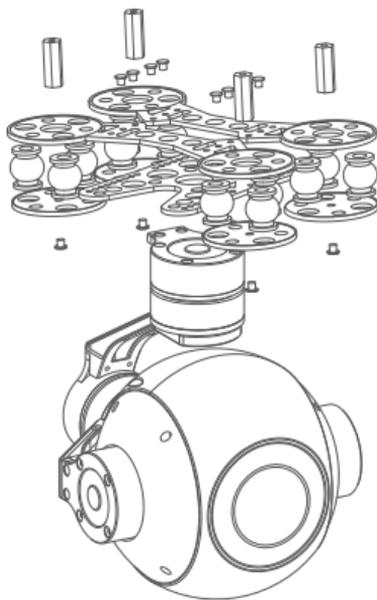


Gimbal Dimension

Unit : mm



Installing



Mechanics@Electronic Characteristics

Input voltage	3S~4S	Idle current	330mA@12V
Dynamic current	450mA@12V	Working environment temp	-20 C ~ +80 C
Size	L147*W121*H154.8mm	Weight	670g

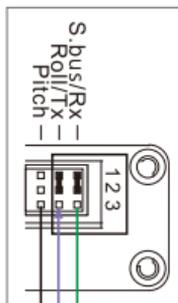
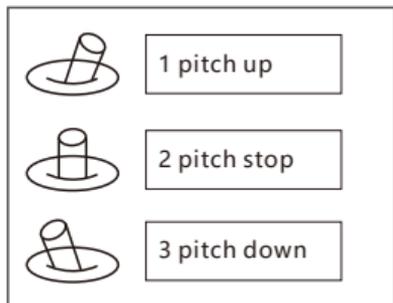
Working Characteristics

Pitch/Tilt: Pitch angle range of action : ± 90
Roll: Roll angle range of action : $\pm 85^{\circ}$
Yaw/Pan: Yaw angle range of action : $\pm 150^{\circ}$
Vibration angle: Pitch/Roll: $\pm 0.02^{\circ}$, Yaw: $\pm 0.03^{\circ}$

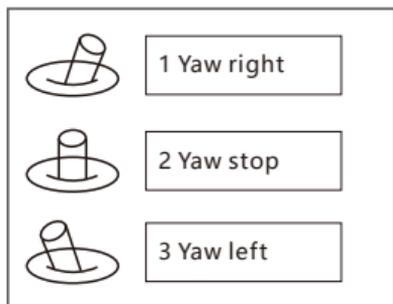
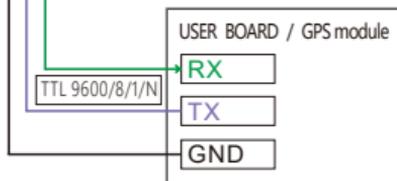
S.bus/Rx: connect to Rx2 for track function.

Roll/ Tx: connect to Tx2 for track function.

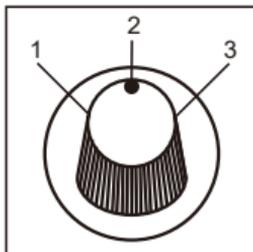
Pitch: PWM in, pitch control



We have protocol for control the gimbal and camera, please contact our technical support for detail doc.



Mode: Change the speed / home position



Position 1: Lowest speed for pitch and yaw.

Position 2: Middle speed for pitch and yaw.

Position 3: Highest speed for pitch and yaw. The speed is continuously quickly from 1 to 3.

One click: Home position.

Two click: Look down.

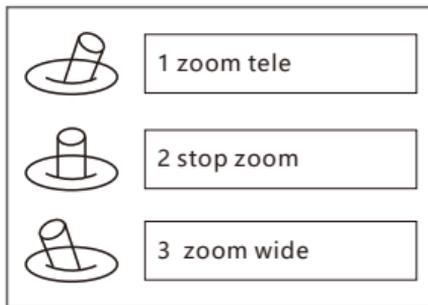
Three click: Yaw not followed by frame.

Four click: Yaw followed by frame.

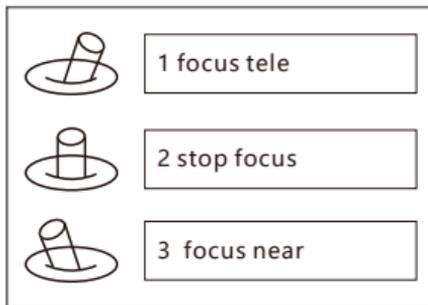
Five click: Restore the factory settings.

(Click = from 2 to 3 and back to 2 quickly)

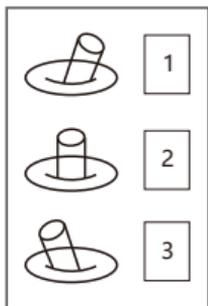
ZOOM: Zoom the camera



Focus: Focus the camera



Pic/Rec : picture / start record , stop record



Switch 2 to 1:camera mode change.

Picture mode:the number is quantity of SD card can storage;

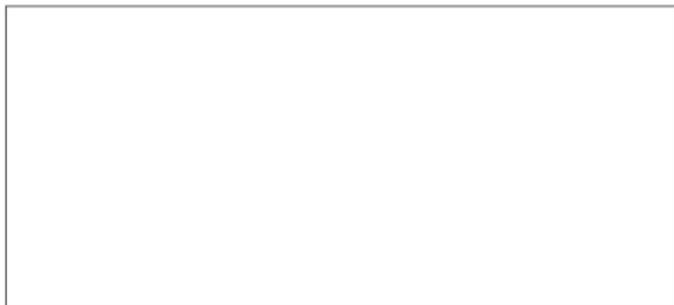
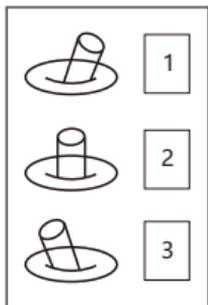
Record mode:the time is recording time from start record.

Switch 2 to 3:

A) take a picture.

B) Start record / stop record

Multi: backup PWM channel for customize



AV: AV output .

Camera Introduction

Q30F has 4mega effective pixel, supports 30x optical autofocus, possess HD 1080P video. There are two video streams in the camera, one is 1080P 30FPS, local H.264 compression, stored in the device SD card, another video output 1080p 60FPS HDMI HD signal for the wireless transmission, according to the characteristics of UAV photography application, we design fast auto-focus speed, small size, and support PWM and serial command control.

Parameter Index

1. Adopt 1/3 inch, 4 mega pixel CMOS SENSOR.
2. The output resolution is 1920*1080P/60 fps.
3. 30x HD optical zoom lens.
4. Zoom focal length $f=4.85\sim 82\text{mm}$, aperture diameter $\phi 16$.
5. Supports wide dynamic state with dynamic range up to 105 dB.
6. HDMI HD output, 1080P video stream in local TF card storage.
7. Real time fast focus function, the focus time $<1\text{s}$.
8. Support filp vertically, horizontal mirror, stationary picture, automatic white balance, automatic gain, automatic color correction, support OSD menu.
9. Wide temperature range, temperature range from $-20^{\circ}\text{C}\sim 80^{\circ}\text{C}$.
10. Support PWM and serial command control.

Functional Characteristics

Zoom Range

Zoom focal length $f=4.5\sim 135\text{mm}$, zoom ranges up to 30 times, exhibiting image detail Perfectly.

The Speed of Focusing

Design for UAV aerial photography , according to aerial characteristics, using fast focus algorithm, focus time $<1\text{s}$.

Wide Dynamic

Adopt 105 dB wide dynamic range, in the presence of backlight or strong light, the view of the over bright and over dark regions can still be captured at the same time.

Ultra Low Illumination

Ultra low illumination: color $0.05\text{lux}@F1.6$, the device can still clearly display image features in ultra low illumination or poor light environment

Output Interface

Using HDMI high-definition output, support HDMI1.3 standard. The hardware interface uses a standard HDMI signal output socket, 1080P local storage, 1080P HDMI output.

Multiple Control Modes

Support PWM control and serial command control.