FOXTECH FH310Z

1080P 10X OPTICAL ZOOM CAMERA WITH 3 AXIS

USER MANUAL

Foxtech FH310Z is a plug and play kit for FPV and UAV platform such as inspection, surveillance, search and rescue.It features in a HD 1080P camera with 10X zoom function. The camera is stabilized by a 3 axis gimbal that is RC controllable in pan, tilt and roll axis. It offers smoother and more stable footage.

FH310Z HD 1080P 10X OPTICAL ZOOM CAMERA

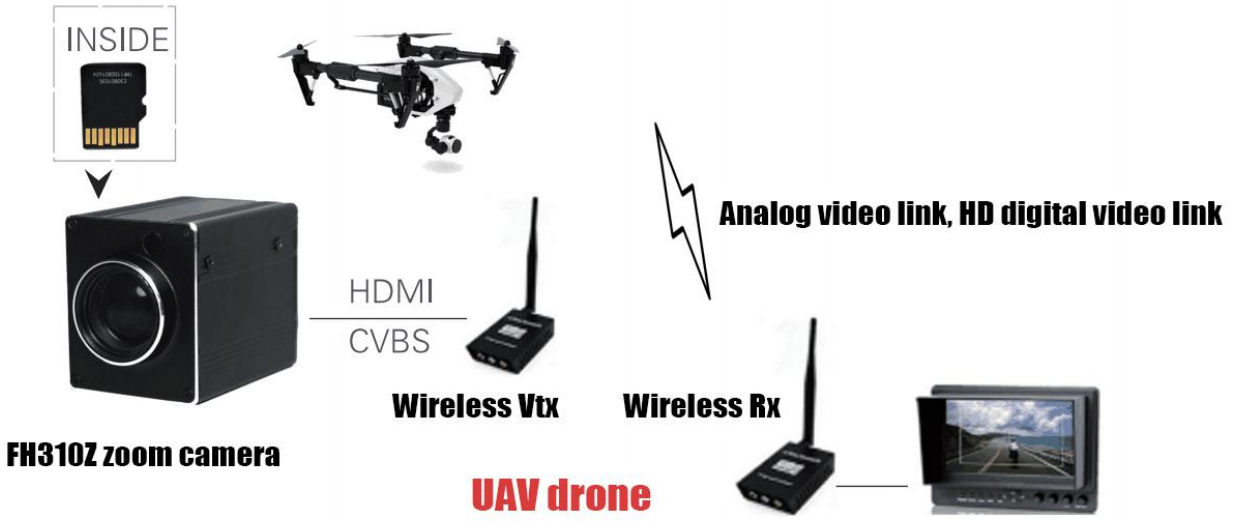
SPECIFICATIONS

1. Adopted 1/4" 300 megapixel CMOS sensor
2. Output resolution:1920x1080@30fps;1280*720@60fps
3. 10X optical zoom
4. Zoom focus length: f=4.9~49mm,diaphragm diameter Φ12.0
5. Wide dynamic, dynamic range up to 105dB
6. HDMI and AV output,up to 32GB SD card storage at 1080P
7. Real-time quick focus function， focus time<1S; Manual focus available
8. Low Lux: 0.05 lux @ F1.6
9. Support flip vertical/flip horizontal/still image,AWB,auto gain control， auto color correction
10. Working temperature range : -10℃ - 55 ℃
11. Dedicated control protocol to achieve camera’s controls.

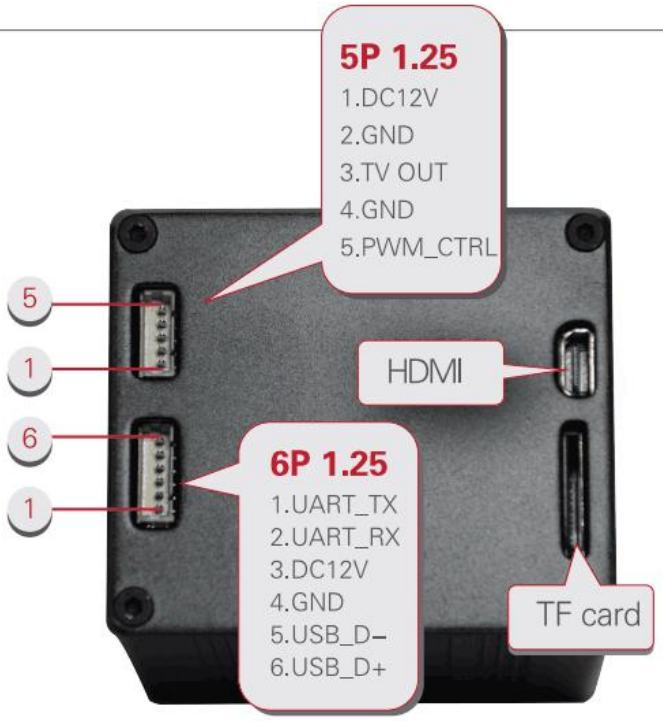
FEATURES

1.Small size yet 10X zoom
Zoom focus length: f=4.9~49mm with up to 10X zoom capability, offers perfect display of image details.
2.Ultra quick auto focus
Special fast focusing algorithm for UAV application,focus time<1S
3.Wide dynamic
Up to 105dB dynamic range, ensures clear capture in strong or low light condition
4.Low Lux
In low light conditions,images features can be clearly displayed
5.Dedicated interface
Support PWM zoom control
6.Small size:63mm×47mm×40mm
7. Light weiht:108g

Wire Diagram



6Pin Connector	
1	UART_TX
2	UART_RX
3	DC12V
4	GND
5	USB_D−
6	USB_D+
5Pin Connector	
1	DC12V
2	GND
3	TV OUT
4	GND
5	PWM_CTRL



FH310Z 3 AXIS GIMBAL

WARNINGS AND DISCLAIMER

Do not alter or add any other parts to the camera gimbal. Do not power the FH310Z gimbal until it is mounted correctly using mounting plate/parts provided. Do not fit any filters or lens hood to the camera as this can cause imbalance which could damage the gimbal motors, use the camera in it's original state do not add other peripherals to the camera.

When setting up the FH310Z gimbal it is recommended that the propellers be removed from the aircraft to avoid injury. When you test fly your aircraft ensure you are in a clear safe area and the flight controller is set up correctly for safe flight. Keep children and animals well clear of the flight test area to avoid injury.

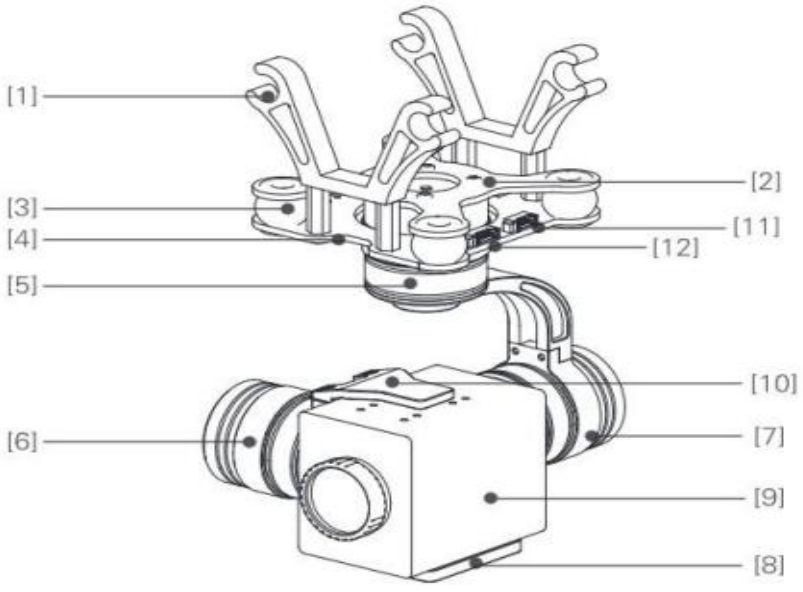
Use outside the guidelines given is out of the control of the manufacturer and therefore the company will not be liable for any loss or liability for improper use of the FH310Z gimble.

GIMBAL INTRODUCTION

FH310Z gimbal is especially designed for FH310Z camera, all settings are pre set from factory. It stabilizes in pan, roll and tilt. The all in one piece design of the gimbal and anti-vibration greatly minimizes the mechanism vibration. It is an excellent option for wide UAV applications such as public security, zoomable aerial photography etc.

⚠FH310Z is made for FH310 camera. It may not work well with other cameras.

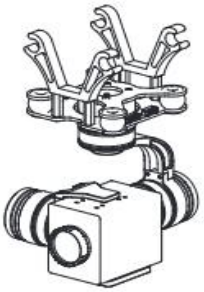
Gimbal Details



[1] Gimbal mount
[2] Top damper plate
[3] Damper ball
[4] bottom damper plate
[5] Pan motor
[6] Tilt motor
[7] Roll motor
[8] Camera mount plate
[9] HD 10X zoom camera
[10] Camera mount plate
[11] Gimbal control interface
[12] Camera control interface

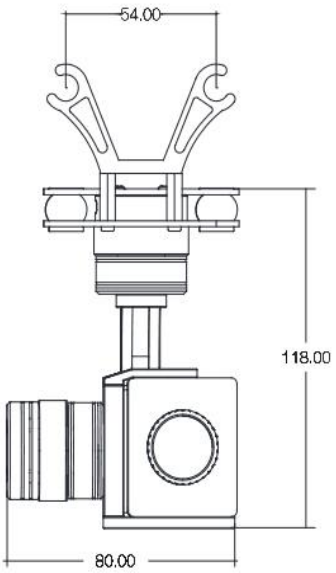
⚠Please make sure no obstacle while gimbal is running;if any, please remove it.

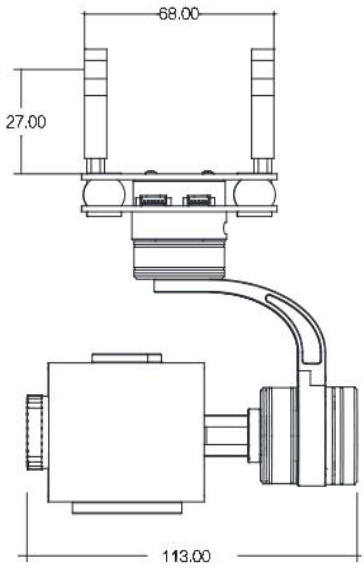
Packing List

Gimbal x1	Screws pack x1
	M3x6mm hexagon socket screw x4 M2x6mm hexagon socket screw x4 M2x6mm hexagon standsoff

Gimbal mount x2	Sapre damper balls
	

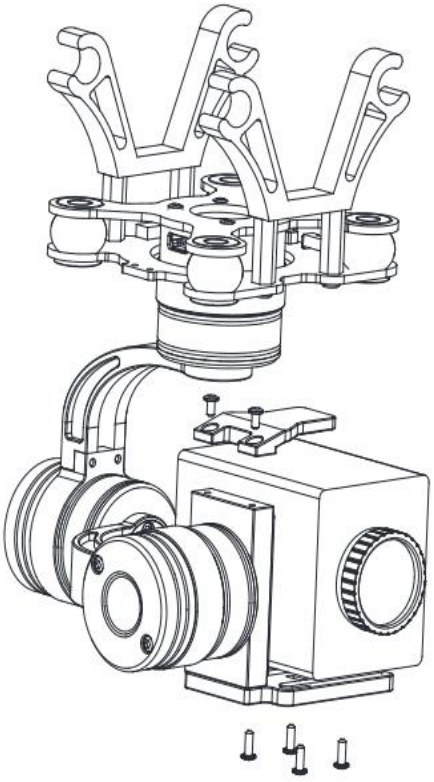
Gimbal Measurements



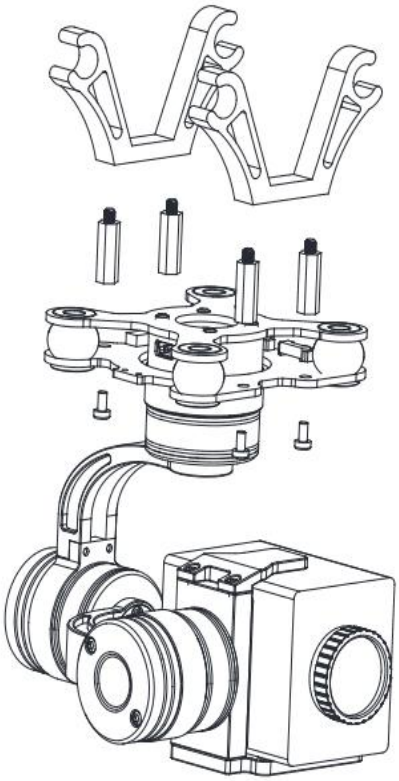


Unit:mm

Installment



Camera installment

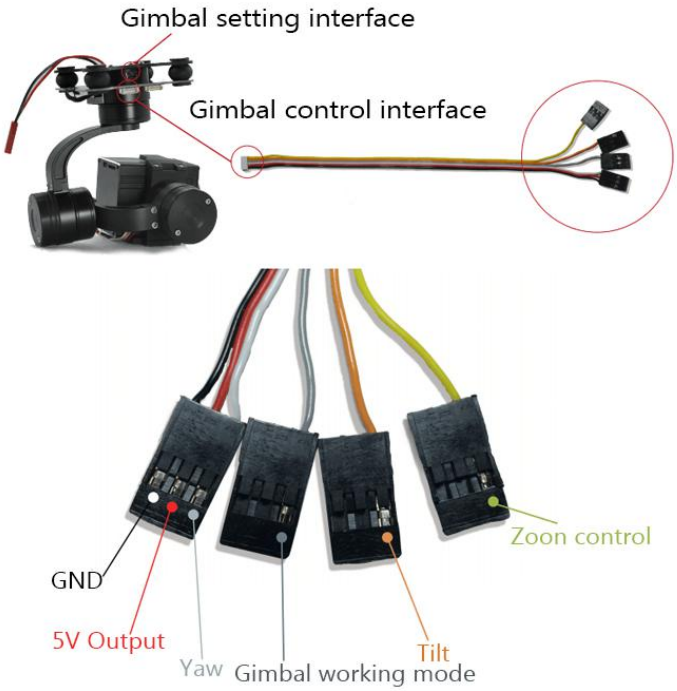


Gimbal mount installment

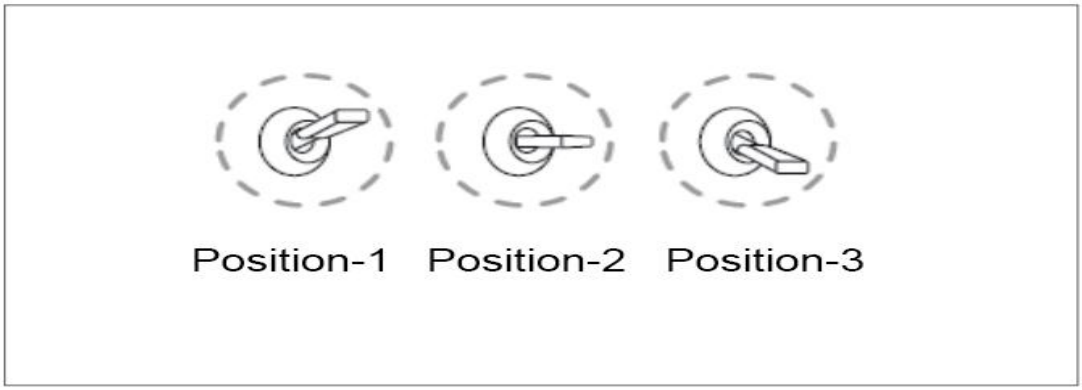
GIMBAL SPECIFICATIONS

1.Working voltage:3S(11.1V)
2.Working current: Static,240mA@12V;Dynamic,320mA@12V
3.Accuracy: Roll and tilt:±0.02°Pan: ±0.03°
4.Control range: ±90°(Tilt); ±45°(Roll); ±150°
5. Working temperature: -10℃~50℃
6.Weight: 260g
7.Size: L105mm x W91mm x H98mm

Gimbal Wire Diagram



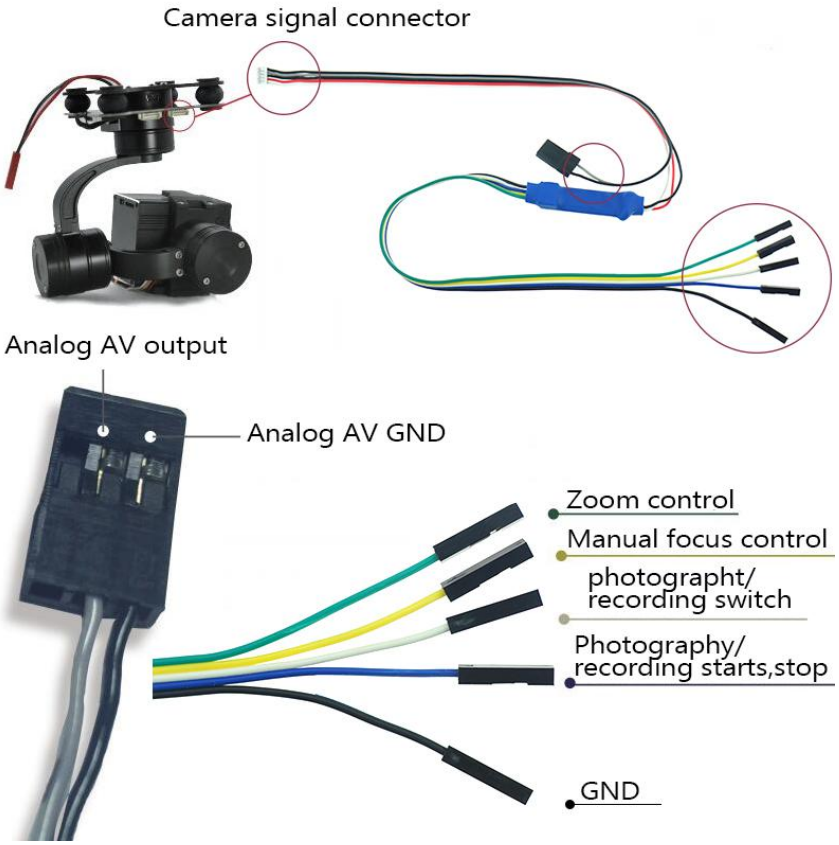
Gimbal Working Model Introduction (3-Postion Switch required)



Position-3,Lock Mode: gimbal moves with low speed,head locked (gimbal Yaw only controlable by radio con troller)
Position-2, Follow Mode: gimbal moves at high speednj€gimbal yaws while the airframe is yawing).
Switch fast 1 time between position-2 and position-1, gimbal yaw axis returns to the centre position.
Switch fast 2 times between position-2 and position-1,gimbal tilt and roll axis return to the level position.
Switch fast 3 times between position-2 and position-1,gimbal gyro calibrating.
Switch fast 4 times between postion-2 and postion-1, gimbal gyro tempreture calibrating; please re start gi mbal after calibration finished.
Switch fast 5 times between postion-2 and position-1,gimbal accelerator calibrating.

Note: Normally, please do not calibrate the gyro and accelerator, improper operation could result in gimbal malfunction!

Camera Wire Diagram



FH310Z GIMBAL AND CAMERA WIRE CONNECTIONS