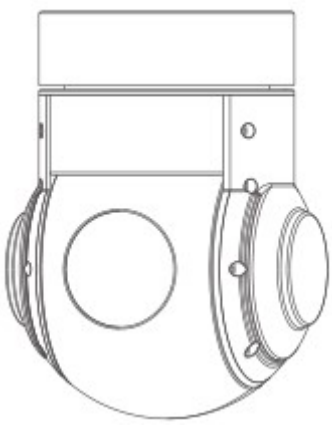
Viewpro U30T

U30T 30x Optical Zoom Object Tracking Camera Gimbal

User manual



Contents

U30T Pinpoint-precision Gimbal

30x Starlight Camera

GPS Information Display and Serial Port Control Wiring Diagram

Gimbal Introduction

U30T 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 U30T 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.

U30T supports PWM, S.BUS and serial command control, suitable for close range remote control or remote data command control.

Object Tracking Function

1. Function description

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

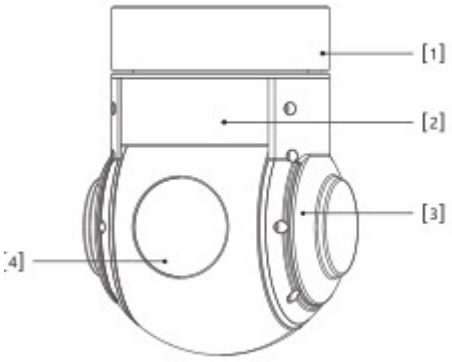
Support custom characters of user OSD, adaptive gate, cross cursor, tracking information display.

2. Tracking Performance

1) Update rate of deviation pixel 50Hz
2) Output delay of deviation pixel <10ms
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
9) Object memory time 100 frames

Gimbal Description

[1]Damping box
[2]YAW axis motor
[3]Pitch axis motor
[4]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

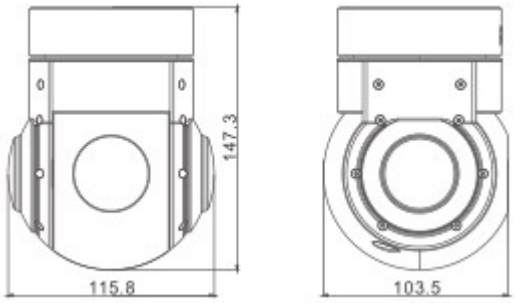
Gimbal*1

Screw pack*1(M3*5mm button head hexagon screw*12)

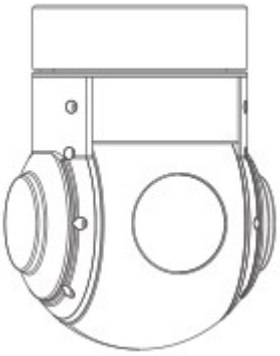
Copper cylinder*4 Damping balls*12

Gimbal Dimension

unit:mm



Installing



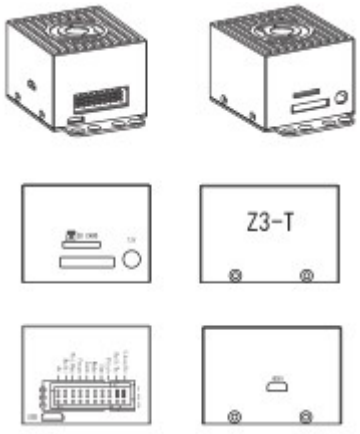
Mechanics@Electronic Characteristics

Input voltage	12v	Idle current	330mA@12V
Dynamic current	450mA@12V	Working environment temp.	-20℃ ~+80℃
Weight	675g	Size	L115.8 *W 103.5*H147.3mm

Working Characteristics

Pitch/Tilt:Pitch angle range of action : ±90°
Roll:Roll angle range of action : ±85°
Yaw/Pan:Yaw angle range of action : ±150°
Vibration angle: Pitch/Roll: ±0.02° , Yaw：±0.03°

Gimbal's signal wire box



Size:49*45.4*35.7

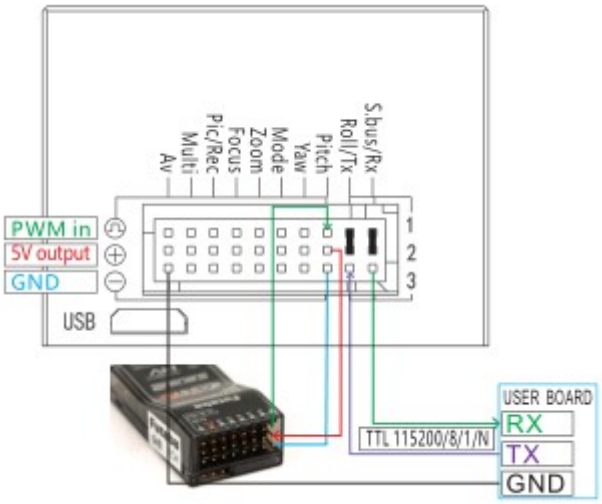
Uint:mm

HDMI OUTPUT 1080P 60fps

TF card max 128G,class 10,FAT32 or exFAT format

Connection of Control Box and Wiring Instruction

HDMI: micro HDMI OUTPUT
1080P 60fps default
SD card: max 128G, class10
FAT 32 or exFAT format

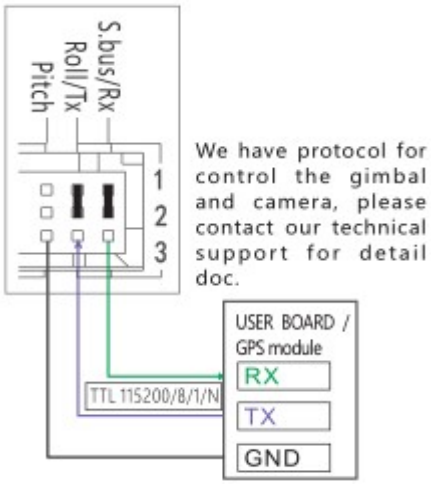


S.bus/Rx: Connect to Rx2 for track function.
Roll/ Tx: Connect to Tx2 for track function.
Pitch: PWM in, pitch control


1 Pitch up


2 Pitch stop


3 Pitch down



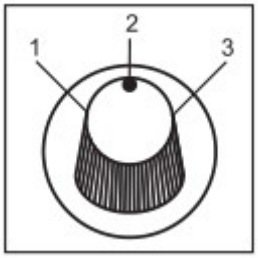
Yaw: PWM in, Yaw control


1 Yaw right

 2 Yaw stop

 3 Yaw left

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

 1 Zoom tele

 2 Stop zoom

 3 Zoom wide

Focus: Focus the camera

 1 Focus tele


2 Stop focus


3 Focus near

Pic /Rec picture / Start record, stop record


1 Switch 2 to 1: Start record / stop record.start record, the OSD display rec hh:mm:ss ;


2 Stop record, the OSD display STBY.


3 Switch 2 to 3: take a picture. OSD display'REC IMG' a second.

Multi: Tracking control


Position 1: exit the tracking
Switch 1 to 2: Display the cross cursor. Adjust the object to the cross cursor.


Switch 2 to 3: Start tracking. Change the object during tracking


Switch 3 to 2: Display the cross cursor, use Pitch/Yaw to adjust the cross cursor.

Switch 2 to 3: Start tracking.

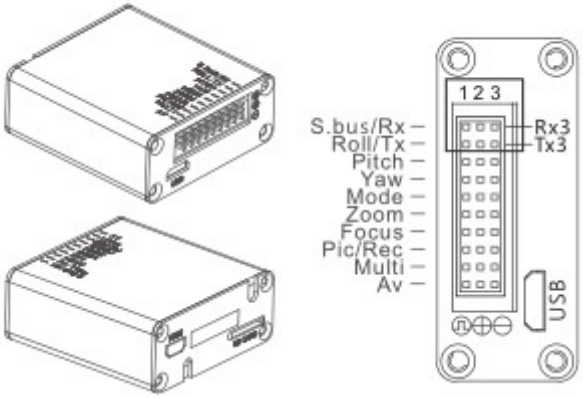
AV: NO AV output this model.

SONY EV7520 30x Starlight Camera

Imager Sensor	SONY 1/2.8-type Exmor R CMOS
Lens	30x
Picture quality	Full HD 1080 (1920*1080)
Minimum illumination	Colour: 0.01 lx(F1.6, AGC on,1/30 s)
Effective pixel	2.13MP
Defog	●Yes

Digital zoom		12x (360x with optical zoom)
Imager Sensor		SONY 1/2.8-type Exmor R CMOS
Image sensor(Number of effective pixels)		Approx.2.13 Megapixels
Signal system		1080p/59.94,1080p/50,1080p/60, 1080p/30,1080p/29.97,1080p/25, 1080i/59.94,1080i/50,1080i/60, 1080i/30,720p/59.94,720p/50, 720p/60, 720p/30, 720p/29.97, 7 2 0 p / 2 5 , N T S C * 1 , P A L * 1
Minimum illumination (50%)	**High sensitivity mode**	Colour: 0.01 lx (F1.6,AGC on,1/30s)
	Normal mode	Colour: 0.1 lx (F1.6,AGC on,1/30s)
S/N ratio		more than 50dB
Gain		Auto/Manual 0dB to 50.0dB(0 to 28 steps + 2 setep/ total 15 steps) Max.Gain Limit 10.7 dB to 50.0dB (6 to 28 steps + 2 step/ total 12 steps)
White balance		Auto, ATW, Indoor, Outdoor, Outdoor Auto, Sodium Vapor Lamp (Fix/Auto/Outdoor Auto), One-push, Manual
Shutter speed		1/1s to 1/10,000s, 22 steps
Sync system		Internal
Exposure control		Auto, Manual, Priority mode(shutter priority & iris priority),Bright, EV compensation, Slow AE
Backlight compensation		Yes
Aperture control		16 steps
Lens		30x optical zoom f = 4.3 mm (wide) to 129.0 mm(tele) F1.6 to F4.7
Digital zoom		12x (360x with optical zoom)
Focusing system		Auto (Sensitivity: normal, low),One-push AF, Manual, Interval AF,Zoom Trigger AF, Focus compensation in ICR on
Horizontal viewing angle	**1080p mode**	63.7° (wide end) to 2.3° (tele end)
	720p mode	63.7° (wide end) to 2.3° (tele end)
	SD	47.8° (wide end) to 1.7° (tele end)
Minimum object distance		10 mm (wide end) to 1200 mm(tele end) (Default: 300 mm)

GPS Information Display and Serial Port Control Wiring Diagram



To use the serial port function, please use the jumper cap to connect RX1 and RX2, TX1 and TX2. External serial port TX connect with TX3. External serial port RX connect with RX3. External serial port GND connect with GND of wiring box.

Note: The signals in the black square are all TTL serial ports. Do not connect 5V and GND to serial data Interface!

The output of date radio stations (TTL 3.3 V) directly controls the gimbal and camera movements, in which the gimbal actions include:

1, Yaw control and angle output, pitch control and angle output, speed setting, angle setting, stop, return to Home;

2, camera actions include: zooming, focusing, start record, stop record, taking photos, record / photo Switch, zoom times information output, etc;

3, when there is no respond on the command from the control box, you need to enter the enquiry command to obtain the status of camera gimbal;

4, serial port baud rate 115200, 8-bit data bit, 1 stop bit, no check bit, HEX.

For specific protocols, please contact us for technical support.