Viewpro

User manual

X30TM

30x Zoom Laser Ranger Object Tracking Gimbal Camera

Compatible with DJI M200/M210/M210RTK

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

Contents

X30TM High-precision Camera

Camera Introduction

X30TM is a high-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 high-precision encoder in each motor. It can be used on DJI drones M200 / M210 / M210RTK. Controlled by APP DJI PILOT it can fullfill many powerful functions, such as: photos or videos with 30 times optical zoom, object tracking, laser rangefinder and so on. The speed of X30TM gimbal is adjustable, LOW speed mode for tele end, the control will be more accurate; Fast speed mode for wide end, 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. You can input a degree in APP Payload Setting and get the gimbal attitude angles exactly.

Camera Description

[1] DJI Skyport

[2] Pan motor

[3] Roll motor

[6] EO camera

[4] Tilt motor

[5] IR laser rangefinder

⚠ 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.

Mechanics@Electronic Characteristics

Input voltage	3S~ 4S	Idle current	330mA@12V
Dynamic current	450mA@12V	Working environment temp	-20℃ ~ +80℃
Size	L135.5*W135*H120mm	Weight	835g

Pitch/Tilt: Pitch angle range of action : ±90
Roll: Roll angle range of action : ±85°
Yaw/Pan: Yaw angle range of action : ±360°
Vibration angle: Pitch/Roll: ±0.02°, Yaw: ±0.03°

# Application Description

DJI Pilot

After mounting X30TM on DJI drone and connecting with remote control, you can operate the gimbal camera via APP DJI Pilot. The gimbal attitude angles (tilt and pan) can be controlled by DJI remote control. Control method please refer to DJI related user manual.
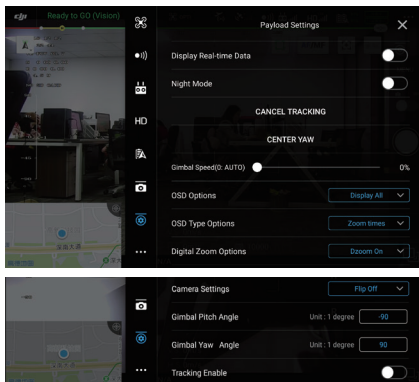
1. Menu instruction
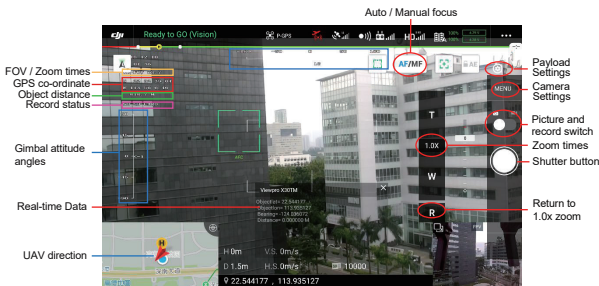
1.1 Camera settings - Photo mode settings:

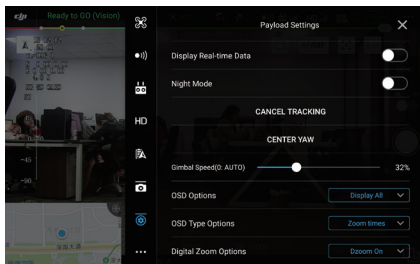You can choose single shot, burst mode or interval mode.
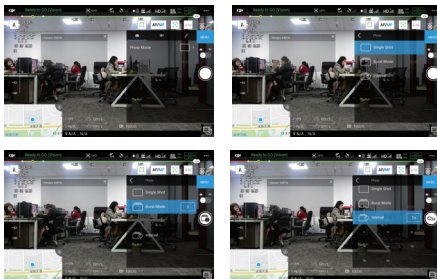

1.2 Payload Settings:

Gimbal Speed:

Gimbal speed is adjustable. When it's 0%, the speed will be adjust automatically, quick speed for wide end, slow speed for tele end. When you adjust it to 1% manually, the speed will be low even in wide end. The high the percentage is, the quicker the speed will be.
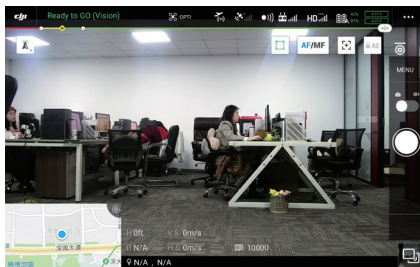

OSD Options:

You can DIY you on-screen-display (OSD). Choose Hide All, then you can choose to display the items you want only.
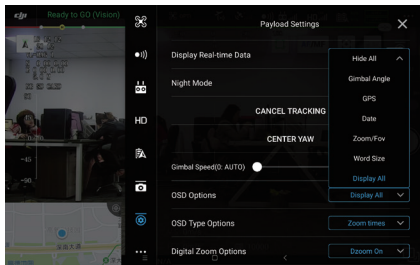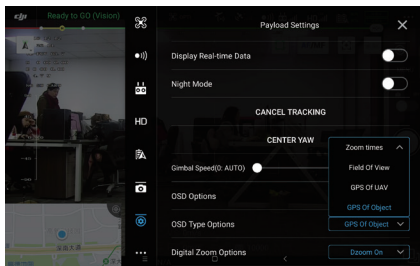
Hide All:

You can choose to display FOV (Field of View) or Zoom times, GPS co-ordinate of UAV or the object.
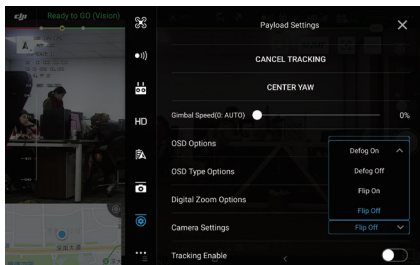

Digital Zoom Options:

The EO camera of X30TM has 6 times digital zoom. Press T continually will get digital zoom automatically after 30x full optical zoom. Or choose digital zoom from Payload settings directly. The zoom times number will become blue when it's in digital zoom status.
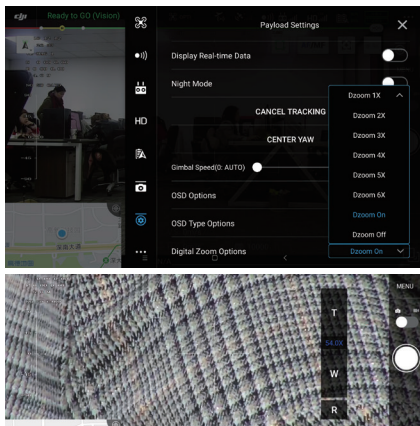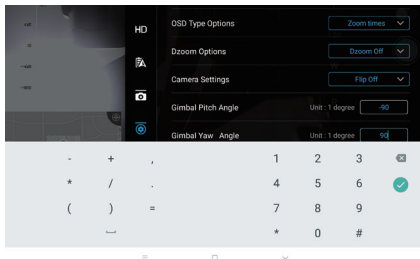
Camera Settings:

Choose defog or flip the screen when necessary.
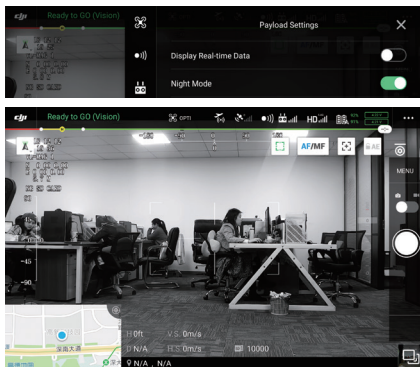
Gimbal Pitch / Yaw Angle Settings:

Input the pitch / yaw angle degrees to get exact attitude angles directly.

2. Main functions instruction

2.1 Night vision

With a great low illumination, X30TM can perforance very well even in a dark environment. Switch to night mode to have a better images.
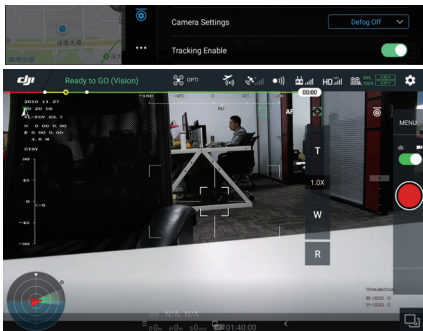
2.2 Object tracking

Start tracking: Enable tracking function, then single touch on the screen to pick tracking object.
Stop tracking: Payload Settings --CANCEL TRACKING
*Note: the gimbal will follow the object automatically after object is chosen, to control the gimbal manually please cancel tracking first.

2.3 Laser rangefinder

X30TM build-in infrared (IR) laser rangefinder, can resolve the geo graphic position and distance of the object automatically after GPS signal is synced from the UAV. The target is the object in the middle point of the screen. When the object distance is less than 5 meters or bigger than 1500 meters, the distance will show 0.
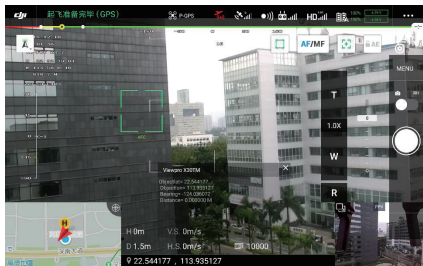
Specification

Hardware Parameter	
Working voltage	12V
Input voltage	4S ~ 6S
Dynamic current	450mA @ 12V
Idle current	330mA @ 12V
Power consumption	≤ 5.4W
Working environment temp.	-40℃ ~ +60℃
Output	Skyport
Local-storage	SD card (Up to 128G, class 10, FAT32 or ex FAT format)
Control method	DJI Pilot

Gimbal Spec	
Pitch/Tilt	±90°
Roll	±85°
Yaw/Pan	±360°
Vibration angle	Pitch/Roll: ±0.02°, Yaw: ±0.03°
One-key to center	√

Camera Spec	
Imager Sensor	SONY 1/2.8" "Exmor R" CMOS
Picture quality	Full HD 1080 (1920*1080)
Effective pixel	2.13MP
Lens optical zoom	30x, F=4.3~129mm
Digital zoom	12x (360x with optical zoom)
Min object distance	10mm(wide end) to 1200mm(tele end). Default 300mm
Horizontal viewing angle	1080p mode: 63.7°(wide end) ~ 2.3°(tele end)
	720p mode: 63.7°(wide end) ~ 2.3°(tele end)
	SD: 47.8°(wide end) ~ 1.7°(tele end)
Sync system	Internal
S/N ratio	more than 50dB
Min illumination	Color 0.01lux@F1.6
Exposure control	Auto, Manual, Priority mode(shutter priority & iris priority), Bright, EV compensation, Slow AE
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
Backlight compensation	Yes
Aperture control	16 steps
Defog	Yes
OSD	Yes

Camera Object Tracking	
Update rate of deviation pixel	50Hz
Output delay of deviation pixel	<10ms
Minimum object contrast	5%
SNR	4
Minimum object size	16*16 pixel
Maximum object size	160*160 pixel
Tracking speed	±32 pixel/frame
Object memory time	100 frames (4s)
The mean square root values of pulse noise in the object position	< 0.5 pixel
Laser Rangefinder	
Range	5~1500meters
Location display	Latitude and longitude
Packing Information	
N.W.	587g
Product meas.	135.5*135*120mm
Accessories	1pc gimbal camera device / High quality plastic box with foam cushion