Viewpro

User manual

Z40K

40x 4K UHD Object Tracking Gimbal Camera

Compatible with DJI M200/M210/M210RTK

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

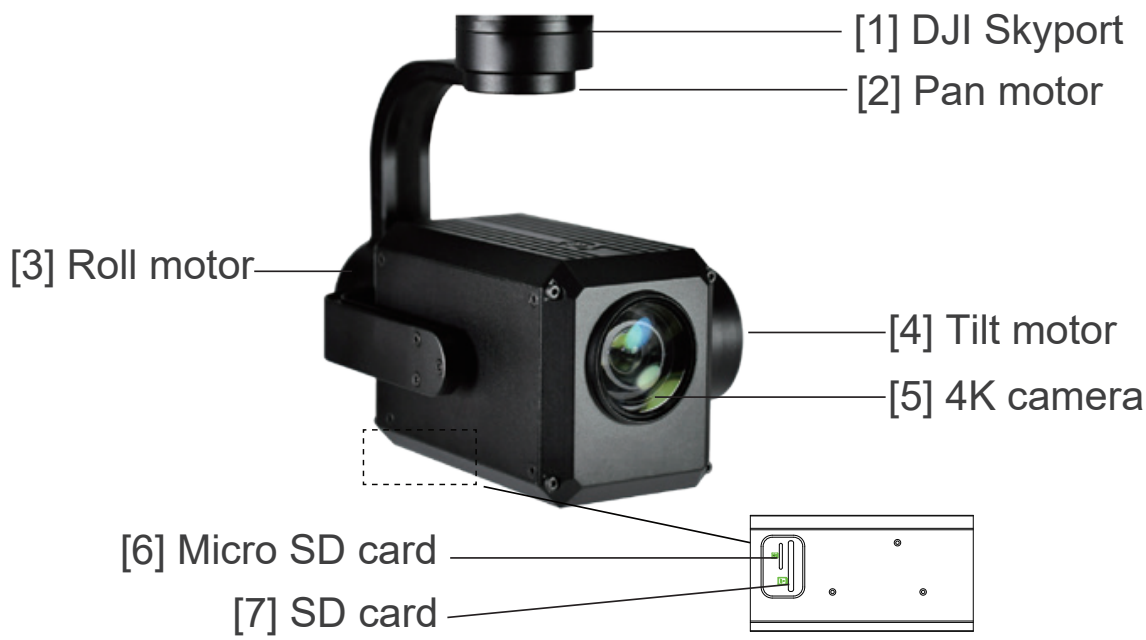
Contents

Z40K High-precision Camera

Camera Introduction

Z40K 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. With advanced OIS function, Z40K can compensate the subtle movements of the UAV to keep the camera stable even under 20 times optical zoom. It can be used on DJI drones M200 / M210 / M210RTK and controlled directly and fully by APP DJI PILOT. Powered by Panasonic 1/2.3inch CMOS 25.9MP 4K camera, Z40K is engineered for inspection especially power and utility industry. The speed of Z40K gimbal is adjustable, LOW speed mode for tele end, the control will be more accurate; Fast mode for wide end, which makes the gimbal control sensitive and quick. 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



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	−40℃ ~ +60℃
Size	L153*W96*H140mm	Weight	630g

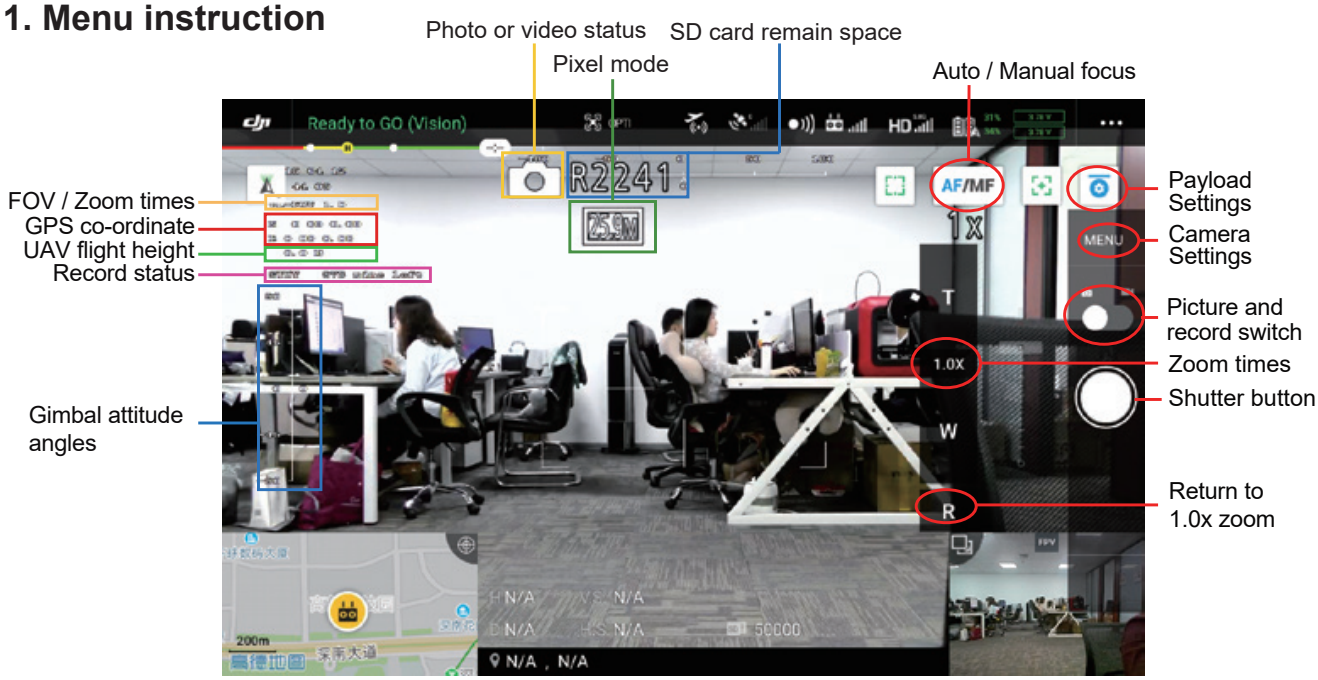
Pitch/Tilt: Pitch angle range of action : ±90
Roll: Roll angle range of action : ±85°
Yaw/Pan: Yaw angle range of action : ±360°
Vibration angle: Pitch/Roll: ±0.02°, Yaw: ±0.03°

Application Description

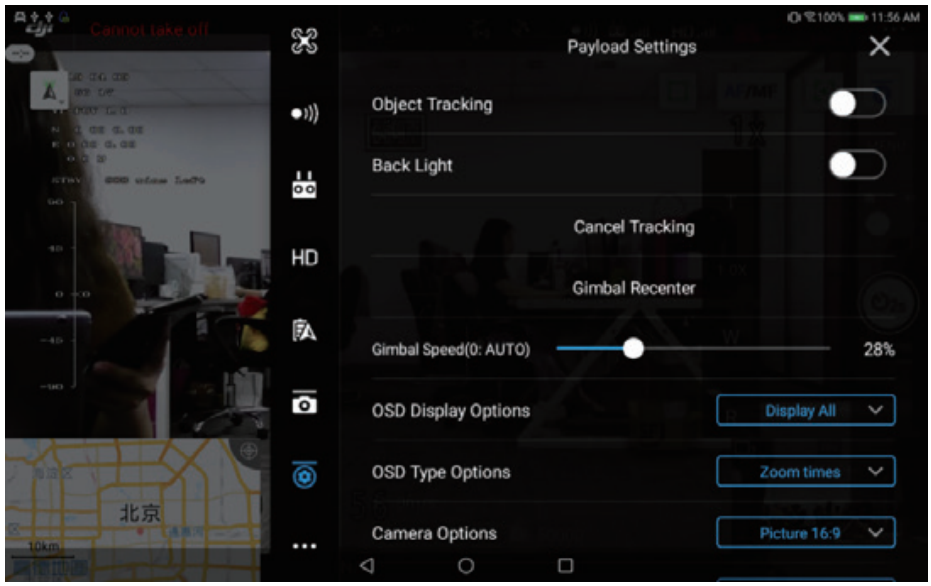
DJI Pilot

After mounting Z40K 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

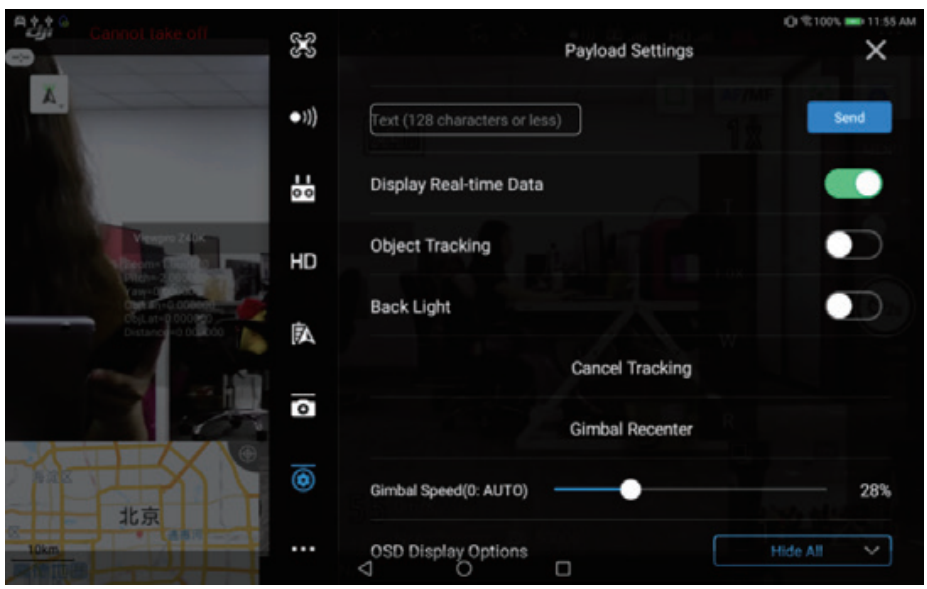


2. Payload Settings



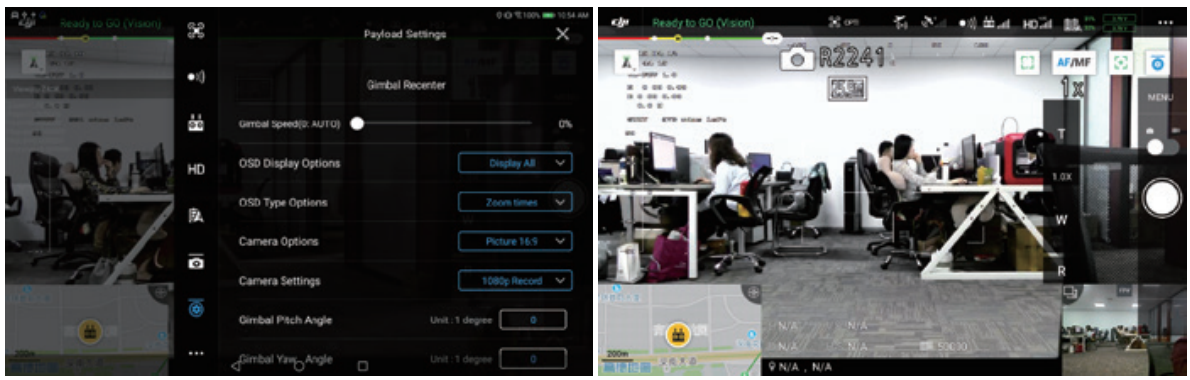
2.1 Gimbal Speed:

Gimbal speed is adjustable. When it's 0%, the speed will 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.



2.2 OSD Display Options:

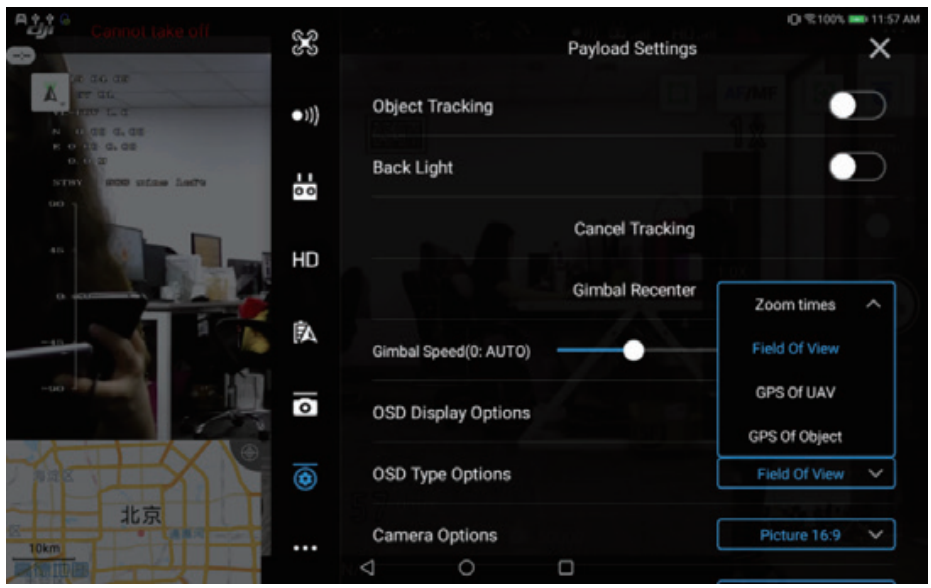
You can DIY your on-screen-display (OSD). Choose Display ALL, or you can choose to display the items that you want only.



Hide All:

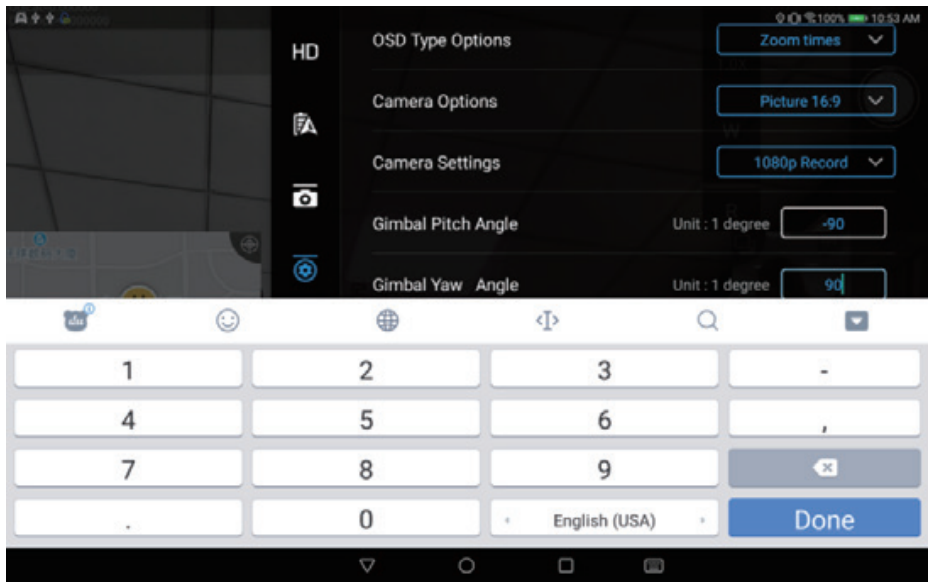
2.3 OSD Type Options:

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



2.4 Gimbal Angles Setting:

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



3.Main functions instruction

3.1 Camera Settings

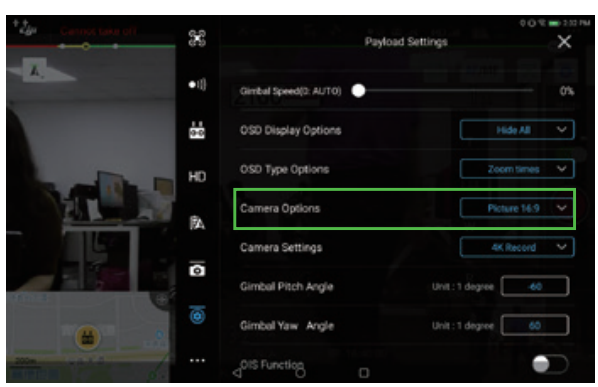
In the APP, you can choose different camera options according to your application demands.

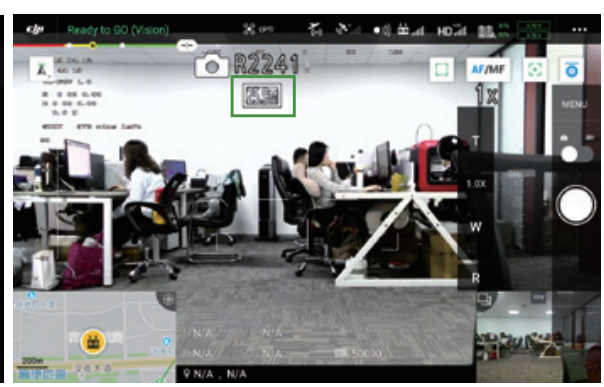
3.1.1 Camera Options:

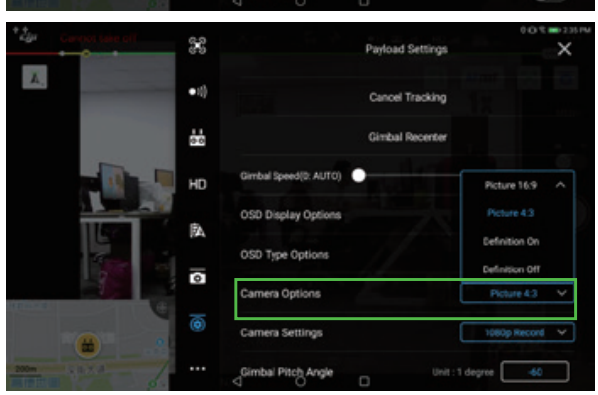
Photo modes:

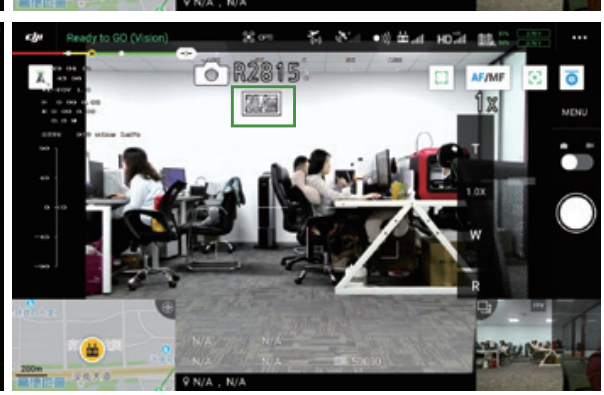
Picture 16:9: total pixel is 25.9MP

Picture 4:3: total pixel is 20.4MP

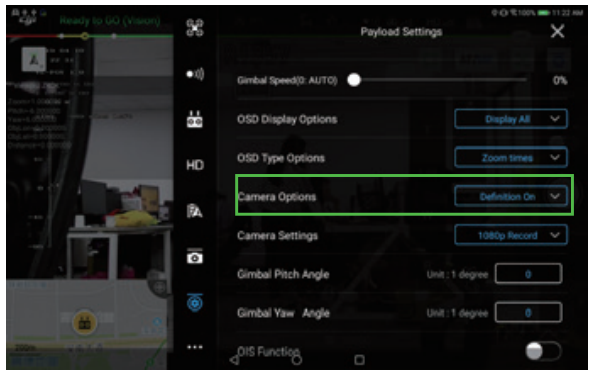


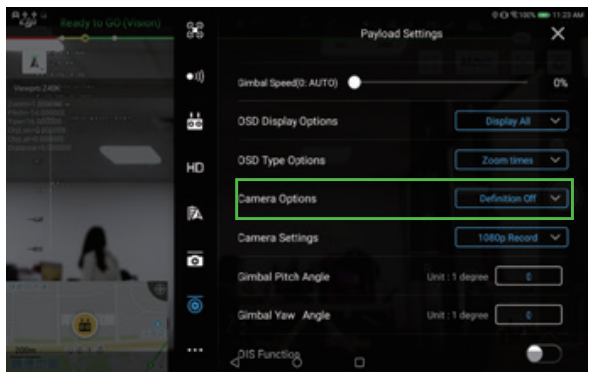


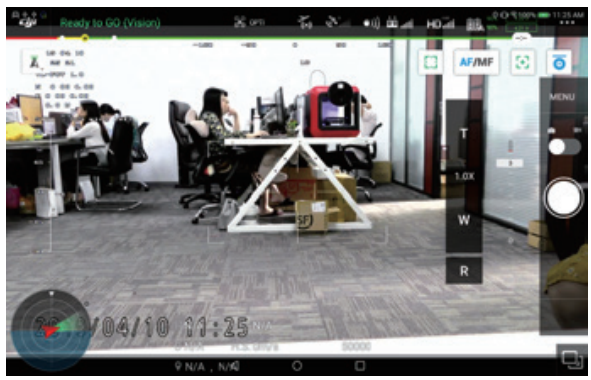


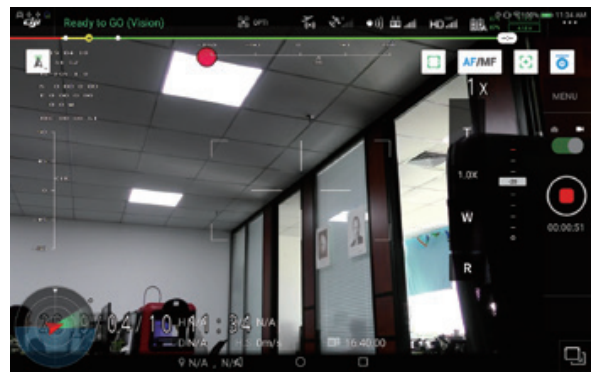


Definition On: Pixel information showing on screen
Definition Off: No pixel information showing





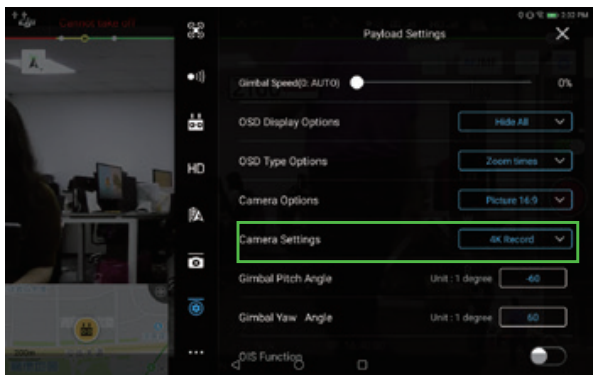


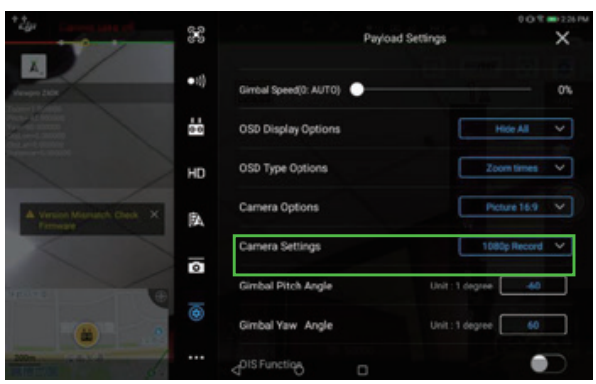


Note: For the ultra high definition reason, it will take about 3-4 seconds to perform the storage after a shooting. When the shooting and storage are performed, the camera icon on screen will become red and a green frame will display on screen with a shooting sound. The RXXXX number after the camera icon indicates the storage space left per picture quantity. If there is no green frame showed after shooting, please check if SD card is normal.

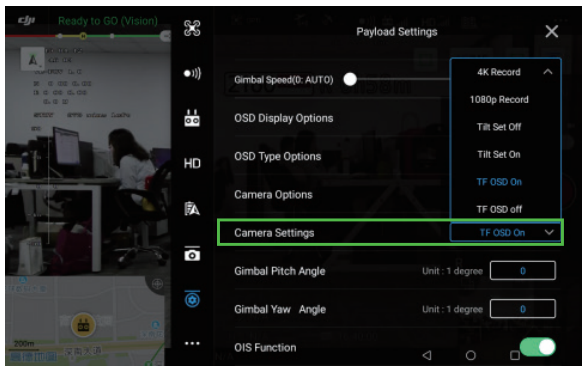
3.1.2 Video record modes:

4K mode: Image quality is 2160P, max optical zoom is 20 times, iA zoom is up to 25 times.
1080P mode: Image quality is 1080P, iA zoom could be up to 40 times.

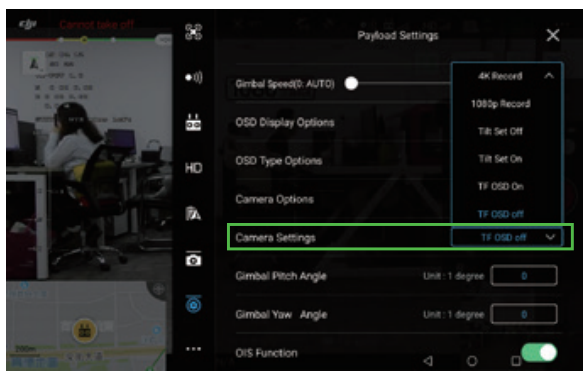


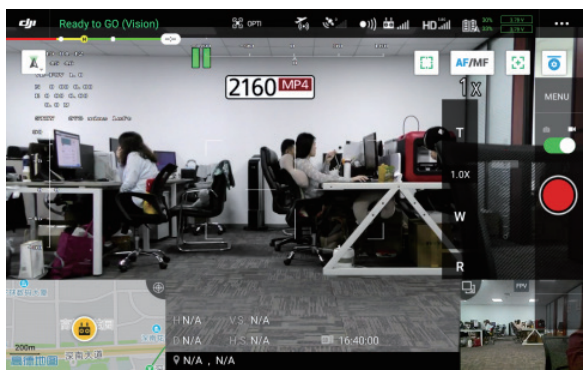


TF OSD On: “R xxxxx” showing on screen
“R xxxxx” indicates the storage time left for video



TF OSD Off: No “R xxxxx” on screen





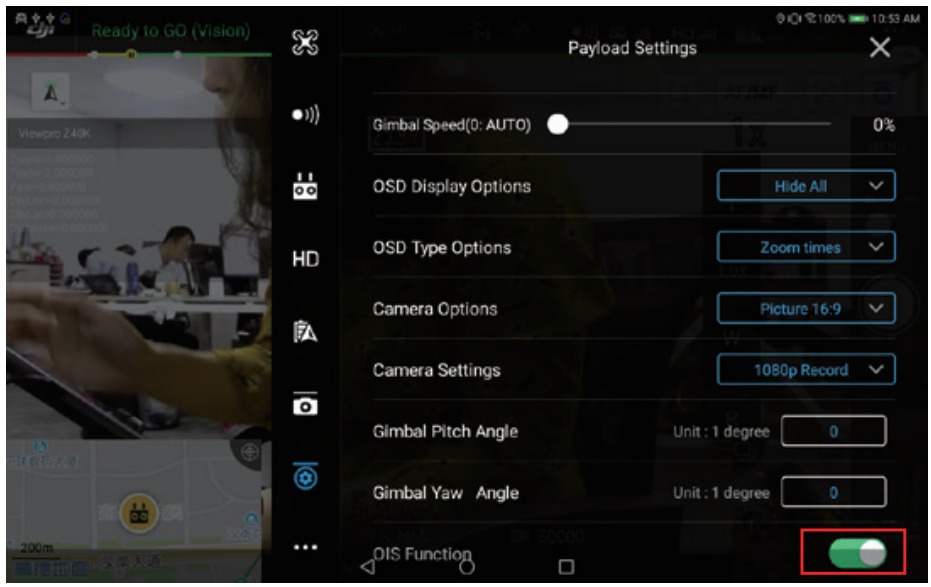
3.2 Video Storage

Micro SD card(TF card): resolution 1920*1080, with OSD. Support up to 128G.

SD card: resolution 3840*2160 pure video without OSD. Support up to 32G.

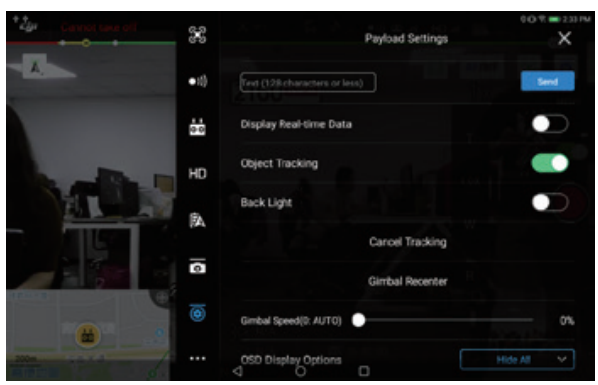
3.3 OIS (Optical Image Stabilization) function

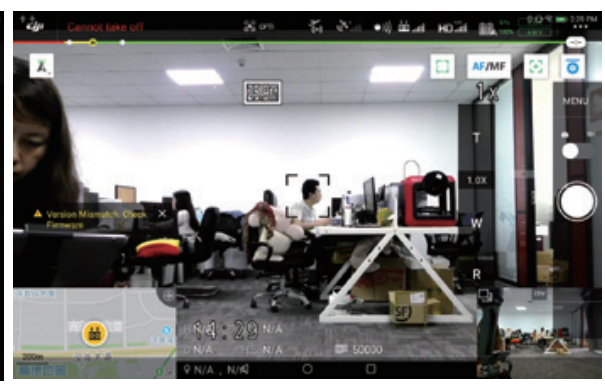
Turn on the OIS function, it could effectively keep the image stable during flying, even in the condition of larger optical zoom.



3.4 Object Tracking

Start tracking: Enable tracking function, the 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.





Specification

Hardware Parameter	
Working voltage	12V
Input voltage	3S ~ 4S
Output voltage	5V (connect with PWM)
Dynamic current	450mA @ 12V
Idle current	330mA @ 12V
Power consumption	≤5.4W
Working environment temp.	-40℃ ~ +60℃
Output	Skyport
Local-storage	SD card*2 (Up to 128G, class 10, FAT32 or ex FAT format)
Control method	DJI Pilot
Gimbal Spec	
Pitch/Tilt	±90°
Roll	±85°
Yaw/Pan	±360°*N
Vibration angle	Pitch/Roll: ±0.02°, Yaw： ±0.03°
One-key to center	√
Camera Spec	
Imager Sensor	Panasonic 1/2.3inch CMOS
Lens	F1.8~F3.6(f=4.08~81.6mm)
Zoom	Optical zoom:20x, iA zoom:25x(4k) / 40x(FHD)
Total pixel	25.9MP
Record effective pixel	4k:8.29MP / FHD:6.10MP(16:9)
Picture effective pixel	25.9MP(4:3)
Optical Image Stabilization	3 axis Optical Image Stabilization
Record format	MPEG-4
Record pixel	4k:3840*2160/30p FHD:1080/60p (HD:720/30p)
Record shutter speed(Manual)	1/30 ~ 1/8000
Picture format	JPEG
Picture pixel	20.4M(4:3)
Picture shutter speed(Manual)	1/2 ~ 1/2000
Dynamic range	65dB
Min object distance	1.5M
Viewing angle	Horizontal: 53.2°(Wide end) ~ 5.65°(Tele end)
	Vertical: 39.8°(wide end) ~ 4.2°(tele end)
	Focus: 66.6°(wide end) ~ 7.2°(tele end)
Sync system	Progressive scanning
Local video	1080P 30fps local TF card
HD output	1080P/720/480P 60fps HDMI1.4
S/N ratio	38dB
Min illumination	Color 0.05lux@F1.6
Backlight compensation	Backlight compensation/strong light inhibition
Gain	Auto
White balance	Auto/Manual
Control system	UART/IR/PWM
Communication protocol	PELCO-D, Hitachi protocol or VISCA
Focus	Auto/Manual/One-time automatic focus

Focus speed	2s
Lens initialization	Built-in
User presetting bit	20 sets
Image rotation	180°, Horizontal/Vertical mirror image
OSD	Micro SD card could support
Object Tracking	
Update rate of deviation pixel	50Hz
Output delay of deviation pixel	<15ms
Minimum object contrast	5%
SNR	4
Minimum object size	16*16 pixel
Maximum object size	160*160 pixel
Tracking speed	±32 pixel/frame
The mean square root values of pulse noise in the object position	< 0.5 pixel
Packing Information	
N.W.	630g
Product meas.	153*96*140mm
Per box	1pc gimbal camera device