



User manual

Z40K

40x 4K UHD Gimbal Camera

Compatible with DJI M210/M210RTK and V2 Series / M300



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

Z40K High-precision Camera

Camera introduction	1
Camera description	1
Mechanics@Electronic characteristics	2
Application description	2
1. Menu instruction	2
2. Payload Settings	3
2.1 Gimbal Speed.....	3
2.2 Gimbal Angles Setting.....	4
3. Main functions instruction	4
3.1 Camera Settings.....	4
3.1.1 Camera Options.....	4
3.1.2 Video Record Modes.....	5
3.2 Video storage.....	8
3.3 OIS(Optical Image Stabilization) function.....	9
Specification	9

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. iA Zoom is up to 40x. Powered by Panasonic 1/2.3inch CMOS 4K camera, can store 4K video and high resolution picture. The max total pixel 25.9MP can be achieved under Picture Mode. Z40K is engineered for inspection especially power and utility industry.

It's a DJI PSDK based payload, can be used on DJI drones M210 / M210RTK & V2 series / M300 and controlled directly and fully by APP DJI PILOT.

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~ 46S	Idle current	550mA@12V
Dynamic current	650mA@12V	Working environment temp	-20℃ ~ +60℃
Size	162*95*153mm	Weight	550g

Pitch/Tilt: mechanical range: $-120^{\circ} \sim 120^{\circ}$, controllable range: $-45^{\circ} \sim 90^{\circ}$

Roll: mechanical range: $\pm 70^{\circ}$

Yaw/Pan: Yaw angle range of action : $\pm 360^{\circ}$ *N

Vibration angle: Pitch/Roll: $\pm 0.02^{\circ}$, Yaw: $\pm 0.02^{\circ}$

Application Description

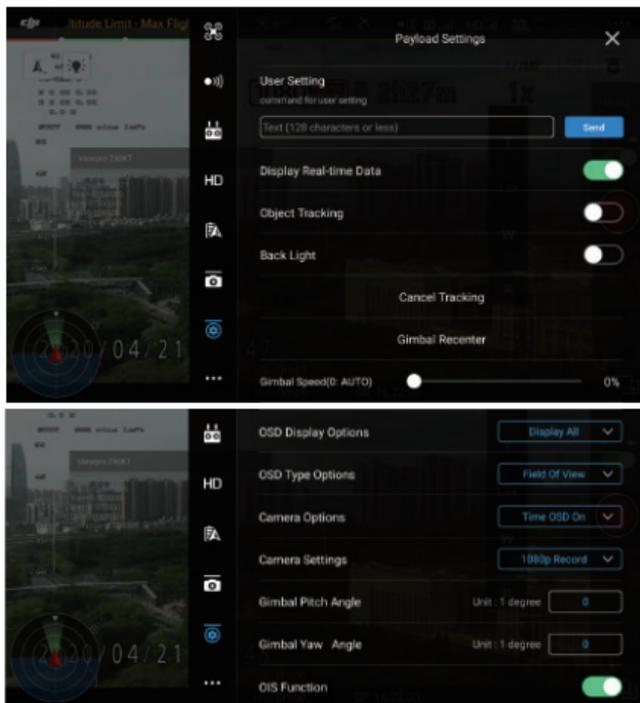
DJI Pilot

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

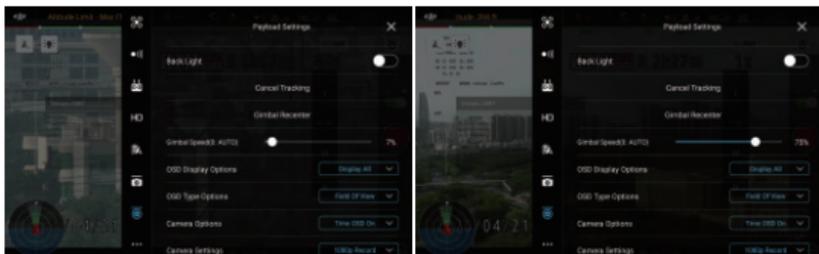


2. Payload Settings



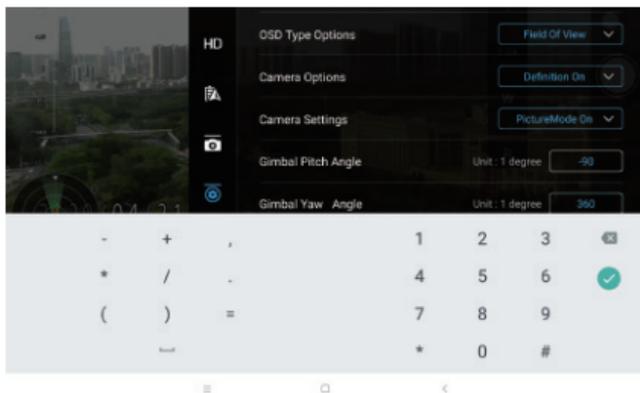
2.1 Gimbal Speed

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



2.2 Gimbal Angles Setting

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



3. Main functions instruction

3.1 Camera Settings

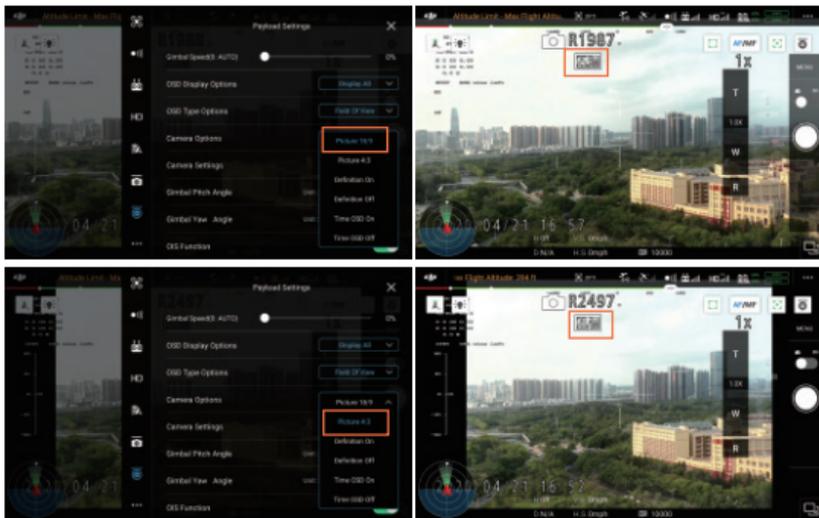
In the APP, you can choose different camera options according to your application demands.

3.1.1 Camera Options:

Photo ratio:

>Picture 16:9: total pixel is 25.9MP

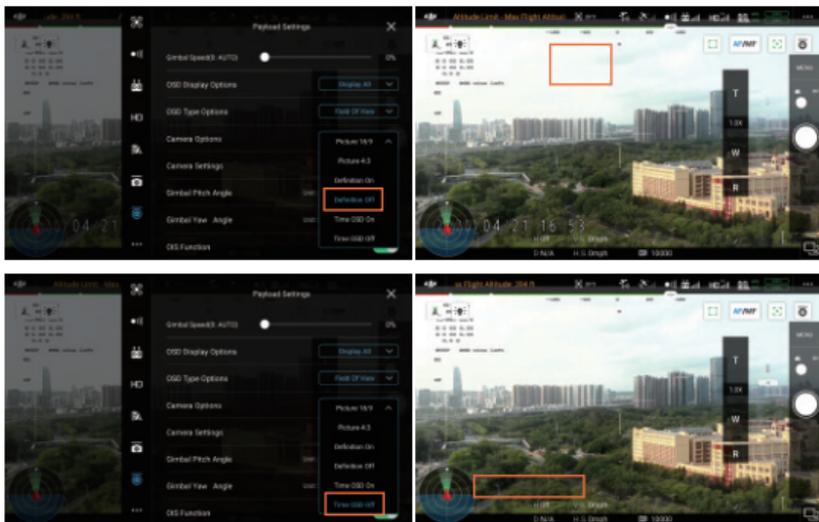
>Picture 4:3: total pixel is 20.4MP



>**Definition On/Off:** Show picture total pixel information or video mode and status information on screen or not.

>**Time OSD On/Off:** Show date and time on OSD or not.

When both off, you can have a clear screen, specially when you choose Hide All in OSD Display Option also. If you choose ON, the information will be showed in 1080p videos/photos of the micro SD card only, not. on another SD card..



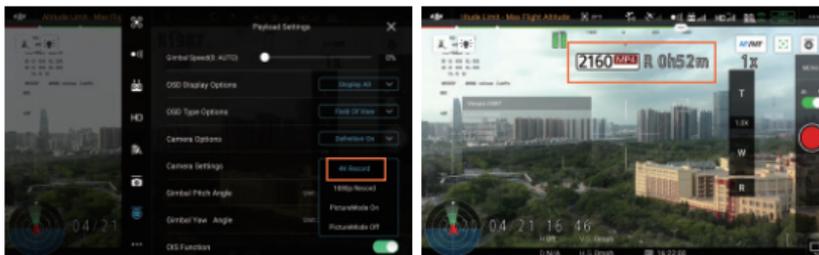
3.1.2 Camera Settings:

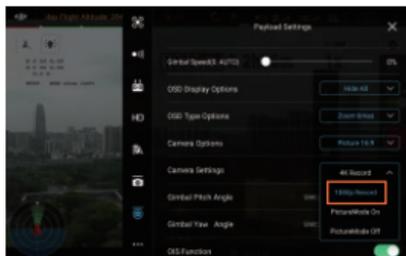
Video record modes:

>**4K mode:** Video image quality is 2160P, zoom up to 25 times.

>**1080P mode:** Video image quality is 1080P, zoom up to 40 times.

4K and 1080p picture and videos will be stored in different folders in the SD card.





Picture Mode On/Off:

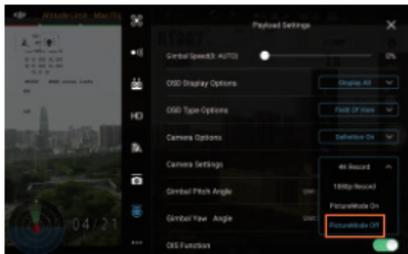
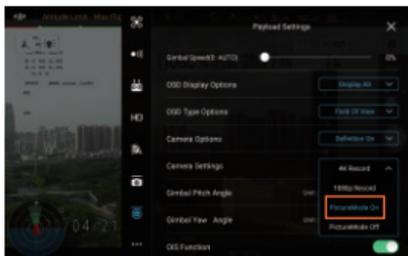
>**Picture Mode On:** Picture total pixel is 25.9MP, zoom max 20 times. Photography and storage time will be about 3-4 seconds per photo.

>**Picture Mode Off:** Picture resolution will be according to video mode, 20.4MP under 4K video mode, 14MP under 1080p mode.

Note:

After switching Picture Mode On/Off, you need to switch picture/video mode button back and forth once or take a picture to initiate it.

Please operate only after the camera finished last command in case command stuck. If the image is stuck, you can reboot the camera image by Camera OFF / ON option.

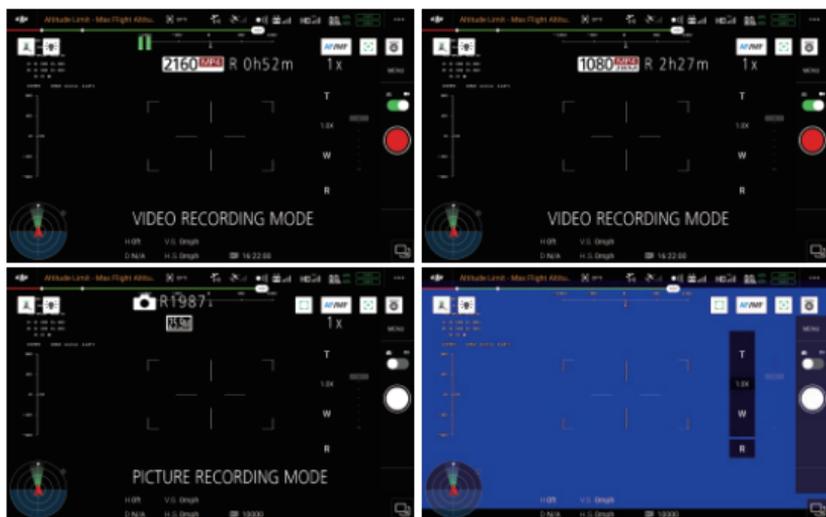


Note: When the shooting and storage are performed, the camera icon on screen will become red and a green frame will display on screen with a shooting sound. The RXXXX number after the camera icon indicates the storage space left per picture quantity. If there is no green frame showed after shooting, please check if SD card is normal.



Note:

After switching video or picture modes, the camera appear belowing image is normal.



3.2 Video Storage

SD card: resolution 3840*2160 pure video without OSD. Support up to 256G. There are many folders in the SD card, according to folder name you can recognize what content inside:

CDPFQ is for photo

RDPHH is for 4K video

YBPHH is for 1080p video

Note: SD card format requirement

<2G Format: FAT

2~32G Format: SDHC FAT32

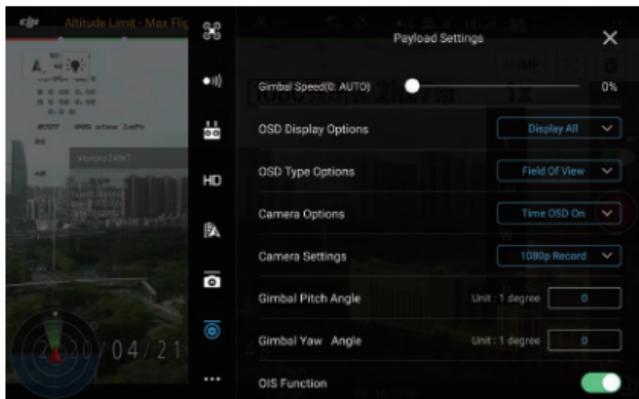
32~256G Format: SDXC EXFAT

Not support NTFS



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.



Hardware Parameter

Working voltage	12V
Input voltage	3S ~ 6S
Dynamic current	550-650mA @ 12V
Idle current	550mA @ 12V
Working environment temp.	-20°C ~ +60°C
Output	Skyport
Local-storage	SD card (Up to 128G, class 10, FAT32 or ex FAT format)
Control method	DJI Pilot

Gimbal Spec

Mechanical Range	Pitch/Tilt: -120° ~ 120°, Roll: ±70°, Yaw/Pan: ±360°*N
Controllable Range	Pitch/Tilt: -45° ~ 90°, Yaw/Pan: ±290° / ±360°*N (IP output version)
Vibration angle	Pitch/Roll: ±0.02°, Yaw: ±0.02°
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(16:9) 6784*3816
Optical Image Stabilization	5 axis Optical Image Stabilization
Video storage format	MPEG-4 (4k:3840*2160 25/30fps FHD:1080P 50/60fps)
Record shutter speed(Manual)	1/30 ~ 1/8000
Photo storage format	JPG(4K:20.4M FHD:14M)
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 50/60fps 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
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
Facial recognition	√
Packing Information	
N.W.	550g
Product meas.	153*95.3*153mm
Accessories	1pc gimbal camera device /Box