

# ZR10

## 2K QHD 30X HYBRID ZOOM GIMBAL CAMERA USER MANUAL



**V1.0**

**July 2022**

Thank you for purchasing SIYI's product.

ZR10 is an HD hybrid zoom gimbal camera completely developed by SIYI Technology, featuring 4 mega pixels of resolution, 10X optical zoom and up to 30X hybrid zoom, can record video at 2K resolution by TF card. ZR10's 3-axis stabilizing technology with FOC control help maintain an absolutely stable image during flight. And the HDR and starlight feature can help expand drone missions to 24/7. In a word, ZR10 is a rare and good payload for multi-rotors, VTOLs, and robotics.

To ensure you a good experience of ZR10 gimbal camera, please read this manual carefully. If you have any issue using the product, please consult the manual or check the online pages of ZR10 on SIYI official website (<http://www.siyi.biz>) or SIYI official store (<https://shop.siyi.biz/products/zr10>). You can also write an email to SIYI official A/S center ([support@siyi.biz](mailto:support@siyi.biz)).

## SIYI User Group - Facebook



**SIYI Official Store** (<https://shop.siyi.biz>)

**SIYI Official AliExpress Store** (<https://siyi.aliexpress.com>)

**SIYI YouTube Channel** (<https://www.youtube.com/c/SIYITech>)

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# READ TIPS

## Icons

Please pay more attention to content indicated with the following marks:

 **DANGER** Dangerous manipulation probably leads to human injuries.

 **WARNING** Warnings on manipulation possibly leads to human injuries.

 **CAUTION** Cautions on what manipulation may lead to property loss.

 **Prohibited**    **Mandatory**    **Mark**

## Safety

ZR10 HD Hybrid Zoom Gimbal Camera is designed for professional application in specific industries, which has been done necessary configuration before delivery, it is forbidden to disassemble the gimbal or to change its mechanical structure. And don't add more payload to ZR10's gimbal other than its own camera. Gimbal camera is designed with very precise structure, users who approach to the equipment should have at least the basic knowledge to operate it. Irregular or irresponsible manipulations to the device may cause damage, property loss, or human injuries. Users under 14 years' old should follow an experienced trainer's guide.

Disassembling or modification to the system is prohibited without permission from its manufacturer, SIYI Technology.

## **Storage/Carrying/Recycling**

When your SIYI products are stand idle, or you are bringing it outdoors, or the system reached service life, then please do read the precautions below.



### **CAUTION**

Always place your SIYI products at places where babies or kids do not reach.



### **DANGER**

SIYI products should be placed in places with below conditions:

Not too hot (above 60°C) or too cold (under -20°C).

Not under direct sunshine or too dusty or too wet.

Not on an unstable holder which lacks solid supports or may cause vibration.

Not nearby steam or other heat sources.

# 1 INTRODUCTION

## 1.1 Product Features

### 10X Optical Zoom, 30X Hybrid Zoom

ZR10 gimbal camera supports 30x hybrid zoom, offering clear view beyond hundreds of meters. ZR10's fast and accurate algorithm makes it focus quickly and quite easy to output high-quality videos.

### 4MP CMOS

### 2K Recording

ZR10 comes with a CMOS of 400 megapixels of effective pixels. Video resolution is up to 2560x1440. Recording supports Class 10 high-speed MicroSD card to present to customers videos with full of elegant details.

### 3-Axis Gimbal Stabilizer

### High-Precision FOC Control

ZR10 gimbal camera is applied with industry-level 3-axis stabilizing technology and high-precision FOC control algorithms, which reduces most image shaking and ensure that the image is always stable even if the aircraft or the vehicle is in vigorous movement, and the camera will continuously output stable and clear images in long focus.

## **High Dynamic Range**

### **Starlight Night Vision Camera**

The HDR feature in ZR10 can precisely capture details of highlights and shadows in dynamic scenes, getting away of low light or backlight. The ultra-sensitive starlight CMOS can keep image bright even in low light environment.

## **Applications**

### **Asset Inspection**

ZR10's 30x hybrid zoom camera, working with HD image transmission devices, can be applied in various asset inspection scenes such as power plant, construction site, etc. Especially in inspecting very dangerous assets such as electric towers and wind turbines, drones equipped with ZR10 zoom camera can secure ground operators with enough distance to finish inspection by checking the received zoom images over the air efficiently and safely.

### **Fire Control and Rescue**

In emergent situations such rescue in fire control scenes, firefighters need to see the full picture as fast as possible. ZR10 is zoom feature can help firefighters quickly see what is happening and transfer important real-time images to the command center, so they can deploy or adjust rescue force in time. Then the rescue task can be finished in high level and high efficiency.

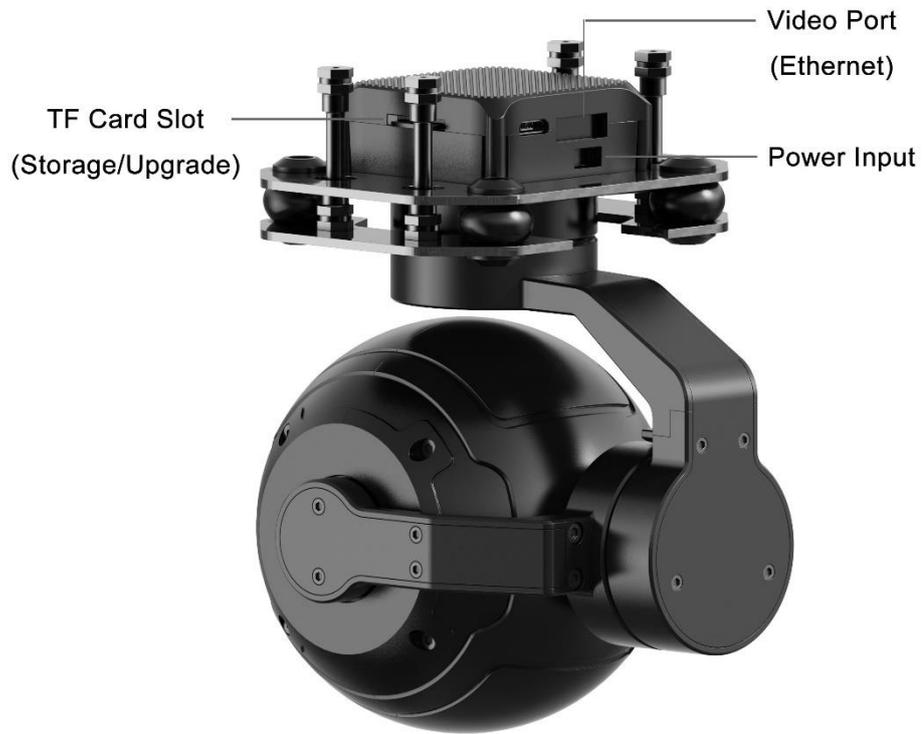
### **Traffic Monitoring**

To see the full scene, and to check a specific spot, traffic coordinators just need to hover their drones equipped with ZR10 gimbal camera in safe space over the target position, then they can monitor the road traffic in real-time. The monitoring images can be zoomed in when they check details or zoomed out when they stream images of the whole scene.

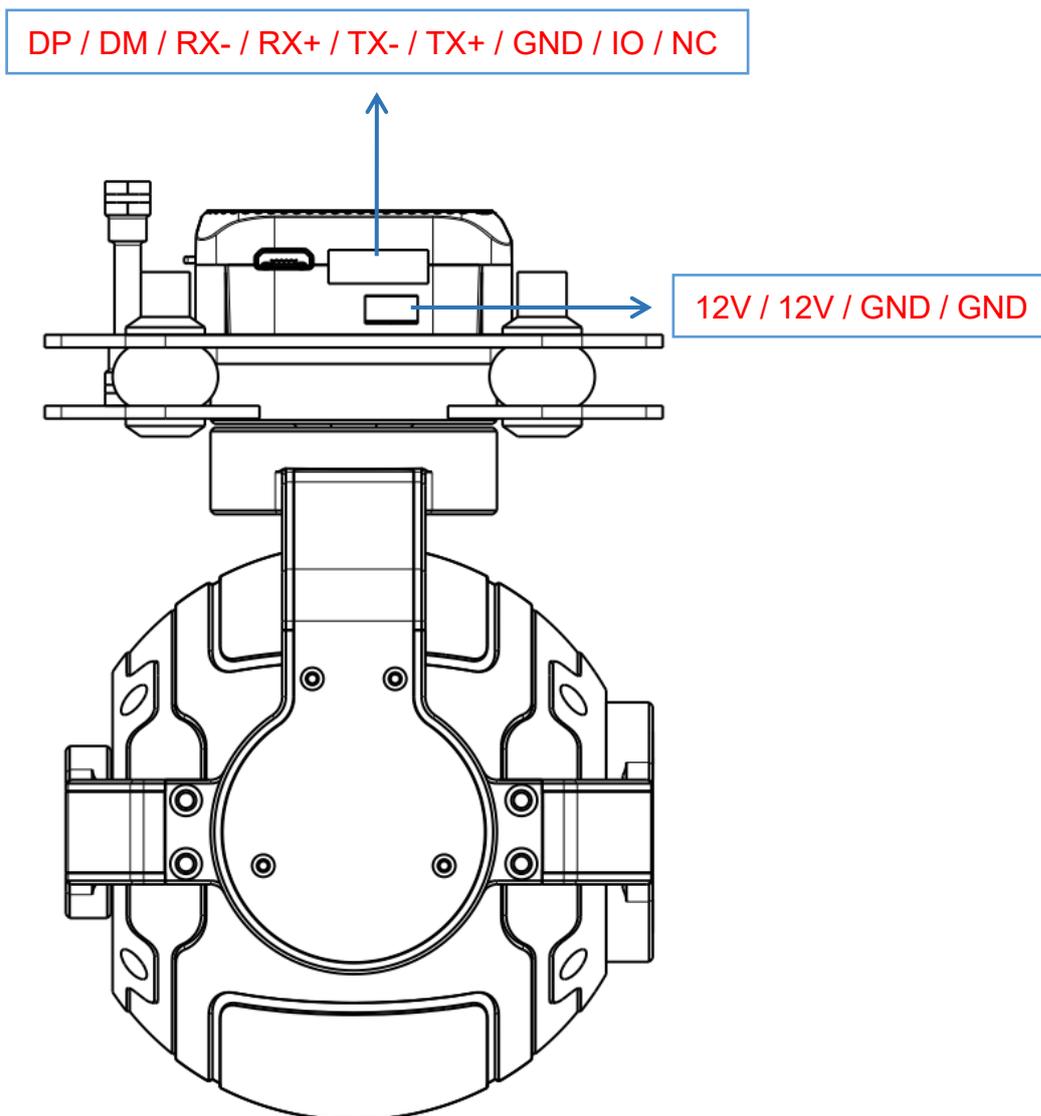
## 1.2 Parts

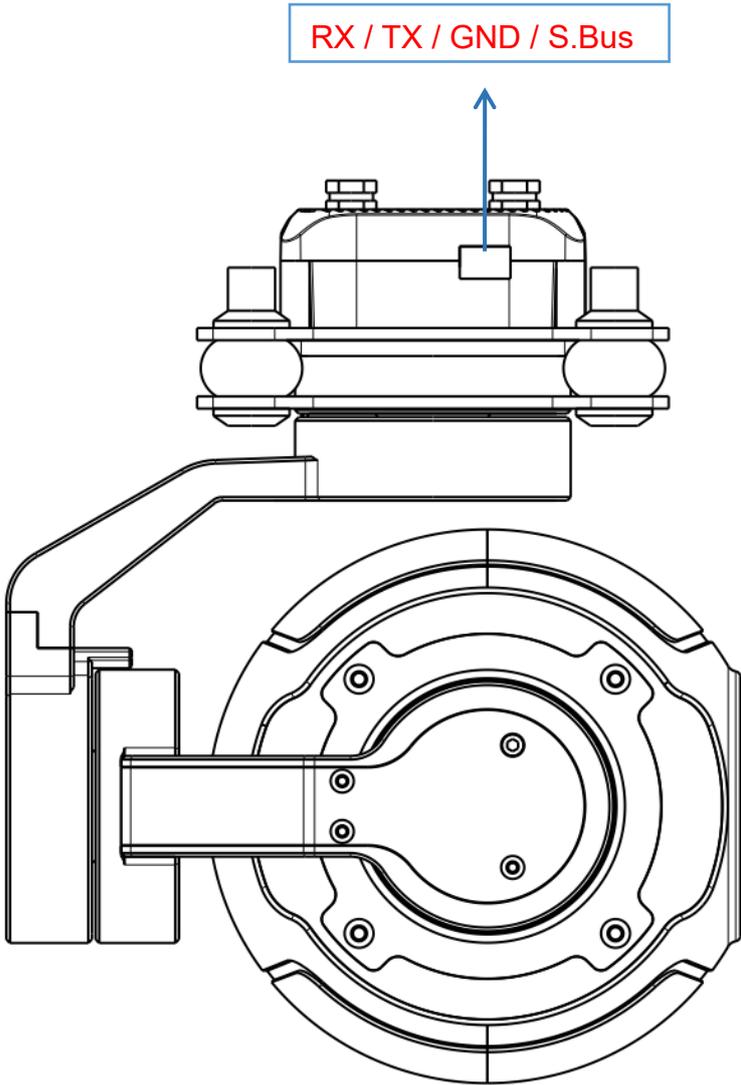
### 1.2.1 At a Glance





### 1.2.2 Ports on ZR10





## 1.3 Technical Specification

### Overall

<b>Video Output Port</b>	Ethernet
<b>Control Signal Input Port</b>	S.Bus / PPM / UART / UDP
<b>Working Voltage</b>	11 ~ 25.2 V
<b>Power Consumption</b>	3 W
<b>Working Temperature</b>	-10 ~ 50 °C
<b>Waterproof Level</b>	IP4X
<b>Dimension</b>	121 x 101 x 78 mm
<b>Weight</b>	381 g

### Gimbal

<b>Angular Vibration Range</b>	$\pm 0.01^\circ$
<b>Controllable Pitch Angle</b>	$-90^\circ \sim +25^\circ$
<b>Mechanical Pitch Angle</b>	$-135^\circ \sim +45^\circ$
<b>Controllable Yaw Angle</b>	$-45^\circ \sim +45^\circ$
<b>Mechanical Yaw Angle</b>	$-90^\circ \sim +90^\circ$

### Camera

<b>Lens</b>	10X Optical Zoom (30X Hybrid Zoom)
<b>Focal Length</b>	$5.15 \pm 5\% \sim 47.38 \pm 5\%$ mm
<b>Minimum Focus Distance</b>	200 mm
<b>Image Sensor</b>	1/2.7-inch, 4 MP effective resolution

<b>Aperture</b>	F1.8 ~ 2.5
<b>FOV</b>	Diagonal: 79.5°, Horizontal: 71.5°
<b>TF Card Recording Resolution</b>	2K (2560 x 1440) @ 30 fps
<b>Video Storage Bitrate</b>	12 Mbps
<b>Supported File System</b>	FAT32
<b>Photography File Format</b>	JPEG
<b>Video File Format</b>	MP4 (Recorded in H265, *auto converted to MP4 after restart)
<b>Supported TF Card Type</b>	MicroSD Class10, max 128 GB
<b>Still Photography Mode</b>	Single
<b>Metering Mode</b>	Evaluative metering

 **Mark**

Features marked with “\*” are in development and can be updated later by firmware.

## 1.4 Packing List

- 1 x ZR10 Gimbal Camera
- 1 x ZR10 Control Signal Cable
- 1 x ZR10 Power Cable
- 1 x ZR10 SIYI Video Cable
- 1 x ZR10 Video Cable
- 1 x ZR10 Ethernet to RJ45 Cable
- 6 x Hex Socket Cap Screw M2.5\*5

10 x Cross Recessed Flat Head Screw M2.5\*10

8 x M2.5 Nut Black

## 1.5 Indicator Definition

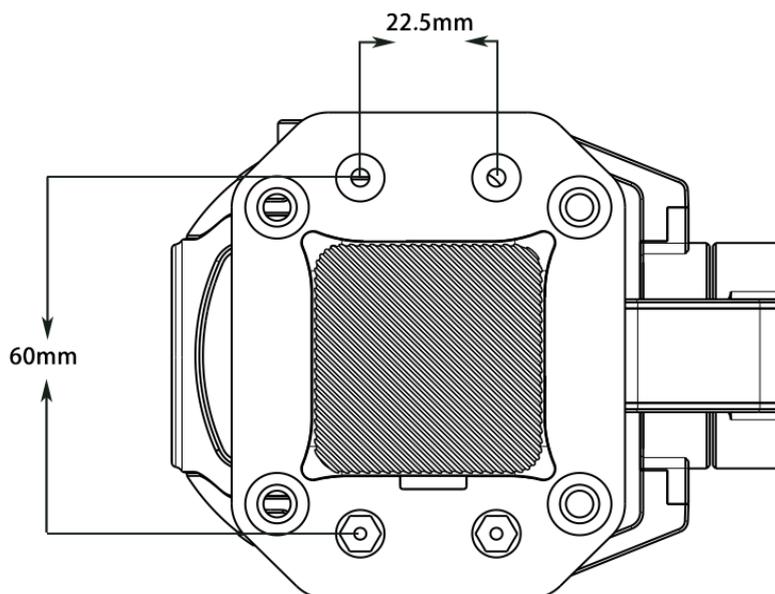
The status indicators on ZR10 gimbal camera use three different colors and different blinking frequencies to indicate the system's working or abnormal status.

- Solid Green: Normally working.
- Slow Green Blinks: S.Bus signal input is normal.
- Slow Red Blinks: One of or all of the firmware does not match (camera firmware, gimbal firmware, zoom firmware).
- ● ● Triple Red Blinks: Failed to identify zoom module.
- ● ● Red-Red-Yellow Blinks Continuously: Failed to identify camera.
- Yellow Blinks: Power input voltage is low (lower than 10 V).
- ● Double Red Blinks: IMU temperature rising is abnormal.
- ● Double Yellow Blinks: IMU temperature is rising.
- ● ● Triple Yellow Blinks: IMU temperature is abnormal.
- ● ● ● Four Yellow Blinks: Data loss in TF card video recording, please check the TF card.

## 2 GET READY TO USE ZR10

### 2.1 Installation

#### Screw Holes' Position and Distance



#### Mark

The specs of the screws for fixing the four tube screws are M.25\*8 mm. Quantity: 4.

## 3 GIMBAL CONTROL

ZR10 gimbal camera supports multiple methods to control.

### 3.1 Control ZR10 Gimbal Camera from SIYI FPV App on MK15 Smart Controller

ZR10 gimbal camera can connect to MK15 air unit directly, then you can control gimbal rotation, gimbal functions, and display video in SIYI FPV app on MK15 remote controller after binding it with the air unit.

#### 3.1.1 Preparation

It is necessary to prepare the tools, firmware, and software below before controlling ZR10 gimbal camera in this way.

- MK15 Mini HD Handheld Smart Controller (The enterprise standard combo is suggested for using with ZR10)
- ZR10 Gimbal Camera

#### **Mark**

Above products can be purchased from SIYI directly or from SIYI authorized dealers.

- ZR10 SIYI Video Cable

## Mark

Above tools come with ZR10 package.

- SIYI FPV App (v2.5.393 or newer version)

## Mark

Above software comes with ZR10 product page on SIYI official website.

## Steps

1. Power MK15 air unit and bind it with MK15 remote controller.
2. Use the ZR10 SIYI Video Cable to connect MK15 air unit's video port with ZR10 gimbal camera's video port.
3. Update the SIYI FPV app on MK15 to v2.5.393 or newer version.
4. Run SIYI FPV app, go to "Settings – Camera IP", and select "SIYI Camera 1" (when IP addresses are 192.168.144.25) or "SIYI Camera 2" (when IP addresses are 192.168.144.26), then it will display ZR10 video stream, and the gimbal rotation and camera functions can be controlled by MK15 remote controller touchscreen.

### 3.1.2 Gimbal Pitch and Yaw Rotation

While SIYI FPV App is running, slide on MK15 touchscreen can control ZR10 gimbal rotation. Sliding left and right are gimbal yaw rotation, up and down are gimbal pitch rotation. Gimbal rotation direction is the same with finger sliding direction.

Double tap MK15 touchscreen and ZR10 gimbal will center automatically.

#### **Mark**

Slide on MK15 touchscreen and hold it, then the gimbal will continue to rotate till it reaches max positions. Longer that you hold it far from the center of the screen, faster the gimbal rotates.

### 3.1.3 Zoom and Focus

While SIYI FPV App is running, touch “Zoom in” or “Zoom out” icon on MK15 touchscreen can control ZR10 image zooming, up to 30X. Optical zoom from 1X to 30X, digital zoom from 10X to 30X. Touch “Close Shot” or “Long Shot” icon the focal length will change between 5 and 47 mm.

Tap MK15 touchscreen and ZR10 gimbal will focus automatically.

### 3.1.4 Photography and Video Recording

While SIYI FPV App is running, touch “Photo” icon on MK15 touchscreen, ZR10

camera will take a picture.

Go to “Settings – Gimbal Camera” page, then you can use the “Record” icon to turn on / off video recording.

### **Mark**

Before taking a picture or recording video with ZR10 gimbal camera, it is necessary to insert TF card into ZR10.

## **3.2 Control ZR10 Gimbal Camera through S.Bus / PPM Signal (Taking an Example of MK15 Smart Controller)**

ZR10 gimbal camera can connect to MK15 air unit, then you can control gimbal rotation and gimbal functions through joysticks, dials, switches, and buttons on MK15 remote controller after binding it with the air unit.

### **3.2.1 Preparation**

It is necessary to prepare the tools, firmware, and software below before controlling ZR10 gimbal camera in this way.

- MK15 Mini HD Handheld Smart Controller (The enterprise standard combo is suggested for using with ZR10)
- ZR10 Gimbal Camera

## **Mark**

Above products can be purchased from SIYI directly or from SIYI authorized dealers.

- ZR10 SIYI Video Cable
- ZR10 Control Signal Cable

## **Mark**

Above tools come with ZR10 package.

- Cable (USB-C to USB-A)

## **Mark**

Above tools should be prepared by customer.

- SIYI PC Assistant (v1.2.8 or newer version)

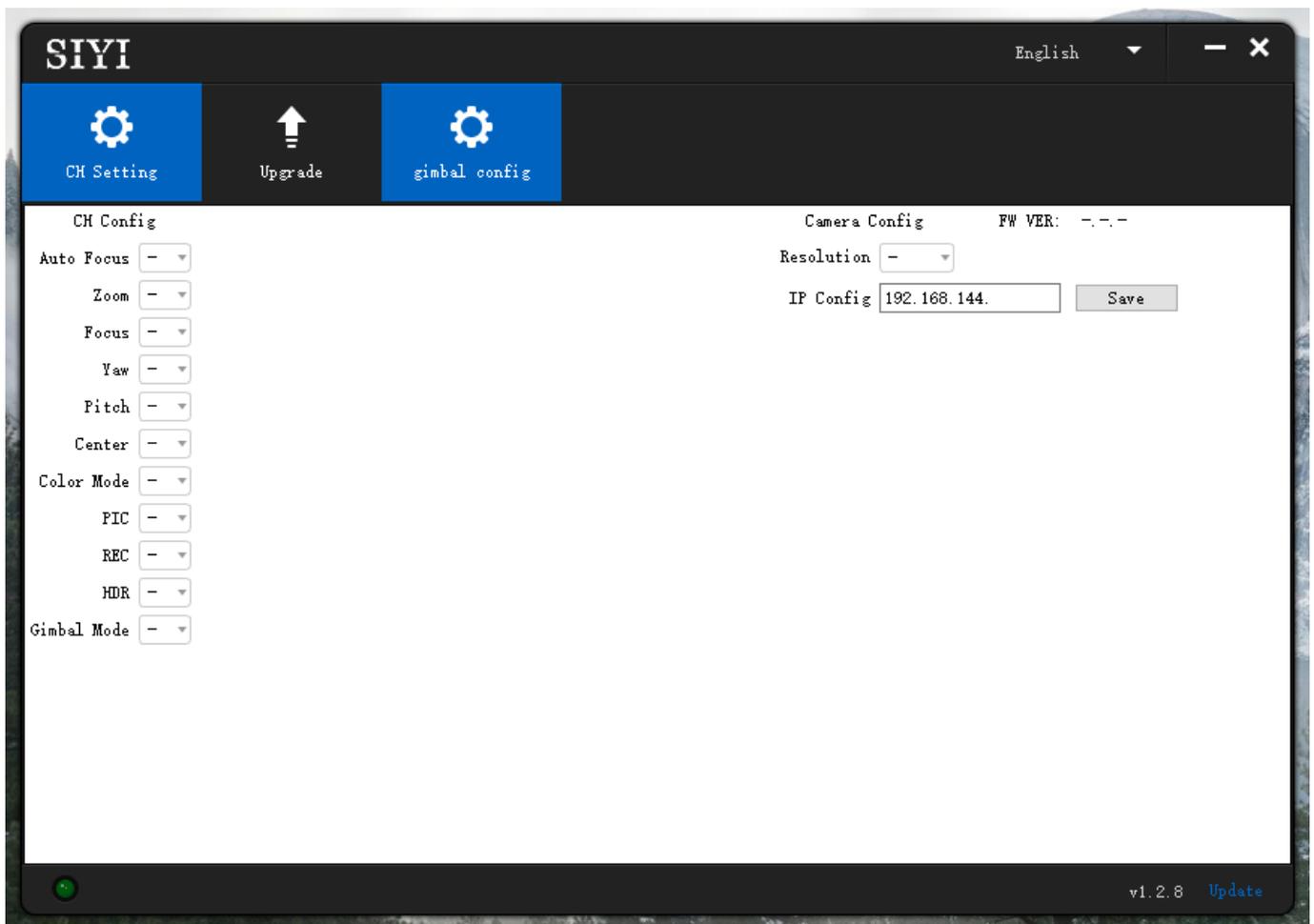
## **Mark**

Above software can be downloaded from ZR10 product page on SIYI official website.

## **Steps**

1. Power MK15 air unit and bind it with MK15 remote controller.
2. Use the ZR10 SIYI Video Cable to connect MK15 air unit's video port with ZR10

- gimbal camera's video port.
3. Use the ZR10 Control Signal cable to connect MK15 air unit's RC port and ZR10 gimbal camera's control signal port.
  4. Install and run SIYI PC Assistant on Windows computer.
  5. Use the USB-C to USB-A cable to connect ZR10 gimbal camera with the Windows computer, then run SIYI PC Assistant and go to "Gimbal Config" page.



6. Under "Channel Config" menu, assign remote controller channel 1 to 16 to target gimbal functions according to your requirement.
7. For the assigned channels, operate their mapped joysticks, dials, switches, and buttons on MK15 remote controller to confirm if they are working normally.

### 3.2.2 Gimbal Pitch and Yaw Rotation (Taking an Example of MK15 Dials)

Below are the MK15 channel mapping settings for ZR10 testing purpose, customers are free to assign MK15 channel mappings through SIYI TX app.

- Channel 7 = Left Dial (Reversed)
- Channel 8 = Right Dial
- Channel 12 = Button D

In SIYI PC Assistant, map “Yaw” function to channel 7 and “Pitch” to channel 8, “Center” to channel 12.

Then, if you operate the left dial on MK15 remote controller, ZR10 gimbal will rotate around yaw axis. If you operate the right dial, the gimbal will rotate around pitch axis. Press button D and gimbal will center automatically.

#### Mark

Hold the dial from its center position, ZR10 gimbal will rotate till reaching its max or min position. Longer it is away from its center position, faster the gimbal rotates.

### 3.1.3 Zoom and Focus (Taking an Example of MK15 Switches)

Below are the MK15 channel mapping settings for ZR10 testing purpose, customers are free to assign MK15 channel mappings through SIYI TX app.

- Channel 13 = Left Switch SA
- Channel 14 = Left Switch SB
- Channel 11 = Button C

In SIYI PC Assistant, map “Zoom” function to channel 13 and “Focus” to channel 14, “Auto Focus” to channel 11.

Then, if you operate the SA switch on MK15 remote controller, ZR10 camera will zoom in or zoom out, optical zoom from 1X to 10X, digital zoom from 10X to 30X. If you operate the SB switch, ZR10 camera will focus from 5 mm to 47 mm.

Press button C and ZR10 camera will focus automatically.

### **3.1.4 Photography and Video Recording (Taking an Example of MK15 Buttons)**

Below are the MK15 channel mapping settings for ZR10 testing purpose, customers are free to assign MK15 channel mappings through SIYI TX app.

- Channel 9 = Button A
- Channel 10 = Button B

In SIYI PC Assistant, map “Photo” function to channel 13 and “Record” to channel 14.

Then, if you operate button A on MK15 remote controller, ZR10 camera will take a

picture. If you operate button B, ZR10 camera will start or stop video recording.

## **Mark**

Before taking a picture or recording video with ZR10 gimbal camera, it is necessary to insert TF card into ZR10.

### **3.3 UART / UDP Control**

ZR10 gimbal camera opens control and function protocol for all customers, welcome to contact SIYI Technology directly for SDK files.

## 4 VIDEO OUTPUT

ZR10 gimbal camera supports multiple ways of outputting video stream through the Ethernet video port.

### 4.1 Output and Display Video Stream on MK15 Smart Controller

ZR10 gimbal camera can connect to MK15 air unit directly, then the video will be displayed in SIYI FPV app after binding MK15 air unit to MK15 remote controller. Please refer to Chapter 3.1 in this manual for details.

### 4.2 Output Video Stream through HM30 Full HD Image Transmission System

ZR10 gimbal camera can connect to HM30 air unit directly, then the video will be displayed in SIYI FPV app or other methods that HM30 supports after binding HM30 air unit to HM30 ground unit.

#### Preparation

It is necessary to prepare the tools, firmware, and software below before outputting ZR10 video stream in this way.

- HM30 Full HD Image Transmission System

- ZR10 Gimbal Camera

### **Mark**

Above products can be purchased from SIYI directly or from SIYI authorized dealers.

- ZR10 SIYI Video Cable

### **Mark**

Above tools come with ZR10 package.

- SIYI FPV App (v2.5.393 and newer version)

### **Mark**

Above software can be downloaded from ZR10 product page on SIYI official website.

## **Steps**

1. Power HM30 air unit and bind it with HM30 ground unit.
2. Use the ZR10 SIYI Video Cable to connect HM30 air unit's video port with ZR10 gimbal camera's video port.
3. Update SIYI FPV App on your Android device to v2.5.393 or newer version.
4. Run SIYI FPV app, go to "Settings – Camera IP", and select "SIYI Camera 1" (when IP addresses are 192.168.144.25) or "SIYI Camera 2" (when IP addresses

are 192.168.144.26), then it will display ZR10 video stream, and the gimbal rotation and camera functions can be controlled by Android device touchscreen.

### 4.3 Output Video Stream to Third-Party Image Transmission Systems

ZR10 gimbal camera supports output video stream to any third-party image transmission systems which provide Ethernet port and are compatible with RTSP video stream.

Before outputting ZR10 video stream in this way, it is necessary to prepare the video cable for connection between ZR10 gimbal camera and the image transmission system.



#### **CAUTION**

ZR10 video port's "RX-" pinout should connect to the image transmission system video port's "RX-" pinout, and "RX+" pinout to "RX+" pinout. Do not cross the pinouts, otherwise it will cause damage to the device.

ZR10 gimbal camera's working temperature is from 11 to 25.2 V, please make sure that the power voltage input is in the range before wiring.

#### **Steps**

1. Power the air unit of the image transmission system and bind it with the ground unit.
2. Use the video cable to connect ZR10 gimbal camera's video output port and the image transmission system's video input port.
3. Open video display software and input ZR10 gimbal camera's RTSP addresses (rtsp://192.168.144.25:8554/main.264), if the video displays normally, connection is successful.

#### **4.4 Solutions to No Image**

If ZR10 gimbal camera failed to output video or the video stream cannot be displayed properly, please follow the steps below to investigate possible reasons.

1. Confirm if the image transmission system ground unit is bound with the air unit and confirm if the camera is connected to the air unit.
2. Open "SIYI FPV" app and check if the Camera IP is "SIYI Camera 1" (when ZR10 IP addresses are 192.168.144.25) or "SIYI Camera 2" (when ZR10 IP addresses are 192.168.144.26).
3. Run SIYI PC Assistant on Windows computer and connect to ZR10 gimbal camera. Check if the current IP addresses of ZR10 gimbal camera is "192.168.144.25" or "192.168.144.26". If not, please re-configure the IP addresses.

**Mark**

In SIYI FPV App’s Camera IP menu, customers can also input the full RTSP addresses of ZR10 gimbal camera to display video stream.

If the video stream still does not display, please follow the steps below and make a deep investigation according to the video output mode and the video display device you use.

**4.4.1 Video Output to An Android Device**

1. Input the ZR10 gimbal camera’s default IP addresses “192.168.144.25” in the “Ping Tools” app and check if the network communication is successful. If there is a response, then check if the RTSP address in the SIYI FPV app is correct.



Successful Network Communication



### Network Communication Failed

2. If the network communication is failed, then please check if the communication between the image transmission system's ground unit and the air unit is successful. If it is, then please check if the video cable between ZR10 camera and the image transmission system's air unit is good, and if the voltage input is in normal range.

#### 4.4.2 Video Output to A Windows Device

1. Use the "Win + R" key combo to wake up the "Run" program and input the command "cmd".

```

管理员: C:\Windows\system32\cmd.exe
Microsoft Windows [版本 10.0.19042.804]
(c) 2020 Microsoft Corporation. 保留所有权利。

C:\Users\Administrator>ping 192.168.144

正在 Ping 192.168.0.144 具有 32 字节的数据:
Control-C
^C
C:\Users\Administrator>ping 192.168.144.25

正在 Ping 192.168.144.25 具有 32 字节的数据:
来自 192.168.144.25 的回复: 字节=32 时间=9ms TTL=64
来自 192.168.144.25 的回复: 字节=32 时间=3ms TTL=64
来自 192.168.144.25 的回复: 字节=32 时间=4ms TTL=64
来自 192.168.144.25 的回复: 字节=32 时间=3ms TTL=64

```

### Successful Network Communication

```

管理员: C:\Windows\system32\cmd.exe

正在 Ping 192.168.144.25 具有 32 字节的数据:
Control-C
^C
C:\Users\Administrator>ping 192.168.144.25

正在 Ping 192.168.144.25 具有 32 字节的数据:
请求超时。
请求超时。
来自 192.168.144.153 的回复: 无法访问目标主机。
来自 192.168.144.153 的回复: 无法访问目标主机。

192.168.144.25 的 Ping 统计信息:
    数据包: 已发送 = 4, 已接收 = 2, 丢失 = 2 (50% 丢失),
C:\Users\Administrator>

```

### Network Communication Failed

- Input the ZR10 gimbal camera's default IP addresses "192.168.144.25" and press the "Enter" key to check if communication is successful. If it is successful, please check if the RTSP addresses in the RTSP player is correct or try to switch to other video players.



3. If the network communication is failed, then please check if the communication between the image transmission system’s ground unit and the air unit is successful. If it is, then please check if the video cable between ZR10 camera and the image transmission system’s air unit is good, and if the voltage input is in normal range.

**Mark**

If you have done investigation by following all steps above, but the reason is still not located, please contact your dealer or contact SIYI Support immediately.

### 4.5 Common IP Addresses

ZR10 Gimbal Camera’s Default IP Addresses: 192.168.144.25

ZR10 Gimbal Camera’s Default RTSP Addresses:

rtsp://192.168.144.25:8554/main.264

SIYI FPV App’s “SIYI Camera 1” IP Addresses: 192.168.144.25

SIYI FPV App’s “SIYI Camera 2” IP Addresses: 192.168.144.26

## 5 SIYI FPV APP

SIYI FPV is an Android application developed by SIYI to configure multiple SIYI devices for image transmission settings, camera settings, video stream display, and link status monitor.

### **Mark**

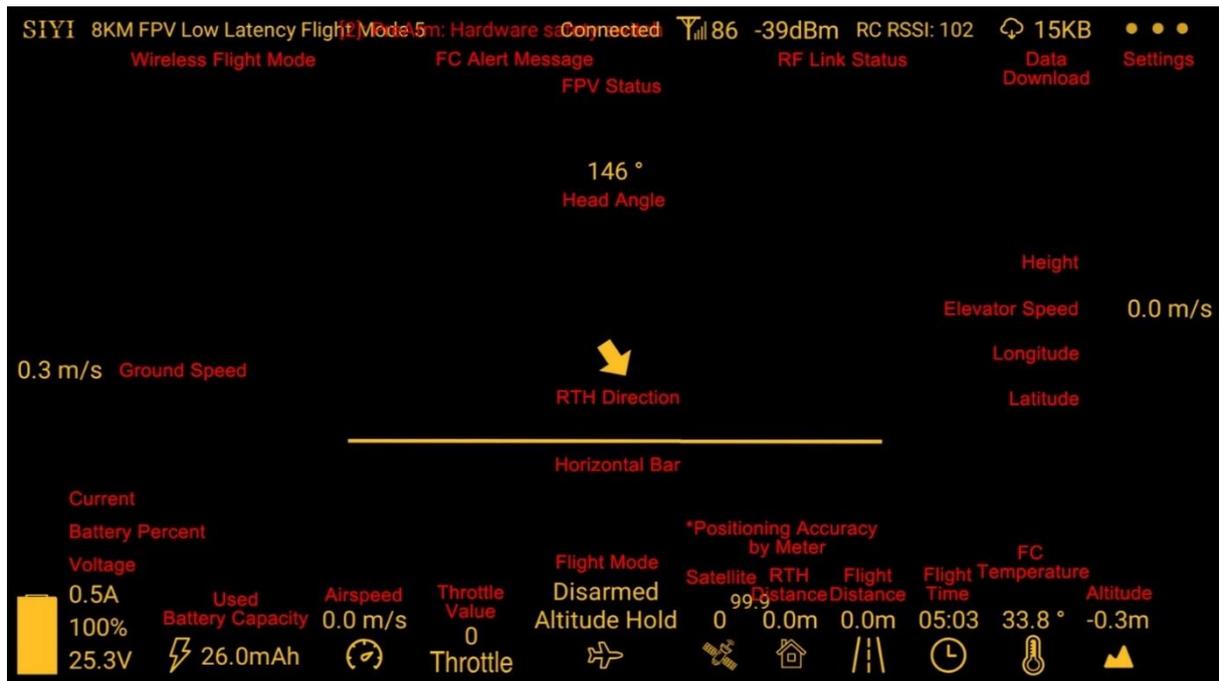
The manual is edited based on SIYI FPV App v2.5.393.

SIYI FPV App can be download from the ZR10 product page on SIYI official website.

SIYI FPV App compatible SIYI devices.

- MK15 Mini HD Handheld Smart Controller
- MK15E Mini HD Handheld Smart Controller
- HM30 Full HD Image Transmission System
- ZR10 2K QHD 30X Hybrid Zoom Gimbal Camera

## SIYI FPV App OSD Information Definition

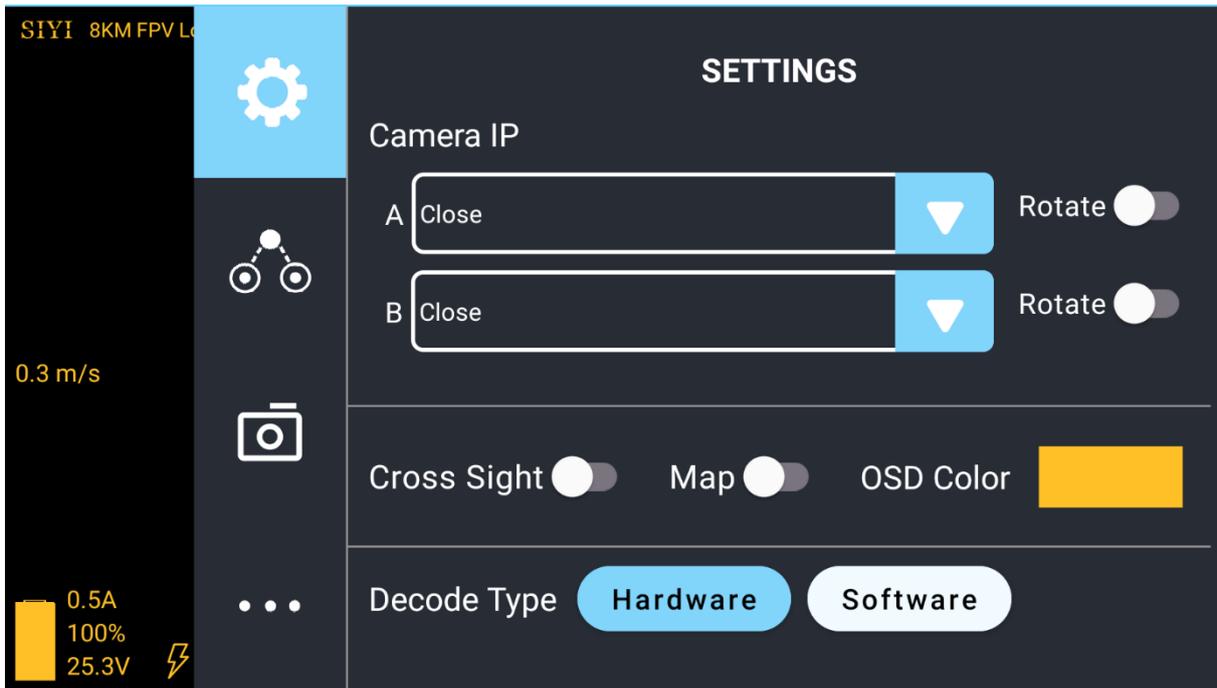


## SIYI FPV Camera Function Icon Definition



## 5.1 Settings

In the “Settings” page, you can configure camera IP Addresses, configure application interface, switch decoding type.



### About Settings

**Camera IP:** Select SIYI Camera 1 and SIYI Camera 2, or input camera RTSP addresses manually, or disable image. The “Rotate” buttons can rotate the image in 180 degrees.

**Cross Sight:** Display a cross sight in the center of the image.

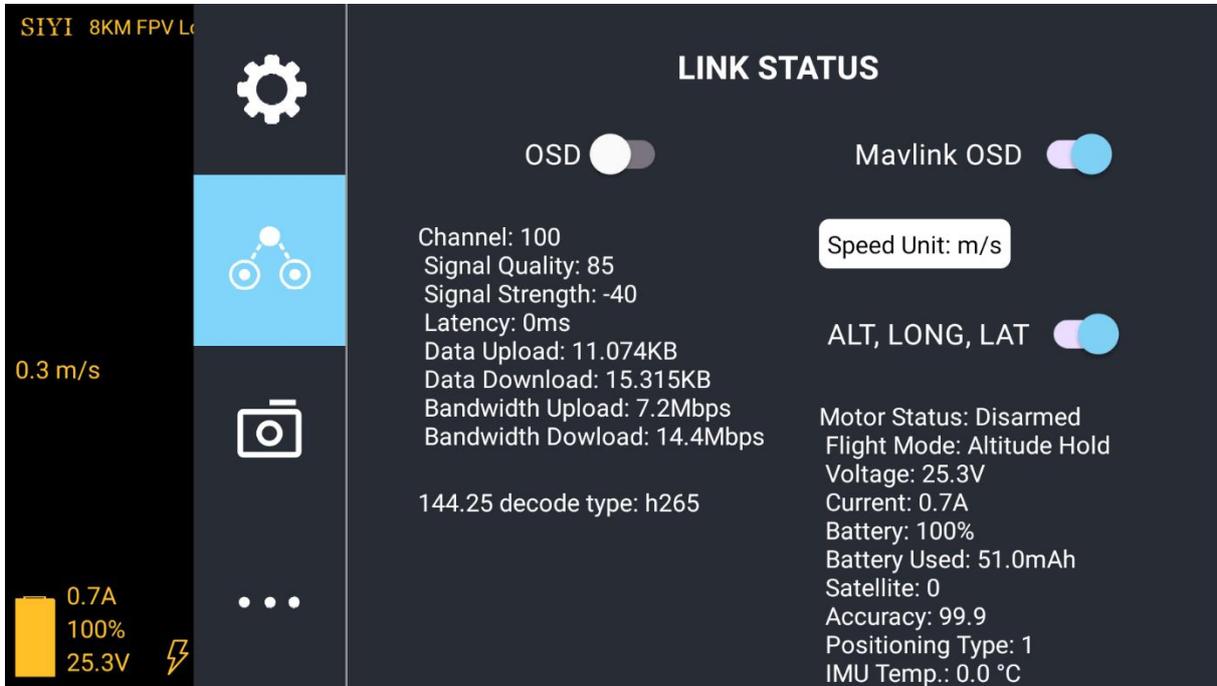
**Map:** Display the flight map at the left-bottom corner of the app.

**OSD Color:** Adjust the color of all OSD information.

**Decoding Type:** Switch between “Hardware Decoding” and “Software Decoding”. Please refer to your video input device to choose the decoding type with the best performance.

## 5.2 Link Status

Display the link status directly over the FPV image.



### About Link Status

OSD: Enable / disable standard OSD information.

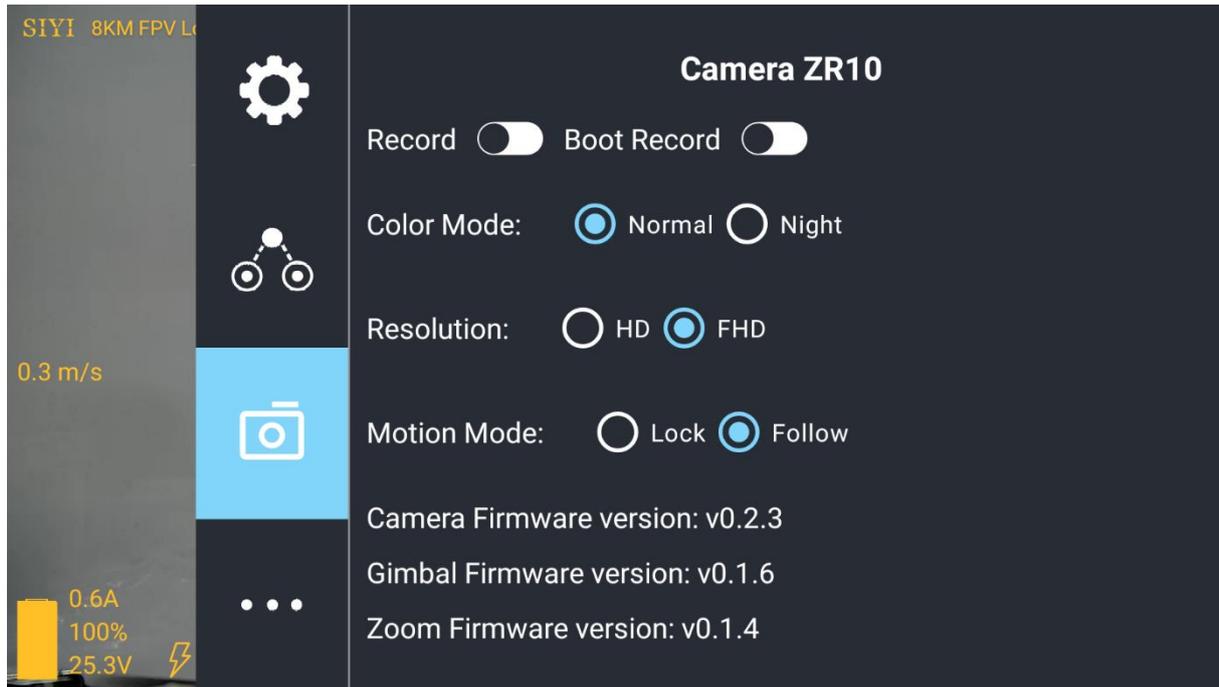
Mavlink OSD: Enable / disable Mavlink OSD information.

Speed Unit: Switch speed unit between meter per seconds and kilometer per hour.

Longitude and Latitude: Enable / disable information.

## 5.3 Gimbal Camera

Configure the basic functions for ZR10 gimbal camera.



## About Gimbal Camera

**Record:** Turn on / off video recording by TF card.

**Auto Record:** Turn on / off automatically video recording by TF card on gimbal camera start.

**Color Mode:** Switch gimbal camera's color mode between Daylight and Night Vision.

**Resolution:** Switch camera real-time video streaming resolution between HD (720p) and Full HD (1080p).

**Motion Mode:** Switch gimbal motion mode between Lock and Follow. Under Lock mode, when the aircraft is turning around yaw axis, gimbal won't follow turning until reaching to its limit position. Under Follow mode, gimbal will follow the aircraft to turn around yaw axis.

**Camera Firmware Version:** Display the current camera firmware version.

**Gimbal Firmware Version:** Display the current gimbal firmware version.

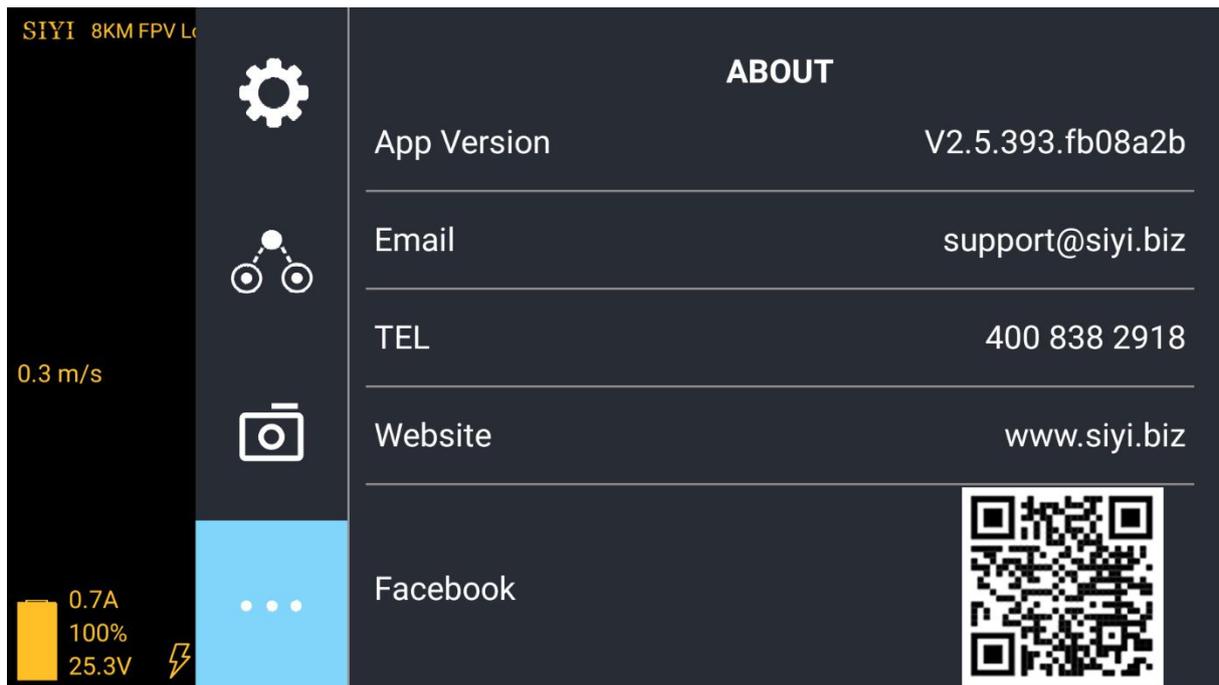
**Zoom Firmware Version:** Display the current gimbal firmware version.

## Mark

After switching camera resolution, the gimbal camera should be restarted to implement the change.

## 5.4 About SIYI FPV

Displays the software version of SIYI FPV and common contact information of SIYI Technology.



## 6 Firmware Upgrade and Configuration

SIYI PC Assistant is a Windows software developed by SIYI to configure almost all SIYI devices for remote controller channels settings, firmware update, and gimbal camera configuration.

### **Mark**

The manual is edited based on SIYI PC Assistant v1.2.8.

### 6.1 Gimbal / Zoom Firmware Update

ZR10 gimbal camera can be connected to SIYI PC Assistant for gimbal firmware and zoom firmware update.

Before upgrading, it is necessary to prepare the tools, software, and firmware below.

- SIYI PC Assistant (v1.2.8 or newer version)
- ZR10 gimbal firmware
- ZR10 zoom firmware

 **Mark**

Above software and firmware can be downloaded from the ZR10 product page on SIYI Official website (<http://siyi.biz/>) or from the ZR10 product page in SIYI Official Store (<https://shop.siyi.biz/products/zr10>) or from the ZR10 Google Drive Link (<https://drive.google.com/drive/folders/1Vl2ow8xj42vGH4rgEncbDSgGWji8Jkpy?usp=sharing>) or got from your dealer.

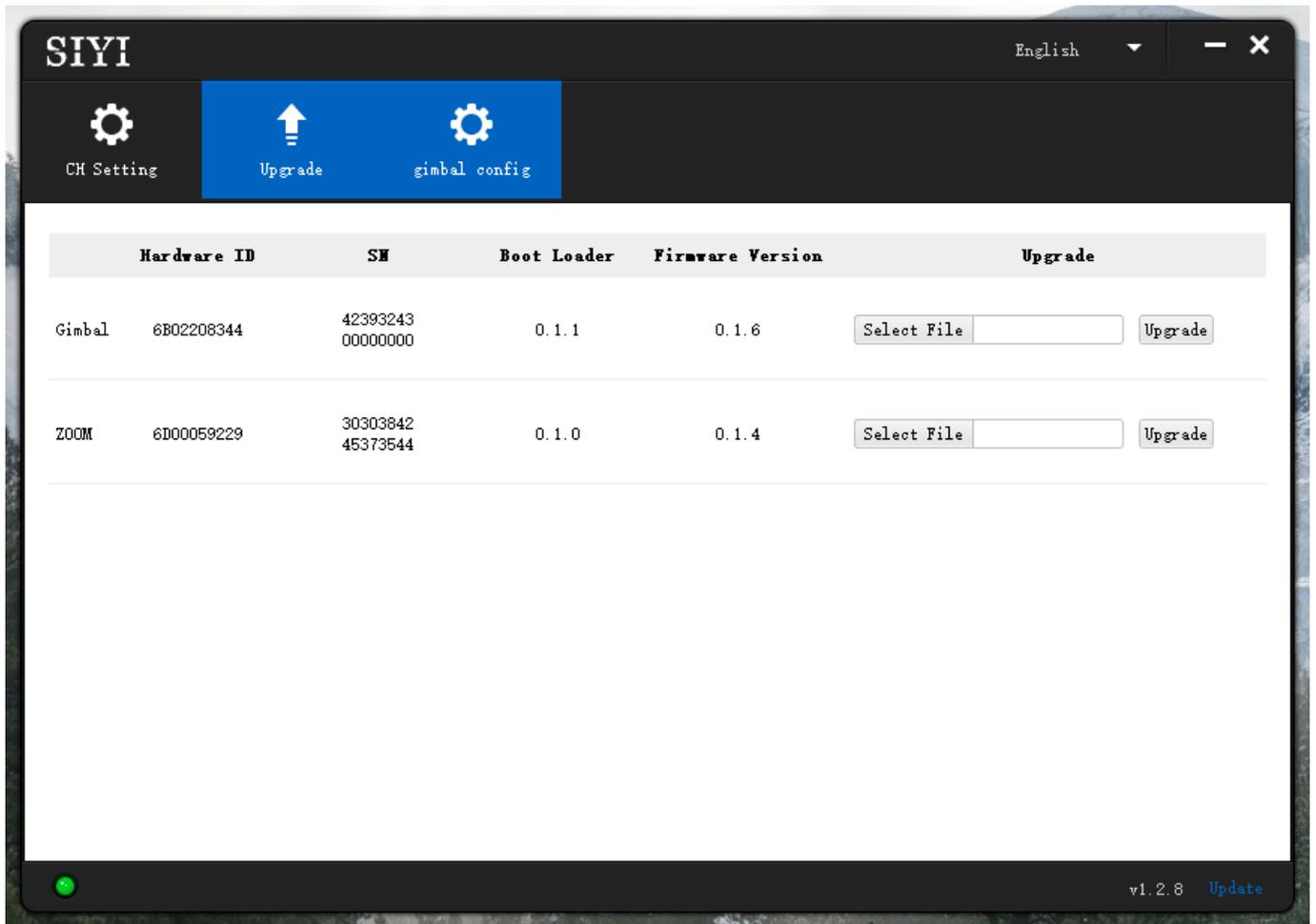
- Cable (USB-C to USB-A)

 **Mark**

Customers should prepare the above tools.

### **Firmware Upgrade Steps**

1. Install “SIYI PC Assistant” on your Windows device.
2. Use the USB-C to USB-A cable to connect the Windows device’s USB-A port to ZR10 gimbal camera’s USB-C port.
3. Run “SIYI PC Assistant” and switch to “Upgrade” page to check ZR10 gimbal camera’s current gimbal firmware and zoom firmware version.



4. If the gimbal or zoom firmware is not the latest, then click the “Select File” button in the “Gimbal” or “Zoom” line to import the latest firmware. Then click “Upgrade” and wait till it is “100%” finished.

 **Mark**

Before updating any firmware, the gimbal camera should be powered.

## 6.2 Camera Firmware Update

ZR10 gimbal camera can use TF card for camera firmware update.

Before upgrading, it is necessary to prepare the tools, software, and firmware below.

- TF card

### Mark

Customers should prepare the above tools.

- ZR10 camera firmware

### Mark

Above software and firmware can be downloaded from the ZR10 product page on SIYI Official website (<http://siyi.biz/>) or from the ZR10 product page in SIYI Official Store (<https://shop.siyi.biz/products/zr10>) or from the ZR10 Google Drive Link (<https://drive.google.com/drive/folders/1Vl2ow8xj42vGH4rgEncbDSgGWji8Jkpy?usp=sharing>) or got from your dealer.

## Firmware Upgrade Steps

1. Save ZR10 camera firmware's ".bin" file to the TF card's root directory and do not change the file name.

名称	修改日期	类型	大小
 ZR10_UpgradeSD.bin	2022/7/5 16:16	BIN 文件	12,085 KB

2. Restart ZR10 gimbal camera and the camera firmware will be flashed automatically.
3. Run SIYI FPV app or SIYI PC Assistant software to check if the camera firmware is updated.

## 6.3 Gimbal Camera Configuration

ZR10 gimbal camera can be connected to SIYI PC Assistant for gimbal control channel and camera specs configuration.

### 6.3.1 Gimbal Camera Control Channels

The “Channel Config” menu under “Gimbal Config” menu can config the below gimbal camera functions to up to 16 channels and an idle channel (disabled).

- Auto Focus
- Zoom
- Focus
- Yaw
- Pitch
- Center
- Color Mode
- Photography
- Video Record
- HDR
- Gimbal Motion Mode

### **6.3.2 Camera Specs**

The “Gimbal Config” menu also supports checking gimbal camera’s current camera firmware, switching camera resolution, and configuring camera IP addresses.

## 8 After-sale Service

If there were any questions or problems using SIYI Technology's product, you can always try to send an email to SIYI Official A/S Center ([support@siyi.biz](mailto:support@siyi.biz)) or consult your sales representative or dealer for answers or solutions.

### 8.1 Repair Service

If your purchased SIYI products cannot work properly, please contact SIYI Official A/S Center for consulting.

Usually there are two situations for acquiring repair service.

- Product Defect
- Product Damage

SIYI products under the two situations can be sent back to SIYI for repairing. Defect products with valid warranty can be repaired for free. Defect products without valid warranty or damaged products should be charged of repair fees after repairing. Please refer to SIYI's Official A/S Quotation for detail.

## 8.2 Warranty

SIYI Technology guarantees that, subject to the following conditions, Return & Refund Service, Replacement Service, and Warranty Repair Service can be requested. Please contact SIYI directly ([support@siyi.biz](mailto:support@siyi.biz) or your sales manager) or authorized SIYI dealer for more detail.

### 8.2.1 7-Day Return & Refund

You can request Return & Refund Service:

Within seven (7) days of receiving a product if the product has no manufacturing defect, has not been activated and is still in new or like-new condition.

Within seven (7) days of receiving a product if the product has a manufacturing defect.

Return & Refund Service will not be provided where:

It is requested beyond seven (7) calendar days of receiving a product.

A product sent to SIYI for Return & Refund Service does not include all original accessories, attachments or packaging, or any item is not in new or like-new condition, i.e., with cracks, dents, or scratches.

A legal proof of purchase, receipt or invoice is not provided or is reasonably believed to have been forged or tampered with.

Any fault or damage of the product is caused by unauthorized use or modification of the product, including exposure to moisture, entry of foreign bodies (water, oil, sand, etc.) or improper installation or operation.

Product labels, serial numbers, waterproof marks, etc. show signs of tampering or alteration.

Damage is caused to the product by uncontrollable external factors, including fire, floods, high winds, or lightning strikes.

A product is not delivered to SIYI within seven (7) calendar days after Return & Refund Service confirmation is sent from SIYI.

Other circumstances stated in this policy.

### **8.2.2 15-Day Replacement**

You can request Replacement Service:

Within fifteen (15) calendar days of receiving the product if the product has sustained a substantial damage in transit, provided always that the damage proof issued by the carrier can be provided to SIYI.

Within fifteen (15) calendar days of receiving the product if the product does not match the original description of the product in one or more significant respects.

Within fifteen (15) calendar days of receiving the product if the product suffers performance failure.

Replacement Service will not be provided where:

Service is requested more than fifteen (15) calendars days after receiving a product.

Legal proof-of-purchase, receipts, or invoices are not provided, or are reasonably believed to have been forged or tampered with.

A product sent to SIYI for replacement does not include all original accessories, attachments, and packaging, or contains items damaged by user error.

A product is found to have no defects after all appropriate tests are conducted by SIYI.

Any fault or damage of the product is caused by unauthorized use or modification of the product, including exposure to moisture, entry of foreign bodies (water, oil, sand, etc.) or improper installation or operation.

Damage is caused by uncontrollable external factors, including fires, floods, high winds, or lightning strikes.

Received product has not been sent back to SIYI seven (7) calendar days after replacement confirmation from SIYI.

Proof of damage during transit issued by the carrier cannot be provided.

Other circumstances stated in this policy.

### 8.2.3 1-Year Warranty Repair

You can request warranty repair service:

If a product does not function as warranted during the warranty period, you may obtain after-sales service by contacting SIYI's service center. You will need to provide a valid proof-of-purchase, receipt, or order number for the warranty service.

Charges may apply for services not covered by this Limited Warranty. Please contact SIYI for information specific to your location.

Please note that the warranty service is only available in the respective SIYI service regions where you purchased your SIYI product.

Warranty Repair service will not be provided where:

Crashes or fire damage caused by non-manufacturing factors, including but not limited to pilot errors.

Damage caused by unauthorized modification, disassembly, or shell opening not in accordance with official instructions or manuals.

Damage caused by improper installation, in correct use, or operation not in accordance with official instructions or manuals.

Damage caused by non-authorized service provider.

Damage caused by unauthorized modification of circuits and mismatch or misuse of the battery and charger.

Damage caused by operation in bad weather (i.e., strong winds, rain, sand/dust storms, etc.)

Damage caused by operating the product in an environment with electromagnetic interference (i.e., in mining areas or close to radio transmission towers, high-voltage wires, substations, etc.)

Damage caused by operating the product in an environment suffering from interference from other wireless devices (i.e., transmitter, video-downlink, Wi-Fi signals, etc.)

Damage caused by reliability or compatibility issues when using unauthorized third-party parts.

Damage caused by operating the unit with a low-charged or defective battery.

Products or parts with an altered identification label or from which the identification label has been removed.

**SIYI Technology (Shenzhen) Co., Ltd**

Business Inquiry: [info@siyi.biz](mailto:info@siyi.biz)

Phone: +86 400 838 2918

A/S Center: [support@siyi.biz](mailto:support@siyi.biz)