R1 / R1M

HD RECORDING FPV CAMERA USER MANUAL



V1.0

Oct 2022

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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

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.

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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℃) or too cold (under -20℃).

Not under direct sunshine or too dusty or too wet.

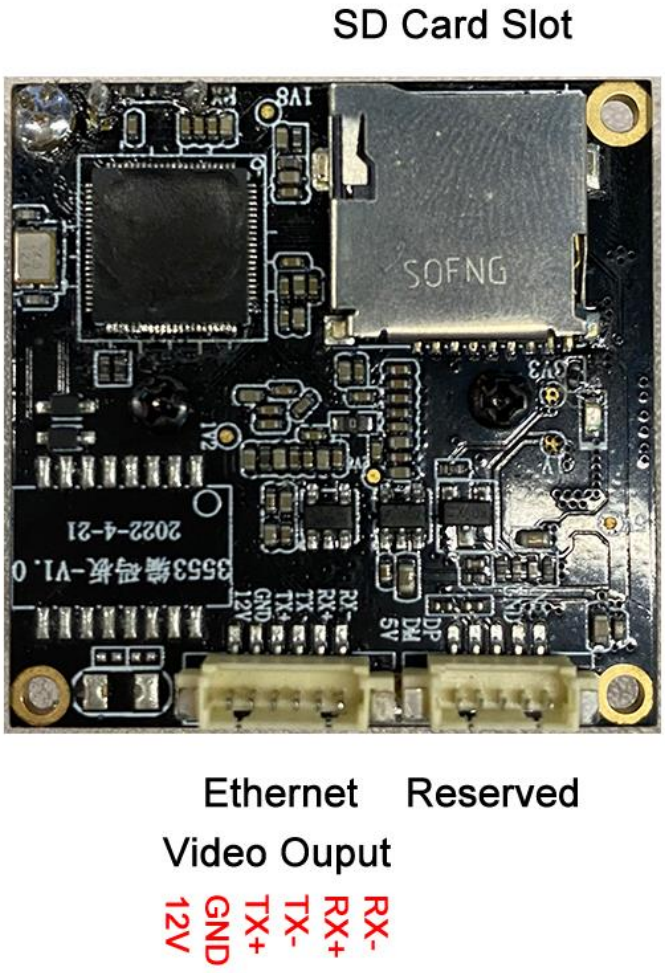
Not on an unstable holder which lacks solid supports or may cause vibration.

Not nearby steam or other heat sources.

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1 INTRODUCTION

1.1 Ports and Definitions



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1.2 Technical Specification

Overall

Video Output Port	Ethernet
Working Voltage	12 V
Power Consumption	3 W
Working Temperature	-10 ~ 50 ℃
Waterproof Level	IP4X
Dimension	42 x 42 x 25 mm
Weight	39 g

Camera

Image Sensor	1/2.9-inch
FOV	Diagonal: 90°, Horizontal: 80°
TF Card Recording Resolution	1080p (1920 x 1080) @ 30 fps 720p (1280 x 720) @ 30 fps
Video Storage Bitrate	12 Mbps
Supported File System	FAT32
Video File Format	H.264
Supported TF Card Type	MicroSD Class10, max 32 GB

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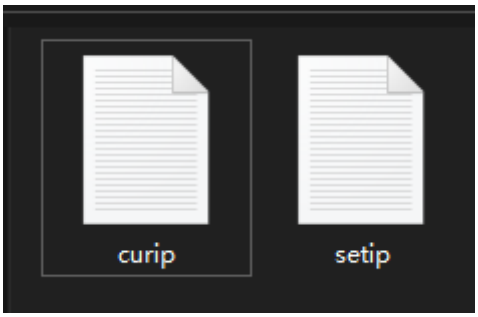
2 HOW TO CONFIGURE CAMERA

If it is the first time that you are going to configure the camera, please do flash the camera firmware once through SD card, so you can see the files for camera configuration in the SD card.

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Please refer to the chapter 6 of this manual for camera firmware update steps.

After flashing camera firmware by SD card, we will see two ".txt" files in the root category of the SD card.



"curip.txt" for checking the current IP addresses.

"setip.txt" for customers to change IP addresses.

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2.1 Check IP

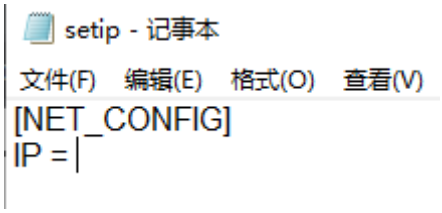
Open the “curip.txt” file, you will see the current IP addresses of the camera.



“192.168.144.25” is the factory default camera IP addresses.

2.2 Change IP

Open the “setip.txt” file, input the IP addresses you need after “IP = ”.





Then insert the SD card to the camera and restart the camera. After waiting for three to five minutes, the IP addresses will be flashed into the camera. Then we restart the camera again to finish changing IP addresses.

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When you are using R1/R1M recording camera with SIYI MK15 or HM30, please do configure its IP addresses within “192.168.144.X” and avoid conflicting with existing IP addresses in the link. For detail, please refer to the “Common IP Addresses” chapter in MK15 and HM30 user manual.

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3 VIDEO RECORDING

R1 / R1M recording camera support video recording function through “SIYI FPV” app.

When the SIYI FPV app is running, tap the “Record” button on the touchscreen can start video recording, and the “Record” button will change to “Recording” button.

Tap the “Recording” button will stop video recording.

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SD / TF card should be inserted to R1 / R1M recording camera before using recording function.

Please use v393 and above version of SIYI FPV app to experience video recording function.

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4 IMAGE TRANSMISSION AND DISPLAY

R1 / R1M recording camera is an Ethernet camera, it can connect to SIYI image transmission systems and third-party image transmission systems.

4.1 Connect to HM30 HD Image Transmission System

Connect the camera to HM30 air unit's video input port, then use mobile device to connect HM30 ground unit and run SIYI FPV app. In camera settings of SIYI FPV app, choose "SIYI Camera 1" or the default RTSP addresses. After powering on HM30 ground unit and air unit and binding them, we will see image from the camera in SIYI FPV app.

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HM30 HD Image Transmission System support multiple ways of displaying and outputting video stream. Please refer to the Chapter 6 of HM30 user manual for details.

4.2 Connect to MK15 Mini Handheld Smart Controller

Connect the camera to MK15 air unit's video input port, then turn on MK15 remote controller and run SIYI FPV app. In camera settings of SIYI FPV app, choose "SIYI Camera 1" or the default RTSP addresses. After powering on MK15 air unit and

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binding it to the remote controller, we will see image from the camera in SIYI FPV app.

4.3 Connect to Third-Party Image Transmission Systems

R1 / R1M recording camera can output video stream to any third-party image transmission systems which provide Ethernet port and are compatible with RTSP video stream.

Before using the camera in this way, it is necessary to prepare the video cable for connection between R1 / R1M recording camera and the image transmission system.

CAUTION

R1 / R1M video output 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.

R1 / R1M recording camera's working voltage is from 12 V DC, please make sure that the power voltage input is normal before wiring.

Steps

1. Power the air unit of the image transmission system and bind it with the ground unit.

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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 the 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 from R1 / R1M Recording Camera

If R1 / R1M recording 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 camera IP addresses are 192.168.144.25) or "SIYI Camera 2" (when camera IP addresses are 192.168.144.26).
3. Check if the current IP addresses of R1 / R1M recording camera is "192.168.144.25" or "192.168.144.26". If not, please re-configure the IP addresses.

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In SIYI FPV App's Camera IP menu, customers can also input the full RTSP addresses of

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R1 / R1M recording 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 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

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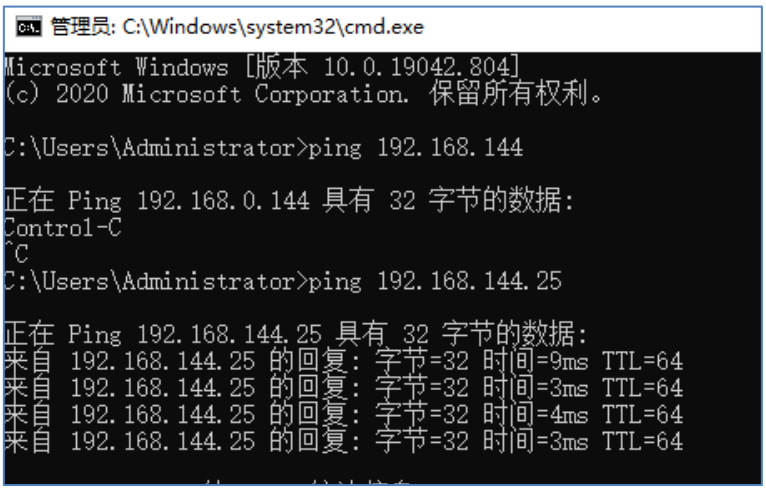
Network Communication Failed

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 the camera and the image transmission system's air unit is good, and if the voltage input is in normal range.

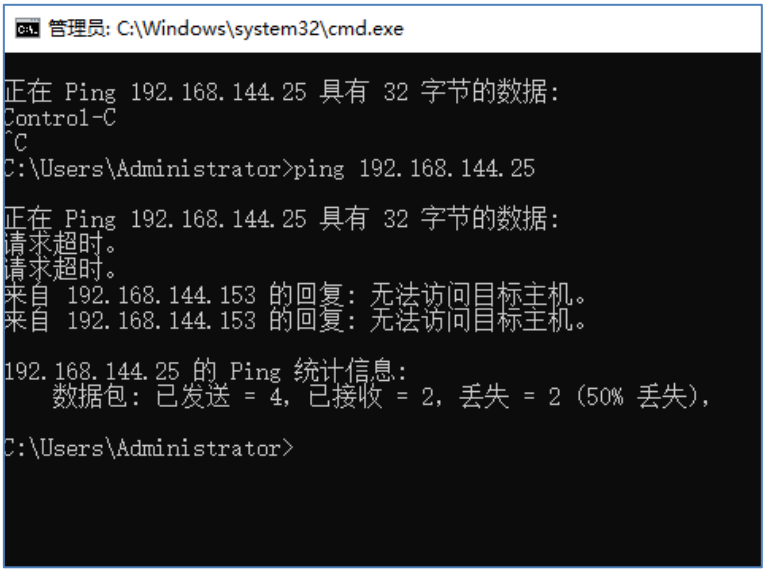
4.4.2 Video Output to A Windows Device

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

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Successful Network Communication



Network Communication Failed

2. Input the 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.

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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 the 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

R1 / R1M Recording Camera's Default IP Addresses: 192.168.144.25

R1 / R1M Recording 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

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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.

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The manual is edited based on SIYI FPV App v2.5.404.

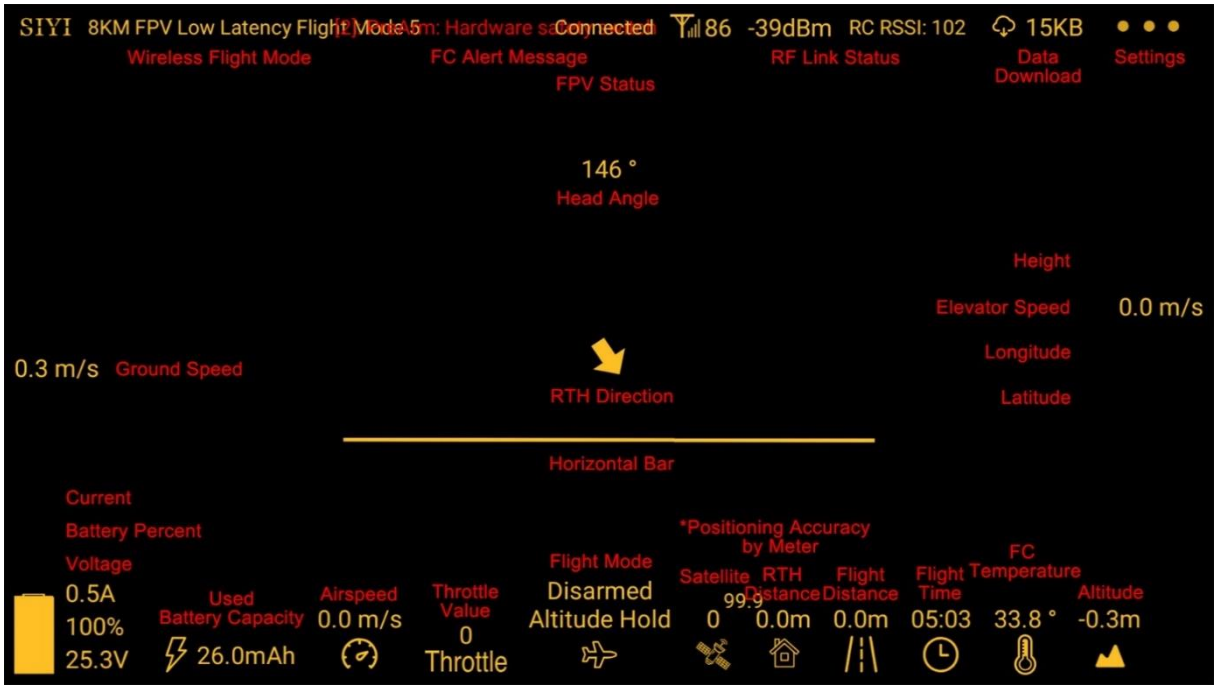
SIYI FPV App can be download from the SIYI official links.

SIYI FPV App compatible SIYI devices.

- MK15 / MK15E Mini HD Handheld Smart Controller
- HM30 Full HD Image Transmission System
- R1 / R1M HD Recording FPV Camera
- ZR10 2K QHD 30X Hybrid Zoom Gimbal Camera

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SIYI FPV App OSD Information Definition



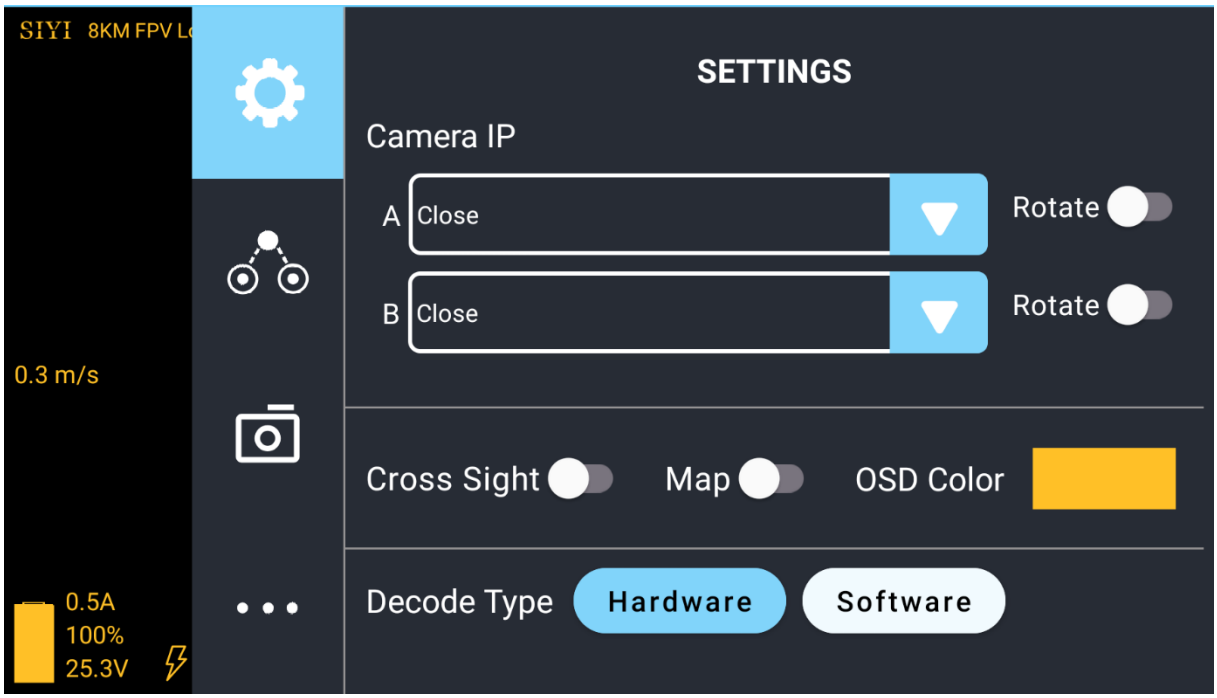
SIYI FPV Camera Function Icon Definition



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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.

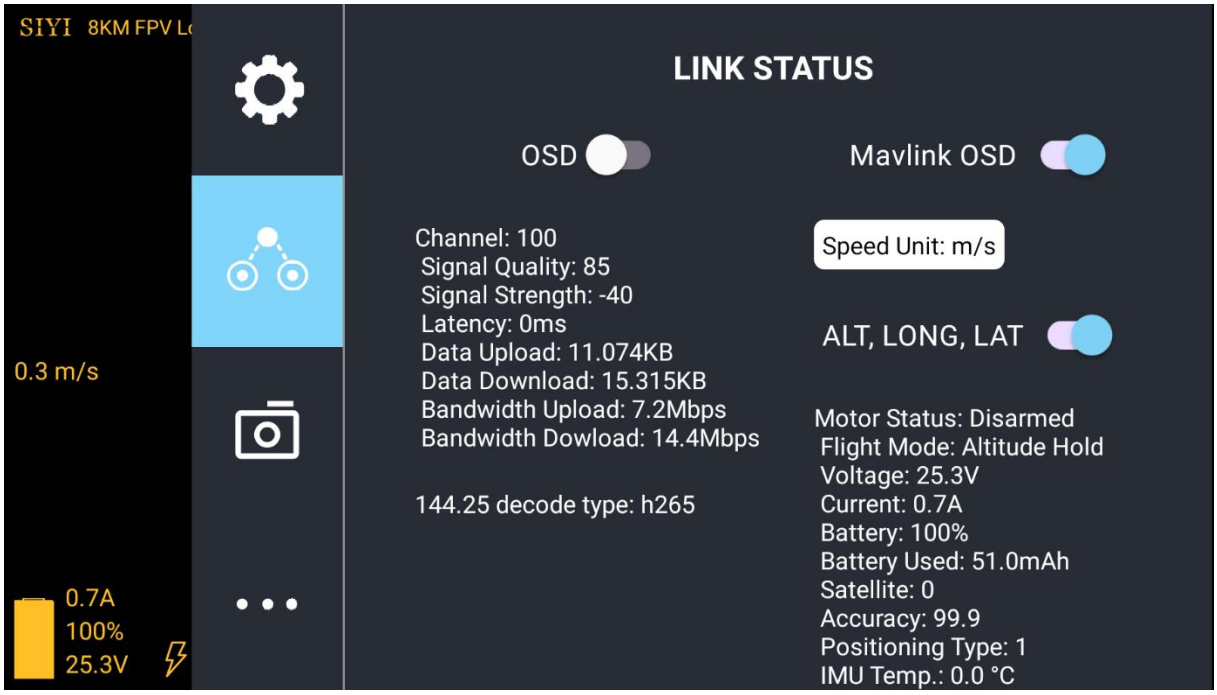
OSD Color: Adjust the color of all OSD information.

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.

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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.

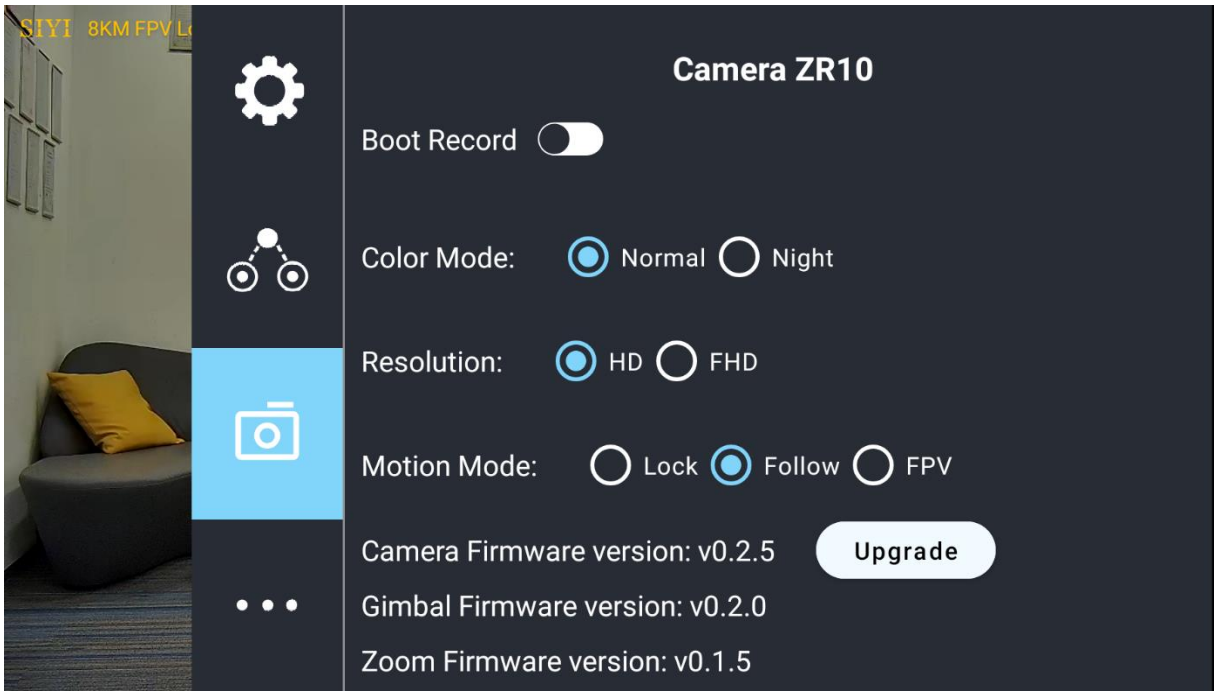
Speed Unit: Switch speed unit between meter per seconds and kilometer per hour.

Longitude and Latitude: Enable / disable information.

5.3 Gimbal Camera

Configure the basic functions for SIYI gimbal cameras and cameras.

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About Gimbal Camera

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 Mode, Follow Mode, and FPV Mode. Under Lock Mode, when the aircraft is rotating around yaw axis, gimbal won't follow to rotate until reaching to its limit position. Under Follow Mode, gimbal will follow the aircraft's rotation around yaw axis. Under FPV Mode, when the aircraft is rotating around yaw axis, gimbal won't follow to rotate until reaching to its limit position, and if the aircraft can rotate around roll axis, gimbal will follow.

Camera Firmware Version: Display the current camera firmware version.

Gimbal Firmware Version: Display the current gimbal firmware version.

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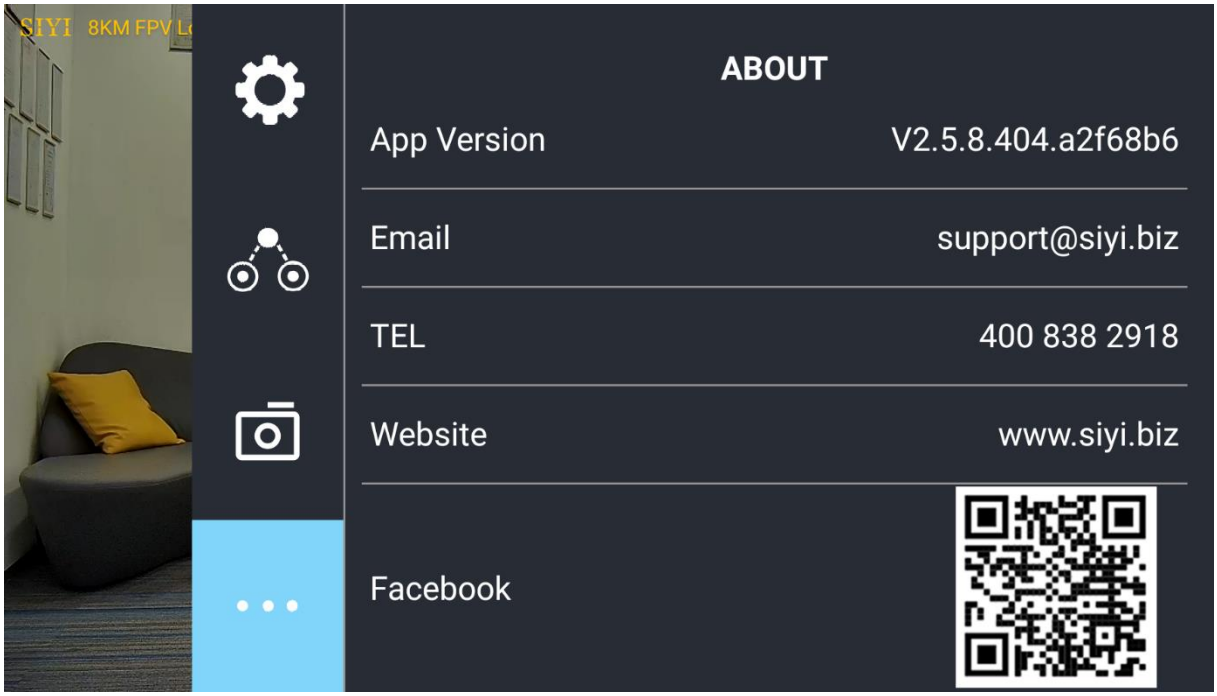
Zoom Firmware Version: Display the current gimbal firmware version.

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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.



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6 Firmware Upgrade and Configuration

R1 / R1M camera can use SD / TF card for camera firmware update.

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

- SD / TF card

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Customers should prepare the above tools.

- R1 / R1M camera firmware

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Above software and firmware can be downloaded from the R1 / R1M product page in SIYI Official Store (https://shop.siyi.biz), or from the R1 / R1M Google Drive Link, or got from your dealer.

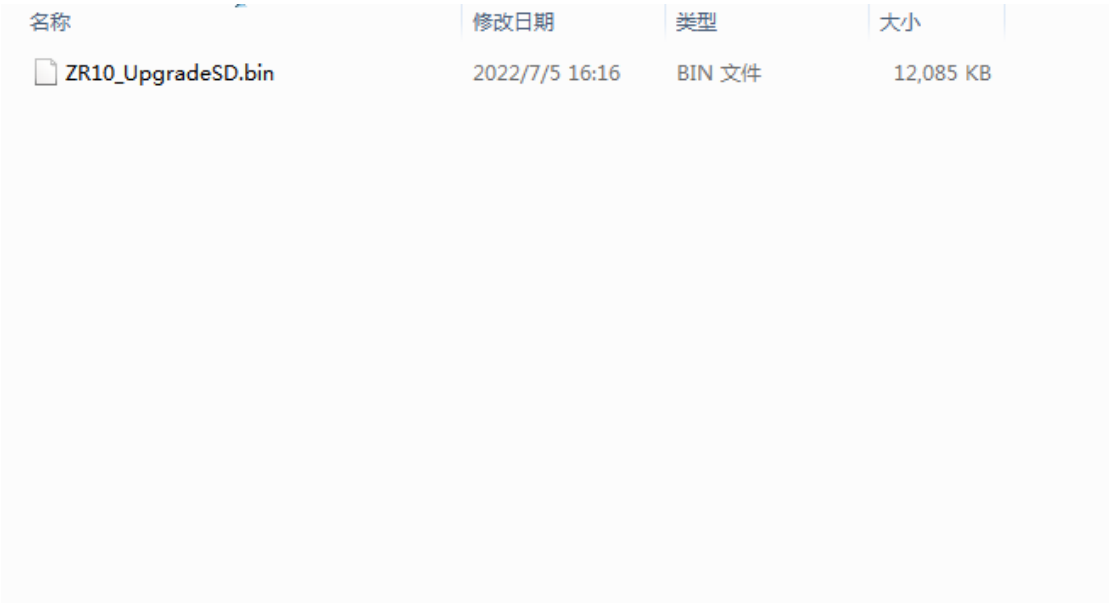
R1 / R1M Recording Camera Google Drive Link:

https://drive.google.com/drive/folders/169FRyJPVFci6Ojg7KgH23l6kyMi70ghG?usp=sharing

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Firmware Upgrade Steps

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



2. Restart the camera and wait for three to five minutes, camera firmware will be flashed automatically.

3. Run SIYI FPV app to check if the camera firmware is updated or check from the "curip.txt" file in the SD card just used.

7 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) or consult your sales representative or dealer for answers or solutions.

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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 or your sales manager) or authorized SIYI dealer for more detail.

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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.

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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.

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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:

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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.)

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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.

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A/S Center: support@siyi.biz

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