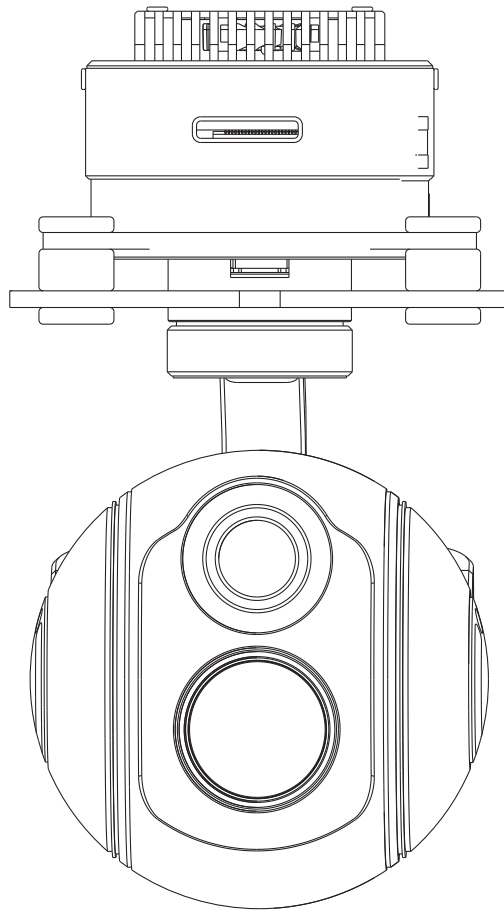


# RG8T Dual-Sensor Gimbal Camera

## Quick Start Guide and Disclaimer

V1.0 202512

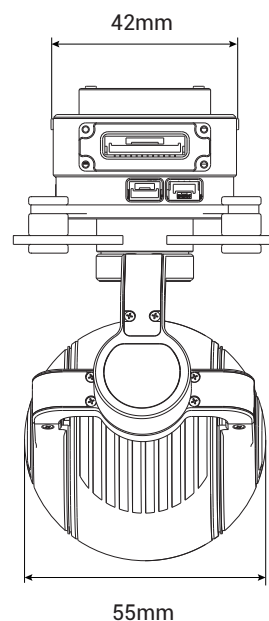
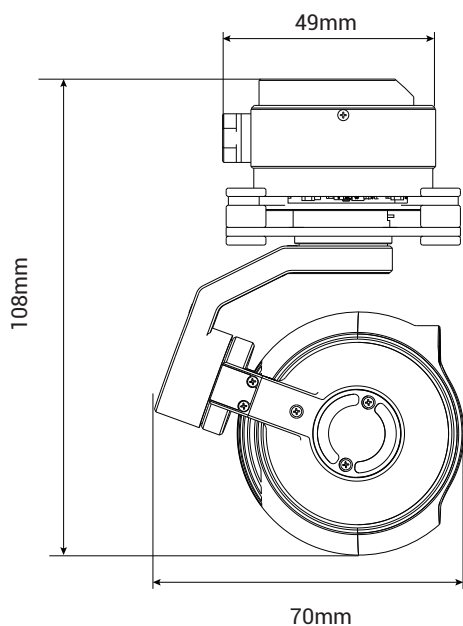


## 1.Product Overview

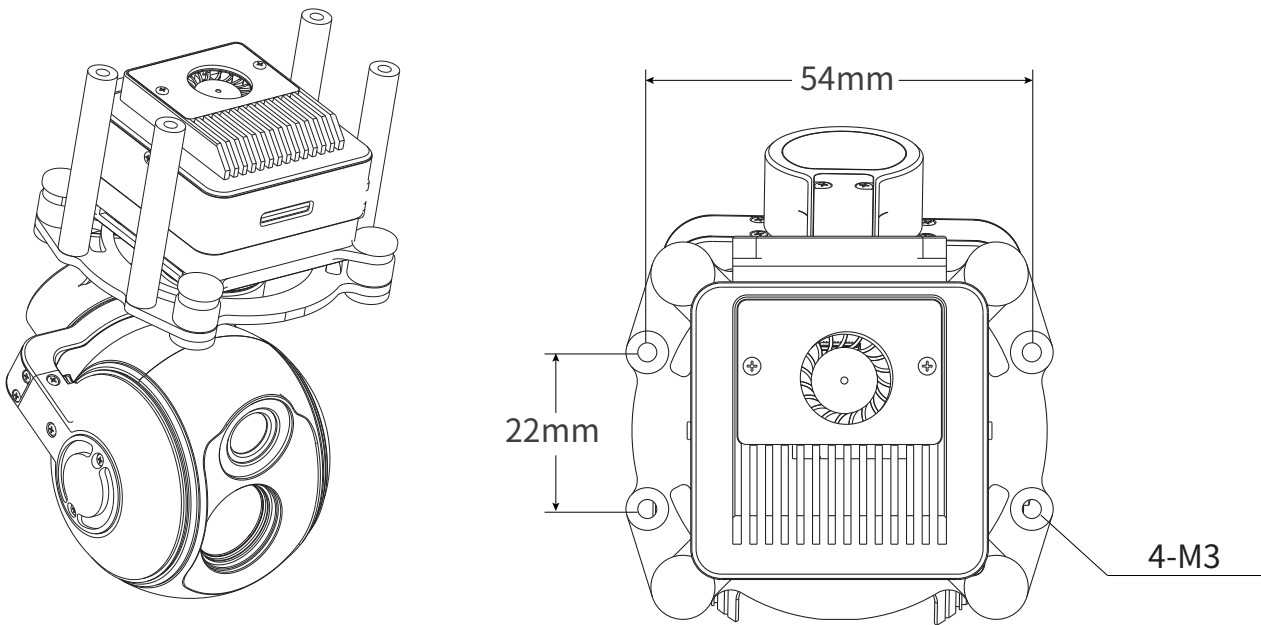
The RG8T is a dual-sensor tracking and recognition PTZ camera that integrates an infrared thermal imager and a compact visible-light camera. It weighs only 162 g. It supports multiple control methods, including serial port TTL, SBus, and network UDP. The camera delivers day/night surveillance capabilities and incorporates 4TOPS AI processing power for real-time personnel and vehicle recognition and tracking. Its lightweight design and flexible control interfaces make it a cost-effective security, industrial, and other application solution.



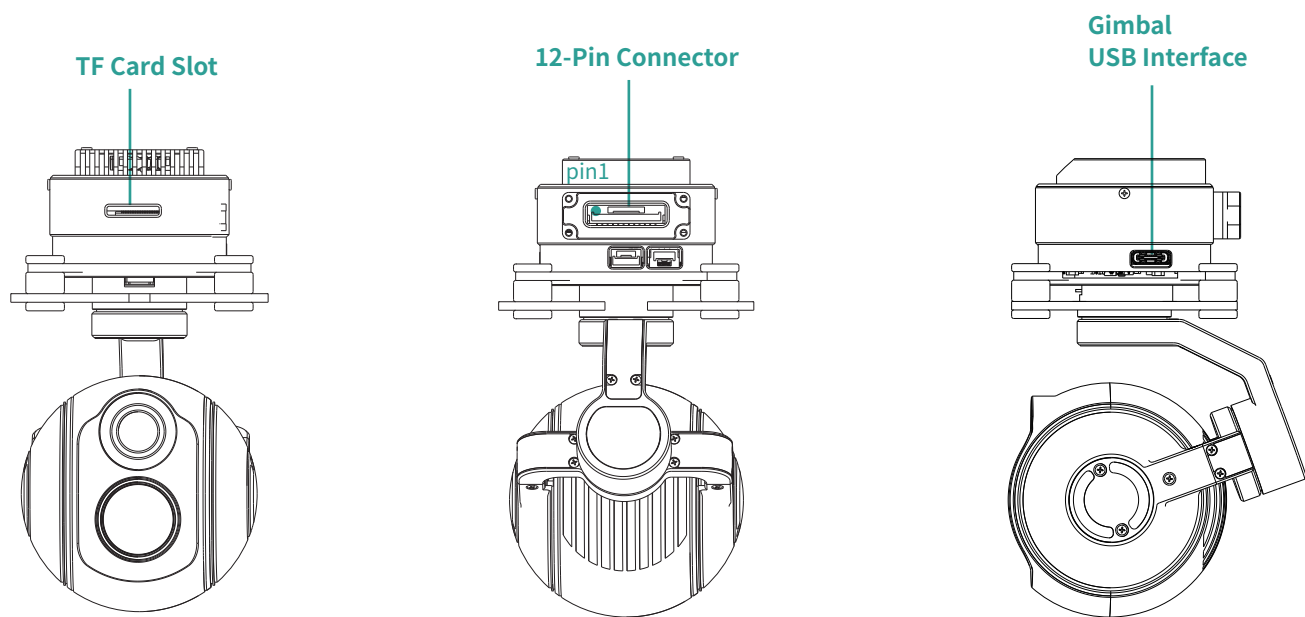
## 2.Gimbal External Dimensions (Unit: mm)



### 3. Installation Diagram



### 4.Product Hardware Interfaces



| Model                 | Interface Type    | Function                |
|-----------------------|-------------------|-------------------------|
| Gimbal USB            | USB Port          | Gimbal Upgrade Port     |
| Memory Card Interface | TF Card Interface | Store Photos and Videos |

| No. | Model                        | Interface Type          | Interface Definition | Function          |
|-----|------------------------------|-------------------------|----------------------|-------------------|
| 1   | 12PIN(GH1.25mm)<br>Connector | Power Interface         | GND                  | GND               |
| 2   |                              | Power Interface         | GND                  | GND               |
| 3   |                              | Power Interface         | 12V-18V              | Power Input       |
| 4   |                              | Power Interface         | 12V-18V              | Power Input       |
| 5   |                              | Communication Interface | T+                   | Network Interface |
| 6   |                              | Communication Interface | T-                   | Network Interface |
| 7   |                              | Communication Interface | R+                   | Network Interface |
| 8   |                              | Communication Interface | R-                   | Network Interface |
| 9   |                              | Communication Interface | SBUS                 |                   |
| 10  |                              | Communication Interface | GND                  |                   |
| 11  |                              | Communication Interface | TX                   | TTL Serial Port   |
| 12  |                              | Communication Interface | RX                   | TTL Serial Port   |

## 5.Gimbal Camera Parameter List

### Wide-angle Camera Parameter List

|                     |                         |
|---------------------|-------------------------|
| Sensor Size         | 1/2.8" CMOS             |
| Focal Length (Wide) | 8mm                     |
| Effective Pixels    | 8MP                     |
| Aperture (Wide)     | F1.6                    |
| FOV                 | H:42.2° V:23.4° D:48.8° |

## Thermal Camera Parameter List

|                    |                                             |
|--------------------|---------------------------------------------|
| Detector Type      | Uncooled VOx Infrared Focal Plane Detector  |
| Thermal Resolution | 640×512/1280×1024 Thermal Super-Resolution) |
| Pixel Pitch        | 12μm                                        |
| Frame Rate         | 25Hz 30Hz                                   |
| Spectral Band      | 8~14μm                                      |
| Focal Length       | 13.5mm                                      |
| FOV                | 31.9°×25.7°                                 |
| Aperture           | F1.0                                        |

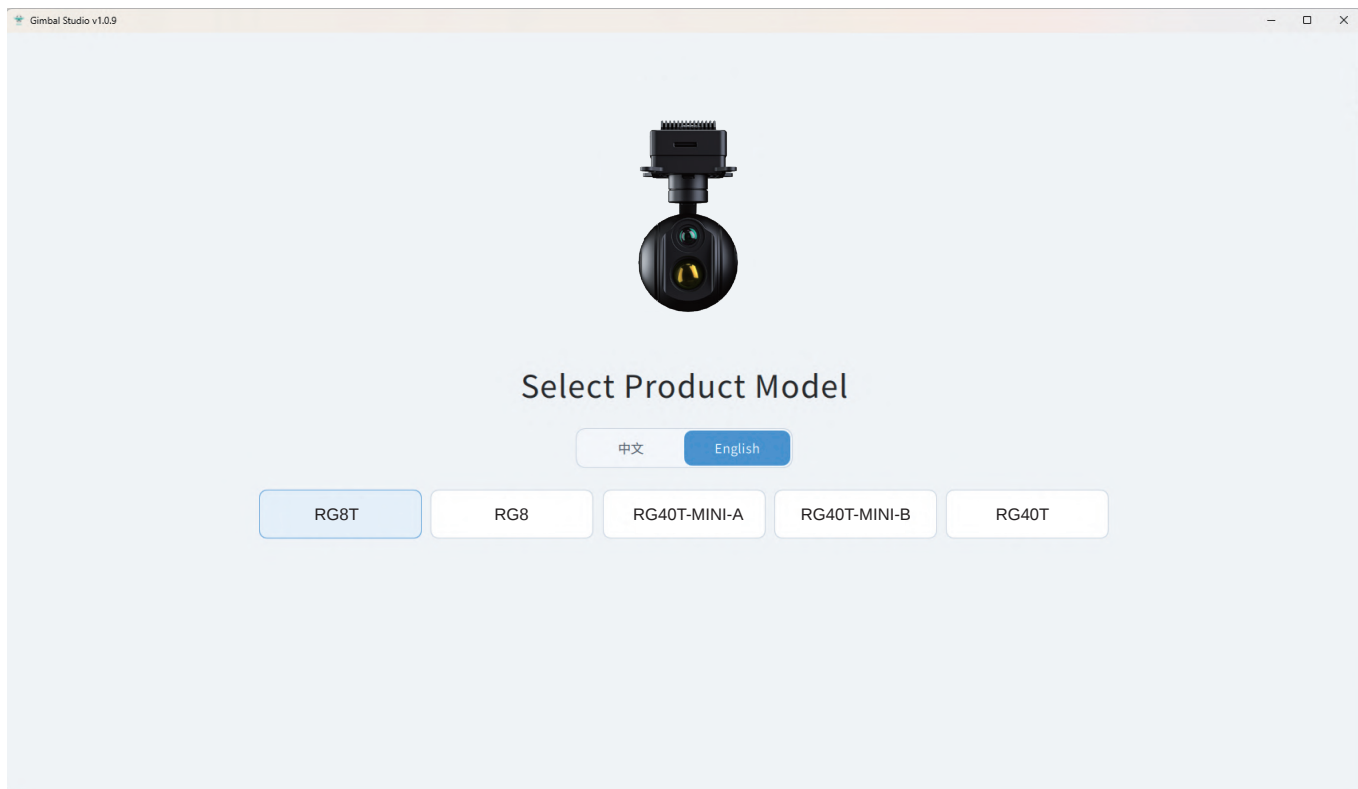
## Basic Parameter List

|                           |                                                                |
|---------------------------|----------------------------------------------------------------|
| Weight                    | 162g±5g                                                        |
| Operating Voltage         | 12V-18V                                                        |
| Number of Axes            | 3-Axis Mechanical Gimbal                                       |
| Software Limit Angle      | Pitch:-90° to +30°    Yaw:-120° to +120°"                      |
| Mechanical Range          | Pitch:-135° to +45°    Roll:-45° to +45°    Yaw:-135° to +135° |
| Max Control Speed         | 180°/S                                                         |
| Angular Vibration Range   | ±0.005°                                                        |
| Interface                 | Network Interface/TTL/sbus                                     |
| Gimbal Mode               | Recognition, Auto-Tracking                                     |
| Operating Temperature     | -40℃ ~+65℃                                                     |
| Communication Protocol    | Proprietary Protocol                                           |
| IP Rating                 | IP44                                                           |
| Power Consumption         | 8W                                                             |
| Hybrid Zoom               | 40x                                                            |
| Optical Zoom              | /                                                              |
| Visual Resolution         | 4K(Wide)                                                       |
| TF Card Photo Format      | JPG                                                            |
| TF Card Video Format      | MP4                                                            |
| Video Resolution          | 4K@30fps                                                       |
| Encoding Format           | H.264, H.265                                                   |
| AI Recognition & Tracking | Support                                                        |

## 6. Product Assistant Software Usage Guide

Please go to the official website "Download Center" to download the assistant software: <https://www.renovag.com/>

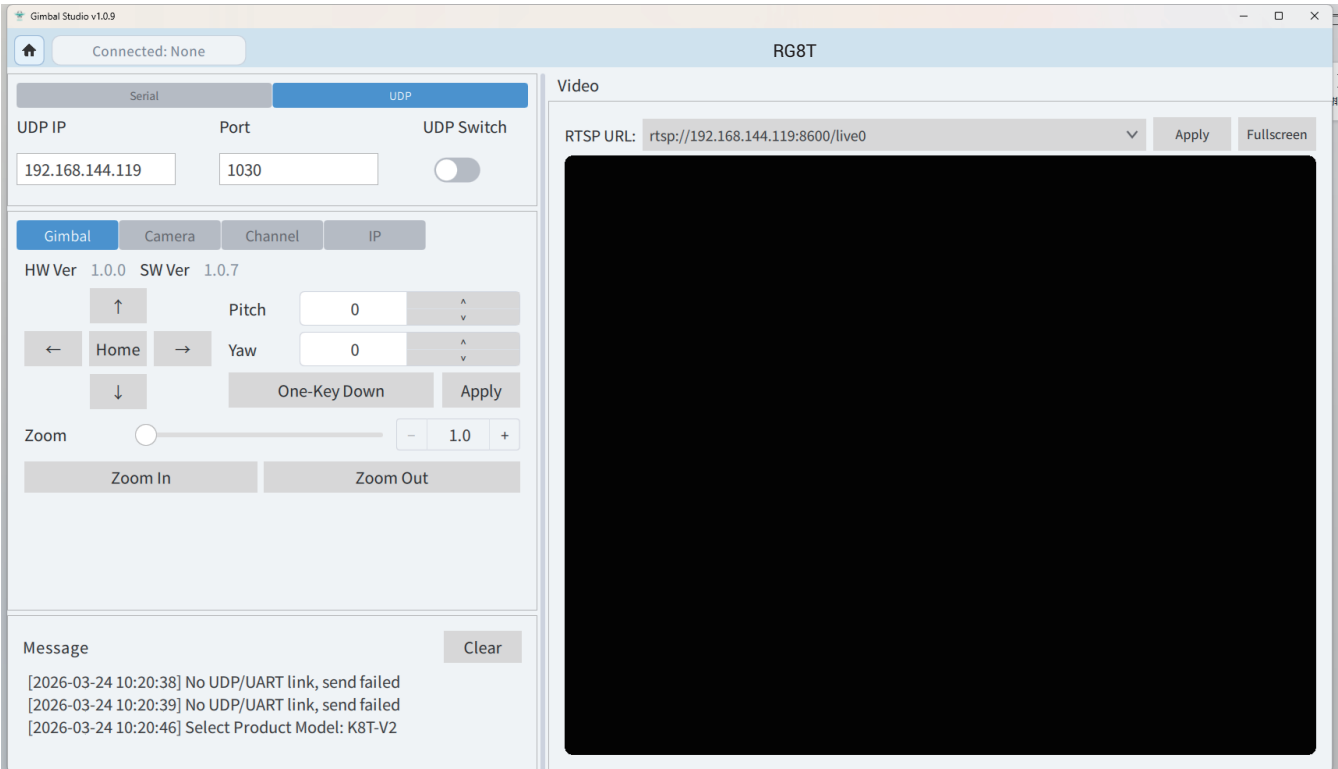
### 6.1 Assistant Software Interface



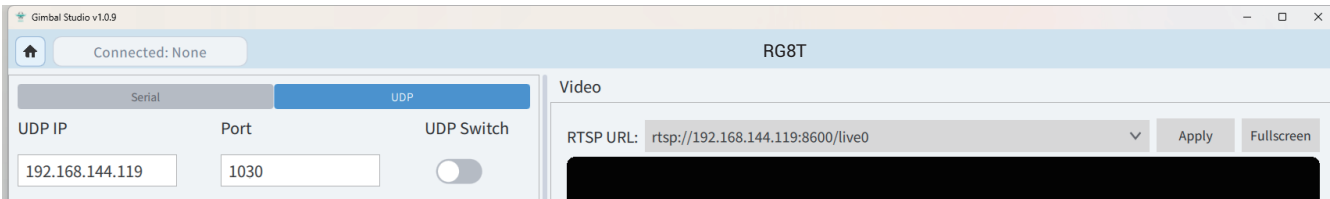
Enter the assistant software page and select the corresponding product model. If you need to switch the language version, please click the icon below to set it.



After entering the page of the corresponding product model, the interface is as follows:



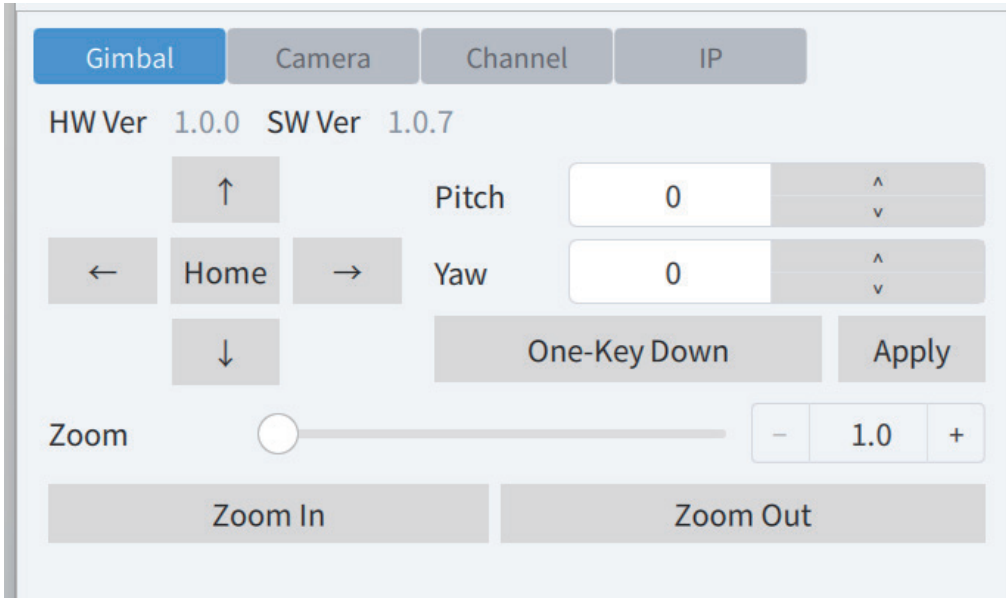
6.2 Connection Settings



Users can choose serial port or UDP connection mode according to actual conditions. For specific parameter settings, refer to the table below:

| Interface Type         | Parameters/Settings                                                                                                                     | User Settings Supported Or Not |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Serial port baud rate  | Default: 115200                                                                                                                         | NO                             |
| UDP address            | Default: 192.168.144.119                                                                                                                | Yes (IP address)               |
| Video playback address | Main stream: rtsp://pod_IP:8600/live0<br>Sub stream: rtsp://pod_IP:8600/live1(The sub stream is mainly for previewing infrared images). | Yes (IP address)               |

### 6.3 Gimbal Control

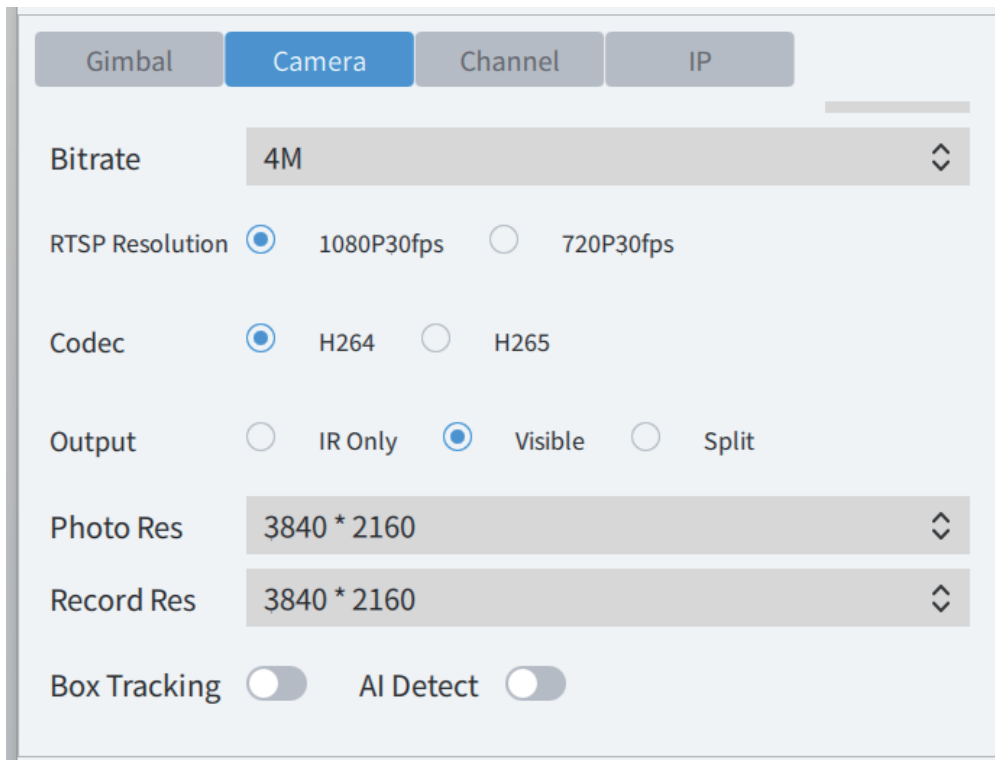


The Gimbal Control interface features a top navigation bar with tabs for 'Gimbal' (selected), 'Camera', 'Channel', and 'IP'. Below the tabs, the hardware and software versions are displayed as 'HW Ver 1.0.0' and 'SW Ver 1.0.7'. The main control area includes a directional pad with 'Home' and 'One-Key Down' buttons, and input fields for 'Pitch' and 'Yaw', both set to '0'. A 'Zoom' slider is positioned at '1.0', with 'Zoom In' and 'Zoom Out' buttons below it. An 'Apply' button is located to the right of the 'One-Key Down' button.

Users can click the gimbal control buttons to adjust the gimbal's speed and angle; the gimbal rotation speed adapts to the zoom magnification—as the zoom magnification increases, the gimbal movement speed decreases accordingly.

Under visible light video output, the zoom is displayed as optical zoom, supporting both hybrid and continuous zoom; under infrared video output, the zoom is displayed as infrared zoom, also supporting both hybrid and continuous zoom.

### 6.4 Video Stream Camera Type Settings



The Video Stream Camera Type Settings interface has a top navigation bar with tabs for 'Gimbal', 'Camera' (selected), 'Channel', and 'IP'. The settings are organized into several sections: 'Bitrate' is set to '4M'; 'RTSP Resolution' has radio buttons for '1080P30fps' (selected) and '720P30fps'; 'Codec' has radio buttons for 'H264' (selected) and 'H265'; 'Output' has radio buttons for 'IR Only', 'Visible' (selected), and 'Split'; 'Photo Res' and 'Record Res' are both set to '3840 \* 2160'; and 'Box Tracking' and 'AI Detect' are each accompanied by a toggle switch.

The host computer allows users to select the camera type for the video stream (Visible, Thermal, or Split-screen); in Thermal mode, pseudo-color palette switching is available.

Users can click the camera reboot button to restart the video feed.

Provides switching for video bitrate, RTSP resolution, video encoding formats, as well as photo and recording resolutions, allowing for selection based on specific requirements.

6.5 Sbus Function Settings

Users can customize channel settings for gimbal camera control when using Sbus, as shown in the figure below.

GimbalCameraChannelIP

StreamCH16⇅

Gimbal PitchCH11⇅

ZoomCH13⇅

Gimbal YawCH12⇅

CaptureCH10⇅

Gimbal HomeCH7⇅

RecordCH6⇅

IR PaletteCH8⇅

Read

Write

Range Value

Max

−

1,950

+

Min

−

1,050

+

Read

Apply

6.6 Camera IP Address Configuration

GimbalCameraChannelIP

IP192 : 168 : 144 : 119

Mask255 : 255 : 255 : 0

Gateway192 : 168 : 144 : 1

Set

Get

Users can configure the IP address according to actual requirements. Note: Please keep a proper record after setting the IP address to prevent connection failure; in the event that the IP address is forgotten, please contact Renova Global official support for assistance.

## 6.7 AI Recognition and Tracking Features

Gimbal

Camera

Channel

IP

Camera Ver 1.1.146

Restart

Bitrate4M

RTSP Resolution

☒ 1080P30fps

☐ 720P30fps

Codec

☒ H264

☐ H265

Output

☐ IR Only

☒ Visible

☐ Split

Photo Res3840 \* 2160

Record Res1920 \* 1080

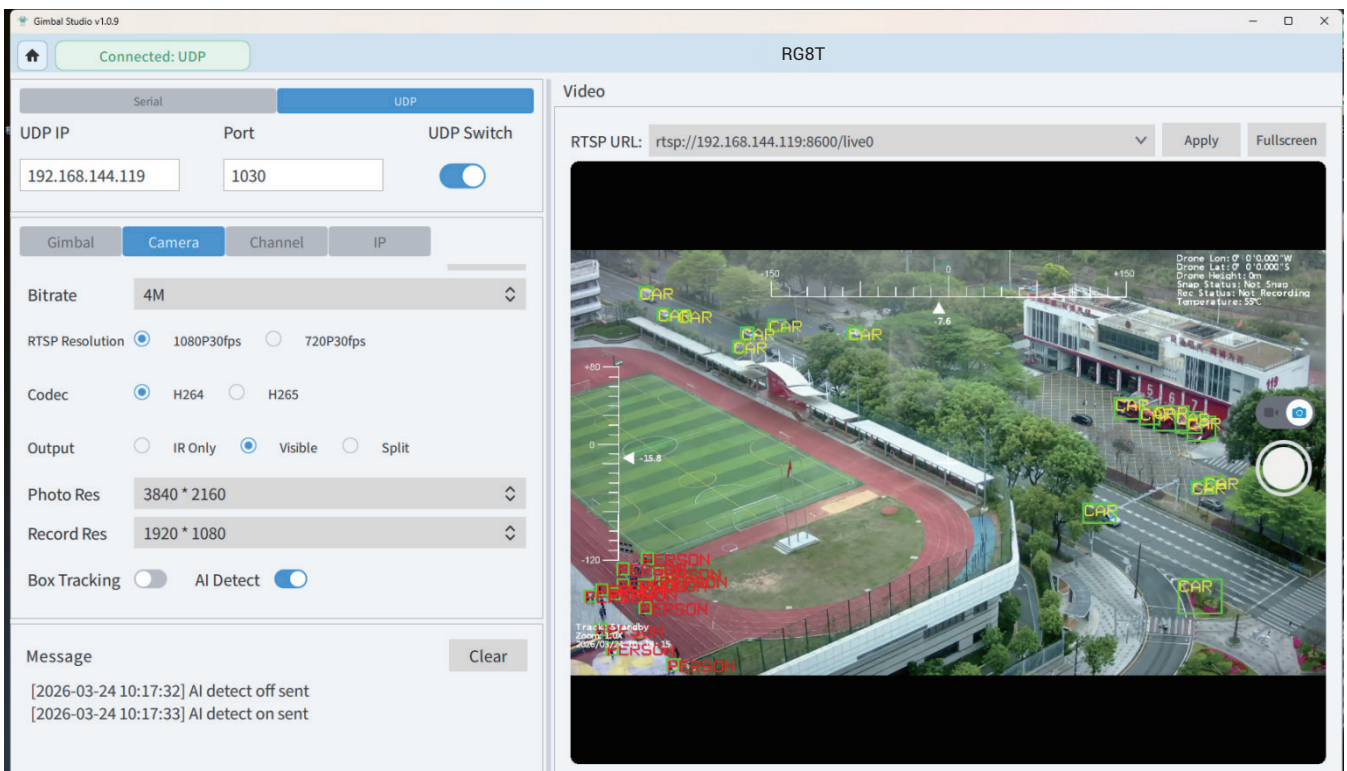
Box Tracking

☐

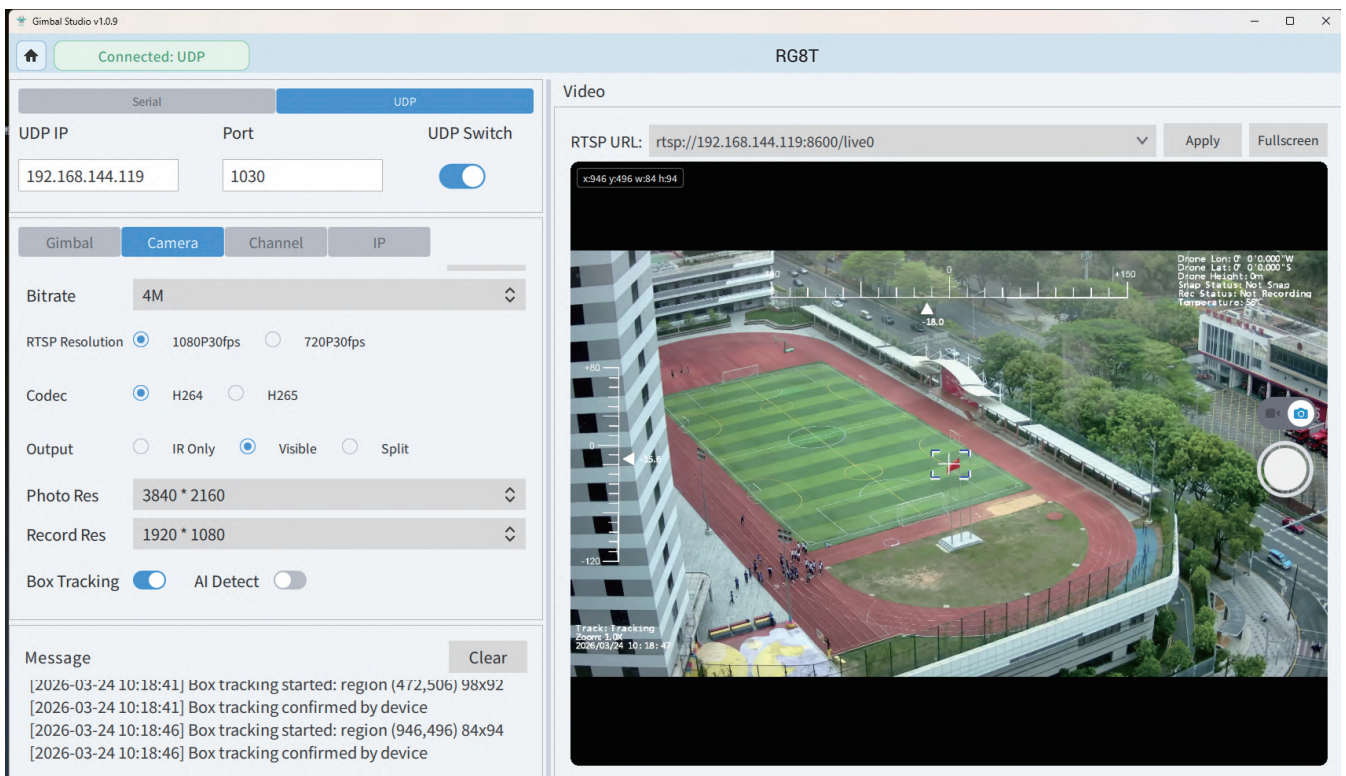
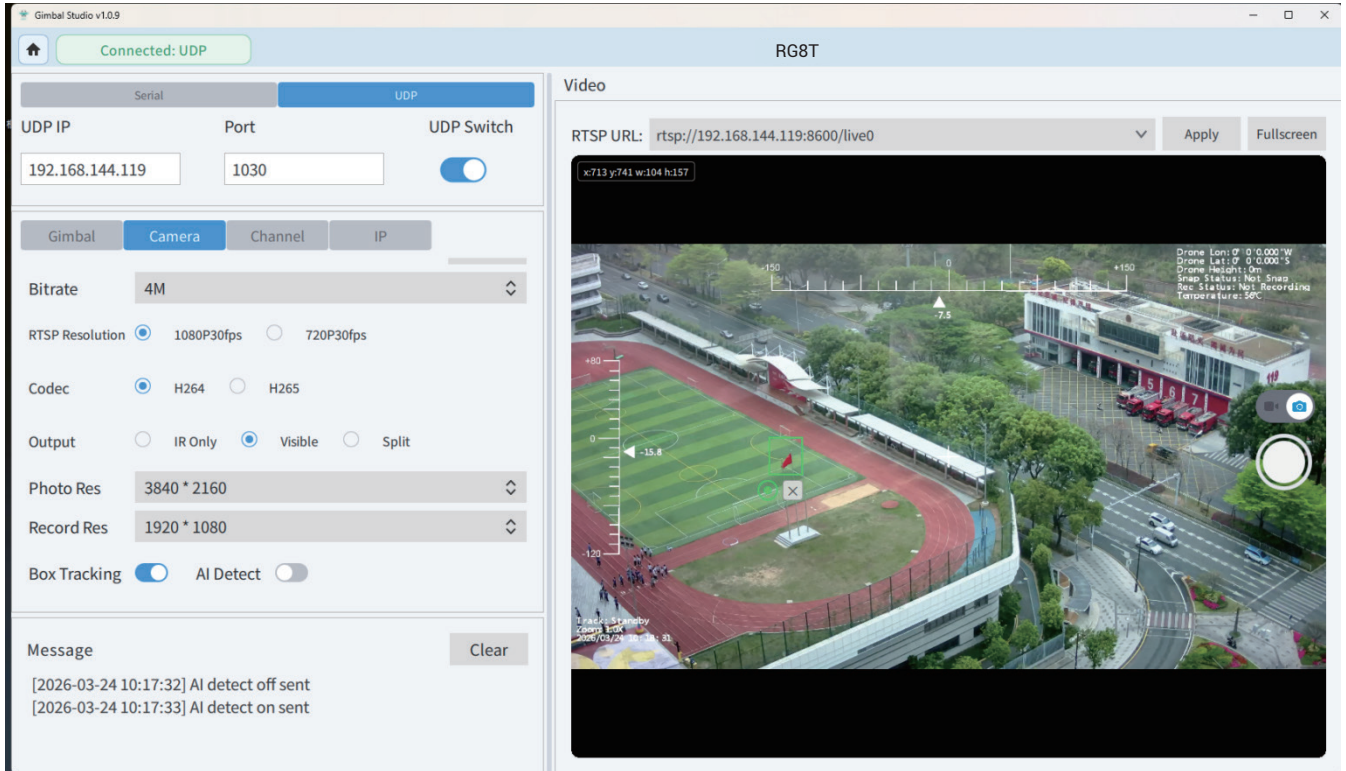
AI Detect

☐

The RG8T features built-in recognition models for common objects such as people, vehicles, and buildings, and provides two distinct tracking modes.



**Recognition Tracking:** In recognition tracking mode, identified targets are marked with a green box; clicking the green box switches directly to tracking mode (the tracking box color turns blue).



**Box-Selection Tracking:** To use the box-selection tracking method, left-click and drag from the top-left to the bottom-right of the target or area of interest (the dynamic box is marked in green during the process); the device will automatically enter tracking mode (the tracking box color turns blue), and the tracked object will be automatically centered.

Once box-selection tracking is enabled, manual gimbal movement control is disabled.

Once box-selection tracking is enabled, switching the video output will automatically deactivate the tracking state; manual box-selection must be performed again to resume tracking.

## 7.Product Camera Firmware Upgrade

Connect the Ethernet cable of the PC host test cable to the computer, open a web browser and enter the camera IP:8080 to access the upgrade interface. Select and add the firmware to proceed with the upgrade.



This document is subject to change without notice.

For the latest version, please visit the official Heq Intelligence website: <https://www.renovag.com/>.