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Dragonfly

快速入门指南

阅读提示 - 符号说明

 重要注意事项

 操作提示

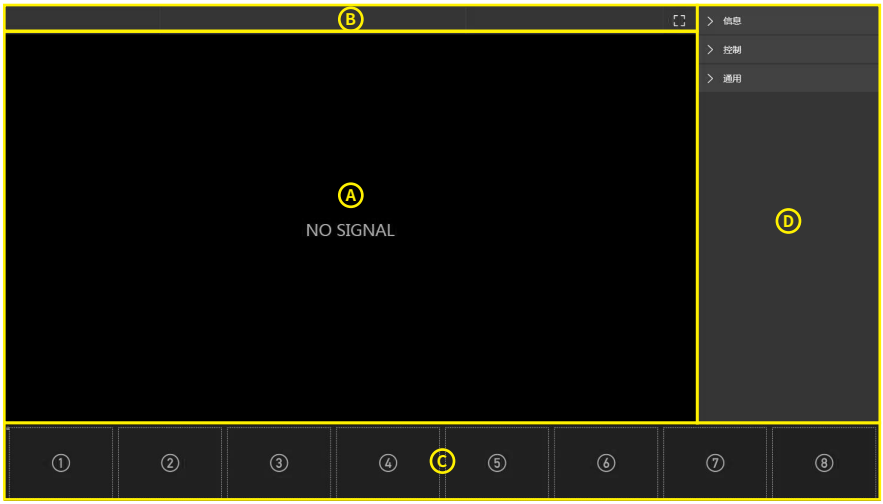
 词汇解释及参考信息

目录

产品概述

Dragonfly 是一款应用于 Windows 平台的吊舱显控软件。可实时显示吊舱画面及状态，并对吊舱进行精准控制。软件支持多种吊舱功能的控制，最多可显示 16 路视频。提供 4 分屏、9 分屏和 16 分屏三种监控模式，可在多台显示器上实现分屏显控。软件支持自定义视频流地址，满足更丰富的使用需求。

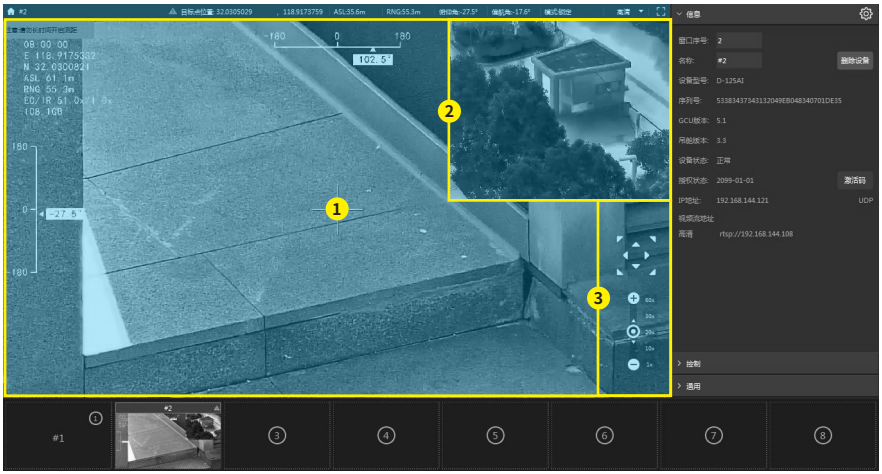
软件界面



A. 吊舱画面
B. 吊舱数据
C. 预览列表
D. 功能区

吊舱画面

分区



1. 主画面　　2. 副画面　　3. 快捷操作

操作

拖拽移动：在主画面区域内按住鼠标左键拖动，可控制吊舱的俯仰与偏航角度。

参照物拖拽移动：在主画面区域内选择一个目标，按住鼠标右键拖动，可控制吊舱的俯仰与偏航角度。

指点移动：在主画面区域内使用鼠标左键点击，吊舱会自动使点击位置处于画面中心。

双击跟踪：在主画面区域内使用鼠标左键双击，可开启跟踪功能。触发该功能后，吊舱会自动跟踪目标，并使之处于画面中心。单击右键取消。

按钮移动：在快捷操作区域内使用鼠标左键点击按钮，可控制吊舱的俯仰与偏航角度。

按钮变焦：在快捷操作区域内使用鼠标左键上下拖动按钮，可控制变焦；鼠标左键点击“+”“-”，可以微调变焦；鼠标左键点击倍数，可快捷变焦。

吊舱数据

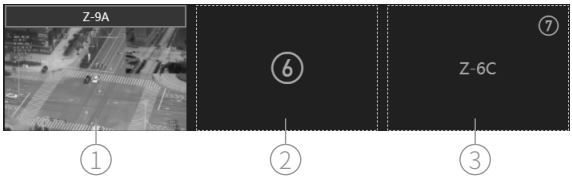
1. **首页** : 切换语言、网络重置、屏幕键盘和帮助。
2. **窗口名称** : 默认显示吊舱型号。可在功能区“信息”选项卡进行修改。
3. **警示** : 开启激光照明或激光测距时，显示警示符号。
4. **目标坐标** : 画面中心点被测物体的经纬度。
5. **目标海拔** : 画面中心点被测物体的海拔高度。
6. **目标距离** : 画面中心点被测物体与吊舱的距离。
7. **吊舱俯仰角**
8. **吊舱偏航角**
9. **模式** : 详见本文《控制》章节
10. **清晰度切换**
11. **全屏**

网络重置

1. 使用调试模块，将电脑与吊舱的 UART2 接口相连，将吊舱上电。
2. 打开“网络重置”并选择串口。
3. 点击连接。

请访问 www.allxianfei.com，在视频中心中获取更多信息。

预览列表



1. 在线吊舱 : 单击选择吊舱，双击弹出分屏窗口，分屏窗口可拖拽至其他显示器。
2. 空闲窗口 : 该窗口无吊舱占用。双击选中后可手动输入视频流地址建立连接，连接成功后只可显示画面，不可对吊舱进行控制。
3. 离线吊舱 : 离线吊舱占用窗口。双击选中后可查看该吊舱离线前信息。

功能区

信息

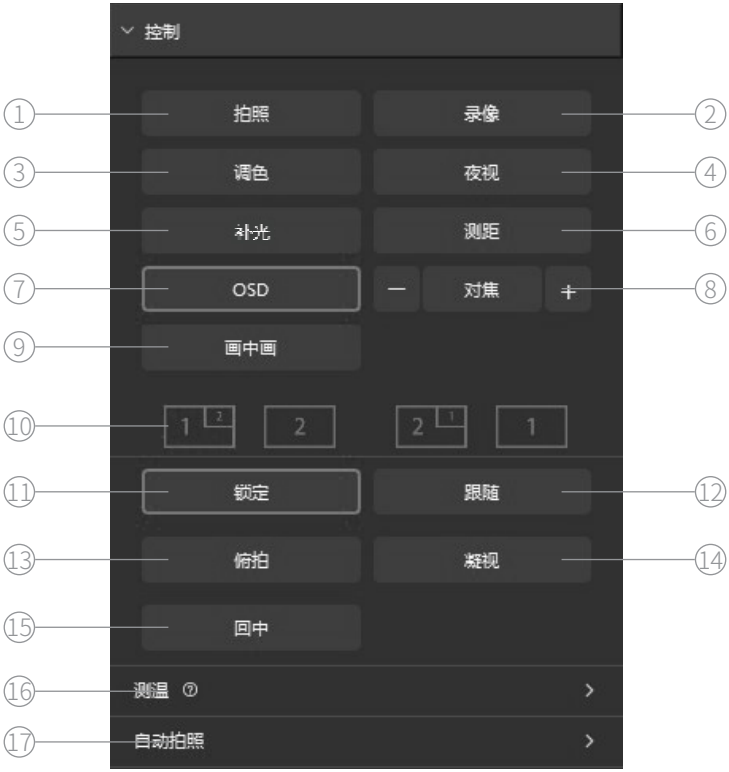
1. 窗口序号：点击序号可进行修改，并将窗口移动至新序号位置。若新序号对应的窗口被在线或离线吊舱占用，则会将两者位置进行交换。序号范围为 1~16。

2. 名称：点击修改窗口名称。

3. 删除吊舱 : 被删除的吊舱在 5 分钟内无法重新上线，预览列表中对应的窗口恢复为空闲窗口。

4. 激活码：点击输入激活码，获取吊舱使用授权。

控制



1. 拍照：拍照命令会触发相机进行一次拍照。照片存储于吊舱的 MicroSD 卡内。
2. 录像：在录像过程中可以进行拍照，不会停止录像。视频存储于吊舱的 MicroSD 卡内。
3. 调色：对于具有热成像相机的吊舱，调色命令可以循环切换热成像图像的色盘模式。
4. 夜视：此模式下相机会切换至低照度模式以提高微光环境下的图像清晰度。
5. 补光：对于具有激光照明功能的吊舱，此命令可开启 / 关闭照明功能，同时自动开启相机低照度模式。

⚠ **吊舱所搭载激光照明模块属于 Class 3B 类非可见光激光器，在照明模块开启状态下，严禁直接目视（≤ 12m）或使用光学仪器直接观察激光光束，照明模块前方 20cm 内严禁放置易燃物体。**

6. **测距**：对于具有测距功能的吊舱，此命令可开启 / 关闭测距功能。如吊舱接收到 GNSS 数据，可同步计算测距目标的地理坐标（经纬度与海拔高度）。

7.**OSD**: 在开启状态下，OSD 信息会通过拍照和视频存储于吊舱的 MicroSD 卡内。

8. **对焦**：触发相机进行一次聚焦。支持微调。

9. **画中画**：对于具有多个相机的吊舱，此命令可在画中画、主图像与副图像之间循环切换。

10. **画面快切**：对于具有多个相机的吊舱，此命令快速选择并切换。

11. **锁定**：此模式下吊舱的偏航角与俯仰角均可控，无转动指令时会始终保持当前姿态。

12. **跟随**：此模式下吊舱偏航角始终随载机指向旋转。俯仰轴状态与锁定模式一致。

13. **俯拍**：此模式下，吊舱俯仰轴会自动旋转至竖直向下。由跟随模式进入俯拍模式时，偏航角始终随载机指向旋转且不可控；由其他模式进入俯拍模式时，偏航角可控，无转动指令时会始终保持当前方向。

14. **凝视**：吊舱会自动旋转，使画面中心所指向的地理位置始终保持不变。对于具有激光测距功能的吊舱，在进入凝视模式前开启测距会提高画面中心的锁定精度。此功能在吊舱接收到 GNSS 数据时才可使用。

15. **回中**：

锁定与跟随模式下，吊舱俯仰及指向回中，工作模式不变；

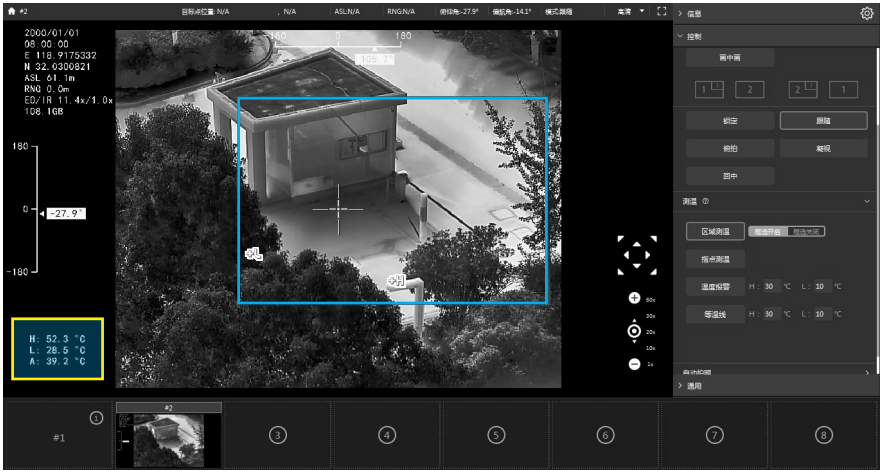
俯拍模式下，吊舱指向回中，工作模式不变；

跟踪模式下，吊舱不响应回中命令；

凝视模式下，吊舱不响应回中命令。

16. **测温**：此功能组包含区域测温、指点测温、温度报警、等温线。

⚠ **使用测温功能时，请将画中画状态切换到全热成像模式。**



开启区域测温后，在主画面上长按鼠标左键画框，完成区域框选后，区域内会显示最高温和最低温的位置，OSD 增加温度显示。

框选开启，主画面将不再支持《操作》章节所描述的操作。

开启指点测温后，在主画面上点击鼠标左键，所点击的位置将显示温度，OSD 增加温度显示。

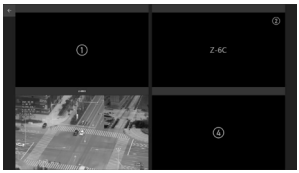
指点开启，主画面将不再支持《操作》章节所描述的操作。

17. 自动拍照

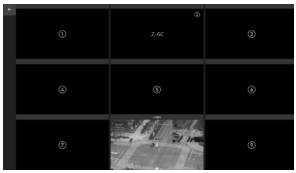
⚠ 当前吊舱不支持的功能会被置灰或隐藏。

通用

1. **视频列表** : 手动开启子码流图像列表区双行显示。
2. **监控模式** : 根据当前占位状态，开启 4/9/16 分屏。



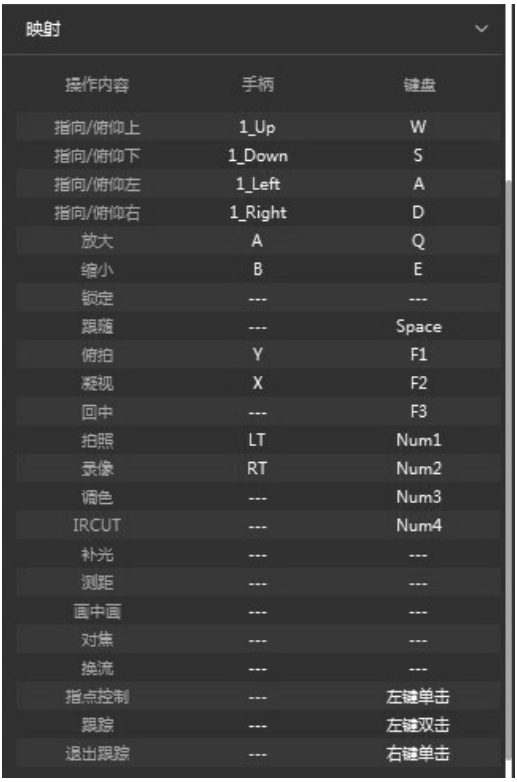
4 分屏



9 分屏

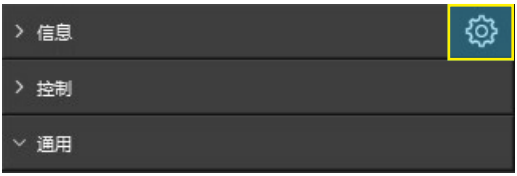
16 分屏

3. **映射** : 支持键盘和手柄。

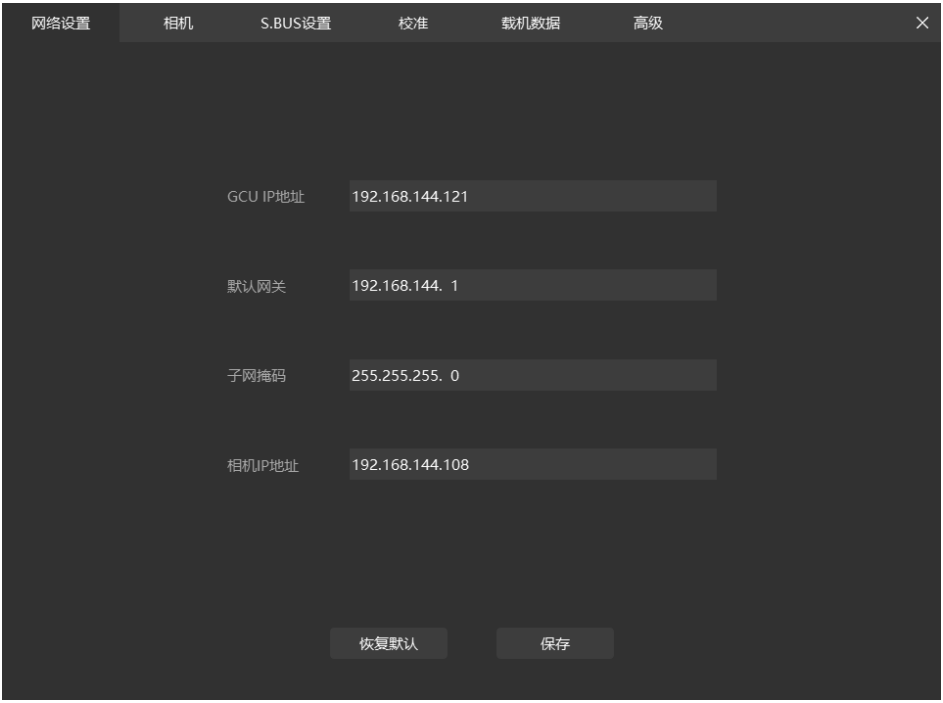


设置

对当前吊舱进行网络、相机、S.BUS、校准、载机数据、高级设置。



网络设置



- GCU IP 地址 / 默认网关 / 子网掩码
  可对 GCU 的网络参数进行设置，请确保修改后的网络参数不会致 GCU 网络连接异常。
- 相机 IP 地址
  填写当前吊舱相机的 IP 地址，GCU 会自动生成吊舱相机的视频流地址。此处并非对相机 IP 地址进行设置。

⚠ 吊舱型号不同，显示的设置项会有相应差异。

请访问 www.allxianfei.com，在视频中心中获取更多信息。

相机设置

- 图库：下载照片和视频。
- 相机 IP 地址 / 默认网关 / 子网掩码
  可对相机的网络参数进行设置，请确保修改后的网络参数不会致相机网络连接异常。

⚠ 吊舱型号不同，显示的设置项会有相应差异。

未显示“图库”的吊舱型号，请通过吊舱内的存储卡获取照片和视频。

请访问 www.allxianfei.com，在视频中心中获取更多信息。

S.BUS 设置

可对吊舱功能所映射的 S.BUS 通道及正反向进行设置，其中俯仰与偏航为比例控制，其余功能为开关控制。

对于开关控制的通道，通道值进入 [1000μs , 1300μs] 会触发一次低位功能，进入 [1300μs , 1700μs] 会触发一次中位功能，进入 [1700μs , 2000μs] 会触发一次高位功能，通道值在同一区间内变化则不会重复触发。

可通过 MAVLink 协议对吊舱进行控制，此时其他 S.BUS 控制功能失效。

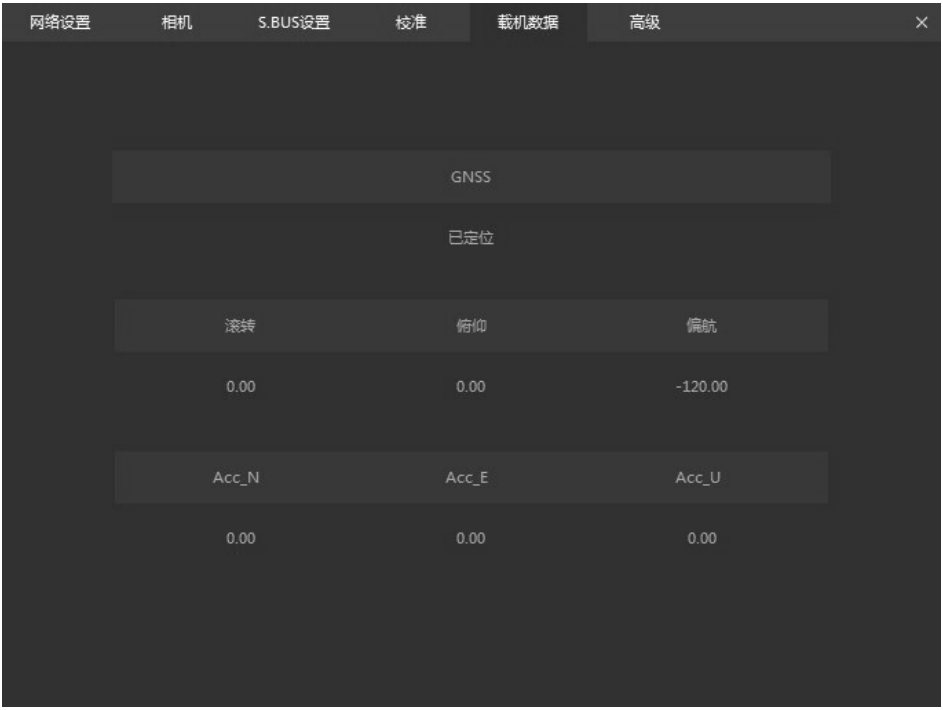
变焦通道值处于放大 / 缩小区间时，相机变焦倍率会持续变化，直至通道值处于停止区间或相机处于最大 / 最小倍率。

校准

可对吊舱进行校准，校准前请确保吊舱处于静止状态（无需回中）直至校准完成。

未接收到有效载机惯导数据时，由于地球自转影响，校准成功的吊舱偏航轴会存在每小时约 15°的漂移，属正常现象，无需再次校准。为保证吊舱姿态准确无飘移，需向吊舱传输有效载机惯导数据，通常情况下，需要载机 GNSS 定位有效。

载机数据



显示 GCU 当前所连接的载机惯导定位状态、姿态角与北东天向加速度。

高级设置

⚠ 吊舱型号不同，显示的设置项会有相应差异。

Dragonfly

Quick Start Guide

Using this Manual – Legend

 Important

 Tips

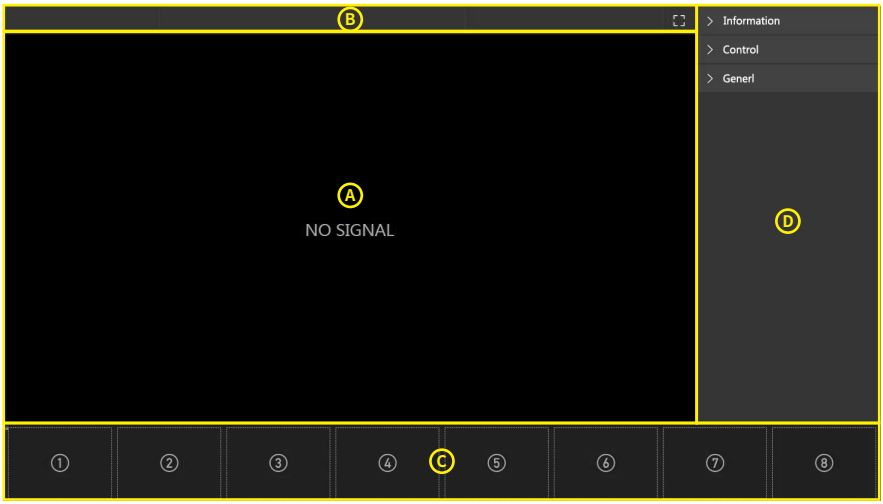
 Explanation

Catalog

Introduction

The Dragonfly is a gimbal control & display software of Windows, which can control the gimbals and display real-time images and statues of them. The Dragonfly supports multiple fuctions of the gimbal and is able to play up to 16 video streams. It provides 4/6/16 split monitor mode and can control & display in multiple monitors. The Dragonfly supports playing custom video streams to meet a rich application.

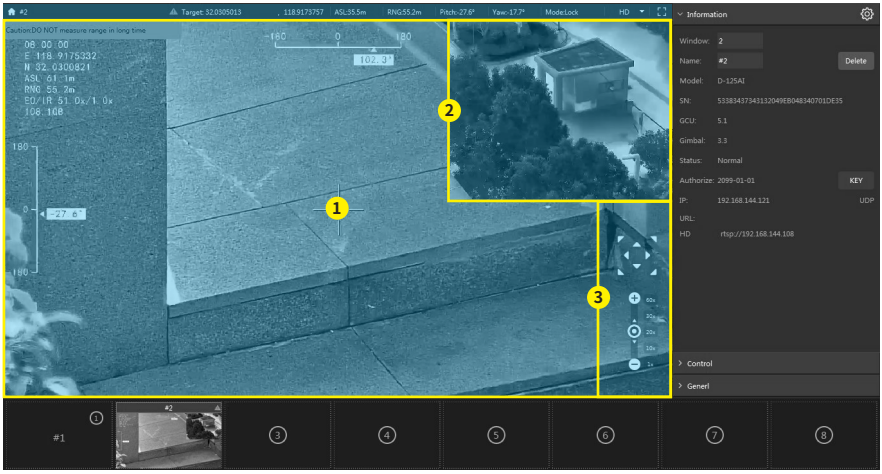
Software Interface



A. Pod Screen
B. Pod Data
C. Preview List
D. Function Area

Pod Screen

Module



1. Main Screen 2. Sub Screen 3. Quick Actions

Operation

Drag and drop: Hold down the left mouse button and drag in the main screen area to control the pitch and yaw angle of the pod.
Drag and drop2: Select a target in the main screen area, hold down the right mouse button and drag, and control the pitch and yaw angle of the pod.
Point to move: Clicking with the left mouse button in the main screen area will automatically place the click position in the center of the screen.
Double-click the track: Double-click with the left mouse button in the main screen area to enable the tracking function, The pod will automatically keep tracking the target in the center of the screen. and right-click to cancel.
button to move: Use the left mouse button to click the button in the quick action area to control the pitch and yaw angle of the pod.
button zoom: Use the left mouse button to drag the button up and down in the quick operation area to control the zoom; Click the left mouse button "+" and "-" to fine-tune the zoom; Click the multiplier with the left mouse button to quickly zoom.

Pod Data

1.**Home**: Language、Network Reset、Virtual Keyboard and Help .

2. **Window name:** Default as device model and can be edited in Message tab in Fuction Area.

3. **Laser waring:** Display laser warning signal while laser lighting module or laser range finder operating.

4. **Target coorinate:** Longitude and latitude of the object in the middle of the screen.

5. **ASL:** Height above sea level of the object in the middle of the screen.

6. **RNG:** Distance to the measured object in the middle of the screen.

7. Gimbal pitch angle

8. Gimbal yaw angle

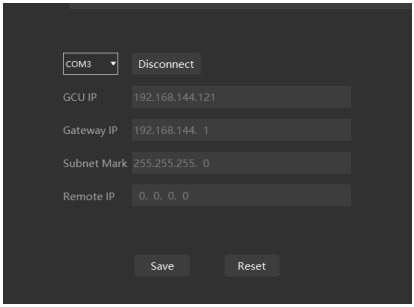
9. **Mode:** See chapter *Control* for details.

10. Quality

11. Full screen

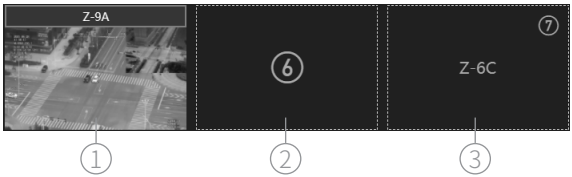
Network Reset

1. Use the Config Module to connect the computer to the UART2 port of the pod and power on the pod.
2. Open"Network Reset"and select the serial port。
3. Click "Connect"。



Visit the www.allxianfei.com for more information in the Video Center.

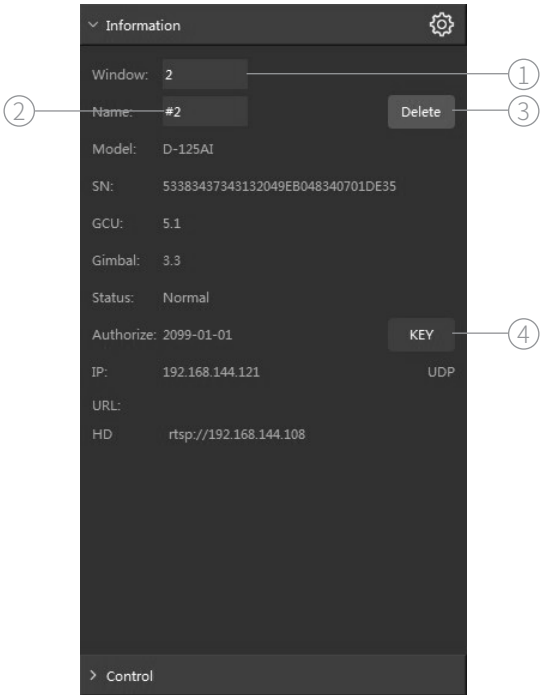
Preview List



1. Online: Left-click to set current device as prime. Double-click to establish a split-screen window, which can be draged to another monitor.
2. Free: Not occupied with any device. User can double-click the window and enter video stream address manually to connect to a network device. After the connection is established, the window displays the image of the device which is not controllable.
3. Offline: Occupied with an offline device. Double-click to check the information of the device before it goes offline.

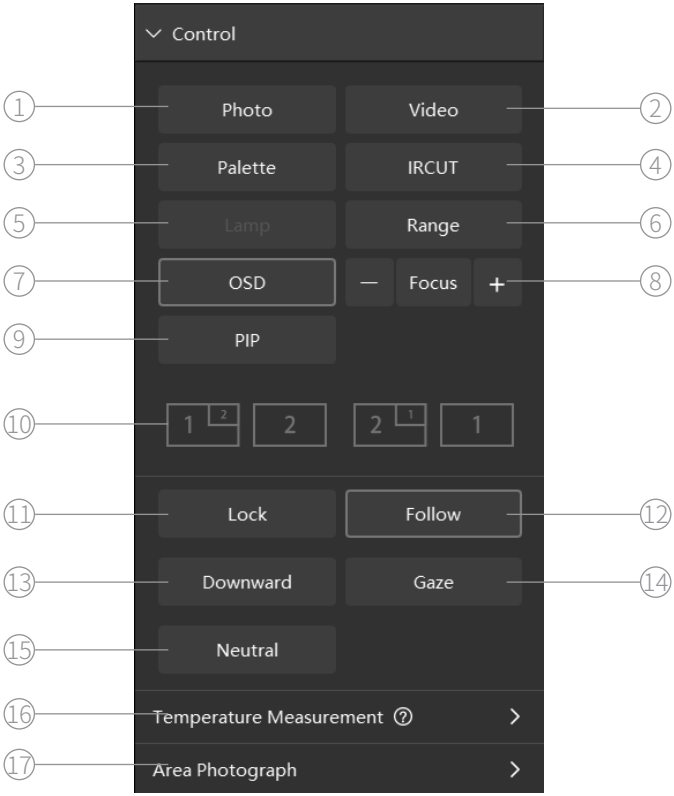
Function Area

Information



1. Window No.: Left-click to edit the number and move the window to the new number position.If the new position is occpiuied, the two window will be swapped.The range of the number is 1~16.
2. Name: Left-click to edit window name.
3. Delete: A deleted device cannot go back online in 5 minutes. The corresponding window in the preview list resumes to free.
4. Key: Click Enter Activation Code to get the pod license.

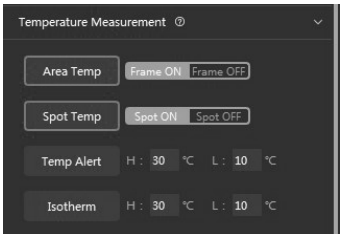
Control



1. **Photo**: Triggering camera shoot one photo.The pictures is saved in the MicroSD card of the gimbal.
2. **Video**: It is able to shoot photos while recording without ending record.The video is saved in the MicroSD card of the gimbal.
3. **Palette**: For gimbals equipped with thermal camera, this button switches options of palette.
4. **IRCUT**: Turn on IRCUT, the camera will switch to night scene to achieve a better image quality in low-light environment.
5. **Lamp**: For gimbals equipped with laser lighting module, click this button to turn on laser lighting and IRCUT at the same time.

⚠ Several models of gimbal equipped with laser lighting module, which is a Class 3B invisible laser. DO NOT exposure eyes to the beam within 12 meters or observe the beam by any optical instrument. DO NOT place any inflammable within 20 centimeters in front of the lighting module.

6. Range: For pods equipped with laser range finder, this button turns on / off ranging. The pod is able to calculate out the longitude, latitude and elevation of the target while receiving GNSS data.
7. OSD: When enabled, the OSD information is stored on the pod's MicroSD card via photos and videos.
8. Focus: Trigger camera to focus once.
9. PIP: For pods equipped with multiple cameras, this button switches different view of the cameras.
10. The picture shift quickly: For pods with multiple cameras, this command quickly selects and switches.
11. Lock: Head lock mode. Yaw angle and pitch angle of the pod are controllable and keep current angle while no rotating command is received.
12. Follow: In this mode, the yaw angle of the pod always rotates with the carrier aircraft. The state of the pitch axis is consistent with the lock mode.
13. Downward: Orthoview mode. In this mode, the pod rotates to vertical downward. The yaw angle follows the carrier and is uncontrollable. Otherwise the yaw angle remains unchanged and is controllable.
14. Gaze: Gaze mode. Pod constantly aims current position in the center of the view. For pods equipped with laser ranger finder, turning on ranging before entering gaze mode will improve the accuracy of locking. The gaze mode is available only when the pod receiving valid GNSS data.
15. Neutral: Pod returns its pitch and yaw neutral position without switching operation mode while in Head lock and Head follow mode.Pod returns its yaw neutral position without switching operation mode while in Orthoview mode. Pod does not response while in Gaze and Track mode.
16. Temperature Measurement: This function group includes area temperature measurement, pointing temperature measurement, temperature alarm, and isotherms.



⚠ When using this function, switch the pip state to full thermal imaging mode.

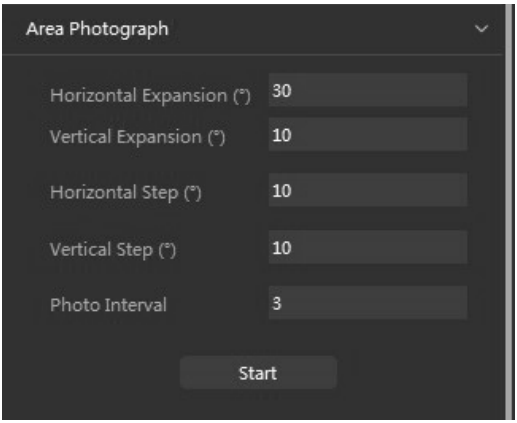
After enabling the area temperature measurement, press and hold the left mouse button on the main screen to draw the frame, and after the region is selected, the location of the highest temperature and the lowest temperature will be displayed in the area, and the temperature display will be added to the OSD.

If the box is turned on, the main screen will no longer support the operation described in the "Operation" section.

After turning on the pointing temperature measurement, click the left mouse button on the main screen, the temperature will be displayed at the clicked position, and the temperature display will be added to the OSD.

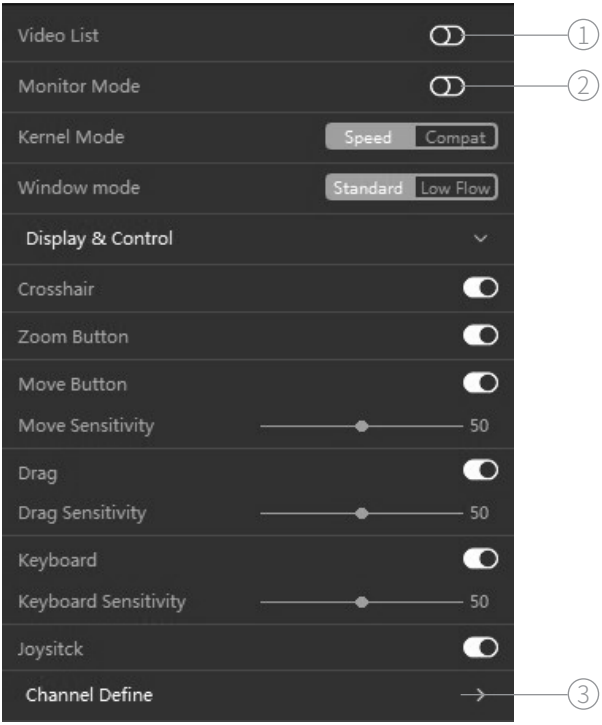
When the guide is turned on, the main screen will no longer support the actions described in the "Actions" section.

17. Area Photograph

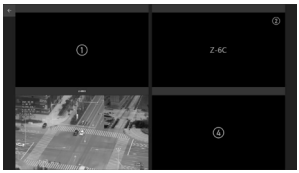


⚠ Features that are not supported by the current pod are grayed out or hidden.

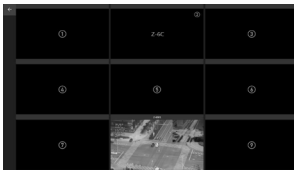
General



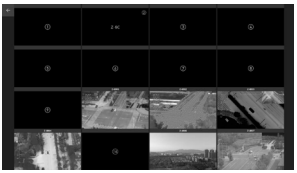
1. **Video List**: Switching single-row / double-row display.
2. **Monitor Mode**: Automatically choosing 4/9/16 split display accoring to current windows occupation.



4 split



9 split



16 split

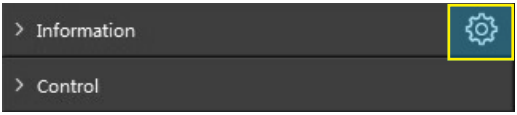
3. **Channel Define**: Edit function mappings to keyboard or joystick.

Channel Define

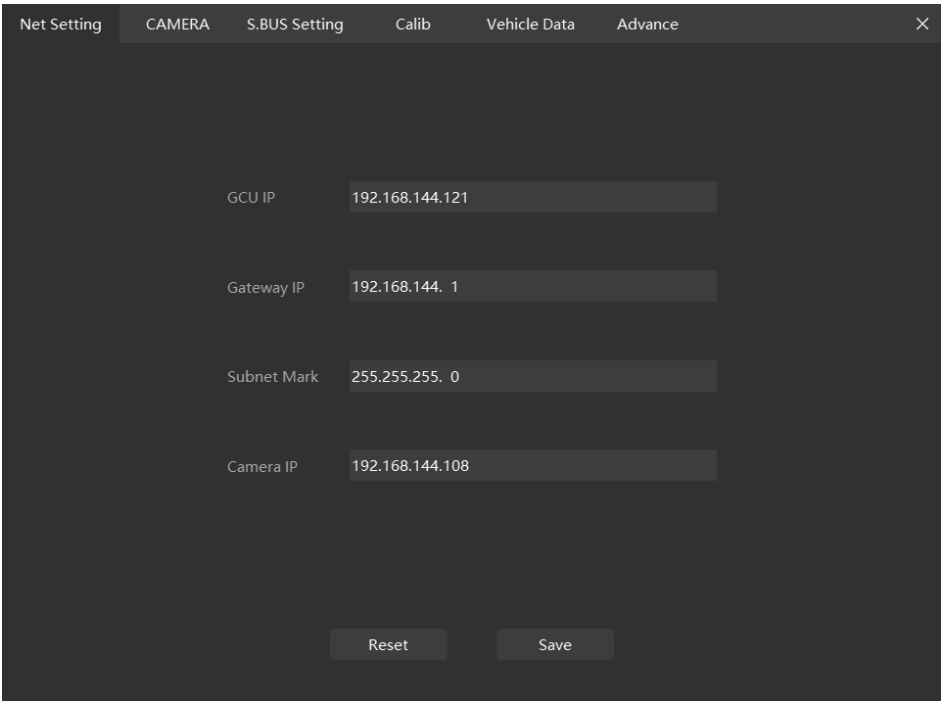
Operation	Joystick	Keyboard
Yaw/Pitch Up	1_Up	W
Yaw/Pitch Down	1_Down	S
Yaw/Pitch Left	1_Left	A
Yaw/Pitch Right	1_Right	D
Zoom In	A	Q
Zoom Out	B	E
Lock	---	---
Follow	---	Space
Downward	Y	F1
Gaze	X	F2
Reset	---	F3
Photo	LT	Num1
Video	RT	Num2
Palette	---	Num3
IRCUT	---	Num4
Lamp	---	---
Range	---	---
PIP	---	---
Focus	---	---
Shift	---	---
Pointing Control	---	Left-Click
Track	---	Left-DblClick
Exit Tracking	---	Right-Click

Setting

Net, Camera, S.BUS, Calibration, Vehicle data, Advance settings for the current pod.



Net Setting

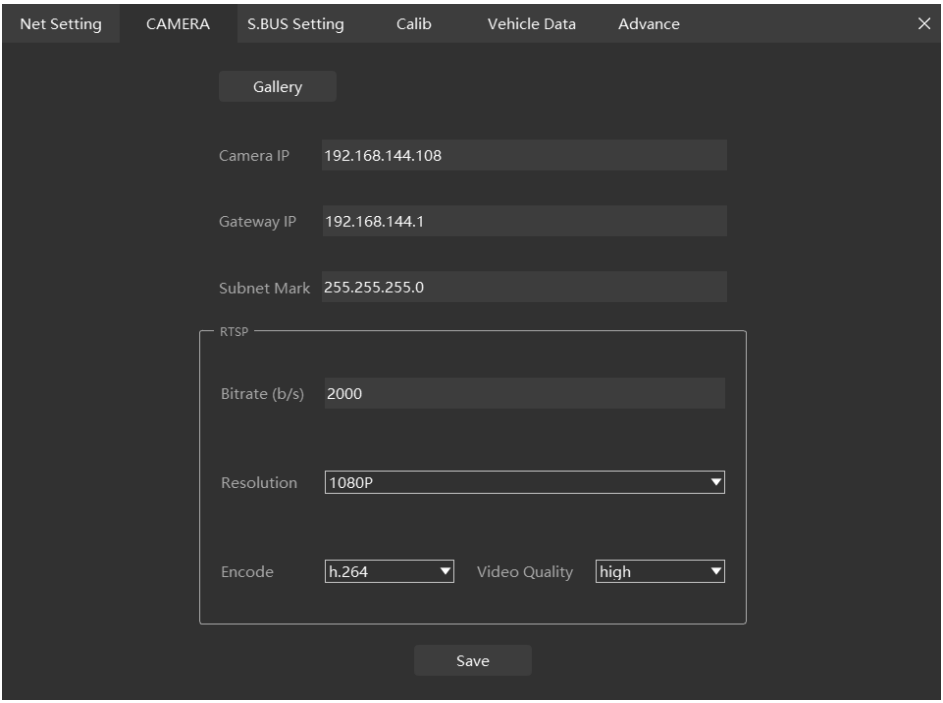


- GCU IP / Gateway IP / Subnet mask
  Configure the network parameters of the GCU. Ensure the parameters will not cause network linkage abnormal.
- Camera IP
  Fill in the IP address of current camera, Video stream addresses will be generated automatically by the GCU. It will not change the IP address of the camera.

⚠ Depending on the pod model, the settings displayed will vary accordingly.

Visit the www.allxianfei.com for more information in the Video Center.

CAMERA



- Gallery: Download photos and videos.
- Camera IP / Gateway IP / Subnet mask
  Configure the network parameters of the camera. Ensure the parameters will not cause network linkage abnormal.

⚠ Depending on the pod model, the settings displayed will vary accordingly.

For pod models where "Gallery" is not displayed, please get photos and videos from the memory card in the pod.

Visit the www.allxianfei.com for more information in the Video Center.

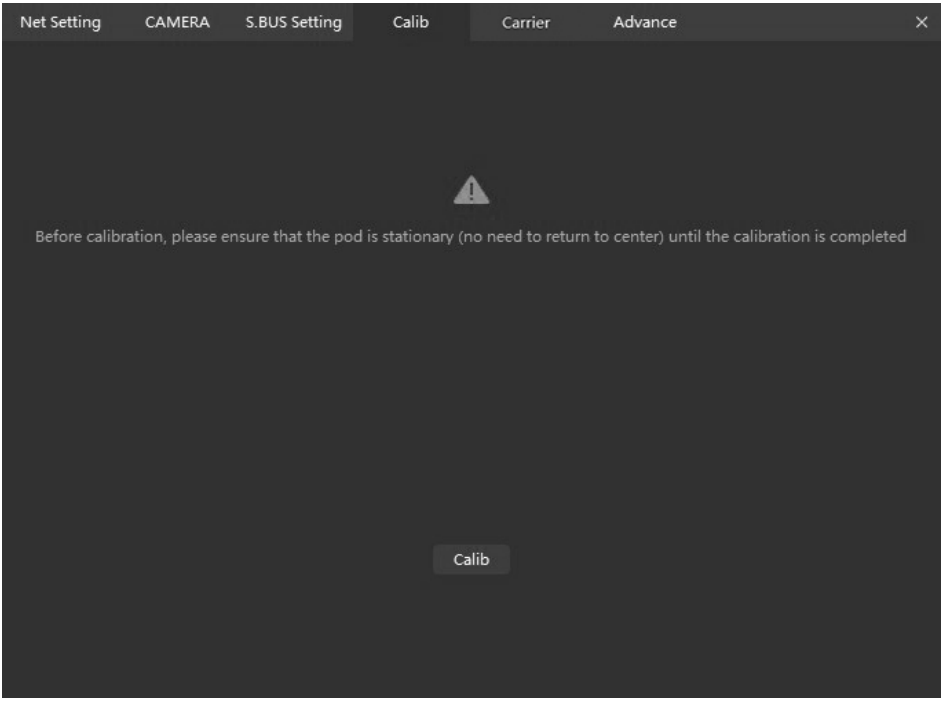
S.BUS Setting

Set S.BUS channels corresponding to pod functions and their renversements. The pitch and yaw are liner channel, and others are switch channels.
For switch channels, pulse width entering [1000μs , 1300μs] triggers lower function once; entering [1300μs , 1700μs] triggers middle function once; entering [1700μs , 2000μs] triggers higher function once. Pulse width varying in the same interval does not repeat the trigger.

The pod can be controlled by MAVlink protocol. Other S.BUS channels controlling is unavailable in the mode.

The zoom rate constantly varies while the channel value is in Tele / Wide interval, until the channel value enters stop interval or the camera is at max / min zoom rate.

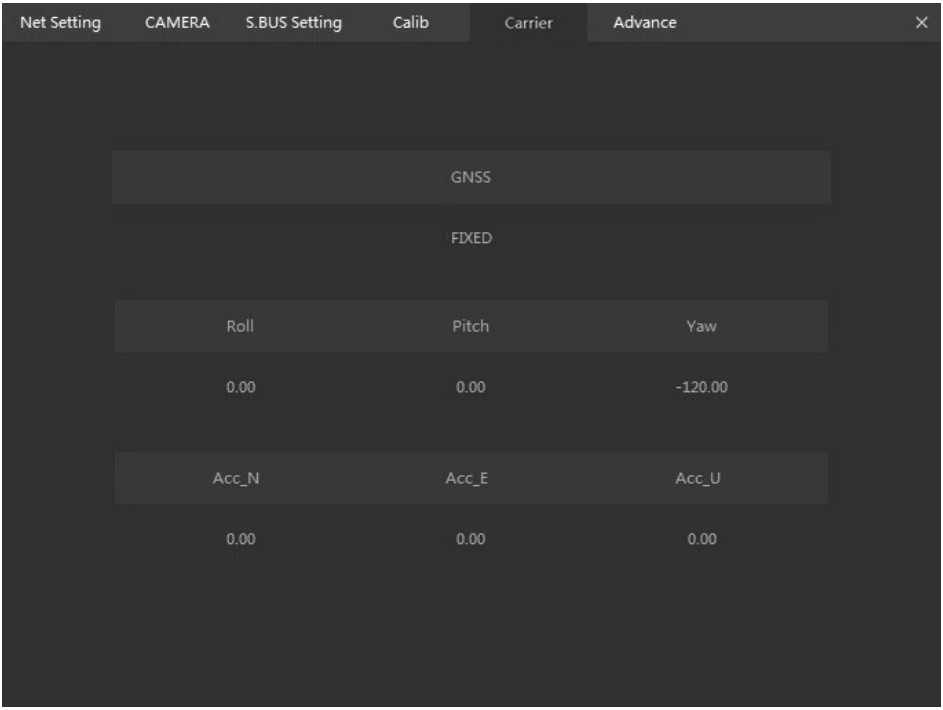
Calibration



Click to calibrate the gimbal. Please keep the pod static while calibrating.

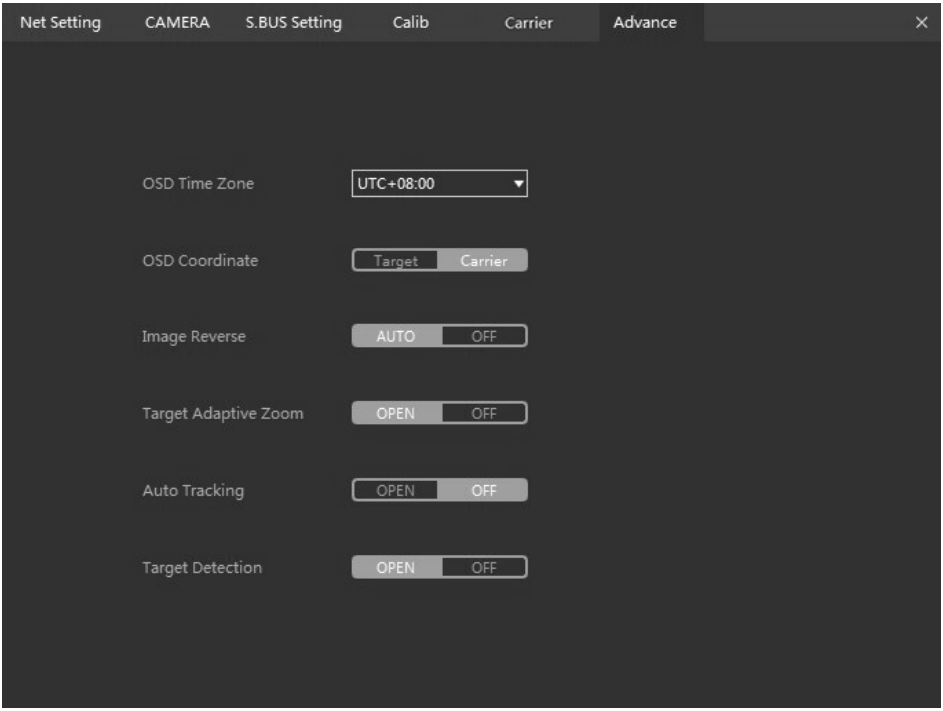
After calibration, it is normal that the yaw shaft of the pod drifts about 15 degrees per hour when not receiving valid carrier INS data. To make sure the pod attitude corrects, it is necessary to transmit valid carrier INS data, usually the GNSS should be positioning.

Carrier



Display the INS positing statue, altitude angle and northward / eastward / upward accuracy of the carrier.

Advance



⚠ Depending on the pod model, the settings displayed will vary accordingly.