



Vision Aerial



A7R Inspection Gimbal Manual



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A7R Inspection Gimbal Flight Operating Instructions

Payload Prep

- Remove payload from Pelican case.
- Place camera SD card into computer and format the card.
- Insert SD card into camera slot and close SD card door on camera.
- Note: Use only one SD card slot, not two.**

Connections

- Insert PCS adapter located at the top of the gimbal into the airframe PCS (Note: arrows showing insertion direction).
- Close PCS lock ring.
- Connect the Gecko cable to the airframe Gecko connector.
- Connect the HDMI cable to the airframe HDMI connector.
- Connect the XT30 male connector to the airframe XT30 female connector.
- If the gimbal is separated into two pieces, align white marker on the gimbal quick disconnect with the white marker on the gimbal body and close the gimbal quick disconnect ring.

Flight Prep

- Verify PCS lock ring is fully closed.
- Connect flight battery XT 90.
- Assist the gimbal to achieve a balanced position when powered. If gimbal position is not level and forward facing, pull the XT90 pack power connector and restart.
- Wait for video feed on the hand controller.
- If the SD card was formatted, a screen will appear indicating the SD card is being prepared.
- If a screen appears requesting to set the date and time, skip this step by using the wheel on the back of the camera to select the skip option and confirm by pressing the center button on the select wheel.
- When a warning screen appears about the battery, use the wheel on the back of the camera to select the OK option and press the center button on the camera wheel.

Follow standard Vision Aerial preflight checklist.

On Takeoff

Camera feed will show the camera SD card is being prepared for the mission by displaying a screen showing "Accessing" followed by one or two additional screens. This is normal and no operator action is required. The hand controller will restore a camera front facing video stream when the system is ready to begin a mission.

During Mission

Picture count will increment on the pin icon as pictures are taken.





Video stream will flash as each picture is taken.

The hand controller can be used during the mission to change the tilt angle of the camera using either the scroll wheel located in the upper left of the hand controller, or by pressing the gimbal icon on the lower right of the screen and using the slider bar that appears.

The hand controller can manually take a photo during the mission, or outside the mission by pressing the still camera icon or a video can be initiated by pressing the movie camera icon:



Other camera attributes can also be changed using the pop-up window that appears when swiping up on the still camera icon:



See the Vision Aerial guide to gimbal/camera control guide for more information.

Post mission

Ensure camera is pointing at the horizon before landing

Extend retracts for landing

Land aircraft

Observe hand controller to monitor geotagging in process after landing.

Note: Do not disconnect pack power until the GTG icon turns blue.



If GTG icon is red,



there was a malfunction writing the geotag information to the camera.

Hand Controller Camera/Gimbal Operation




The hand controller behaves as it normally would with the addition of some camera and gimbal control overlays that are semi transparent on the flight controller screen.


The camera/gimbal control initiates with a screen that has the buttons shown below in the lower right quadrant of your hand controller screen (overlaid on the image currently in front of your camera).

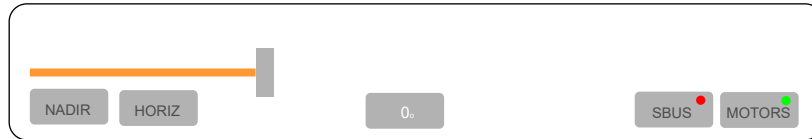
The orange bar will slide under the icon of the still camera and the movie camera until communication with the Pixy-S gimbal is established. Do not begin flight operation until the orange bar is not present.



The initial control icons are defined as follows:

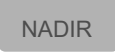


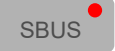

| | |
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|  | <p>This icon is used to identify the status of the geotagging operation. There are three colors the icon can take:</p> <p>Red: the icon indicates that either the communication channel to the Pixy-S is offline, or that there has been an error geotagging the camera images.</p> <p>Blue: The communication channel to the Pixy-S is online and the system is operating nominally.</p> <p>Green: The airframe is flying and images taken will be geotagged when the airframe lands. The "GTG" under the icon will change to an image count</p> |
|  | <p>This icon will either display or remove from display the gimbal slider bar. More information on the slider bar is discussed below.</p> |
|  | <p>This icon will trigger the camera to either take a still picture, or video. Selecting the video camera once will begin video recording, and a second time will stop video recording.</p> |

Selecting the  icon will cause the gimbal control window to be displayed, or to be removed from the display. The control window is shown below:

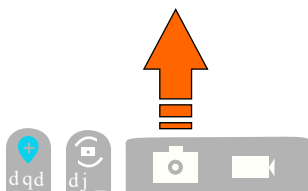


Moving the slider will cause the gimbal to change the camera tilt angle. Moving to the left points the camera down, while moving the slider to the right points the camera up. As the slider bar is moved, the gimbal angle will be displayed in the center box. The gimbal angle can also be controlled by the scroll wheel located in the upper left of the hand controller. The gimbal angle will also be displayed in the center box when controlled by the scroll wheel.

The other icons in the gimbal control window are described below:

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|  | <p>Pressing this icon will force the gimbal to the nadir position. A second press will have no effect.</p> |
|  | <p>Pressing this icon will force the gimbal to the horizontal position. A second press will have no effect.</p> |
|  | <p>This icon is a status display of the gimbal angle. Pressing this icon has no effect.</p> |
|  | <p>This icon switches the control of the gimbal from software control with the status light red, to Sbus control. The Vision Aerial Pixy-S design does not use Sbus control so pressing this icon has no effect.</p> |
|  | <p>This icon turns the gimbal motors on and off. A green light shows the motors are on and powered. A red light indicates that the motors are not operating properly and the gimbal is not stable. Pressing this button will cause the gimbal motors to go into standby and leave the gimbal uncontrolled. This button should not be pressed during flight.</p> |







Swiping up on the still camera icon brings up a window with various camera control icons.




As shown below:



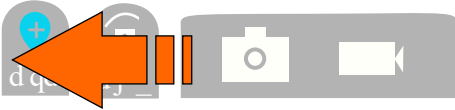
All these camera control buttons have plus (+) and minus (-) controls to either increase or decrease the selected function.

| | |
|---|--|
|  | This icon controls the shutter speed. |
|  | This icon controls the aperture. |
|  | This icon controls the ISO. |
|  | This icon controls the exposure. |
|  | This icon controls the white balance. |
|  | This icon controls the zoom. Swiping either left or right will also increase or decrease the zoom. |



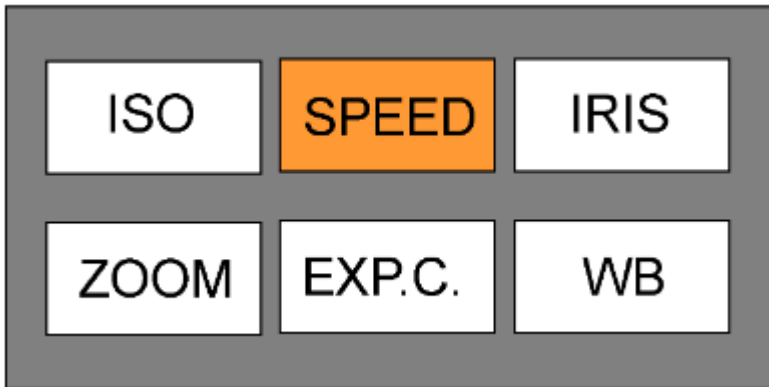
Pressing the  button in the upper right of the camera control display will restore the screen to the original

Swiping left on the camera icon will minimize the main icons to give full screen control to functions that may be occluded by the icons. Swiping up from the bottom center of the screen will restore the icons.



Swiping right on the camera icon will bring up additional functionality that allows additional control of the gimbal. These parameters are set by Vision Aerial and changing any of them is not recommended.

A long press on the hand controller “D” button will cause another camera control screen to appear as shown below:



Pressing any of the larger buttons will control that function. After selecting the function to control, short presses on the “C” and “D” buttons will increase or decrease that function on the camera. The first short press on the “C” or “D” button will cause this screen to return to the previous screen. Subsequent short presses on the “C” or “D” buttons will control the same selected functions until the hand controller is reset.

Sony A7Riv Camera Manual

<https://www.sony.com/electronics/support/res/manuals/5007/d531f403cf9be9e583cba8a8a3f-d4449/50073251M.pdf>