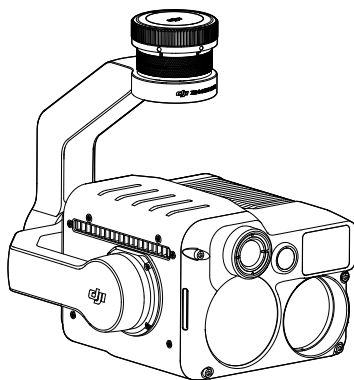


# ZENMUSE H20N

## User Manual v1.0

2022.03



### **Searching for Keywords**

Search for keywords such as “battery” and “install” to find a topic. If you are using Adobe Acrobat Reader to read this document, press Ctrl+F on Windows or Command+F on Mac to begin a search.

### **Navigating to a Topic**

View a complete list of topics in the table of contents. Click on a topic to navigate to that section.

### **Printing this Document**

This document supports high resolution printing.

# Using this Manual

## Legend

 Warning

 Important

 Tips

## Caution

1. When not in use, store the Zenmuse H20N in the storage case and replace the desiccant packet as necessary to prevent fogging the lenses due to excessive ambient humidity. If the lenses fog up, the water vapor will usually dissipate after turning on the device for a while. The recommended storage environment is a relative humidity less than 40% at a temperature of  $20\pm5^{\circ}\text{C}$ .
2. Do not expose the infrared camera lenses to a strong energy source such as the sun, lava or laser beam. The temperature of the observation target should not exceed  $800^{\circ}\text{C}$ , otherwise it will burn the camera and cause permanent damage.
3. Do not place the product under direct sunlight, in areas with poor ventilation, or near a heat source such as a heater.
4. Do not frequently power on/off the product. After it is turned off, wait at least 30 seconds before turning back on, otherwise the product life will be affected.
5. Under stable laboratory conditions, the Zenmuse H20N achieves an IP44 protection rating by IEC60529 standards. However, this protection rating is not permanent and may reduce over time after long-term use.
6. Make sure the gimbal port and gimbal surface are free from any liquid before installation.
7. Make sure the gimbal is securely installed onto the aircraft, the microSD card slot cover is clean and firmly in place.
8. Make sure the gimbal surface is dry before opening the microSD card slot cover.
9. Do not plug or unplug the microSD card during use.
10. Do not touch the surface of the camera lenses and keep it away from hard objects, as doing so may lead to blurred images and affect the imaging quality.
11. Clean the surface of the camera lenses with a soft, dry, clean cloth. Do not use alkaline detergents.

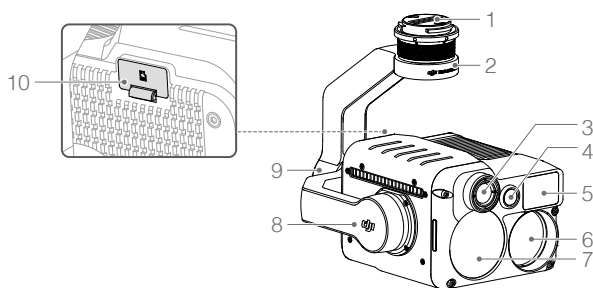
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# Introduction

Equipped with two long-wave infrared thermal cameras, a zoom camera, and a wide-angle camera, the Zenmuse H20N gimbal camera can provide infrared and visual images simultaneously. Users can quickly switch to a highly magnified zoom camera view after recognizing a target in a wide camera view. Thanks to the laser range finder, the H20N can provide the location of a target and the distance to them during a search and rescue operation or aid in site inspection with rapid positioning information that improves working efficiency.

Zenmuse H20N can be mounted onto the Matrice 300 RTK aircraft and stream live video to the DJI Pilot 2 app.



1. Gimbal Connector
2. Pan Motor
3. Wide Infrared Thermal Camera
4. Wide Camera
5. Laser Range Finder
6. Tele Infrared Thermal Camera
7. Zoom Camera
8. Tilt Motor
9. Roll Motor
10. microSD Card Slot

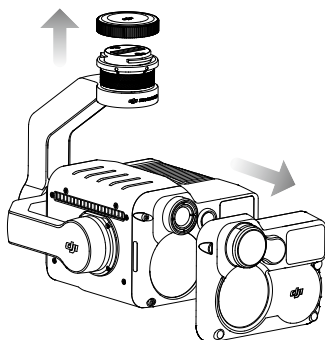
# Installation

## Supported Aircraft

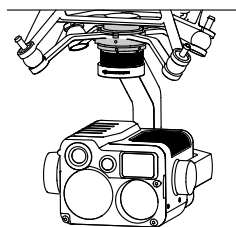
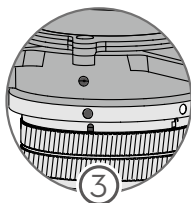
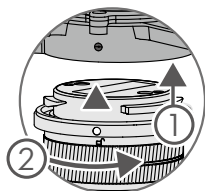
Matrice 300 RTK

## Mounting the Zenmuse H20N

1. Remove the gimbal cap and lens protector.



2. Align the white and red dots and insert the gimbal onto the Matrice 300 RTK aircraft. Rotate the gimbal connector to the locked position.



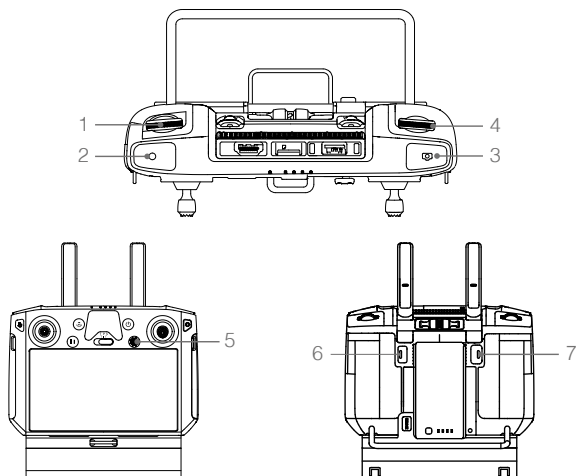
- Hold the aircraft firmly and steadily rotate the gimbal connector to attach and detach the gimbal.
- Ensure the microSD card slot cover is firmly in place to prevent dust or moisture entering during usage or storage.

## Activation

The Zenmuse H20N gimbal and camera requires activation before using. Mount it onto the aircraft, then power on the aircraft and remote controller, follow the on-screen instructions to activate using DJI Pilot 2. An internet connection is required for activation.

# Remote Controller Operation

Adjust the gimbal's tilt using the left dial and adjust its pan by the right dial. Press the shutter button or record button to take photos or record video. Toggle the 5D button to adjust the zoom (up and down) and EV value (left and right). The customizable button C1 can be used to recenter the gimbal, and the customizable button C2 can be used to switch between the main and auxiliary screen.



## 1. Left Dial

Turn to adjust the gimbal's tilt.

## 2. Record Button

Press to start/stop recording video.

## 3. Shutter Button

Press to take a photo, you can set the photo mode as single or interval in the DJI Pilot 2 app. Taking single photo is supported during video recording.

## 4. Right Dial\*

Turn to adjust the gimbal's pan.

## 5. 5D Button

The default function is as follows. The function for this button can be customized in the DJI Pilot 2 app.

Left: Decrease EV value

Right: Increase EV value

Up: Zoom in

Down: Zoom out

## 6. Customizable Button C2

The default function is to switch between the main and auxiliary screen. The function for this button can be customized in the DJI Pilot 2 app.

## 7. Customizable Button C1

The default function is to recenter the gimbal. The function for this button can be customized in the DJI Pilot 2 app.

\* Press and hold the confirm button and then turn the right dial to adjust the zoom.

# DJI Pilot 2 App Controls

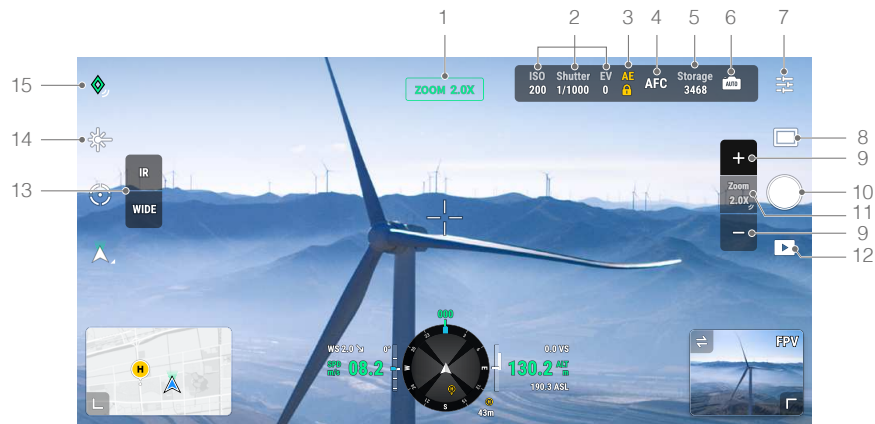
Besides capturing photos, recording videos, and playback functions, the touch interface provides more intuitive and convenient control options such as Auto Night Scene, Spot Meter, Isotherm functions, and Link Zoom for visual and infrared thermal cameras.

The following image is for reference only. The actual interface varies according to the app version.

## Basic Functions

You can watch liveviews from the Zenmuse H20N and change camera settings in Camera View.

Below is an example where the main screen shows the zoom camera view.



### 1. Camera and Zoom

Displays the camera for the current liveview and its zoom rate.

### 2. Camera Parameters

Displays the camera's current shoot/record parameters.

### 3. Auto Exposure Lock

Tap to lock the exposure value.

### 4. Focus Mode

Tap to switch the focus mode. Various focus modes are supported: MF (manual focus), AF-C (continuous autofocus) and AF-S (single autofocus).

### 5. Storage Capacity

Displays the available capacity of the microSD card.

### 6. Auto/Manual Exposure Switch

Tap to switch between auto and manual exposure.

### 7. Camera Settings

#### • Photo Settings (effective in photo mode)

Image Ratio: 16: 9 (visible photo), 5:4 (infrared photo)

Image Format: JPEG

Save Photo: Includes Current View, Wide Photo, Zoom Photo and Infrared Photo. Current view will save the photo taken by the current camera, but in the SBS display mode of the infrared thermal camera, it will save the screenshot instead. Photos will be saved in the microSD card in the gimbal and camera.

- **Video Settings (effective in video mode)**

Video Format: MP4

Save Video: Includes Current View, Wide Video, Zoom Video and Infrared Video. Current view will save a recording of the current liveview of the app (not the HD camera feed). Videos will be saved in the microSD card in the gimbal and camera.

- **General Settings**

#### **Create Folder**

Create a folder manually on the microSD card of the gimbal and camera to store photos and videos, with customizable folder names.

#### **Timestamp**

Enable or disable the timestamp. Customized timestamp can be created to include information such as aircraft model, aircraft SN, coordinates, altitudes, date and time. Timestamp location can also be customized.

#### **Video Caption**

After video caption is enabled, a caption file will be created when videos are saved. The caption file includes information such as frame number, exposure parameters, gimbal attitude, aircraft attitude, etc.

#### **LEDs Off When Shooting And Recording**

Frame Arm LEDs will turn off automatically during shooting and recording.

#### **Night Scene (for Zoom Camera only)**

Choose Auto Night Scene mode, or turn Night Scene on or off. In Night Scene mode, the zoom camera will switch the IR filter of the zoom camera, and optimize imaging in low-light environment with the intelligent night scene enhancement function.

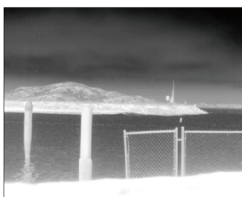
#### **Lock Gimbal while Shooting**

Enable or disable gimbal lock while taking photos. If enabled, the gimbal will be locked in place to ensure image stability when the aircraft is moving.

#### **ROI (Region of Interest) (for infrared thermal cameras only)**

Use this feature to manage color range distribution across the screen to maximize contrast for regions of interest. Select "Full" to evenly distribute the color spectrum across the entire image. For instance, if there is a large patch of sky (at relatively low temperature) in your image, much of the color spectrum will be allocated to the lower temperature range, meaning that other parts of the spectrum will have a lower contrast. In this case, you may select "Sky excluded (33%)" or "Sky excluded (50%)" to ignore areas of the sky so that most of the spectrum can be allocated to remaining areas, providing higher contrast and utility for analysis.

Below is the comparison between ROI set to Full and Sky excluded from ROI.



ROI set to "Full"



Sky excluded from ROI

### Scene (for infrared thermal cameras only)

Enhance your images instantly by selecting Default, Inspection, or Manual. After selecting Manual, users can set and save custom parameters according to their needs.

The camera will automatically apply the following properties to obtain the best result.

- DDE (Digital Detail Enhancement): Enhances image details and/or suppresses fixed pattern noise.
- Contrast: The ratio of black and white of the image. Colors will be richer and have more contrast when the value is high.
- Brightness: The brightness of the image.

### Auto FFC (for infrared thermal cameras only)

Enable or disable the automatic FFC calibration. The infrared thermal cameras will automatically calibrate at regular intervals.

### Gridlines

Enable or disable the gridlines or diagonal.

### Laser Module

Select Enhanced Mode or On-Demand Mode based on your needs. Note that the mode will be reset to Enhanced after the camera is restarted.

### Reset Camera Settings

Tap to reset the camera to the default settings.

### Format SD Card

Tap to format and remove all content from the microSD card. Operate with caution.

## 8. Photo/Video Toggle

Tap to switch between photo and video modes, and select different shooting or recording modes.

Photo Mode: Single Shot, Interval (2/3/5/7/10/15/20/30/60 s), High-Res Grid Photo, Panorama.

Video Mode:

Zoom: 1920x1080@30fps, 2688x1512@30fps, 1920x1080@15fps (Night Scene Mode)

Wide: 1920x1080@30fps

IR: 640x512@30fps

## 9. Zoom (Zoom Camera)

Tap to adjust the zoom magnification level of the zoom camera. The zoom magnification of the zoom camera ranges from 2x to 128x.

- If the main screen shows the zoom camera view, the liveview can be changed directly by adjusting the zoom.
- If the main screen shows the infrared thermal camera view: when Link Zoom is enabled, the liveview can be changed directly by adjusting the zoom if the zoom magnification level is not

above 32x; but only the zoom camera preview box in the middle of the screen will be changed if the zoom magnification level is above 32x. When Link Zoom is disabled, only the zoom camera preview box in the middle of the screen will be changed.

- If the main screen shows the wide camera view, only the zoom camera preview box in the middle of the screen will be changed by adjusting the zoom.

#### 10. Shutter/Record Button

Tap to shoot photos or start or stop recording.

#### 11. Link Zoom

Press and hold for two seconds to enable or disable Link Zoom.

Once enabled, in the infrared thermal camera view, the button for adjusting the zoom of the infrared cameras will disappear automatically. In this case, adjusting the zoom of the zoom camera will change the zoom of the infrared thermal cameras at the same time.

The infrared thermal camera can zoom up to 32x. When the zoom magnification of the zoom camera is adjusted to 32x or above, a pop-up will appear on the DJI Pilot 2 app interface indicating that the infrared thermal camera has reached the maximum magnification level. The maximum magnification level will remain at 32x and no longer increase.

#### 12. Playback

Tap to enter and preview photos and videos as soon as they are captured.

#### 13. Camera View Switch Button

Tap to switch the main screen to the camera view corresponding to the button.

#### 14. Laser Ranging

Tap to enable the laser ranging function. Laser ranging can measure the distance of objects within the measurement range, and displays the distance from the aircraft and the absolute height of the measured object in the middle of the screen.

#### 15. Pin Point

Tap on the target in the center of the view to record the latitude, longitude and altitude of the point.

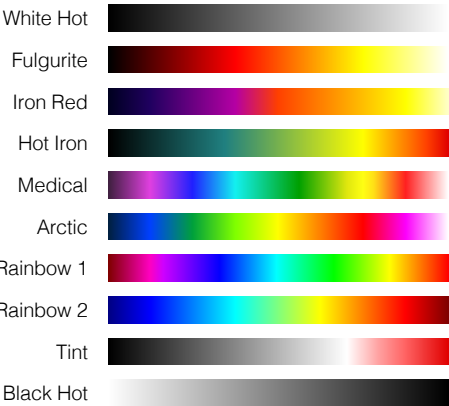
Below is an example where the main screen shows the wide infrared thermal camera view.



16. Palette/Isotherm

Palette

The Zenmuse H20N offers a variety of palette options. Distinct colors are used to show temperature differences in the thermal image using grayscale intensity. The temperature range of the image is mapped to 256 colors and displayed in the 8-bit JPEG or MP4 format. The following table shows all palette options.



| Palette   | Description                                                                                                                                                                                                                                                                                            |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| White Hot | The most commonly used pseudo color, using white for high temperatures and black for low temperatures, which is a natural association for people.                                                                                                                                                      |
| Fulgurite | Dark red represents low temperatures and white represents high temperatures. The warm tone of this palette aligns with people's association with hot temperatures.                                                                                                                                     |
| Iron Red  | This palette displays nuanced differences in heat signatures, quickly displaying anomalies and human bodies. Hotter objects appear as light warm colors and colder objects appear as dark cool colors.                                                                                                 |
| Hot Iron  | Red represents high temperatures, and cool colors represent low temperatures. It is able to identify hot targets quickly, while showing the details of cool targets.                                                                                                                                   |
| Medical   | This palette shows nuanced differences in temperatures, and is therefore ideal for scenarios with small temperature changes. In environments with low contrast, it is still able to detect objects and slight temperature changes. It is mainly used in the medical field for human body temperatures. |
| Arctic    | Uses the same palette as Medical, except switching the purple for a cool blue to better reflect temperature changes.                                                                                                                                                                                   |
| Rainbow 1 | Similar to Medical, it reduces the warm color ratio and increases the cold color ratio for high temperature targets to better show the details of cool targets.                                                                                                                                        |
| Rainbow 2 | The color transition is reduced, the warm and cold colors are moderately proportioned, which can show the details of high and low temperature targets at the same time.                                                                                                                                |

|           |                                                                                                                                                                                                                                                                    |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tint      | Uses black and white for low temperatures and bright red for high temperatures, it is able to detect high temperature targets quickly. Mainly used for high-contrast environments, ideal for quickly and accurately identifying high temperature targets at night. |
| Black Hot | The opposite to White Hot, using black for warmer objects and white for cooler objects. The heat distribution of high temperature targets can be better observed when outdoors.                                                                                    |

Below are examples of different palette options.

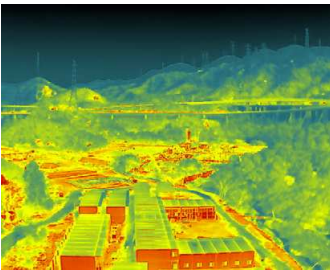
White Hot



Black Hot



Hot Iron



Iron Red



Tint

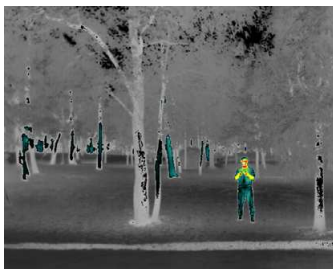


## Isotherm

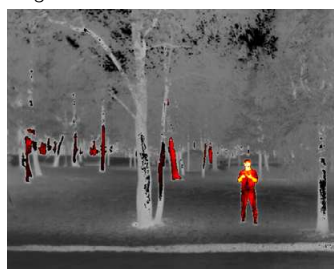
This feature allows designated temperature ranges to be represented with different color schemes, so that objects within this range impart higher contrast and better visibility. The temperature range is set with upper and lower thresholds.

Below are examples of isotherm features enabled.

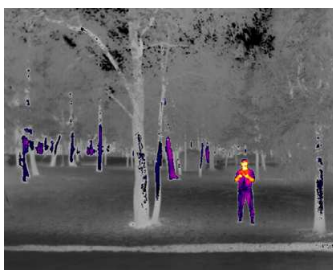
Hot Iron Isotherm



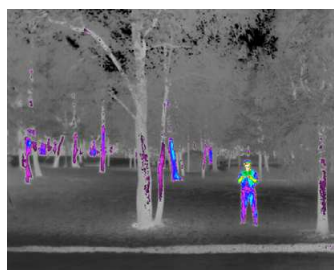
Fulgurite Isotherm



Iron Red Isotherm



Medical Isotherm



## 17. Gain Mode

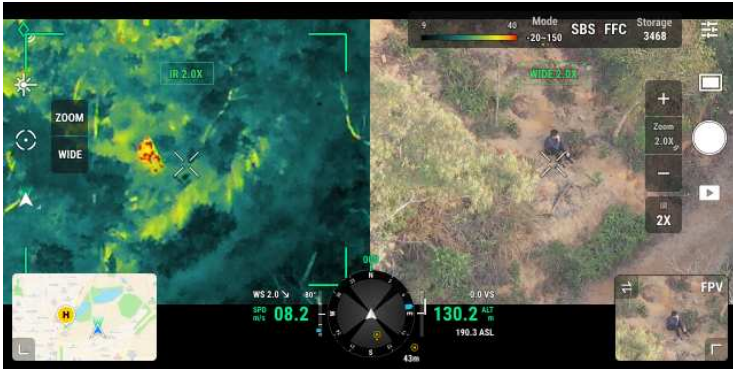
Tap to adjust the temperature range. Users can choose High Gain Mode or Low Gain Mode. High Gain Mode: A narrower temperature range can be captured with a higher sensitivity to temperature differences. Low Gain Mode: A wider temperature range can be captured with a lower sensitivity to temperature differences.

## 18. Display Mode

Tap to switch between the IR and Split display modes for infrared thermal camera.

IR: only displays footage captured by the infrared thermal camera.

Split: Both the footage captured by the infrared thermal camera and the zoom camera will be displayed side by side.



### 19. FFC Calibration

Tap this button to execute FFC calibration. FFC calibration is a function of the infrared thermal camera for optimizing image quality. During calibration, your screen may freeze momentarily and the camera will make a clicking sound.

### 20. Zoom (Infrared Thermal Camera)

Tap to adjust the digital zoom of the infrared thermal camera to 2x, 4x, 8x, 16x or 32x.

## Intelligent Functions

### Link Zoom

Press and hold the Link Zoom button on the app for two seconds to enable Link Zoom. Once enabled, users can adjust the zoom magnification of the zoom camera and infrared thermal camera at the same time. Press and hold the button for two seconds again to disable Link Zoom.

### Click to Aim

Double-click the point of interest on the main screen. The gimbal will automatically move to the point of interest in the center of the screen.

### High-Res Grid Photo

Drag to select an area in the wide camera view, the gimbal will move automatically and take a series of 4MP photos of the selected area at the current zoom ratio with the zoom camera.

Tap the Photo/Video toggle and enter Photo Settings, and then select High-Res Grid Photo. After entering this function, the liveview will switch to the wide camera view. You can set the target shooting area by editing, moving and zooming the white grid on the screen.

All photos will be saved in the same sub-folder in the microSD card, and an HTML file will be created. To view the wide and close-up images, open this HTML file using a browser on a PC.

### Night Scene (for Zoom Camera only)

In Night Scene mode, the camera will switch the IR filter of the zoom camera, and optimize imaging in low-light environment with the intelligent night scene enhancement function. Tap MENU, General Settings, and then enable Night Scene.

## Temperature Measurement (for infrared thermal cameras only)

### Spot Meter

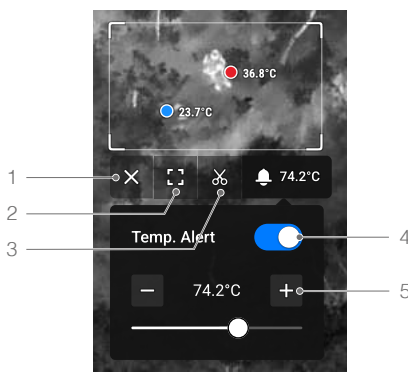
Tap any position within the temperature measurement area on the screen to measure the temperature.

### Area Measurement

Drag to select an area within the temperature measurement area on the screen. The lowest temperature, highest temperature, and their corresponding locations in this area will be displayed on the screen.

Tap the icons below the selected area box to:

1. Close the area measurement page;
2. Maximize the page;
3. Take a screenshot of the measurement result;
4. Enable/disable Temperature Alert;
5. Set alert temperature. After Temperature Alert is enabled, users can set the alert temperature. Once the highest temperature exceeds the set alert temperature, the remote controller will issue a warning sound.



Temperature measurement accuracy is affected by various factors:

1. Reflectivity of objects - Shiny metals with high reflectivity will reflect more of the background radiation and result in lower accuracy, whereas objects with matte surfaces will produce higher accuracy.
2. Temperature of background radiation – Sunlight affects temperature measurement accuracy, so the infrared thermal camera should be kept out of exposure to direct or reflected sunlight.
3. Air temperature and humidity – Temperature and humidity resistance has been calibrated before delivery, but some temperature measurement errors are inevitable. Extreme temperatures or humidity levels will affect measurement accuracy.
4. Distance between the camera and the object – The default distance used in calibration is 5 m, which generates the most accurate temperature measurement. Deviations from this distance will lower the accuracy.

5. Emissivity of objects – The emissivity of the object will affect temperature measurement accuracy. Generally, accuracy increases proportionally to emissivity. Emissivity is affected by factors such as the material, or the roughness or degree of oxidation of the object's surface.
- 

 When measuring a blackbody 5 m away at 25° C in a windless indoor environment, using the High Gain Mode, the wide infrared thermal camera provides an accuracy of up to  $\pm 2^{\circ}\text{C}$  or  $\pm 2\%$  (whichever is the larger value), and the tele-infrared thermal camera provides an accuracy of up to  $\pm 5^{\circ}\text{C}$  or  $\pm 4\%$  (whichever is the larger value). Since the emissivity of different blackbody varies, this measurement result only represents the accuracy of the tested blackbody and is for reference only.

---

# Updating Firmware

- 
- Ensure the aircraft, the remote controller and the Zenmuse H20N have all been updated to the latest firmware. Otherwise, usage may be affected.
  - Do not power off the aircraft or detach the gimbal and camera while updating the firmware. Restart them once firmware update is complete.

## Using DJI Pilot 2

### Online Update

1. Make sure that the H20N is securely mounted onto the aircraft, that there is a strong connection between the aircraft and remote controller and other DJI devices used with the aircraft, and that all devices are powered on.
2. Run DJI Pilot 2, tap HMS -> Firmware Update -> Update All to update. The remote controller must be connected to the internet during firmware update.



This will update the firmware of both the H20N and the other DJI devices connected.

### Offline Update

An offline firmware package can be downloaded from the DJI official website to an external storage device such as an SD card or USB flash drive. Run DJI Pilot 2, tap HMS -> Firmware Update -> Offline Update to select the firmware package for the H20N from the external storage device and tap Update All to update.

## Using microSD Card

Make sure that the H20N is securely mounted onto the aircraft and the aircraft is powered off. Check that there is enough free space on the microSD card and the Intelligent Flight Batteries are fully charged.

1. Visit the Zenmuse H20N product page on the DJI official website and go to Downloads.
2. Download the latest firmware.
3. Once downloaded, copy the firmware file to the root directory of the microSD card.
4. Insert a microSD card into the microSD card slot of the H20N.
5. Power on the aircraft. The H20N will perform an auto-check and start to update automatically. H20N will beep to indicate the status of the firmware update.
6. Restart the device after the firmware update is complete.

| Alarm                                 | Description                                                                                        |
|---------------------------------------|----------------------------------------------------------------------------------------------------|
| 1 short beep                          | An update file is detected, preparing for update.                                                  |
| 4 short beeps                         | Updating firmware, do not stop the update.                                                         |
| 1 long beep followed by 2 short beeps | The firmware update was successful.                                                                |
| Continuous long beep                  | The firmware update failed, please try to update again.<br>Contact DJI support for help if needed. |



Make sure that there is only one firmware update file on the microSD card.

# Appendix

| Specifications            |                                                                             |
|---------------------------|-----------------------------------------------------------------------------|
| General                   |                                                                             |
| Product Name              | Zenmuse H20N                                                                |
| Dimensions                | 178×135×161 mm                                                              |
| Weight                    | 878±5 g                                                                     |
| Ingress Protection Rating | IP44                                                                        |
| Laser Safety              | Class 1M (IEC 60825-1:2014)                                                 |
| Supported Aircraft        | Matrice 300 RTK                                                             |
| Gimbal                    |                                                                             |
| Angular Vibration Range   | ±0.01°                                                                      |
| Mounting                  | Detachable                                                                  |
| Controllable Range        | Pan: ±320°, Tilt: -120° to +60°                                             |
| Mechanical Range          | Pan: ±330°, Tilt: -132.5° to +68°, Roll: -90° to +60°                       |
| Max Controllable Speed    | Pan: 90°/s, Tilt: 90°/s                                                     |
| Zoom Camera               |                                                                             |
| Image Sensor              | 1/1.8" CMOS; Effective Pixels: 4M                                           |
| Lens                      | Focal Length: 6.8-119.9 mm (Equivalent focal length: Approx. 32.7-574.5 mm) |
|                           | Aperture: f/2.8-f/11 (day); f/1.6-f/11 (night)                              |
|                           | Focus: 1 m to ∞ (wide); 8 m to ∞ (telephoto)                                |
| Focus Mode                | MF/AF-C/AF-S                                                                |
| Exposure Mode             | Manual, Auto                                                                |
| Exposure Compensation     | ±3.0 (1/3 increments)                                                       |
| Metering Mode             | Spot Metering, Average Metering                                             |
| AE Lock                   | Supported                                                                   |
| Electronic Shutter Speed  | Photo: 8-1/8000 s                                                           |
|                           | Video: 1/30-1/8000 s                                                        |
|                           | Photo/Video (Night Scene): 1/15-1/8000 s                                    |
| ISO Range                 | Video: 100-102400                                                           |
|                           | Photo: 100-102400                                                           |
| Video Resolution          | 2688×1512@30fps                                                             |
|                           | 1920×1080@30fps                                                             |
|                           | 1920×1080@15fps ( Night Scene)                                              |
| Video Format              | MP4                                                                         |
| Video Caption             | Supported                                                                   |
| Max Image Size            | 2688×1512                                                                   |
| Photo Format              | JPEG                                                                        |
| Wide Camera               |                                                                             |
| Image Sensor              | 1/2.7" CMOS; Effective Pixels: 2M                                           |
| Lens                      | DFOV: 73.6°                                                                 |
|                           | Focal Length: 4.5 mm (Equivalent focal length: Approx. 29 mm)               |
|                           | Aperture: f/2.8                                                             |
|                           | Focus: 1 m to ∞                                                             |

|                                     |                                                                                             |
|-------------------------------------|---------------------------------------------------------------------------------------------|
| Exposure Mode                       | Auto                                                                                        |
| Exposure Compensation               | ±3.0 (1/3 increments)                                                                       |
| Metering Mode                       | Spot Metering, Average Metering                                                             |
| AE Lock                             | Supported                                                                                   |
| Electronic Shutter Speed            | 1-1/8000 s                                                                                  |
| ISO Range                           | Video: 100-102400<br>Photo: 100-102400                                                      |
| Video Resolution                    | 1920×1080@30fps                                                                             |
| Video Format                        | MP4                                                                                         |
| Video Caption                       | Supported                                                                                   |
| Max. Image Size                     | 1920×1080                                                                                   |
| Image Format                        | JPEG                                                                                        |
| <b>Wide Infrared Thermal Camera</b> |                                                                                             |
| Thermal Imager                      | Uncooled VOx Microbolometer                                                                 |
| Lens                                | DFOV: 45.5°                                                                                 |
|                                     | Focal Length: 12 mm (Equivalent focal length: Approx. 53 mm;                                |
|                                     | Equivalent optical zoom rate: 2x)                                                           |
|                                     | Aperture: f/1.0<br>Focus: 5 m to ∞                                                          |
| Equivalent digital zoom rate        | 4x                                                                                          |
| Video Resolution                    | 640×512 @ 30 fps                                                                            |
| Video Format                        | MP4                                                                                         |
| Image Resolution                    | 640×512                                                                                     |
| Image Format                        | R-JPEG (16 bit raw included)                                                                |
| Pixel Pitch                         | 12 μm                                                                                       |
| Spectral Band                       | 8-14 μm                                                                                     |
| Sensitivity (NETD)                  | ≤50 mK @ f/1.0                                                                              |
| Temperature Measurement Method      | Spot Meter, Area Measurement                                                                |
| Scene Range                         | -20° to 150° C (High Gain)                                                                  |
|                                     | 0° to 500° C (Low Gain)                                                                     |
| Temperature Alert                   | Supported                                                                                   |
| FFC                                 | Auto/Manual                                                                                 |
| Palette                             | White Hot/Fulgurite/Iron Red/Hot Iron/Medical/Arctic/Rainbow 1/<br>Rainbow 2/Tint/Black Hot |
| <b>Tele-infrared Thermal Camera</b> |                                                                                             |
| Thermal Imager                      | Uncooled VOx Microbolometer                                                                 |
| Lens                                | DFOV: 12.5°                                                                                 |
|                                     | Focal Length: 44.5 mm (Equivalent focal length: Approx. 196 mm;                             |
|                                     | Equivalent optical zoom rate: 8x)                                                           |
|                                     | Aperture: f/1.2<br>Focus: 45 m to ∞                                                         |
| Equivalent Digital Zoom             | 16x, 32x                                                                                    |
| Video Resolution                    | 640×512@30fps                                                                               |

|                                |                                                                                                                                                                                                                                                                                                                     |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Video Format                   | MP4                                                                                                                                                                                                                                                                                                                 |
| Image Resolution               | 640×512                                                                                                                                                                                                                                                                                                             |
| Image Format                   | R-JPEG* (16 bit raw included)                                                                                                                                                                                                                                                                                       |
| Pixel Pitch                    | 12 μm                                                                                                                                                                                                                                                                                                               |
| Spectral Band                  | 8-14 μm                                                                                                                                                                                                                                                                                                             |
| Sensitivity (NETD)             | ≤50 mK @ f/1.0                                                                                                                                                                                                                                                                                                      |
| Temperature Measurement Method | Spot Meter, Area Measurement                                                                                                                                                                                                                                                                                        |
| Scene Range                    | -20° C to 150° C (High Gain)<br>0° C to 500° C (Low Gain)                                                                                                                                                                                                                                                           |
| Temperature Alert              | Supported                                                                                                                                                                                                                                                                                                           |
| FFC                            | Auto/Manual                                                                                                                                                                                                                                                                                                         |
| Palette                        | White Hot/Fulgurite/Iron Red/Hot Iron/Medical/Arctic/Rainbow 1/<br>Rainbow 2/Tint/Black Hot                                                                                                                                                                                                                         |
| <b>Laser Range Finder*</b>     |                                                                                                                                                                                                                                                                                                                     |
| Wavelength                     | 905 nm                                                                                                                                                                                                                                                                                                              |
| Max Laser Power                | 3.5 mW                                                                                                                                                                                                                                                                                                              |
| Measurement Accuracy           | ± (0.2 m + target distance x 0.15%)                                                                                                                                                                                                                                                                                 |
| Measuring Range                | 3-1,200 m (0.5×12 m vertical surface with 20% reflectivity)                                                                                                                                                                                                                                                         |
| <b>Storage**</b>               |                                                                                                                                                                                                                                                                                                                     |
| Supported SD Cards             | Supports a UHS-I Speed Grade 3 microSD card with a capacity of up to 128 GB                                                                                                                                                                                                                                         |
| Supported File System          | exFAT                                                                                                                                                                                                                                                                                                               |
| Recommended microSD Cards      | SanDisk Extreme PRO_32GB_U3_A1_microSD_V30_HC I<br>SanDisk Extreme_32GB_U3_A1_microSD_V30_HC I<br>SanDisk Extreme_64GB_U3_A2_microSD V30_HC I<br>Kioxia EXCERIA Plus_64GB_microSD_V30_HC I<br>Samsung EVO_128GB_U3_microSD_XC I<br>Samsung EVO Plus_128GB_U3_microSD_XC I<br>Lexar 667x_64GB_U3_A2_microSD_V30_XC I |
| <b>Environment</b>             |                                                                                                                                                                                                                                                                                                                     |
| Operating Temperature          | -20° to 50° C (temperature measurement only functions in the temperature range of -10° to 50° C)                                                                                                                                                                                                                    |
| Storage Temperature            | -20° to 60° C                                                                                                                                                                                                                                                                                                       |

\* Optical parameters of the laser rangefinder: laser pulse width is 6.5 ns, repetition frequency is 12.5 kHz, maximum peak power is 45 W. DO NOT disassemble the laser range finder, otherwise you may be injured by the laser.

\*\* Zenmuse H20N supports the Security Code function. Go to Data and Privacy in DJI Pilot 2 and set the code to encrypt the microSD card installed on the camera. Download DJI Decrypt Tool from the DJI official website to decrypt the microSD card on a Windows computer and access the card content.

DJI Support

<http://www.dji.com/support>

This content is subject to change without prior notice.

Download the latest version from

[\*\*http://www.dji.com/zenmuse-h20n\*\*](http://www.dji.com/zenmuse-h20n)

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