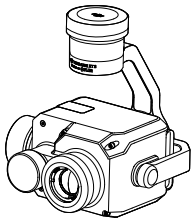


# ZENMUSE XT 2

THERMAL BY 

Quick Start Guide

V1.2 2018.05



## Disclaimer and Warning

Congratulations on purchasing your new DJI™ product. The information in this document affects your safety and your legal rights and responsibilities. Please read this entire document carefully to ensure proper configuration before use. Failure to read and follow instructions and warnings in this document may result in serious injury to yourself or others, or damage to your DJI product or damage to other objects in the vicinity, or violation of the EU export control law. This document and all other collateral documents are subject to change at the sole discretion of SZ DJI Technology Co., Ltd. (DJI).

### Comply with Applicable Export Control Laws

You are advised that export, re-export and transfer of ZENMUSE™ XT 2 equipped with the thermal imaging camera, and related product, spare parts, technology, and software (hereafter refer to "Products") are subjected to EU export control law (Council Regulation (EC) No 428/2009) and other applicable export control laws and sanctions (hereafter refer to "Export Control Laws"). Prior to your use, sale, transfer, rental or other conduct related to the Products, unless permitted by the Export Control Laws or with the license issued by competent authorities, you shall in particular check and guarantee by appropriate measures that:

1. There will be no infringement of an embargo imposed by the EU;
2. These Products are not intended for use in connection with armaments, nuclear, chemical or biological weapons, or missile technology applications;
3. These Products will not be provided to the entities, persons, and organizations listed in all applicable sanctioned party lists.

### Export Compliance; Disclaimer; Indemnity

You acknowledge it is your responsibility to comply with EU export control law and any other applicable export control laws. You shall solely be responsible for the legal responsibility if any of your use, sale, transfer, rental or other conduct related to the Products fail to comply with the applicable export control laws. DJI shall, in no circumstances, be responsible for your violation of any applicable export control laws. Furthermore, you shall indemnify, defend, and hold harmless DJI, its affiliates, directors, officers, employees, agents, and representatives,

from and against any and all claims, demands, suits, causes of action, expenses (including reasonable attorneys' fees), damages, losses, or liabilities of any nature whatsoever, arising from, or allegedly arising from, or related to, your failure to comply with applicable export control laws.

### **Do Not Modify or Alter the Zenmuse XT 2**

The Zenmuse XT 2 has been calibrated specifically for the designated camera and lens before leaving the factory. No physical or mechanical modification or adjustment of the gimbal is required or recommended. Do not add any other component or device (such as a filter, lens hood, etc.) to the camera.

The Zenmuse XT 2 is a delicate instrument. Do not disassemble the gimbal or camera as this will cause permanent damage.

Be sure to use a DJI approved battery, otherwise performance may be hindered and internal malfunction or damage may occur.

### **Only Use Compatible Aircraft**

The Zenmuse XT 2 is currently compatible with the following DJI Aircraft: MATRICE™ 200 series and Matrice 600 series. It will also be compatible with designated further products. To optimize the gimbal's performance, download the latest DJI Pilot app and update the latest aircraft firmware, otherwise the Zenmuse XT 2 may not function properly.

### **Safe Use**

Make sure to operate your aircraft in the safest manner possible. Observe the procedures contained in the user manual and the online tutorials to mount and connect the gimbal to your aircraft. Please respect the AMA's national Model Aircraft Safety Code.

By using this product, you hereby signify that you have read this disclaimer and warning carefully and that you understand and agree to abide by the terms and conditions herein. You agree that you are solely responsible for your own conduct while using this product, and for any consequences thereof. You agree to use this product only for purposes that are proper and in accordance with all applicable laws, rules, and regulations, including international and domestic airspace regulations, and all terms, precautions, practices, policies, and guidelines DJI has made and may make available.

DJI accepts no liability for damage, injury or any legal responsibility incurred directly or indirectly from the use of this product. The user shall observe safe and lawful practices including, but not limited to, those set forth in the User Manual.

## In the Box

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Gimbal and Camera x1



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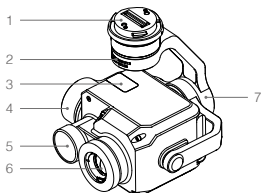
microSD Card x2



## Zenmuse XT 2

The Zenmuse XT 2 gimbal and camera features the FLIR Longwave Infrared Thermal Camera and a Visual Camera, providing both infrared and visual images simultaneously. The FLIR Longwave Infrared Thermal Camera provides high-sensitivity (<math><50 \text{ mK}@f/1.0</math>) infrared scanning at 640/30 fps or 336/60 fps (depending on the camera model), and comes with 9 mm, 13 mm, 19 mm and 25 mm lens options. The Visual Camera captures 4K videos and 12 megapixel photos.

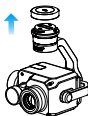
As with other DJI 3-axis gimbal systems, the Zenmuse XT 2 can be mounted onto the Matrice 200 series or Matrice 600 series aircraft and stream live HD video to the DJI Pilot app. This makes it excellent for aerial thermal applications such as inspection and maintenance, search and rescue, and precision agriculture.



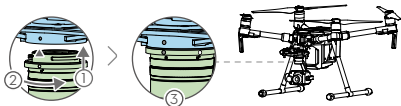
- |                     |                            |
|---------------------|----------------------------|
| 1. Gimbal Connector | 5. Visual Camera           |
| 2. Pan Motor        | 6. Infrared Thermal Camera |
| 3. microSD Slots    | 7. Roll Motor              |
| 4. Tilt Motor       |                            |

## Installation

1. Remove the gimbal cap.



2. The following installation display takes the Matrice 200 aircraft as an example. Rotate the gimbal connector to the unlocked position and insert the gimbal, and then rotate the gimbal connector to the locked position.

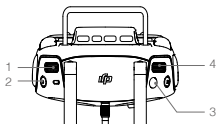


- Hold the gimbal connector firmly and apply a steady, firm rotating force when attaching or detaching the gimbal.
- Ensure the microSD card slot cover is firmly in place to prevent dust or moisture entering during usage or transportation.

## Camera Controls

### Remote Controller

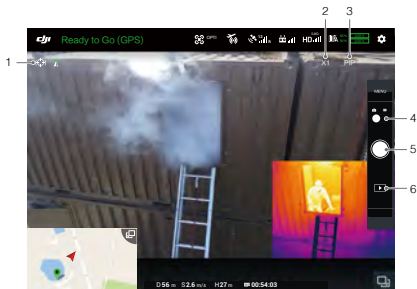
Press the right dial to select a Palette. Press the Shutter Button or Record Button to capture photos or record video. Adjust the camera's tilt using the left dial.



1. Left Dial
2. Record Button
3. Shutter Button
4. Right Dial

### DJI Pilot App

The touch interface can be used for capturing photos, recording videos, and playback. The Spotlight, Digital Zoom, Display Mode, Palette, Scene, and Isotherm functions, etc. can all be configured in the app.



1. Spotlight
2. Digital Zoom
3. Display Mode
4. Shutter/Record Toggle
5. Shutter/Record Button
6. Playback

## Specifications

<b>General</b>	
Name	Zenmuse XT 2
Dimensions	25 mm lens: 123.7×112.6×127.1 mm Other lens versions: 118.02×111.6×125.5 mm
Weight	25 mm lens: 629 g Other lens versions: 588 g
<b>Gimbal</b>	
Angular Vibration Range	±0.01°
Mount	Detachable
Controllable Range	Tilt: +30° to -90°, Pan: ±320°
Mechanical Range	Tilt: +45° to -130°, Pan: ±330°, Roll: -90° to +60°
Max Controllable Speed	Tilt: 90°/s, Pan: 90°/s
<b>Camera (Thermal)</b>	
Thermal Imager	Uncooled VOx Microbolometer
FPA/ Digital Video Display Formats	640×512; 336×256
Digital Zoom	640×512: 1x, 2x, 4x, 8x 336×256: 1x, 2x, 4x
Pixel Pitch	17 µm
Spectral Band	7.5-13.5 µm
Full Frame Rates	30 Hz
Exportable Frame Rates	<9 Hz
Sensitivity (NEΔT)	<50 mk @ f/1.0
Scene Range (High Gain)	640×512: -25° to 135°C 336×256: -25° to 100°C
Scene Range (Low Gain)	-40° to 550°C
File Storage	microSD card*
Photo Format	JPEG, TIFF, R-JPEG
Video Format	8 bit: MOV, MP4 14 bit: TIFF Sequence, SEQ**
<b>Camera (Visual)</b>	
Sensor	CMOS, 1/1.7", Effective Pixels: 12 M
Lens	Prime lens Focus at 8 mm, FOV 57.12° × 42.44°
Digital Zoom	1x, 2x, 4x, 8x
Photo Formats	JPEG
Video Formats	MOV, MP4
Video Resolutions	4K Ultra HD: 3840×2160 29.97p FHD: 1920×1080 29.97p

Working Modes	Capture, Record, Playback				
Still Photography Modes	Single Shot Burst Shooting (3/5 frames) Interval (2/3/5/7/10/15/20/30 sec)				
Video Caption	Supported				
Anti-flicker	Auto, 50 Hz, 60 Hz				
Storage	microSD card. Max capacity: 128 GB. UHS-3 required. Recommended model: Sandisk Extreme 16/32 GB UHS-3 microSDHC Sandisk Extreme 64/128 GB UHS-3 microSDXC				
Supported File System	FAT 32 (≤32GB), exFAT (>32GB)				
<b>Image Processing &amp; Display Control</b>					
Image Optimization	Yes				
Digital Detail Enhancement	Yes				
Polarity Control (Black Hot/ White Hot)	Yes				
Color & Monochrome Palettes (LUT)	Yes				
<b>Lens Models</b>	<b>9 mm</b>	<b>13 mm</b>	<b>19 mm</b>	<b>25 mm</b>	
640×512	FoV	/	f/1.25	f/1.25	f/1.1
	iFoV	/	45°×37° 1.308 mr	32°×26° 0.895 mr	25°×20° 0.680 mr
336×256	FoV	f/1.25	f/1.25	f/1.25	/
	iFoV	35°×27° 1.889 mr	25°×19° 1.308 mr	17°×13° 0.895 mr	/
Min Focus Distance	3.2 cm	7.6 cm	15.3 cm	30 cm	
Hyperfocal Distance	2.1 m	4.4 m	9.5 m	21 m	
Hyperfocal Depth of Field	1.1 m	2.2 m	4.8 m	11 m	

\* The SD card, which is located near the lens, is used to store TIFF Sequence and SEQ infrared RAW video only. The other format footage will be stored in the other SD card.

\*\* It is recommended to use ImageJ to play the TIFF Sequence video and Flir Tools to play SEQ video.

This content is subject to change.