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DJI P1

Efficiency through Flexible Full-frame Photogrammetry

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Full Frame - The New Benchmark for Aerial Surveying

The Zenmuse P1 integrates a full-frame sensor with interchangeable fixed-focus lenses on a 3-axis stabilized gimbal. Designed for photogrammetry flight missions, it takes efficiency and accuracy to a whole new level.

Accuracy without GCPs:
3 cm horizontally / 5 cm vertically [1]

High Efficiency
3 km^2 covered in a single flight [2]

45 MP
Full-frame Sensor

3-axis Stabilized Gimbal,
Smart Oblique Capture

Global Mechanical Shutter[3],
Shutter Speed 1/2000 Seconds

TimeSync 2.0 - synchronization
at the microsecond level

Your Go-to Tool for Aerial Photogrammetry

Extraordinary Efficiency

The P1 includes a full-frame, low-noise high-sensitivity sensor that can take a photo every 0.7 s during the flight, and covering 3 km^2 [2] in a single flight.

Remarkable Accuracy

Equipped with a global mechanical shutter and the all-new TimeSync 2.0 system, which synchronizes time across modules at the microsecond level, the P1 lets users capture centimeter-accurate data combined with the real-time position and orientation compensation technology.

Robust Versatility

Create 2D, 3D, and detailed models thanks to the integrated 3-axis gimbal that can be outfitted with 24/35/50mm lenses and the Smart Oblique Capture feature.

Efficiency to Cover It All

Full-frame Camera

- 45MP Full-frame Sensor
- 4.4 μm Pixel Size
- Low-noise, high sensitivity imaging extends daily operational time
- Take a photo every 0.7 s during the flight
- TimeSync 2.0 aligns the camera, flight controller, RTK module, and gimbal at the microsecond level

Flexibility to Capture It All

Multiple Fixed-focus Lens Options

- Global Mechanical Shutter [3] with a shutter speed of 1/2000 seconds
- Sends the median exposure pulse in microseconds
- Supports 24/35/50mm lenses with DJI DL mounts

Work Smart, Work Fast

Smart Oblique Capture

Cover 7.5 km^2 [4] in a single workday with the P1. Elevate the efficiency of your oblique photography mission using Smart Oblique Capture, where the gimbal automatically rotates to take photos at the different angles needed. Only photos essential to the reconstruction will be taken at the edge of the flight area, increasing post-processing efficiency by 20%[5] to 50%[6].

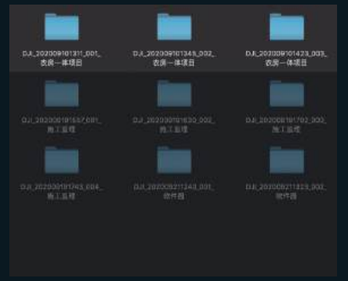
Fieldwork Report[7]

Verify data quality immediately post-flight by checking the position data and number of the images acquired, as well as RTK status and positioning accuracy.

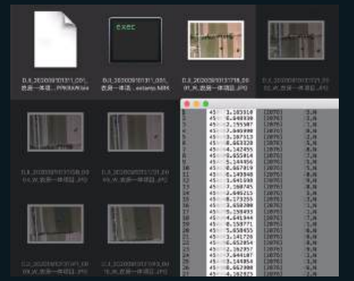
Smart Data Management

Your mission data management - streamlined.

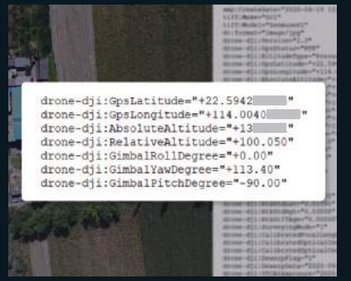
Mission result files are automatically associated with the Mission Name and Mission Time.



A centralized storage location for photos, GNSS data, and TimeStamps. MRK files.



The image metadata contains the camera's intrinsic and extrinsic parameters and the status of RTK.



A Mission Mode for Any Scenario

2D Orthomosaic Mission

Generate orthomosaics without GCPs using the P1, perfect for medium to large-area operations.

3D Oblique Mission

Effortlessly acquire oblique images from multiple angles that meet 3D modeling requirements across industries such as urban planning and centimeter-level accurate cadastral surveys to serve 3D reality models and smart city planning.

Detailed Modeling Mission

Acquire ultra-high resolution image data of vertical or slanted surfaces from a safe distance that faithfully recreates subtle textures, structures, and features, for detailed reconstructions, geological surveys, heritage site conservation, hydraulic engineering, and more.

Real-time Mapping Mission

Gather geographic information of large areas in real-time using DJI Terra so that teams can make crucial decisions quickly on site.

Application Scenarios

Topographic Mapping

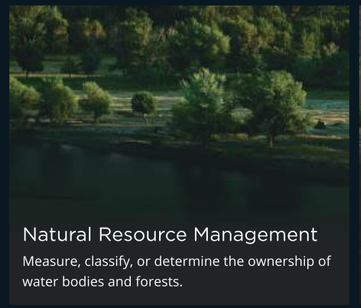
Capture data that meet the 1:500 scale accuracy requirements without GCPs.

Cadastral Surveying

Quickly generate centimeter-level accurate 3D reality models.

AEC and Surveying

Manage the full project lifecycle with 2D and 3D drone data.

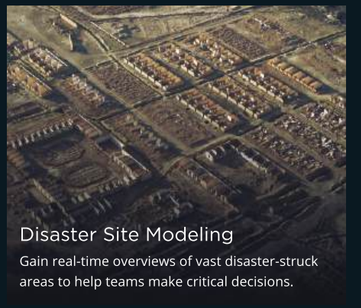


Natural Resource Management

Measure, classify, or determine the ownership of water bodies and forests.

Geological Investigation

Safely gather millimeter-level accurate aerial data of geological hazard sites.



Disaster Site Modeling

Gain real-time overviews of vast disaster-struck areas to help teams make critical decisions.

Specifications

General

Dimensions	198×166×129 mm
Weight	Approx. 787 g
Power	13 W
IP Rating	IP4X
Supported Aircraft	Matrice 300 RTK
Operating Temperature Range	-20° to 50° C (-4° to 122° F)
Storage Temperature Range	-20° to 60° C (-4° to 140° F)
Absolute Accuracy	Horizontal: 3 cm, Vertical: 5 cm *

* Using Mapping Mission at a GSD of 3 cm and flight speed of 15 m/s, with an 75% front overlap rate and a 55% side overlap rate.

Camera

Sensor	Sensor size (Still): 35.9×24 mm (Full frame) Sensor size (Max video recording area): 34×19 mm Effective Pixels: 45MP Pixel size: 4.4 μm
Supported Lenses	DJI DL 24mm F2.8 LS ASPH (with lens hood and balancing ring/filter), FOV 84° DJI DL 35mm F2.8 LS ASPH (with lens hood and balancing ring/filter), FOV 63.5° DJI DL 50mm F2.8 LS ASPH (with lens hood and balancing ring/filter), FOV 46.8°
Supported SD Cards	SD: UHS-1 rating or above; Max capacity: 128 GB
Storage Files	Photo / GNSS Raw Observation Data/ Image Log File
Photo Size	3:2 (8192×5460)
Operation Modes	Capture, Record, Playback
Minimum Photo Interval	0.7 s
Shutter Speed	Mechanical Shutter Speed: 1/2000-1/8 s Electronic Shutter Speed: 1/8000-8 s
Aperture Range	f/2.8-f/16
ISO Range	Photo: 100-25600；Video: 100-3200

Video

Video Format	MP4
Video Resolution	16:9 (3840×2160)
Frame Rate	60fps

Gimbal

Stabilized System	3-axis (tilt, roll, pan)
Angular Vibration Range	0.01°
Mount	Detachable DJI SKYPORT
Mechanical Range	Tilt: -125° to +40°; Roll: -55° to +55°; Pan: ±320°

[1] Using Mapping Mission at a GSD of 3 cm, with an 75% front overlap rate and a 55% side overlap rate.
[2] At a GSD of 3 cm, with an 75% front overlap rate and a 55% side overlap rate.
[3] The global shutter is achieved with a central leaf shutter
[4] Using Smart Oblique Capture at a GSD of 3 cm, with an 80% front overlap rate and a 65% side overlap rate.
[5] Area mapped: 1.5 km^2, flight altitude: 200 m
[6] Area mapped: 0.5 km^2, flight altitude: 200 m
[7] Support coming soon.