

AirData UAV Wind Data

Data

- Flight logs have been uploaded to website <https://airdata.com/>
- Website data has been downloaded as .csv file via Python html parser

HUBox | Hochladen | Erstellen | Freigeben | Suchen | Daten in dieser Bibliothek d. | 123 |

Dateien

- Meine Bibliotheken
- Für mich freigegeben
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- Veröffentlichte Bibliotheken
- Verbundene Geräte
- Freigabeverwaltung

Bibliotheken / Jostice_Experiment / UAV

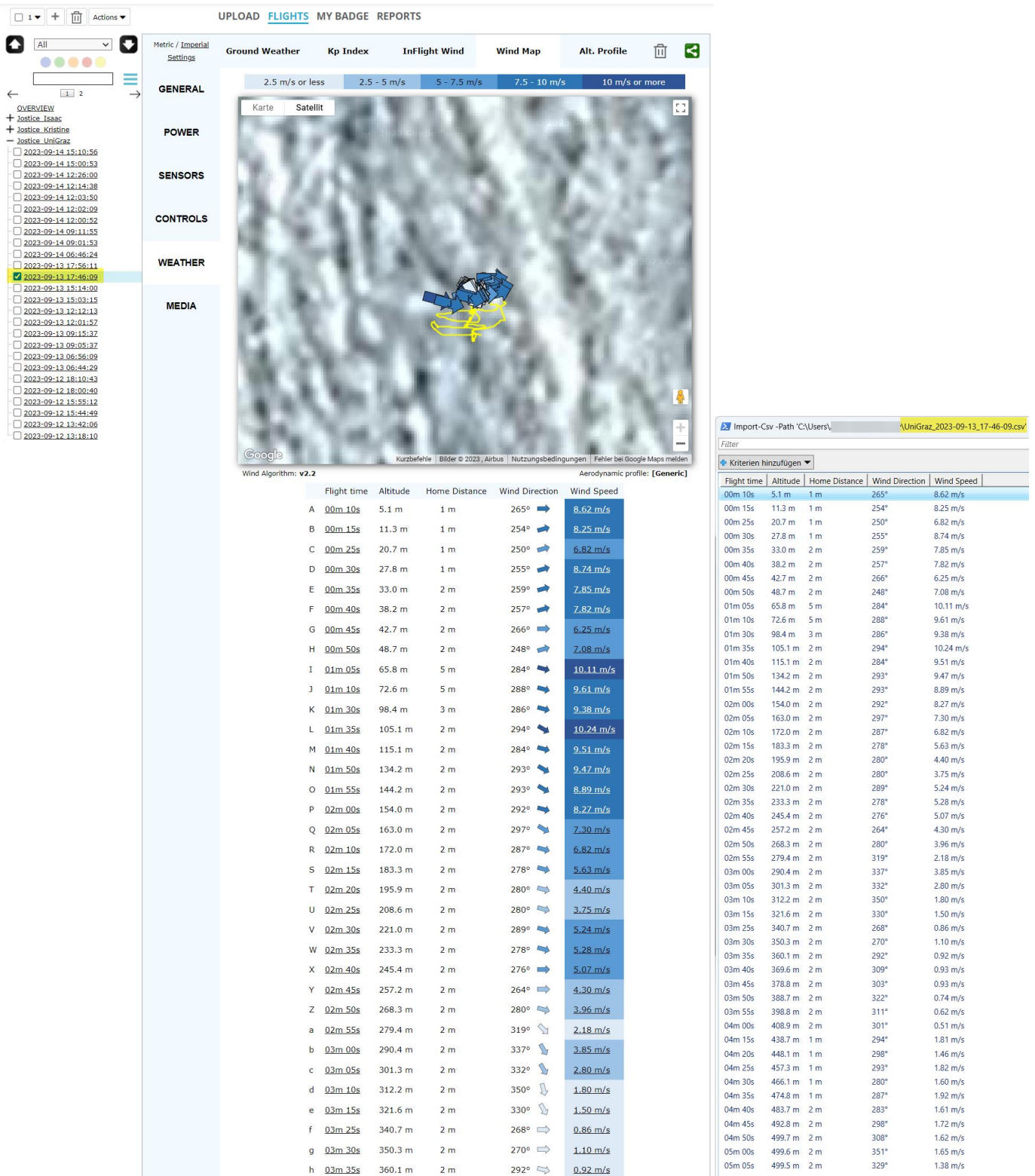
Name	Größe	Letzte Änderung
windprofile_UniGraz.zip	40.6 KB	vor 9 Stunden
windprofile_SV.zip	1.1 KB	vor 9 Stunden
windprofile_Kristine.zip	10.6 KB	vor 9 Stunden
windprofile_Isaac.zip	10.3 KB	vor 9 Stunden
windprofile_dji_sdn.zip	3.6 KB	vor 9 Stunden
flightrecord_dji_sdn.zip	6.2 MB	vor 4 Tagen
flightlog_litchi_sdn.zip	4.0 MB	vor 4 Tagen
FlightRecordSV.zip	7.5 MB	vor 25 Tagen
FlightRecordIsaac.zip	7.1 MB	vor einem Monat
FlightRecordKristine.zip	42.4 MB	vor einem Monat
UniGraz_Mavic3.zip	40.2 MB	vor einem Monat
23-09-12-12-43-22_FLY305.DAT	5.7 MB	vor einem Monat

Output: wind profile as .csv file

Input: flight logs as .txt file

Name	Typ	Komprimierte Größe	Kennwort	Größe	Verhältnis	Änderungsdatum
UniGraz_2023-09-08-10-17-34.csv	CSV-Datensatz	1 KB	Nein	1 KB	23%	29.10.2023 00:42
UniGraz_2023-09-12-13-18-10.csv	CSV-Datensatz	1 KB	Nein	3 KB	67%	29.10.2023 00:42
UniGraz_2023-09-12-13-42-06.csv	CSV-Datensatz	1 KB	Nein	3 KB	66%	29.10.2023 00:42
UniGraz_2023-09-12-15-44-49.csv	CSV-Datensatz	1 KB	Nein	2 KB	62%	29.10.2023 00:42
UniGraz_2023-09-12-15-55-12.csv	CSV-Datensatz	2 KB	Nein	4 KB	70%	29.10.2023 00:42
UniGraz_2023-09-12-18-00-40.csv	CSV-Datensatz	1 KB	Nein	2 KB	65%	29.10.2023 00:42
UniGraz_2023-09-12-18-10-43.csv	CSV-Datensatz	1 KB	Nein	1 KB	48%	29.10.2023 00:42
UniGraz_2023-09-13-06-44-29.csv	CSV-Datensatz	1 KB	Nein	3 KB	67%	29.10.2023 00:42
UniGraz_2023-09-13-09-05-37.csv	CSV-Datensatz	1 KB	Nein	1 KB	58%	29.10.2023 00:42
UniGraz_2023-09-13-09-15-37.csv	CSV-Datensatz	1 KB	Nein	1 KB	58%	29.10.2023 00:42
UniGraz_2023-09-13-12-01-57.csv	CSV-Datensatz	1 KB	Nein	3 KB	65%	29.10.2023 00:42
UniGraz_2023-09-13-12-12-13.csv	CSV-Datensatz	1 KB	Nein	2 KB	61%	29.10.2023 00:42
UniGraz_2023-09-13-15-09-15.csv	CSV-Datensatz	1 KB	Nein	2 KB	66%	29.10.2023 00:42
UniGraz_2023-09-13-17-46-09.csv	CSV-Datensatz	1 KB	Nein	2 KB	66%	29.10.2023 00:42
UniGraz_2023-09-13-17-56-11.csv	CSV-Datensatz	1 KB	Nein	1 KB	54%	29.10.2023 00:42
UniGraz_2023-09-14-06-46-24.csv	CSV-Datensatz	1 KB	Nein	3 KB	66%	29.10.2023 00:42
UniGraz_2023-09-14-09-01-53.csv	CSV-Datensatz	1 KB	Nein	2 KB	65%	29.10.2023 00:43
UniGraz_2023-09-14-09-11-55.csv	CSV-Datensatz	1 KB	Nein	3 KB	69%	29.10.2023 00:43
UniGraz_2023-09-14-12-03-50.csv	CSV-Datensatz	1 KB	Nein	2 KB	65%	29.10.2023 00:43
UniGraz_2023-09-14-12-14-38.csv	CSV-Datensatz	1 KB	Nein	1 KB	59%	29.10.2023 00:43
UniGraz_2023-09-14-12-36-00.csv	CSV-Datensatz	1 KB	Nein	1 KB	65%	29.10.2023 00:43
UniGraz_2023-09-14-15-00-53.csv	CSV-Datensatz	1 KB	Nein	3 KB	65%	29.10.2023 00:43
UniGraz_2023-09-14-15-10-56.csv	CSV-Datensatz	1 KB	Nein	1 KB	60%	29.10.2023 00:43

- Result:



Exceptions

- Wind profile could not be determined for some flight logs due to insufficient data (usually flight time too short)

The screenshot shows the Jostice flight log interface. On the left, there is a list of flight logs for three UAVs: Jostice_Isaac, Jostice_Kristine, and Jostice_UniGraz. The flight log for Jostice_UniGraz is selected, showing a list of flight logs with timestamps. The flight log with timestamp 2023-09-14 12:00:52 is selected. On the right, the detailed view of this flight log is shown. It includes a satellite map of the flight path, a table of flight data, and a message indicating that not enough valid records were found for the wind profile.

Flight Log List (Left):

- Jostice_Isaac
 - 2023-09-14 15:10:56
 - 2023-09-14 15:00:53
 - 2023-09-14 12:26:00
 - 2023-09-14 12:14:38
 - 2023-09-14 12:03:50
 - 2023-09-14 12:02:09
 - 2023-09-14 12:00:52 (Selected)
 - 2023-09-14 09:11:55
 - 2023-09-14 09:01:53
 - 2023-09-14 06:46:24
 - 2023-09-13 17:56:11
 - 2023-09-13 17:46:09
 - 2023-09-13 15:14:00
 - 2023-09-13 15:03:15
 - 2023-09-13 12:12:13
 - 2023-09-13 12:01:57
 - 2023-09-13 09:15:37
 - 2023-09-13 09:05:37
 - 2023-09-13 06:56:09
 - 2023-09-13 06:44:29
 - 2023-09-12 18:10:43
 - 2023-09-12 18:00:40
 - 2023-09-12 15:55:12
 - 2023-09-12 15:44:49
 - 2023-09-12 13:42:06
 - 2023-09-12 13:18:10
- Jostice_Kristine
- Jostice_UniGraz

Flight Log Details (Right):

GENERAL

POWER

SENSORS

CONTROLS

WEATHER

MEDIA

Wind Profile:

2.5 m/s or less | 2.5 - 5 m/s | 5 - 7.5 m/s | 7.5 - 10 m/s | 10 m/s or more

Flight time: 00:01:52 | Altitude: 100 m | Home Distance: 100 m | Wind Direction: 0° | Wind Speed: 0 m/s

Not enough valid records were found.

UAV	Total flight logs	Success	Failed
Isaac	17	14	3
Kristine	20	13	7
UniGraz	31	25	6
dji_sdn	9	6	3
SV	2	1	1

Wind profile algorithm

Information based on feedback received from AirData support:

Q: How can I download/export the wind map/data directly from the website?

A: As of now, we don't offer a direct option to download or export wind map data from the platform. However, your interest in this capability is duly noted. Your feedback is invaluable, and we'll take this as a feature request to enhance the functionality of our platform to better serve your needs.

Q: Why is it only showing data for the ascent but not for the descent?

A: The design of the wind map feature currently focuses on the ascent phase due to certain algorithmic limitations. During the descent of the drone, various factors can introduce instability in the measurements, which can impact the accuracy of the wind data generated by the algorithm. While we understand your interest in having a comprehensive wind map that includes the descent phase, ensuring the highest data accuracy is our top priority. We're continuously exploring possibilities to refine and expand our features based on user needs.

Q: Can the resolution be changed?

A: Again, your observation and suggestion for adjusting the resolution of the wind map are greatly appreciated. However, at the moment, the wind speed calculations are based on a 5-second average, and AirData will provide readings every 5 seconds if enough data is available. We understand that different applications might benefit from varying levels of resolution, and we'll certainly bring your request for customizable resolution to our engineering team for consideration in future updates.

Q: Is there any documentation available on how the wind profile is calculated or which input parameters are considered?

While the algorithm itself is proprietary, we do have some additional documentation regarding how wind data is calculated in AirData.

The wind information is calculated based on a unique aerodynamic profile for each drone type. We look at the actual behavior of the drone during the flight vs the expected behavior. In terms of accuracy, based on our internal testing and feedback from others, the wind information is fairly accurate, but we do not have a specific margin of error at this point.

The in-flight wind information is generated by AirData.

In-flight wind is calculated using the angle of the aircraft and the speed of the aircraft at each point of the flight. The wind speed calculations are based on a 5-second average.

Version 2 (current version) of our wind algorithm has the following enhancements:

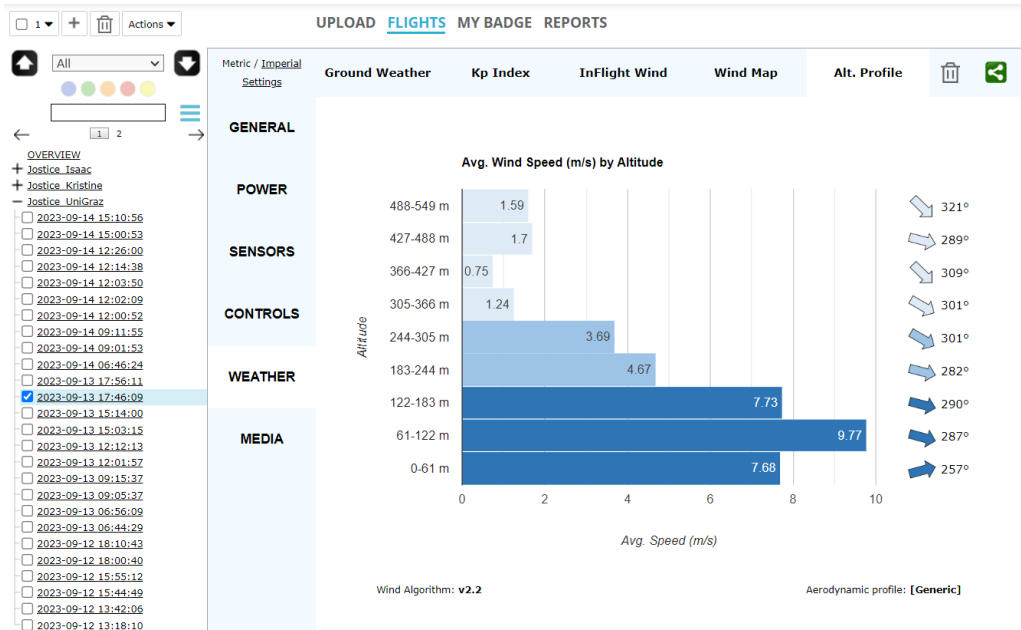
- Comprehensive aerodynamic profile for each drone type;
- All flight modes are now supported;
- Higher resolution: wind will be reported at all speeds;
- The new algorithm will handle turns and altitude changes;
- Better accuracy: balancing functions to compensate for non-balanced IMUs.

Note: Version 2 will not report wind during sharp maneuvers, such as steep decline or fast turns.

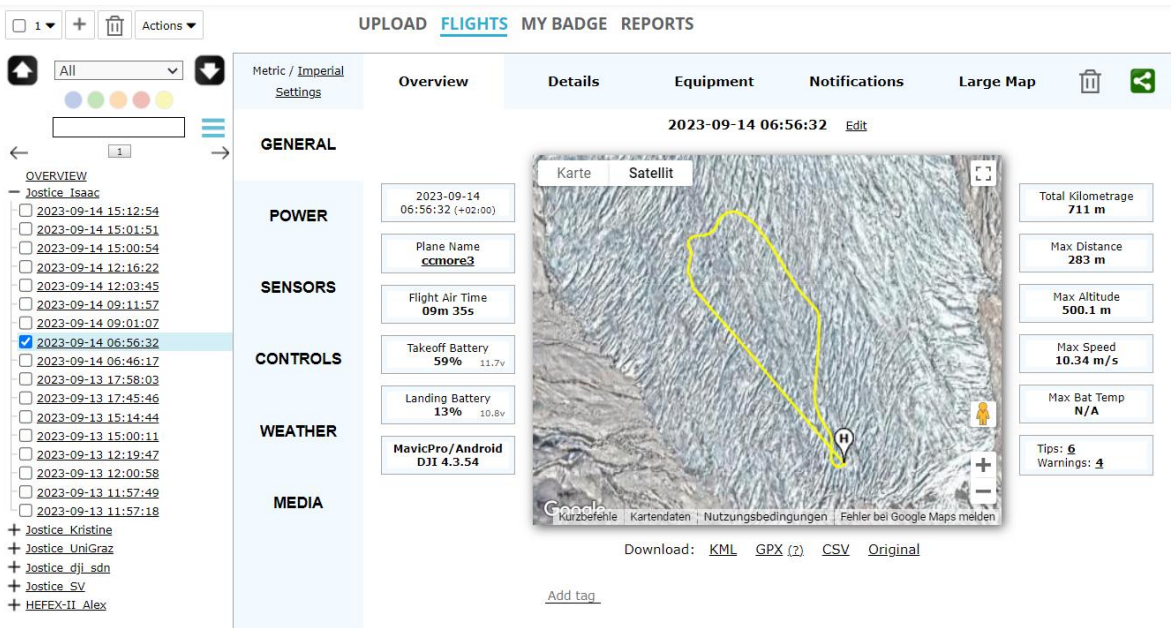
The wind speed calculations are based on a 5-second average, and AirData will provide readings every 5 seconds if enough data is available. To get wind readings every 5 seconds, there needs to be stability with the wind and drone/controls. A gap in wind readings indicates that either the wind or the drone/controls were not stable enough during that period for our algorithms to accurately provide readings. You can add to the stability of the drone/controls by hovering or flying in a straight, constant line.

Additional website data

- Altitude profile:



- Flights stats for single flight



Metric / Imperial

Settings

GENERAL

POWER

SENSORS

CONTROLS

WEATHER

MEDIA

Overview

Details

Equipment

Notifications

Large Map

2023-09-14 06:56:32

Edit

Karte

Satellit

2023-09-14 06:56:32 (+02:00)

Plane Name

ccmore3

Flight Air Time

09m 35s

Takeoff Battery

59%

11.7V

Landing Battery

13%

10.8V

MavicPro/Android

DJI 4.3.54

Total Kilometrage

711 m

Max Distance

283 m

Max Altitude

500.1 m

Max Speed

10.34 m/s

Max Bat Temp

N/A

Tips: 6

Warnings: 4

Download: KML GPX (2) CSV Original

Add tag

- Flight stats for collection of flights

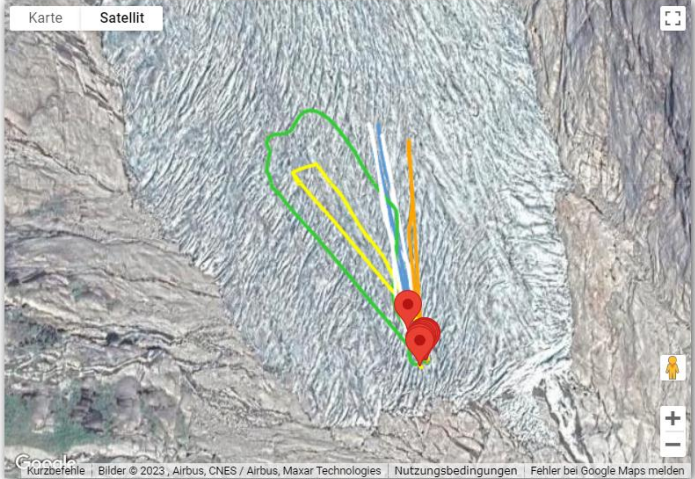
UPLOAD **FLIGHTS** MY BADGE REPORTS

Metric / Imperial Settings

Overview Attendance Flights (17)

Jostice_Isaac Edit

Karte Satellit



Download: [Group KML](#)

[Add Flight Group Notes](#)

OVERVIEW

Jostice_Isaac

- ☐ 2023-09-14 15:12:54
- ☐ 2023-09-14 15:01:51
- ☐ 2023-09-14 15:00:54
- ☐ 2023-09-14 12:16:22
- ☐ 2023-09-14 12:03:45
- ☐ 2023-09-14 09:11:57
- ☐ 2023-09-14 09:01:07
- ☐ 2023-09-14 06:56:32
- ☐ 2023-09-14 05:46:17
- ☐ 2023-09-13 17:58:03
- ☐ 2023-09-13 17:45:46
- ☐ 2023-09-13 15:14:44
- ☐ 2023-09-13 15:00:11
- ☐ 2023-09-13 12:19:47
- ☐ 2023-09-13 12:00:58
- ☐ 2023-09-13 11:57:49
- ☐ 2023-09-13 11:57:18

+ Jostice_Kristine

+ Jostice_UniGraz

+ Jostice_dji_sdn

+ Jostice_SV

+ HEFEX-II_Alex

GENERAL

- Flight stats can also be extracted and downloaded from this website:

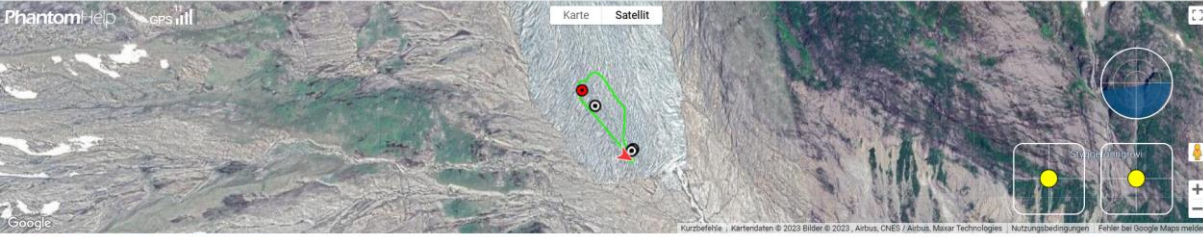
<https://www.phantomhelp.com/logviewer/upload/>

DJI Flight Log Viewer - Phantom

phantomhelp.com/logviewer/26A36F8M4XTQ54SDQH5/

Phantom Help GPS still

Karte Satellit



Download KML | Download CSV | Download Flight Log

Map Size: [Small](#) | [Medium](#) | [Large](#)

Time	Flight Mode	GPS	IMU Altitude	VPS Altitude	Speed	Home Distance	Battery	Battery Voltage	Cell 1	Cell 2	Cell 3	Cell Deviation	Message
9m 17s	Starting Motors	11 satellites	0 ft	0.3 ft	0 mph	0 ft	N/A	11.71 V	3.91 V	3.90 V	3.90 V	0.004 V	
9m 17.5s	Starting Motors	11 satellites	0 ft	0.3 ft	0 mph	2.5 ft	59%	11.71 V	3.91 V	3.90 V	3.90 V	0.004 V	Data Recorder File Index is 242.; Set Return to Home (RTH) altitude to 120 m (394 ft).
9m 18.2s	Auto Takeoff	11 satellites	0 ft	0.3 ft	0 mph	3.1 ft	59%	11.674 V	3.89 V	3.89 V	3.89 V	0.006 V	Strong interference. Fly with caution.
9m 19.2s	Auto Takeoff	10 satellites	-0.3 ft	0.7 ft	1.6 mph	3.8 ft	59%	11.58 V	3.87 V	3.86 V	3.85 V	0.015 V	
9m 19.4s	Auto Takeoff	11 satellites	-0.3 ft	0.7 ft	1.0 mph	4.2 ft	59%	11.58 V	3.87 V	3.86 V	3.85 V	0.015 V	
9m 19.5s	Auto Takeoff	11 satellites	0 ft	1.0 ft	0.5 mph	1.3 ft	59%	11.58 V	3.87 V	3.86 V	3.85 V	0.015 V	Home Point Updated.; Home Point recorded. Return-to-Home Altitude:120M.
9m 19.8s	Auto Takeoff	10 satellites	0 ft	1.3 ft	0 mph	1.3 ft	59%	11.58 V	3.87 V	3.86 V	3.85 V	0.015 V	
9m 20s	Auto Takeoff	10 satellites	0.7 ft	2.0 ft	0 mph	1.2 ft	59%	11.58 V	3.87 V	3.86 V	3.85 V	0.015 V	
9m 20.2s	Auto Takeoff	11 satellites	1.3 ft	2.6 ft	0 mph	1.2 ft	59%	11.58 V	3.87 V	3.86 V	3.85 V	0.015 V	
9m 20.6s	P-GPS	11 satellites	2.6 ft	3.9 ft	0 mph	1.2 ft	59%	11.58 V	3.87 V	3.86 V	3.85 V	0.015 V	
9m 21.3s	P-GPS	11 satellites	3.3 ft	4.3 ft	3.0 mph	1.7 ft	59%	11.435 V	3.82 V	3.81 V	3.80 V	0.020 V	
9m 21.4s	P-GPS	11 satellites	3.3 ft	4.3 ft	4.1 mph	2.2 ft	59%	11.435 V	3.82 V	3.81 V	3.80 V	0.020 V	
9m 21.5s	P-GPS	11 satellites	3.3 ft	4.3 ft	4.9 mph	2.9 ft	59%	11.435 V	3.82 V	3.81 V	3.80 V	0.020 V	
9m 21.6s	P-GPS	11 satellites	3.3 ft	4.3 ft	5.6 mph	3.8 ft	59%	11.435 V	3.82 V	3.81 V	3.80 V	0.020 V	
9m 21.7s	P-GPS	11 satellites	3.3 ft	4.3 ft	6.2 mph	4.7 ft	59%	11.435 V	3.82 V	3.81 V	3.80 V	0.020 V	

View your DJI drone flight logs offline with [Flight Reader](#)