RTK drone pre-flight

FIXFINDER · findrtk.com

Any RTK or PPK mapping drone. Network RTK or your own base.

Date _____ Site _____ Crew _____ Mount point _____

BEFORE YOU LEAVE

- [ ] Check the airspace. In controlled airspace, get FAA authorization first (for example, through LAANC). [1]
- [ ] Check the weather: at least 3 statute miles visibility, and stay 500 ft below and 2,000 ft sideways from clouds. [2]
- [ ] Plan the flight height at 400 ft above ground or lower (higher only within 400 ft of a structure). [2]
- [ ] Make sure Remote ID works: a standard Remote ID drone or a broadcast module. [3]
- [ ] Charge the drone, controller and spare batteries. Have enough power for the whole planned flight. [4]
- [ ] Update the drone, controller and flight app firmware at home, not on site. [5]
- [ ] Write down your corrections: caster address, port, mount point, user name and password. Or plan your own base. [5]
- [ ] Network RTK: make sure the controller will have internet (hotspot or cell dongle) the whole flight. [5]
- [ ] Set and measure your GCPs and check shots before you fly, spread across the site with one near the center. [6]

ON SITE

- [ ] Walk the site. Note people, property and ground hazards. Brief everyone on roles and emergency steps. [4]
- [ ] Inspect the drone: no damage, vents clear, nothing loose inside. [5]
- [ ] Propellers: same model, tight, not cracked or bent. Arms and blades unfolded. [5]
- [ ] Clean the camera lens and sensors. Remove the gimbal cover before power-on. [5]
- [ ] Any payload or attachment is secure and won't change how the drone flies. [4]
- [ ] Power on. Confirm the control link is solid before takeoff. [4]
- [ ] Set the return-to-home height above the tallest obstacle on the route. [5]

RTK

- [ ] Turn RTK on and pick the right service type for your corrections. [5]
- [ ] Wait for a GNSS position first, then connect to the caster. [7]
- [ ] Do not start the mapping mission until RTK shows FIX (not FLOAT or SINGLE). [5]
- [ ] Use the same datum and units as your GCPs and the project. [8]

AFTER THE FLIGHT

- [ ] Check the photos were taken in FIX. DJI photos store an RtkFlag: 50 = fixed. [5]
- [ ] Measure your check shots against the map before you call the job done. [6]

SOURCES (CHECKED OCT 28, 2026)

[1] 14 CFR 107.41, Operation in certain airspace (authorization, e.g. LAANC) https://www.ecfr.gov/current/title-14/chapter-I/subchapter-F/part-107/subpart-B/section-107.41

[2] 14 CFR 107.51, Operating limitations (400 ft, 3 mi visibility, cloud clearance) https://www.ecfr.gov/current/title-14/chapter-I/subchapter-F/part-107/subpart-B/section-107.51

[3] 14 CFR Part 89, Remote Identification of Unmanned Aircraft https://www.ecfr.gov/current/title-14/chapter-I/subchapter-F/part-89

[4] 14 CFR 107.49, Preflight familiarization, inspection, and actions https://www.ecfr.gov/current/title-14/chapter-I/subchapter-F/part-107/subpart-B/section-107.49

[5] DJI Matrice 4 Series User Manual v1.0 (2025.01): Pre-Flight Checklist, Aircraft RTK, RTH, photo metadata https://dl.djicdn.com/downloads/DJI_Matrice_4_Series/DJI_Matrice_4_Series_User_Manual-en.pdf

[6] Pix4D: Number and distribution of GCPs https://support.pix4d.com/hc/en-us/articles/202557489

[7] RTKdata docs: DJI Pilot 2 RTK setup (wait for a GNSS position before connecting, or the caster gets 0,0) https://docs.rtkdata.com/integration-hub/ntrip-clients-and-field-software/dji-pilot-pilot-2

[8] Emlid docs, Reach RS3: Averaging base position in FIX (placing the base) https://docs.emlid.com/reachrs3/base-setup/setting-up-base-over-known-point/averaged-in-fix/

Follow your own equipment manual if it differs. Latest version: findrtk.com/tools/checklists