ANAFI Ai
The 4G robotic UAV
USER GUIDE v7.5.0.0

"Pleasure in the job puts perfection in the work." — Aristotle

Parrot

We are Parrot. Welcome to the team!

With ANAFI Ai, you have chosen the first IoT*-compatible, 4G flying robot, which you can use everywhere, on the go, anytime.

We strongly recommend you read the following information and instructions thoroughly before you take ANAFI Ai to the air, to make the most of your first 32-minute flight.

The prerequisites on the following pages, will not occupy more than 5 minutes of your time: ANAFI Ai requires the FreeFlight 7 app to fly, and to make sure your drone and controller are fully up-to-date with the latest features.

Note that all future ecosystem updates (app, drone, controller) will be packed in future FreeFlight 7 releases. The ecosystem update procedure will therefore always be the same as that described in the following pages.

As you discover the world of possibilities that ANAFI Ai opens to you, you will fully understand the importance of mission planning in your workflow.

Have a great read, and many productive hours flying ANAFI Ai.

* IoT: Internet of Things

Using this guide

- This guide is specific to a single UAS configuration, consisting of: the ANAFI Ai drone; the Parrot Skycontroller 4; the FreeFlight 7 flight application.
- Read it entirely at least once: it answers most questions that most users encounter when they discover ANAFI Ai.
- Keep it for reference and stay alert for updates: they will be advertised on all Parrot websites and social media.
- The Table of contents, starting on page 7, is active. Click a title to access the corresponding section.
- This online user guide has no index: use [ctrl]-F (Windows) or [command]-F (Mac) to browse all occurrences of any keyword (*flight*, *settings*, *photogrammetry*, *obstacle avoidance, gimbal*, *iPhone*, *photo*, *ISO*, and so on).

About ANAFI Ai documentation

The present guide completes the documentation of ANAFI Ai, which also consists in:

- ANAFI Ai Flight Safety Guide, available online **Flight Safety guide**,
- ANAFI Ai and FreeFlight 7 release notes, available online **Release note**,

ANAFI Ai repair and maintenance tutorials available on **Youtube channel**

Read the Flight Safety Guide provided with the ANAFI Ai to have complementary information about safety, operational limitations, for use and maintenance of the drone. Always verify that you are using the last version of the User Guide on parrot.com/en/support/anafi-ai.

Prerequisites

You want to put ANAFI Ai to work as soon as possible, so do we. Refer to the enclosed Super Quick Start Guide (SQSG) if you need illustrated guidance to get these quick prerequisites out of the way.

1. Wake up the batteries of your ANAFI Ai and Skycontroller 4. Charge the batteries using the enclosed USB-C to USB-C cables. The batteries' LEDs start flashing: they are awake. Let them charge while you read. Parrot recommends you always run a full charge of the smart batteries of your drone and controller before flying ANAFI Ai.

2. Flash the following QR code to download the latest FreeFlight 7 version available on your iOS device: ANAFI Ai requires FreeFlight 7 to fly. The app will enable you to update your Parrot Skycontroller 4 and ANAFI Ai with the latest software version when you power them on for the first time.

The fully secure piloting software of ANAFI Ai, FreeFlight 7, guarantees the integrity of data exchanges for the full ecosystem and manages updates (piloting software, drone, remote control).

When you have downloaded and installed FreeFlight 7, press the power button of the Parrot Skycontroller 4 and hold it for approximately 3 seconds (until its main LED turns on in light blue) to power it on.

Press the "Push" label of the gimbal protection with your thumb and position a finger on each side of the gimbal to lift the gimbal protection away.

Press the power button of ANAFI Ai and hold it for approximately 3 seconds (until the drone's fan starts turning) to power it on.

Warning: The battery is updated automatically to version 7.5 during its first boot. Do not unplug the battery while LEDs are flashing.

Use the enclosed USB-C to Lightning cable to connect your device to the right-side USB-C port of the Parrot Skycontroller 4, and install it as shown in the enclosed SQSG.

A prompt appears on your screen, which invites you to allow the communication between your device and the controller.
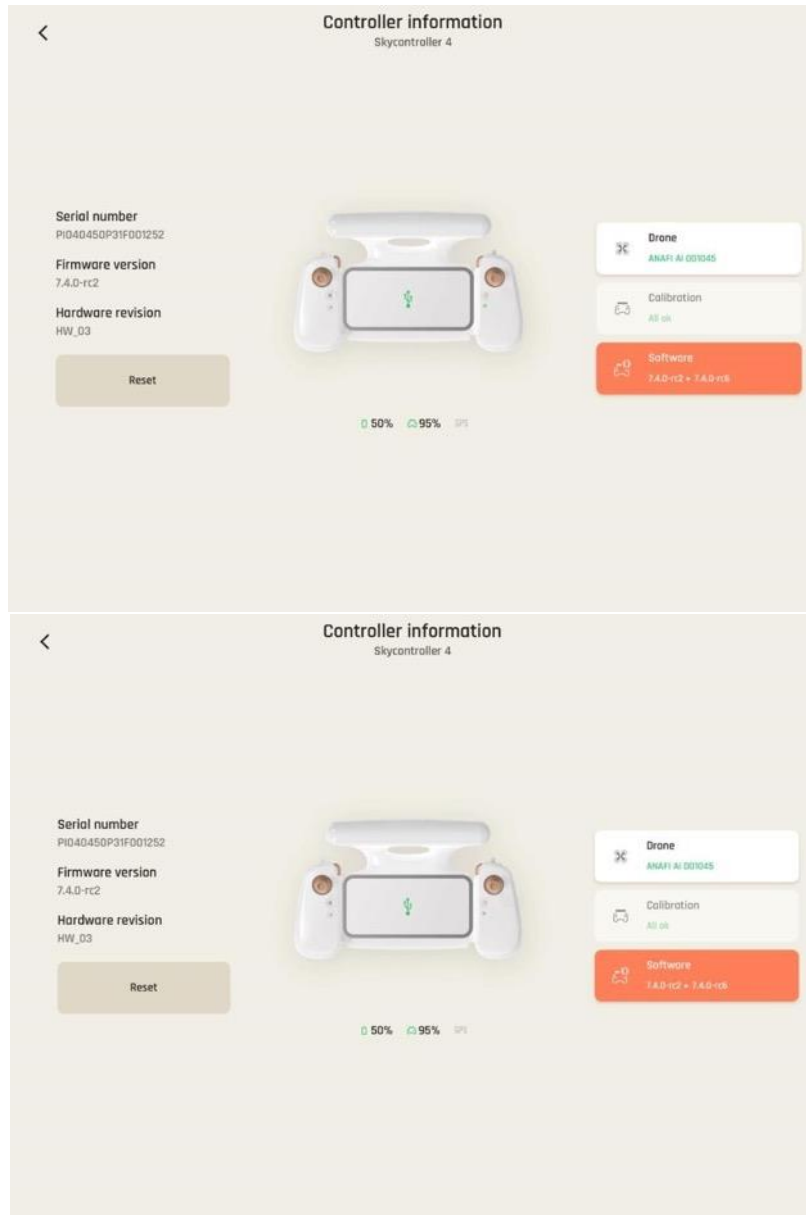
3. Tap "Allow": FreeFlight 7 runs.

If the prompt does not appear on your screen when you connect your device to your Skycontroller 4, launch FreeFlight 7 manually, as with any other app.
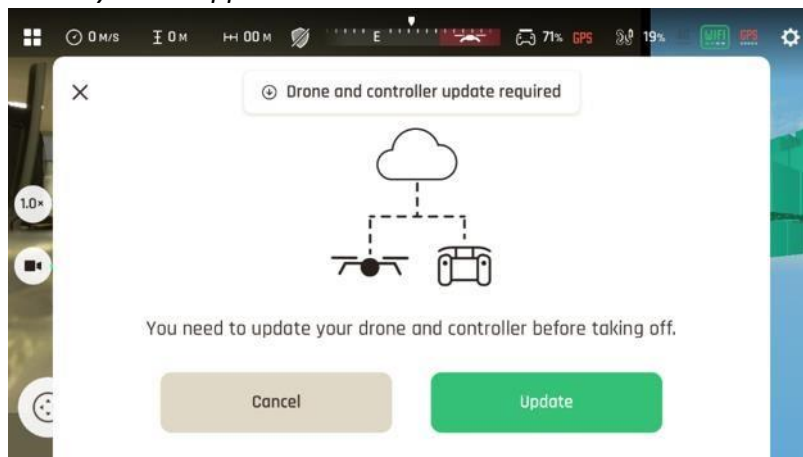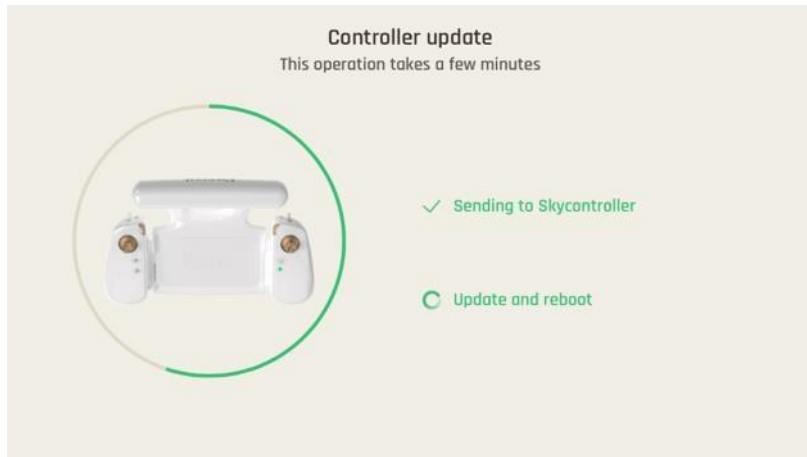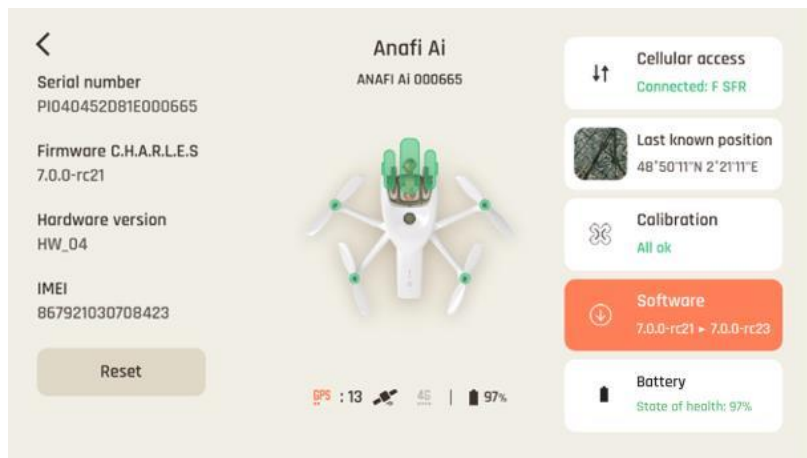

FreeFlight 7 Update screen

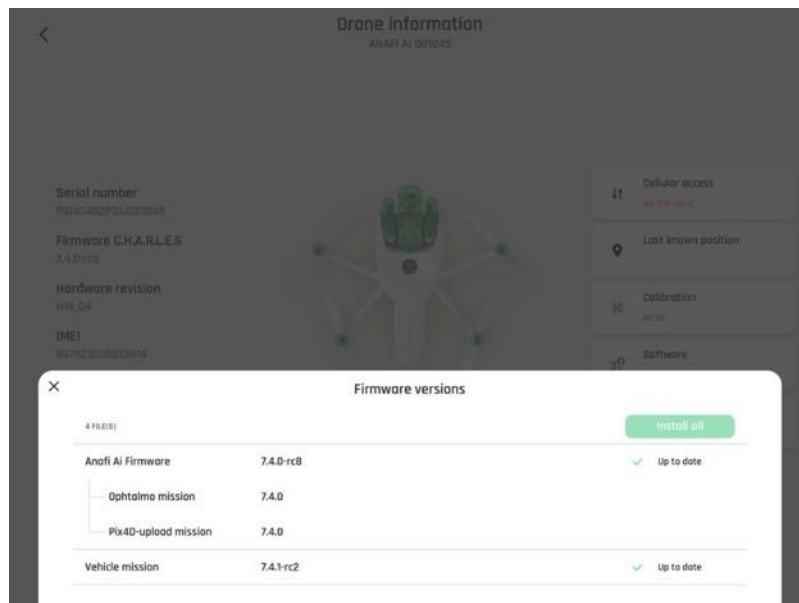4. Follow onscreen instructions to update your ecosystem.

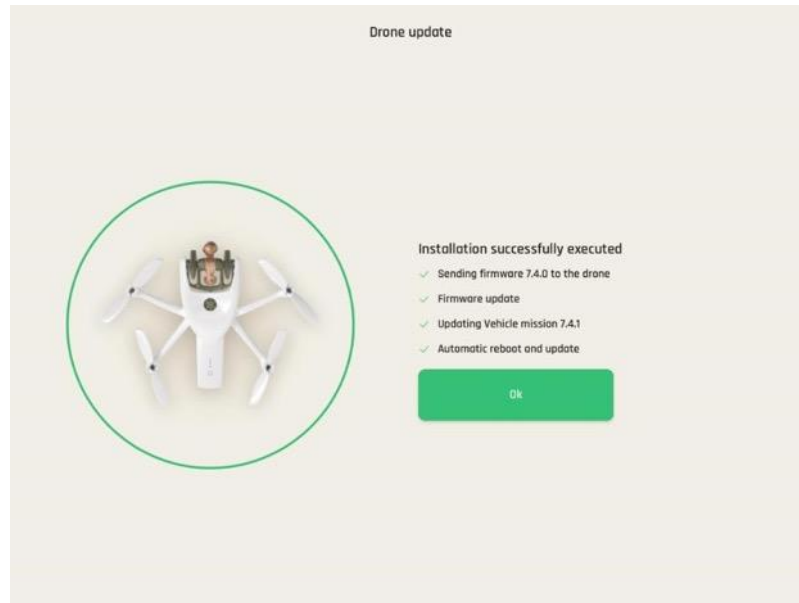*Tap "Software" from the Skycontroller 4 page to launch the update*

Skycontroller 4 update in progress

Tap "Software" from the ANAFI Ai page to launch the update

Tap "Install all"

Update complete

5. Follow onscreen instructions to carry out calibrations if required – refer to the "*Calibrations*" section of this guide for further information.

All systems are ready for flight.

Table of contents

Foreword

About ANAFI Ai

Always transport ANAFI Ai safely stored in its case and always reposition its gimbal protection before storing it in its case.

ANAFI Ai was designed and optimized to fly as is. Parrot therefore strongly discourages the use of any addon or accessory which could be mounted on, or attached to ANAFI Ai (feet extensions, buoys, hulls, etc.). In addition to the overweight they carry for the drone and its motors, they can indeed magnetically disturb ANAFI Ai and impair its communications.

About the ANAFI Ai ecosystem

In the following pages, the word *"ecosystem"* refers to the drone (ANAFI Ai), its controller (Skycontroller 4) and the FreeFlight 7 flying app.

About power lines and pylons

Flying close to power installations may impact the behavior of the drone. Always keep your distances from power installations such as power lines and pylons. Higher powers carry higher disturbance potential. In any case, never fly closer than 3 m (9 ft) from a power installation.

About Radiation Field

The proximity of high intensity radiation field may impact the behavior of the drone (e.g. airport radar). Do not fly closer than 500m from the beam of a high intensity radar. In any case, never fly closer than 50m from a radar installation.

About Wi-Fi

Parrot asks you to switch off your smartphone's Wi-Fi connection when flying ANAFI Ai with both the Parrot Skycontroller 4 and your phone: with this configuration, the drone and the controller communicate through ANAFI Ai's Wi-Fi network and activating your phone's Wi-Fi can only result in interferences.

About GPS

ANAFI Ai does not need a satellite – GPS, Glonass, Galileo – synchronization (or fix) to take off. It can therefore be piloted indoor and through cluttered areas, stabilized by its onboard sensors.

However, automated and assisted flight modes require both ANAFI Ai and the FreeFlight 7 device synchronization to geocoordinate satellites – the Parrot Skycontroller 4 alone has no geo-positioning capacity.

For this reason, Parrot recommends ANAFI Ai pilots to always set up, start and finish their automated and assisted flights from wide open areas, as a sports field.

About 4K video formats

4K video formats are professional grade media which may not be read natively by slower computers. Shoot in 1080p or use a video converter to turn your ANAFI Ai's 4K videos into a more manageable format (like 1080p) if they do not read properly on your equipment.

About audio recording

ANAFI Ai is equipped with a microphone, which enables it to record videos with sound. The drone's microphone can be activated or deactivated through the Audio item of the Quick settings menu of FreeFlight 7 – refer to the "*SETTINGS/Quick*" section of this guide for additional information on this menu.

About the smart batteries

As you will find out by reading this guide, the batteries of both ANAFI Ai and the Parrot Skycontroller 4 are smart enough to enter a wintering mode when you are not using them for ten days in a row. This also means you need to wake them up and charge them completely before you fly ANAFI Ai for the first time.

About HDMI

The Parrot Skycontroller 4 is equipped with a micro-HDMI port, which enables to stream ANAFI Ai images to a screen or to HDMI goggles. Parrot recommends using a certified micro-HDMI to HDMI cable (not included in the box) to connect those external pieces of equipment to the Skycontroller 4, as uncertified cables could impair the ecosystem's Wi-Fi performances.

The packaging of certified HDMI cables displays the following logo:

About devices

In the following pages, the word *"device"* refers to the iOS smartphone or tablet on which FreeFlight 7 is installed.

About Parrot.Cloud accounts

Parrot strongly recommends that you use your Parrot.Cloud account (or create one if ANAFI Ai is your first Parrot drone) to let Parrot store your ANAFI Ai flight data. Sharing your data, even anonymously, benefits the community, as it enables us to improve our products.

It also directly benefits all identifiable users in case they need to contact Parrot support teams.

Refer to the "DATA SHARING AND USER ACCOUNTS/Parrot.Cloud account & Full sharing" section of this guide for additional information.

About information related to Privacy Rights

Please check the information provided in the Flight Safety Guide given in the ANAFI Ai packaging to learn more about appearance of individuals in video and photo made by a drone.

Disclaimer

1. ANAFI Ai IS NOT A TOY and should not be used or handled by a person under the age of 18 years.

2. Using ANAFI Ai carries no particular health requirement.

3. BEFORE USING ANAFI Ai:

   (A)   CAREFULLY READ the user manual and all information and documentation available on www.parrot.com, which is susceptible to be updated at any time and without prior notice (hereinafter referred to as "Parrot Documentation"). SPECIAL ATTENTION must be given to the paragraphs marked with the symbol ⚠ ;

   (B)   ENSURE YOU ARE AWARE OF THE REGULATIONS APPLICABLE TO THE USE OF DRONES AND THEIR ACCESSORIES (hereinafter referred to as "Applicable Regulations");

   (C)   REMEMBER that ANAFI Ai may expose others and yourself to EQUIPMENT DAMAGE, PERSONAL INJURY, OR BOTH, which could result in serious harm or death.

4. Be aware that videos and photos that are promoted and advertised by Parrot Drones SAS and its affiliates have been made by and with experienced professionals and drone pilots. IN CASE OF DOUBT RELATING TO THE USE OF YOUR ANAFI Ai DRONE AND ITS ACCESSORIES, ALWAYS REFER TO THE MOST RECENT VERSION OF THE PARROT DOCUMENTATION.

5. TO THE EXTENT PERMITTED BY APPLICABLE LAW, PARROT DRONES SAS, ITS SUBSIDIARIES, AND THEIR RESPECTIVE DISTRIBUTORS AND RETAILERS SHALL NOT BE LIABLE FOR ANY DAMAGES ARISING FROM, OR IN CONNECTION WITH THE NON-COMPLIANCE OF PARROT WITH THE DOCUMENTATION OR THE APPLICABLE REGULATIONS BY YOURSELF OR ANY PERSON USING YOUR ANAFI Ai.

Technical specifications

Drone

· Size folded: 304 x 130 x 118 mm
· Size unfolded: 320 x 440 x 118 mm
· Weight: 898 g / 1.98 lb
· Ready to fly in 60 seconds
· Maximum flight time: 32 min
· Maximum horizontal speed: 17 m/s – 38 mph
· Maximum vertical climb speed: 4 m/s – 9 mph
· Maximum vertical descent speed: 3 m/s – 7 mph
· Maximum wind resistance: 15 m/s – 31.3 mph during flight & 12 m/s – 26.8 mph during take-off and landing
· Maximum propeller speed: 12,000 rpm
· Maximum static thrust: 23.27 N
· Thrust to weight ratio: 2.65
· Service Ceiling: 5,000 m (above sea level)
· Operating temperatures: -10°C to 40°C
· Dust and rain resistant (IP53)
· Noise emission: 82 dBA
· MicroSD and nano SIM card slots

CONNECTIVITY

· Seamless 4G/Wi-Fi switching
· Wi-Fi range: 4 km
· 4G range: unlimited provided 4G coverage
· Flies Beyond Visual Line Of Sight
· 1080 p 30 fps live streaming
· No interference near telecom towers

NAVIGATION SYSTEM

· Satellite navigation: GPS, Glonass and Galileo
· Vertical camera & Time of Flight
· Barometer and magnetometer
· 2 x 6-axis inertial units (flight and camera)
· 2 x 3-axis accelerometers
· 2 x 3-axis gyroscopes
· Stereoscopic cameras mounted on a 311° rotating gimbal (-107° to +204°) for obstacle avoidance
· AI trajectory optimization system
· Indoor flight

DRONE SMART BATTERY

· Type: High Density LiPo (262 Wh/kg)
· Capacity: 6,800 mAh 4.4 V
· Charging port: USB-C
· Weight: 366 g / 0.81 lb
· Maximum charging power: 45 W
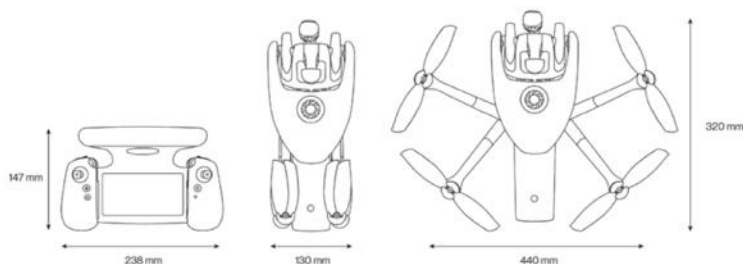
SKYCONTROLLER 4

· Size without terminal: 238 x 147 x 55 mm
· Maximum size: 315 x 147 x 55 mm
· Weight: 606 g / 1.34 lb
· Wi-Fi 802.11a/b/ g/n (Wi-Fi beacon)
· 4G
· Direct video stream resolution: 1080 p
· Battery capacity: 3,350 mAh 7.2 V
· Compatible with all devices up to 8"
· Charges smartphones and tablets
· 2xUSB-C (charging and connecting) ports
· Micro-HDMI port
· Dust resistant (IP5X)

IMAGING SYSTEM

· Sensor: 1/2" 48 MP CMOS
· Dynamic range: 14 EV in HDR mode
· Optical LD-ASPH (low dispersion aspheric lens)
· Aperture: f/2.0
· 35 mm focal equivalent: 24 mm
· Depth of field: 4.5 m to ∞
· ISO range: 50 to 6400
· Shutter speed: 1/15 s to 1/10000 s
· Zoom: 6x – lossless: up to 4x (1080 p) & 2x (4K UHD)
· 6-axis stabilization:
· Mechanical: 3-axis (pitch, roll, yaw)
· Electronic (EIS): 3-axis (pitch, roll, yaw)
· Gimbal tilt range: -90° to +90°

AUTONOMOUS FLIGHT

· Photogrammetry: grid, double grid, circular, 1-click
· Flight Plan: multiple Waypoints and Points of Interest
· Cameraman: automatic framing with visual tracking
· Smart RTH: customable return altitude
· Vehicle: flight adapted to controller location reference

CYBERSECURITY

· Zero data shared without user consent
· FIPS140-2 compliant and CC EAL5+ certified
· Secure Elements Strong authentication for 4G
· Digitally signed pictures
· Transparency & Bug bounty continuous security check

WEIGHT AND BALANCE
· Weight: 898 g / 1.98 lb

Center of gravity:
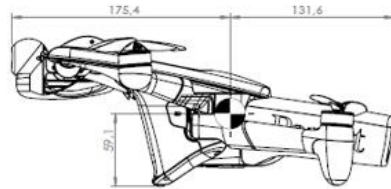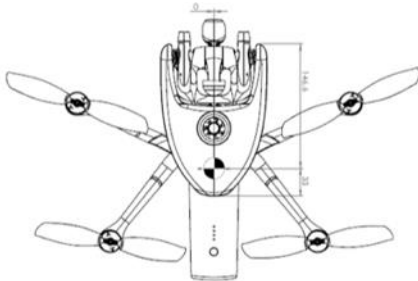
Package contents

Your ANAFI Ai pack contains:

- ANAFI Ai drone
- 1 Parrot Skycontroller 4
- 1 smart battery, preinstalled on ANAFI Ai
- 1 hard case
- 1 worldwide compatible USB-PD fast charger
- 2 long USB-C to USB-C cables for charging and pairing
- 2 short USB cables (1 Lightning and 1 USB-C) to connect devices
- 1 additional set of propeller blades
- 1 additional set of joysticks
- 1 gimbal protection
- A Flight Safety Guide

Presentation of ANAFI Ai

Ready to store or carry
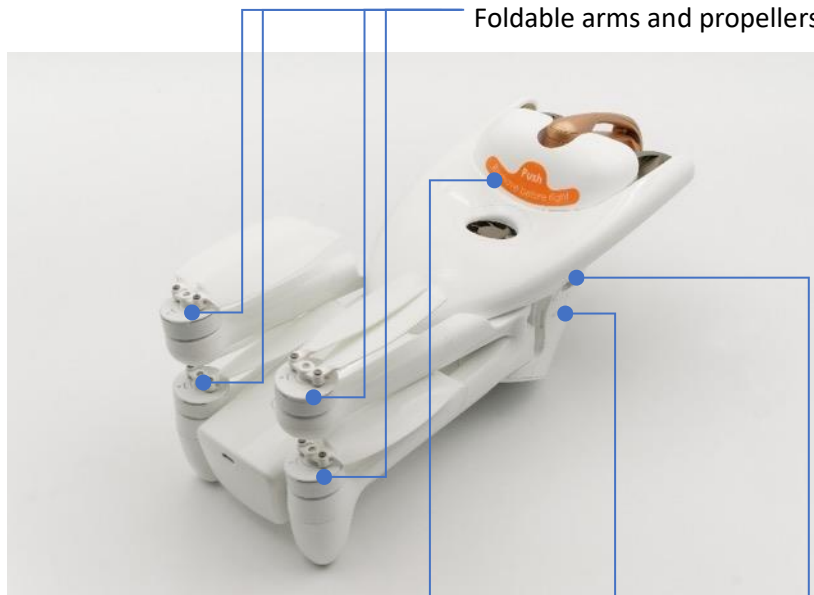
Foldable arms and propellers

Gimbal protection   4G cover   Right LED

Ready to fly

Stereo obstacle avoidance cameras

Charge level LED indicators   180° tilt 4K camera gimbal

Smart battery

USB-C charging port   Power button

Bottom view

Low light & low altitude assistance lights

Vertical camera
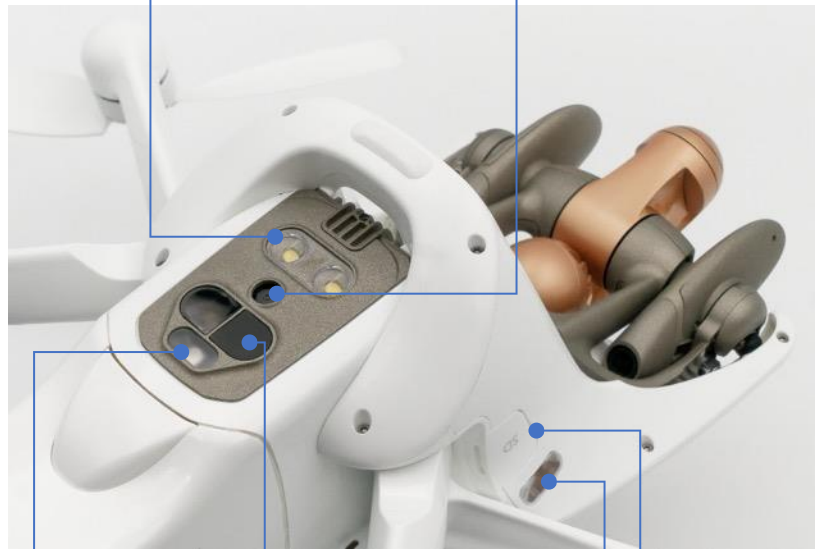
Bottom LED

Time of Flight (ToF)

SD cover

Left LED

About LEDs and assistance lights

LEDs ensure ANAFI Ai's visibility, and they facilitate the visualization of the drone's orientation in flight.

The right LED flashes for 0.4 seconds every 2-second cycle.

The left LED flashes for 0.4 seconds every 2-second cycle.

Both right and left LEDs are dimmed when the drone is landed.

The bottom LED is off when the drone is landed. It flashes in green for 0.4 seconds every 2-second cycle when the drone is flying.

Its luminosity increases with the drone's height over its take-off point, up to 5 meters.

Assistance white lights turn on in low light conditions, when ANAFI Ai is flying between 0.25 and 5.9 meters above ground.

Presentation of Parrot Skycontroller 4

Front

RTH

Detachable Control sticks

Wi-Fi antenna

Power

Take-off/Landing

Status indicator LED

Sliding handles
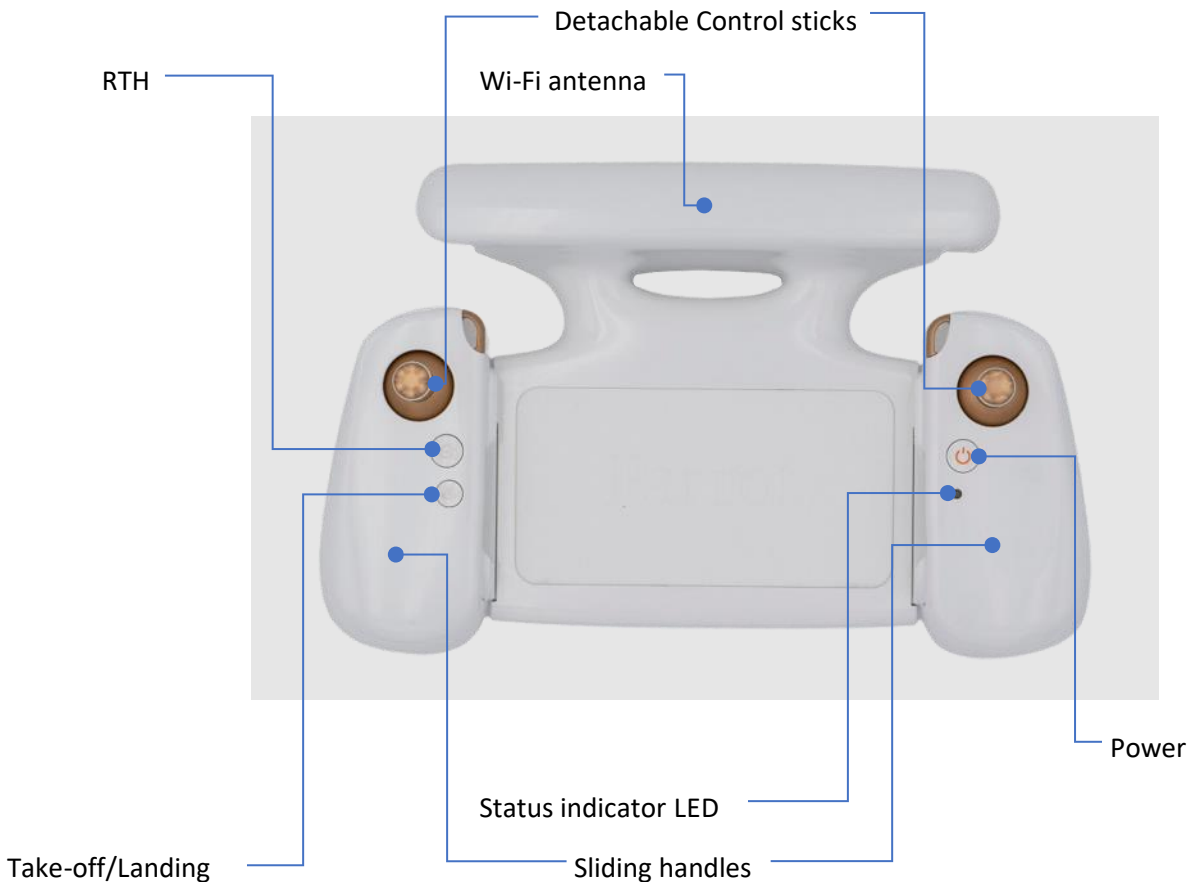
LED status indicator color codes

When the Parrot Skycontroller 4 is powered on, its LED status indicator gives you an instant visual indication:

Flashing green:	Skycontroller 4 update in progress
Alternating light blue and dark blue:	Connecting to ANAFI Ai
Flashing light blue:	No drone configured or wrong WPA key
Steady dark blue:	Connected to ANAFI Ai
Alternating purple and dark blue:	RTH in progress
Alternating red and any other color:	Low battery alert (ANAFI Ai, Skycontroller 4, or both) or RTH alert

Top

Gimbal tilt trigger   Zoom trigger

Optics reset   Media recording

Neck strap loops

Bottom

USB-C charging port   Micro-HDMI port

Charging status LED

Right Side

USB-C device connection port
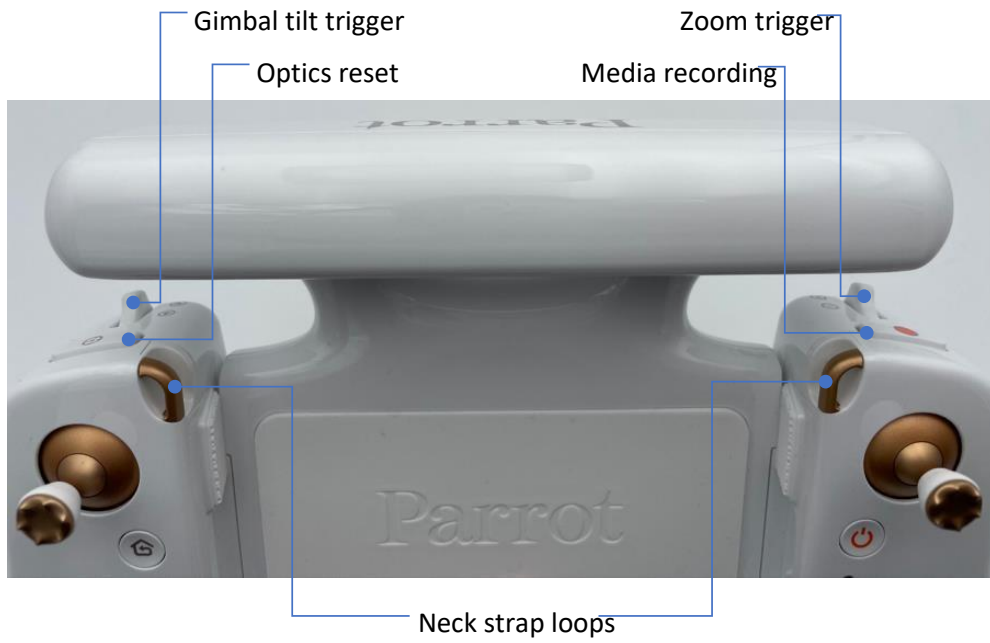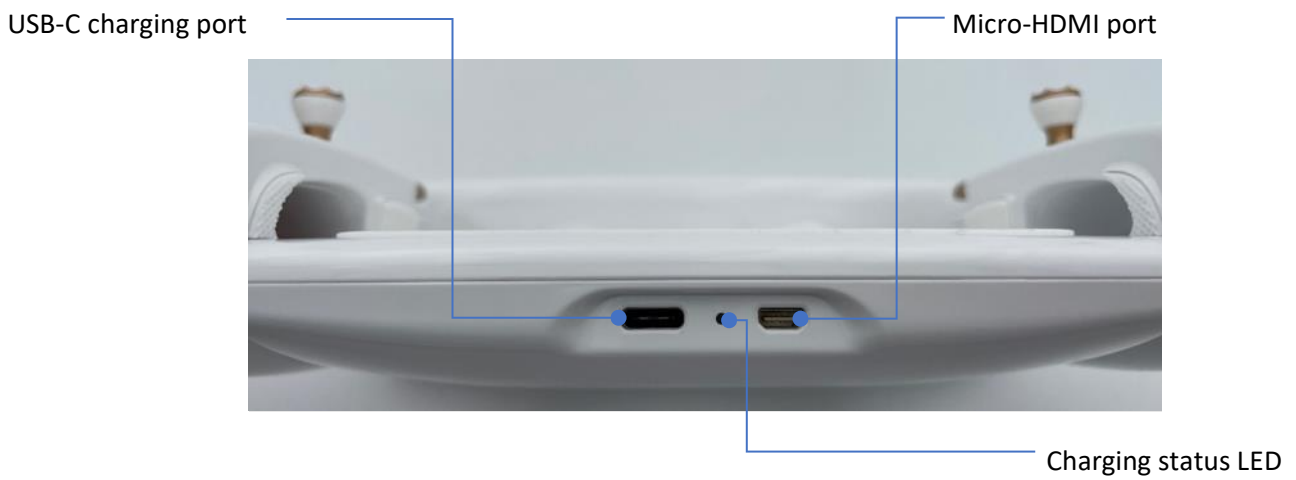
Spare control stick storage (2nd one on the opposite side)

Pairing ANAFI Ai to a Parrot Skycontroller 4

This procedure is useful to pair a drone and a controller which have never been paired, and to restore the lost pairing between a drone and a controller.

1. Check a compatible microSD card is inserted into ANAFI Ai.
2. Power ANAFI Ai on.
3. Power the Parrot Skycontroller 4 on.
4. Plug the drone to one of the USB-C ports of the controller (side or bottom) with an USB-C to USB-C cable.
5. The LED of the Parrot Skycontroller 4 repeatedly flashes in green: it is acknowledging ANAFI Ai and establishing pairing protocols.
6. Wait for synchronization between Parrot Skycontroller 4 and ANAFI Ai (steady dark blue LED on the controller): check that the left trigger of the Parrot Skycontroller 4 activates the drone's gimbal to ensure the synch is complete.
7. Unplug the controller from the drone.

HDMI video sharing

Use a micro-HDMI to HDMI cable to connect the Skycontroller 4 to an external screen (or VR goggles): the screen displays ANAFI Ai's video stream.

Note that external screens display only the drone's video stream (and none of the additional information provided by FreeFlight 7).

In consequence, operators can keep an eye on the drone's view, on an external screen, while when they navigate FreeFlight 7 menus (settings or dashboard) on the device associated to the Skycontroller 4.

Reminder: Parrot recommends using a certified micro-HDMI to HDMI cable (not included in the box) to connect external pieces of equipment to the Skycontroller 4, as uncertified cables could impair the ecosystem's Wi-Fi performances.

The packaging of certified HDMI cables displays the following logo:

GPS receiver compatibility

To improve your device location accuracy, an external GPS receiver can be plugged alongside the Skycontroller 4.
Here is the procedure to use a GPS receiver:

1. Plug a USB hub to the USB-C port at the bottom of the Skycontroller 4.
2. Plug the GPS receiver to the USB hub

The external receiver signal will now be used instead of the iOS device for positioning in Follow-Me, Vehicle mission etc.

Supported GPS modules:
• Any USB GNSS receiver based on the u-blox 8 or u-blox 9 family of chipsets.

4G Connectivity

4G connectivity warning

Check local regulations before using 4G connectivity, as some countries may restrict or prohibit drone connections to local 4G networks, even in areas where drone operations are allowed.

In such a situation, turn "Cellular access" off in the FreeFlight 7 application and use the Wi-Fi connection only (refer to the "Advanced settings / Connection" section of this guide).

About 4G connectivity

4G connectivity opens professional users a wide new world of BVLOS (beyond visual line of sight) flights. Provided 4G coverage is available, ANAFI Ai has no range limit, other than that of its battery.

In interference-ridden environments such as urban areas, 4G connectivity also offers an incomparable robustness of the communications between drone and controller.

By default, as soon as a compatible nano SIM card is inserted in ANAFI Ai and activated, the Skycontroller 4 optimizes its connection with the drone, choosing between Wi-Fi and 4G network, automatically and in real time.

You can choose a different behavior (Wi-Fi priority or 4G priority) from the "Connection" Advanced Settings of FreeFlight 7 – refer to the "*ADVANCED SETTINGS / Connection*" section of this guide for additional information.

   • Temporarily switching this setting to "4G priority" before a flight is a good way to assess the strength of your 4G connection – select "Wi-Fi priority" then revert to "Auto" to take off using Wi-Fi.

Be aware that 4G connection and in flight 4G data sharing may generate a charge, according to the 4G data plans associated to your drone and device SIM cards.

Installing and retrieving the nano SIM card

The nano SIM card slot of ANAFI Ai is located on the right side of the drone, under the "4G" cover. To install the nano SIM card, lift the cover open and insert the nano SIM card straight into the slot, shortest side first and connectors turned to the back of the drone – refer to the diagram inside the 4G cover. To retrieve the nano SIM, press the card and extract it.

Activating the nano SIM card

To activate the nano SIM card, power the full ANAFI Ai ecosystem (drone, Skycontroller 4, device) on as you would for a flight.

Access the ANAFI Ai page of the dashboard. Top right of the interface, the "Cellular access" tile displays "Sim locked" as on the following screenshot.
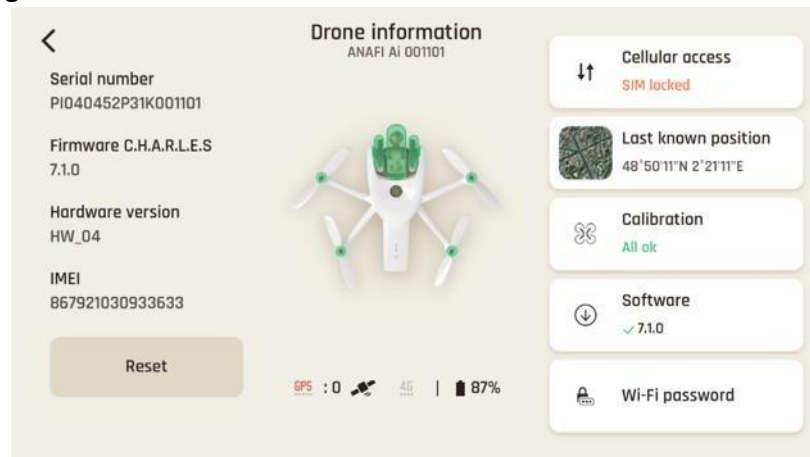
Drone page: SIM locked

Tap the "Cellular access" tile to access the interface shown in the following screenshot.
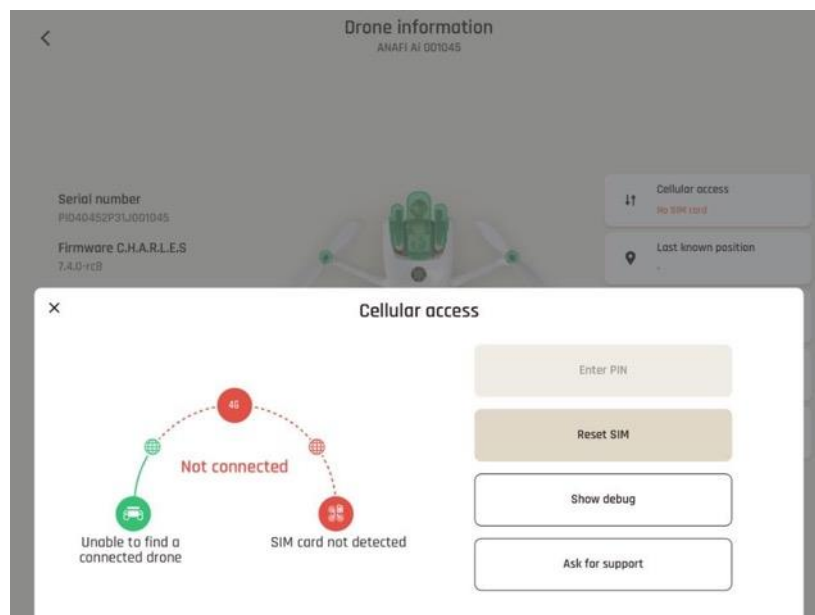
Cellular access interface

If applicable, tap "Enter PIN" to access the "SIM card PIN" interface.
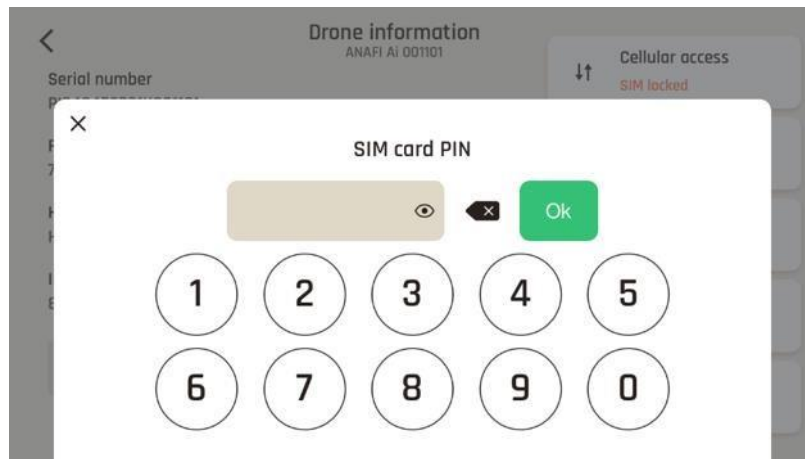
"SIM card PIN" interface

Enter your PIN and tap "Ok" to confirm. The interface closes and after a few seconds, the 4G protocols are activated as in the following screenshot.
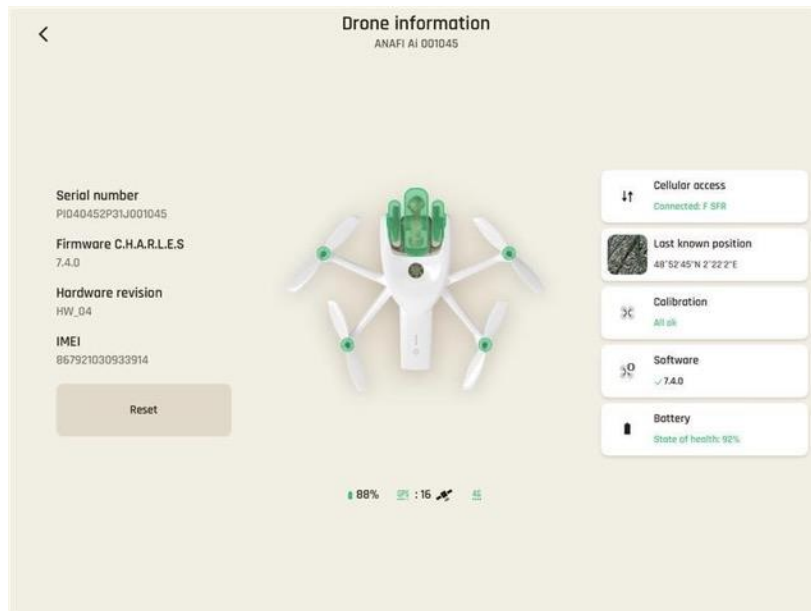
"Cellular access": connected

Tap the "Cellular access" tile again to check the corresponding interface, displayed in the following screenshot.
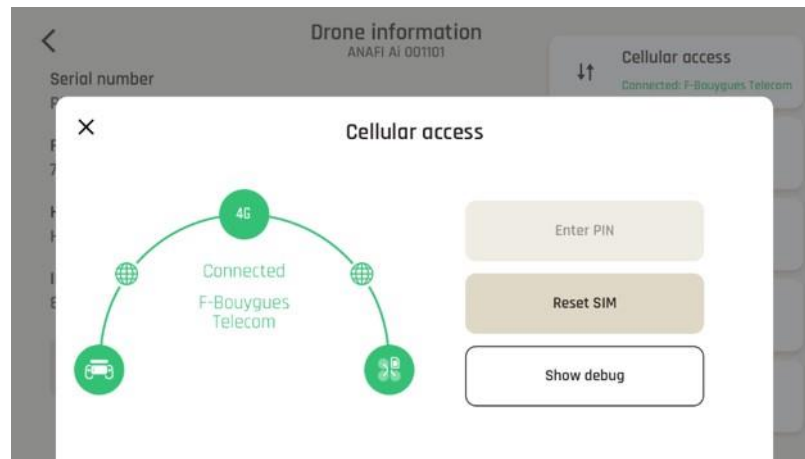
Cellular access interface

- Note that selecting "Reset SIM" from this interface and confirming this action causes the drone to reboot, with a "SIM locked" status.
- Note that although creating a Parrot.Cloud account is always recommended, it is not mandatory to activate ANAFI Ai's 4G functions.

Data sharing and User accounts

Parrot highly values your privacy and the security of your data. The FIPS140-2 compliant & CC EAL5+ certified Secure Elements and strong authentication for 4G feature of the ANAFI Ai ecosystem provide absolute protection for your workflow.

This section describes the three data sharing options available for ANAFI Ai owners and operators, in connection with the Parrot.Cloud account. PIX4D accounts are also covered in this section.

Anonymous sharing (default option)

From the FreeFlight 7 dashboard, tap the "Log in" button to access data sharing and account options.
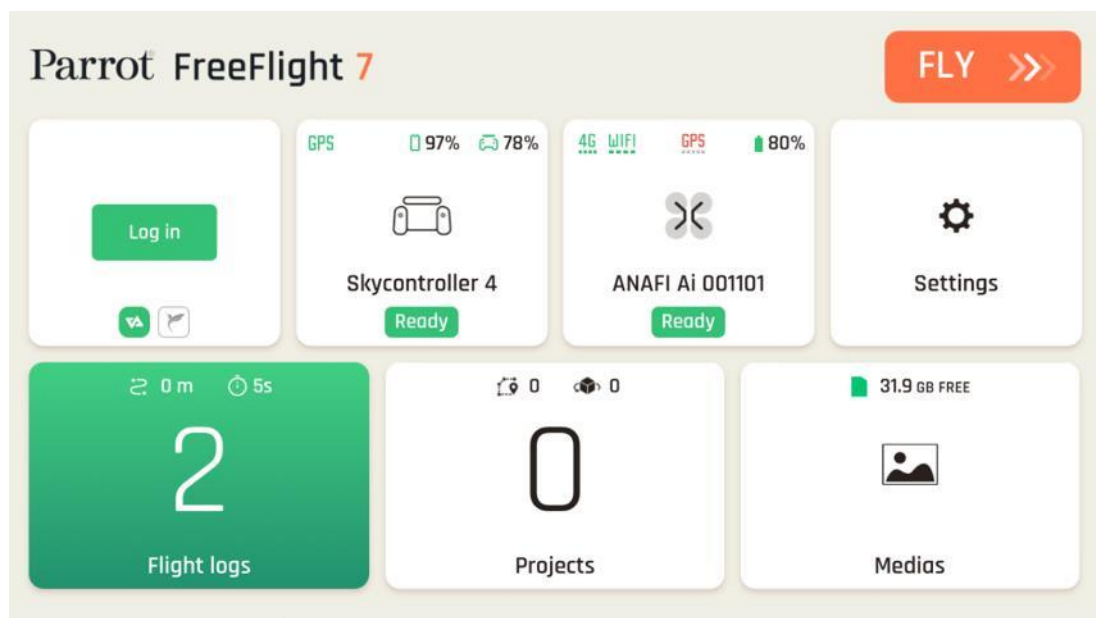
FreeFlight 7 dashboard

By default, on first launch and as the ecosystem is free from all links to Parrot or partners accounts, FreeFlight 7 forwards anonymous software data to our servers, which help Parrot improve its products.

- Note that as on the last screenshot, the FreeFlight 7 dashboard may display existing Flight Logs, even on first start up: the initial start-up amounts to 1 flight log and any conformity/quality test during production amounts to another flight log.

Your flight data is stored locally, between your FreeFlight 7 device and your drone, both protected by the Secure Elements and 4G strong authentication (if you have activated a nano SIM).

Tap the "Data sharing" box to display the option.
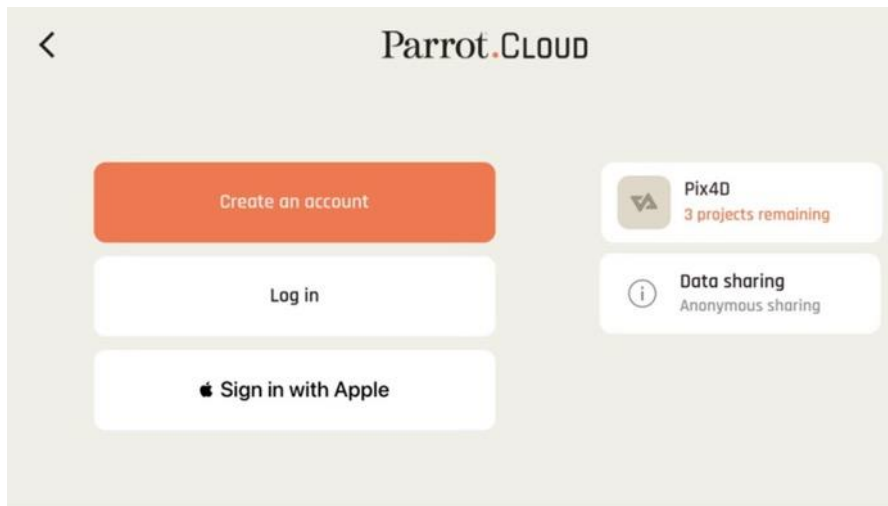
FreeFlight 7: Data sharing and user accounts
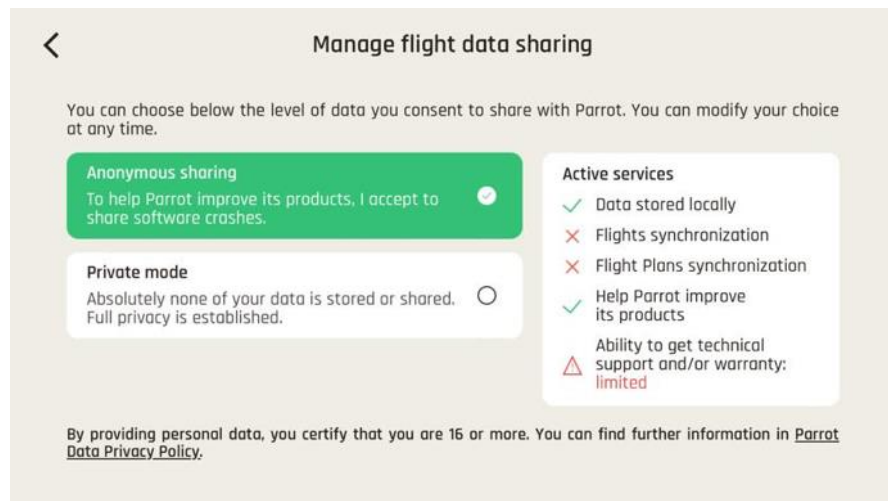
Manage flight data sharing: Anonymous sharing

Private mode (zero data)

From the "Manage flight data sharing" page, select "Private mode": FreeFlight 7 warns you that confirming this choice will delete all flight data from your device.
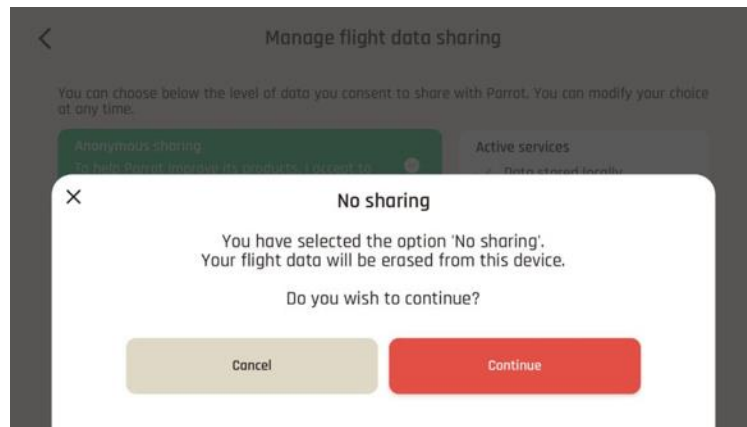
No sharing warning

Select "Continue": no additional data will be recorded on your device until this option is reverted.
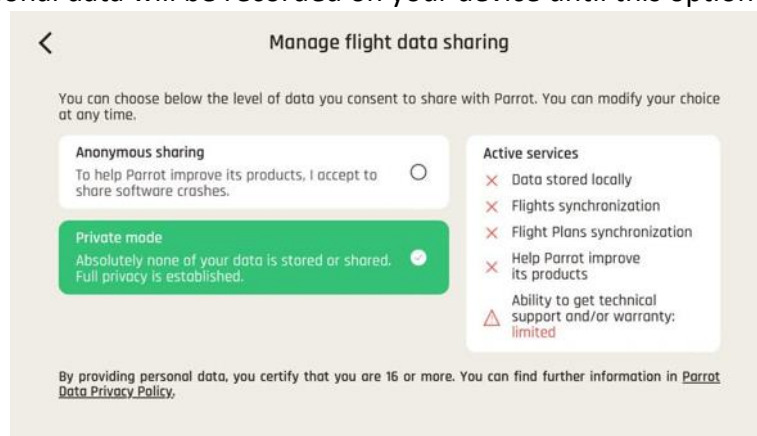
Private mode

- Note that activating the Private mode considerably limits your ability to get technical support, warranty, or both from Parrot Support. Although the ecosystem produces data to enable safe flight and mission, NONE of it is saved after the ecosystem is powered off.

Parrot.Cloud account & Full sharing

Logging in to a Parrot.Cloud account enables you to save your flight data and your Flight Plans on the Cloud.

Creating a Parrot.Cloud account is optional, but this option also enables you to maximize your access to technical support, warranty, or both.

Create or log in to your existing Parrot.Cloud account from the next screenshot interface and follow in-app instructions – creating a Parrot.Coud may require a confirmation from your email account before full activation.
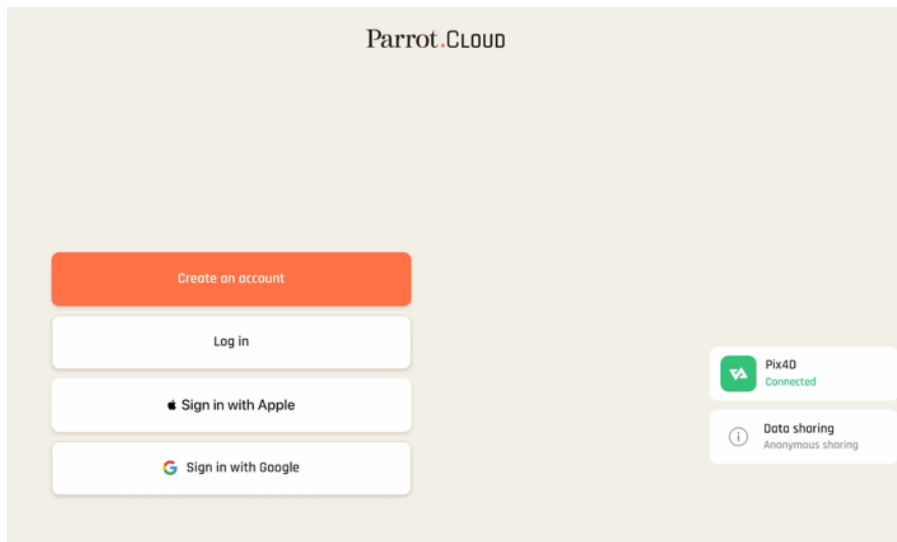
After you have logged in to your Parrot.Cloud account, by default, the Full sharing option is activated.
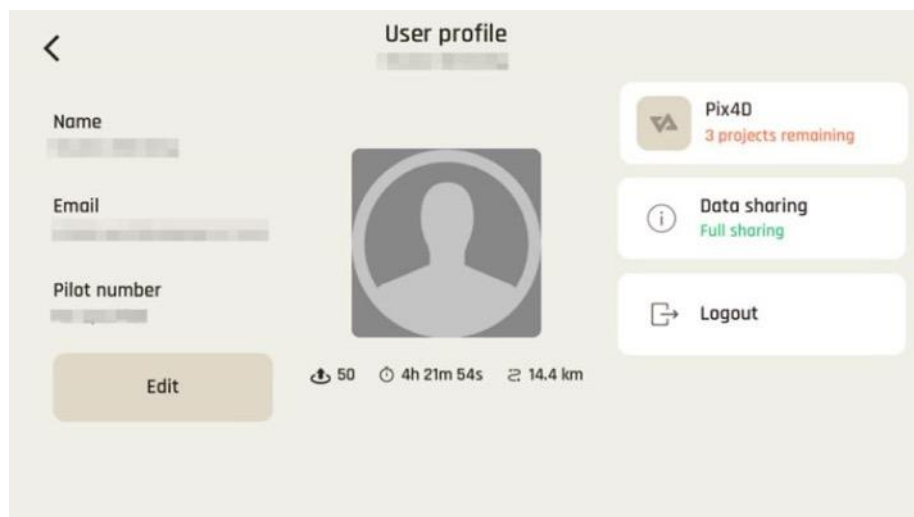
User profile interface
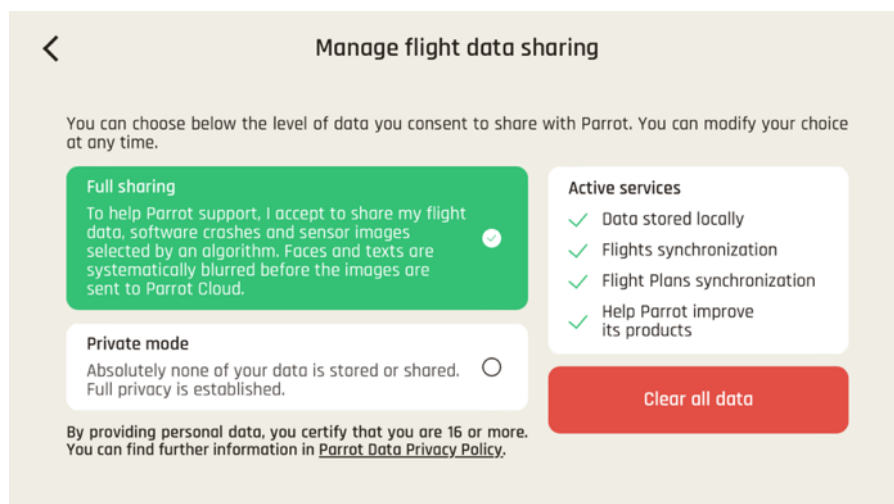
Manage flight data sharing: Full sharing

• Note that the "Clear all data" button enables you to delete all your data from your device (and from the Cloud, if you decide so) at any time – this is useful for multi-operators drones.

PIX4D account – 3 offered photogrammetry models for new users

Existing PIX4D users can link their account to their drone, start programming photogrammetry missions directly from FreeFlight 7 and enjoy 4G upload to PIX4D.

New users can enjoy 3 offered photogrammetry models, courtesy of Parrot and PIX4D, provided they create a PIX4D account.

Tap the PIX4D box to log in to your PIX4D account or create a PIX4D account – follow in-app instructions to proceed to PIX4D "Connect" page.
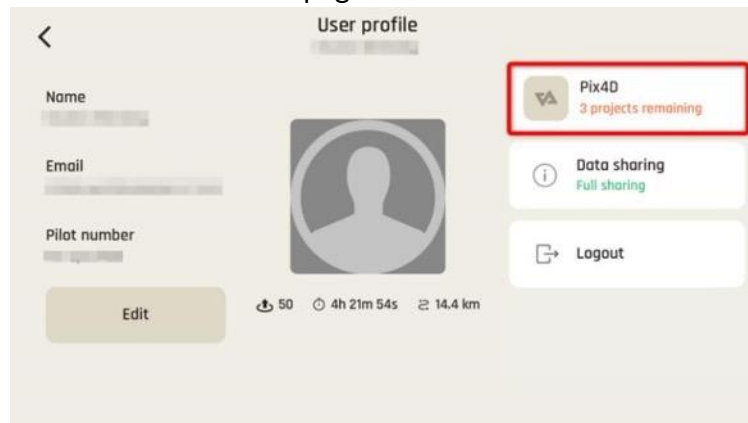
PIX4D box highlighted
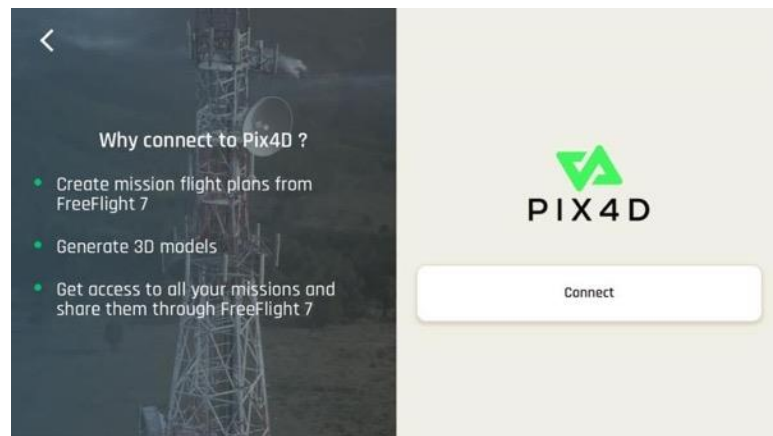
PIX4D connect page
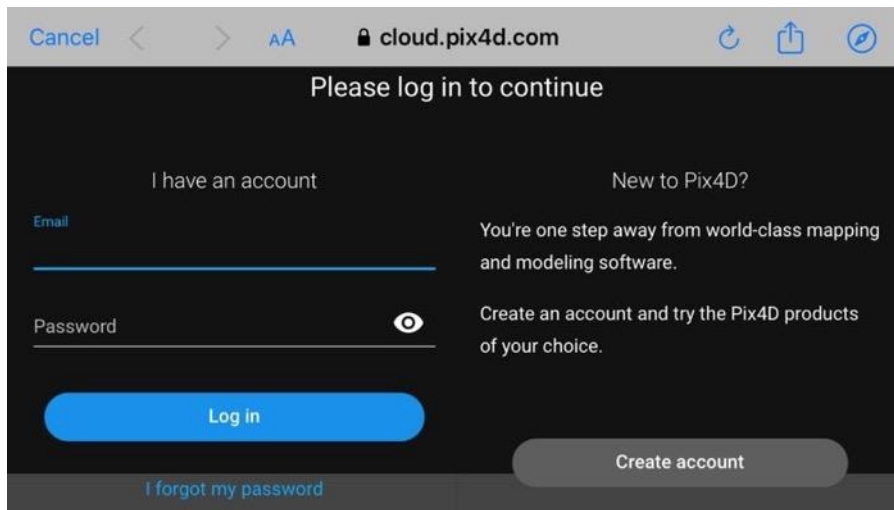
Log in or create a PIX4D account

Follow in-app instructions to log in or create an account - creating a PIX4D account may require a confirmation from your email account before full activation.

Refer to the "*MISSIONS: PHOTOGRAMMETRY*" section of this guide for additional details on photogrammetry missions.

Obstacle avoidance

- The drone's obstacle avoidance (OA) system relies on stereo cameras, located on each side of the main camera. Make sure the lenses of the stereo cameras are always perfectly clean: you can use a drop of specialized (photo) lens cleaning liquid to ensure the cleanliness of the optics.

The OA system is activated through the Quick Settings and its status is displayed on the HUD, through a shield icon in the top bar:

Grey:	OA deactivated
Green:	OA activated and operating optimally
Orange:	OA activated, degraded operation
Red:	OA activated, but inoperative

- In the following screenshot, the OA icon is green. Parrot strongly recommends deactivating the OA whenever the icon is NOT green.

OA activated and operating optimally

- If you see a "Stereo camera failure" notification associated with a red shield, deactivate the OA immediately, land your drone as soon as possible and reboot all systems (drone, controller, app) before attempting another OA activation: you may have to recalibrate the Obstacle avoidance system before you can activate OA again – refer to the "*Calibrations / Obstacle avoidance*" section of this guide for further information.
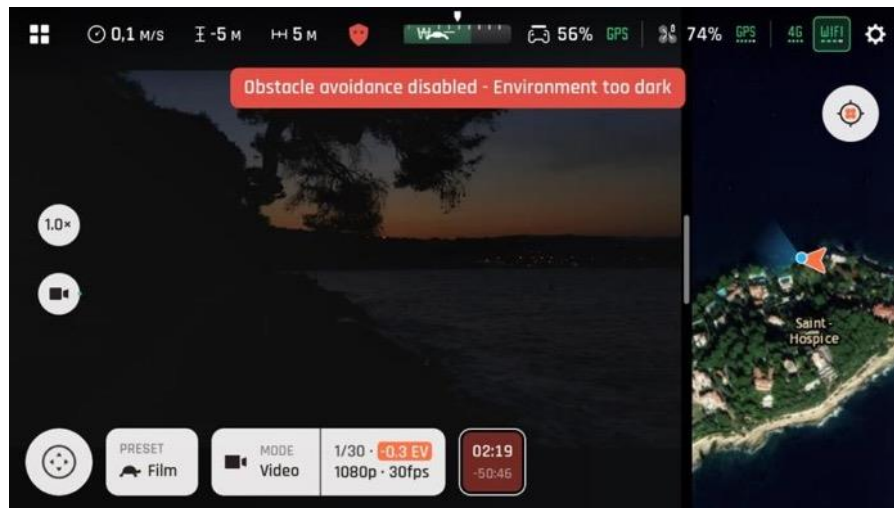
Red shield: deactivate the OA immediately.

Obstacle avoidance and manual piloting

• The OA is designed to help the pilot, not to replace his control over the drone. -
   Do not lose sight of the drone and always remain focused on its flight.

   - Rely on your own judgement to control the drone and manually avoid obstacles.

   - Be wary of obstacles, in particular people and animals which may find themselves on the trajectory of the drone.

   - Keep the speed of your drone under 8 m/s. - Set an RTH altitude before each flight.

When you fly the drone in a direction where the OA cannot detect obstacles (directly sideways or sideways and toward the back), a notification appears on your screen as on the next screenshot.
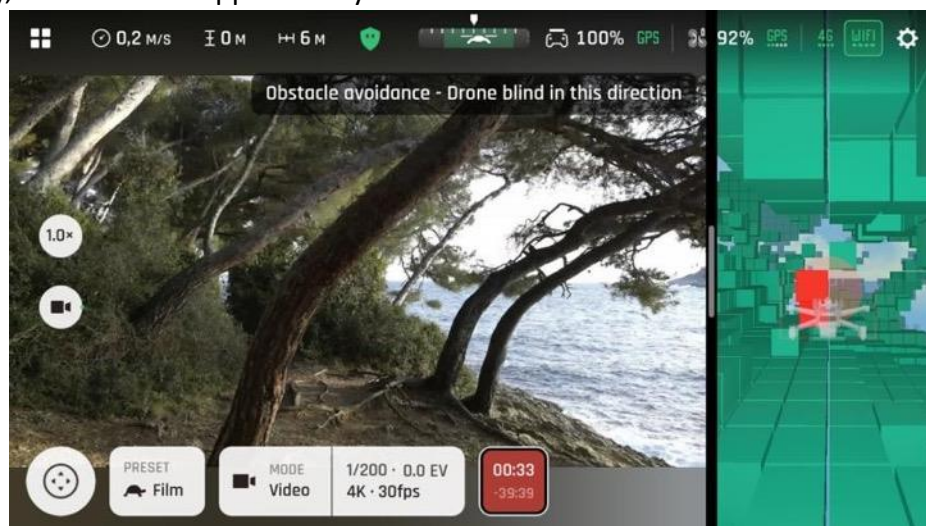
"Drone blind" notification

Face the drone in the direction of the motion to avoid getting this notification.

Obstacle avoidance and automated flights

During automated flights, the drone manages its trajectory to keep the OA fully functional.

- However, you must carefully plan and monitor your automated flights in the following conditions, as the OA might not work optimally.

    - Dynamic (moving) environments.
    - In front of surfaces or objects that are:
        o monochrome (plain white or black, on any other color without distinct texture or motive);
        o reflective;
        o water based or transparent;
        o mobile; o very dark or very bright.
    - In areas where the lighting conditions change drastically or very rapidly.
    - In rainy conditions.

Calibrations

This section presents the calibration procedures required by the ecosystem: one procedure for the Skycontroller 4's magnetometer and four procedures for ANAFI Ai's systems:

- Gimbal calibration
- Horizon calibration
- Magnetometer calibration
- Obstacle avoidance calibration

Skycontroller 4

FreeFlight 7 may require you to calibrate the magnetometer of your Skycontroller 4 if it has been exposed to a strong magnetic field or if your flying conditions change radically – from a continent to another, for example.

When a calibration must be carried out, the Skycontroller 4 page of FreeFlight 7 displays a "Calibration required" alert, as on the following screenshot.
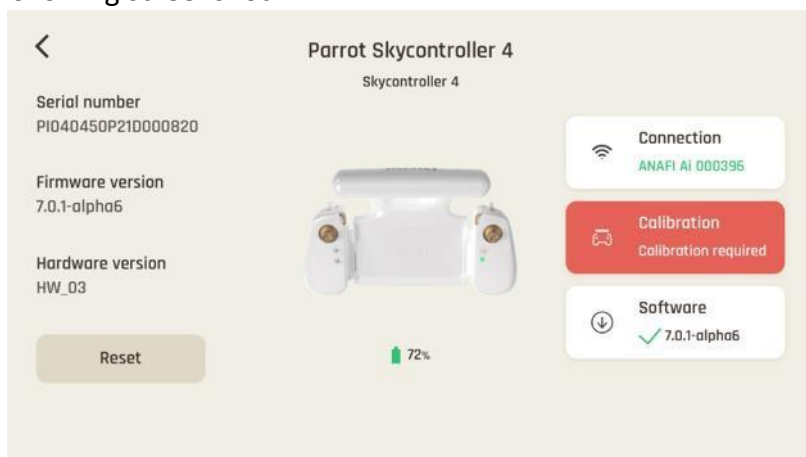
Skycontroller 4 calibration required

Tap the alert to access the following screen and follow onscreen instructions.
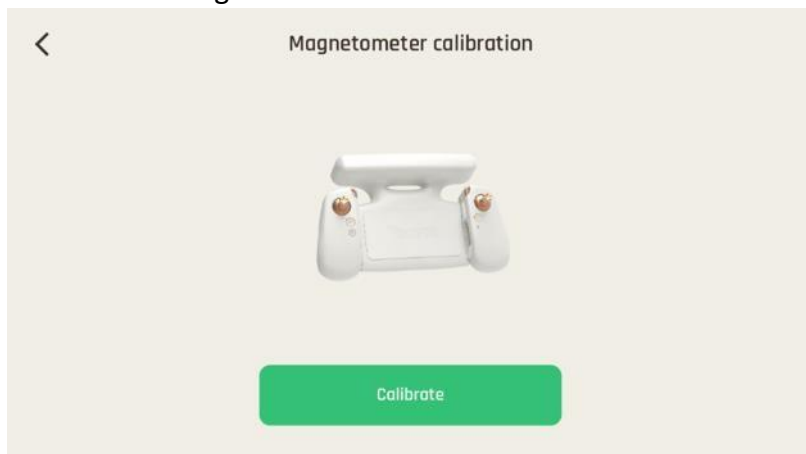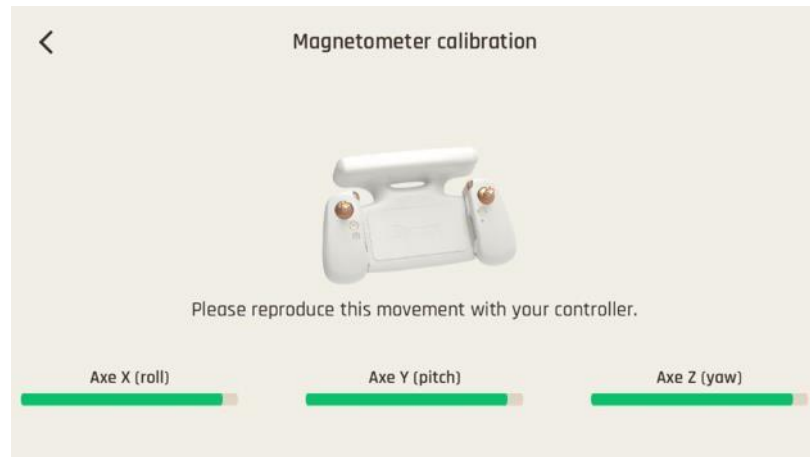
Skycontroller 4 calibration in progress

Gimbal

Access calibration options from the ANAFI Ai page of the dashboard. Before starting this procedure, you need to position ANAFI Ai on a flat and perfectly level surface.
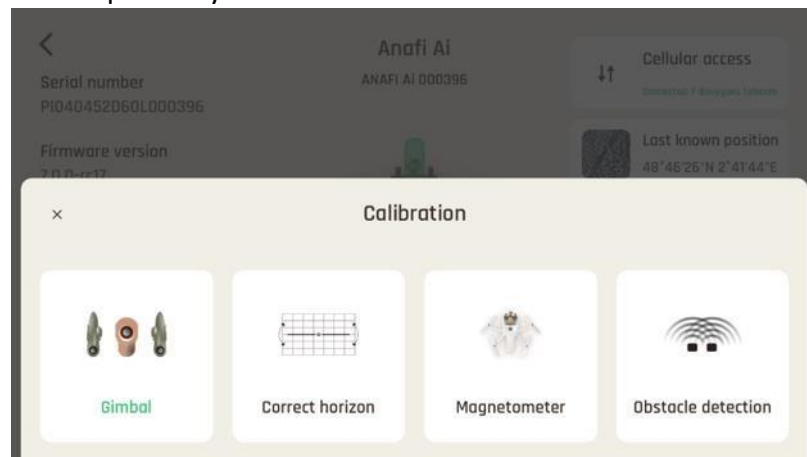
ANAFI   Ai calibration menu

Use the first option to perform a gimbal calibration, that is more precise than the quick calibration which occurs when ANAFI Ai is powered on. Both the main camera and the stereo camera gimbals are calibrated successively.
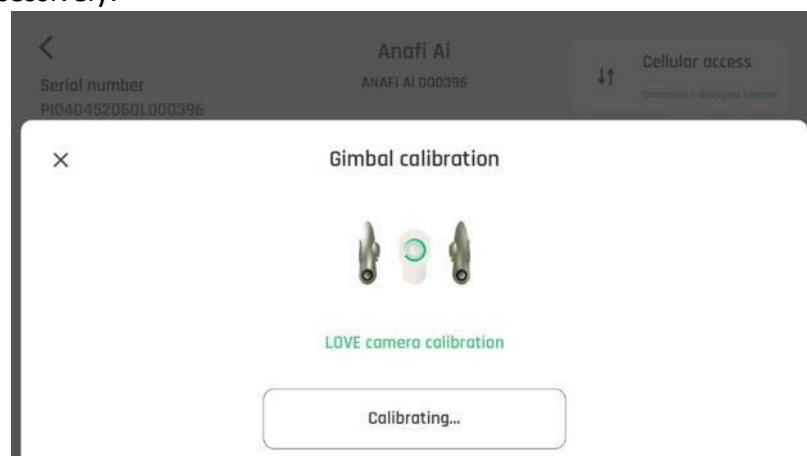
• Be aware that FreeFlight 7 can prompt you to carry out this calibration when needed. It is not mandatory to take off, but it is recommended.

Horizon calibration (exceptional procedure)

Your ANAFI Ai's camera has been factory-calibrated with unparalleled precision.

Unlike the magnetometer calibration of ANAFI Ai or that of the Parrot Skycontroller 4, which must be carried out periodically, the horizon calibration must not be carried out unless it appears necessary – typically, after a crash.

If you notice a tilted horizon on all your videos and photos, and if this tilt is always on the same side, access horizon calibration to make your horizon perfectly straight again.

This feature is accessible from the ANAFI Ai page on the FreeFlight 7 dashboard (or from the ANAFI Ai box of the HUD).

Before starting this procedure, you need to position ANAFI Ai on a flat and perfectly level surface, exactly perpendicular to any pattern containing straight lines you can use as horizon references.

A half empty large water bottle provides a useful horizon line almost anywhere.

When ANAFI Ai is correctly positioned, perpendicular to a horizon, power it on, along with the Parrot Skycontroller 4 and your device, as you would for any flight.

Access the calibration menu from the ANAFI Ai page of the dashboard of FreeFlight 7.

Select the "Horizon calibration" option.

Tap "–" or "+" until the artificial horizon of ANAFI Ai matches the horizon reference facing the drone.
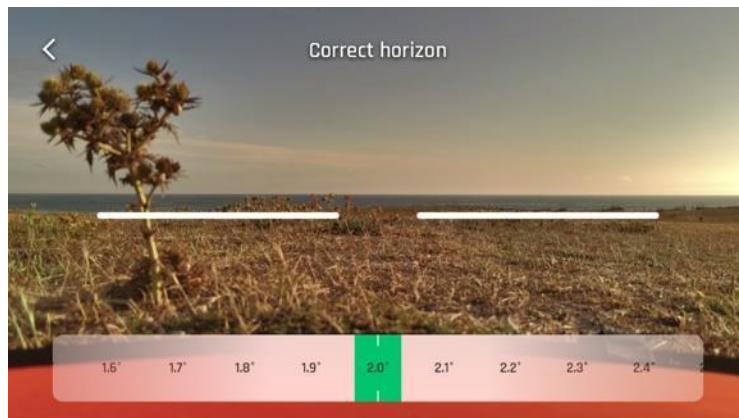
Horizon corrected

When you have straightened the tilt of the camera, tap the "<" icon on the top left of the screen to confirm your setting and exit horizon calibration.

Magnetometer calibration

When the calibration of the magnetometer of the drone is required, FreeFlight 7 guides you through the following procedure.
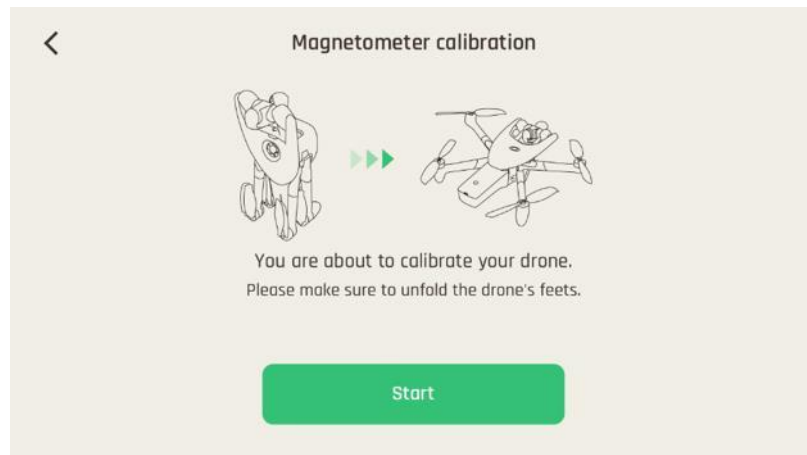
Magnetometer calibration screen
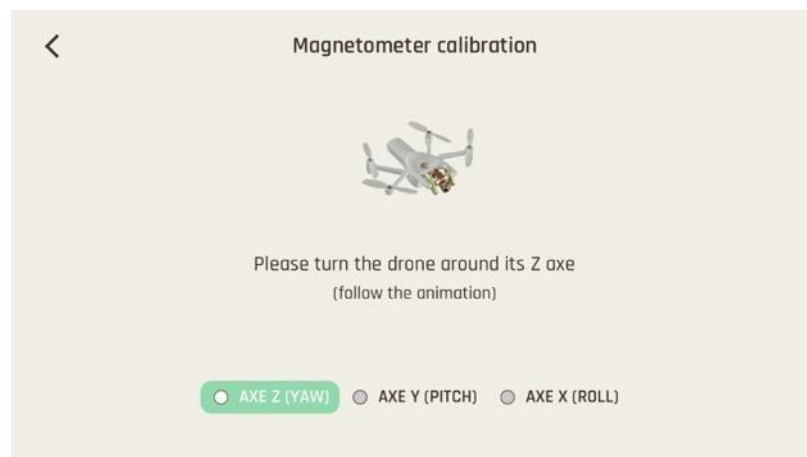
Calibrating the Z axis
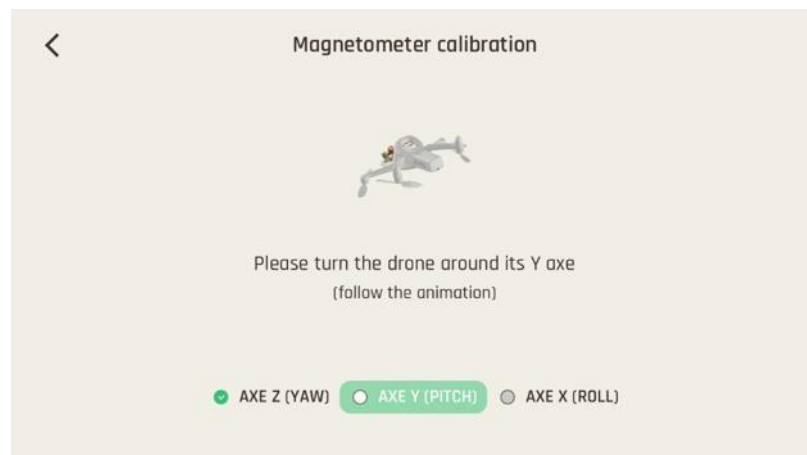
Calibrating the Y axis
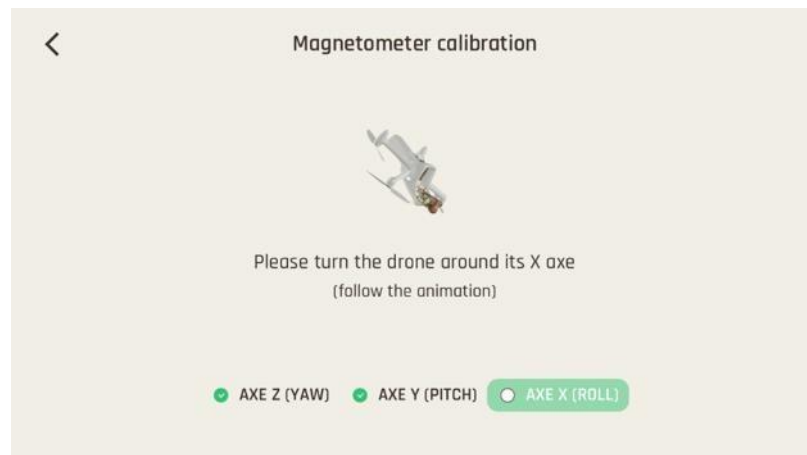
Calibrating the X axis

Obstacle avoidance

To calibrate the obstacle avoidance system, set up your full ecosystem for a flight: obstacle avoidance calibration implies a short flight in a straight upward line, and a full rotation of the drone (360°). Please note that during this procedure, the obstacle avoidance is disabled.
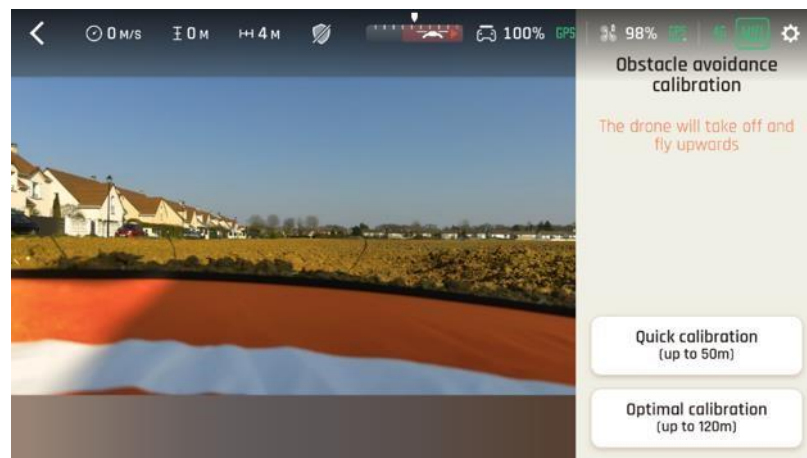
Obstacle detection calibration interface

• Therefore, it must always be carried out in the open, ideally in a zone fully authorized to drone flights:

- use the Quick calibration (50 meters) option in zones where ANAFI Ai may not be flown over that height - 50 meters calibration is slightly downgraded and it should only be used in flattest environments;

- the Optimal calibration (120 meters) option provides the best quality calibration, and must be favored whenever possible.

Tap an option to select it: ANAFI Ai takes off, reaches the selected height, performs a 360 (full rotation) and descends.
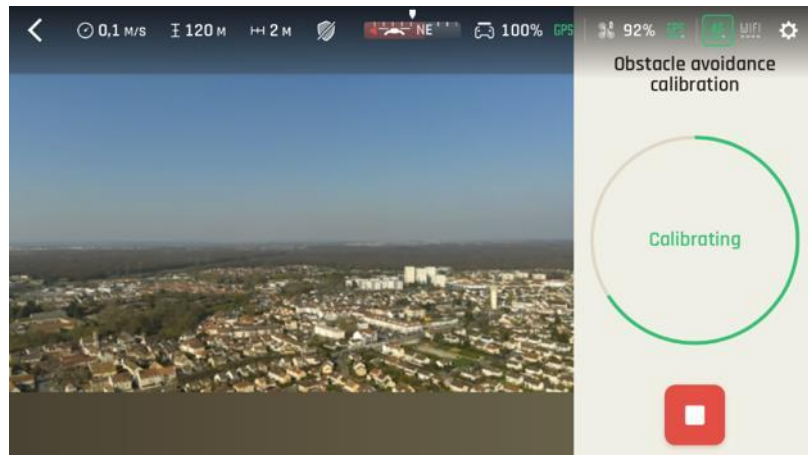
Calibration in progress

When prompted by FreeFlight 7, land the drone to complete the calibration.
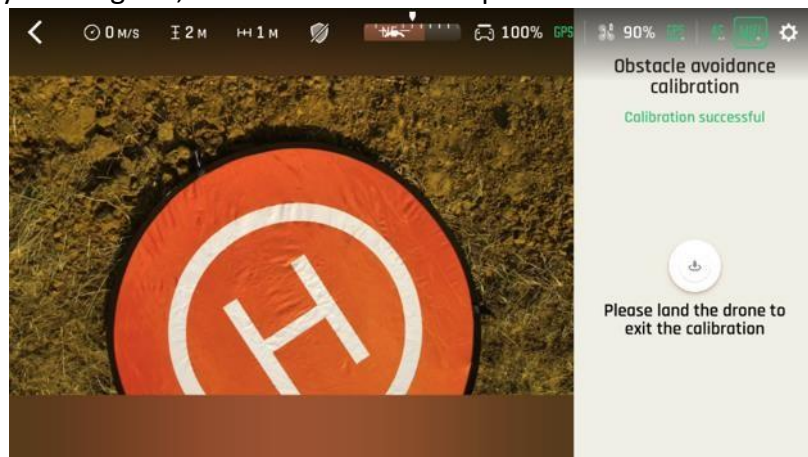
Calibration successful confirmation
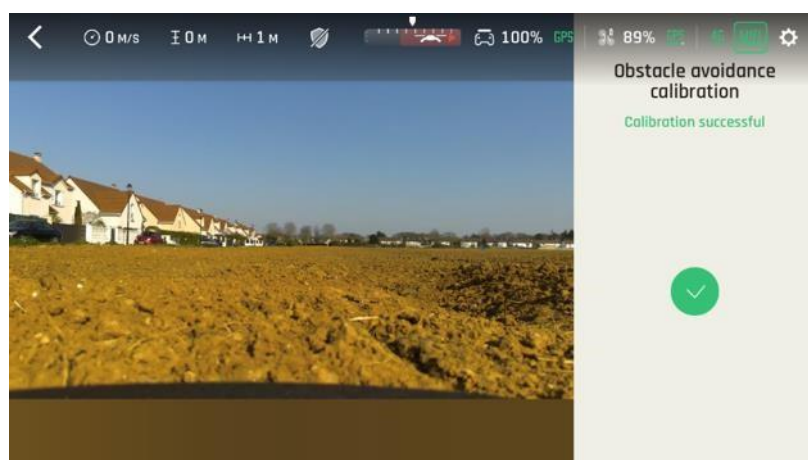
Drone landed, calibration sequence complete

Pre-flight reminders

Transport & handling

- To ensure a proper storage of your ANAFI Ai, always transport it on its hard case, safely positioned, with gimbal's protection on.
- Always transport the Parrot Skycontroller 4 safely into its hard case relevant location.
- To ensure the safe storage of the battery, be sure to protect it from low/high temperatures exposure and try to keep it close to ambient temperatures.
- Always handle the ANAFI Ai with care. You should never apply pressure on it and generally avoid touching the drone's camera and gimbal – its most sensitive parts.
- Always keep the hard case with the drone/battery in dry places.

Equipment

- Make sure you have downloaded the latest version of FreeFlight 7 and that both your Parrot Skycontroller 4 and your ANAFI Ai have been updated with the latest versions of firmware.
- For the ultimate ANAFI Ai experience, make sure you have the right USB-C to Lightning cable to connect your Parrot Skycontroller 4 and your device.
- Make sure ANAFI Ai is fitted with a microSD card with enough free memory space.
- Make sure all four foldable arms of ANAFI Ai are unfolded.
- Make sure its propellers are clean, intact and unobstructed.
- Make sure both ANAFI Ai's and Parrot Skycontroller 4's batteries are fully charged.
- Make sure ANAFI Ai's battery is securely installed on the drone's body.
- Make sure ANAFI Ai's gimbal protection has been removed.
- Make sure ANAFI Ai's lenses are clean – if you need to clean them, do it before you power the drone on: hold the gimbals between two fingers so that you do not pressure their mechanisms when you clean the lens, and gently wipe the lens with a microfiber cloth.

Regulations

- Make sure the use of ANAFI Ai is allowed where you are intending to fly.
- Check for potential restrictions regarding the use of Wi-Fi frequencies in the area where you are intending to fly.

Flight conditions

- Check that your flying zone is safe and clear.
- Do not fly ANAFI Ai at night.
- Do not fly ANAFI Ai over urban areas or over restricted airspaces such as airports, train stations, power plants, national reserves, and so on.
- Check the weather: do not fly ANAFI Ai in the fog, snow, hail, or in a wind exceeding 15 meters per second or 50 km/h.
- To avoid any drone's damages, do not fly the ANAFI Ai during salt spray, thunderstorm, sandstorm, bird flocks.

- Due to the operating mode of its vertical camera and Time of Flight (ToF) sensor, Parrot recommends you do not fly ANAFI Ai low over water and other reflective surfaces (mirrors, glass, and so on).

Getting started

1. Charge the battery using one of the enclosed USB-C to USB-C cables and the enclosed charger. Refer to the *"Battery charging"* section of this guide for additional information. Parrot recommends you always run a full charge of your smart battery before flying ANAFI Ai**.**
2. Charge your Parrot Skycontroller 4.
3. Check that your flying zone is safe and clear.
4. To start the drone, place it on a flat horizontal surface and press the power button until the drone's fan starts turning (approximately 3 seconds).
5. Press the Skycontroller 4's power button for 3 seconds, wait for the steady dark blue light, then plug your device to the controller using a USB-C to Lightning cable. Parrot recommends you always fly ANAFI Ai with Parrot Skycontroller 4 and a device, for the best flight experience.
6. FreeFlight 7 runs automatically on your device and connects to ANAFI Ai and to Parrot Skycontroller 4.
7. Check for controller and drone software updates, adapt the brightness of the screen of your device to your flight conditions.
8. Calibrate your ANAFI Ai, your Parrot Skycontroller 4, or both, if required, following the instructions on the screen of your device.
9. Check that your flying zone is still safe and clear, and that no one (people, animal) has approached or is approaching ANAFI Ai.
10. Stay at least 2 m (6 ft) clear from the drone, press the ⬆ button and enjoy the flight.

- As a safeguard measure, ANAFI Ai is programmed to cut its motors instantly in case of impact on one of its propeller blades: always control your drone carefully.

Taking off

Ground take-off

Position ANAFI Ai on a flat, even, and clear surface.

Power it on, move at least 2 m (6 ft) away from ANAFI Ai and check that the surroundings of the drone are absolutely clear.

Press the ⬆ button on your Parrot Skycontroller 4.

ANAFI Ai takes off and stabilizes at 1 m (3 ft) from the ground, waiting for commands from the pilot.

Hand launch

- Be especially careful when you hand launch ANAFI Ai. This procedure is safe provided you are not distracted or startled by an outside event with a live drone in your hand: concentrate on what you are doing, but always stay aware of your surroundings.

Power ANAFI Ai on and position the drone on your flat, open hand. On the left of the screen of your device, a "Handlaunch Available" interface appears.
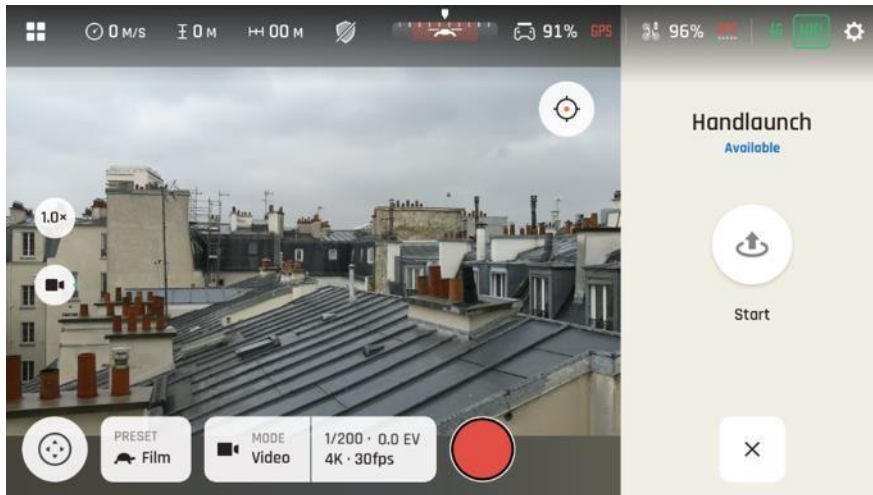
"Hand Launch" Screen

Press the ⬆ button on your Parrot Skycontroller 4, or tap the icon on the screen of your device. The drone's blades start rotating.

Wait until the propellers' rotation speed stabilizes, then briefly and briskly lift ANAFI Ai up and forward with your open hand. ANAFI Ai is airborne. It stabilizes, waiting for commands from the pilot.

Flying

Left control stick (default mode)

Right control stick (default mode)

Rise

Forward

Descend

Reverse

Turn right

Move to the right

Turn left

Move to the left
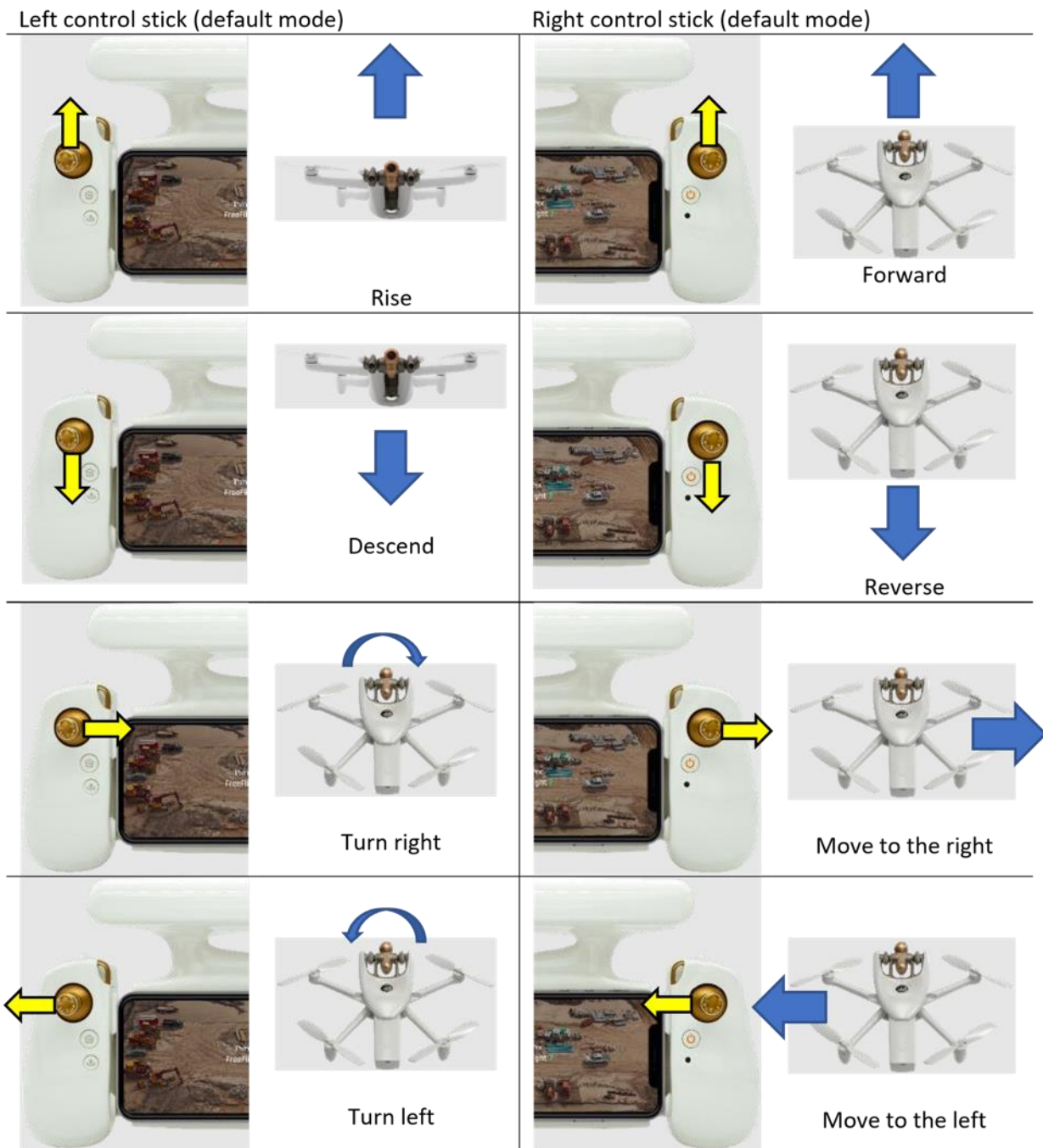
- Note that you can modify ANAFI Ai's controls through the SETTINGS menu of FreeFlight 7. Refer to the *"SETTINGS/ Controls"* section of this guide for additional information.

Returning home: Smart RTH

- Returning home implies ANAFI Ai has set a "home point" for itself. This is achieved with the first GPS fix of the drone. In consequence, Parrot recommends ANAFI Ai pilots to check that their drone GPS icon is green before they take-off – as on the next screenshot.
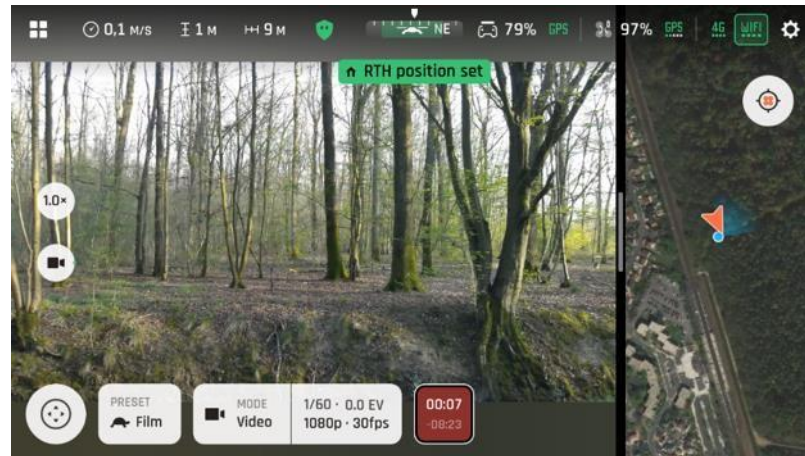
Both GPS icons are green: RTH position set

- If no GPS fix is possible from the ground, pilots must fly ANAFI Ai in a straight upward line over their take-off point until the drone synchronizes with enough satellites to turn the GPS icon green: this ensures the home point is directly over the actual take-off point.

    To bring ANAFI Ai back to its home point, press the 🏠 button on your Parrot Skycontroller 4.

    ANAFI Ai rises to 50 meters over its take-off point – or to the altitude you have set, through FreeFlight 7, between 20 and 100 meters – and flies back over its home.

    Refer to the *"ADVANCED SETTINGS – Safety"* section of this guide for instructions on RTH height configuration.

Low battery Smart RTH

ANAFI Ai features a Smart RTH capability: considering its altitude and its distance from its home point, the drone computes in real time the power it needs to return home – or to the pilot (refer to the "*ADVANCED SETTINGS / Safety / Advanced RTH settings*" section of this guide for additional details on this feature). When short on battery power, FreeFlight 7 alerts you that it will enter Smart RTH mode.

If you feel confident you can bring ANAFI Ai back to its take-off point or if you wish to land it at a different location, you can cancel the Smart RTH directly from the alert pop-up.

Ecosystem link loss Smart RTH

ANAFI Ai features a seamless connectivity switch capability, between Wi-Fi and 4G. It is therefore exceptionally equipped to avoid any complete link loss between the elements of the ecosystem, however difficult the flight environment – refer to the following screenshots for an example of behavior of the ecosystem, facing strong interferences.
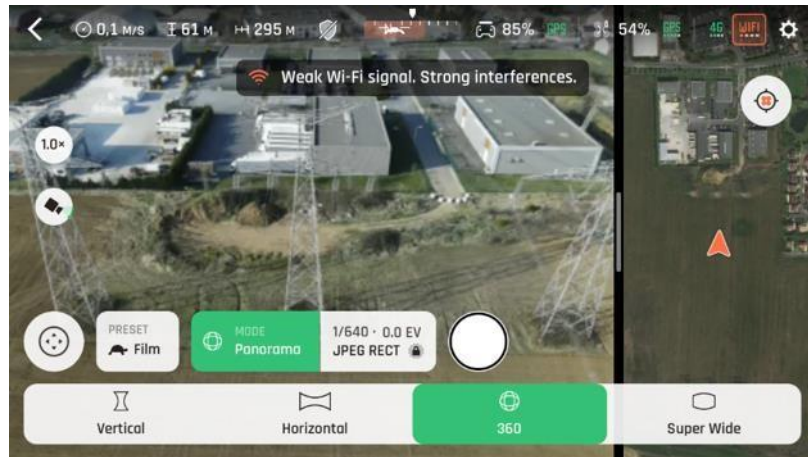
Wi-Fi is about to break up, due to powerline interferences

4G has automatically taken over

However, in the very unlikely event of a complete loss of connection between the controller and the drone that last for more than 6 seconds, ANAFI Ai will automatically enter Smart RTH mode.

This behavior (drone rises to RTH height and starts route toward home) ensures a quick recovery of pilot control over the drone, in most cases.

Pilot Smart RTH

When the "Pilot" advanced RTH option is selected, ANAFI Ai comes back to the GPS position of the device used to control the drone (whether linked to a Parrot Skycontroller 4 or not) at the exact moment an RTH procedure is activated – or to the last known coordinates of the device, in case it has lost GPS fix.

For this reason, we recommend ANAFI Ai pilots not to move, after they have activated an RTH procedure, when in "Pilot" advanced RTH mode.

When the horizontal distance between the drone and the home position is less than 5m
- If the RTH is caused by an ice alert, or a battery communication loss, the drone descends to rth_end_altitude, or lands depending on the RTH ending selected behavior

For other RTH reasons,
- If the precise home feature is available, the drone:
    1. rises to 10m above ground level,
    2. moves horizontally towards the home location,
    3. descends with the aid of precise home.

Otherwise, the drone descends directly to rth_end_altitude, or lands depending on the RTH ending selected behavior.

When the horizontal distance between the drone and the home position is between 5m and 100m:
- If the precise home feature is available, the drone performs a RTH and sets a RTH altitude = min (max (horizontal distance/2, 10m), rth_min_altitude)

Otherwise, the RTH altitude is calculated by:
- RTH altitude = min (horizontal distance/2, rth_min_altitude) if the RTH ending selected behavior is landing
- RTH altitude = min (max (horizontal distance/2, rth_end_altitude), rth_min_altitude) if the RTH ending selected behavior is hovering

Landing

Landing in progress

Fly ANAFI Ai directly over a flat, even, and clear surface, then press the ⬆ button: ANAFI Ai lands.

Hand landing

- Be especially careful when you hand land ANAFI Ai. This procedure is safe provided you are not distracted or startled by an outside event with a live drone approaching your hand: concentrate on what you are doing, but always stay aware of your surroundings.
- Drone GPS synchronization is mandatory for a successful hand landing.
- Do not attempt a hand landing in a wind strong enough to make ANAFI Ai "fight" to hold its hovering position.

While the ANAFI Ai fly more than 100 cm (3 ft) above your open hand, arm extended: ANAFI Ai recognizes your hand.
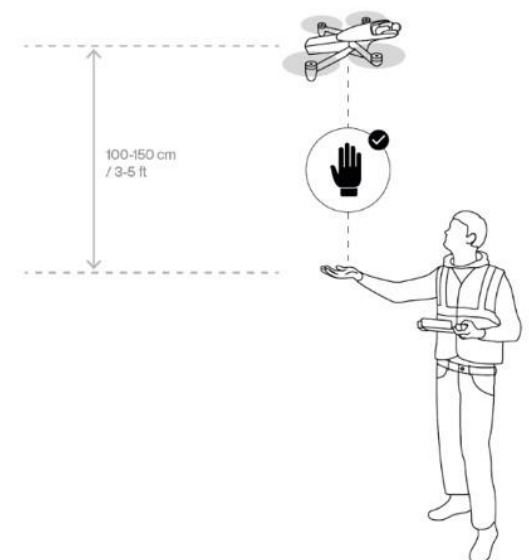
Press the ⬆ button of your Skycontroller 4:

1. If necessary, ANAFI Ai rotates to align perfectly with your hand.
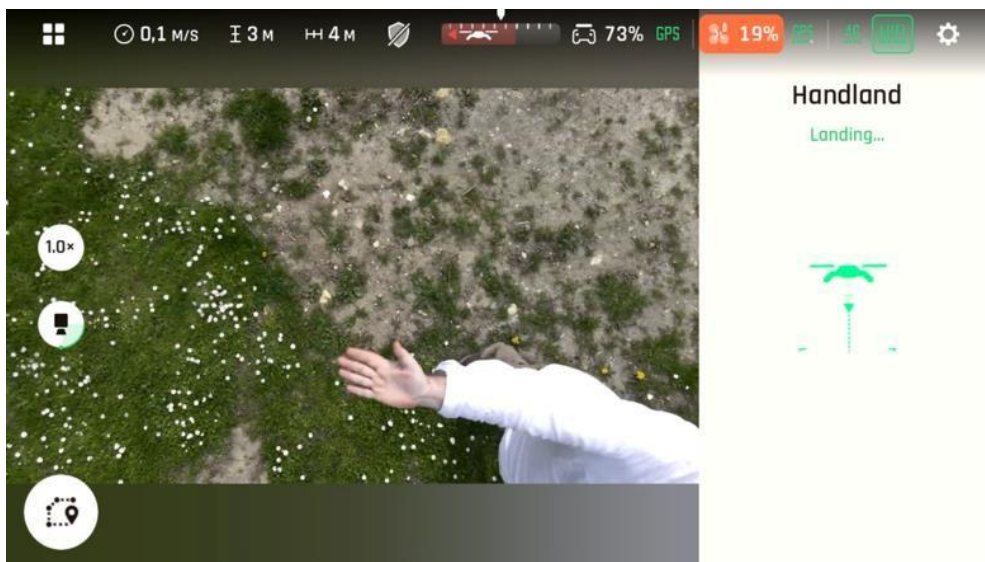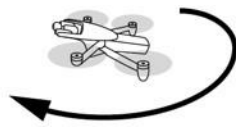
Landing button pressed, hand detected

2. ANAFI Ai slowly and safely lands on your hand.
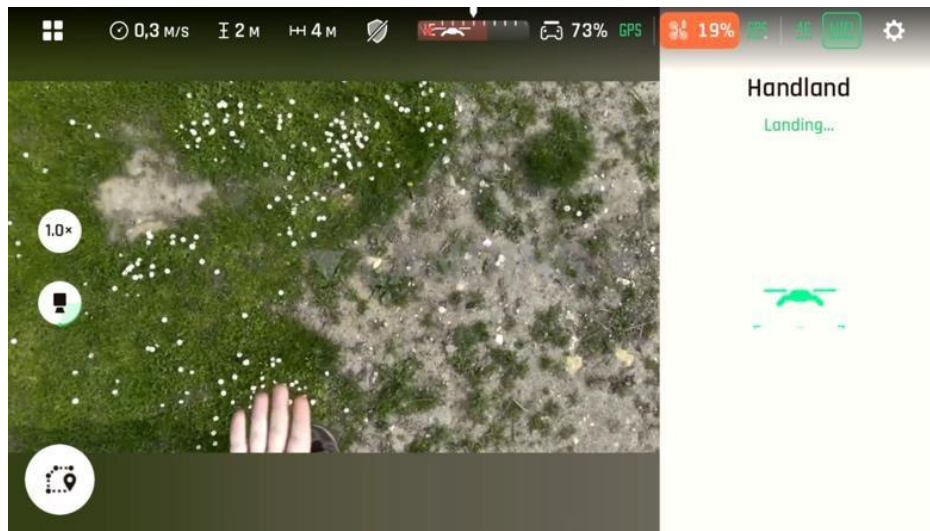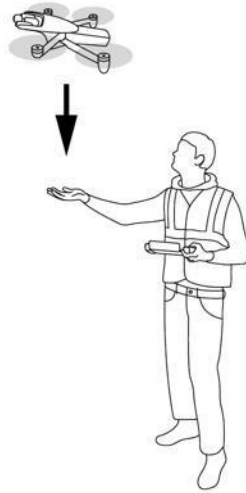
Drone aligned, hand landing in progress

Note that during a landing procedure, if the ANAFI Ai is still flying at more than 100 cm (3 ft) from your hand, you can put your open hand, arm extended under the drone: ANAFI Ai will recognize your hand and apply the hand landing as described above.

Smart LiPo Battery

ANAFI Ai's smart LiPo battery is preinstalled on the drone. It can be charged whether it is installed on ANAFI Ai, or not.

Battery removal

To remove the smart battery from the drone, unfold the arms of ANAFI Ai, press the push-button located under the battery and disengage it from the drone.

Battery installation

To install the smart battery back on the drone, unfold the arms of ANAFI Ai, slide the battery firmly into the drone until you feel and hear the battery clicking into the body of the drone. Check that the battery is tightly secured into the drone. You are set.

ANAFI   Ai : battery ready for installation

Battery charging

To charge ANAFI Ai's smart LiPo battery, use one of the enclosed USB-C to USB-C cable to plug the battery to its charger, or to:

o a tabletop or laptop computer's USB-C port; o a
power bank's USB-C port.

Full charging time depends on charger specifications and ambient temperature. At 20°C, you can expect charging your battery in 2 hours.

When ANAFI Ai's smart LiPo battery is plugged to a power source and charging, its 4 LEDs indicate in real time its level of charge:

LED 1 flashing:	battery is between 0 and 25% charged
LED 1 steady & LED 2 flashing:	battery is between 25 and 50% charged
LEDs 1 and 2 steady & LED 3 flashing:	battery is between 50 and 75% charged
LEDs 1, 2 and 3 steady & LED 4 flashing:	battery is between 75 and 100% charged
Battery is plugged and all LEDs are off:	battery is full

Similarly, when your battery is not installed on ANAFI Ai, you can check its charge level at any time by pressing its power button:

1 steady LED lights up:	battery is between 0 and 25% charged
2 steady LEDs light up:	battery is between 25 and 50% charged
3 steady LEDs light up:	battery is between 50 and 75% charged
4 steady LEDs light up:	battery is between 75 and 100% charged

Finally, the same logic applies when **the smart LiPo battery is installed on the drone and when** ANAFI Ai **is powered on**. The number of steady LEDs enables you to estimate your remaining flying time:

1 steady LED is lit up:	less than 8 minutes flying time remaining
2 steady LEDs are lit up:	between 8 and 16 minutes flying time remaining
3 steady LEDs are lit up:	between 16 and 24 minutes flying time remaining
4 steady LEDs are lit up:	between 24 and 32 minutes flying time remaining

Battery care and safety

ANAFI Ai's smart LiPo battery is as high-tech as any other element of your flying 4G robot.

It features a wintering mode, designed to increase its durability and facilitate its care. Ideally, when not in use for a prolonged period, batteries should be stored half-charged. When not in use for 10 days, ANAFI Ai's smart battery discharges itself, if required, to 65 % charge, over a 48h period. In other words, after a maximum of 12 days without use, this smart battery enters hibernation with a charge level which never exceeds 65 %. If you leave your ANAFI Ai battery for 12 days, you will find out its power button does not activate the charge level LED indicators.

The battery needs to be charged to exit the wintering mode and start operating as described in the earlier paragraphs: this behavior preserves the battery over time. Parrot recommends you always run a full charge of your smart battery before flying ANAFI Ai.

Like all other LiPo batteries, ANAFI Ai's smart battery must be handled, transported and stored with care:

- to optimize the battery's lifetime, do not discharge it under 15 %;
- never leave a battery unattended while charging;
- never expose a battery to extreme temperatures, neither hot, nor cold;
- never leave a battery exposed to direct sunray for a prolonged period of time;
- never charge a battery which is still warm from use (wait for at least 20 minutes);
- never use or recharge a damaged or swollen battery;
- for an optimum storage, always keep your battery in a dry, ventilated place, at a temperature close to 20 °C;

- the boundary conditions to store the battery are:
  - a temperature from -20°C to 35°C; o a
    relative humidity lower than 75% (rh);
- always carry your battery in a fire-retardant bag or case (unless it is installed on ANAFI Ai: it can then be transported with the drone, inside its carrying case).

Finally, note that ANAFI Ai's smart battery will only allow charge in ambient temperatures between +10 °C and +45 °C, and that using ANAFI Ai in temperatures approaching 0 °C will reduce its flying time. To minimize this slight drop in the smart battery's capacity, keep your battery as warm as possible before starting a flight in a cold environment: be aware that if the temperature of the core of the battery drops below 5 °C, it will not power the drone.

- • If the behavior of your battery is not consistent with the elements contained in this section, and if you cannot get it to power your ANAFI Ai, you must reset your battery: plug it to a power source with one of the enclosed cables, then keep the battery's power button pressed for 15 seconds (regardless of the behavior of the LEDs), and release the button.

The battery's LEDs flash quickly, one after the other, alternating green and red: the reset is successful.

Battery state of health

ANAFI Ai's

FreeFlight 7 gives the status of the following battery caracteristics:

- the serial number
- the global voltage
- the cells voltage
- the temperature
- the total capacity
- the state of health
- the cycles
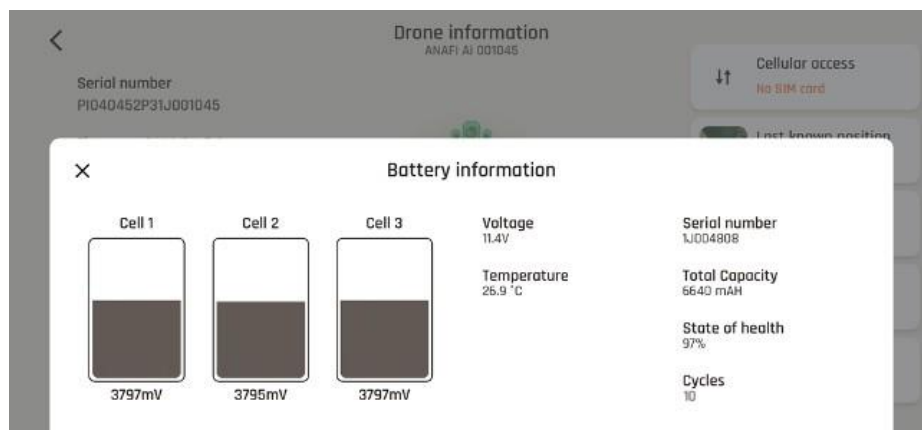
Battery state of health interface

To access the Battery state of health interface from the dashboard of FreeFlight 7, tap the "Drone information" box, and click on the "Battery" box on the bottom right of the screen.

Media retrieval

Installing and retrieving the microSD card

The microSD card slot of ANAFI Ai is located on the left side of the drone, under the "SD" cover. To install the microSD card, lift the cover open and insert the microSD card straight into the slot, shortest side first and connectors turned to the back of the drone.

To retrieve the microSD card, press the card and extract it.

Retrieving photos and videos

Use a microSD to SD card adapter to transfer videos and photos you have taken with ANAFI Ai to your computer. Slide the microSD card into the adapter and use the adapter how you would use any other SD card: access your videos and photos through a card reader or the SD card slot of your computer. Copy your videos and photos to the hard drive of your computer to edit, store, and manage your media.

Compatible microSD cards

The following microSD cards have been extensively tested by Parrot teams and they are fully compatible with ANAFI Ai:

- Lexar 1800x   64GB
- ScanDisk Extreme   64GB

-   ScanDisk Extreme   128GB
-   ScanDisk Extreme Plus   128GB
-   ScanDisk Extreme Pro   128GB
-   Prograde V60   64GB

Direct media retrieval (drone to PC)

You can also retrieve your media directly from ANAFI Ai, without extracting the microSD card.

Power the full system on and activate the "Direct connection from PC or smartphone" option from the Connection settings – refer to the *"ADVANCED SETTINGS/Connection"* section of this guide for additional details.

Use the enclosed USB-C to USB-C cable to connect the drone to the USB-C port of your PC (Windows OS computer).

If your computer has no USB-C port, you can use a USB-A to USB-C cable to connect ANAFI Ai to your computer.

ANAFI Ai mounts as any other external drive: copy your media from the DCIM/100MEDIA directory to your computer's hard drive.

When you are done managing your media, eject ANAFI Ai as any other external drive.

• When plugged in to a computer and powered on, ANAFI Ai's battery discharges itself. This means you must recharge your smart battery after you have retrieved your media, even if it was fully charged when you began the procedure.

FreeFlight 7 Gallery

Finally, you can manage your media and download them directly from ANAFI Ai to your device with the Gallery of FreeFlight 7.

The Gallery also lets you:

-   preview videos and photos, without downloading them to your device;
-   format microSD cards (refer to the next section of this guide);
-   create panoramas (refer to the "*Creating panoramas*" section of this guide for additional details);
-   share media.

To access the Gallery from the dashboard of FreeFlight 7, tap the "Gallery" box.

If ANAFI Ai is powered on and connected to the device (directly or through the Parrot Skycontroller 4), the FreeFlight 7 Gallery displays the microSD card media, by default.

Tap any media to preview it.

Tap any green media download box to transfer the corresponding media to your device.

Access the media you have downloaded to your device by tapping the "Local" box, at the top of the interface.

MicroSD card formatting

Tap the "Format SD card" button of the SD Card screen of FreeFlight 7 Gallery to access formatting options. Select one of the following options.
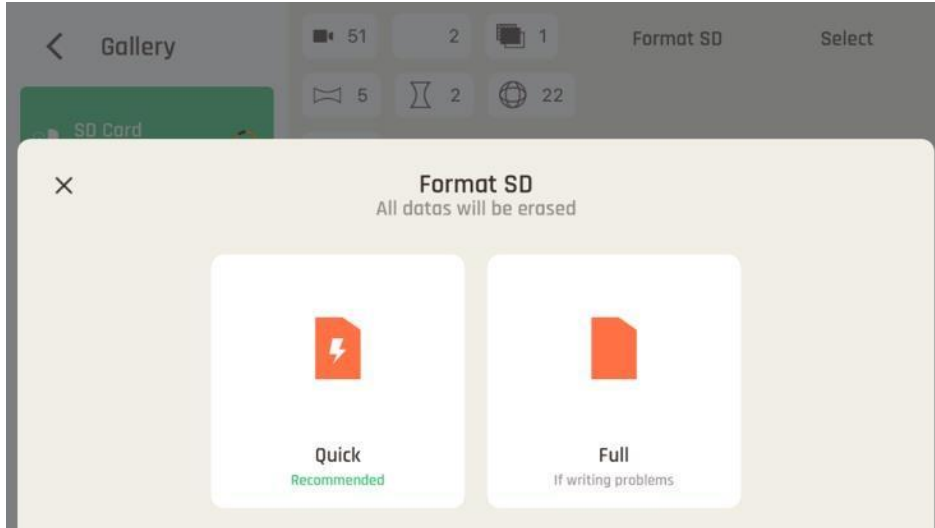
Confirm your selection from the next screen to launch the formatting.

• Note that both options delete all microSD card contents.

Introducing FreeFlight 7

The HUD (head-up display) interface of FreeFlight 7 is the companion to ANAFI Ai. It enables you to access all the features of ANAFI Ai, from the screen of your device, at the touch of your thumbs.

This section explores FreeFlight 7 functions, starting with a presentation of HUD information. **Presentation of the HUD**
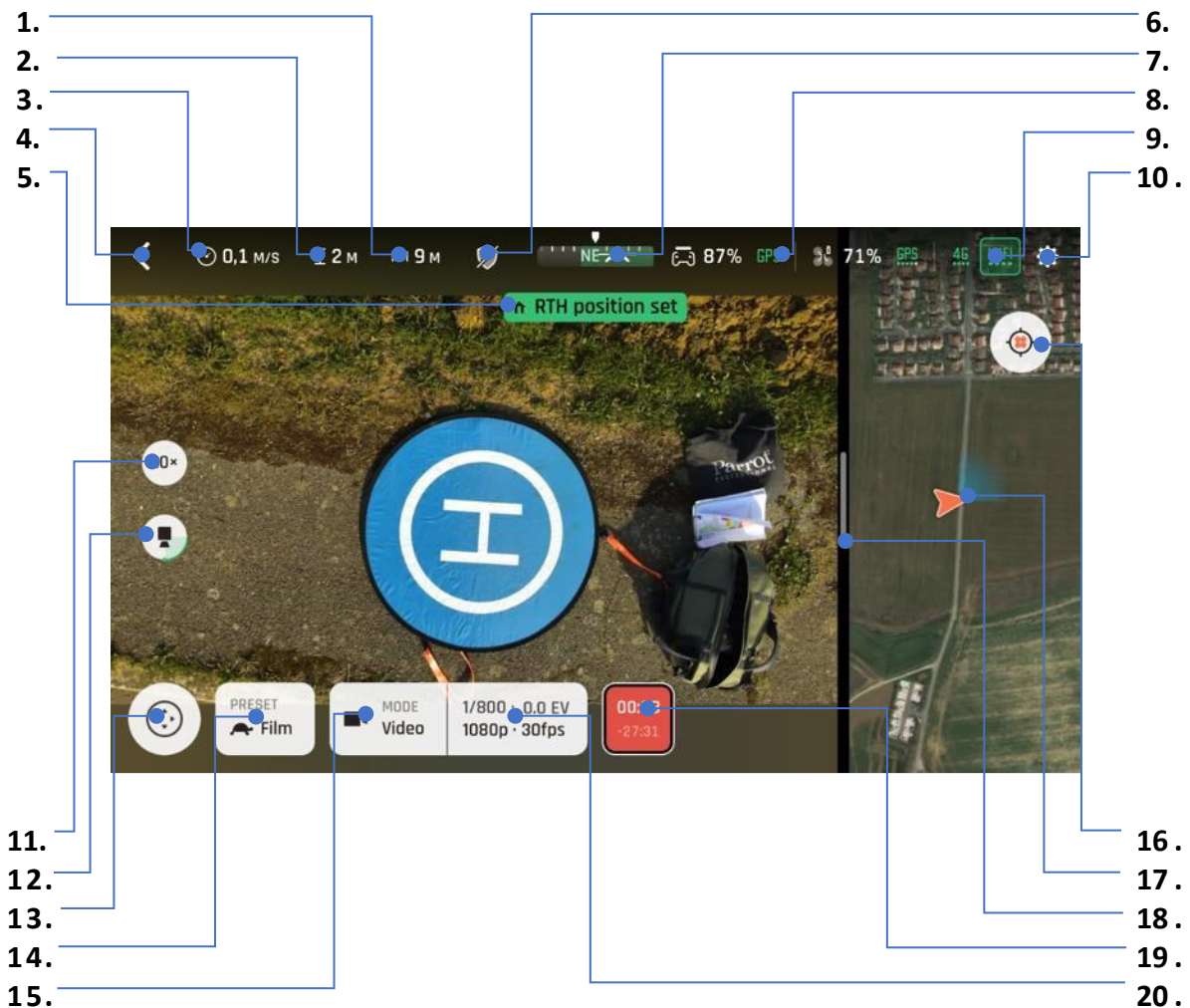
1. Drone horizontal distance relative to pilot   11. Zoom factor

2. Drone vertical distance relative to take-off point   12. Gimbal tilt

3. Drone speed   13. Piloting modes/Missions

4. To dashboard   14. Drone speed mode (Film/Sport)

5. Notifications & alerts zone   15. Imaging modes (Video/Photo/Pano)

6. Obstacle avoidance (shield) icon   16. Center (drone/controller) toggle

7. Compass and drone direction to pilot   17. Map/3D view area

8. Controller battery & device GPS statuses	18. Slider
9. Drone: battery/4G/Wi-Fi/GPS statuses	19. Shutter (Record/Stop: video mode)
10. To settings	20. Imaging settings

Missions:	Piloting
	Photogrammetry
	Flight Plan
	Cameraman
	Vehicle
	Touch & Fly: Waypoint & POI

Imaging modes:	Video
	Single photography
	Time lapse
	GPS lapse
	Panorama
	Bracketing
	Burst

- Note that both GPS icons are green, on the presentation screenshot. This means that the device and ANAFI Ai are both synchronized to enough GPS, Glonass and Galileo satellites to optimize the stability of the drone, especially at higher altitudes.

  Parrot therefore recommends you always check both your FreeFlight 7 HUD's GPS icons are green (and not red), before you make your ANAFI Ai take off.

HUD Slider Management

The slider which separates the video feed from the map (or 3D view) enables you to configure your screen to your liking or to the specifics of your mission.
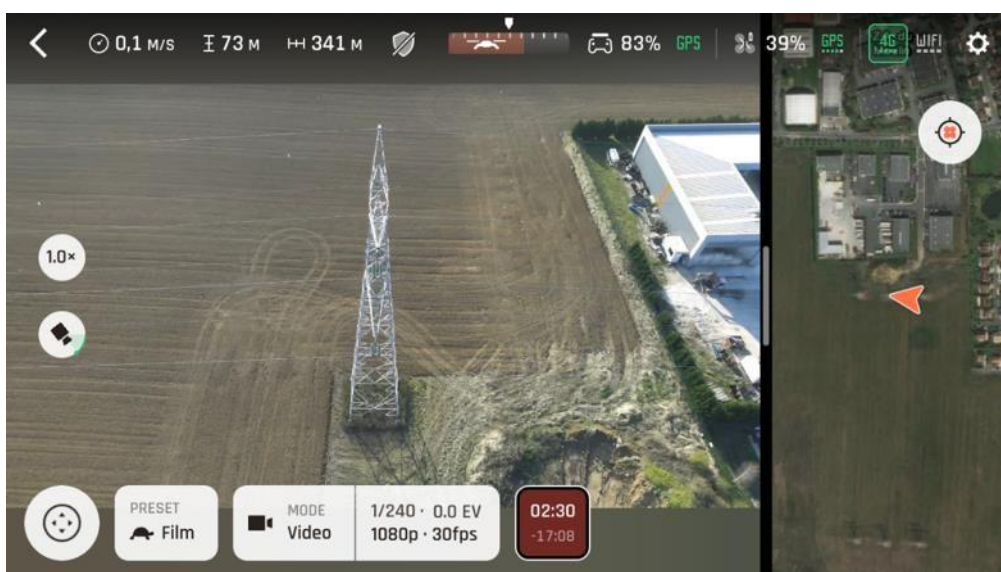
Slider: default view

Touch and slide the slider to the left to increase and adjust the size of the map (or 3D view).
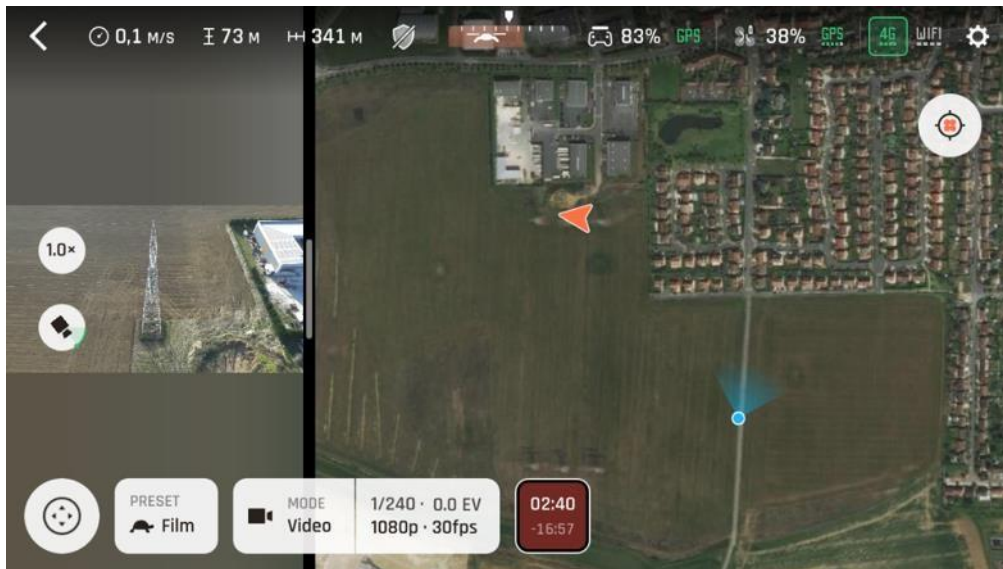
Slider: more map

• Note that on larger devices (tablets), the map is displayed on the lower part of the screen.

Settings

Access FreeFlight 7 settings through the icon on the extreme right of the top bar of the HUD. This section presents the Quick and Controls settings.

Quick

For each item, tap to toggle (Map or 3D view) or activate and highlight – as Audio, Geocage and Auto-record on the following screenshot.
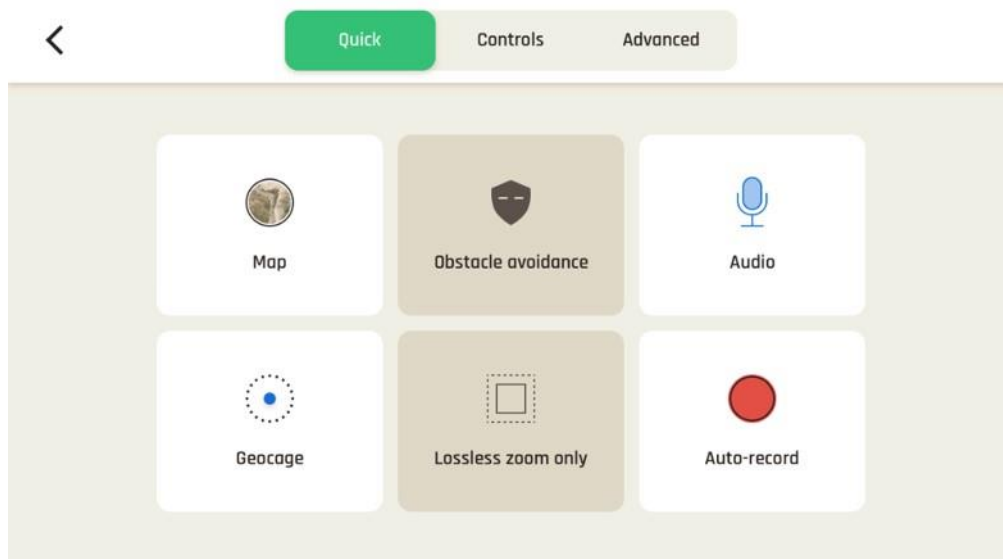
Quick settings

Controls

Controls settings manage the way your controller behaves. Tap an option to select it.
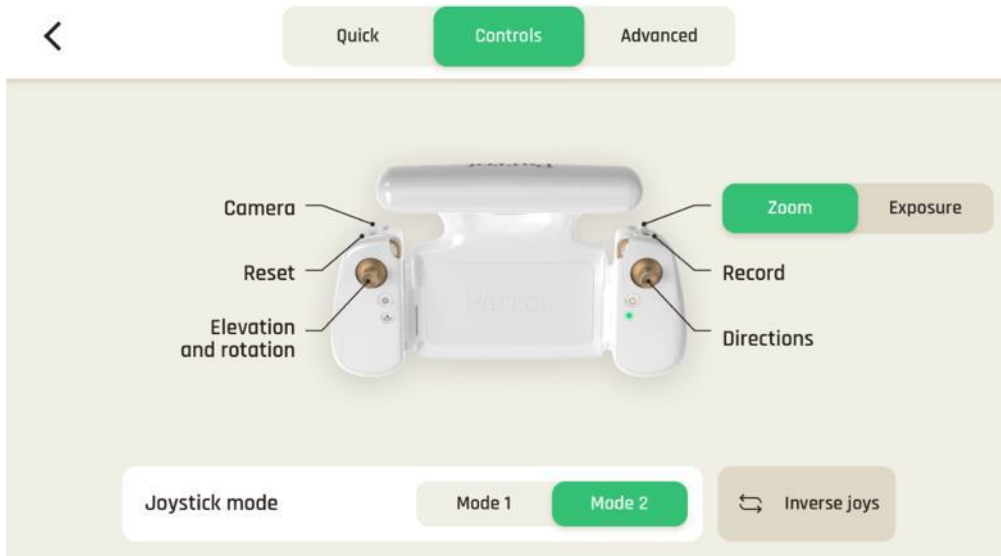
Controls settings

Advanced Settings

For each item, the default value (DV) is displayed in bold characters or highlighted on screenshots.

Presets

The Presets settings allow you to adapt the flight behavior of ANAFI Ai for each mode ("Film" and "Sport").

Use each slider to fix your values.

Camera tilt speed   1°/s to 180°/s (DV: 10°/s for FILM; 35°/s for SPORT)
Banked turn   NO / YES (DV: YES for FILM, NO for SPORT)
Inclination   0.25°/s to 30°/s (DV: 10°/s for FILM; 25°/s for SPORT)
Vertical speed 0.05 m/s to 4 m/s (DV: 1 m/s for FILM; 4 m/s for SPORT)
Rotation speed   10°/s to 200°/s (DV: 10°/s for FILM; 90°/s for SPORT)

- Note that "Inclination" and "Vertical speed" values are the ones which carry the biggest impact on ANAFI Ai's acceleration and general flying behavior. Higher settings require extreme care, superior piloting skills, or both, when flying ANAFI Ai.
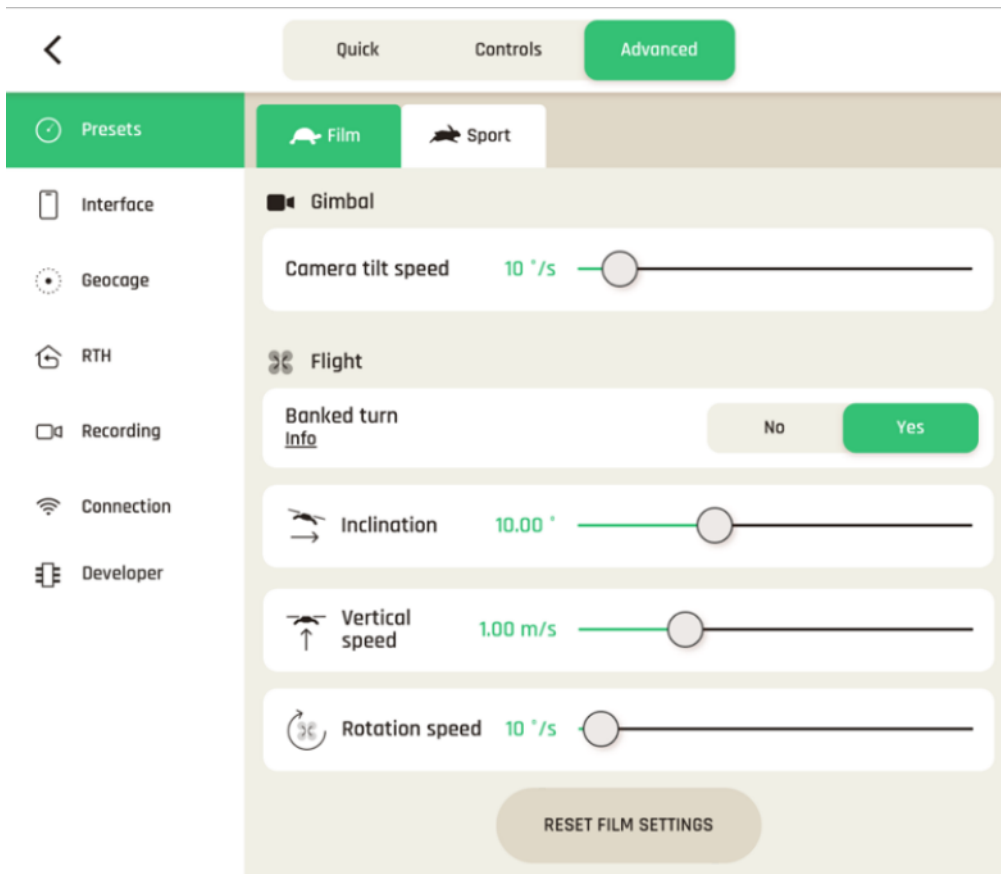
Presets settings

Tap each reset button on the bottom of each page to reset the corresponding Mode to its default values.

Interface

For each item, Map type or Measurement system, tap an option to select it.
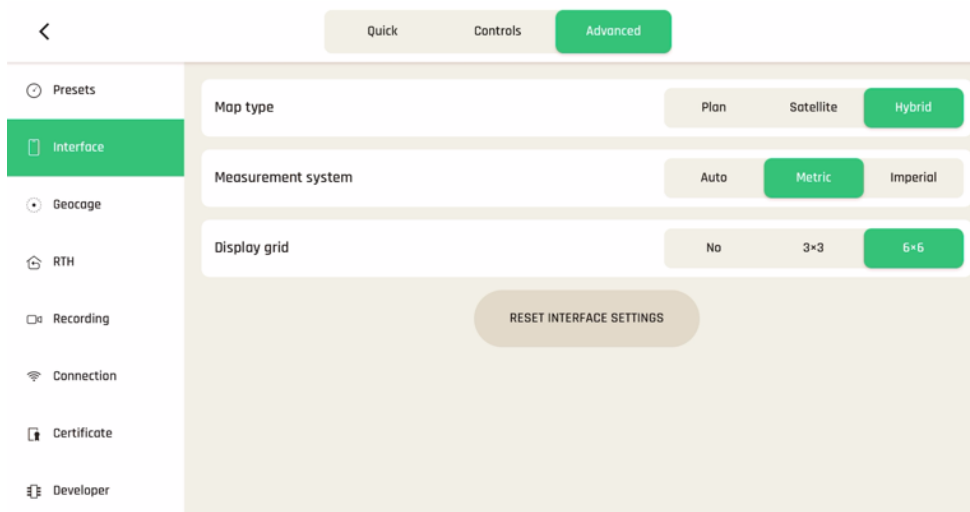
You can add a grid overlay to the streaming view.

Tap "RESET INTERFACE SETTINGS" on the bottom of the page to reset to default.

Geocage

The Geocage is activated ("On") by default, with the following values:

- Height: 100 m (configurable from 1 m to 150 m)
- Distance: 100 m (configurable from 10 m to 4 km)

Tap "No" to deactivate or tap and slide the circle to set new values.
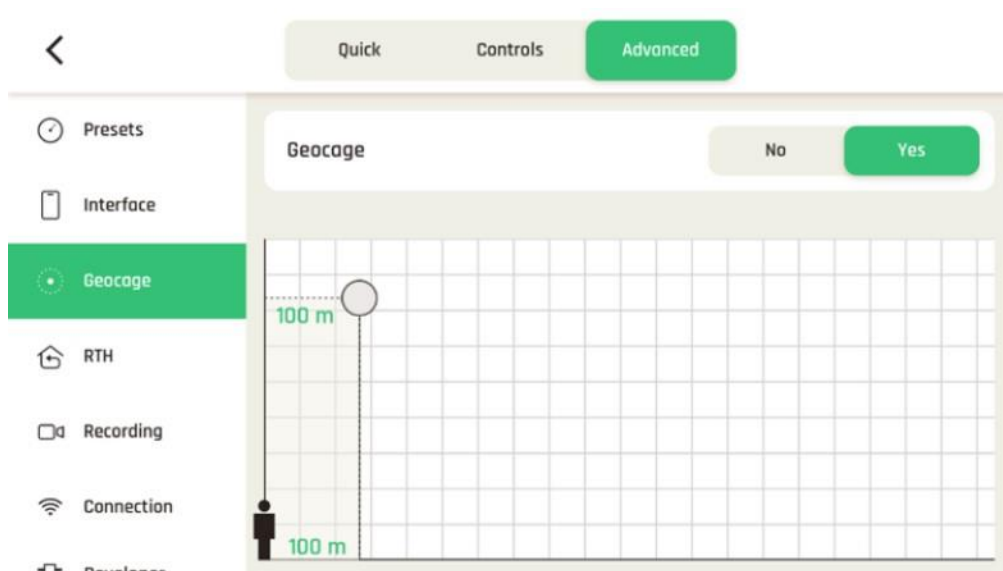
Geocage settings

Tap "RESET GEOCAGE PREFERENCES" on the bottom of the page to reset to default.

When the Geocage is activated, FreeFlight 7 displays an alert when the drone approaches the set limit, and it stops when it reaches them, as in the screenshot below.
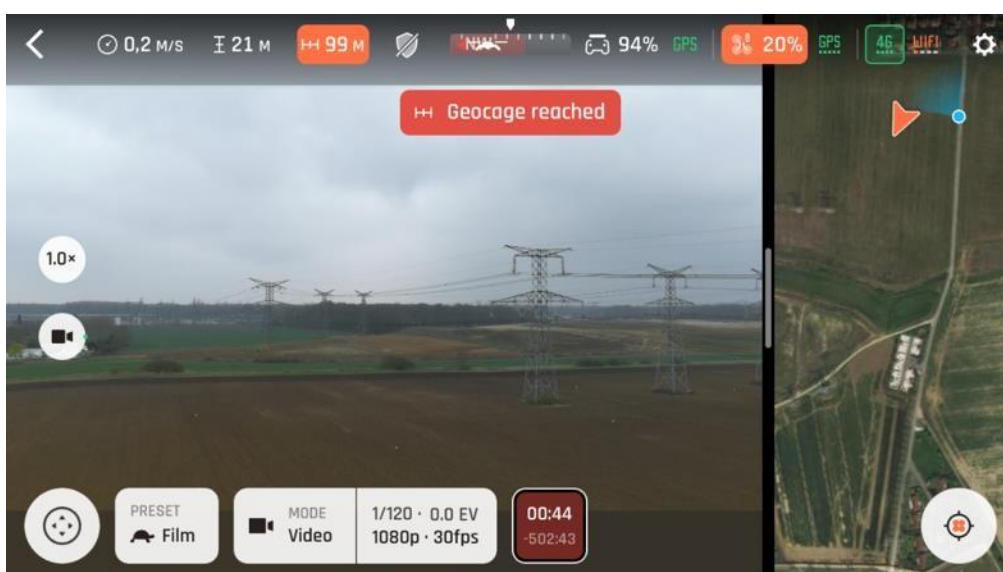
The Geocage limit is reached

RTH

Through RTH settings, you define the behavior of your drone when the RTH feature is activated.

The following screenshot displays the default values of the menu. The Hovering slider is set at 2 m and it is configurable between 1 m and 10 m. The RTH minimum height is set at 50 m and it is configurable between 20 m and 100 m.

RTH settings

Tap "RESET RTH PREFERENCES" on the bottom of the page to reset to default.

The RTH can be used automatically if the weather is frosty fog or if the batterie as been disconnected.

Recording

Recording settings enable you to select camera options, both in photo and video modes.

The default values are displayed in the following screenshot.
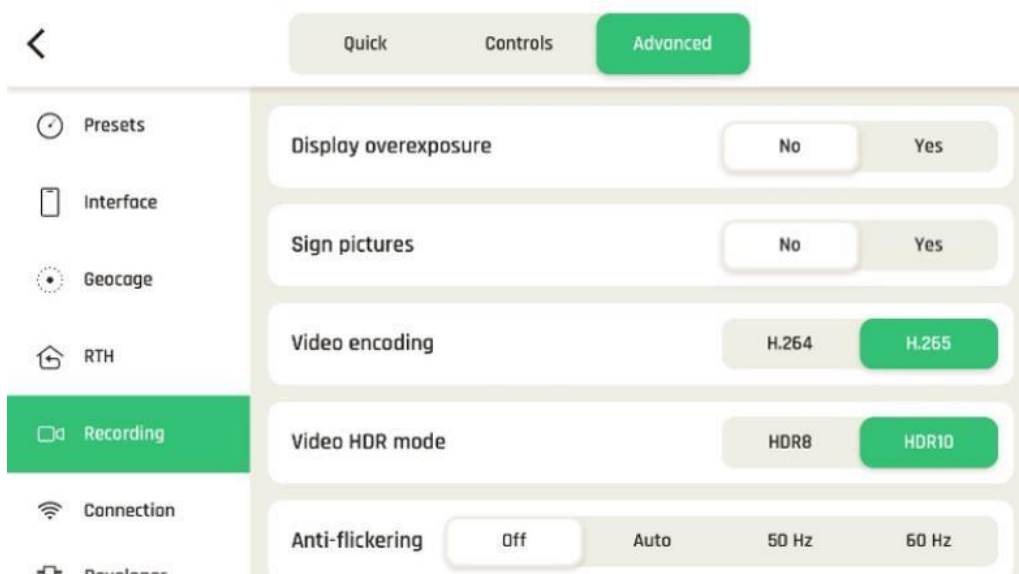
Recording settings

About Overexposure display: when this setting is activated, the HUD of FreeFlight 7 shows all overexposed areas of the screen as hatched, which enables you to fine-tune your framing, your EV settings, or both.

About Picture signatures: this feature allows authentication and proof of integrity of files produced by ANAFI Ai (to serve as evidence, for example), but it can increase the achievable time interval between photos in Timelapse and GPS-lapse modes. When this feature is activated, a .sig file is recorded simultaneously with each picture taken.

About Anti-flickering: this setting and the associated technology aim at eliminating the flicker effect which can arise due to some artificial lights. The "AUTO" option should work for most users, but depending on your

country, you can try other settings if you feel bothered by a flicker effect on your device's screen, your artificial light videos, or both.

Tap "RESET CAMERA SETTINGS" on the bottom of the page to reset to default.

Connection

Connection settings let you manage your 4G connection, change your ANAFI Ai's Wi-Fi network name, password & band, and broadcast your DRI. The following screenshots highlight default values for each item.
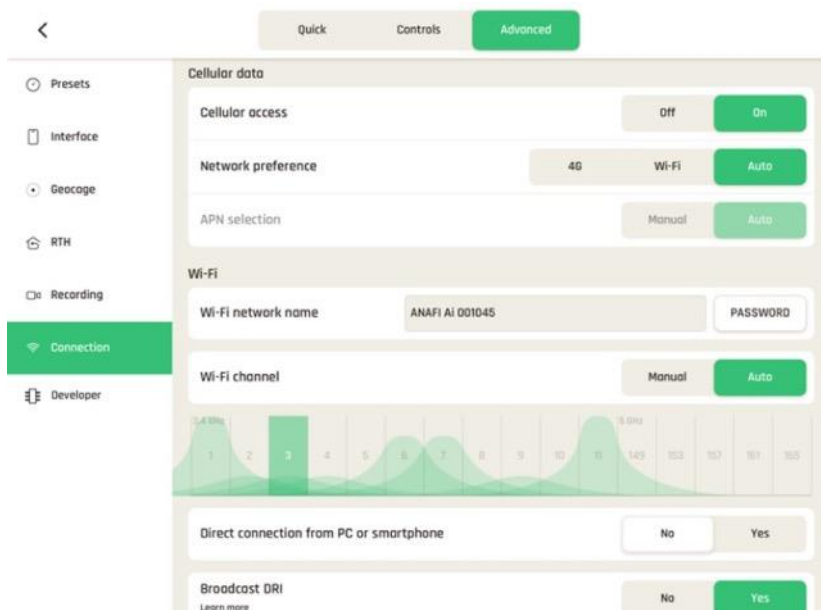
Connection settings: Cellular data & Wi-Fi
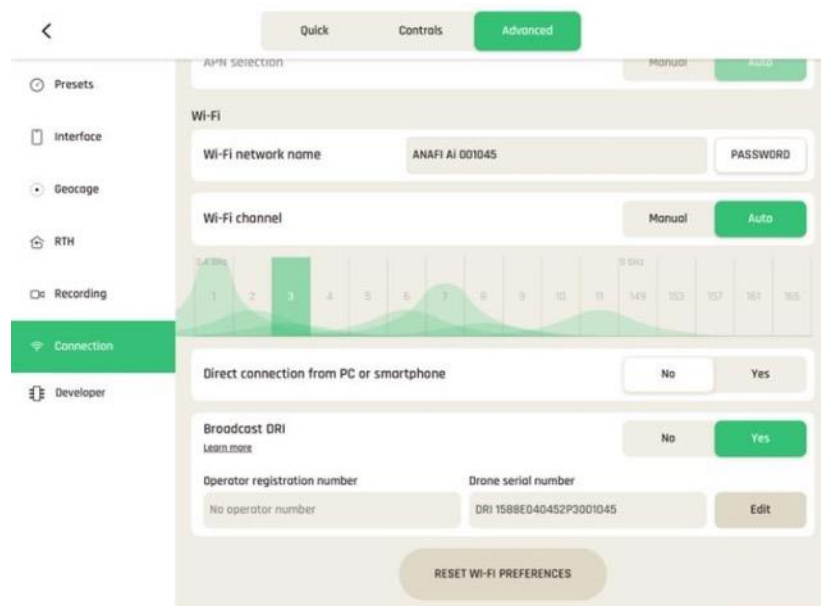
Connection settings: Cellular data & Wi-Fi
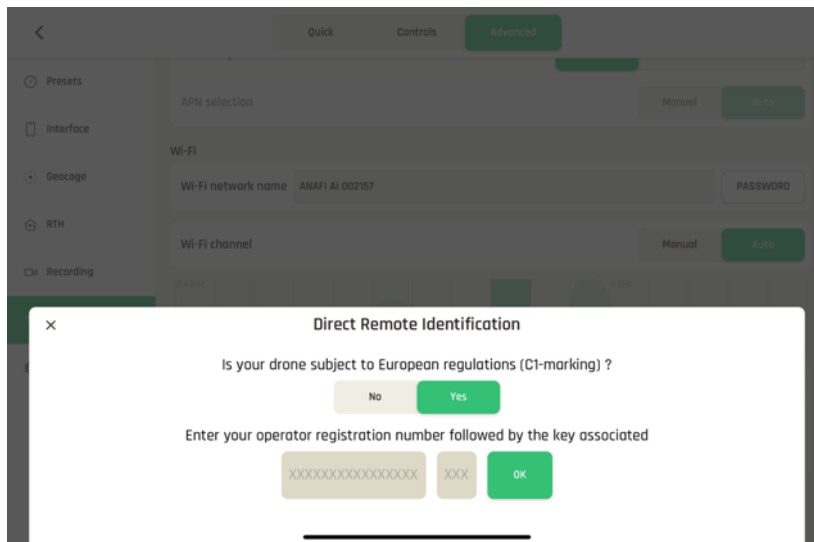
Connection settings: DRI broadcast

About Network preference: the "Auto" (default) option lets the drone manage its connections.

Use other options to adapt to your flight conditions: "4G priority" relies on the 4G network as long as it is available, before switching to Wi-Fi; "Wi-Fi priority" relies on the Wi-Fi connection as long as it is available, before switching to 4G. Be aware that 4G connection and in flight 4G data sharing may generate a charge, according to the 4G data plan associated to your nano SIM card.

While flying without 4G connection in dense environments such as cities, we recommend switching to manual Wi-Fi channel and use UNII3 5GHz band (channel 149 to 161) if it's available in your country.

About Wi-Fi Password: click on "PASSWORD" to define the Wi-Fi key shared by ANAFI Ai and the Skycontroller 4. Parrot defines a unique random password for each ANAFI Ai and Skycontroller 4 package, but Parrot highly recommends you define your own password. Your password must be robust: 10 characters long or more and using at least 3 types of characters among uppercase, lowercase, digits, and special characters. The security of your ecosystem and data depends on the security of this password.

About Direct connection from PC or smartphone: this option is set on "NO" by default. When you activate it, it enables additional network protocols on the drone. These protocols benefit from WPA2 authentication and encryption. Default network protocols used with the Skycontroller 4 are more secure as they implement additional encryption.

About Direct Remote Identification (DRI): the DRI option ensures, in real time, the local broadcast of remote pilot (operator registration number) and drone information (such as the serial number) during the flight. The DRI electronic signal is compliant with both European & American drone regulations. According to European for open category or American drone regulation, check that the DRI function is turned ON during in-flight operation. For additional information, consult the regulations in force.

> • It is your responsibility, as an ANAFI Ai owner, operator, or both, to check your local authorities' requirements before you fly.

Tap "RESET WI-FI PREFERENCES" on the bottom of the page to reset to default. FreeFlight 7 must be connected to ANAFI Ai for this button to appear.

Developer

Developer settings allows you to access debug tools for AirSDK mission developers. If direct connection from a device is ON, you can activate ANAFI Ai shell access and custom mission logs.
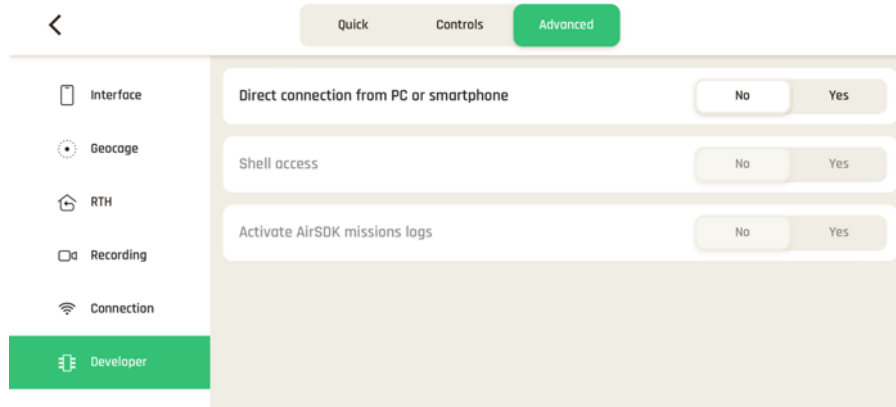
Developer settings

Videos, Photos and Panoramas

ANAFI Ai is equipped with a state-of-the-art 4K, 3-axis-stabilized camera, which delivers astoundingly sharp motion and still pictures, through a 1/2'' CMOS 48MP sensor.

The lens of the camera includes low dispersion aspherical elements, that reduce chromatic aberrations and flare, and guarantee optical excellence to such a small, smart and versatile airborne imaging system.

Although you can film and take pictures using your device as ANAFI Ai's only controller, we recommend you always use the Parrot Skycontroller 4 and your device, for the best controlled, most precise, and safest filming and photos-shooting flights.

Making videos

By default, ANAFI Ai and FreeFlight 7 are set to start recording a video as soon as ANAFI Ai takes off. This literally means all you have to do, to start filming, is to fly ANAFI Ai into the sky.

However, depending on your filming objectives, ANAFI Ai and FreeFlight 7 offer a wealth of settings, from full auto to manual professional options, for you to make the most of every situation.

If required, tap the "Mode" box in the bottom bar of the HUD, to select the video mode.

Main filming options are twofold, and accessible from the HUD of FreeFlight 7.

First, select a video resolution by tapping the corresponding box of the HUD.
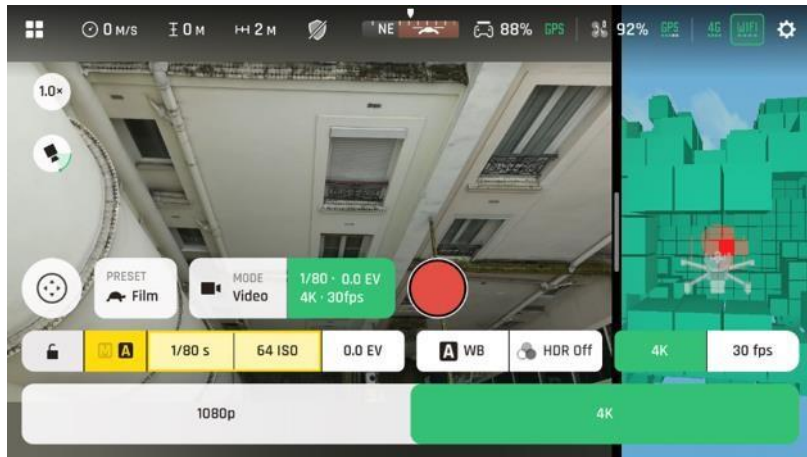
Video resolutions menu

Second, select a framerate (fps – frames per second) value from the corresponding box of the HUD.

Tap the video settings box again to close the sub-boxes and confirm your choices.

Available fps values depend on the resolution you have selected, and on whether you have activated the HDR option:

4K:	24, 25 or 30 fps
4K HDR:	24, 25 or 30 fps
P-Log 4K:	24, 25 or 30 fps
1080 p:	24, 25, 30, 48, 50 or 60 fps
1080 p HDR:	24, 25 or 30 fps
P-Log 1080 p:	24, 25, 30, 48, 50 or 60fps
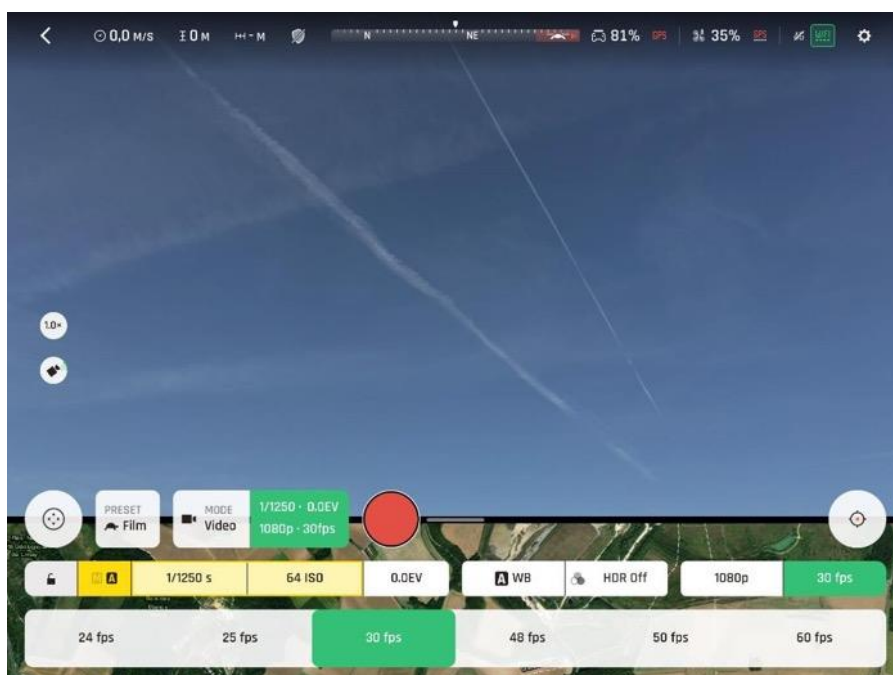
When you are happy with your settings and your framing, press the hard shutter button on the right of Parrot Skycontroller 4 (or tap the soft shutter button of the HUD) to start filming.

The round soft shutter button of the HUD turns into a square and displays a double timer: time since the video started (main timer, top) and remaining filming time (small timer, bottom).

Press the hard shutter button of the controller (or tap the soft shutter button of the HUD) again to end the recording. The soft shutter button of the HUD comes back to steady, red and round. The timer disappears.

Taking photos

To access the photo options of ANAFI Ai tap the "Mode" box in the bottom bar of the HUD.

Six photo modes are available on ANAFI Ai: Photo (single shot), Timelapse, GPS Lapse, Panorama (4 formats), Bracketing and Burst.

Thanks to its 48MP CMOS sensor, ANAFI Ai produces three main picture formats:

- rectilinear (48MP or 12 MP) JPEG;
- wide 48MP or 12MP JPEG and DNG (Digital NeGative: Adobe open standard RAW format); – composite panoramas (JPEG), up to 32MP.

Note that the HDR option is only available for 12MP JPEG photos.

First, select a photo mode by tapping the "Mode" box of the HUD. The options appear on your device. Tap a photo mode to select it.

When a photo mode is selected, the soft shutter button of the HUD appears as a full white circle.

There is no option for the "Photo" (single shot) and "Burst" modes.

Selecting the "Timelapse" mode opens seven options: 0.5 sec (12MP only), 1 sec, 2 secs, 4 secs, 10 secs, 30 secs and 60 secs.

Selecting the "GPS Lapse" opens nine options: 0.5m, 1m, 2m, 5m, 10m, 20m, 50m, 100m, and 200m.

Selecting the "Panorama" mode opens four options: Vertical, Horizontal, 360 and Super Wide.

Note that Vertical, Horizontal and 360 panoramas require the drone to be flying before you can activate the shutter. Refer to the next section, "*Generating Panoramas*", for additional details about the "Panorama" mode.

Selecting the "Bracketing" mode opens three options: 3 photos (-1 EV, +0.0 EV, +1 EV), 5 photos (2 EV to +2 EV) and 7 photos (-3 EV to +3 EV). When one of these options has been selected, the soft shutter button of the HUD displays the number of the corresponding option.

Second, select a photo format from the corresponding box of the HUD.
Tap the "Imaging box" to call the photo settings boxes.
Tap the "Resolution box" to select 48MP or 12MP.
Tap the last box on the right of the screen to access the photo formats.

Available photo formats for each photo mode are as follows:

Photo (Single):	JPEG RECT, JPEG WIDE, DNG+JPEG (RECT or WIDE)
Timelapse:	JPEG RECT only
GPS Lapse:	JPEG RECT only
Panorama:	JPEG RECT only
Bracketing:	JPEG RECT, JPEG WIDE, DNG+JPEG (RECT or WIDE)
Burst:	JPEG RECT, JPEG WIDE

Tap a format (JPEG RECT, or JPEG WIDE if available, or any DNG+JPEG format if available) to select it. Tap the "Imaging" box again to close the sub-boxes and confirm your choice.

Photo options

When you are happy with your settings and your framing, press the hard shutter button on the right of the Parrot Skycontroller 4 (or tap the soft shutter button of the HUD) to take a photo.

In "Photo" mode, the screen flashes in black and white to confirm a picture has been taken.

In "Timelapse" mode, the screen flashes in black and white to confirm a picture has been taken. 0.5 to 60 seconds later, depending on your option choice, the drone takes another photo, and so on until you press the shutter button again to stop the Timelapse.

In "GPS Lapse" mode, the screen flashes in black and white to confirm a picture has been taken. Control and move ANAFI Ai: when the drone reaches any point on a 0.5 to 200-meter radius sphere around the initial photo, depending on your option choice, the drone takes another photo, and so on until you press the shutter button again to stop the GPS Lapse. Between each shutter action, a green progress bar, at the bottom of the HUD, lets you estimate the distance the drone must cover before the next shot.

For additional details on the "Panorama" mode, refer to the next section, "*Generating Panoramas*".

In "Bracketing" mode, the screen flashes in black and white to confirm 3, 5 or 7 pictures have been taken.

In "Burst" mode, the screen flashes in black and white to confirm 10 pictures have been taken in the span of 1 second.

About ANAFI Ai photo formats:

JPEG RECT: 4:3 aspect ratio, 48 or 12MP and 65° horizontal field of view (HFOV)

JPEG WIDE: 4:3 aspect ratio,48MP, 73° HFOV – zoom is disabled for this format

DNG+JPEG: 4:3 aspect ratio, 48MP, 73° HFOV – zoom is disabled for WIDE option

- The DNG+JPEG option produces at least 2 files (1 DNG, 1 JPEG) for each shutter action. As other RAW picture formats, DNG is a very useful format for professional photography processing and workflow. Indeed, RAW formats retain all the information gathered by photography sensors, contrary to JPEG formats – which are compressed and processed renderings of this comprehensive information. In consequence, RAW pictures such as ANAFI Ai's DNG are heavy files, but they offer the very best post-processing and retouching possibilities.

Creating Panoramas

ANAFI Ai panoramas are generated automatically through the gallery of FreeFlight 7, based on a series of pictures taken by the drone.

The generation of a panorama, regardless of its format, implies three phases:

- collecting the pictures, in flight (except for the Super Wide format, which can be shot with a landed drone);

- downloading the pictures from ANAFI Ai to your device;

- stitching the pictures together to create the panorama, on your device, through the gallery of FreeFlight 7.

Before shooting a panorama:

- Make sure you are not flying lower than 10 meters (30 ft) over water.

- To optimize the stitching process, make sure no object nor subject are present in a 10 meters (30 ft) radius around ANAFI Ai.

- Bear in mind ANAFI Ai locks the exposure (refer to the "*AE Lock*" section of this guide for additional information on exposure locking) of the frame with which you start your panorama. For this reason, Parrot recommends you always frame the main subject of the intended panorama before pressing the shutter button.

- Bear in mind ANAFI Ai will not enable you to proceed with a panorama if the drone is short on power (capturing a 360 Panorama takes ANAFI Ai 85 seconds).

To capture a panorama, select the "Panorama" box from the imaging "Mode" menu of the HUD. Then, tap the panorama type you want to select it: Vertical, Horizontal, 360 or Super Wide.
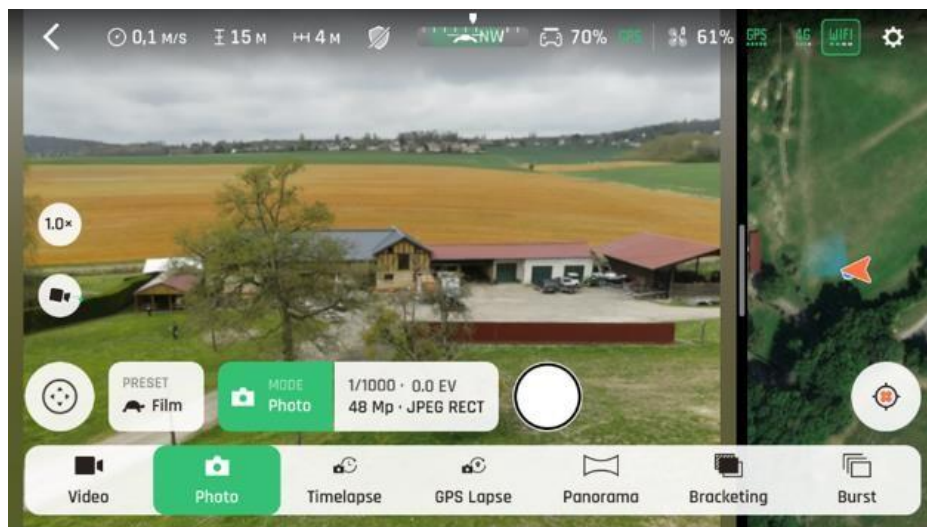
Panorama types

When you are happy with your framing, press the hard shutter button on the right of the Parrot Skycontroller 4 (or tap the soft shutter button of the HUD) to begin the Panorama capture. ANAFI Ai starts taking pictures and the bottom of the HUD displays a progress bar which fills with green as the capture unfolds.

Panorama types capture characteristics:

Vertical: ANAFI Ai takes 8 photos in about 20 seconds

Horizontal: ANAFI Ai takes 10 photos in about 20 seconds

360:            ANAFI Ai takes 38 photos in about 96 seconds

Super Wide: ANAFI Ai takes 9 photos in about 18 seconds

To download the Panorama pictures to your device, land ANAFI Ai. Then, from the homepage of FreeFlight 7, tap the Medias page to access the Gallery. Like other medias, Panoramas are marked with their distinct icon and a green download box, which shows the size of the corresponding series of pictures. The icon boxes at the top center of the screen enable you to filter your media.
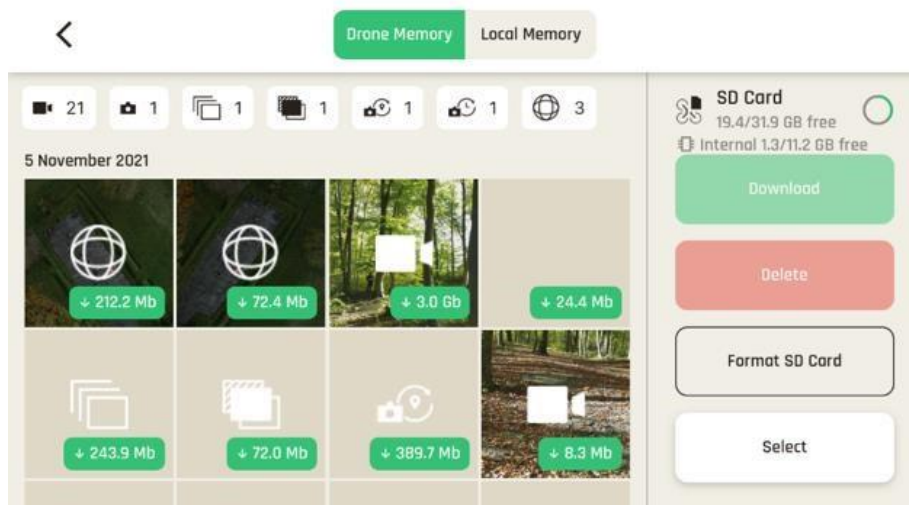
Drone memory displaying Panoramas

Tap the green box of the Panorama you want to generate to start downloading the corresponding series of pictures to your device. When the download is complete, FreeFlight 7 displays a page from where you can delete the downloaded photos: tap "Keep" to keep the originals on the microSD card; tap "Delete" to delete them.

Select its tab on the left to access the FreeFlight 7 Phone Gallery, which contains only the media you have downloaded from ANAFI Ai's microSD card.
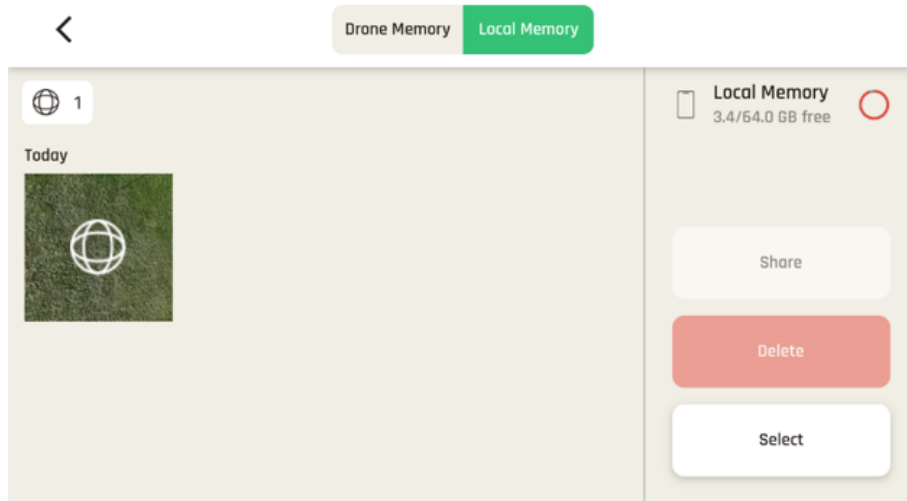
Local (device) Memory displaying a Panorama

Finally, select the panorama you want to generate from your Local gallery: FreeFlight 7 displays the following screen.
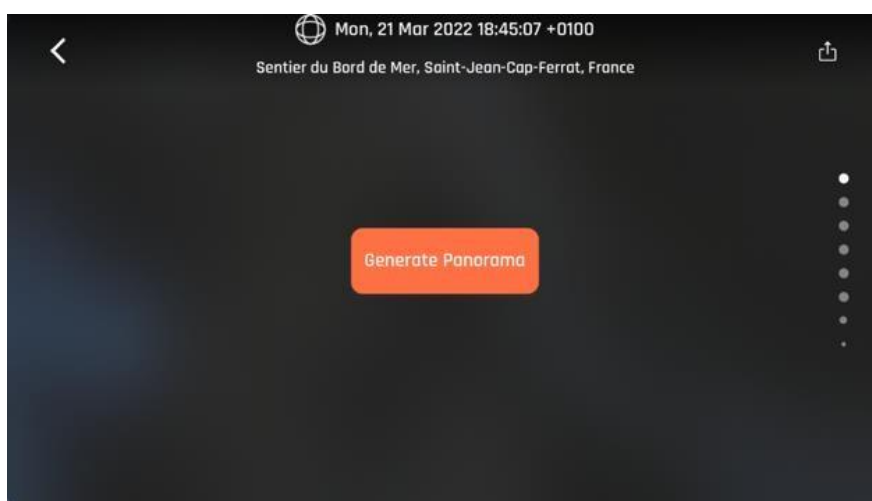
Panorama generation page

Tap "Generate Panorama" to create the panorama (or browse the individual pictures with the slider on the right).

When the panorama creation is complete, FreeFlight 7 displays the result.

About media Metadata

ANAFI Ai photos and videos contain Metadata with the drone telemetry elements (position, altitude, speed, battery level, etc.) and video metrics (angle of the camera, exposure value, field of view, etc.).

The altitude in the photo Metadata is based on WGS84 whereas the altitude displayed on FreeFlight7 is the altitude above takeoff. Because of that, both values might differ depending on the take-off location.

You can learn more about the embedded photo Metadata here, and more about embedded video Metadata here.

Gimbal tilt and zoom controls

ANAFI Ai features a controllable gimbal (180° tilt range, from nadir to zenith) and a 6x zoom. This section presents these features and the way to activate them.

Gimbal tilt control

ANAFI Ai's gimbal tilt control is activated through the left trigger of Parrot Skycontroller 4. It is available in all video and photo modes, and in all manual piloting modes.

- To aim the gimbal toward the ground, push the tilt control trigger down.
- To aim the gimbal toward the sky, pull the tilt control trigger up.
- To reset the gimbal tilt to a horizontal position, press the optics reset button on the left of Parrot Skycontroller 4 (this action also resets the zoom factor of the lens to 1x).

Zoom control

ANAFI Ai's zoom control is activated through the right trigger of Parrot Skycontroller 4. It is available in all video modes, and in JPEG RECT photo mode (with an impact on the final resolution of your pictures). WIDE photo modes imply the use and rendering of all 48MP delivered by ANAFI Ai's CMOS sensor: zoom is deactivated in both WIDE photo modes.

- To zoom in on a subject, push the zoom trigger down.
- To zoom out, pull the zoom trigger up.
- Pressing the optics reset button on the left of Parrot Skycontroller 4 instantly resets the zoom factor of the lens to 1x (this action also resets the gimbal tilt to a horizontal position).

The HUD of FreeFlight 7 presents precise, decimal-by-decimal zoom information at all times, in the middle of the left side of the screen, as shown on the following screenshots.

1080p 1x zoom
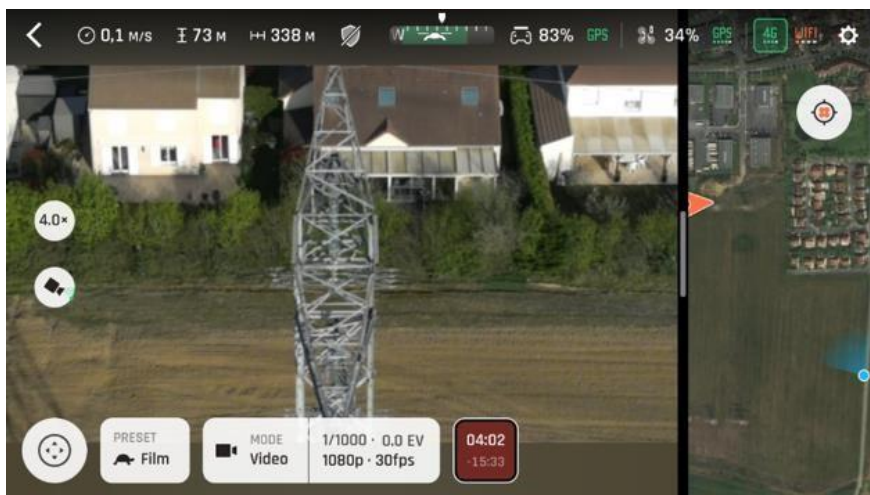
1080p 4x (max lossless) zoom

As already mentioned, ANAFI Ai presents no lossless zoom capabilities for pictures: the zoom is deactivated by design in WIDE formats (JPEG and DNG+JPEG), and it has an impact on the resolution of the pictures in JPEG RECT format.

By contrast, ANAFI Ai offers impressive lossless zoom capabilities for 1080p (4x) and 4K (2x) videos.
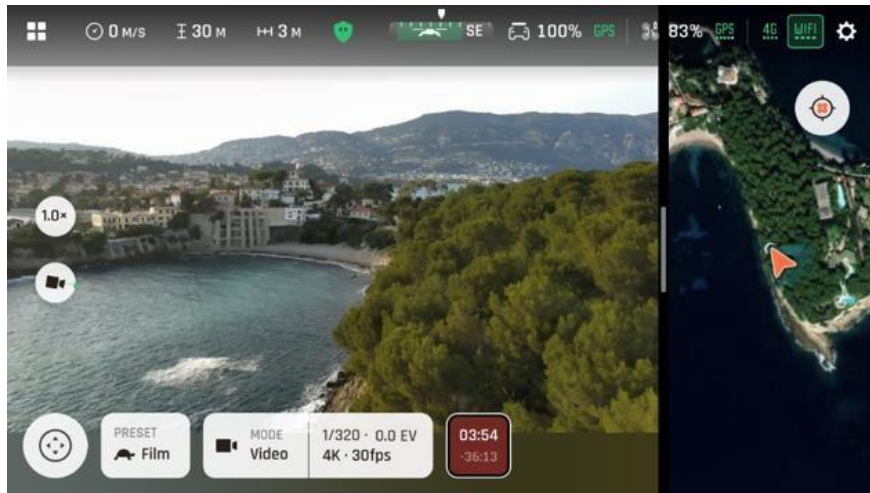
4K 1x zoom
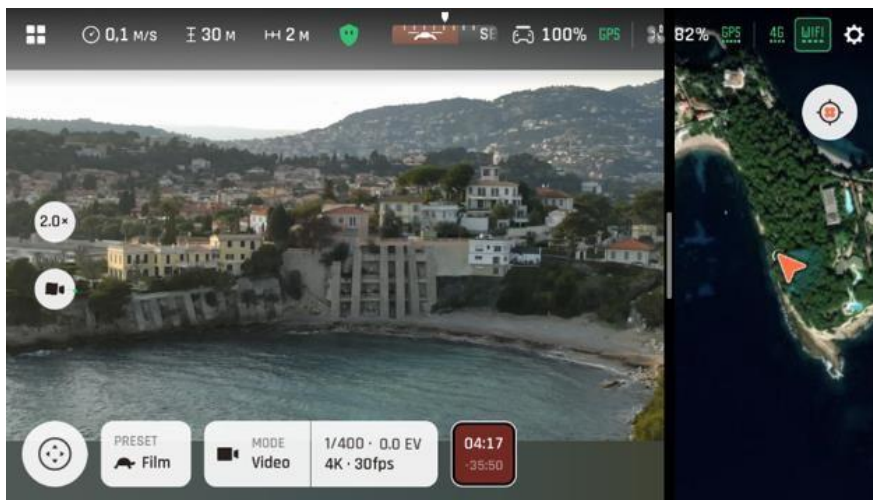
4K 2x (max lossless) zoom

Finally, remember that the 1080p video mode offers the best resolution for direct observation, even out of the lossless zoom envelope.
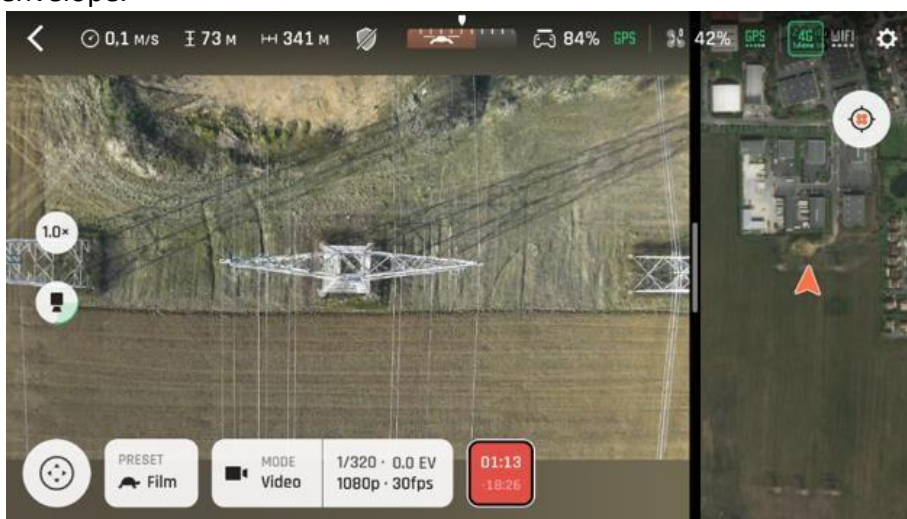
1080p 1x zoom

1080p 6x (max) zoom

You can find below the zoom level correlation table depending on each photo and video mode:

Mode	Media format	Lossless zoom off	Lossless zoom on
Video	4k (std, HDR, P-Log)	Up to x6	Up to x2
	1080p (std, HDR, P-Log)	Up to x6	Up to x4
Photo (single)	JPEG RECT	Up to x6	Unavailable
	JPEG WIDE	Unavailable	Unavailable
	DNG+JPEG RECT	Up to x6	Unavailable
	DNG+JPEG WIDE	Unavailable	Unavailable
Timelapse	JPEG RECT	Unavailable	Unavailable
GPS Lapse	JPEG RECT	Unavailable	Unavailable
Panorama	JPEG RECT	Unavailable	Unavailable
Bracketing	JPEG RECT	Up to x6	Unavailable
	JPEG WIDE	Unavailable	Unavailable
	DNG+JPEG RECT	Up to x6	Unavailable
	DNG+JPEG WIDE	Unavailable	Unavailable
Burst	JPEG RECT	Up to x6	Unavailable
	JPEG WIDE	Unavailable	Unavailable

Advanced imaging

ANAFI Ai is set to deliver high quality and balanced 4K videos and 48MP photos, out of the box.

Some image enthusiasts and all professional directors, videographers and photographers, however, will find their way through pro-imaging settings. This section is designed to help you exploit manual settings and develop your filming and photography styles.

The Exposure value (EV) is the only setting accessible in the Auto mode, from the "Imaging box" menu of the HUD.

Exposure value (EV)

The EV expresses the general darkness or lightness of a photograph – or a video. At +0.0 (zero) EV, ANAFI Ai automatically adapts the shutter speed and the ISO value to deliver a perfectly balanced photo or video: not too dark and not too light.

Tap the "+0.0 EV" box to activate the EV scale.

Slide your finger on the scale to adapt your EV toward negative values and darken your picture or video.

Use positive values to lighten your images. This can be useful if you want to capture a backlit scene and to fade surroundings in light.

-1.0 EV   *+1.0 EV*
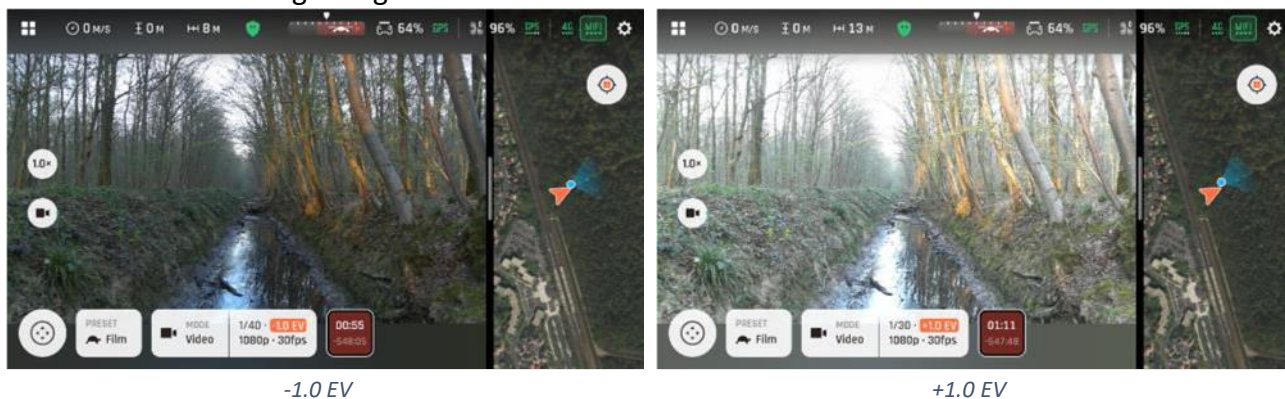
To activate further settings, tap the "   " box, on the left of the Imaging settings box. The additional settings boxes are unlocked, they stand out in white rather than yellow and "   " is replaced by "   ".

Manual/Automatic toggle

Shutter speed (s)

The "s" value refers to the time, in fraction of second, when the shutter stays open to capture a still picture: it is called exposure time.

In Auto mode, ANAFI Ai selects the best shutter speed and ISO value couple, in real time, depending on the scene and available light. In consequence, selecting a shutter speed also deactivates the Auto ISO mode.

As ANAFI Ai's f/2.0 aperture lens lets a lot of light in, even compared to most professional SLR lenses, your drone can achieve very fast "s" values (down to 1/10000s) and capture very fast action. It can also be used for slow shots, up to 1/15 second for the photo mode.

Note that ANAFI Ai can shoot pictures and videos when it is not flying. You can even hold it in your hand and use it as a premium stabilized 4K video and photo camera.

> Tap the "s" box to open the shutter slider.

> Select a value to exit the auto-mode for shutter speed and ISO. This action also deactivates the EV slider.

> Set the s value you require, then tap the "ISO" box to select an ISO value. Experiment: the display of the HUD reflects your settings. If you get lost, tap Auto either on the "s" or the "ISO" slider to get back to auto exposure and reactivate the EV slider.

ISO value (ISO)

The ISO value refers to the sensitivity of the sensor. As we have seen, it is linked to the shutter speed value: both sliders activate when you deactivate the "Auto" mode and set a value for one, or for the other. The lower the ISO value, the lower the sensitivity of the sensor, and the lower the image noise (digital grain). Therefore, under good lighting conditions, such as sunny daylight outside shots, low ISO values (between 50 and 200) should always be selected. The sensitivity of the sensor increases as the ISO value goes up: 1600 ISO can be used to capture low light interior scenes, or exterior shots at dusk or dawn, for example.

By default, in Auto mode, ANAFI Ai constantly adapts its ISO and shutter speed values to the scene it is filming.

Setting an ISO value for a whole shot or series of shot, however, is very useful to professional filming. Tap the ISO box to open the ISO slider.

> Select a value to exit the Auto mode for ISO and shutter speed. This action also deactivates the EV slider.

> Set the ISO value you require, then tap the "s" box to select a shutter value. Experiment: the display of the HUD reflects your settings. If you get lost, tap Auto either on the "s" or the "ISO" slider to get back to auto exposure and reactivate the EV slider.

White balance (WB)

White balance deals with the color temperature of the light. Cold lights make the whites look blue. Warm lights make the whites look yellow. By default, in Auto WB mode, ANAFI Ai keeps the whites white, at all times: it adapts its WB value in real time.

However, setting a WB value for an entire shot is especially useful for professional filming: stable WB facilitates the grading (color treatment) of videos.

> Tap the WB box to open the white balance options.

> Select the WB option that is best suited for your shooting conditions, your subject, or both. The display of the HUD reflects your settings and helps you make the best choice.

Auto WB

Incandescent WB

Fluo WB

Sunny WB

Cloudy WB

Shaded WB

WB 2 000 K

WB 10 000 K

Lock AE

As any serious camera, FreeFlight 7 offers the possibility to lock the general exposure of a view, to fine-tune the framing of a shot and keep the desired exposure.

To access this function, tap the "Imaging settings box" of the HUD.

Tap the "Open lock" icon, on the far left of the Imaging menu to lock the exposure value to that of the current view. The icon turns into a "Closed lock" on a yellow background. A yellow "Lock AE" box appears in the Notifications & Alert zone, below the top bar of the HUD.

Move ANAFI Ai around or tilt its gimbal to change the frame: the exposure settings remain as they were when you activated the function.

Tap the "Closed lock" icon to deactivate the exposure lock: the icon reverts to "Open lock" on a white background.
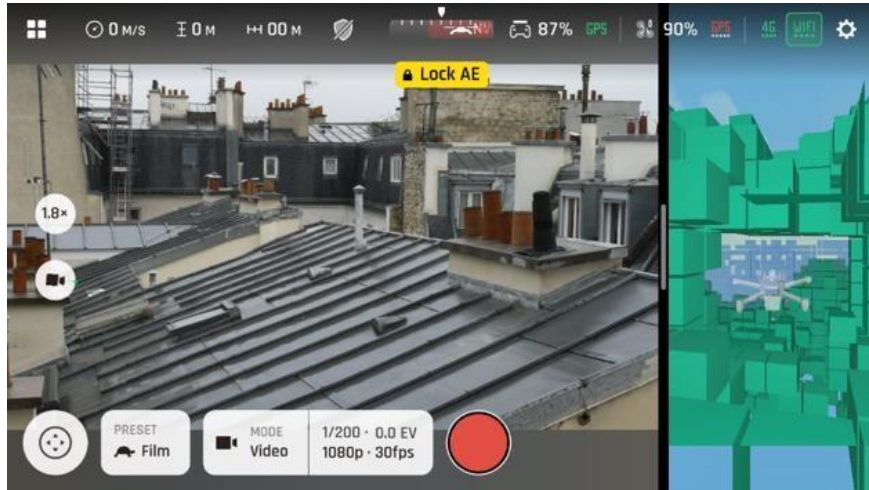
Lock AE activated

Lock AE Touch

With the "Lock AE Touch" (or "Spot AE") function of FreeFlight 7, you can also lock the exposure of a frame on any detail of any view.

To activate this function, follow the "Lock AE" procedure of the preceding section. When the exposure is locked, long press the region of the frame you want to base your exposure on. A yellow square animates around this spot and the settings change ("s" value, ISO value, or both).

Refer to the following screenshots for additional details on the logic of this feature.
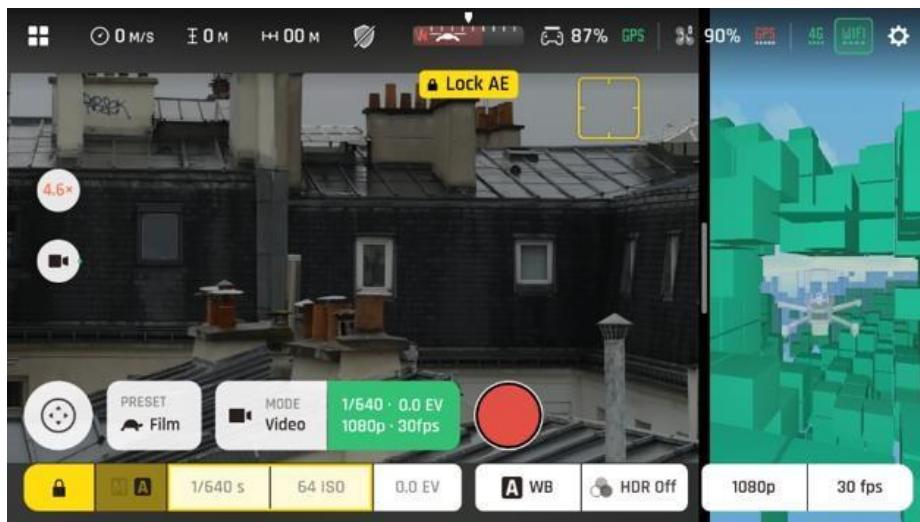
Exposure is locked on a white sky: shutter speed is set at 1/640 s and the image is underexposed
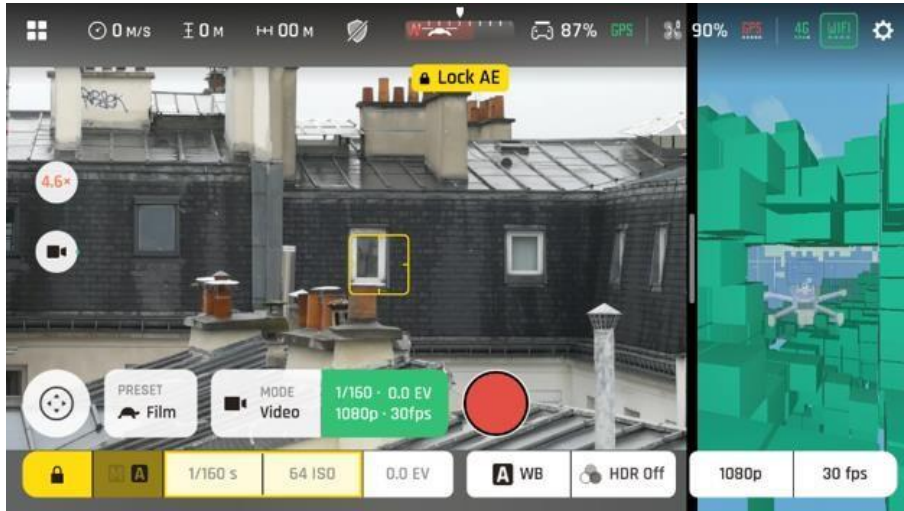
Exposure is locked on a building: shutter speed is set at 1/160 s and the image is correctly exposed

HDR

HDR (high dynamic range) is another great way to enhance a video or a photo. The HDR option is available for videos (no lossless zoom and limited to 30 fps max in 4K, lossless zoom limited to 2x and limited to 30 fps max in 1080 p) and 12MP photos.

To activate the HDR option, tap the "Imaging" box from the lower bar of the HUD, then tap the "HDR box".

Select "HDR On": a HDR notice appears in black inside a yellow box, at the center of the top of the HUD. Press the hard shutter button on your Parrot Skycontroller 4 (or the soft shutter button of the HUD) to start filming in HDR or to take an HDR photo.
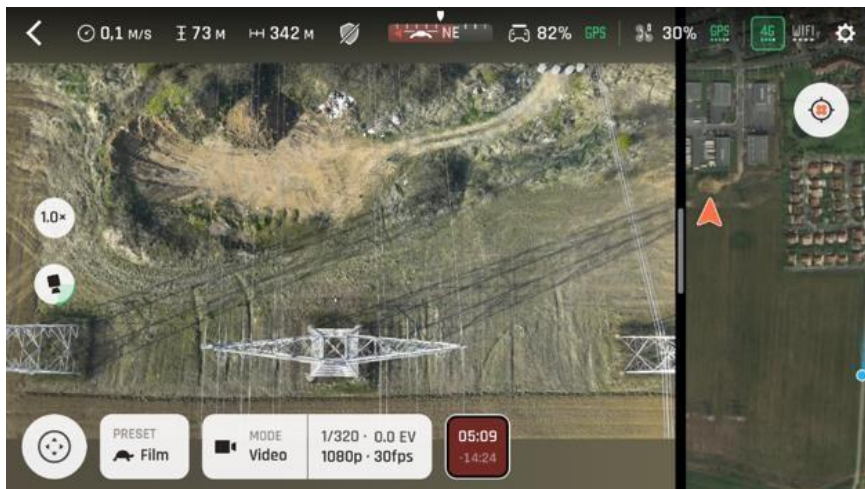
HDR Off
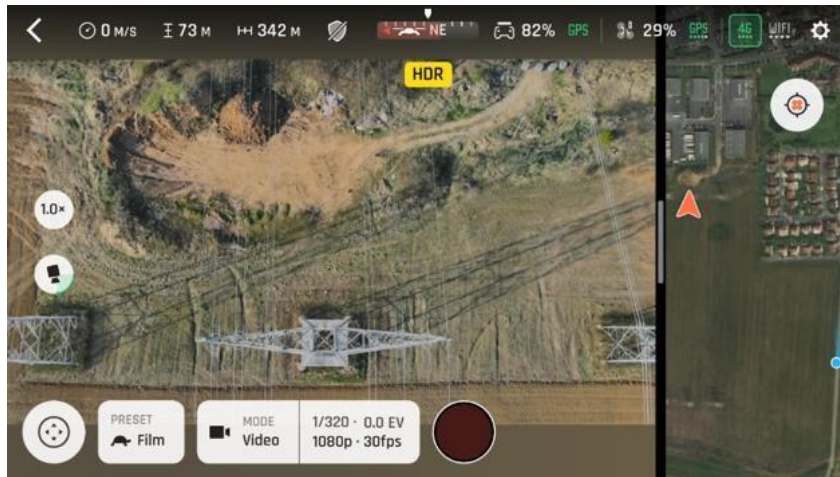
HDR On

Follow the same procedure and select "HDR Off" to revert.

- Note that you cannot modify "EV", "s" or "ISO" values when the HDR mode is activated. However, you always keep control over your white balance ("WB").
- Note that activating (or deactivating) HDR halts any ongoing video recording, and starts a new recording with the new setting, after 5 seconds.
- ANAFI Ai features 2 HDR options: HDR-8 and HDR-10. HDR-10 is only available through H265 video encoding – refer to the "*ADVANCED SETTINGS/Recording*" section of this guide for additional details on HDR and video encoding options selection.

P-Log

The P-Log option is also available through the "HDR box". This alternative imaging style makes images a little less contrasted and saturated: P-Log style is ideal for videos you want to edit and postprocess using professional grading tools and filters.
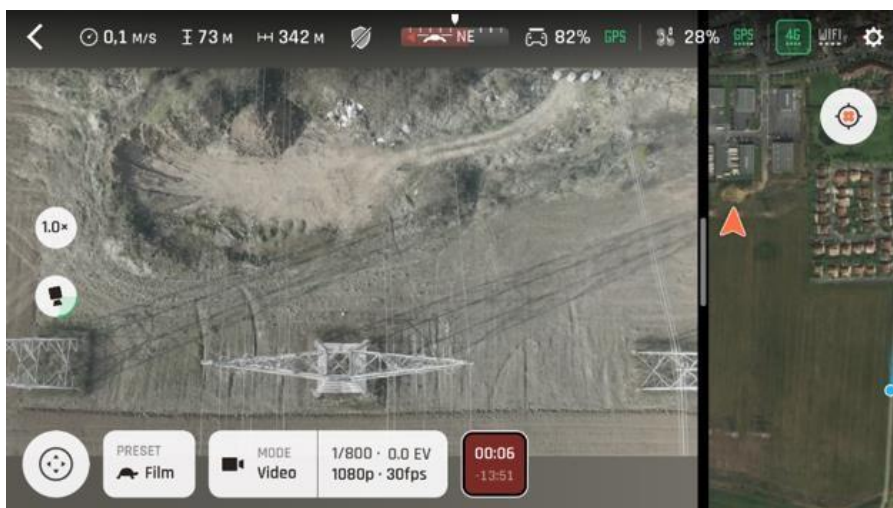
P-Log filming style

Missions: Piloting

Tap the "MISSIONS" icon in the left bottom corner of the HUD of FreeFlight 7 to access the Missions.

Tap a mission to select it. Each Mission is associated with a specific behavior, which this section and the following describe.

The Piloting Mission is ANAFI Ai's default Mission. It enables you to pilot the drone and fully control its camera tilt and zoom.

When you release the commands in Manual flight mode, ANAFI Ai stays in position, hovering.

Missions: Photogrammetry

About photogrammetry

According to the American Society for Photogrammetry and Remote Sensing (ASPRS), photogrammetry is the science and technology of obtaining reliable information about physical objects and the environment through the process of recording, measuring and interpreting photographic images.

The ASPRS was created in 1934, but the field of photogrammetry has since greatly benefited of the emergence of flying cameras such as Parrot drones. One of the leaders of the field is PIX4D, which became a Parrot Group company in 2012.

ANAFI Ai and FreeFlight 7 therefore embark PIX4D technologies which enable existing PIX4D users to seamlessly link their drone to their PIX4D account. New users can use ANAFI Ai to discover PIX4D photogrammetry services, through three offered mapping missions.

There are four types of photogrammetry mapping missions: Grid, Double grid, Orbit and 1-Click.

This section describes the specificities of each mission, and the way to program them.

Important: Absolute altitude reference (AAR) is the default flight height setting for all missions. AAR is the height the drone flies above the relevant ground level. AAR height may be different from, average mean sea level (AMSL).

To launch a photogrammetry flight, select "Photogrammetry" through the Missions selection menu of FreeFlight 7.
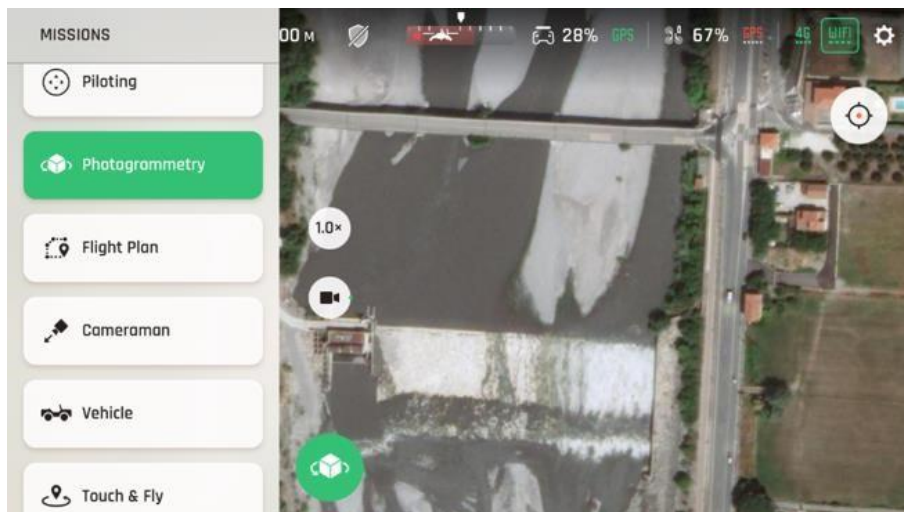
FreeFlight 7 mission selection menu

Grid

Simple grid photogrammetry flights are useful to create 2D maps. Simple grids can be precisely adapted to any shape, to match the borders of a field or a coastline, for example. Follow these steps to program and launch a simple grid mapping flight.

Tap the map to create a square grid.

Tap and slide the green corners of the square to adapt the grid to the zone you want to map. Tap any "+" sign to create a new segment and a new corner.

Tab box to select Image Parameters:

Resolution	12MP / 48MP
Exposure	-3.0 to +3/0 EV (DV: 0.0 EV)
White balance	Auto / Sunny / Cloudy

Tap box to select Flight Parameters:

4G upload	Yes / No
Obstacle avoidance	Yes / No
Final RTH	Yes / No
RTH on data link loss	Yes / No
Altitude	From 5 m (DV: 50 m)
Camera tilt	-90° to 0.0°
Front overlap	20.0% to 90.0% (DV: 80.0%)
Side overlap	20.0% to 90.0% (DV: 60.0%)

Tap "Done" when ready.

Tap "Play" to launch the flight.
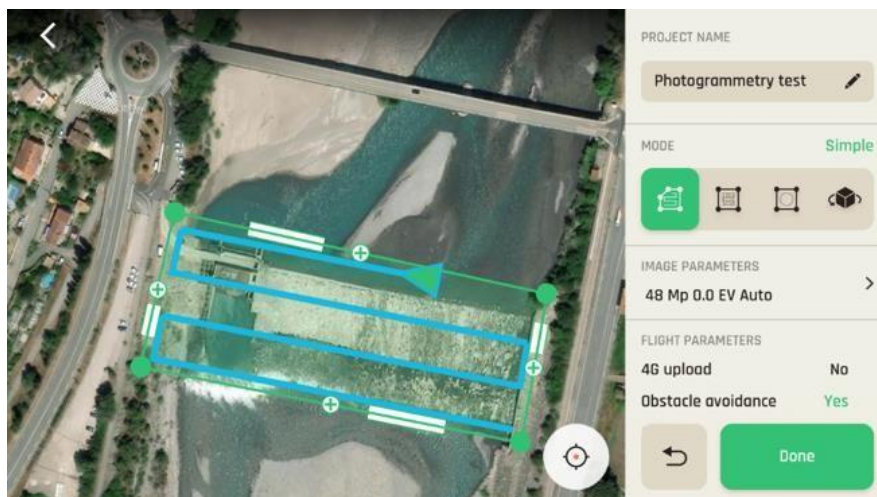
FreeFlight 7: *Grid photogrammetry*

Double grid

Double grid photogrammetry flights are useful to create 3D maps or 3D models of square areas. Follow these steps to program and launch a double grid mapping flight.

Tap the map to create a square grid.

Tap and slide the green corners of the square to adapt the grid to the zone you want to map.

Tab box to select Image Parameters:

Resolution	12MP / 48MP
Exposure	-3.0 to +3/0 EV (DV: 0.0 EV)
White balance	Auto / Sunny / Cloudy

Tap box to select Flight Parameters:

4G upload	Yes / No
Obstacle avoidance	Yes / No
Final RTH	Yes / No
RTH on data link loss	Yes / No
Altitude	From 5 m (DV: 50 m)
Camera tilt	-90° to 0.0° (DV: -70°)
Front overlap	20.0% to 90.0% (DV: 80.0%)
Side overlap	20.0% to 90.0% (DV: 60.0%)

Tap "Done" when ready.

Tap "Play" to launch the flight.
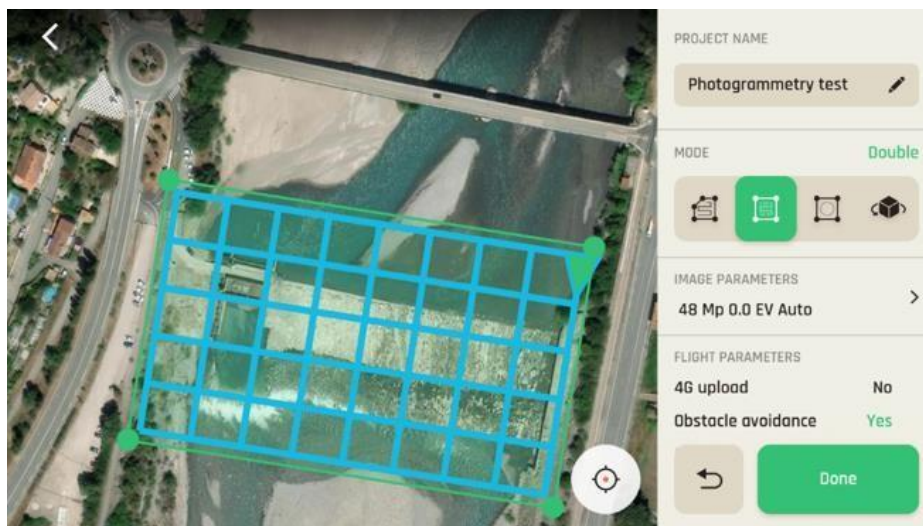
FreeFlight 7: Double grid photogrammetry

Orbit

Orbit photogrammetry flights are useful to model an isolated building or structure in 3D. Follow these steps to program and launch a circular mapping flight.

Tap the map to create a square flight area.

Tap and slide the square to position the object you want to map at the center of the flight area. Tap and slide the green corners of the square to adapt the flight area to the part surrounding the target object you want included in the 3D model.

Tab box to select Image Parameters:

Resolution	12MP / 48MP
Exposure	-3.0 to +3/0 EV (DV: 0.0 EV)
White balance	Auto / Sunny / Cloudy

Tap box to select Flight Parameters:

4G upload	Yes / No
Obstacle avoidance	Yes / No
Final RTH	Yes / No
RTH on data link loss	Yes / No
Altitude	From 5 m (DV: 50 m)
Number of photos	18 to 90
Camera tilt	-90% to 0.0° (DV: **-45°**)

Tap "Done" when ready.
Tap "Play" to launch the flight.
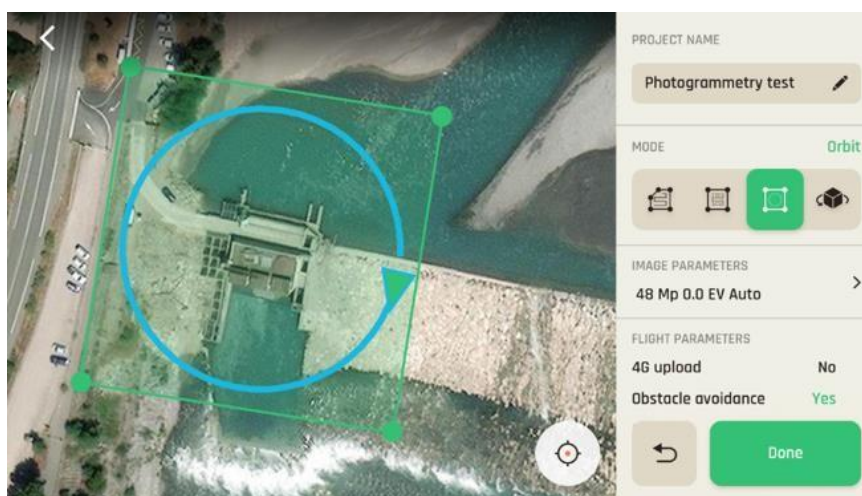
FreeFlight 7: Orbit photogrammetry

1-Click

1-Click photogrammetry flights are designed to create the 3D model of a single building, with a single tap on the screen.

Tap the box which appeared on the map over the building you want to model.
The box turns green.
Define Building height if it is unknown by the land register, as in the following screenshot.
Tab box to select Image Parameters:

Resolution	12MP / 48MP

Exposure	-3.0 to +3/0 EV (DV: 0.0 EV)
White balance	Auto / Sunny / Cloudy

Tap box to select Flight Parameters:

4G upload	Yes / No
Obstacle avoidance	Yes / No
Final RTH	Yes / No
RTH on data link loss	Yes / No
Building height	From 5 m (DV: 10 m)

Tap "Done" when ready.
Tap "Play" to launch the flight.
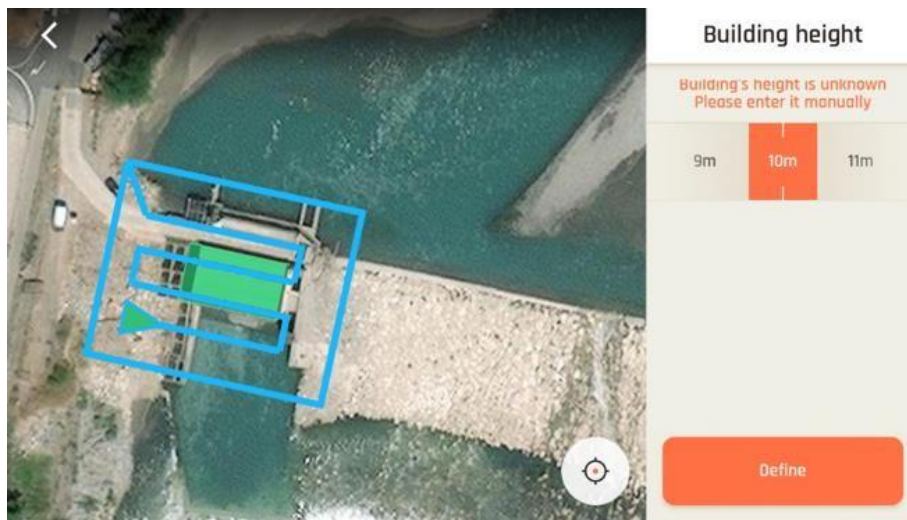
FreeFlight 7: 1-Click photogrammetry

Note: If the mission starting point is 50km away, or further, an alert message appears: **First waypoint too far away**.

About PIX4D suite compatibility

ANAFI Ai is compatible with the PIX4D software suite, including Pix4Dmapper, Pix4Dinspect, Pix4Dmatic, and Pix4Dcloud. To learn more on how to optimize the processing of the images, please read PIX4D SOFTWARE TUNING FOR ANAFI Ai documentation.

Missions: Flight Plan

Flight Plan is a powerful tool, which enables you to fully prepare and configure automated flight plans, you can run once or routinely.

Through a use case scenario, this section will teach you the basics of automated flight and filming management, with ANAFI Ai and Flight Plan.

Moreover, The Anafi AI is able to support AMSL altitude (Above Mean Sea Level), that mean it permits to use a reference point to measure more precisely the environment

• WARNING: the following Flight Plan and scenario have been set up for educational purposes only and such a flight would not be authorized without proper credentials.

Flight Plan: scenario

The mayor of a village island has the responsibility of 3 lighthouses. He wants to set up a daily routine inspection of the lantern of each lighthouse before sundown.

His main constraint is to avoid flying over populated areas. The tourist office of the village also sees in daily ANAFI Ai flights the opportunity to gather exceptional footage for communication purposes.

The proposed method relies on setting up three Points of Interest (POI) first, then programming Waypoints (WP) around them, but remember you can set up, move, edit, or add any POI or WP in any order.

Tap the "MISSIONS" icon in the left bottom corner of the HUD of FreeFlight 7 to access missions options.

Tap "Flight Plan" to select this mission.

The map of your surroundings opens full screen. If you are not connected to ANAFI Ai, the minimized live view is black, as on the next screenshot.
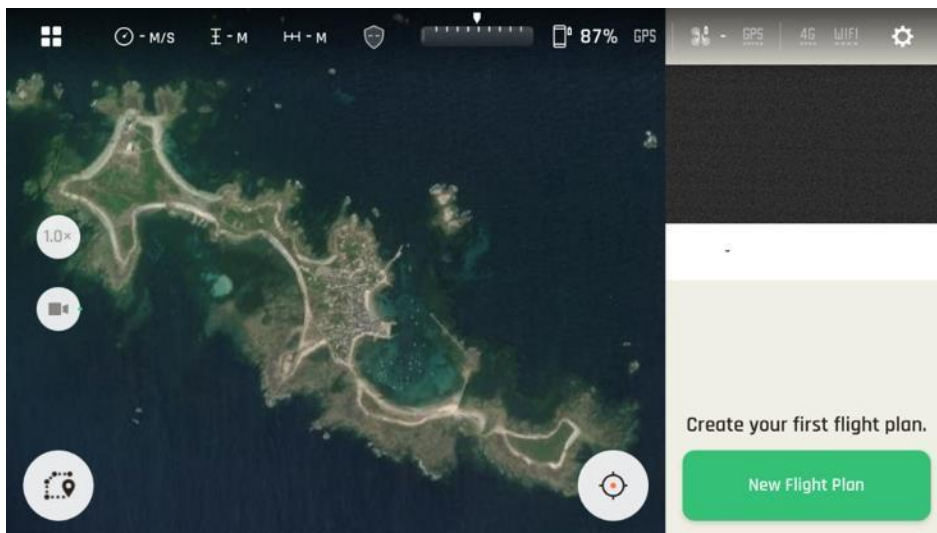
New Flight Plan interface

Tap "New Flight Plan", then edit and confirm the name of your project to start.

Flight Plan: creating POI

As the proposed scenario is based on the inspection of three different locations, it seems sensible to build this Flight Plan around those POI.
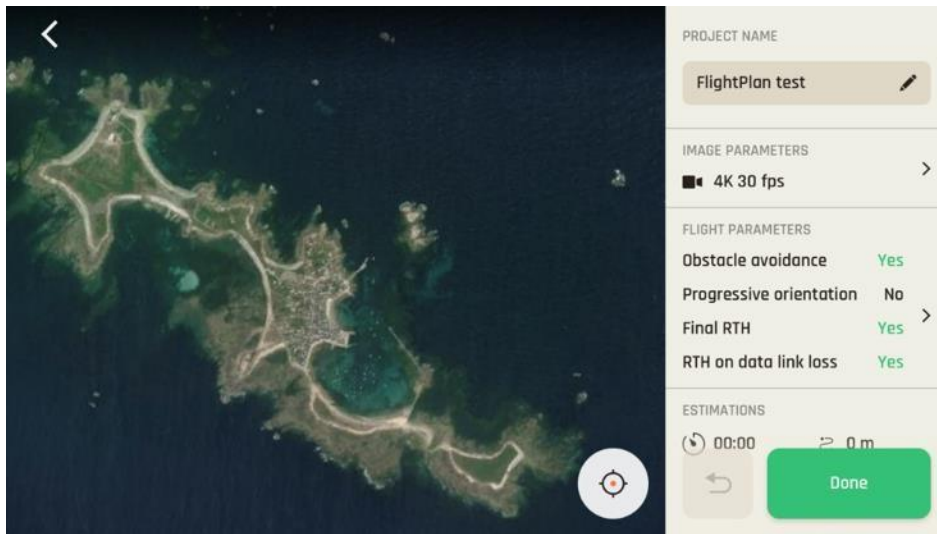
Empty Flight Plan interface

Long press a point on the screen to make it a POI and to open the POI interface: the next screenshot shows the position of the first lighthouse. It is isolated and its area also offers a good take-off point for the flight.

Slide the selector left or right to define the height of the POI: it is the point ANAFI Ai's camera will aim when filming the POI.

As the mission is to inspect the lantern at the top of the lighthouses, we are setting POI at their known height.

Tap the "X" on the left of the POI interface to make the POI idle and return to Flight Plan interface.
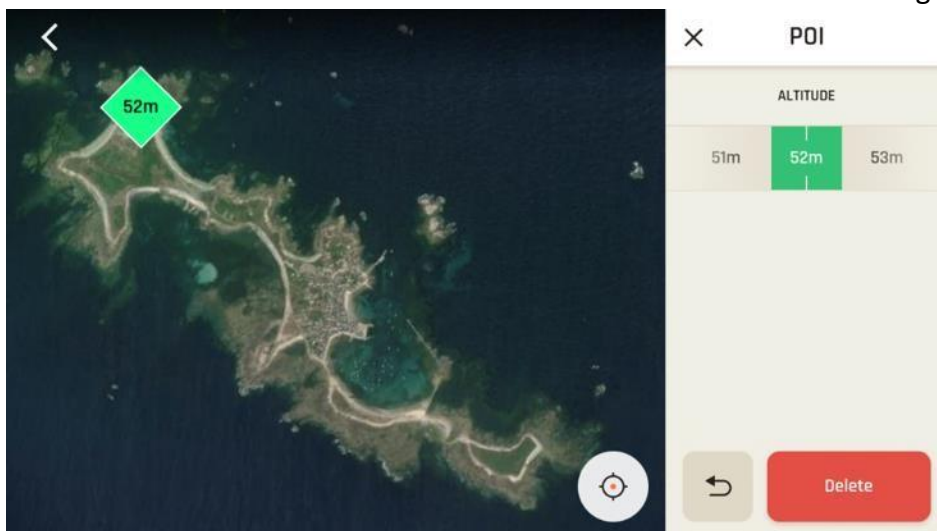
First POI and altitude set

Repeat the procedure to add more POI and set their height. Note active POI are displayed in bright green (as on the earlier screenshot), and idle POI are each displayed in different colors (as on the following screenshot).
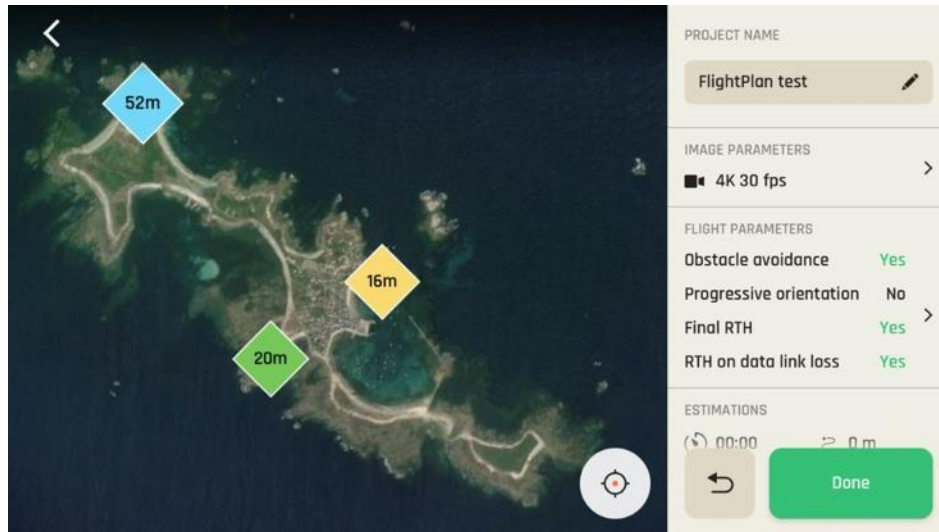
Three POI set

Flight Plan: creating and managing WP

Let us zoom to the area of the first POI, that of the tallest lighthouse, where we intend to start and finish the flight.
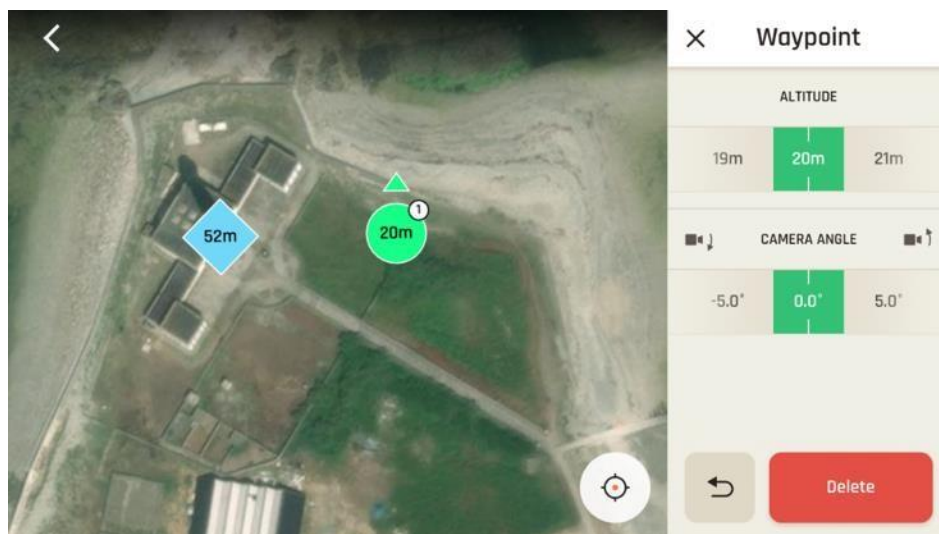
First WP set

Tap a point on the screen to make it a WP and to open the WP interface.

Slide the selectors left or right to define the height of flight over take-off point at the WP, and to set the camera angle.

Tap and move the arrow around the WP to change the direction of the camera: on the following screenshot, we have directed the camera toward the lighthouse.

Note: active WP are displayed in bright green, and they appear in the minimap on the right-hand side of the screen.

Direction of camera changed

Tap a point on the screen to create a new WP: by default, it is set at the same altitude and camera angle as the one before, and the camera points in the direction of the flight which brought the drone to the WP – refer to the next screenshot.
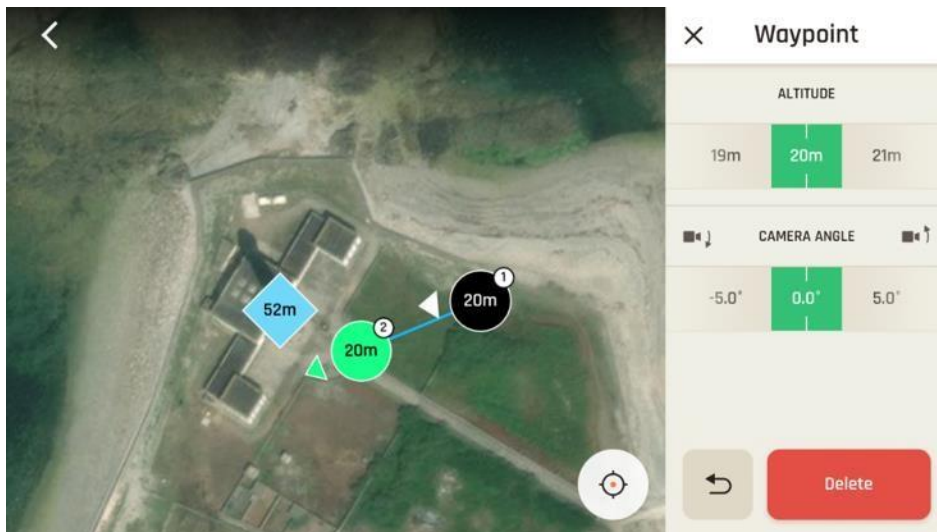
Second WP set

Let us start the inspection on the second WP: adjust its altitude with the slider (55 m), so that the drone slightly overflies the lantern of the lighthouse.

Tap the POI to activate it, then tap the WP you wish to link: the arrow of the WP turns toward the POI and it is displayed in the same color as the POI – bright green when the POI is active, or the POI's distinctive color when it is idle.

Tap the screen to add more WP around the lighthouse: they are linked to the POI with a constant flight level, by default, until you tap "X" to close the POI interface.

The screenshots on the next page illustrate each of these steps.
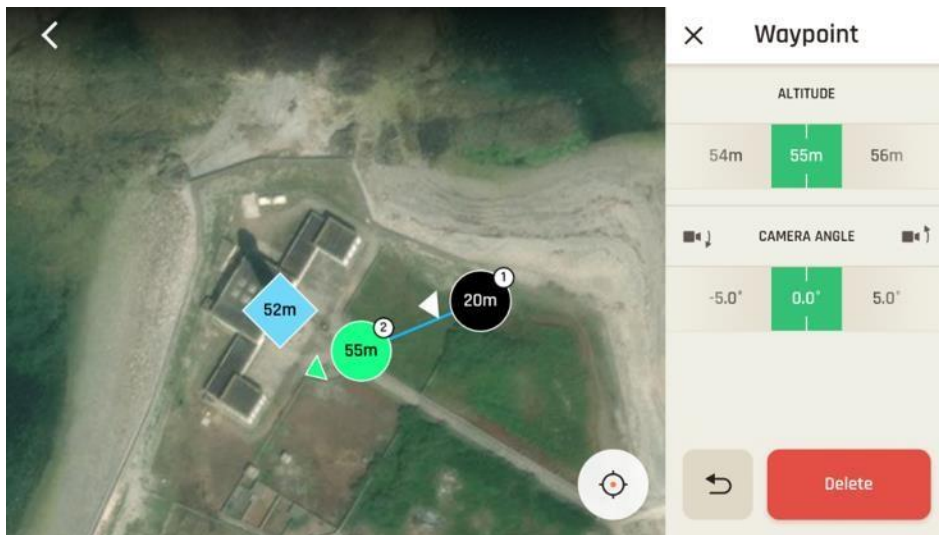
WP #2 altitude changed
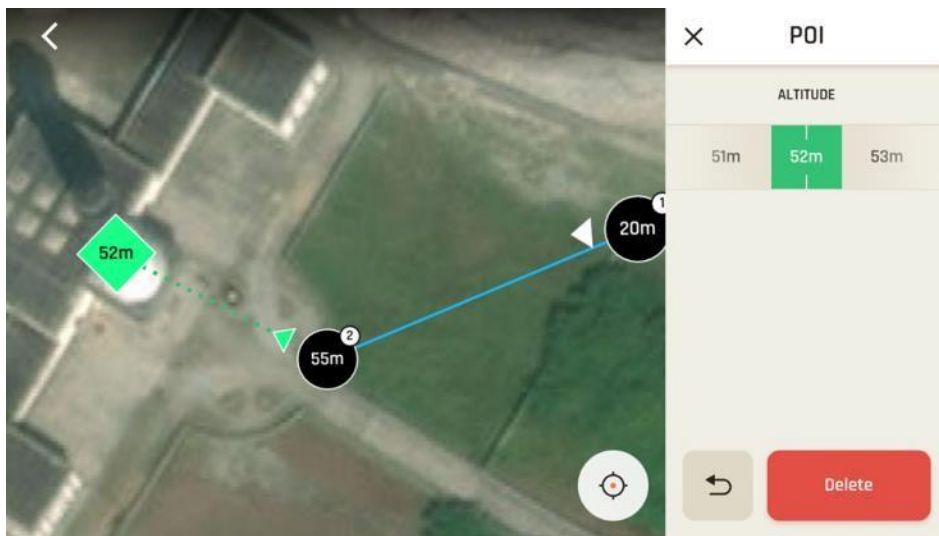
POI selected and WP #2 linked
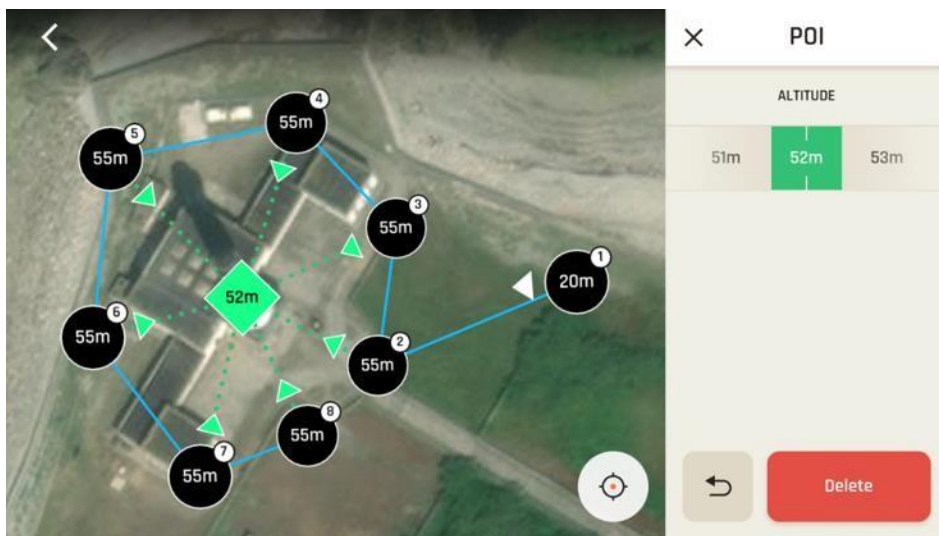
Flying toward the second lighthouse is straightforward, as the drone does not have to fly over populated areas.

Tap the screen to add a WP near the next inspection zone: note its altitude and its camera angle mirror those of the earlier WP.
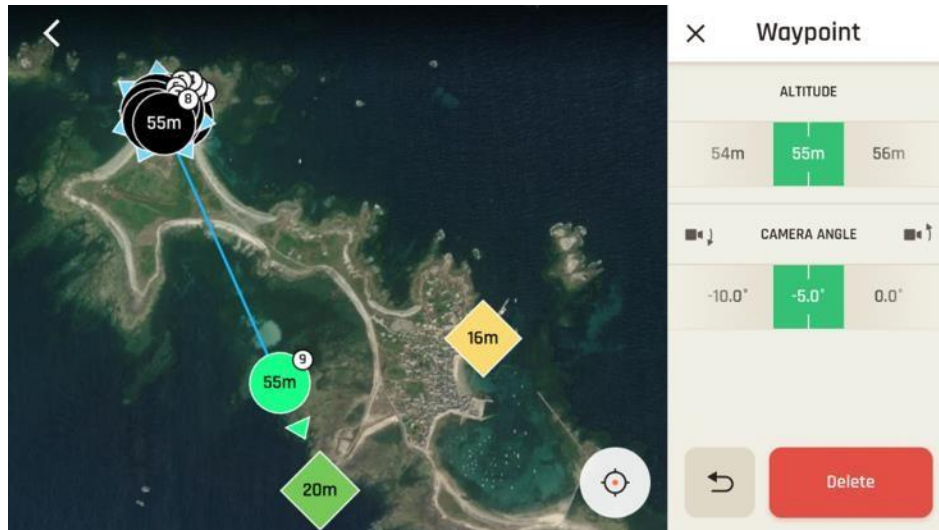
Transit WP set

Repeat earlier procedure to program the inspection of the second lighthouse.

Note from the next screenshot that when no POI or WP is active, the bottom of the Flight Plan interface gives you flight time and distance estimates for the Flight Plan: still plenty of time for the inspection of the third lighthouse and the flight back to take-off point.
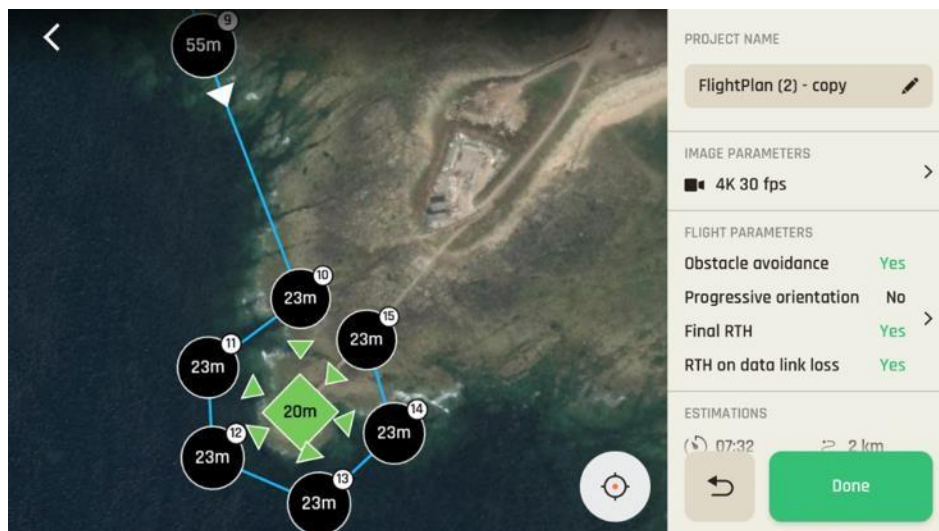
15 WP for 7'32'' and 2 km estimated flight time and distance

The third lighthouse is inside the village, which cannot be flown over. On the next screenshot, reaching WP #16 in a straight line implies flying too close from houses. This gives the opportunity to check the Segment interface.

Tap a segment to activate the Segment interface: you can modify the speed of ANAFI Ai for any flight segment (from 0.5 m/s to 12 m/s by 0.5 m/s increments – default value: 5 m/s).
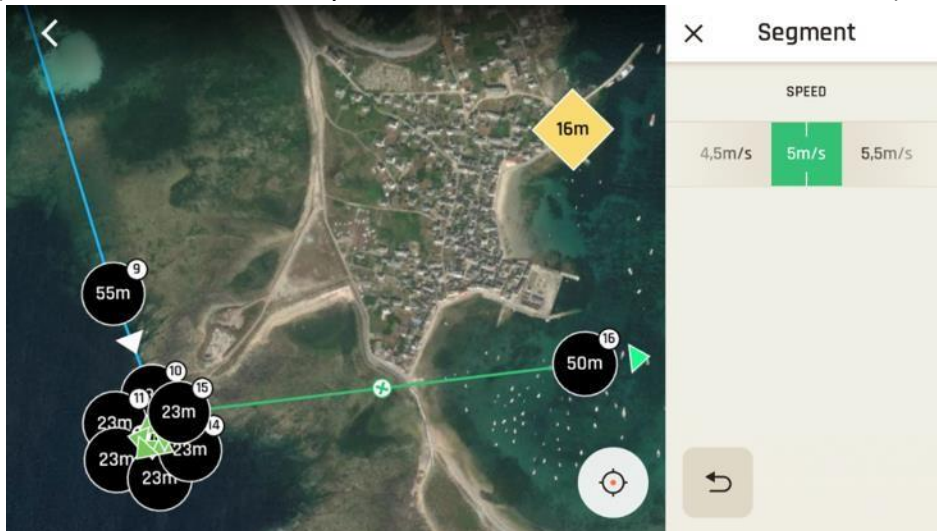
Segment interface activated

Tap the "+" on the middle of the segment to create a new WP there: note that by default, the altitude of the new WP considers flight level change between the WP before and the next WP.

Tap and slide the new WP to move it away from the village.

New WP created

Tap and slide any WP to move it

Creating a temporary POI can be a useful aid for framing.

With the next screenshots, you can check that a constant -5.0° camera angle should keep a nice framing on the village, provided WP #17 is moved away from the POI: camera angle adapts in real time as you move a POI-linked WP.

Then you can delete the POI and fine tune camera directions manually.
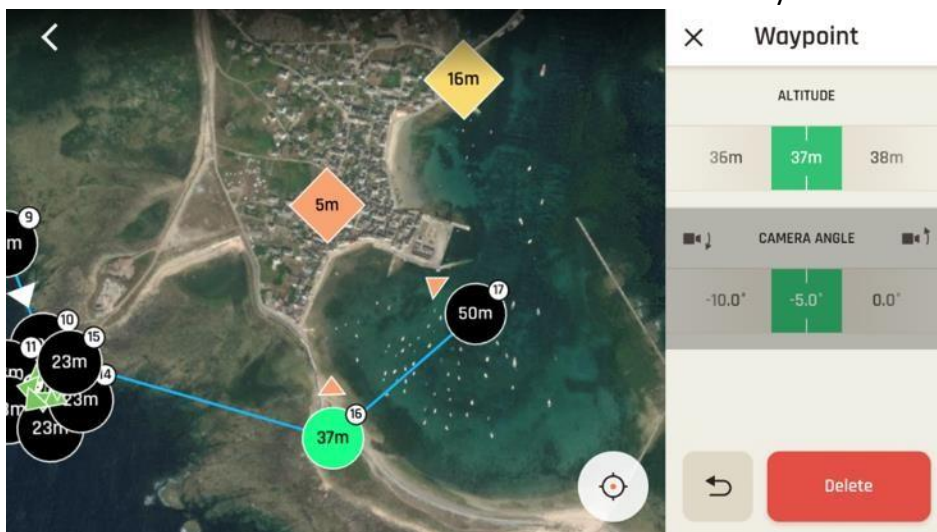
Temporary 5 m POI created to validate framing

WP #17 moved to stay consistent with a -5.0° camera angle

Repeat earlier procedures to program the inspection of the third lighthouse and transit WP back to the take-off area.

Obviously, Flight Plans can take any shape or form and the last WP does not have to be close to the take-off area: you can start and finish a Flight Plan in different locations.

• However, if you want to land away from your take-off area, remember to select "No" Final RTH from the Flight Parameters – refer to the "*Flight Parameters*" section of this chapter for details.

Flight Plan: Image parameters

The Flight Plan is complete. As you can see on the next screenshot, FreeFlight 7 estimates it will take about 17'40'' to complete the 4.8 km flight. Time to set the Image parameters.
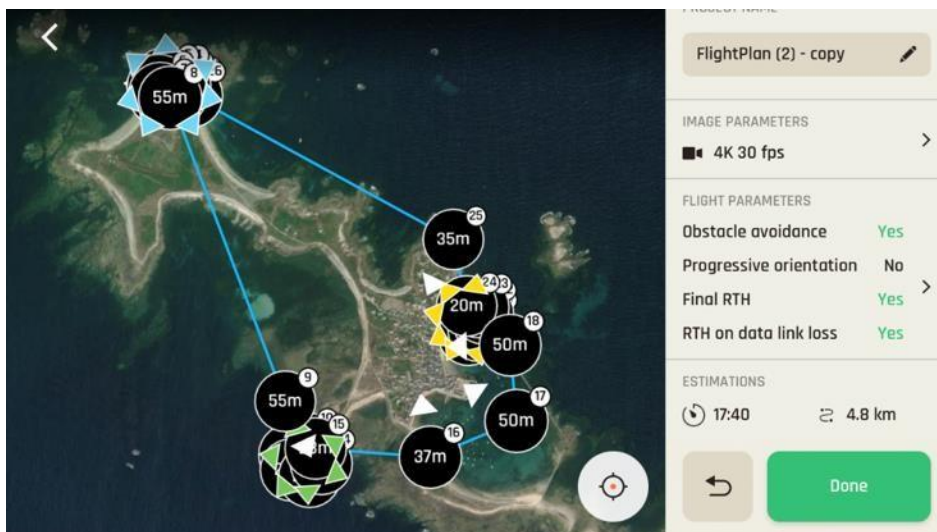
Flight Plan complete

Tap the "Image parameters" box to open the corresponding interface.
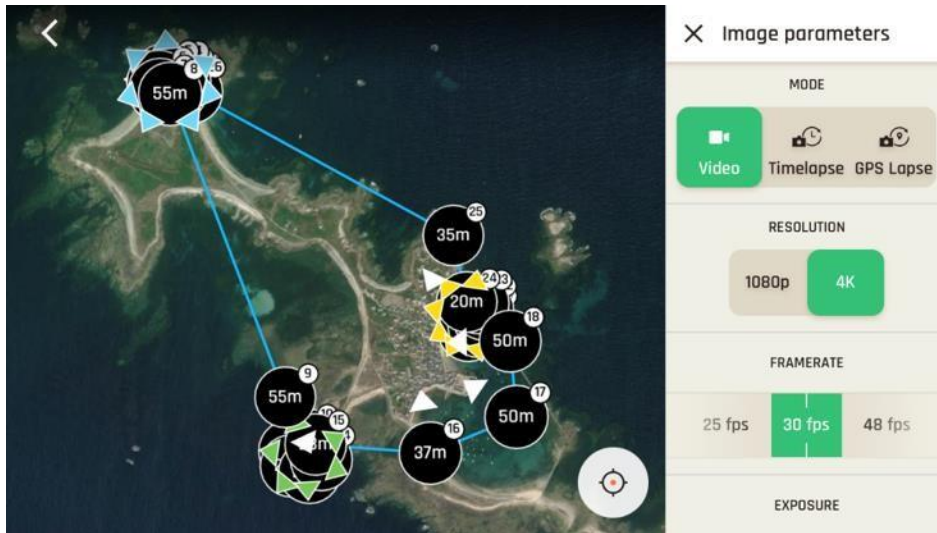
Image parameters interface

Select your settings.

Flight Plan Image parameters are as follows (default values in bold).

Video:

Resolutions	4K or 1080p
Framerate	30 fps (24 to 30 fps for 4K / 24 to 60 fps for 1080p)
Exposure	-3.0 EV to +3.0 EV (DV: 0.0 EV)
White Balance	Auto / Sunny / Cloudy

Timelapse:

Duration	1 s, 2 s, 4 s, 10 s, 30 s or 60 s intervals between shots
Resolution	12 MP / 48 MP
Exposure	-3.0 EV to +3.0 EV (DV: 0.0 EV)
White Balance	Auto / Sunny / Cloudy

GPS lapse:

Distance	0.5 m, 1 m, 2 m, 5 m, 10 m, 20 m, 50 m, 100 m, or 200 m between shots
Resolution	12 MP / 48 MP
Exposure	-3.0 EV to +3.0 EV (DV: 0.0 EV)
White Balance	Auto / Sunny / Cloudy

Tap "X" to close Image parameters and confirm your settings.

Flight Plan: Flight parameters

Tap the "Image parameters" box to open the corresponding interface. Four flight parameters determine the behavior of ANAFI Ai during a Flight Plan (default values in bold):

Obstacle avoidance	Yes / No
Progressive orientation	Yes / No
Final RTH	Yes / No
RTH on data link loss	Yes / No

Tap "X" to close Flight parameters and confirm your settings.

Tap the "Done" button to save your Flight Plan.

Flight parameters interface

Flight Plan: execution

Close FreeFlight 7, get to your take-off area, set up ANAFI Ai for the flight with your Parrot Skycontroller 4 and your device.

Tap the "MISSIONS" icon in the left bottom corner of the HUD of FreeFlight 7 to access missions options.

Tap "Flight Plan" to select this mission: the last plan you have programmed appears.

Tap the green "Play" (arrow) button from the right of the Flight Plan interface to launch the flight: ANAFI Ai takes off, flies to the first WP and begins the mission.

Drone ready for a Flight Plan

Remember you can pause any Flight Plan at any time: tap the red "STOP" (square) button of the interface or reclaim the commands of the drone.

When you are done exploring or taking Panoramas and you are ready to resume the Flight Plan, tap "Play" to start again from the latest WP ANAFI Ai has passed.

• Activate and monitor every Flight Plan with extreme care: always check your drone's route is safe, always retain visual contact with ANAFI Ai, and always be ready to stop the Flight Plan (tap the "STOP" box of the HUD or reclaim commands of the drone) in case a danger arises.

Note: If the mission starting point is 50km away, or further, an alert message appears: **First waypoint too far away**.

Flight Plan: import

To import a MAVlink file directly in FreeFlight 7, follow the next steps:

- Send the file to your email address.

- Open the email with Outlook on your iOS device.

- Tap on the file.

- Click on the share button.

- Click on "share with", and choose FreeFlight 7 App.

FreeFlight 7 will open directly on the Flight Plan interface and charge the MAVlink file. Note that an imported flight plan can't be edited.

Missions: Cameraman

The Cameraman mission enables you to keep an object or a subject in the center of your frame, while you pilot ANAFI Ai around it/him/her.

Frame the object or subject you want to film and fly around.

Tap the "MISSIONS" icon in the left bottom corner of the HUD of FreeFlight 7 to access the missions options.

Tap "Cameraman" to select this mission.

Up to 10 potential targets (people, vehicles, animals, etc.) appear highlighted in yellow as in the screenshot below.
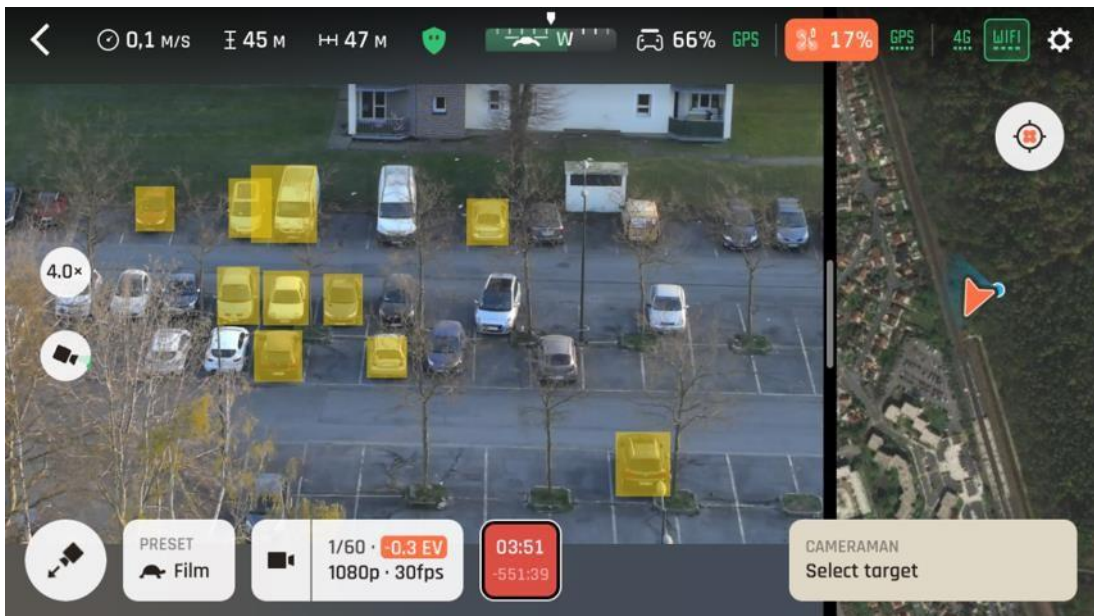
Cameraman: potential target selection

Tap a potential target to select it, or draw a rectangle with your finger on the screen of your device, around the object or subject you want ANAFI Ai to follow.

When your target is locked, it appears highlighted in green, as in the next screenshots, where a moving vehicle was selected.
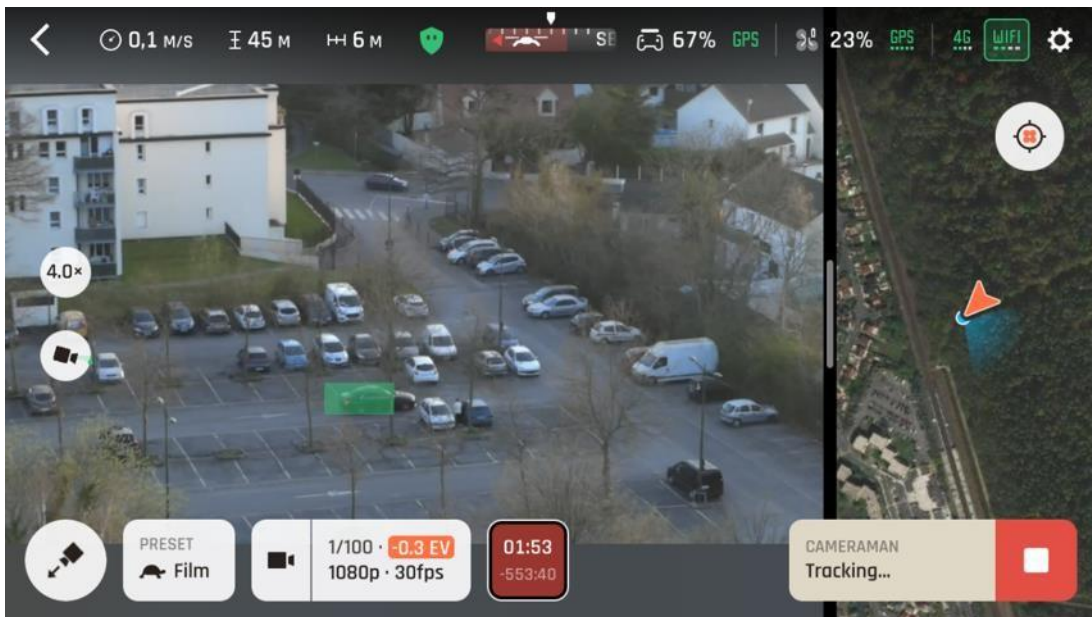
Tracking in progress 1
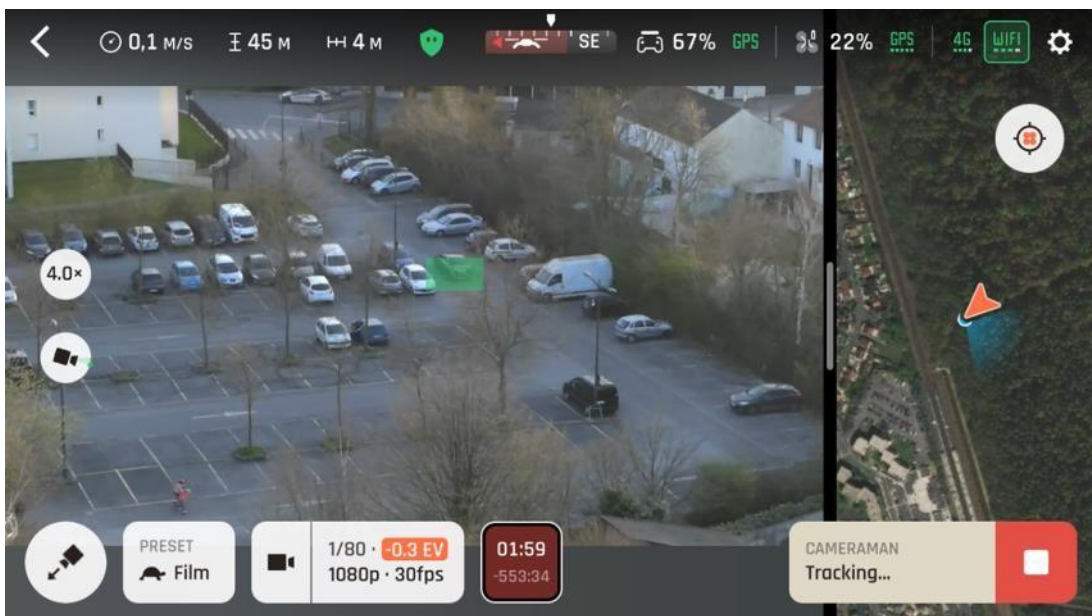
Tracking in progress 2

Fly ANAFI Ai around your target. The drone keeps your target at the center of the frame.

Therefore, if you push the right joystick of the Parrot Skycontroller 4 to the left, ANAFI Ai circles around your target clockwise. If you push the right joystick of the Parrot Skycontroller 4 to the right, ANAFI Ai circles around your target counterclockwise.

When the Cameraman mode is activated, ANAFI Ai manages the gimbal tilt to keep the target in the frame. Therefore, the left trigger of the Parrot Skycontroller 4 is deactivated in this mode. However, you can still control the zoom, with the right trigger.

When you release the commands in the Cameraman mode, ANAFI Ai hovers and rotates to keep following the target.

To end the following of your target, tap the white square on red background ("STOP button") in the bottom right corner of the HUD.

When no target is selected, or when the following of the target has been ended by the pilot, ANAFI Ai's behavior is similar to that of the Piloting mission.

Activate and monitor the Cameraman mode with care: always check your flight plan and the trajectory of your subject are clear from obstacles and safe, always retain visual contact with ANAFI Ai, and always be ready to stop the following (tap the "STOP button" of your HUD) in case a danger or any sort of unexpected obstacle arises.

Missions: Vehicle

The Vehicle mission enables authorized pilots to take off and control their drone from a moving vehicle (for example a platform-van or a boat), then to land it back safely on the moving vehicle (up to a 25 km/h or 17.5 mph speed).

- Vehicle missions consume more energy: increase the safety margins on your battery readings – if you normally land with batteries at 20 %, aim for 30 %.
- Set up ANAFI Ai for take-off in the direction of the moving platform motion.
- This feature requires a double GPS fix (drone and device) to be activated.
- Parrot recommends initiating Vehicle mission flights from a distinctive take-off platform such as a black and white landing pad. You can download and print, with a minimum size of 70cm x 70cm, the Parrot landing pad available here.
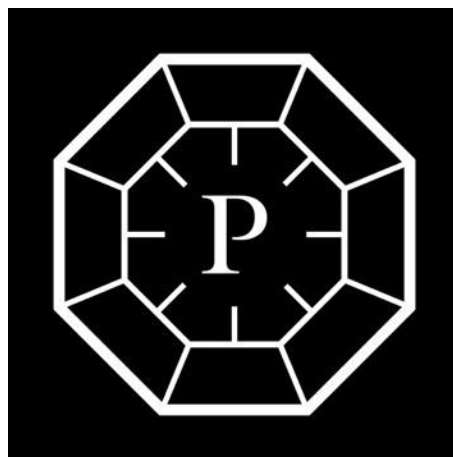
Landing pad preview

From take-off, ANAFI Ai synchronizes its speed and trajectory to that of the vehicle, tracking and following it. The pilot retains control of the flight of the drone, relative to the vehicle's reference.

In other words, the drone follows the vehicle by default, even when the command is activated. However, you keep control of the precise trajectory of ANAFI Ai, of its direction, and thus of the framing of the camera.

When you are following a vehicle, a link appears between your drone and the vehicle to symbolize the "tracking mission".

During a Vehicle mission, activating the RTH command initiates a return sequence toward the vehicle ("Returning to vehicle"). The following sections describe all phases of Vehicle missions.

Vehicle take-off

1. Set up ANAFI Ai in the direction of the movement of the vehicle.
2. Check your operating area provides GPS synchronization for both the drone and the controller.
3. Stabilize the speed of the vehicle under 25 km/h (15.5 mph).
4. Activate the Vehicle mission from the "MISSIONS" icon on the bottom left of the FreeFlight 7 screen.
5. Stabilize the direction of the vehicle: if possible, take off from a straight stretch of a road.
6. Activate the ⬆ button: ANAFI Ai takes off, stabilizes 5 m above its take-off point, tracks and follows the vehicle.

All green for take-off

Take-off complete, RTH position set

7. From now on, you will not be able to exit the Vehicle mission before you have landed the drone – refer to the next sections of this guide for additional details.

8. You have control over the trajectory and framing of the drone, relative to the referential of the motion of the vehicle in which you travel with the Skycontroller 4.

Vehicle navigation safety

Always activate and monitor Vehicle missions with great care: it is easy to get disoriented when controlling a moving vector from another moving vector.

Remember that when the tracking is active, the default behavior of ANAFI Ai is to track and follow the vehicle: it will not hover in the absence of pilot commands.

Always check your flight plan and the trajectory of your vehicle are clear from obstacles and safe, always retain visual contact with ANAFI Ai, and always be ready to suspend the tracking and make the drone hover (tap the square "STOP" button on the bottom right corner of the FreeFlight 7 screen, as in the screenshot below).

Tracking in progress, no command from the pilot: ANAFI Ai is travelling as the same speed as the vehicle

Tracking suspended, no command from the pilot: ANAFI Ai is hovering

When the tracking is suspended during a Vehicle mission, the behavior of the drone is that of the Piloting mission.

Tap the green "PLAY" button, as seen in the last screenshot, to restore tracking.

Returning to vehicle

The Returning to vehicle (RTV) feature brings ANAFI Ai back to the vehicle from which it took off, and which hosts the Skycontroller 4.

Smart rules associated with RTH features of ANAFI Ai (low battery, ecosystem link loss) are also valid for RTV.

The RTV procedure can be decomposed in three steps. When an RTV is activated:

1. ANAFI Ai accelerates toward the tracked vehicle, moving upward to reach the minimum RTH altitude, if it was flying below it – refer to the "*ADVANCED SETTINGS / RTH*" section of this guide for details on RTH settings.
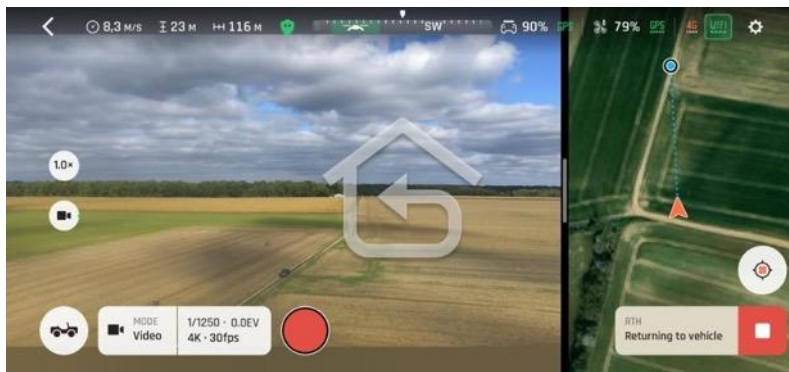
Returning to vehicle activated

2. ANAFI Ai catches up with the vehicle based upon its GPS position, then begins descending to scan for it visually: when the drone reaches 30 m over the vehicle, the drone's main camera turns to the ground to locate it.

Searching vehicle

3. When the vehicle is identified, ANAFI Ai stays synchronized to its route and speed, and descends to the selected hovering height – or the "landing zone search" height, if you have selected the "Landing" ending from the Advanced RTH settings.

Vehicle found: descent to hover altitude is about to begin

Vehicle landing safety

- Landing a drone on a moving vehicle is a technical gesture, which requires training and focus. Landing is always one of the most sensitive parts of a flight and performing it in motion makes it even more crucial.

- Always monitor each stage of the Returning to vehicle and Landing sequences carefully, even if you have selected the "Landing" ending for Vehicle missions: always be ready to reclaim control of the drone at any stage of the flight.

- Vehicle landings consume more energy: increase the safety margins on your battery readings – if you normally land with batteries at 20 %, aim for 30 %.

The landing sequence of a Vehicle mission implies the activation of a "landing zone search" by ANAFI Ai. This search can:

- occur automatically after an RTV, if you have selected the "Landing" ending from the Advanced RTH settings;
- occur by pilot action on the ⬆ button when the drone is at a maximum distance of 30 m from the vehicle. The drone descends to 8 m high before starting the search.
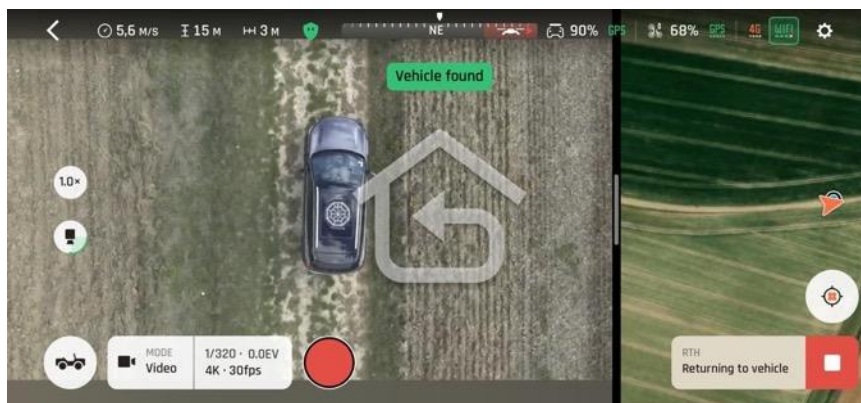
Landing sequence initiated: Searching landing zone

- If the vehicle is moving and the landing zone cannot be acquired after 8 seconds, the drone automatically lands at a reduced speed. FreeFlight 7 will prompt you to adjust the drone's position.

- If the vehicle is stopped, the drone keeps descending while searching for the landing zone. If the landing zone cannot be acquired, FreeFlight 7 prompts you to adjust the drone's position and the drone lands while tracking the vehicle position.

When the landing zone has been acquired, the top center of the screen displays a "Precise landing" notification.
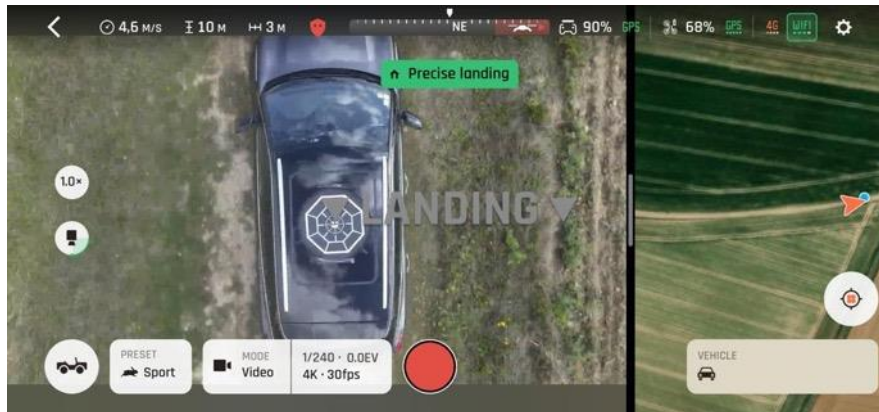
Precise landing activated

This is ANAFI Ai's final approach signal: from there it descends steadily, around 1 m/s, from 8 m height to its landing point.

- Stabilize the direction of your vehicle, and steady its speed under 25 km/h (15.5 mph).

Until ANAFI Ai has safely landed, the Vehicle landing can be aborted by reclaiming the thrust commands and making the drone climb, if any issue arises (GPS loss, bump on the road, wind gusts, water too choppy, etc.).

- Always monitor and control Vehicle mission landings with care and do not hesitate in briefly stopping the vehicle to perform a safer landing if you feel unsure about motion landing conditions.

Missions: Touch & Fly

Touch & Fly: Waypoint

The Waypoint (WP) "Touch & Fly" mode enables you to fly ANAFI Ai to any point on the map. Tap "Touch & Fly" from the "PILOTING MODE" box menu. The map of your surroundings opens full screen. The live image captured by ANAFI Ai is minimized in the top right corner of your screen.
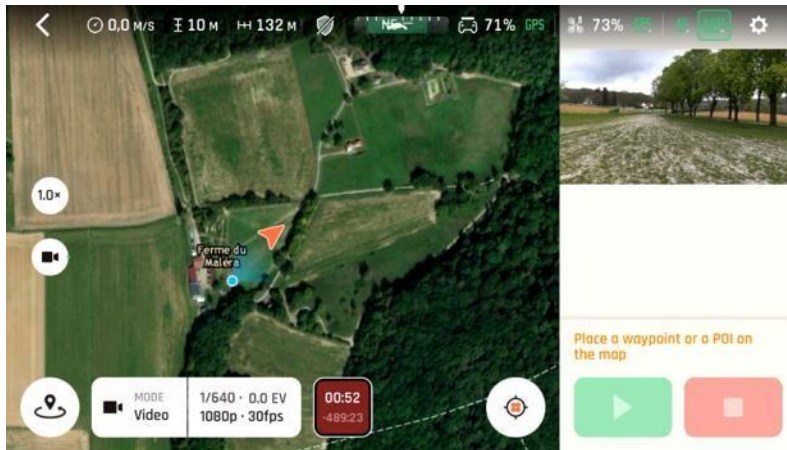
Touch & Fly interface

Single tap a point on the map to select a destination for ANAFI Ai: the drone turns toward this point, which is marked as a black circle with a green border. Use the slider on the right of the screen to set the drone's WP altitude.

Touch & Fly WP configuration

Tap the green "Play button" on the bottom right of the interface to send ANAFI Ai toward its defined WP (position and height).

Touch & Fly: drone flying to WP

Once the waypoint is set on the map, you can tap the live image window to display it full screen. The waypoint will be visible on its center.

You can then tap on the live image or drag and drop the waypoint to set its new position. The new waypoint location is set on a cylinder with, as a center the drone, and as a radius the distance between the drone and the last waypoint.
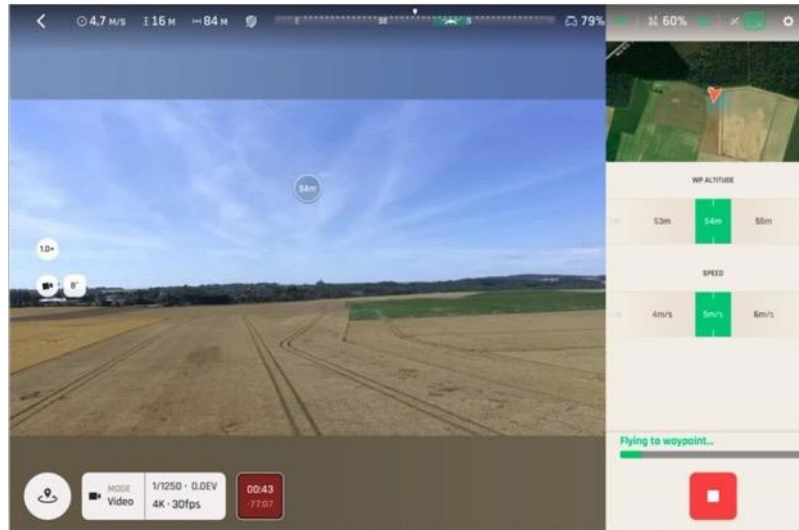
Touch & Fly: WP on the live image

Touch & Fly: POI

The Point of Interest (POI) "Touch & Fly" mode enables you to fly ANAFI Ai around any point on the map, keeping this particular point at the center of the map. Tap "Touch & Fly" from the "PILOTING MODE" box.The map of your surroundings opens full screen. The live image captured by ANAFI Ai is minimized in the top right corner of your screen.

Long press a point on the map to create a POI for ANAFI Ai: this point is marked as a green square with a white border. Use the slider on the right of the screen to set the altitude of the POI.
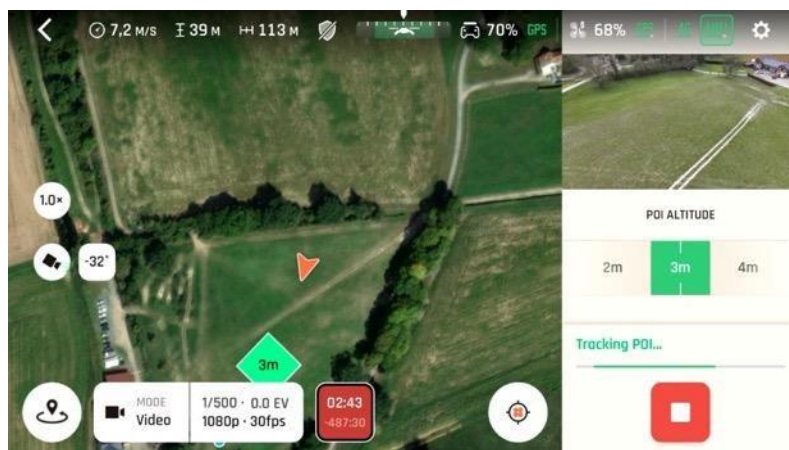
Touch & Fly: Tracking POI

Once the POI is set on the map, you can tap the live image window to display it full screen. The POI will be visible on its center.

You can then tap on the live image or drag and drop the POI to set its new position. The new POI location is set on a horizontal plane which has the high of the last POI.

Touch & Fly: POI on the live video

Fly ANAFI Ai around your POI. The drone keeps the POI at the center of the frame. Therefore, if you push the right joystick of the Parrot Skycontroller 4 to the left, ANAFI Ai circles around the POI clockwise. If you push the right joystick of the Parrot Skycontroller 4 to the right, ANAFI Ai circles around the POI counterclockwise.

When the Touch & Fly POI mode is activated, ANAFI Ai manages the gimbal tilt to keep the POI in the frame. Therefore, the left trigger of the Parrot Skycontroller 4 is deactivated in this mode. However, you can still control the zoom, with the right trigger.

When you release the commands in Touch & Fly POI mode, ANAFI Ai hovers and keeps the POI at the center of the frame. To end the following of the POI, tap the white square on red background ("STOP button") in the bottom right corner of the HUD.

Flight logs and projects management

If you have not activated the zero data mode of the ANAFI Ai ecosystem, **FreeFlight 7** keeps your Flight logs and lets you easily manage your Projects (Flight Plans and Photogrammetry), from the dashboard.

This section describes the corresponding interfaces.
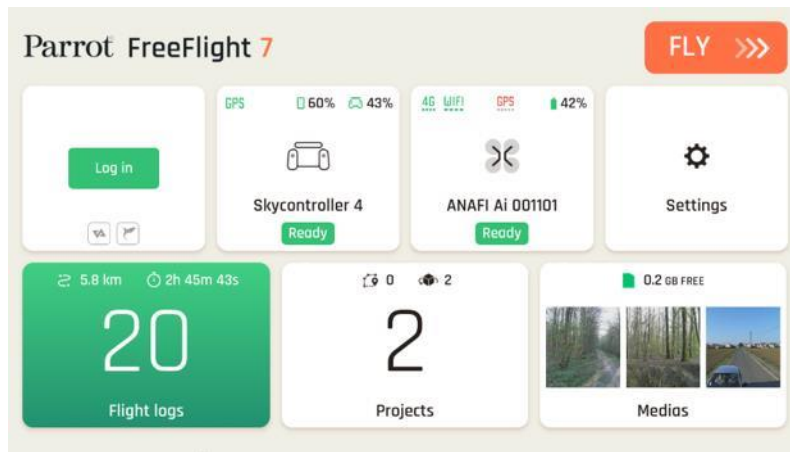
FreeFlight 7 dashboard

Flight logs

The Flight logs box of the dashboard displays the number of recorded flights, the corresponding distance flown, and the corresponding flight time.

Tap the box to access Flight logs.
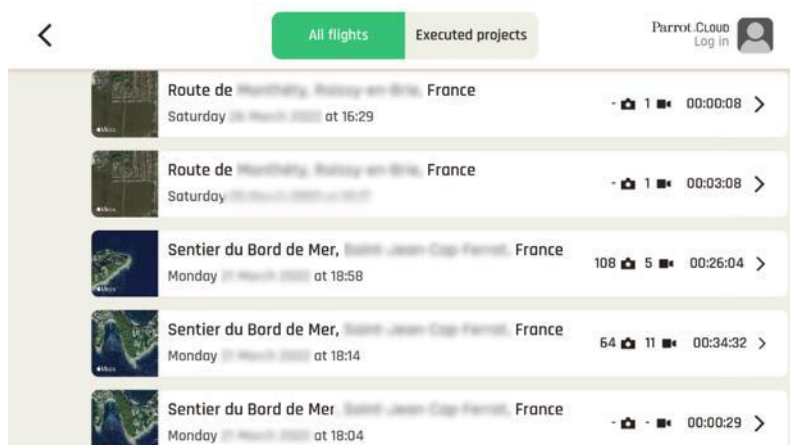
All flights list

Note you can toggle the top center selector of this interface from "All flight" to "Executed projects", which brings you to Flight Plan projects.

Tap a flight to open it.
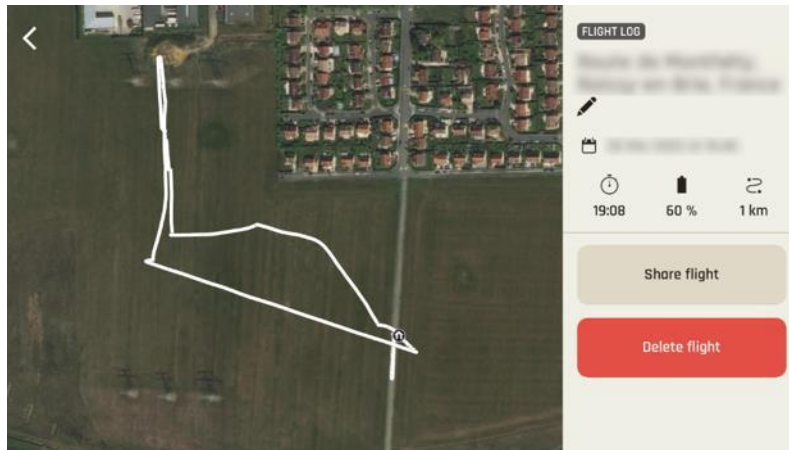
Individual flight log

From this screen you can edit the name of the flight with the pen icon, check the time, date and details of the flight, and share the flight (through all iOS sharing options).

You can also delete individual flights from this screen (the app asks you to confirm).

Finally, you can slide, zoom in or out and navigate in the map of the surrounding of your flight on the left part of the screen.

Tap "<" to go back to the Flights list.

Projects

The Projects box of the dashboard displays the total number Projects, details the number of recorded Flight Plans and the number of recorded Photogrammetry missions.

Tap the box to access Projects.
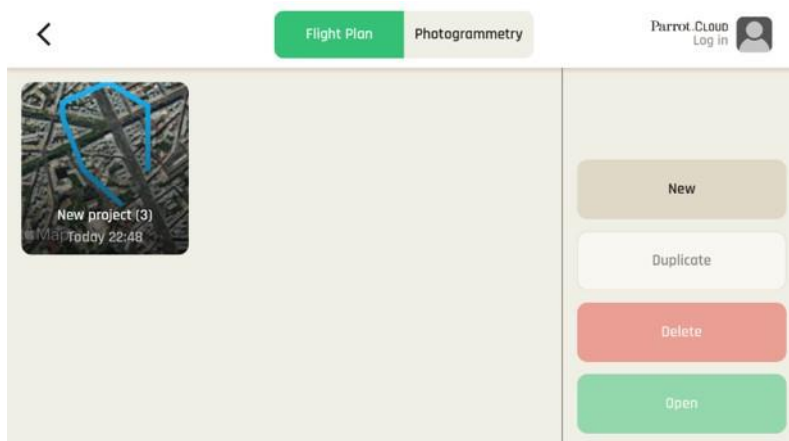
Flight Plan projects

The app displays saved Flight Plans first. If no Flight Plan has been programed, the list will be empty upon first access of the interface.

Tap "New" to create a new project in the Flight Plan mission interface.

Tap a project to select it, the following options appear or activate:

- edit the project name with the pen icon;
- duplicate the project; - delete the project;
- open the project (you can double tap projects directly from the list to open them in the Flight Plan mission interface).

Use the toggle at the top center of the screen to access Photogrammetry projects.
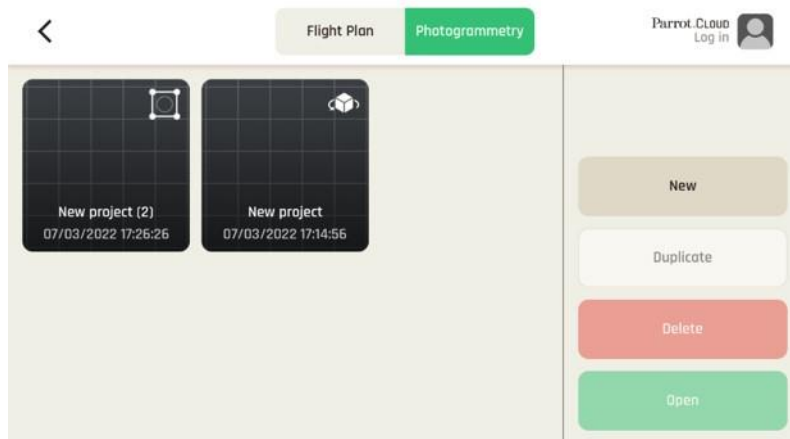
Photogrammetry projects

Tap "New" to create a new project in the Photogrammetry mission interface.

Tap a project to select it, the following options appear or activate:

- edit the project name with the pen icon;
- duplicate the project; - delete the project;
- open the project (you can double tap projects directly from the list to open them in the Photogrammetry mission interface).

Tap "<" to go back to the dashboard.

Maintenance and Troubleshooting

This section describes basics procedures which enable you to maintain your drone and troubleshoot most issues you can encounter using ANAFI Ai.

In addition, drone and controller resetting procedures can prove useful before a change of operator or operating structure, for example.

Changing propeller blades

Propeller blades are instrumental for flight integrity and delicate pieces of equipment. Even minor contacts with external elements (wall, tree branch, etc.) can invisibly damage their structure. Remember that for safety ANAFI Ai is programmed to cut its motors instantly in case of impact on one of its propeller blades: always control your drone carefully.

Therefore, Parrot recommends you immediately replace propeller blades which have sustained even a minor contact with the environment– or to replace them every 50 flight hours, as part of scheduled maintenance.

ANAFI Ai propeller blades have been designed for instant, no tool replacement. To replace a propeller blade, follow this simple procedure.

1. Unfold the arm that supports the blades which need to be replaced.
2. Hold the motor (round rotating part) of the propeller between your left thumb and index.
3. Unfold the blades and pinch the part which screws on the motor, between the blades, with your right thumb and index.

A. blades: unscrew used A blades (left front & right back) counterclockwise and screw new ones clockwise. counterclockwise.	B. blades: unscrew used B blades (left back & right front) clockwise and screw new ones

Double check your blades respect the following diagram before setting up ANAFI Ai for its next flight.
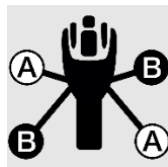
Propeller blades and ANAFI Ai smart batteries can be bought separately. Find an ANAFI Ai spare parts reseller here.

Rebooting all systems

The first intent procedure, when the ecosystem does not perform as expected, is to power off and reboot all elements of the ecosystem:

- device (kill FreeFlight 7 and reboot);
- Skycontroller 4; - ANAFI Ai.

Reinstalling FreeFlight 7

If you feel you must delete and reinstall FreeFlight 7 later, remember to back up all your device FreeFlight 7 media, as they will be deleted with the application.

Resetting ANAFI Ai

Resetting ANAFI Ai reverts the drone back to its latest firmware update: it cleans all media, logs and credentials from the drone. For this reason, remember to back up all your "Drone memory" FreeFlight 7 media before resetting ANAFI Ai.

To reset ANAFI Ai, press and hold the drone's power button for approximately 10 seconds, until one of the LED flashes in red, then release the button immediately.

The drone reboots. The reset is successful.

The same procedure can be carried out through the "Reset" button of ANAFI Ai's page, in FreeFlight 7.
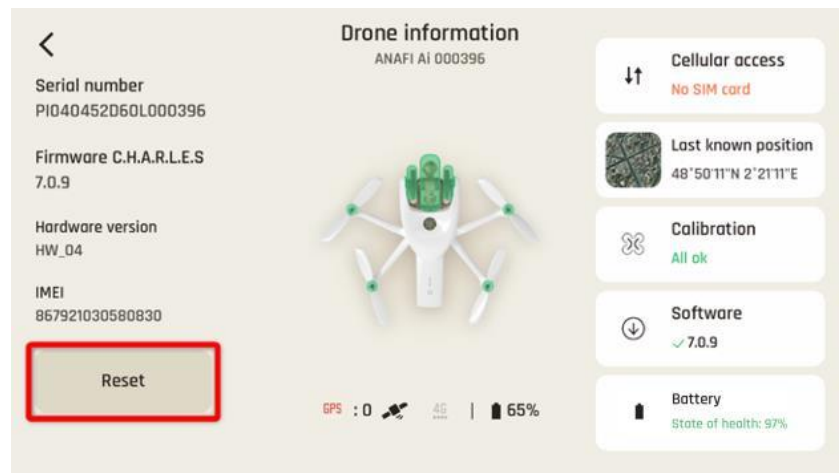
FreeFlight 7: Position of the reset button on the ANAFI Ai page

Turn-off ANAFI Ai

Press the power button of ANAFI Ai and hold it for approximately 3 seconds (until all the battery's LEDs light off) to turn it off.

Some visual indications can help you to determine if your ANAFI Ai does not turn-off:

1. Battery's LED status: whether they are light on or not
2. If the gimbal is stabilized, it proves that the ANAFI Ai is still turn-on.
3. The top-central fan is running
4. The lateral LEDs are still blinking

A solution to be sure that the ANAFI Ai is well switched-off is to remove the battery from the body of the drone (before, check that the drone is safe landed on the ground, without any running propeller).

Resetting the Skycontroller 4

Resetting the Skycontroller 4 reverts the controller back to its latest firmware update: it cleans all logs and credentials, and restores the original ecosystem's Wi-Fi SSID and password.

• To reset the Skycontroller 4, make sure no drone is connected to the controller, or the drone will initiate a take-off sequence.

Press and hold the controller's Take-off/Landing, Optics reset and Media recording buttons for 15 seconds, then release the 3 buttons – note that the LED starts flashing after 10 seconds, but hold the buttons for 5 seconds more.

The Skycontroller 4 reboots. The reset is successful.

The same procedure can be carried out safely, even with a drone connected, through the "Reset" button of the Skycontroller 4 page, in FreeFlight **7**.
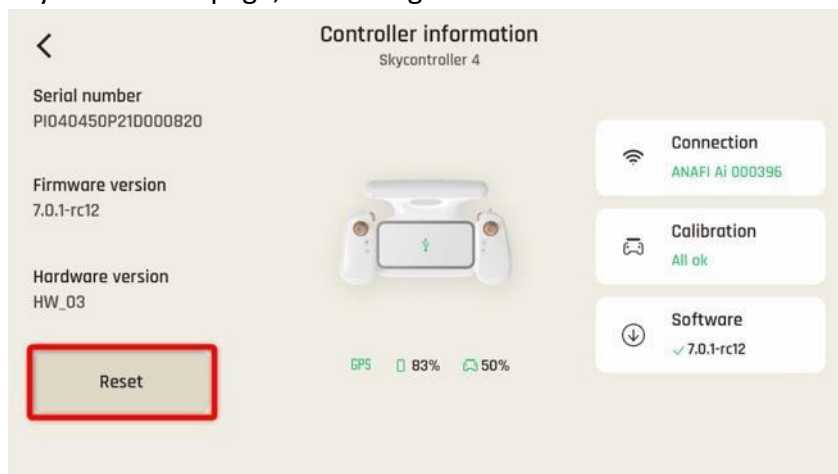
FreeFlight 7: Position of the reset button on the Skycontroller 4 page

Resetting the smart battery (reminder)

If the behavior of your battery is not consistent with the elements contained in the "SMART LIPO BATTERY" section of this guide, and if you cannot get it to power your ANAFI Ai, you must reset your battery: plug it to a power source with one of the enclosed cables, then keep the battery's power button pressed for 15 seconds (regardless of the behavior of the LEDs), and release the button.

The battery's LEDs flash quickly, one after the other, alternating green and red: the reset is successful.

To guarantee lasting best performance, Parrot recommends replacing smart batteries after 300 charge/discharge cycles.

Recover ANAFI Ai

In case of worrying situation, please follow the next steps:

1. Press the RTH button on the Parrot Skycontroller 4.
2. If it doesn't work, attempt to issue an Automatic landing by pressing the Take-off/Landing button on the Parrot Skycontroller 4.
3. Try to locate the ANAFI Ai position.
4. Check this unlikely event won't cause a subsequent hazardous situation(s) based on its last know position.
5. If there is a reasonable expectation that the loss of control will cause injury to a person, please contact the emergency services.

Worrying situation might result to a non-respect of the normal utilization of the ANAFI Ai. Please read and respect the operational requirements describe in the checklist appendix 1.

4G connectivity issue

4G connectivity issue can be caused by one of the following possibilities:

- There is no SIM card in the drone
- You did not enter the SIM card code of the drone
- Drone's 4G connectivity is not activated
- Your mobile has no internet access
- The 4G connection is not established

In these cases, FreeFlight 7 connectivity interface informs the origin of the issue.

Ortherwise, the interface displays the "ask for support 4G" option.

If you press the button, a dialogue box appear. You need to fill the following information:

- Name of your phone's SIM card provider
- Mobile number or email address
- Country
- Type of connection (Wi-Fi/4G)
- Have you ever successfully connected FreeFlight 7 to the drone in 4G?

Once validated, you need to accept to share your data with Parrot.

The App then helps you to easily create a ticket for our technical team. Parrot will then contact you to solve your problem.
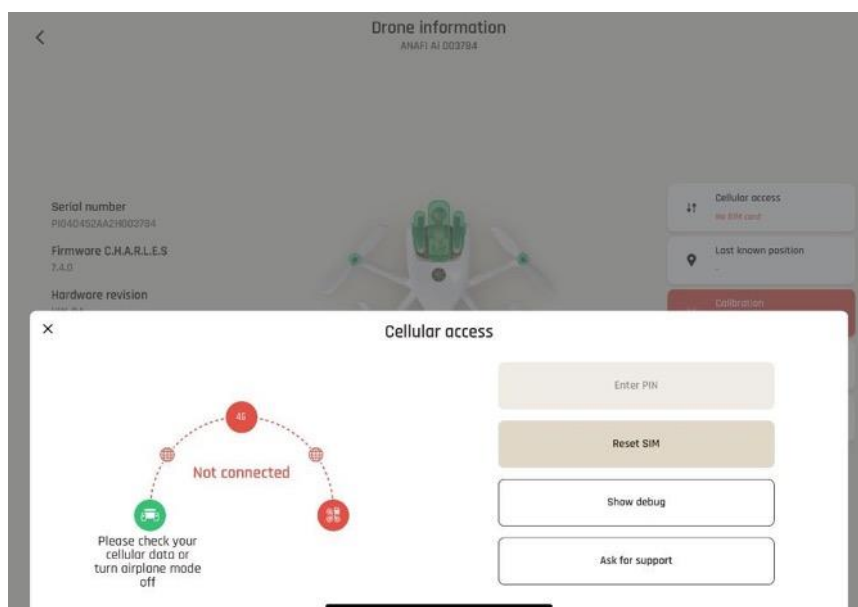
FreeFlight 7: Connexion error

FreeFlight 7: "Ask for support"

End of the drone service life

- Please, refers to the flight safety guide manual provided inside the packaging to find complementary information on how to recycle this product.

The propeller blades and the give box are made of plastic, they can be disposed in the recycle bin.

All the electronical devices (ANAFI Ai, Parrot Skycontroller 4, smart battery) must be brought back to a collection point (e.g. stores, recycling center) to be recycled. It is indicated by the following logos:

Appendix 1: Operational Checklist

Update & calibration

Device...UPDATED
FreeFlight 7 ....UPDATED
Parrot Skycontroller 4 ....UPDATED
Anafi Ai ....UPDATED

Magneto calibration ....OK
Parrot Skycontroller 4 calibration..........................OK
Gimbal calibration...OK
Horizon calibration (exceptional) ....OK
Obstacle avoidance calibration..................................OK

Parrot Skycontroller 4 & Anafi Ai OFF

Arms..unfolded, locked
Arms mechanical lash ....NONE
Lens cap...OFF
Visual check drone and gimbal ....OK
Check propellers ....intact, free, fully screwed
Check Parrot Skycontroller 4 ....OK, 100% charged
Check terminal to Parrot Skycontroller 4 cable.......OK
Anafi Ai's battery ....intact, lock, charged
Device battery...OK, charged
MicroSD card...inserted, with enough memory available

Parrot Skycontroller 4 & Anafi Ai ON

Parrot Skycontroller 4 ....flashing light to dark blue LED
Anafi Ai..ON, gimbal OK
Device...ON, Wi-Fi OFF
Device / C2 link...FreeFlight 7 launched, image feed OK
RTH parameters ....set
Max altitude..set
Max distance...set
Image setting ....OK
Global reactivity ....set
Vertical speed ....set
Rotation speed ....set

Before Take-off

Device GPS .... signal Red / Green
Flight mode .... MANUAL
Weather .... checked and OK
TO Zone .... clear
Drone status.. checked
Take-off/Land command .... Take Off

After Take-off

Precise Home Set .... OK
Check flight commands... OK
Check gimbal .... OK
Video feed... OK
Video latency .... OK
Drone status .... Check

Before landing

Flight mode .... MANUAL
Weather .... OK
Landing Zone... Clear
Drone status .... Check
Take-off/Land command .... Land

After landing

Check engines off.. OFF
Drone status .... Check
Arms mechanical lash .... NONE
Visual check drone and gimbal .... OK
Check propellers... intact, free, fully screwed
Battery.. intact, OFF
Lens cap .... ON
Anafi Ai's battery .... Disengaged, stored
Micro SD card.. Stored away
Cables.. Stored away

If you have feedback or comments about the v7.5.0.0 of this guide, please reach out to:

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