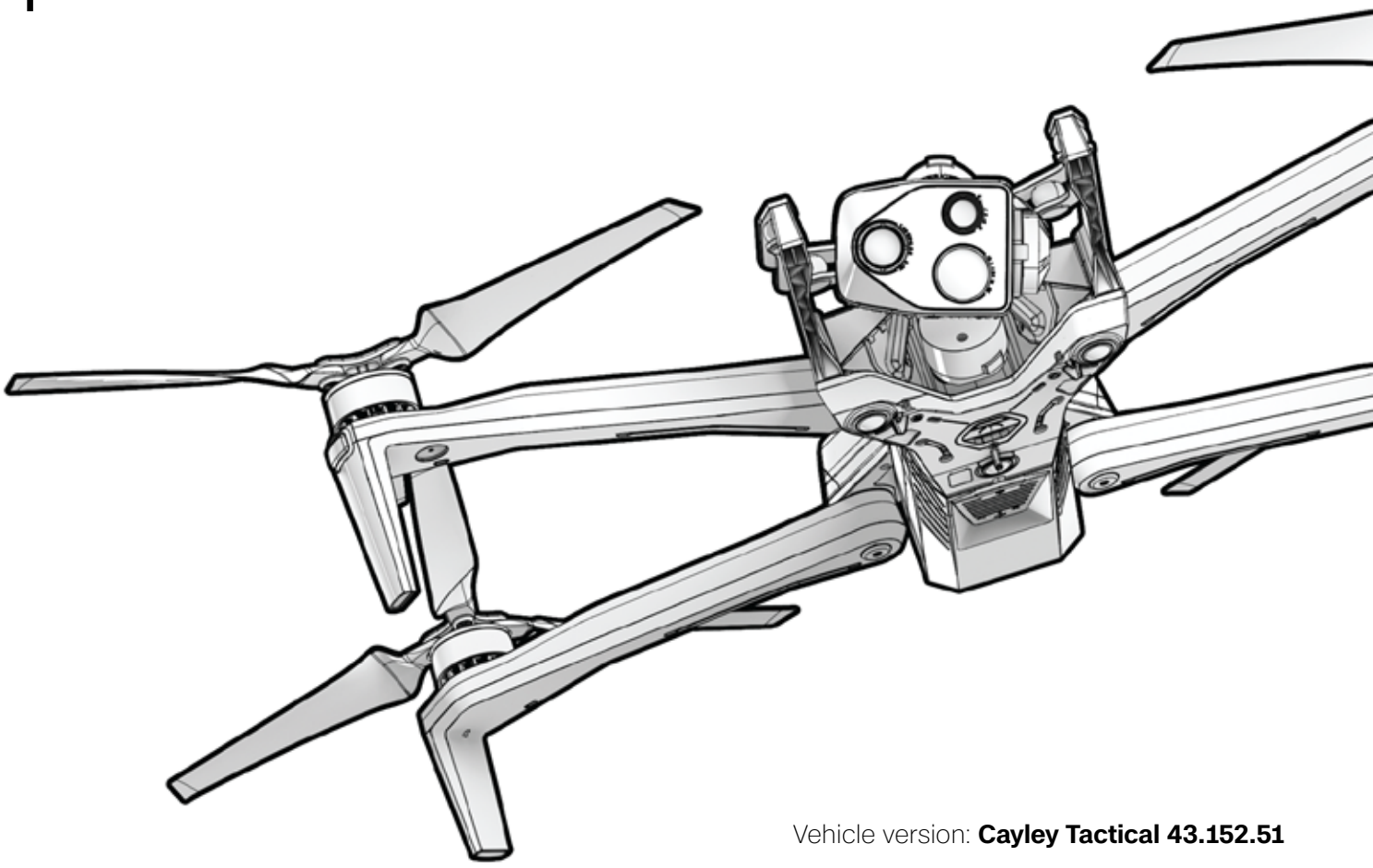
Skydio

Skydio X10D ATO / INTL

Operator Manual



Vehicle version: **Cayley Tactical 43.152.51**

Controller version: **46.46.60**

Updated: **September 10, 2026**

ATO Approval Date: **9/10/2026**

WARNING: *Please read all of the Safety Guidelines for your specific drone before your first flight. Failure to follow these Safety Guidelines could result in serious bodily injury to yourself or others and/or total loss of your Skydio product. Failure to follow these Safety Guidelines may also lead to damaged property, and will void any applicable warranty coverage under the Skydio Limited Warranty. : www.skydio.com/safety.*

Change Log

Date	Summary of Changes
25-Mar-24	Initial software release — vehicle 31.6.121 / controller 31.6.88 (All)
11-Jun-24	Software release — vehicle 34.1.114 / controller 34.1.79 (Cover)
	Low Light selection replaces the GPS Only toggle (p. 51)
	NightSense information added (p. 109)
	Action wheel information added (p. 47)
	Deleted vision return as a selection option (p. 55)
27-Jun-24	Software release — vehicle 34.1.125 / controller 34.1.81 (Cover)
14-Aug-24	Bug-fix software release — vehicle 34.1.140 / controller 34.1.86 (Cover)
22-Oct-24	Software release — vehicle 37.1.182 / controller 37.1.159 (Cover)
	Updated QR codes (p. c)
	WiFi-enabled controller information (p. 31)
	Added Radio Frequency to telemetry bar (p. 63)
2-Jan-25	Added Low Light launch height (p. 121)
19-Feb-25	Software release — vehicle 37.7.6 / controller 37.7.1 (Cover)
24-Apr-25	Gate screen image (p. 35)
	Flight Control Screen image (p. 44)
	Weak GPS altitude limit updated to 164 ft (pp. 49, 99)
	Attitude Mode image, info, and return behavior (pp. 50, 57)
	Gridlines added (p. 61)
	Camera shutter capture sound (p. 79)
	Launch clearance / Low Launch (p. 97)
	Updated fly screen (p. 101)
	Battery indicator update (p. 102)
	Navigation indicator update (p. 103)
	Offloading screen captures (p. 132)
	Return in Attitude Mode (p. 144)
	Export logs (p. 151)
29-May-25	Software release — vehicle 39.237 / controller 39.186 (Cover)
	Updated light information (p. 58)
	Added battery specs (p. 161)
25-Jun-25	Software release for controller 39.187.1 (Cover)
27-Aug-25	Software release — vehicle 39.301 / controller 39.257 (Cover)
	Software update instructions updated (pp. 28–29)
	Updated button mapping for screenshots and images (pp. 36–37)
	Included Range Limits Geofence and Slow Mode (p. 49)

Change Log

	ADS-B added (p. 55)
	Added Attitude Mode image (p. 57)
	Updated ATAK images (p. 59)
	Added gridline images (p. 61)
	Additional telemetry items (p. 62)
	Addition of the Sound menu (p. 67)
	Updated skills info and images (p. 106)
7-Oct-25	Software release — vehicle 39.327 / controller 39.264 (Cover)
8-Dec-25	Software release — vehicle 39.328.17 / controller 39.328.4 (Cover)
	Additional Low Battery information added (pp. 140–142)
3-Feb-26	Map menu update (p. 31)
	Lighting menu update (pp. 57, 66)
	Sharing menu update (p. 58)
6-Mar-26	Controller software release 44.6.49 (Cover)
24-Mar-26	Software release — vehicle 43.147.56 / controller 44.79.19 (Cover)
	Vehicle icing detection (p. 33)
	Backtracking Return (p. 53)
23-Apr-26	Hotfix release — vehicle 43.147.74 / controller 44.79.19 (Cover)
12-May-26	Hotfix release — vehicle 43.147.79 (Cover)
21-May-26	Hotfix release — vehicle 43.147.80 (Cover)
1-Jul-26	Cayley Tactical Release 43.152.32 (Cover)
3-Aug-26	Complete refresh (All)
10-Sept-26	Hotfix release — vehicle 43.152.51 / controller 46.46.60 (Cover)

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Scan the QR codes to view more information about flying with Skydio X10D.

Getting Started with Skydio X10D

Flying with Skydio X10

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Skydio X10D Maintenance

Skydio X10D Safety and Operating Guide

Skydio Legal

For legal, warranty and intellectual property information, visit: *www.skydio.com/legal*

If you need assistance, please reach out to FedSupport@skydio.us

System Description

Skydio X10D is the offline variant of the Skydio X10, designed for public-safety, civil-government, defense, and national-security missions in disconnected or communications-constrained environments. It shares the X10 airframe, sensor packages, attachments, onboard autonomy, and controller running Skydio Flight Deck. X10D does not require network or cloud connectivity, enabling secure offline operation and local mission-data management. Its encrypted multiband radio provides frequency diversity and extended range in lower-frequency bands. As an open, modular platform, X10D supports additional payloads and integration with tactical networks, third-party radios, controllers, ground-control systems, and mission applications. RAS-A compliance and the MAVLink protocol enable manual vehicle control, autonomous missions, camera and payload control, vehicle-specific skills, and radio-link and pairing configuration.

The system is comprised of:

Air vehicle: A foldable quad-rotor with onboard processing. Six navigation cameras provide true 360-degree environmental awareness and obstacle avoidance. Performance includes up to approximately 40 minutes of flight, a 45 mph maximum speed, IP55 weather resistance, and operation up to a 15,000-foot density altitude.

EO/IR sensing: Stabilized sensor packages combine wide, narrow or telephoto visible-light cameras with a 640 × 512 FLIR Boson+ thermal imager. The system can therefore perform close inspection, long-range observation, low-light operations, thermal search, and target-area documentation.

Autonomy: Onboard visual navigation supports positioning, stabilization, obstacle avoidance and autonomous mission execution. Operators can fly manually or use workflows such as waypoints, automated imaging and other flight skills; responsibility for route and airspace safety remains with the pilot.

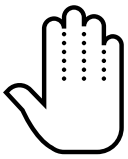
Ground-control segment: The handheld Skydio Controller runs Flight Deck and provides mission planning, aircraft and payload control, live video and telemetry. It has a high-brightness display, HDMI and USB-C outputs, and approximately five hours of operating time.

Communications: X10D is available in SkydioLink (SL) and MH multiband radio configurations. MH provides frequency diversity and supports RAS-A/MAVLink-based integration with third-party controllers, radios, ground-control applications and mission systems. Supported interfaces include flight plans, commands, camera and gimbal control, telemetry and vehicle parameters.

Security and disconnected operations: The aircraft can operate without external network access. Published protections include AES-256 datalink encryption, encrypted internal and removable storage, secure pairing, hardware-protected keys, trusted or secure boot, and signed secure updates. X10D is NDAA compliant and listed as Blue UAS Select.

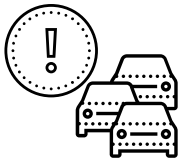
Safety Guidelines

WARNING: *To avoid injury or damage to your drone, read the Skydio X10D Safety Guidelines in the Safety and Operating Guide.*



Keep your fingers away from moving propellers at all times.

Use caution around reflective surfaces (e.g., still water or mirrors) and small obstacles (e.g., thin branches, utility lines, or chain link fencing)



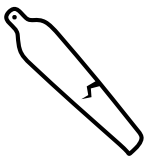
Skydio X10D does not avoid moving objects (e.g., vehicles).

Skydio X10D obstacle avoidance can be impaired when in low light and poor visibility when flying without NightSense. Fly with extreme caution under these conditions.

Before flying over water, ensure your drone has a strong GPS signal. Launch and land over a dry surface.

Skydio X10D is IP55 rated and able to fly in light to moderate precipitation with obstacle avoidance disabled. Skydio X10D Controller is IP54 rated.

Clean all of the cameras before each flight so Skydio X10D can see clearly.



Check your propeller blades for damage before each flight.

Follow all civil aviation authority regulations, as well as all local, state, and federal laws.

Warnings

- Maintain a distance of at least 10 ft (3 m) between the drone and emitters (including cell towers) to reduce the risk of electromagnetic interference (EMI). EMI may lead to camera failures, potentially impacting situational awareness of the operator. Disruptions to both controlled and autonomous flight may lead to a total loss of the vehicle and pose a risk of serious bodily injury.
- Skydio X10D's magnetic battery retention may attract metallic debris and disrupt the battery connection. Inspect the battery pins and bay for damage or debris. Confirm the battery is fully seated before launch. Do not use batteries that are damaged.
- Do not attempt to hand catch the X10D before obstacle avoidance is automatically disabled during landing. The drone may attempt to avoid your hand, causing injury or damage.
- Propeller blades are sharp. Handle them with extreme caution, especially while they are spinning.
- Do not stare directly into the VT300-L sensor package flashlight for an extended period.
- Never fly under the influence of drugs or alcohol.
- The X10D may not detect thin or visually challenging obstacles, including: Thin branches, Telephone or power lines, Ropes, Netting, Wires, Chain-link fencing, Objects less than 0.5 in (1.3 cm) in diameter
- Do not operate directly over people or vehicles without complying with applicable regulations and obtaining required Certificates of Waiver or Authorization.
- Never fly near or interfere with crewed aircraft operations.
- The X10D is shipped in 2.4 GHz Max Power mode. Adjust the power level as required to prevent unauthorized operation in certain regions.
- Configure Lost Connection Return Behaviors before flying.
- Obstacle avoidance is disabled below 10 ft (3 m) during landing, do not touch spinning propellers.
- Do not hand launch or hand land with NightSense due to potential burn and eye-damage risks.
- Do not hand launch or hand land: During windy conditions, At night, In extreme environmental conditions.
- Do not grab or catch the drone without initiating a landing. The motors will continue spinning at full speed.
- Do not attempt to hand land until the lights turn yellow, indicating obstacle avoidance is disabled.
- After prolonged VT300-L flashlight use, allow the sensor package to cool before handling to avoid burns.
- Flight Termination will cause the drone to crash. Use it only in extreme emergencies.
- Replace propellers immediately if they have: Hairline cracks, Large breaks, Bends.
- Do not submerge the drone or batteries or place them under running water.
- After prolonged use of the NightSense attachments, they may be hot to the touch.
- Do not stare directly into your NightSense modules at close range. NightSense attachments.
- Due to potential burn risk and eye damage, do not Hand Landing while using NightSense.

Caution

- Do not stow the X10D while wet. Complete all required postflight drying procedures first.
- Use extreme caution around moving obstacles, including: Aircraft, Vehicles, Animals.
- The X10D chassis and metal frame may become hot in direct sunlight, high-temperature environments, or after remaining powered on while on the ground.
- Obstacle avoidance may be degraded around: Transparent surfaces, Reflective surfaces, Windows, Mirrors, Still water wider than 23 in (58 cm)
- Use only Skydio-provided power supplies and cables with the Dual Charger.
- The controller password cannot be recovered or reset. Record it and store it securely.
- Store the assigned Encryption Key with the X10D. Pairing another key will overwrite the original pairing and erase previously captured media.
- Obstacle avoidance is not available in Attitude Mode.

Regulations

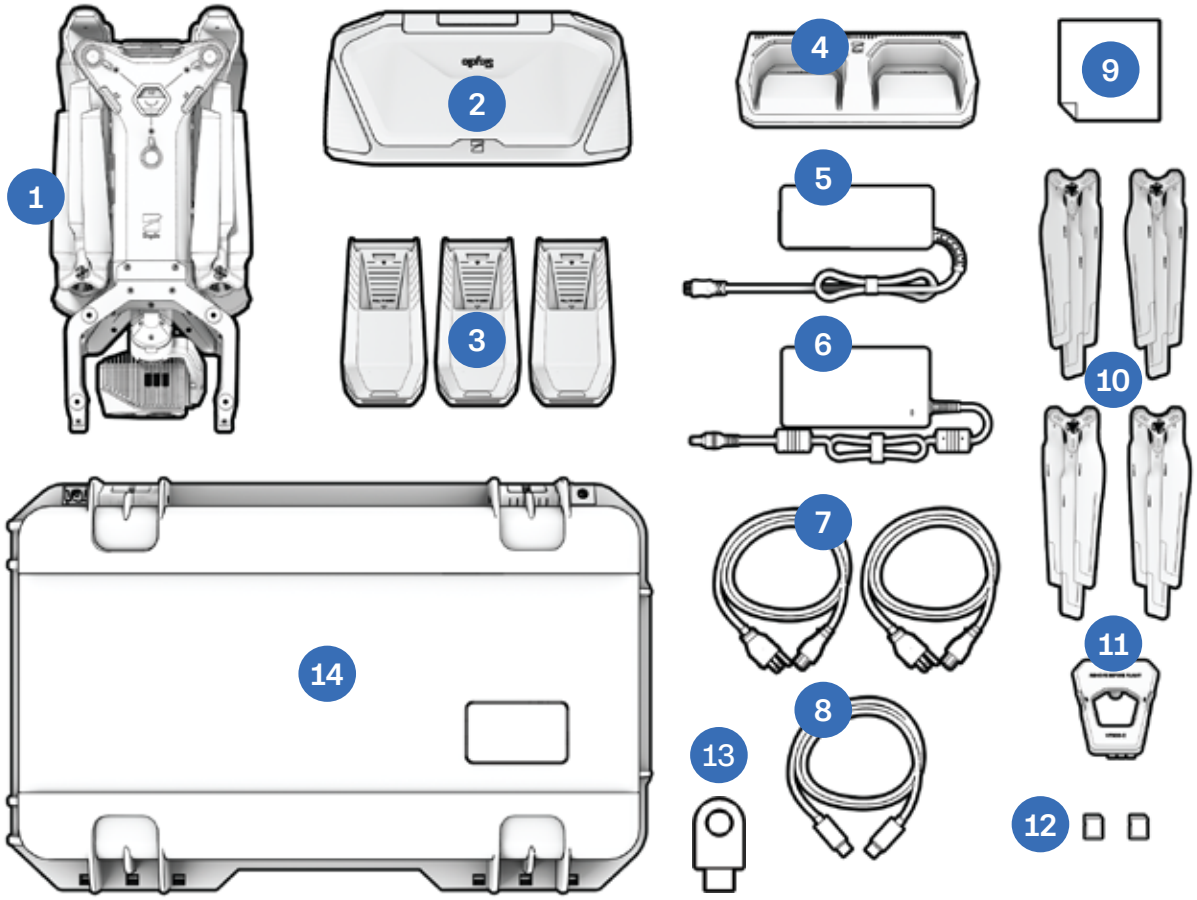
- The pilot in command (PIC) is solely responsible for managing altitude, range, and battery level and b) following all civil aviation authority regulations, as well as all local, state, and federal laws.
- The pilot in command (PIC) is solely responsible for following all civil aviation authority regulations, as well as all local, state, and federal laws.
- Always follow FAA and country-specific civil aviation authority regulations, as well as local, state, and federal laws and regulations when operating your Skydio X10D.
- Download the FAA Drone Safety Guide (if located in the United States).
- Check resources including but not limited to knowbeforeyoufly.org or apps like B4UFLY for more information.
- Do not fly in an environment where the use of drones is restricted or not authorized.
- **Maintain visual line of sight at all times**, unless you have received express permission to fly beyond visual line of sight from a civil aviation authority such as the FAA.
- Skydio X10D drones sold in the United States are NOT Remote ID-compliant

Getting Started

Review the basic hardware and accessories that come with your drone before your first flight.

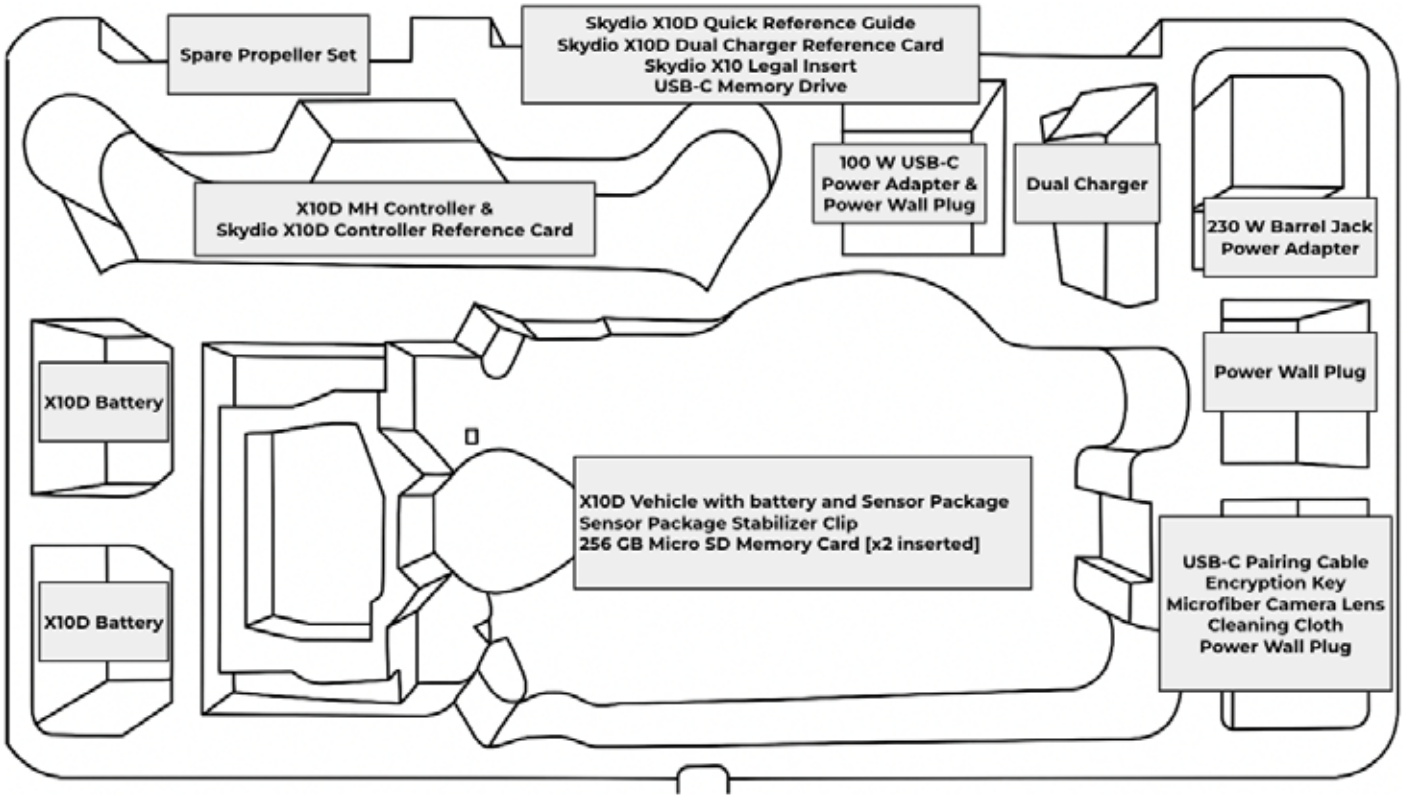
This section covers

Skydio X10D Starter Kit



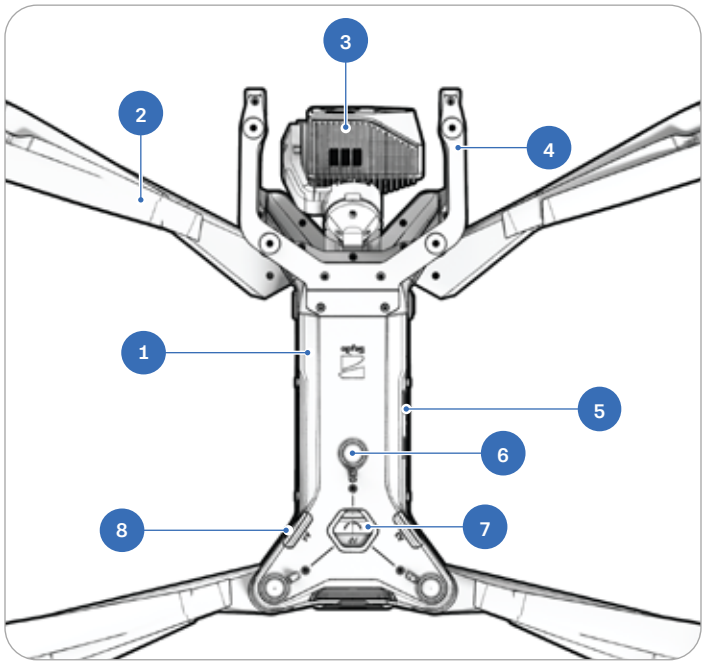
1. Skydio X10D vehicle and sensor package
2. Skydio X10D Controller
3. Batteries (3)
4. Skydio X10D Dual Charger
5. 100 W power supply (USB-C)
6. 230 W power supply (barrel jack)
7. Power cables (2)
8. USB-C to USB-C pairing cable
9. Microfiber cleaning cloth
10. Spare propeller sets (4)
11. Sensor package lock
12. 256 GB microSD cards, pre-installed (2)
13. Encryption Key
14. Transport Case

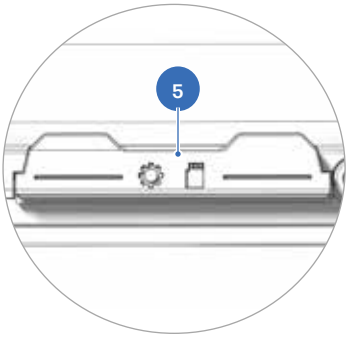
X10D Starter Kit Case Layout

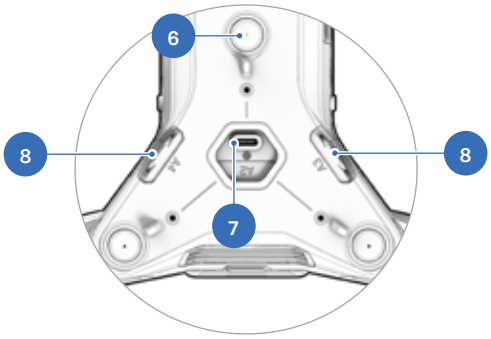


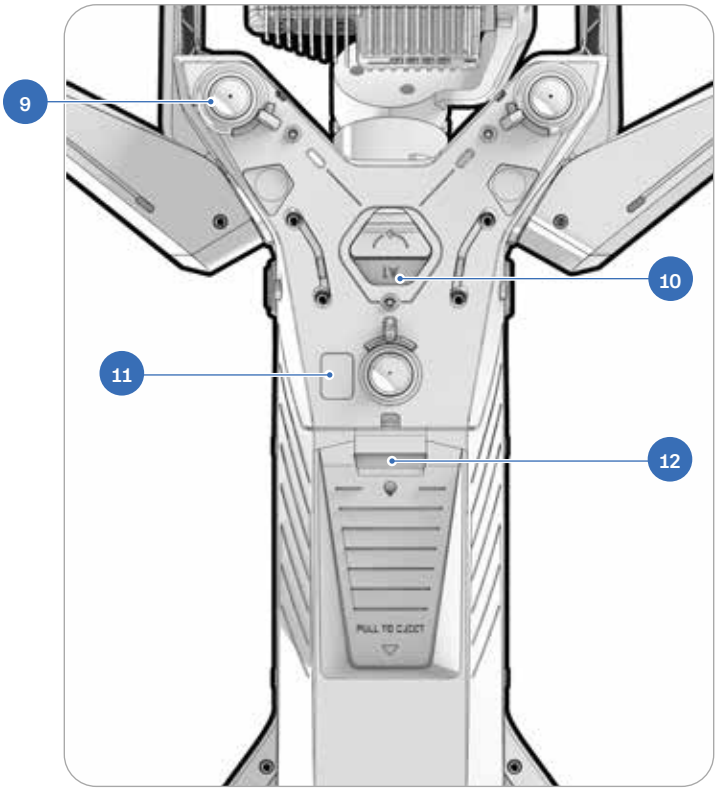
X10D Vehicle Hardware

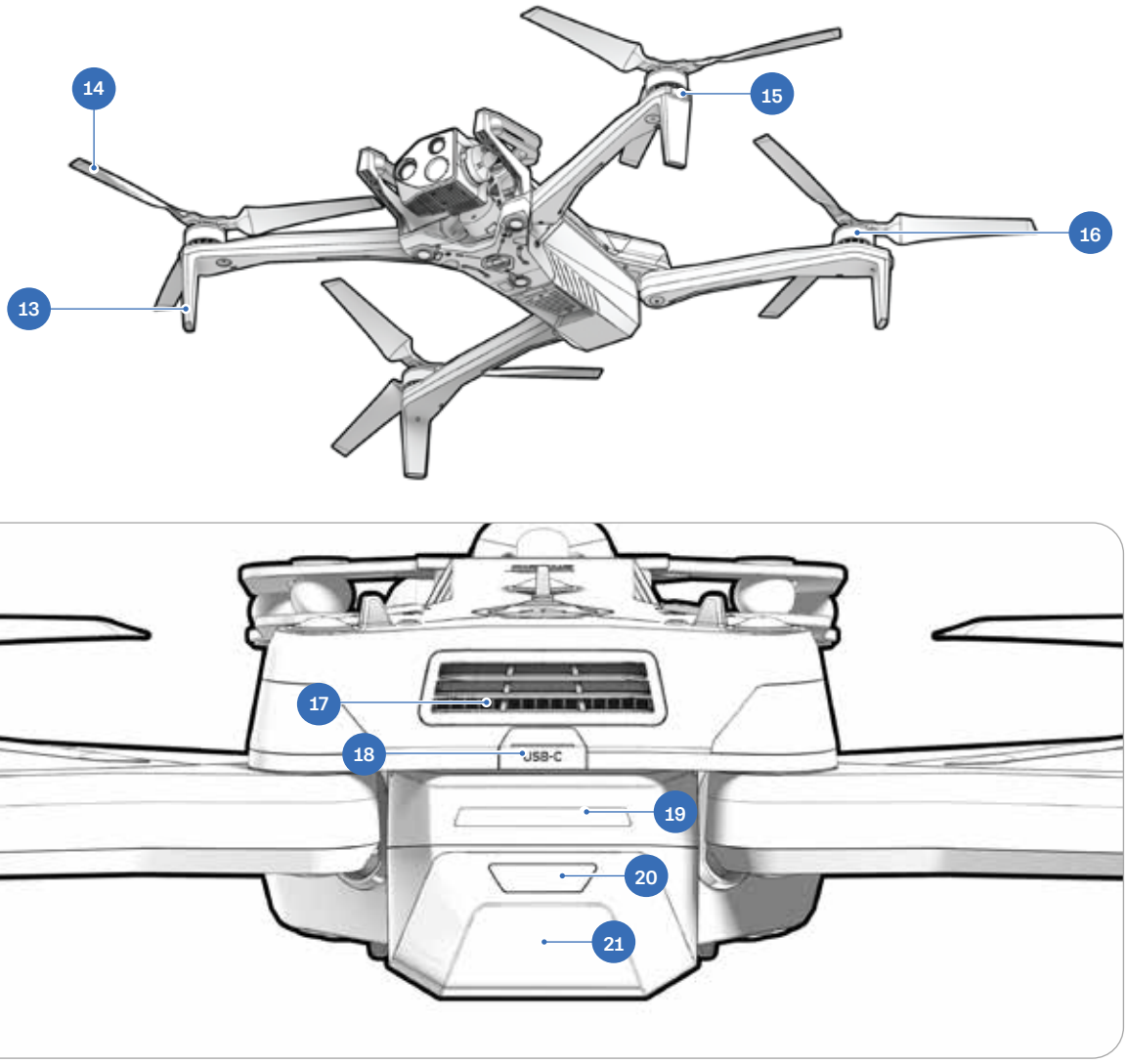
1. Chassis
2. Arm (4)
3. Sensor package
4. Sensor package frame
5. Log and Media card slots (2)
6. Top navigation cameras (3)
7. Top attachment bay (A2)
8. Side attachment bay (A3, A4)
9. Bottom navigation cameras (3)
10. Bottom attachment bay (A1)
11. Time of flight sensor
12. Parachute strap location (optional attachment)











13. Landing feet/antennas

14. Propeller blades

15. RGB/strobe lights

16. Propeller motors

17. Cooling fan/outlet

18. USB-C charge port

19. Battery lights

20. Power button

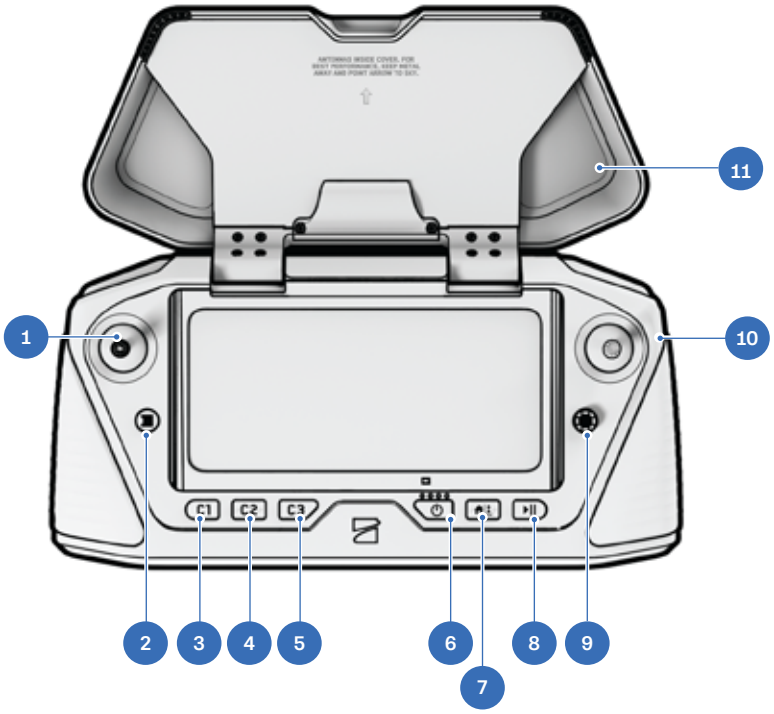
21. Battery

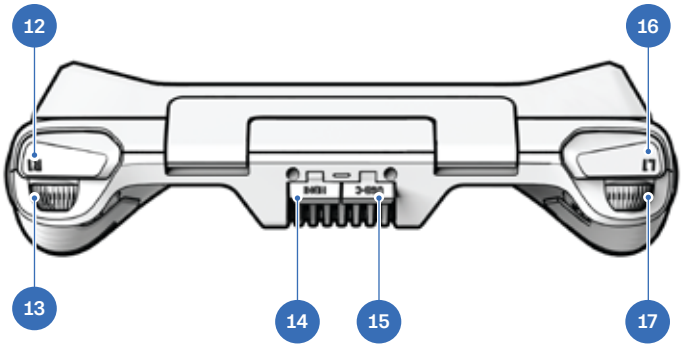
Visit What sensor packages are available for Skydio X10 for more information about the sensor packages available for purchase.

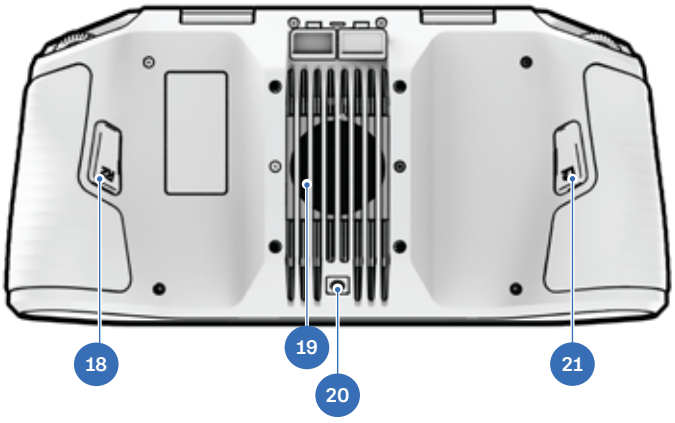
X10D Controller Hardware

1. Left joystick
2. Menu/Back button
3. C1 button[1]
4. C2 button[1]
5. C3 button[1]
6. Power button
7. Launch/Return/Land button
8. Pause button
9. Directional pad (D-pad)
10. Right joystick
11. Controller cover/antennas
12. R1 button (Shutter)
13. Right wheel
14. HDMI port
15. USB-C charge port
16. L1 button (Boost)
17. Left wheel[1]
18. R2 button[1]
19. Cooling fan
20. Neck strap[2] and tripod mount
21. L2 button[1]

[1]*Customizable*
[2]*Neck strap sold separately*







Autonomy Features

With the purchase of Skydio X10D, you have access to a powerful suite of advanced AI-pilot assistance capabilities. Skydio X10D comes equipped with the following software features:

- 360° Obstacle Avoidance
- Attitude Mode
- Crosshair Coordinates
- Low Light Flight
- Manual Flight
- Map Capture
- Motion Planning
- Object/Scene Recognition
- Offline Maps Importing
- Point of Interest Orbit
- Real-time 3D mapping
- Scout
- Skydio Visual Navigation
- Subject Detection
- TAK Integration
- Track in Place (subject tracking)
- Visual Return-to-Home
- Waypoint Missions
- Zoom

Charging Batteries

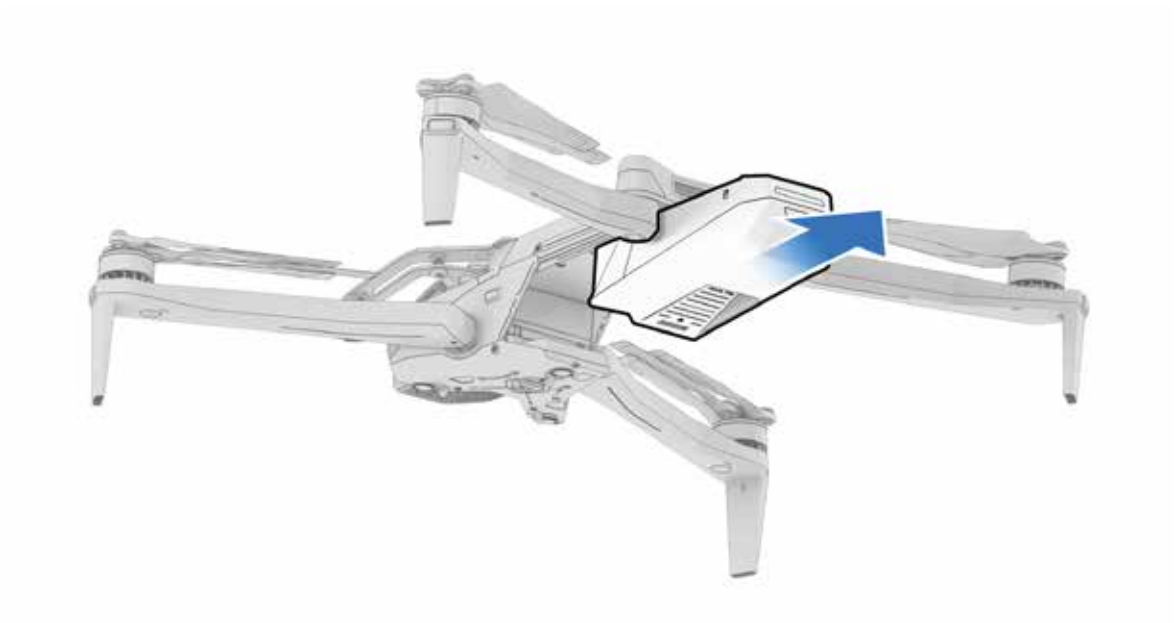
Skydio X10D batteries are shipped in a state of hibernation and will not power on your drone out of the box. Your batteries will automatically exit this state once they begin charging for the first time.

Using the Skydio X10D Dual Charger

The Skydio X10D Dual Charger sequentially charges two batteries. The Dual Charger will prioritize fully charging the battery with the highest charge level. If both batteries are depleted, it will prioritize the battery that is inserted first.

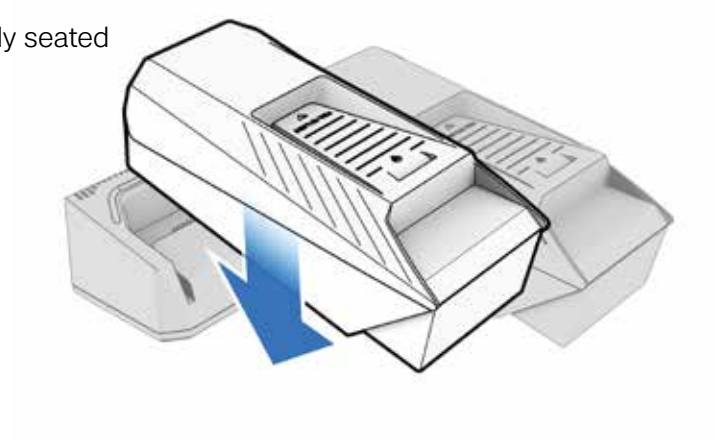
Step 1 - Remove battery from drone

- Firmly grip the drone chassis with one hand
- Grip the battery with your other hand, placing your palm over the power button and wrapping your thumb under the battery
- Using your fingers as leverage, press against the drone until the magnets disengage and slide the battery away from the sensor package



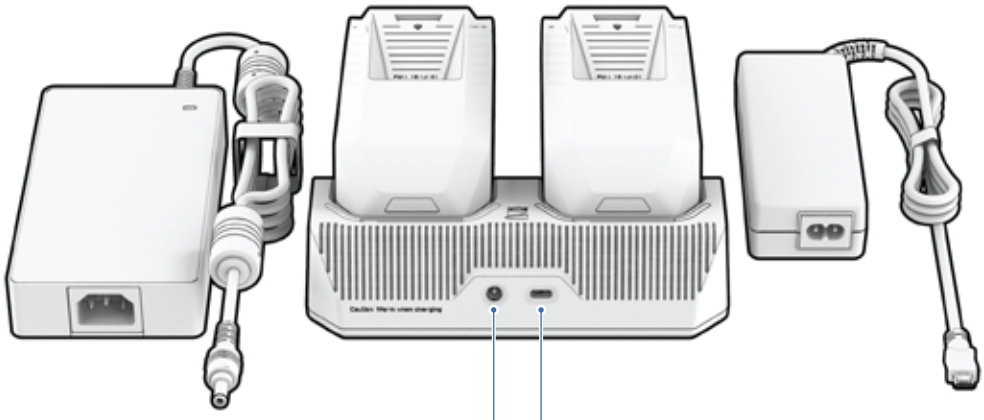
Step 2 - Place batteries into the X10D Dual Charger

- Ensure the battery and connection pins are free of debris and interference
- Gently push down to ensure the batteries are properly seated



Step 3 - Insert the power supply

- Two charging ports are located on the back of the Skydio X10D Dual Charger
- Use either the USB-C 100 W USB-C power supply or the barrel jack 230 W fast power supply
- Plug into a power source



Barrel jack 230 W power supply
20VDC, 11.5A
About 1 hour to charge a depleted battery

USB-C 100 W power supply
5-20VDC, 3A / 20VDC, 5A
About 1 hour 45 minutes to charge a depleted battery

Battery Charge State	Light Behavior
Actively charging	Pulsing blue
Waiting to charge	Solid blue
Charging complete	Solid green

CAUTION: *Third-party adapters and cables are not supported for use on the Dual Charger. Only use the Skydio-provided power supplies and cables to charge the batteries.*

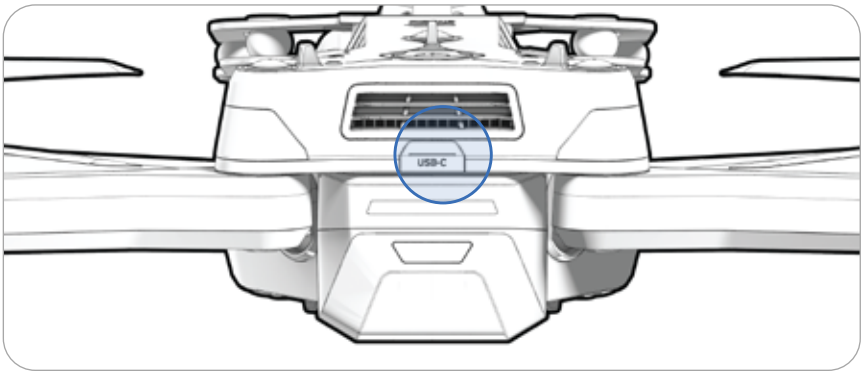
Using the Skydio X10D

Step 1 - Insert battery

- Align the battery with the rails and slide toward the sensor package until the magnets engage

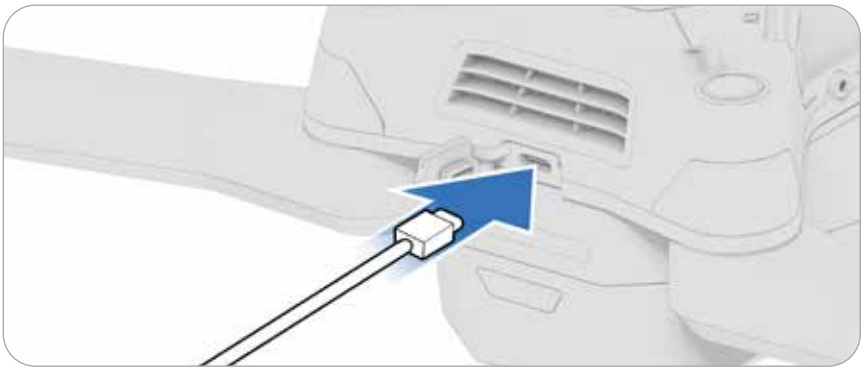
Step 2 - Locate the charging USB-C port

- The charging port is located on the back of the drone above the battery. This is the only USB-C port that supports charging.



Step 3 - Insert the USB-C 100 W power supply

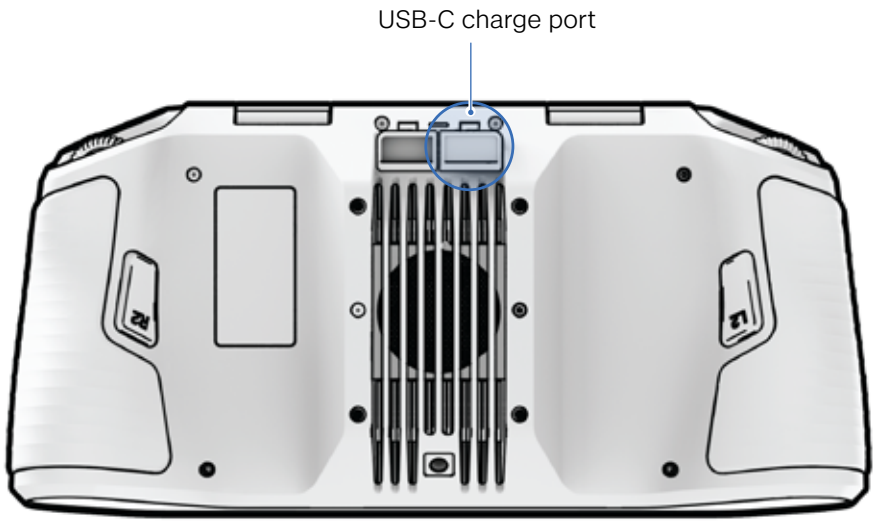
- Plug into a power source.



Charging the X10D Controller

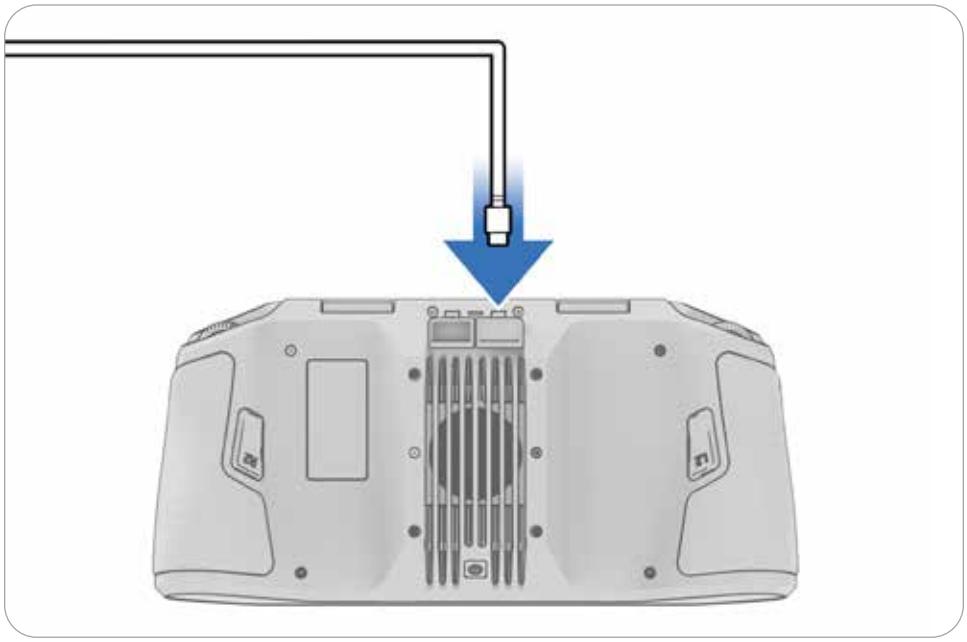
Step 1 - Locate the USB-C port

- The charging port is located on the back of the controller.



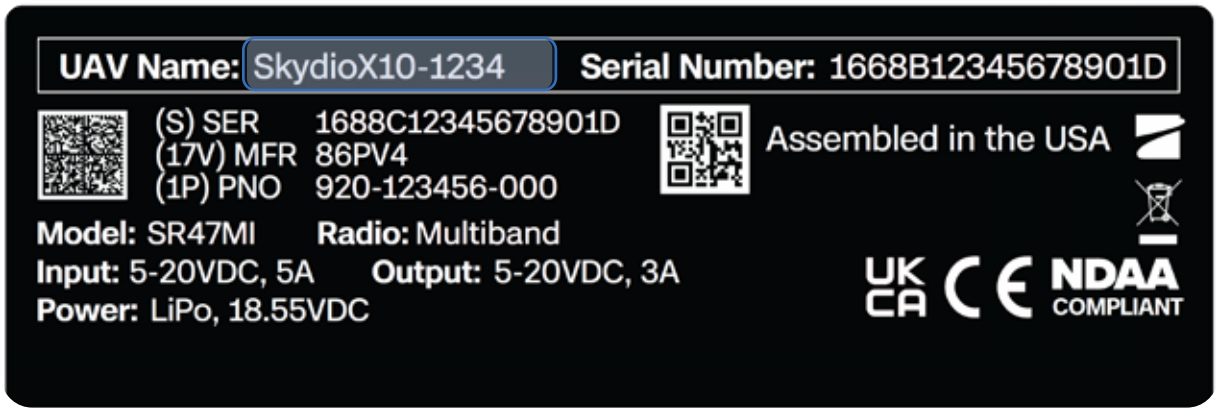
Step 2 - Insert the 100 W power supply

- Connect your Skydio X10D Controller to the 100 W power supply. Plug into a power source. The lights on the front of the controller will turn on and indicate the level of charge.



UAV Name and Battery Serial Number

Skydio X10D UAV Name
This begins with **SkydioX10D** and can be found on the label inside the battery bay of the drone.



Skydio X10D Battery Serial Number is 16-characters and can be found on the battery label.

Preflight

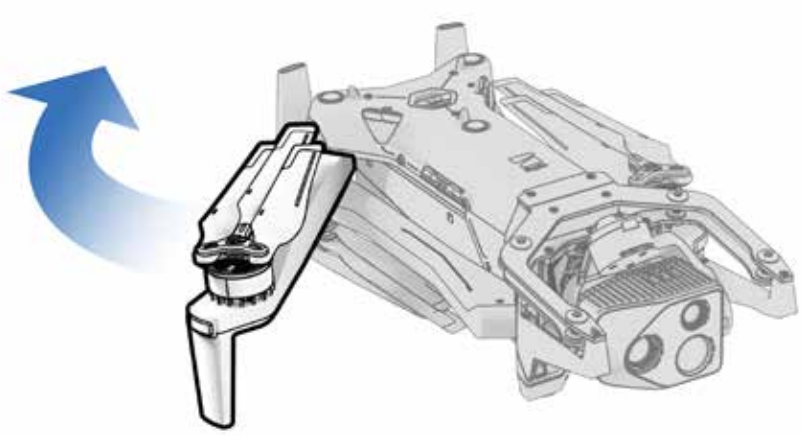
Set up your system before your first flight.

This section covers

Deploy X10D System

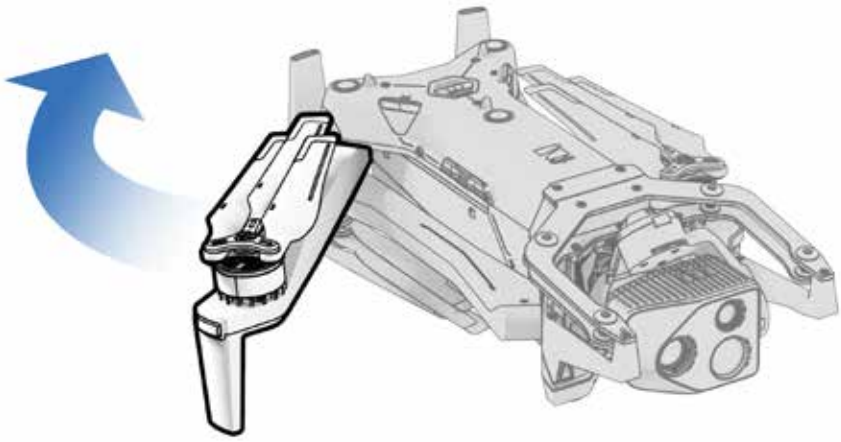
Step 1 - Unfold the rear arms

- Hold the drone with the sensor package facing away from you
- Pull **laterally** away from the chassis until you feel the arm seat into place



Step 2 - Unfold the front arms

- Push **down** and **forward** until you feel the arm seat into place.



Step 3 - Verify and format microSD cards (pre-installed)

- Ensure you have two UHS Speed Class 3 (or faster) microSD cards inserted in the slots on the side of the drone.
- Minimum 256 GB
- Format your cards before flying using **Manage Data** within the **Information** menu (**Global Settings** > **Information** > **Devices** > **Manage Data**)

Logs card
Scan data and records flight logs

Media card
Stores media captured during flight

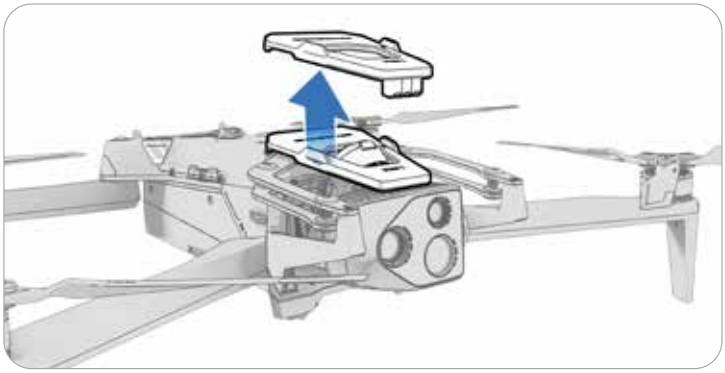
Step 4 - Insert battery

- Align the battery with the rails and slide toward the sensor package until the magnets engage.
- Ensure the battery and rails are free of debris and interference
- Ensure the battery is completely seated before flying

WARNING: *Skydio X10D's magnetic battery retention may attract metallic debris and disrupt the battery connection. Inspect the battery pins and bay for damage or debris. Confirm the battery is fully seated before launch. Do not use batteries that are damaged.*

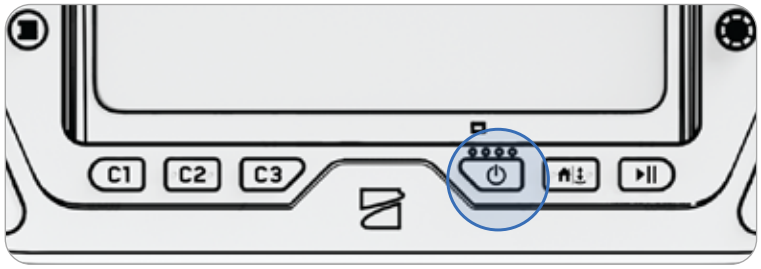
Step 5 - Remove the sensor package lock

- Hold the sensor package and gently pull to remove from the top of your drone
- Save this piece to reattach when storing or transporting



Step 6 - Power on the X10D Controller

- Open the controller lid and hold the Power button for five seconds
- The lights on the front of the controller will turn on and indicate the level of charge



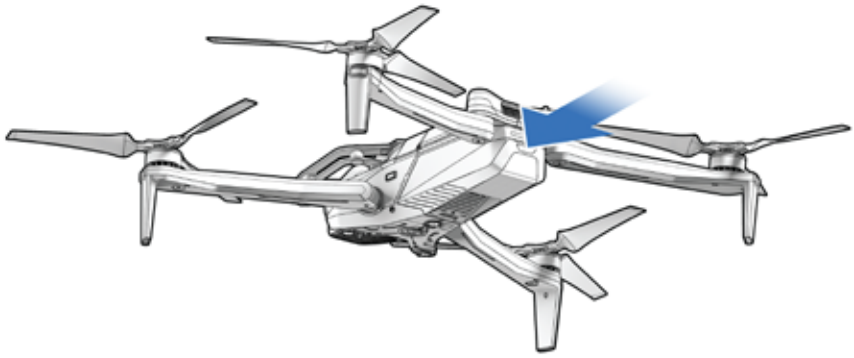
Step 7 - Set up Skydio Flight Deck

- Skydio Flight Deck is the dedicated flight software on your controller
- Create a device password to unlock the controller
- The password will be required to unlock the controller when powering on or waking from a sleep state
- Minimum six characters. Follow your organizations guidelines for password length and complexity

> ***CAUTION:*** *The controller password cannot be recovered or reset. Ensure that your password is entered correctly and is written down and stored in a safe location. If the password is lost, the controller will need to be replaced.*

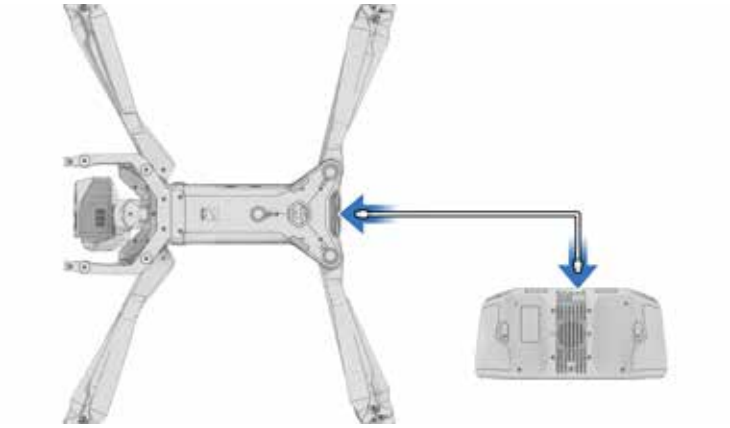
Step 8 - Power on Skydio X10D

- Press and hold the Power button on the battery for three seconds
- The lights on the drone arms will turn blue as X10D powers on



Step 9 - Pair the drone and controller

- Connect the USB-C pairing cable to the drone and controller
- The lights on the drone will turn solid blue and the name of your drone will appear on the screen when pairing is successful
- Once paired, the drone and controller will automatically connect before future flights.



Updating the X10D System

Updates from Skydio contain essential enhancements and fixes designed to improve performance and optimize flight controls and features for operating your Skydio X10D drone, controller, and dual charger. **You will need:**

- Computer with an Internet connection
- USB-C memory drive authorized by command or IT Security and formatted to exFAT
- The media SD card from your X10D drone (optional)
- .zip containing the offline_ota folder with the X10D vehicle update
- .tar file Controller update

Update your Skydio X10D Controller:

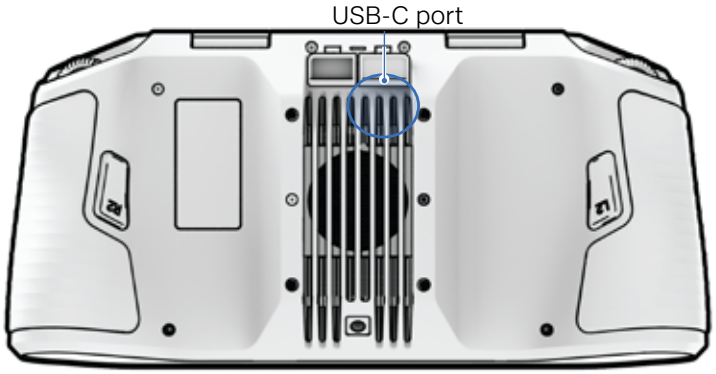
Step 1 - Insert the USB-C drive into your computer

Step 2 - Copy the .tar file to the root level of your USB-C drive and safely eject

Step 3 - Power on the controller

Step 4 - Insert the USB-C drive into the port on the back of the controller

- Select the Global Settings and Information menu
- Select Controller Update and Select Update



Step 5 - Navigate to the memory drive root folder

Step 6 - Select My Files

- Select USB Storage 1 and the Controller Flashpack.Tar file and Done
- The update will begin, and your controller may restart multiple times
- Remove the memory drive when the update is complete

To update your Skydio X10D using a USB-C memory drive

Step 1 - Insert the USB-C memory drive into your computer

Step 2 - Extract the .zip offline_ota folder

Step 3 - Copy the folder to the root level of the USB-C memory drive

- Ensure the USB-C memory drive contains only the offline_ota folder. If multiple update folders are present, the drone may not install the update correctly.

Step 4 - Insert the USB-C memory drive into the rear USB-C port on the drone

- The update will begin automatically
- The update status is reflected in the light feedback
- The process may take several minutes

To update your Skydio X10D using the media SD card

Step 1 - Eject the Media SD card from your X10D

Step 2 - Insert the Media SD card into your computer (using an adapter if necessary)

Step 3 - Extract the .zip offline_ota folder

Step 4 - Copy the folder to the root level of the media SD card

- Ensure the media SD card contains only the offline_ota folder. If multiple update folders are present, the drone may not install the update correctly.

Step 5 - Insert the Media SD card back into the media port on the drone

- The update will begin automatically
- The update status is reflected in the light feedback
- The process may take several minutes

Update Status	Light Feedback
Initializing	Solid yellow
0-25%	1 arm flashing yellow light
25-50%	1 arm solid yellow / 1 arm flashing yellow
50-75%	2 arms solid yellow / 1 arm flashing yellow
75-100%	3 arms solid yellow / 1 arm flashing yellow
Complete	4 arms solid green light
Error	Flashing red

Visit How to use Skydio ISR Manager to update your X10D for detailed information.

Encryption

An encryption key that enables you to encrypt your media is included with your Skydio X10D. You will need to pair that Encryption Key to your X10D and store it with your vehicle. You can enable and disable the encryption settings in the Skydio X10D Controller Flight Deck. When the media encryption is enabled, all images and videos captured by X10D will be encrypted and hidden in the Media Review tab.

To enable encryption:

Step 1 - Power on and pair the X10D and controller

Step 2 - Insert the Encryption Key

- Into the rear USB-C port on the X10D

Step 3 - Select Global Settings > Information menu > your UAV name

Step 4 - Select Encryption and Enabled

- The Encryption Key lights will begin blinking and a notice will alert you to remove the key

To disable encryption:

Step 1 - Select Global Settings > Information menu > your paired drone

Step 2 - Select Encryption and Disabled

- If Disable Encryption is selected, all media captured will not be securely encrypted. You will be able to review your media in the Media tab.

To Decrypt media to view and transfer to your device:

Step 1 - Insert the Encryption Key into the rear USB-C port on the X10D

- The Encryption Key lights will begin blinking

Step 2 - Remove the Encryption Key when the lights stop blinking

Step 3 - Attach one end of the USB-C cable to the rear USB-C port on the X10D

Step 4 - Attach the other end to your device and import your decrypted media

- Windows OS will recognize X10D as an external hard drive
- Mac OS will utilize the Photos app or Image Capture app to transfer media

CAUTION: *Pairing an Encryption Key assigns the key to that X10D. It is essential that you store the Encryption Key with the X10D. Using a different Encryption Key will overwrite the original pairing, erasing the previously captured media.*

Importing Maps

Upload and view KML, GeoJSON, or GeoPDF files directly to the controller as base and overlay map layers, toggling them on or off at any time during flight. Import and convert these files into the controller's native map engine before use. This enables pilots to participate in federal wildfire and emergency response operations that require standardized GeoPDF and KML layers, and helps inspectors and responders clearly see assets, zones, and restricted areas during missions.

Step 1 - Load your map files onto a USB-C memory drive

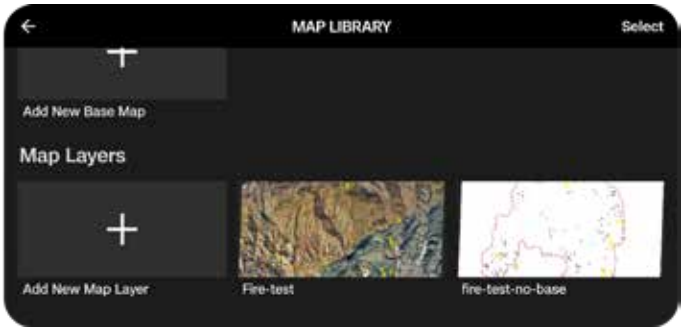
- Ensure that the memory drive is formatted to exFAT
- Insert the USB-C memory drive or adapter into the controller
- Select the Information menu and Import Maps

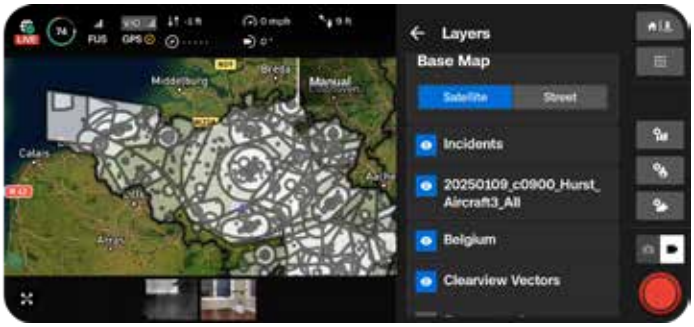
Step 2 - Select the Information menu and Map Library

- Navigate to the storage device
- Select the maps to import

Step 3 - Select Done

- Wait for your maps to import
- Select View Map Library to review your imported maps
- Select Map Layer in flight: From the flight screen, select the Map Menu > Layers > Toggle on/off individual base and overlay map layers.





Set the Skydio X10D controller to Online mode to connect to a WiFi network. Sign in to your organizations admin account, toggle the WiFi on to download maps and to access the controller updates. Toggle off to retain flight security. Visit [How to access the WiFi on your Skydio X10D controller] for detailed information.

Importing Terrain Data

Terrain data regions are now available in the Skydio ISR Manager for download and loading onto the drone media SD card. The X10D will automatically ingest the terrain data it needs from the continent-scale DTED dataset stored on the media SD card. As it plans and executes missions, the aircraft checks its current position and route, loads the relevant DTED tiles, and maintains a rolling cache of nearby terrain. X10D automatically imports DTED data within a 10 km radius of the launch site. This provides sufficient terrain coverage for flights up to 10 km without requiring operators to manually manage terrain files. It also helps prevent storage limitations or DTED coverage gaps during a mission.

Required:

- Computer with Internet
- The Media SD card from your X10D vehicle
- USB-C SD card reader inserted into your computer

Step 1 - Navigate to Skydio ISR Manager: https://cloud.skydio.com

Step 2 - Select the ISR Manager menu

Step 3 - Select the Download Terrain Maps tab

Step 4 - Download the operational map region for your area

Step 5 - Unzip the compressed folder

- Do not unzip the individual files

Step 6 - Create a new folder and title it DTED

- Add the downloaded file to the DTED folder

Step 7 - Drag the folder to the Media SD card

Step 8 - Remove the SD card reader from your computer

Step 9 - Insert the media card back into your X10D vehicle

Step 10 - Power on the drone and controller

Step 11 - Select the Media menu to prompt the file transfer to the internal storage

If all files are successfully transferred to the drone:

- The dataset files inside the DTED folder on the SD media card will be gone
- DTED coordinates will display when the Crosshair Coordinates are toggled on

Battery Warming in Cold Environments

For extremely cold environments, the X10D battery features self-warming technology to enable flight within 5 minutes. If the X10D battery is below 32°F (0°C), X10D will be prevented from launching. You will need to pre-warm your batteries before you can launch.

- Battery self-warming is supported down to -4°F (-20°C).
- Skydio X10D will allow launching with reduced performance while continuing to operate the self-warmer until full performance is restored.
- A battery must have at least 30% charge to self-warm.
- A fully charged battery is strongly recommended when flying in cold weather.
- Flight time will be reduced in cold temperatures.
- Minimize aggressive maneuvering in extremely cold environments.

Pre-warm a battery before inserting into the drone:

Step 1 - Triple tap the battery button to begin the self-warming process

- The lights on the battery will turn orange during the self-warming process
- Triple tapping again will end the self-warming process

Step 2 - If the battery is cold enough it will begin self-warming

- When self-warming is complete, the lights on the battery will briefly turn blue and then power off

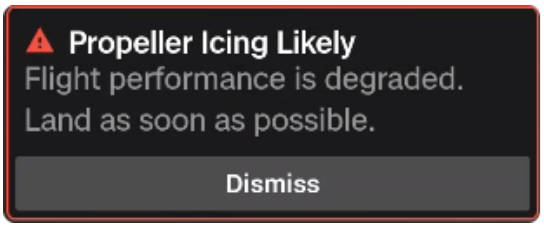
Step 3 - Insert the battery into the drone and power on

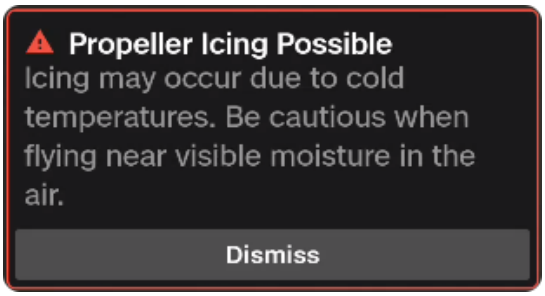
- If the self-warming was still in progress prior to inserting, it will continue while the battery is in the drone
- Launch will become unblocked when the battery is sufficiently warmed for the given state of charge

Icing Detection

Cold, wet conditions can cause ice to form on rotor blades, reducing lift and flight stability. Vehicle Icing Detection is a safety feature that helps prevent incidents during cold and wet conditions by automatically identifying early signs of icing and alerting you before performance is affected.

- Continuously monitors flight performance and detects reduced lift or increased drag that may indicate ice buildup
- Icing alerts may appear in temperatures up to 46°F (8°C)
- Enabled by default





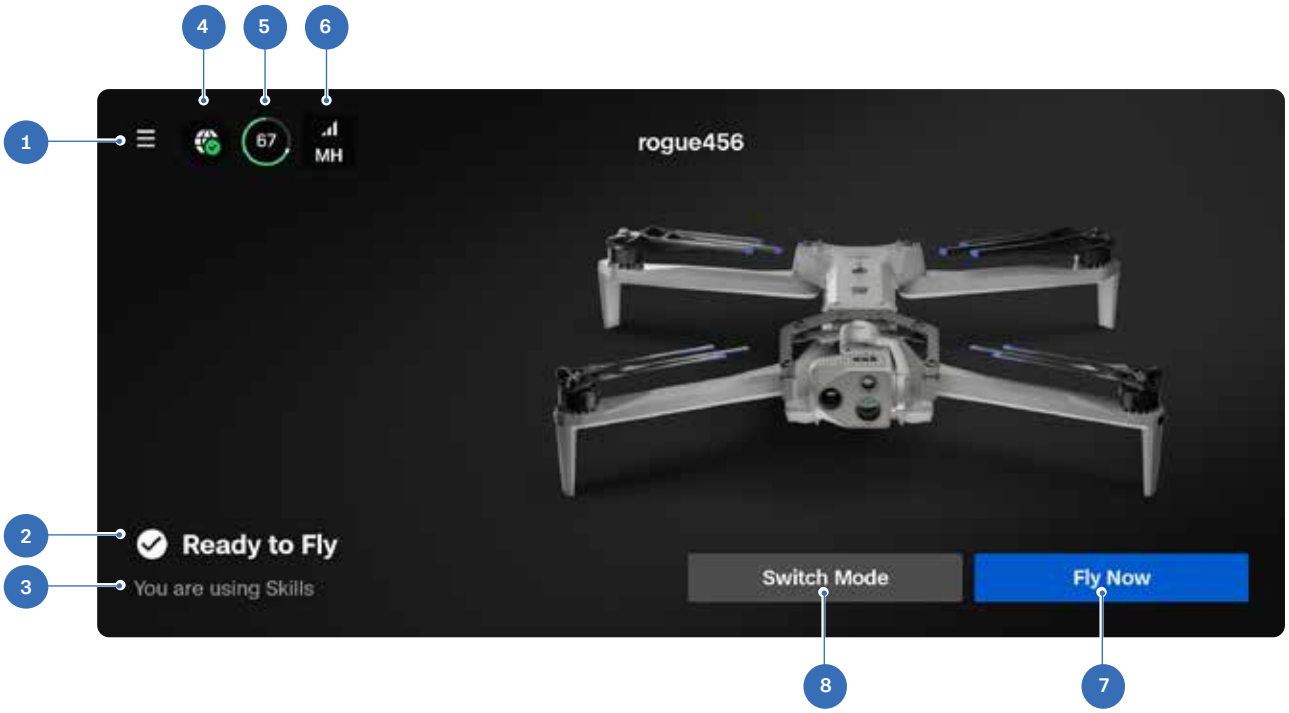
Global Settings

Menu locations and setting customizations.

This section covers

Gate Screen

After powering on and connecting to your drone, the first screen you will see is the **Gate Screen**. This screen is the first step to starting your flight, switching modes, or configuring preflight settings.

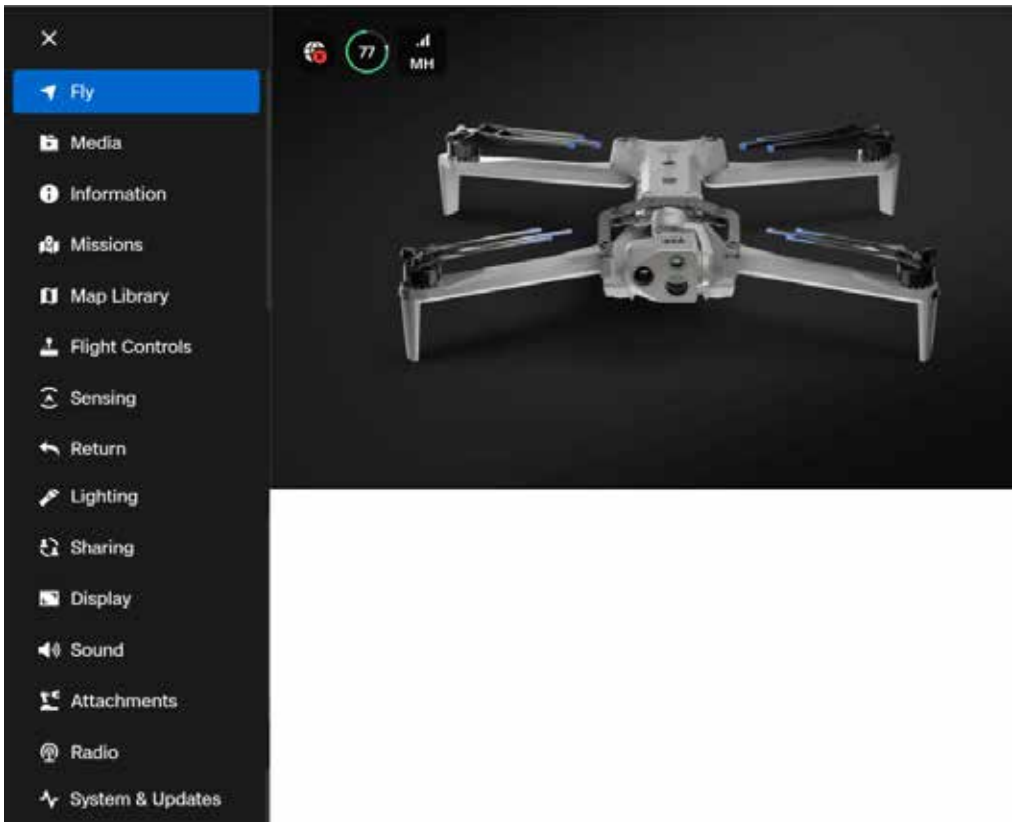


1. Global Settings
2. Flight Status
3. Flight Mode
4. WiFi Enabled Indicator
5. Drone Battery Level
6. Radio Signal Strength
7. Fly Now (Flight Screen)
8. Flight Mode Selector

Global Settings Menu

The Global Settings menu is accessible before and during flight. You will use this menu to navigate to a variety of settings, such as low battery behaviors, stream layouts, and obstacle avoidance behavior. Select the Global Settings icon in the top left of the screen to access the following menus:

- Offline User sign In
- Media
- Information
- Missions - *Future*
- Map Library
- Flight Controls
- Sensing
- Return
- Lighting
- Sharing
- Display
- Sound
- Attachments
- Radio
- System & Updates



Offline User: Sign in to your organizations admin account to access Online Mode.

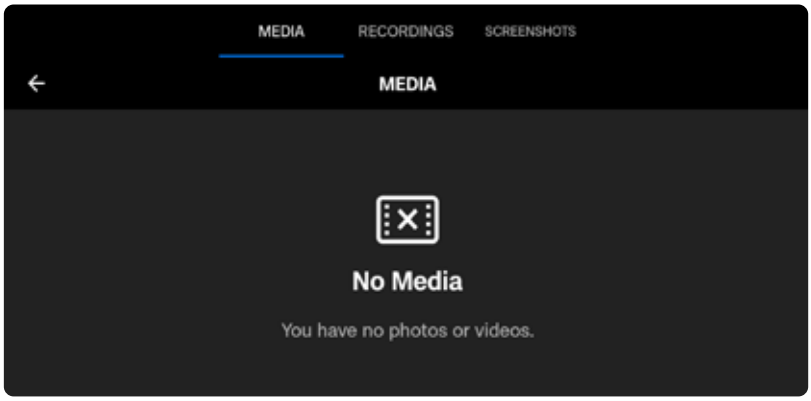
Media

Media menu to view photos, videos, and scans from your recent flights.

- Select an image or video to view
- Press and hold on a thumbnail to select multiple or delete

If you captured photos using **Interval**, all photos captured will appear as a single stack. Selecting the stack will allow you to scroll through individual images one by one.

Only standard color and thermal JPGs will display in the Media menu. To access your DNG or RJPG files, you must transfer the files from your drone.



Screen Recording:

- Toggle on/off in the display menu

Screenshot:

Users with the special access to the screen record feature can now assign the screenshot function to a controller button through the button mapping menu. This enhancement makes it easier to capture the flight screen without interfering with flight or camera controls.

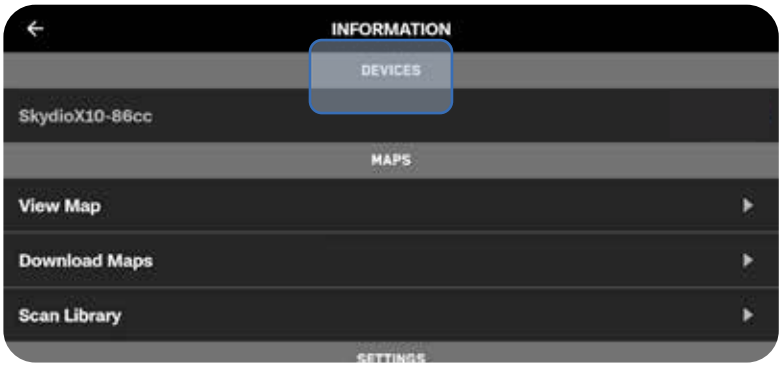
- Press and hold the mapped button for 6 seconds
- The screenshot function can be mapped to either C1, C2, C3 or R2.
- A message will display that the screenshot was saved
- Media is not available during flight

Information Menu

While the Skydio X10D vehicle and controller are paired, the Information menu provides access to updates, settings radio frequency selections, the map library, and more.

Devices

Lists the name of the drone that is currently paired, as well as other X10D drones that have previously paired to the controller. Select the drone name to access



Vehicle details - Software version number, Serial number, ANSI serial number and model of the vehicle. Sensor Package model and serial number. Battery firmware version number.

Manage Data - Select to format the Log and Media cards or Factory Reset your drone.

Locate Skydio X10D - In the event that your Skydio X10D is lost, you may view its last known location. If the Coordinate setting is enabled, the latitude and longitude of the current or last known location will be displayed.

View Last Flights - Displays the feed that was last viewed from the Flight Screen, even if the drone is not connected. Designed to assist you with locating your drone in the event of a crash, emergency landing, or low battery landing in an unintended location.

Radio - Select Dynamic Channel Switching, Power Level, and Presets.

Encryption - Select to enable or disable.

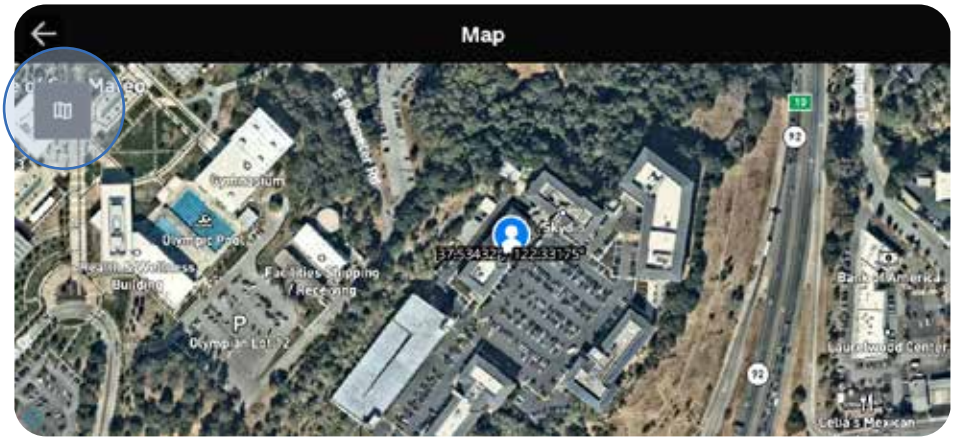
Anti-flicker - Adjust anti-flicker settings if you experience flickering in your video. This setting is for users located outside of North America, in countries where the frequency of the alternating current in household electrical outlets is 50 Hz.

Export Vehicle Logs to USB-C - Export flight logs and telemetry data to a memory drive inserted into the controller.

Information Menu

View Map - View your current location, search, and configure map settings. The location of Skydio X10D, the controller, Launch Point, and Home Point (if set) are all indicated on the map.

X10D **Controller** **Launch Point** **Home Point**

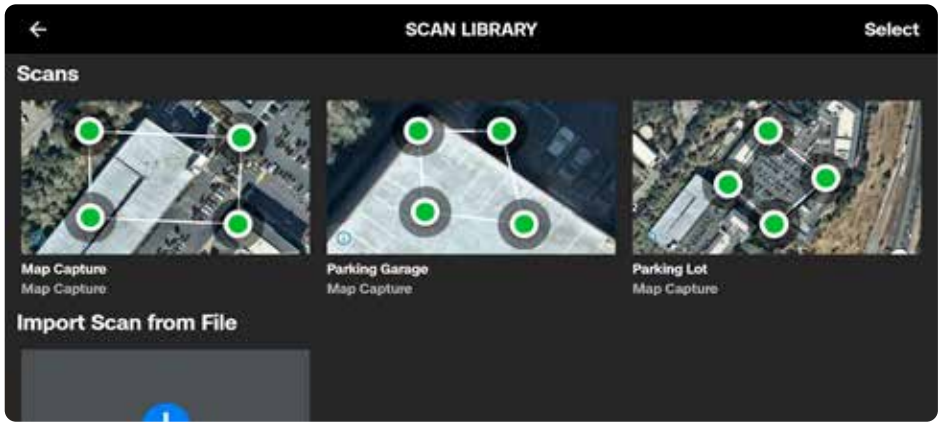


Map Library - View and import base maps and map layers. Located in Global Settings or the Information Menu.

Waypoint Mission - Stores the most recent Waypoint Mission. Press and hold on a waypoint to delete it. Press and hold on the map to add a waypoint or delete all waypoints. Set your Heading, Gimbal Angle, and Altitude in the Waypoints settings tab. Only one Waypoint Mission will be saved at a time.

Information Menu

Scan Library - View or repeat saved Map Capture scans. You also have the ability to import a previous Map Capture.



For detailed instructions and information visit How to use Map Capture.

Controller Update - Select this tab to update the controller.

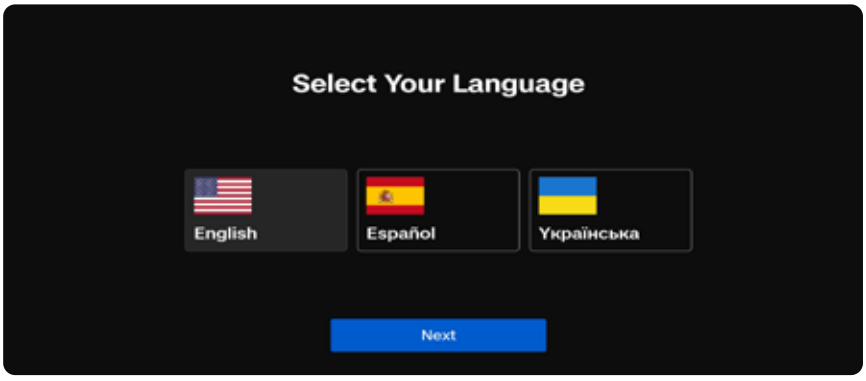
Change Password - Select this tab to change your controller password. The current password is required.

Tutorials - Includes step-by-step instructions for actions such as calibration.

Skydio Support Logs - Select this tab to send logs to customer support. Insert a memory device into the USB-C port on the controller and select **Export to Drive**. To assist the support team and better troubleshoot any issues or questions you may have, we may require you to send logs or other data from your drone to help us determine the root cause of any issues. Do not reformat or factory reset your Skydio drone prior to contacting our support team.

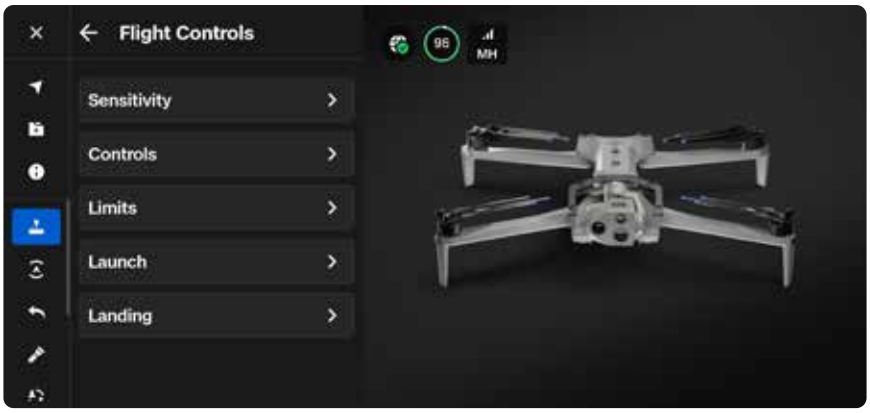
Legal - View legal documentation such as the Skydio Safety and Operating Guide.

Languages - Skydio Flight Deck is available in Spanish and Ukrainian as selectable language options. Menus, notifications, and system text will update instantly once a language is selected.



Flight Controls

Access the Flight Control menu to customize your flight behaviors, input mapping, Height Ceiling, and altitude limits.



Sensitivity

Gimbal Pitch
Controls how quickly the camera sensor package moves up and down.

- Default - 20%

Flight
Allows you to customize the maximum allowed speed for roll, pitch, yaw, and throttle. Increase pitch sensitivity to increase the maximum speed of the drone. Default sensitivity:

- Roll - 35%
- Pitch - 35%
- Yaw - 40%
- Throttle - 100%

Rapid Descent
Allows you to increase the speed to the maximum descent rate when pressing and holding Boost (L1 button).

- Descent speed: 27 mph (12 m/s)

Flight Controls

Controls

Control Mode
Determines how your controller joysticks will maneuver X10D.

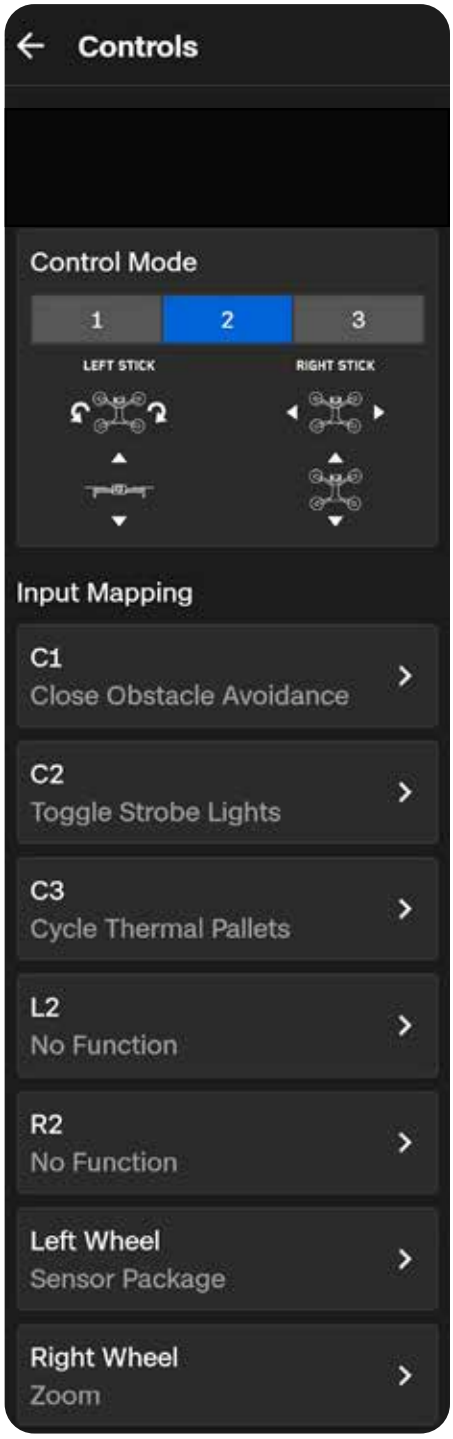
- Select between Mode 1, 2 (default), and 3.

Input Mapping

Customize buttons and wheels with the following options:

- Toggle Map
- Toggle Camera
- Obstacle Avoidance (Close, Minimal, Disabled)
- Cycle Display Layout
- Cycle Thermal Palettes
- Cycle Full Screen View
- Reset Sensor Package
- Toggle Strobe Lights
- Toggle RGB Lights
- Stop at Structure
- Take Screenshot
- No Function

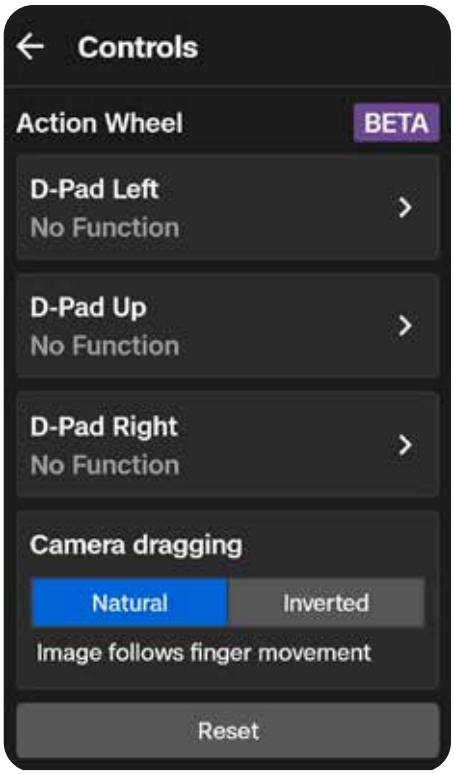
Customizable buttons include: C1, C2, C3, L2, R2.



Flight Controls

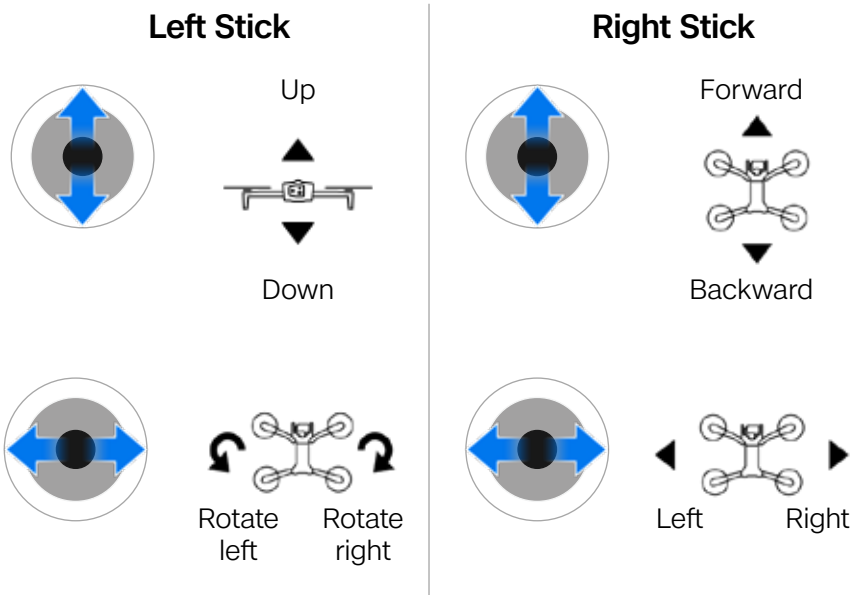
Action Wheel
Assign functions to the controller D-pad for quick access during flight. To open the Action Wheel, press and hold the Back button, then press the D-pad up, left, or right to activate the assigned function.

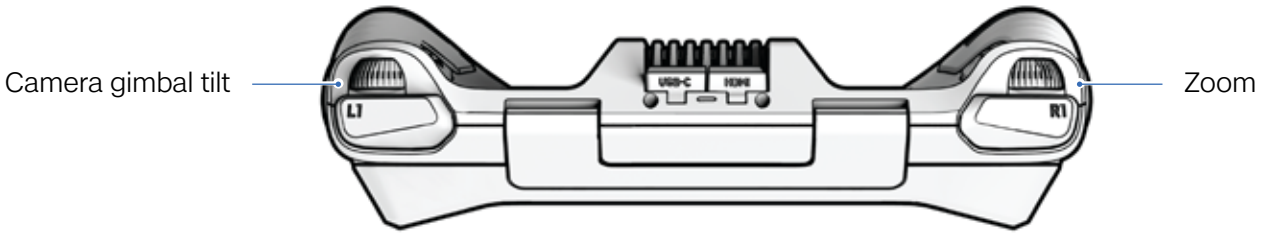
Camera Dragging
Drag your finger on the screen to pitch the sensor package and yaw the drone to look around.



Flight Controls

Control Mode - By default, flight Control Mode is set to Mode 2. In Mode 2, the left joystick controls the elevation and horizontal rotation of the drone, and the right joystick controls the forward, backward, and lateral movements of the drone.



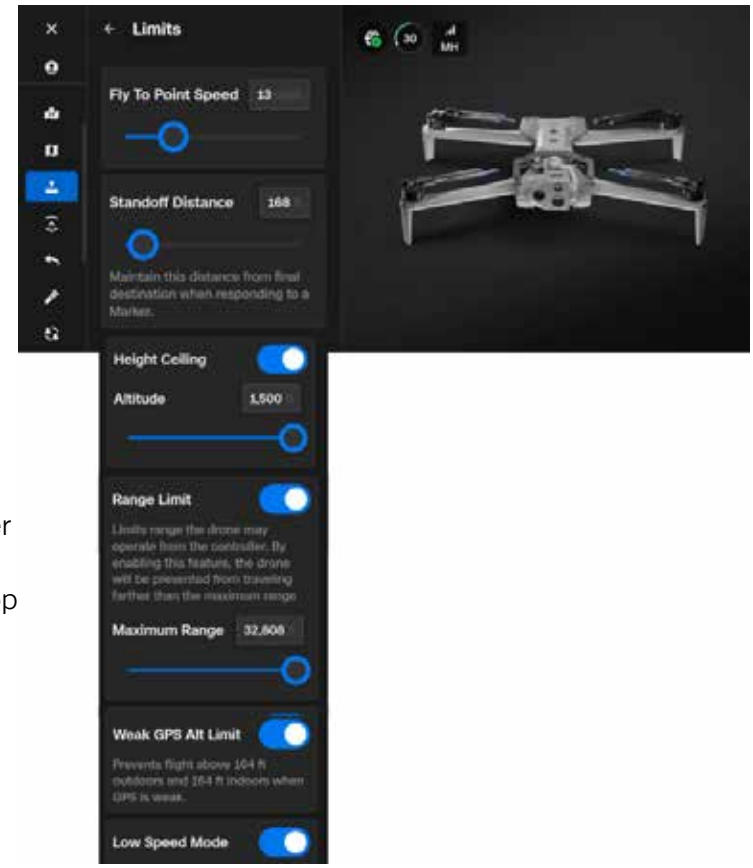


Flight Controls

Limits

Fly to Speed & Standoff Distance: set the speed that the Fly with Standoff flies toward a selected point while maintaining a configured standoff distance. Watch from Standoff combines both functions by flying to a standoff position and watching the selected point during the approach.

- Set speed between 1 and 45 mph
- Set standoff between 0 and 1,640 ft



Height Ceiling: when enabled, allows you to set the maximum allowed drone altitude above the Launch Point. Height Ceiling settings persist across flights and power cycles.

- Minimum: 10 ft (3 m)
- Maximum: 1500 ft (457 m)

Range Limits Geofence: allows for precise control over a defined maximum range (164 to 32,808 ft / 50 to 10,000 m). When the drone reaches the limit, it will stop and hover.

- To fly beyond the geofence, dynamically increase the distance (up to 10 km) or toggle off
- The geofence is centered on the controller's GPS position
- If the controller GPS is lost during flight, the geofence center point freezes at the last valid controller location.
- If the controller has never provided a valid GPS, the center point defaults to the launch location

Weak GPS Alt Limit: when enabled, prevents flight above 164 ft (50 m) when GPS is weak.

> ***WARNING:*** *Toggling Weak GPS Alt Limit OFF disables the altitude limit and your drone will fly using only visual navigation. To reduce the risk of an emergency landing, maintain a flight path near surfaces and objects.*

Low Speed Mode: toggle on to enable a maximum flight speed of 3 m/s for safer operation around people.

Flight Controls 

Launch

Low launch: Limits the launch height to 3 ft (1 m), ensuring quicker flight control and allowing tactical users to maintain a lower profile.

Select Global settings > Flight Controls >Launch tab > Low Launch Toggle On/Off

- Supported with Skydio NightSense
- The setting persists across flights and power cycles
- If Obstacle Avoidance is disabled, Low Launch will not be available
- If Attitude Mode is enabled, Low Launch will not be available

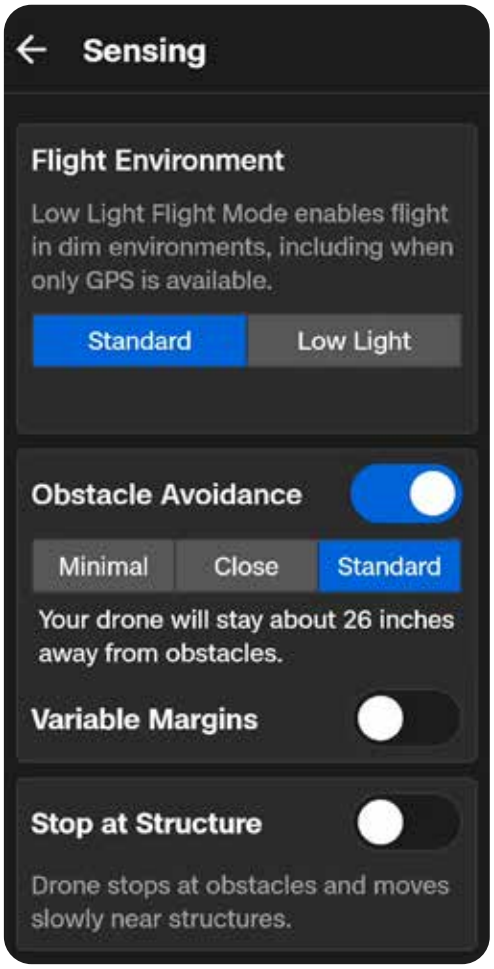
Landing

Auto Land in Attitude (default On): After 5 seconds of inactivity in Attitude Mode (the joysticks are centered and not touched), Skydio X10 will automatically initiate an emergency landing.

Toggled Off: The drone will remain in attitude mode under joystick command until GPS/VIO navigation systems are healthy or until you land.

Sensing

Use this menu to adjust autonomous flight behaviors and select vehicle navigation options, toggle GPS off, and launch in Attitude Mode.



Flight Environment: Select either Standard or Low Light to best represent your flight environment

- **Standard (default)** - flight in normal daytime or in brightly lit conditions (i.e. indoors)
- **Low Light** - flight at night or in low-light conditions with poor visibility. Low Light mode is automatically enabled between civil dusk and civil dawn (sun 6° or more below the horizon).

Obstacle Avoidance: When flying near obstacles your drone will follow your selected distance setting. Choose between Standard, Close, and Minimal.

- **Standard (default)** - Drone stays 26 in (66 cm) away from obstacles (15 in, 39 cm in narrow spaces). Top ground speed: ~36 mph (16 m/s)
- **Close** - Drone stays 6 in (15 cm) away from obstacles (5 in, 13 cm in narrow spaces). Top ground speed: ~18 mph (8 m/s)
- **Minimal** - Slight course corrections to avoid obstacles, but primarily relies on the pilot to avoid collisions. Top ground speed: ~18 mph (8 m/s)
- **Disabled (toggle off)** - Skydio X10D will not avoid obstacles and there is a high risk of collision. Top ground speed: ~45 mph (20 m/s)

Variable Margins: uses AI and visual navigation to dynamically, and temporarily, reduce obstacle avoidance margins when moving through narrow spaces. Margins will also dynamically expand if the drone detects environmental dangers, such as wind.

- Enabled by default. Disable to turn off the dynamic margin behavior.

CAUTION: *Flying with Close, Minimal or Disabled settings greatly increases the risk of collision. Minimal or Disabled settings are used to navigate tight spaces and should only be used if you are an experienced pilot. Skydio recommends turning down controller throttle, roll, and pitch sensitivity to the lowest setting and proceeding at a maximum speed of 2 mph (1 m/s).*

Sensing 

Stop at Structure: Perform finer, more controlled inspections on structures such as bridges or building facades. When enabled, your drone will not deviate from its course when it is within 8 ft (2.5 m) of a structure. The drone will reduce speed and maintain position, allowing for more precise maneuvering in the immediate vicinity of the structure.

- Adjust the maximum speed using the Speed Near Obstacles slider
- Maximum controller speed settings apply when no structure is present
- Stop at Structure is active during manual flight, including when paused during a 3D Scan

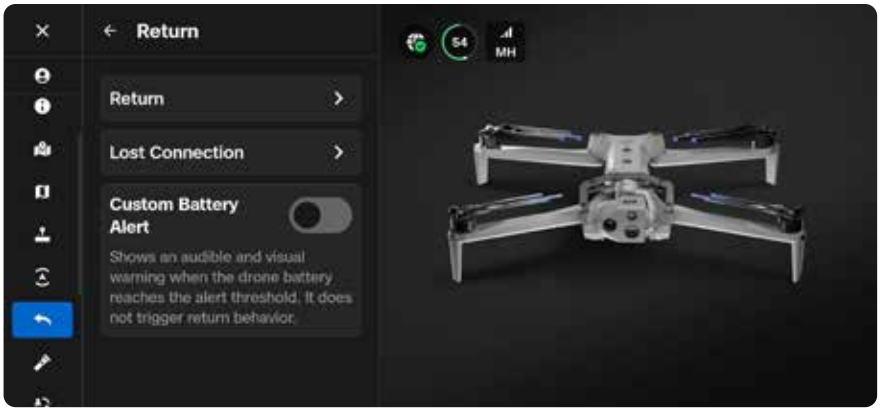
Disable Framelock (default off)**:** Toggle on to disable. Framelock captures imagery with foreground stability that keeps your intended subject in frame. Reduces instances of unintentional drift, resulting in the need for more manual adjustments. Complete more efficient inspections by reducing the need for additional camera adjustments while capturing close-up details.

Vehicle navigation Options: If attitude mode and vehicle GPS are toggled off the X10D will fly using VIO.

- Attitude Mode - Toggle on to enable flight in attitude mode
- GPS Navigation - Toggle off to disable GPS navigation

Return

Configure your return and lost connection behaviors as well as how Skydio X10D will return if connection is lost.



WARNING: *Before flying, ensure you have set your Lost Connection Return Behaviors. This is a critical step that ensures your drone returns safely and lands in an accessible location.*

Backtracking: Return using previously flown path. Obstacle Avoidance must be on to use this feature.

Height Behavior: Set the altitude at which the drone will ascend to before returning.

- Absolute - X10D will ascend to the specified Return Height above the Launch Point before returning
- Relative - X10D will ascend to the specified Return Height above the current position before returning

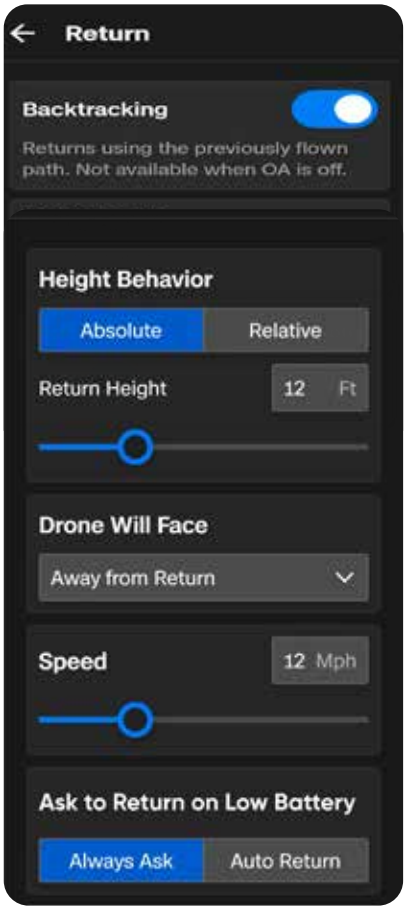
Drone Will Face: Set Skydio X10D to either look toward or away from the return destination while flying.

Speed: Set the speed at which Skydio X10D returns

- GPS return: 1 - 45 mph (0.5 - 20 m/s)

Ask to Return on Low Battery: When the battery is only sufficient to return and land, choose between a prompt or an automatic return.

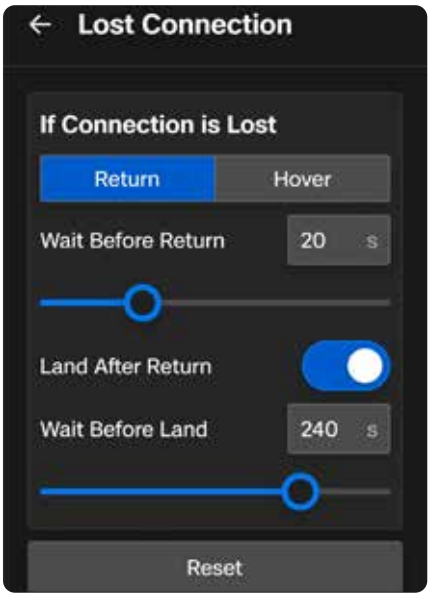
- Always Ask (default) - you will be asked to select the return location each time the battery level is low.
- Auto Return - X10D will automatically return to either the Launch Point or the Home Point (if set) when the battery is low.



Return

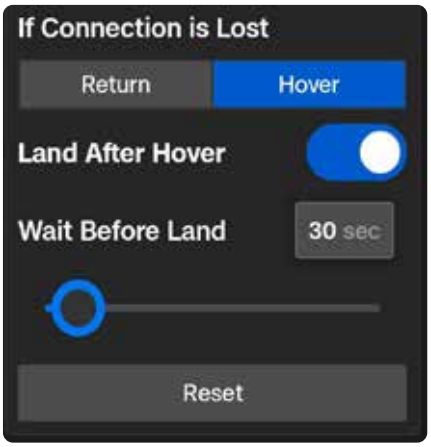
Lost Connection

If connection is lost, Skydio X10D will default to the **Lost Connection** settings. Set your Lost Connection behaviors preflight.



Return

- **Wait Before Return** - set the amount of time you want X10D to wait before it initiates a return flight, allowing time to reconnect
- **Land After Return** - when enabled, your drone will return, hover for a specified amount of time, then land.
- **Wait Before Land** - the amount of time between 0 to 300 seconds (default is 240 seconds) that you want your drone to wait above the landing location before landing. This setting is only enabled when Land After Return is toggled on.



Hover

- **Land After Hover** - when enabled, X10D will hover for a specified amount of time, then use visual navigation to find a safe area to land.
- **Wait Before Land** - the amount of time between 0 to 300 seconds (default is 240 seconds) that you want your drone to wait before landing. This setting is only enabled when Land After Hover is toggled on.

X10D will continue hovering as it tries to regain connection. If it fails to reconnect and reaches low battery:

- Automatic return set, your drone will return to either the Launch Point or Home Point (if set)
- No automatic return set, your drone will use visual navigation to find a safe area to land
- If VIO is degraded (flying in Low Light without NightSense), your drone will be unable to use visual navigation and will descend vertically and land

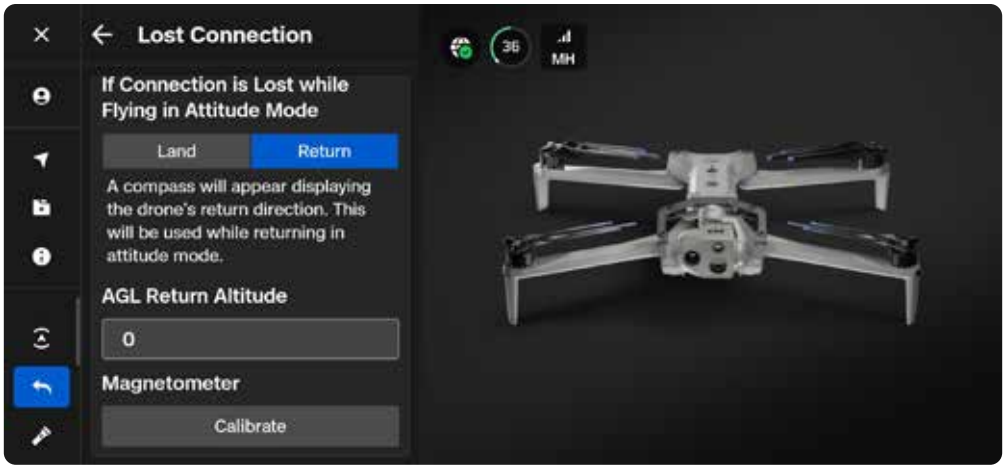
Return

Attitude Mode Return

- **Land -** X10D will immediately land in place if it loses connection while in Attitude Mode.
- **Return -** A compass will appear displaying the return heading. Manually adjust the compass to set return heading

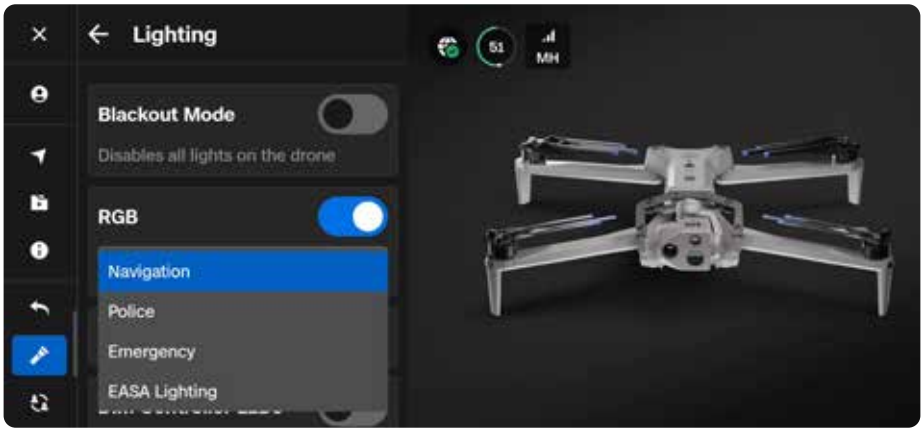
AGL Return Altitude - Set the Above Ground Level return altitude between 0 and 3,281 ft

Magnetometer - Follow the prompts to calibrate the magnetometer



Lighting

Skydio X10 navigation lights (RGB) are enabled by default. To disable these lights, or enable strobe or infrared lights, navigate to the Lighting menu under Global Settings.



Blackout Mode - Enabling Blackout Mode will turn off all visible and IR light sources on the vehicle, disable the light toggles, and dim the controller lights. Setting Blackout Mode will persist across flights and power cycles.

RGB: Three options will appear in the drop-down menu:

- Navigation (default)
- Police
- Emergency

RGB - When enabled, the lights on the end of the arms will appear red and green while flying. When the drone is powered on and grounded, the lights will appear blue.

Police - When enabled, the front and back RGB lights on the drone will flash red and blue and alternate colors between the right and left arms. Red: Front left, back right/Blue: Front right, back left.

Emergency - When enabled, the front and back RGB lights on the drone will flash red and white and alternate colors between the right and left arms. Red: Front left, back right/White: Front right, back left.

Strobe - Enable to visually track the drone in low-light conditions. Skydio X10D strobe lights meet the FAA requirement of being visible at a distance of (3 4.8 km) statute miles.

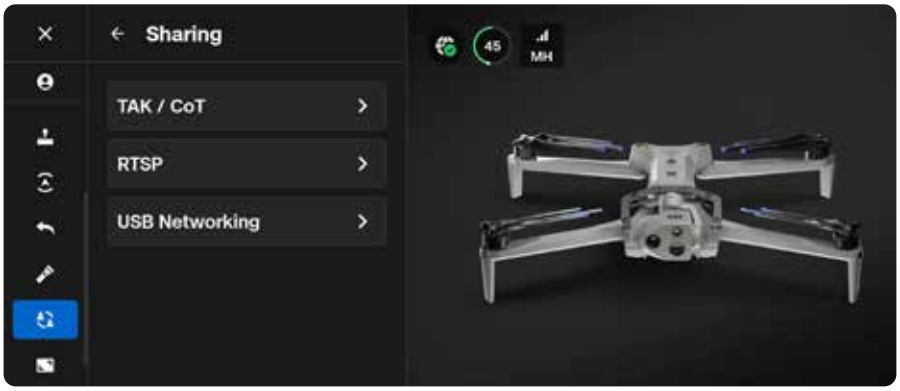
Infrared - Cannot be seen by the naked eye. These broadcast an IR light that can only be detected with an infrared lens. Assists with navigation in low-light.

European Aviation Safety Agency (EASA) Lighting - display a red front light, a white rear light, and periodically flashing green lights visible from all directions.

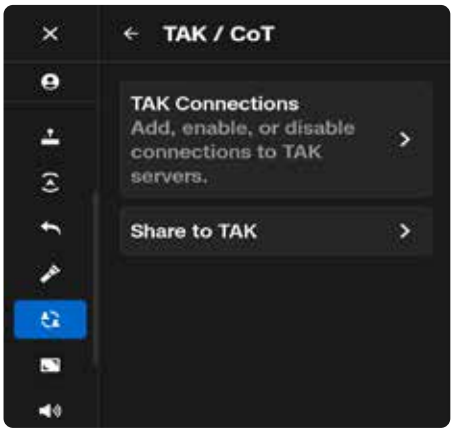
Dim Controller's LEDs - Toggle on to dim the lights on the controller

Sharing

The Sharing menu allows you to stream using TAK/Cot, RTSP, or USB Networking.



TAK / CoT



TAK Connections - The integration of the Skydio X10D Controller and the Android Team Awareness Kit (ATAK) app allows you to broadcast the controller and vehicle telemetry data, and Real-Time Streaming Protocol (RTSP) video feed of the Skydio X10D to other nodes in the ATAK network.

Step 1 - Select Add a Connection

Step 2 - Enter Server Name, Address, and Port

Step 3 - add TCP or SSL/TLS protocol

Step 4 - Select Add Connection

For detailed instructions and information visit [Connecting Skydio Flight Deck to TAK servers]

Share to TAK - TAK markers let operators share important locations, tracked subjects, drone position, controller position, and crosshair position across a TAK network using Cursor on Target (CoT).

Step 1 - Toggle On Share Drone and Controller Markers

Step 2 - Enter Drone Callsign and Controller Callsign

Step 3 - Select which tracked subjects create the TAK marker

For detailed instructions and information visit [How to use TAK Markers on Skydio X10D]

Sharing

RTSP

RTSP streaming allows the Skydio X10 system to send live video over a network to a compatible viewing application, video management system, or command center display. The Skydio X10D Controller can also provide KLV metadata with the video stream. KLV, or Key-Length-Value metadata, carries telemetry and geospatial information such as aircraft position, sensor orientation, timestamps, and target or frame center location.

For detailed instructions and information visit How to set up RTSP and Telemetry Streaming on the Skydio X10D

USB Networking

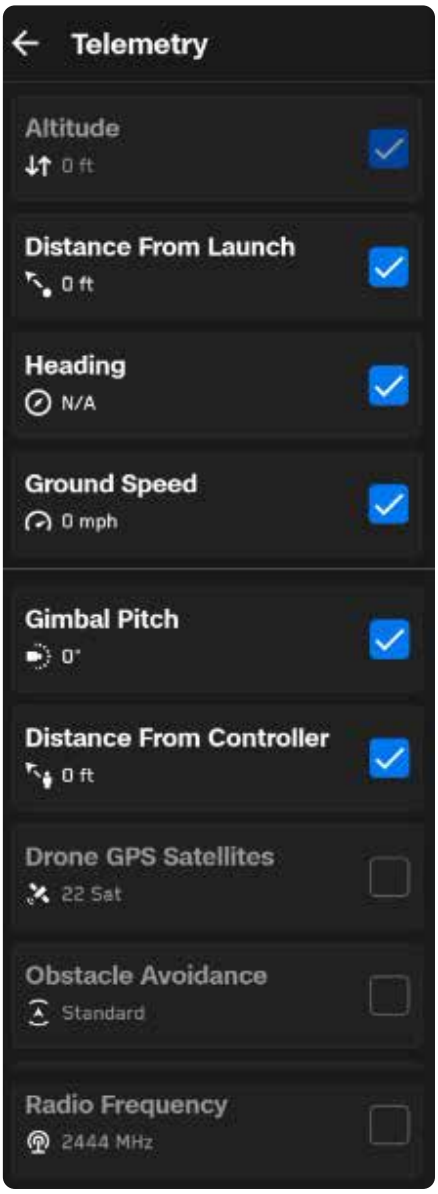
USB-C Mode: Selecting the USB Hub option from the segmented controller will set the USB port to be compatible with third-party hubs.

Static IP Addressing: Allows users to manually configure static IP settings for Ethernet connections made through the controller's USB-C port. It introduces a simple workflow to assign an IP address, subnet mask, gateway, and DNS when no DHCP server is available. By supporting static configuration, the controller can integrate with a wider range of tactical radios and networks that disable DHCP for security or policy without engineering assistance.

Display

Telemetry
Customize the telemetry metrics you want to display while flying. Select the blue check mark to enable or disable the corresponding telemetry information. Select up to 6 items to display on your telemetry bar:

- Altitude
- Distance from Launch
- Heading
- Ground Speed
- Gimbal Pitch
- Distance from Controller
- Radio Frequency
- GPS Satellite Count
- Obstacle Avoidance
- Battery Temperature
- Time Elapsed
- Time until Shutdown
- Wind Speed & Direction

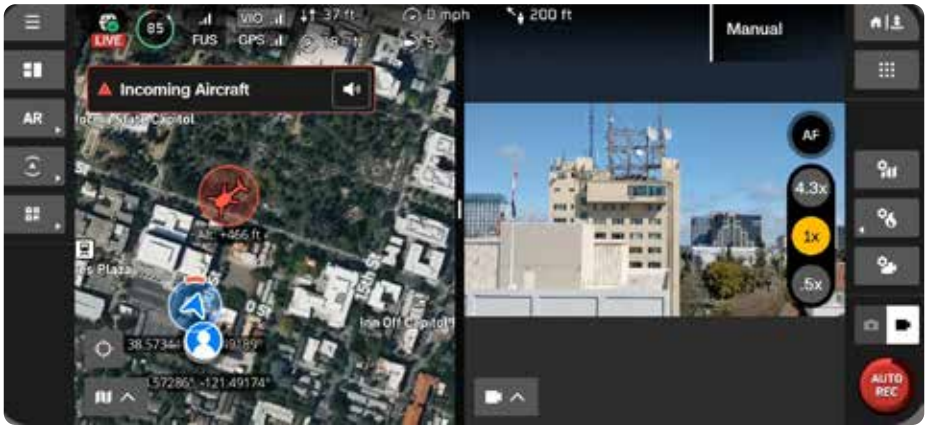


Display

Air Traffic

Select the Air Traffic - Automatic Dependent Surveillance - Broadcast (ADS-B) adjustable alerting range to customize the detection sensitivity, where V is the vertical distance from the drone before the alert is triggered, and H is the horizontal distance. The default range is set to Small.

- Small - H: 0.5 NM; V: +/- 500 ft (152 m)
- Medium - H: 1 NM; V: +/- 500 ft (152 m)
- Large - H: 1.5 NM; V: +/- 500 ft (152 m)



When an aircraft enters your alert range, its icon will turn red and you will hear an audible alert through the controller speakers.

- Aircraft icon – Displays either a fixed-wing aircraft or rotorcraft, with the altitude relative to your drone. Select this icon to view more flight details such as vertical/horizontal speed, and ground distance.
- Visual notification – A message alert appears in the top right of the screen and displays Incoming Aircraft
- Audible alert (off by default) - When an aircraft enters your alert radius, the X10 Controller will play an audible alert. Select the speaker icon in the message box to mute the alert.

Display

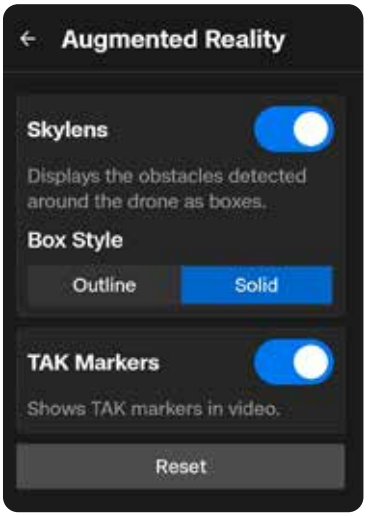
Augmented Reality

SKylens - Toggle on to display boxes around obstacles detected.

- Solid displays boxes filled with color
- Outline displays framed or unfilled box

Enable to visually display where Skydio X10D detects obstacles in the environment. Appears as either solid or outlined augmented reality (AR) boxes, depending on your selection within the **Display** menu. Use the **AR Quick Action** button to cycle between the distances from which obstacles are rendered on the screen. Objects that are closer appear red.

- Off
- 0 - 6 ft (0 - 2 m)
- 0 - 13 ft (0 - 4 m)



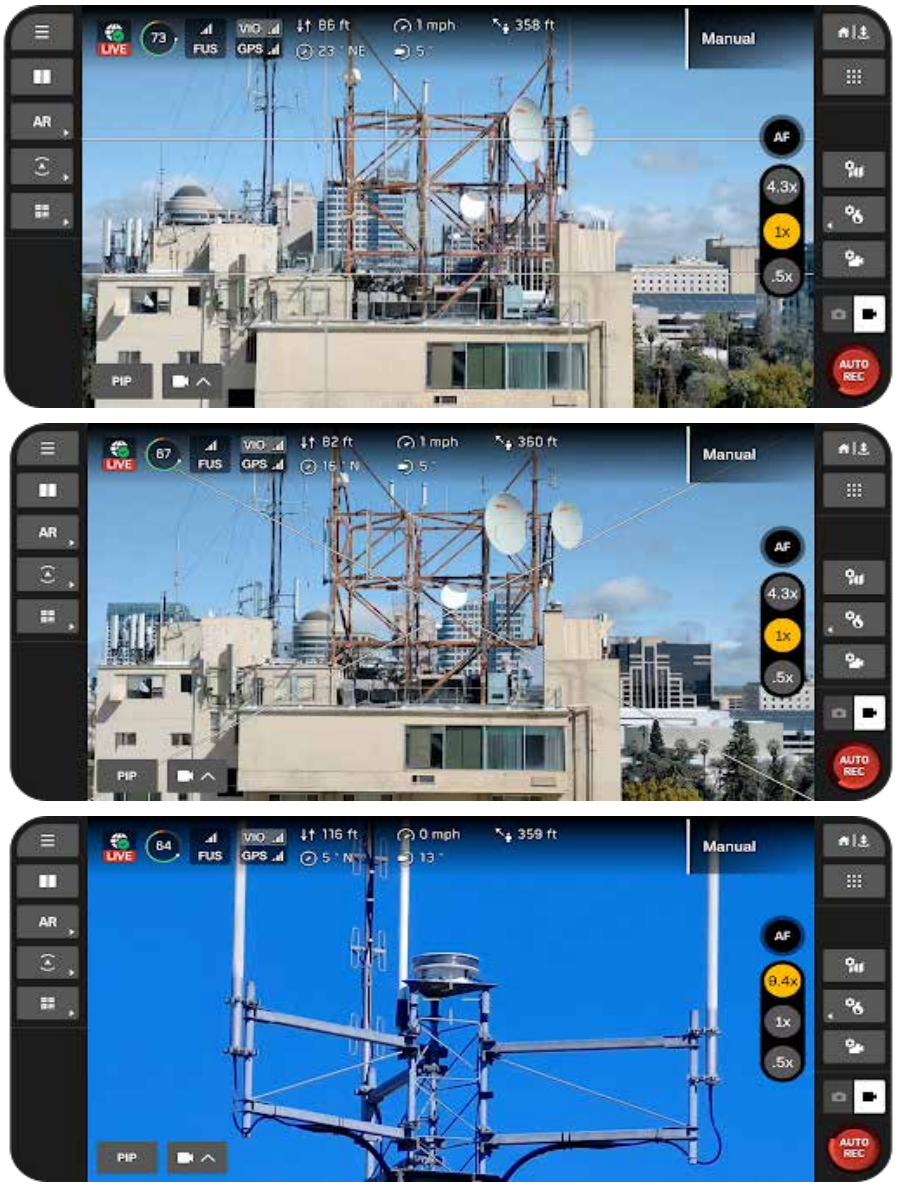
TAK Markers

Toggle on to display TAK markers in the video recording of your flight.

Display

Gridlines - Displays compositional guidelines over the camera feed.

- Centerpoint - Displays a crosshair in the center of the screen to align subjects
- Grid - Adds a rule of thirds overlay for balanced framing
- Diagonal - Displays two intersecting diagonal lines from opposite corners, aiding in angular alignment



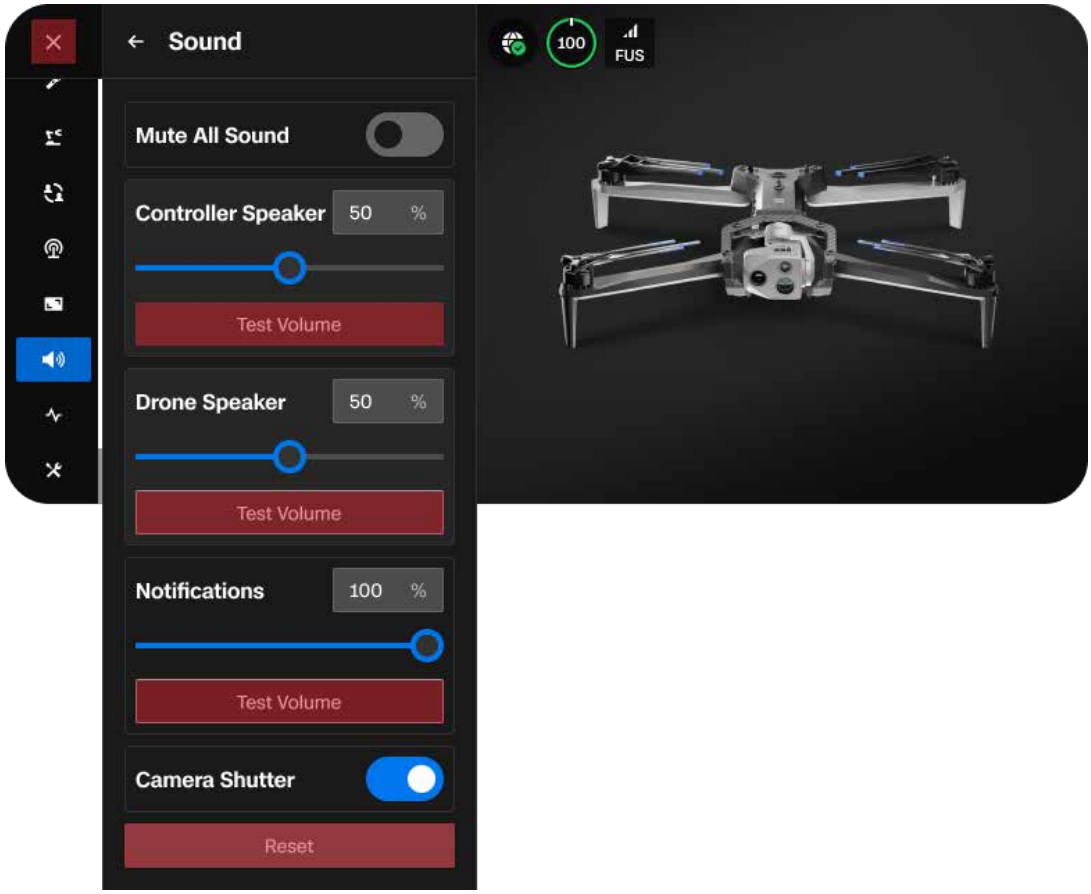
Display Brightness - Adjust the brightness of your X10D Controller screen.

Units - Choose between Imperial or Metric units.

Sound

Use the new sound menu to set the volume for audible ADS-B, low battery alert, and shutter sound notifications. The default volume for sound is set to 0 (silent). Use the slider to adjust the volume.

- Controller speaker volume
- Drone speaker volume
- Notification volume
- Camera shutter sounds



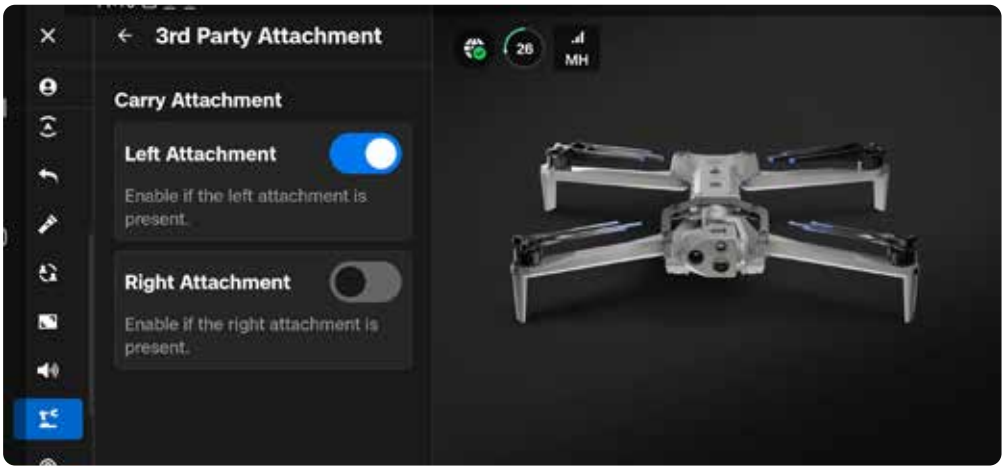
Attachments

Any Skydio payload attachments connected to the X10D will display the unique settings menu.

- NightSense
- Speaker
- Spotlight
- Parachute
- Dropper

For detailed instructions and information visit [What attachments are available with Skydio X10?]

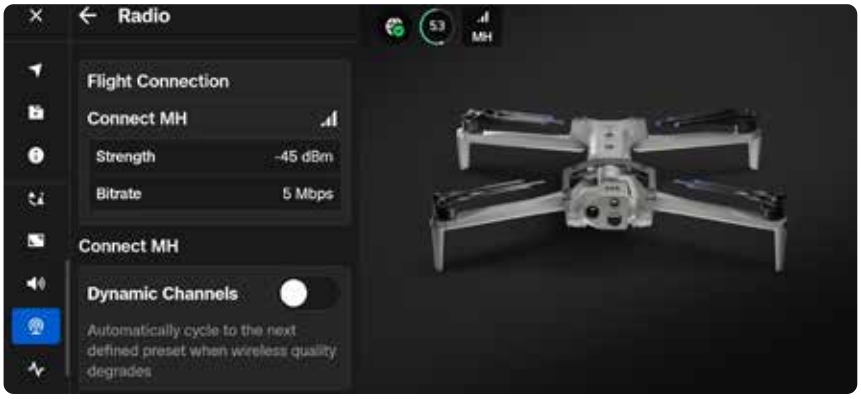
Select the left or right attachment bay for the third-party attachments



For detailed instructions and information visit [Third-Party Attachments on Skydio X10D]

Radio

Use this menu to configure your radio settings. Toggle Dynamic Channel Switching on or off and manually select your frequency.

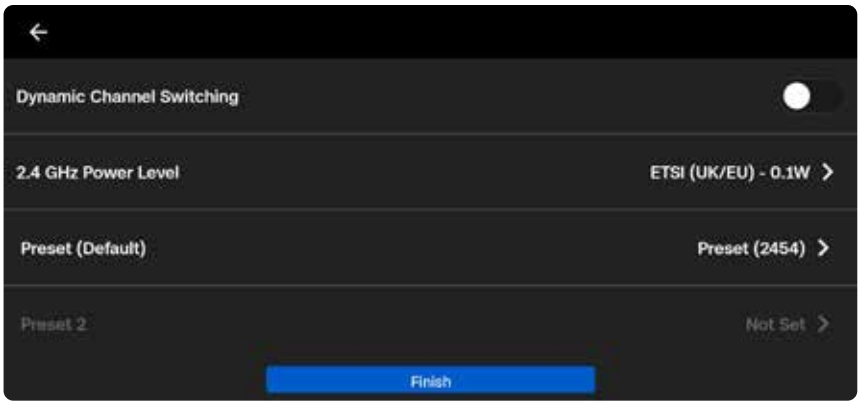


Dynamic Channel Switching

Cycle through six preset frequencies to automatically find the cleanest channel, ensuring stable and reliable flight.

Step 1 - Select Global Setting, the Information menu, and the Radio tab

- Select the power, channel, and band for each preset
- Select Finish



External Radio - Optional setting to change the radio from the controller to the External Radio Kit

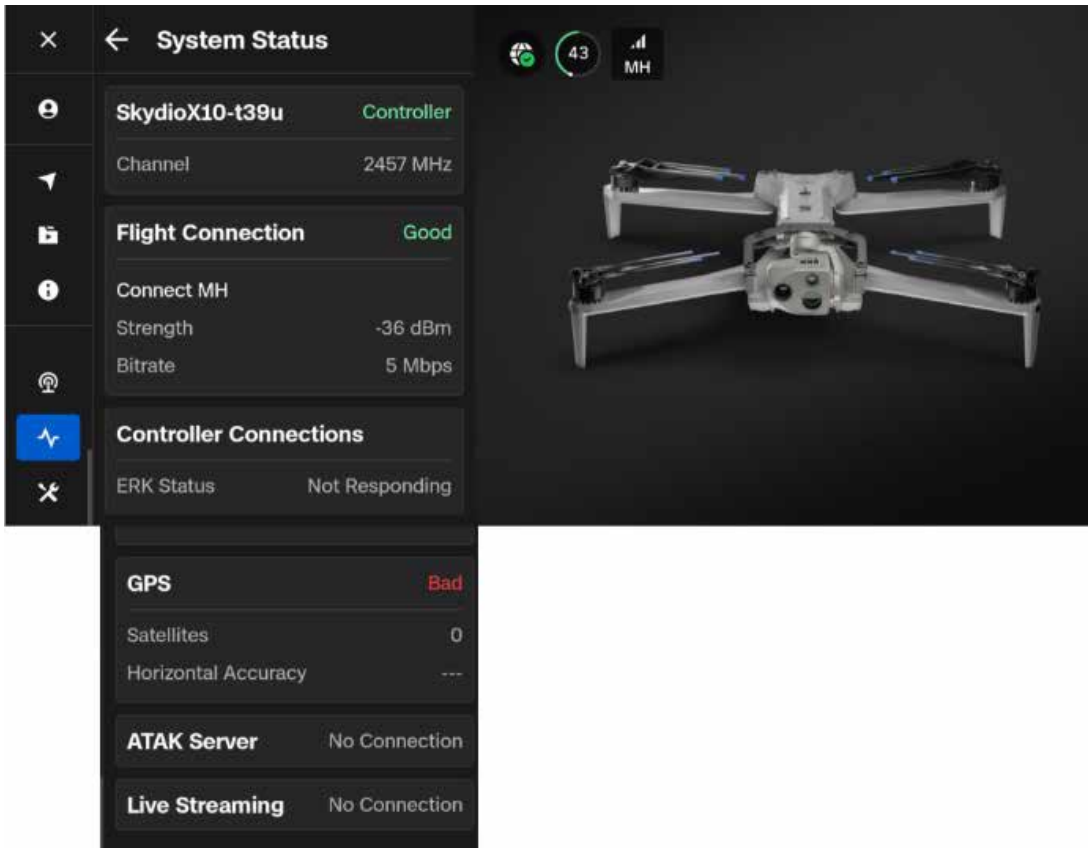
WARNING: *The X10D is shipped in 2.4 GHz Max Power mode for optimal range performance. Adjust the power level by selecting Global Settings > Information > Drone ID under Devices > Radio > 2.4 GHz Power Level to prevent unauthorized power levels in certain regions.*

NOTE: *The frequency selection options are specified as center frequencies for an 8 MHz channel (±4 MHz from center). Select the value that matches the center assigned by your frequency office; if given band edges, choose their midpoint. Power levels are EIRP (not conducted transmitter output).*

System Status

Provides a comprehensive overview of the system at a glance. Displays:

- Vehicle and channel
- Flight connection and radio
- Controller connection
- GPS strength
- ATAK server
- Live Streaming



Camera Settings

Learn how to adjust camera and video settings such as zoom, exposure, ISO, and resolution.

This section covers

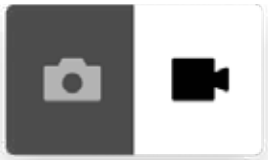
Camera Overview

When your drone captures a photo or video, it will save one image file with the color camera. Two files will save if you have JPG and DNG enabled. If you would like Skydio X10D to also capture an image file with the thermal camera, enable **Thermal Capture** within the **Thermal Settings**.

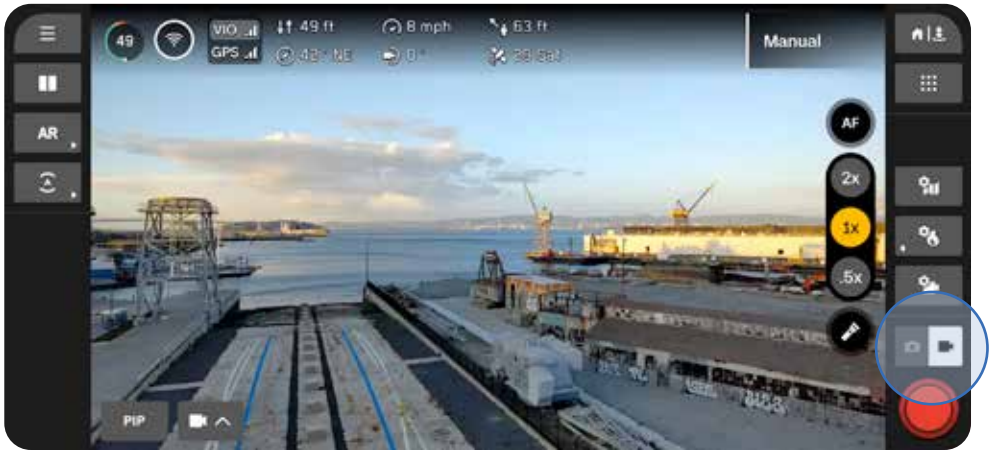
Use **Camera Mode** on the right sidebar to switch between photo or video. Skydio X10D can capture photos or videos but not both at the same time. Your color and thermal cameras will always be in the same Camera Mode.

Access your photos and videos using the **Media** menu located in **Global Settings**.

Photo enabled



Video enabled



NOTE: *Photo and Video mode settings are independent of each other and persist through mode changes, but not power cycles.*

Capture Settings (Photo and Video)

Brightness Exposure Value (EV) - Refers to the amount of light the camera allows in. Negative numbers result in darker images (less exposure) while positive numbers result in brighter images (more exposure).

- Brightness is set to Auto by default

White Balance - Balances the color temperature in your photo. If the whites in your picture are too orange, for example, adding the opposite color (blue) will balance them out. Lower values result in a cooler (blues) image while higher values result in a warmer (yellows) image.

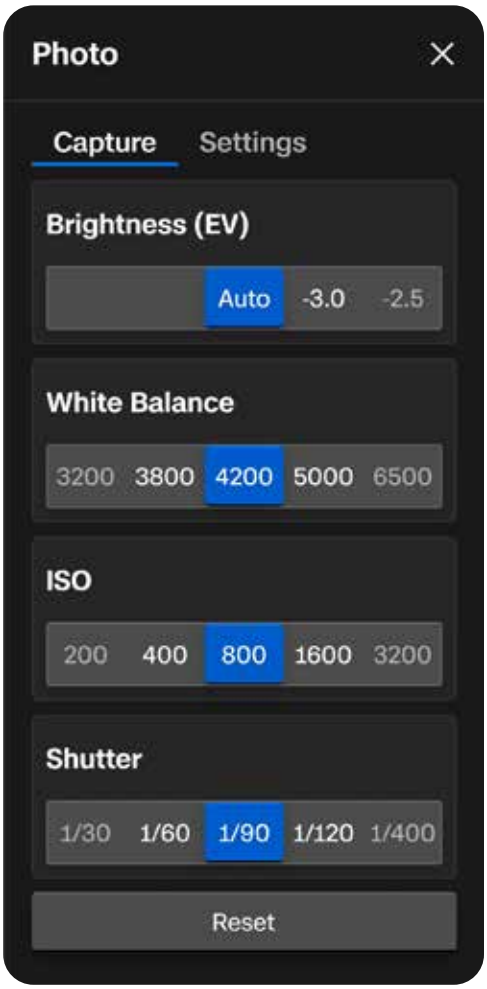
- Auto (default): X10D will automatically adjust the White Balance for its environment

ISO - Brightens or darkens your photo. When in low-light conditions, raising the ISO value will brighten the image, however you may see some graininess.

- Auto: X10D will automatically adjust the ISO for its environment

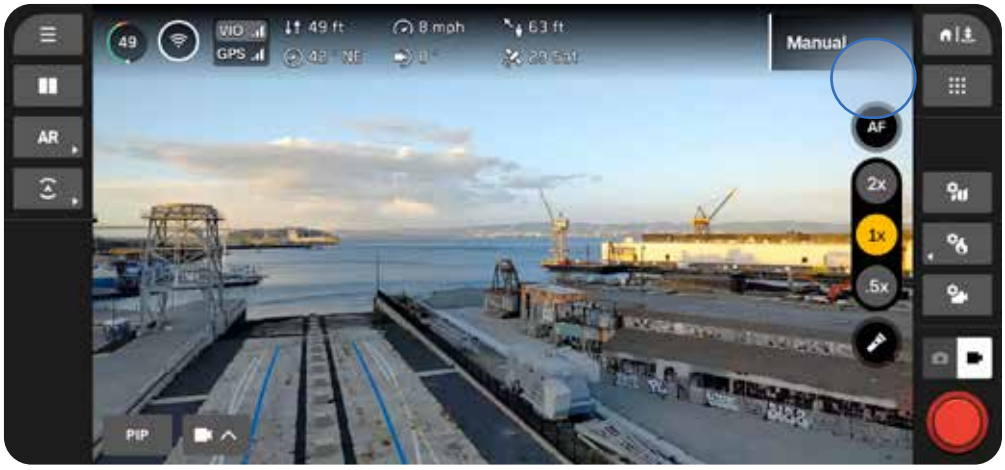
Shutter - Refers to the length of time a photo is exposed. Slower shutter speed means greater exposure, while faster shutter speed means less exposure.

- Auto means Skydio X10D will automatically adjust the Shutter speed based on the available light



Focus and Exposure

To view the various focus options, select the Focus Control button on the right side of the Flight Screen.



AutoFocus (AF) - By default, your camera will be set to automatically adjust focus and exposure. In this focus mode, focus will generally prioritize objects in the center of the screen.

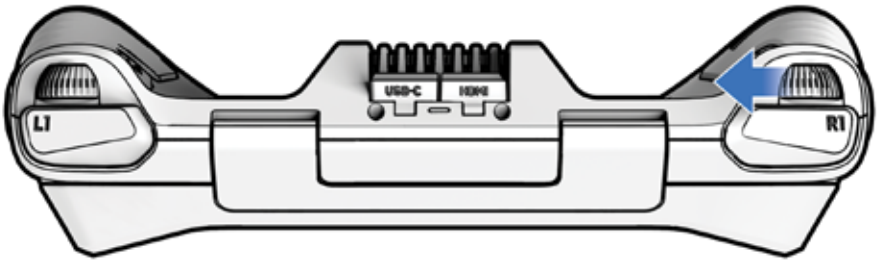
Manual Focus (MF) - After selecting the Manual Focus icon, two more button options will appear.

- Use the image of the mountain to focus on objects further away
- Use the image of the flower to focus on objects that are closer

Tap to Focus - Touch anywhere on the screen to focus on an area of interest, or select the icon to center. The Focus Indicator will turn green once the image is sharp and clear. a padlock icon will appear which can be selected to lock focal point and exposure. When focal point and exposure lock is used, the icon will remain on the screen until another location is selected, or the padlock de-selected.

Zoom Settings (Photo and Video)

To zoom in digitally, place your finger on the right controller wheel and push it to the left. Customize this using Input Mapping (Flight Controls > Controls).



Quickly snap to a zoom level using the Zoom buttons on the right side of the screen.

VT300-Z Sensor

- 4.3x - transitions between narrow and telephoto lens, 128x max system zoom
- 1x - default zoom level of narrow lens
- .5x - Surround Vision

VT300-L Sensor

- 2x - transitions between wide and narrow lens, 64x max system zoom
- 1x - default zoom level of wide lens
- .5x - Surround Vision

NOTE: *Images and videos taken while zoomed in will be saved at that zoom level.*

Surround Vision

Surround Vision uses Skydio X10D navigation cameras to generate an ultra-wide view of your environment for situational awareness.

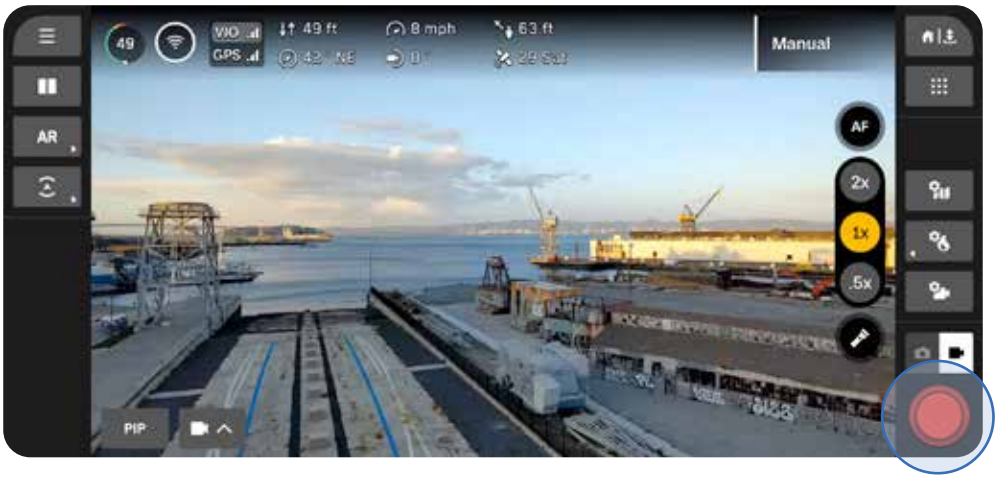
NOTE: *Photos and videos captured when in Surround Vision will be saved at 1x zoom.*

Thermal Zoom

The thermal camera will zoom up to 16x, but you may continue to zoom using the color camera. If any Tools are enabled, such as Region of Interest, they will dynamically adjust to fit the screen as you zoom.

Shutter Indicators

The Shutter is located in the bottom right of the Flight Screen and indicates the current state of Photo or Video mode.



Photo

Ready for Capture

Pressed

Disabled

Interval

Video

Manual Record

Manual Record (Pressed)

Recording

Recording (Pressed)

Auto Recording

Auto Recording (Paused)

Photo Settings

File Type - Choose whether you want Skydio to capture JPG images only, or both JPG and DNG files.

- **JPG -** Digital image format containing compressed image data.
- **DNG -** RAW image format file, meaning it is not compressed and retains all original photo data. A DNG file is larger than a JPG file since it stores image data.

Resolution - Refers to the resolution of captured image. Measured in megapixels.

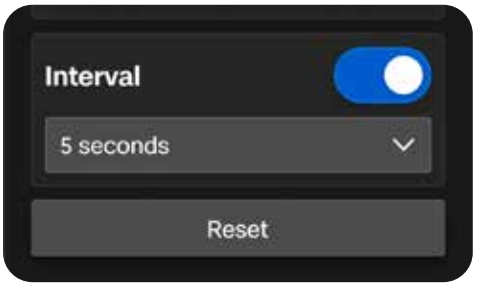
- **Full -** Images are captured at the highest quality, providing more detail and clarity.
- **1/4 -** Images are captured at one-fourth of the full resolution, resulting in smaller file sizes. Best for conserving storage space or transmitting images faster.

Camera Mode

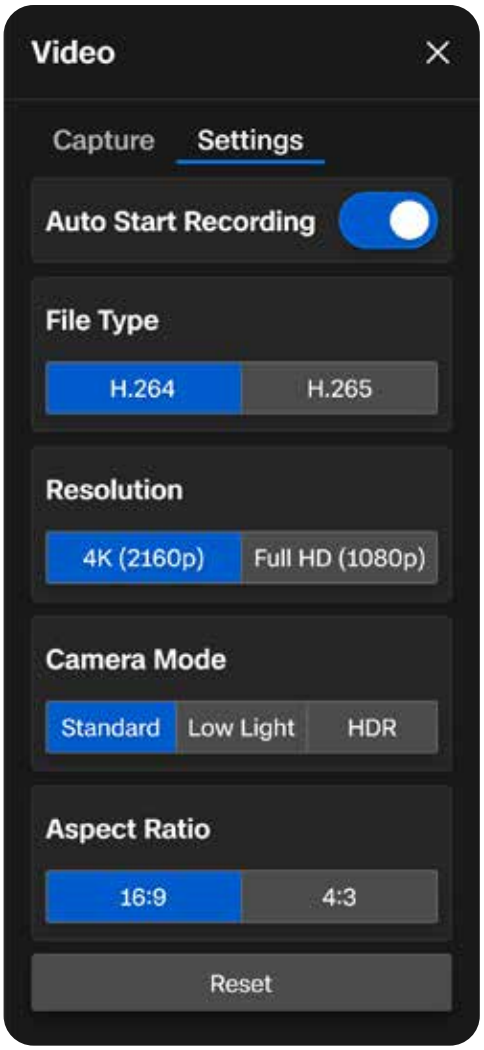
- **Standard -** Designed for typical, everyday lighting conditions. Provides a balanced, standard level of exposure, image processing, and contrast.
- **Low Light -** Designed for environments with dim lighting, such as indoors or evening. Settings are adjusted to capture more light, reduce noise, and improve visibility. Only available with 1/4 Resolution.
- **HDR (High Dynamic Range)** - Combines multiple exposures into one image to capture greater detail in both bright and dark areas of a scene. Only available with 1/4 Resolution.

Interval

When enabled, Skydio X10D will continuously capture photos at the specified time interval until the setting is disabled or the flight ends.



Video Settings



Auto Start Recording

- When enabled, Skydio X10D will record video automatically.
- When disabled, tap the on-screen Shutter button or on the controller (R1 button) to start/stop video recording.

File Type

Select between H.264 and H.265 compression formats, depending on your preferences for video quality, file size, and playback compatibility.

- **H.264** - Provides manageable file sizes without sacrificing video quality. Recommended for standard video recording, and compatible with most devices and video editing software.
- **H.265** - Ideal for high-quality video capture and maintains efficient compression.

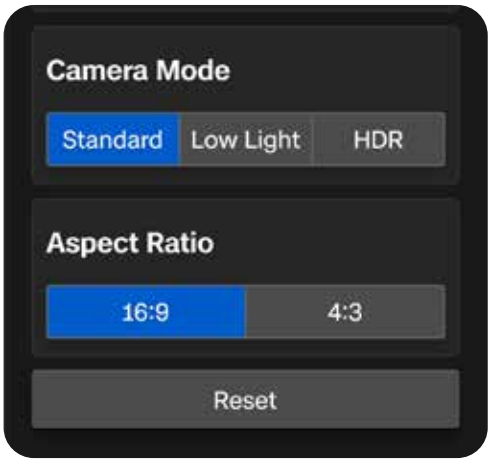
Resolution

Select between 4K and Full HD, which refers to the amount of detail in your video. Measured in pixels.

- More pixels result in a high-resolution video
- Fewer pixels result in a lower resolution video

Camera Mode

- **Standard** - Designed for typical, everyday lighting conditions. Provides a balanced, standard level of exposure, image processing, and contrast.
- **Low Light** - Designed for environments with dim lighting, such as indoors or evening. Settings are adjusted to capture more light, reduce noise, and improve visibility.
- **HDR** - Designed to capture environments with a wide range of brightness levels.



Aspect Ratio

Sets the shape and framing of your video.

- **16:9** - Provides a wider, broader field of view.
- **4:3** - Provides greater FOV in the vertical axis, resulting in more square-shaped framing. Images are taller, as opposed to wider.

VT300-L Sensor Package Flashlight

The VT300-L sensor package comes quipped with an flashlight, providing effective illumination up to 10 ft (3 m) and enabling inspections in low-light environments.

Select the on-screen flashlight icon to turn the flashlight on or off in flight.

NOTE: *The flashlight can only be controlled during flight and will not be operational on the ground nor during launch and landing.*

WARNING: *When using the flashlight on the VT300-L sensor package, do not stare directly into the light at any range for any extended period of time. After prolonged use of the flashlight, your sensor package may be hot to the touch and could present a serious burn risk. After landing, wait for your sensor package to cool down before handling.*

Thermal Camera

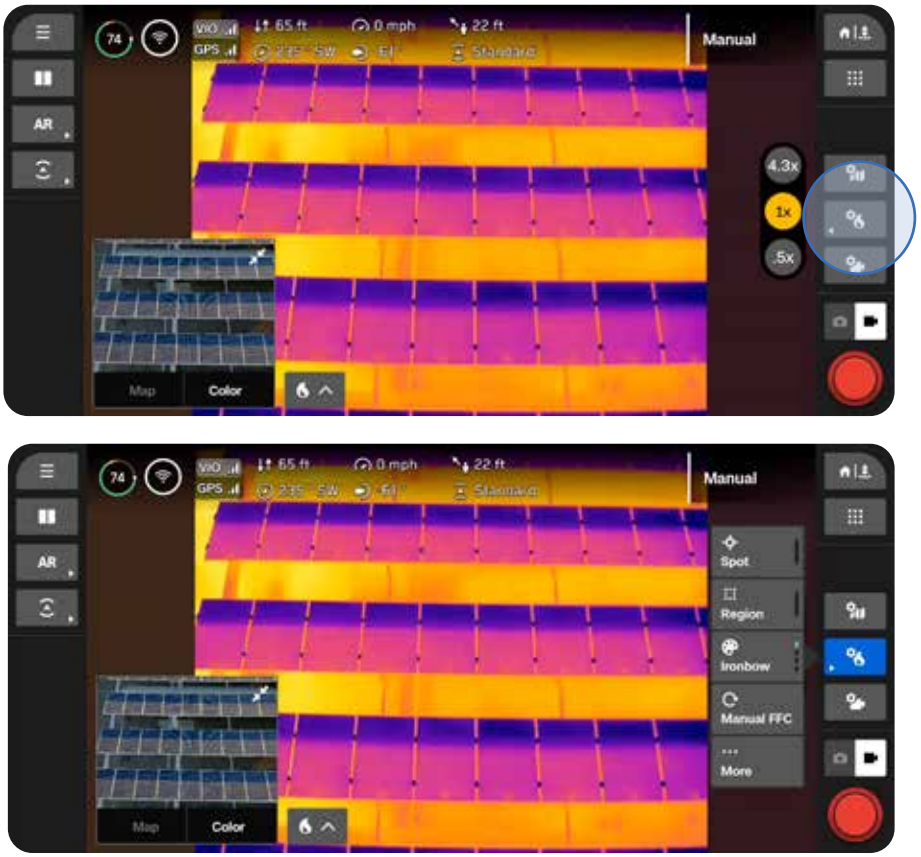
The thermal camera with Skydio X10D includes a powerful suite of tools, such as radiometric capabilities, to assist you in a variety of use cases.

This section covers

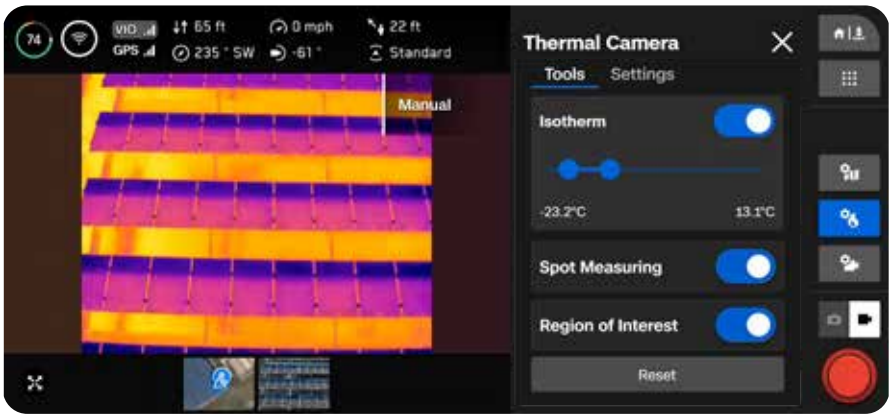
Accessing Thermal Options

Quickly access your Thermal Tools and Settings using the quick action button located on the right side of the Flight Screen.

Select Thermal Settings - Easily enable some settings using the quick actions that appear, or access the full menu.

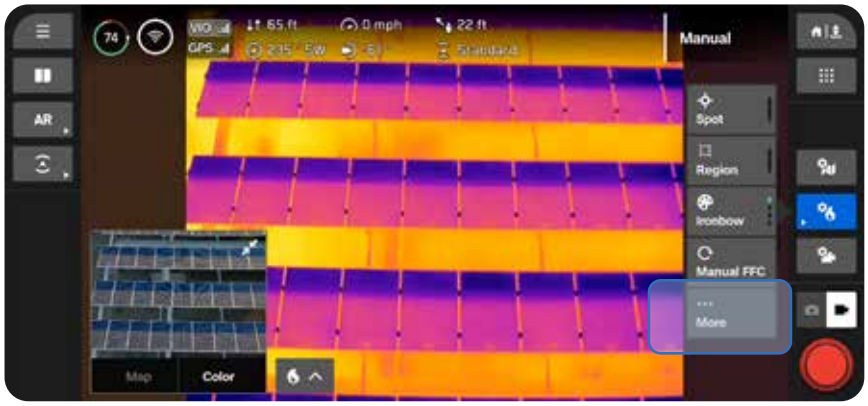


Select More - Use the tabs at the top to customize your Tools, Settings, and Parameters.



Flat Field Correction (FFC)

Flat Field Correction (FFC) mitigates and compensates for errors that build up over time during the thermal camera operation. This is performed in the background automatically at lower zoom levels, however, you can use the Thermal Settings to manually perform FFC at any time.

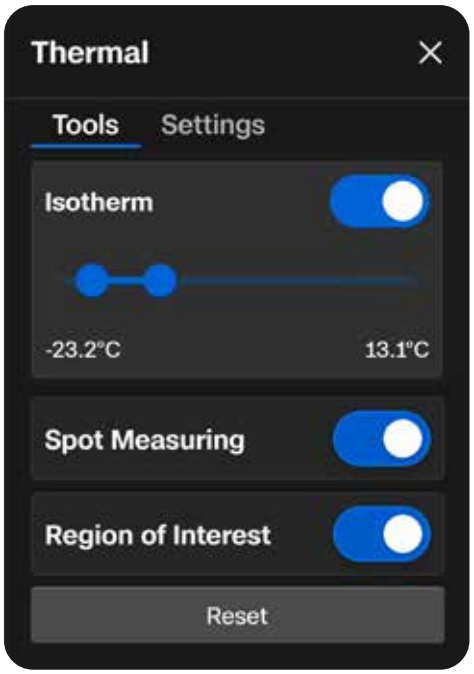


NOTE: *If you manually perform FFC, the actuation of the shutter may be noticeable on the image at higher zoom levels.*

Thermal Tools

Isotherm
Allows you to set a range of temperatures to detect. Use this setting to omit unwanted data outside of the specified range. The defined range will appear as the currently selected palette.

- Temperatures outside of the defined range will appear as the default White Hot or Black Hot palette
- If White Hot or Black Hot are currently selected, the temperatures in the Isotherm range will default to Rainbow



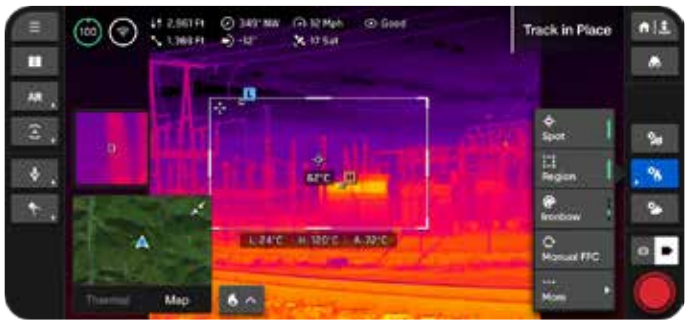
Spot Measuring
Enable to display the specific temperature value of an object on-screen as you drag your finger on-screen.

- Tap or drag your finger across the screen to view temperatures

Region of Interest
Enable to display an on-screen box that detects the minimum, maximum, and average temperatures within the outlined area

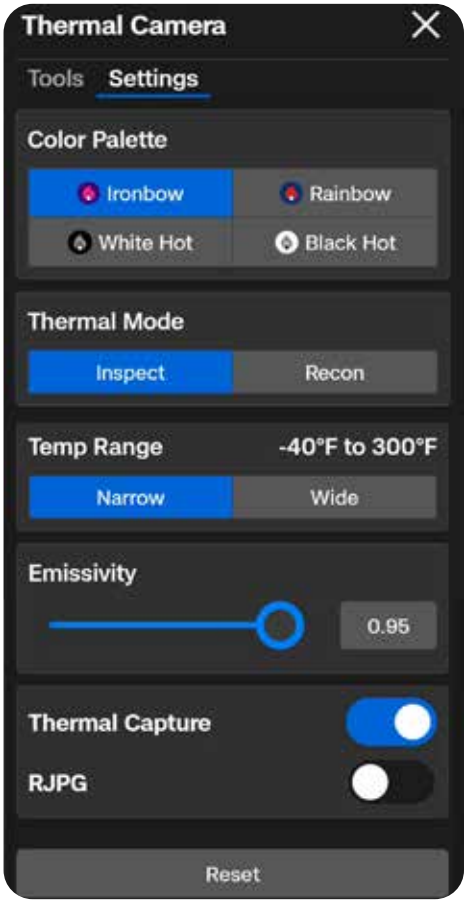
- **H** represents the highest temperature detected
- **L** represents the lowest temperature detected
- **A** indicates the average temperature detected
- Select the edges of the box to resize, or use the arrows to drag the box to a different location

Spot Measuring



Region of Interest

Thermal Settings



Color Palette
Visual representations of temperature variations captured by a thermal camera

Ironbow - Quickly identify varying temperatures and spot thermal anomalies. Displays a specific range of colors, from blues to reds, which indicate different temperature levels.

- Warmer objects are presented in lighter colors and colder objects in darker colors

Rainbow - Uses the colors of a traditional rainbow to distinguish between subtle variations in temperature levels.

- Covers a broader range of colors without emphasizing specific temperature ranges

White Hot - Provides a clear visualization of temperature variations without a variety of colors.

- Brighter, whiter colors indicate warmer temperatures
- Darker colors represent cooler temperatures

Black Hot - Displays the inverse of a White Hot palette.

- Brighter, white colors indicate cooler temperatures
- Darker, black colors represent warmer temperatures

Thermal Settings

Thermal Mode
Adjust the signal amplification from the camera sensor to enhance temperature differences in an image.

Recon - Tuned to increase the contrast between the overall scene and targets. Best for search and rescue or situational awareness use cases. Recon helps differentiate the scene from things like people, vehicles, or animals.

Inspect - Tuned to decrease the overall contrast so that temperature anomalies are easier to identify in inspection use cases. This makes it easier to not only see the anomaly, but help track the source from the heat signature.

Custom - Allows you to fine-tune your Gain, High Tail, and Low Tail settings. Select Inspect or Recon as your Base Mode, then adjust your Gain, High Tail, and Low Tail settings from there. These settings will persist across flights and will be applied each time you select Custom as your Thermal Mode.

- Gain - Artificially increases contrast of areas with similar temperatures
- High Tail - Adjust saturation of the hotter items in the scene
- Low Tail - Adjust saturation of colder items in the scene

Temp Range
Select the range of temperatures Skydio X10D will detect.

- Narrow - Detects temperatures ranging from -40°F to 302°F (-40°C to 150°C)
- Wide - Detects temperatures ranging from -40°F to 662°F (-40°C to 350°C)

Thermal Capture
Enable to capture thermal images as JPG files.

RJPG - When enabled, your drone will capture a Radiometric JPG in addition to a standard JPG. A Radiometric JPG includes the radiometric data within the photo file.

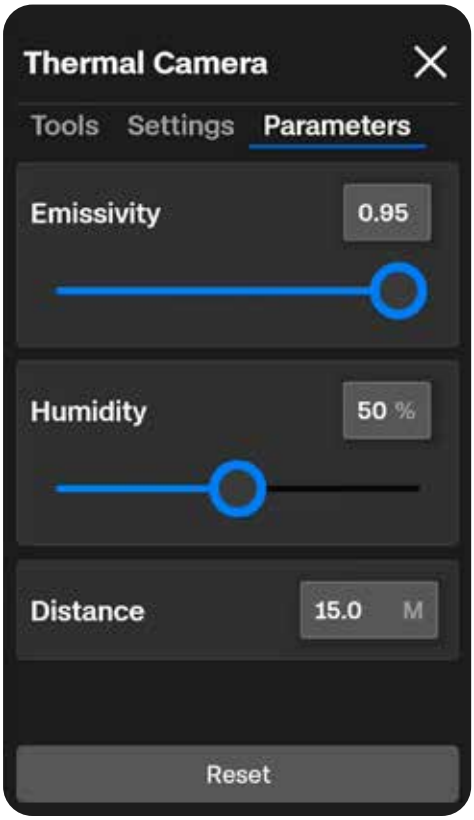
Thermal Parameters

Emissivity
The measure of how efficiently an object emits thermal radiation. Adjust to match the camera readings to the true temperature of the object.

- Higher values means the camera is more sensitive to temperature variations
- Lower values means the camera is less sensitive to temperature variations

Surfaces that are better emitters (higher emissivity) provide more reliable temperature readings. For example, black electrical tape, rusted or oxidized surfaces, bodies of water, or human skin all absorb and emit energy. Set your emissivity high for these types of surfaces.

Reflective surfaces are not good emitters (low emissivity) and therefore not as reliable to measure. Stainless steel, shiny surfaces, or reflective windows tend to have a low emissivity. Set your emissivity low for these types of surfaces, but we recommend gathering your reading from a higher emissivity surface whenever possible.



Humidity
Set your humidity to accurately reflect the environment you are flying in. This should be the humidity between the sensor and the target. Humidity is an important parameter to set because your thermal sensor will detect atmospheric conditions like humidity (and distance) which can affect the accuracy of your reading.

Distance
Set your distance to accurately reflect the range from your thermal sensor to the target. The further away the target, the more atmosphere your thermal camera will pick up along the way to the target which can affect the accuracy of your reading.

Skydio Flight Deck

Review safe flight practices and important information you need to know while in flight.

This section covers

Preflight Inspection

Carefully inspect your drone and environment before launching to ensure a safe flight.

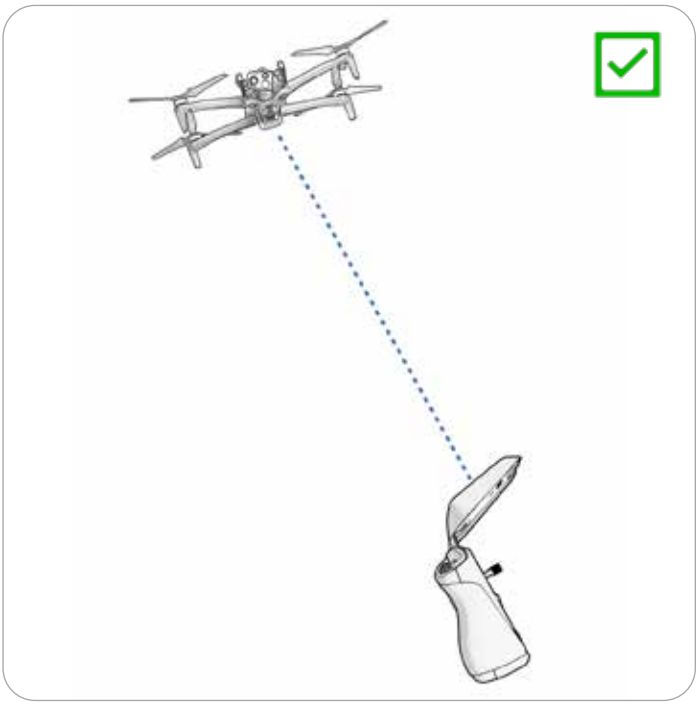
- **Inspect the chassis** to ensure it is free of damage.
- **Inspect drone arms** and verify they are fully extended and free of damage.
- **Inspect the battery** and confirm it is securely seated prior to launching. Skydio X10D uses magnets to seat the battery which may attract metallic debris. Ensure the connector pins are free of debris or damage.
- **Clean the camera lenses and time of flight sensor** with a clean microfiber cloth. Cameras should be dust and smudge-free before flight.
- **Fan out the propellers and inspect** to verify they are firmly attached and properly seated in the motors and spin freely. Propellers should be free of cracks or damage. Do NOT fly with damaged propellers.
- **Inspect the sensor package** before powering on and ensure it moves freely and is not damaged, and **remove the Sensor Package Lock** before flying.
- **Ensure all USB-C and microSD card seals are secured** over the ports.
- **Check your surroundings** before launching to ensure a safe environment for flight.
- **Point the controller cover/antennas toward the drone** for maximum wireless performance.
- **Verify batteries are fully charged** before flying.
- **Check for drone and controller updates** before flying.

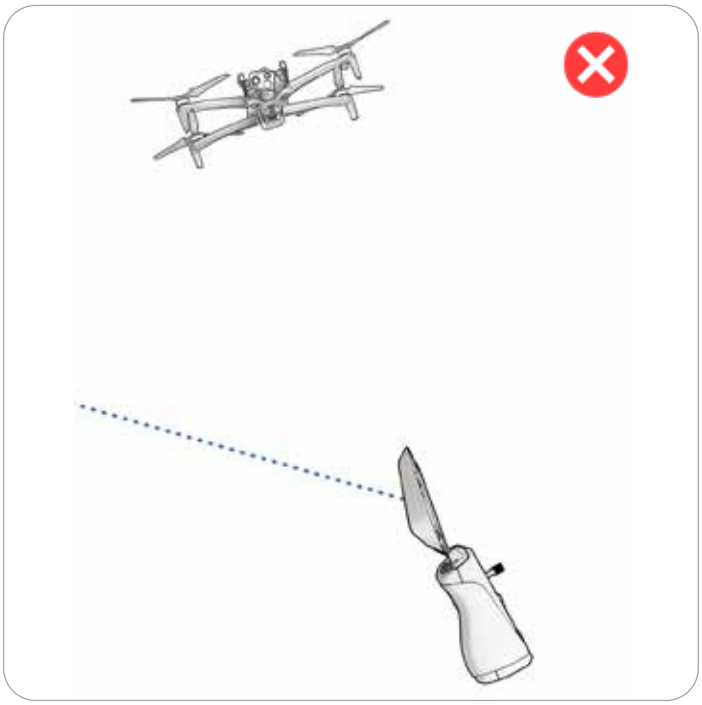
Before your first flight, make sure to set your Return and Lost Connection Behaviors (Global Settings > Return). Visit How to set Return and Lost Connection behaviors on Skydio X10 for more information about Return and Lost Connection Behaviors.

Maximum Wireless Performance

For maximum wireless performance when flying over a direct link, always maintain a direct line of sight between the controller and Skydio X10D. Point the controller cover toward the drone, especially when flying at close range high altitude.

Signal strength and maximum control range may be affected when flying in areas with electromagnetic interference.

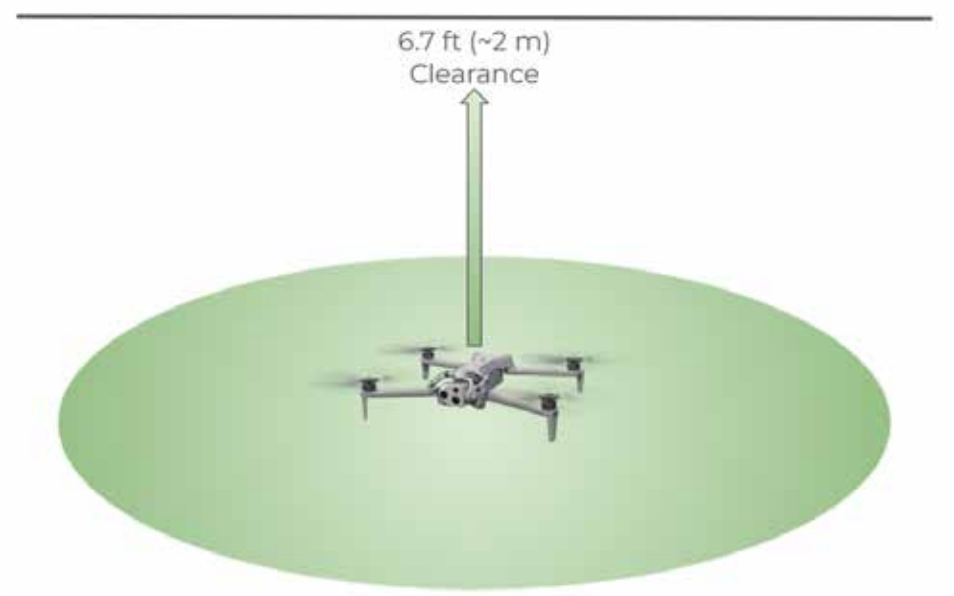




Launching

Step 1 - Find a clear, safe area to launch

Find a clear, safe area to launch and place your drone on a stable surface. X10D is capable of launching with 6.7 ft (~2 m) of clearance however 10 ft (3 m) of clearance in all directions will allow for a safer launch. Operating in tighter spaces may increase the risk of collision, injury or damage during launch.



Low Launch limits the launch height to 3 ft (1 m) ensuring the pilot has quicker flight control and allowing tactical users to maintain a lower profile.

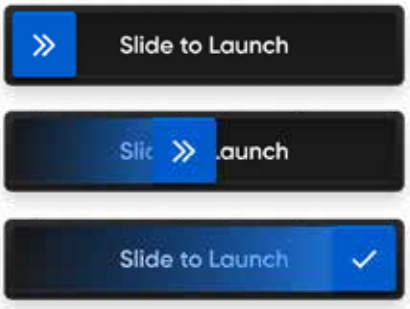
- Toggle On/Off
- The setting persists across fights and power cycles
- Requires 6.7 ft (2 m) of vertical clearance
- If Obstacle Avoidance is disabled, Low Launch will not be available
- If Attitude Mode is enabled, Low Launch will not be available

Step 2 - Launch

- Your drone will rotate 360° during launch to calibrate its Inertial Measurement Unit (IMU) and navigation system, climb to 10 ft (3 m), and hover.

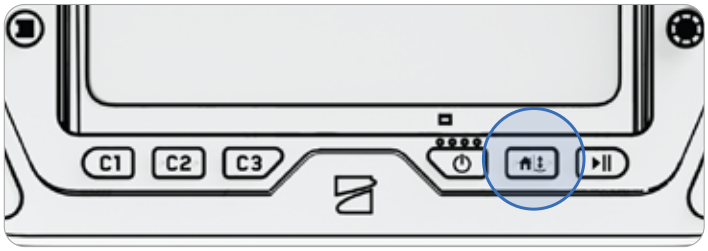
Option 1 - Drag the on-screen slider

- The drone will initiate launching when you lift your finger away from the screen.



Option 2 - Press and hold the Launch/Land button on the controller

- The drone will initiate launching when you see the on-screen check mark.



Step 3 - Acquire GPS Lock

- The GPS indicator in the telemetry bar will spin until the drone has acquired GPS Lock and established heading.
- When the **Weak GPS Alt Limit** toggle is enabled, your drone will not be able to ascend above 164 ft (50 m) when GPS is weak.
- Fly laterally to acquire a GPS lock and ascend.

Hand Launching

Launching and landing Skydio X10D from your hand is a quick and convenient way to start or end your flight, particularly if you are not in a clear, level area. For your safety, always use caution when hand launching. This maneuver is dangerous and should not be attempted in unstable environments, such as during high winds or while standing on a moving vehicle or boat.

WARNING: *Obstacle avoidance is disabled when the drone is below 10 ft (3 m) during landing. Exercise extreme care to avoid injury or damage. Do not touch spinning propellers.*

Step 1 - Ensure you have clearance above and in front of you

Step 2 - Hold the drone away from you (sensor package facing away from your body)

- Lightly grip the battery
- Keep the drone level, still, and at arm's length from your body
- Your fingers should be below the Skydio X10D chassis and away from the propellers at all times
- Ensure your hand is steady

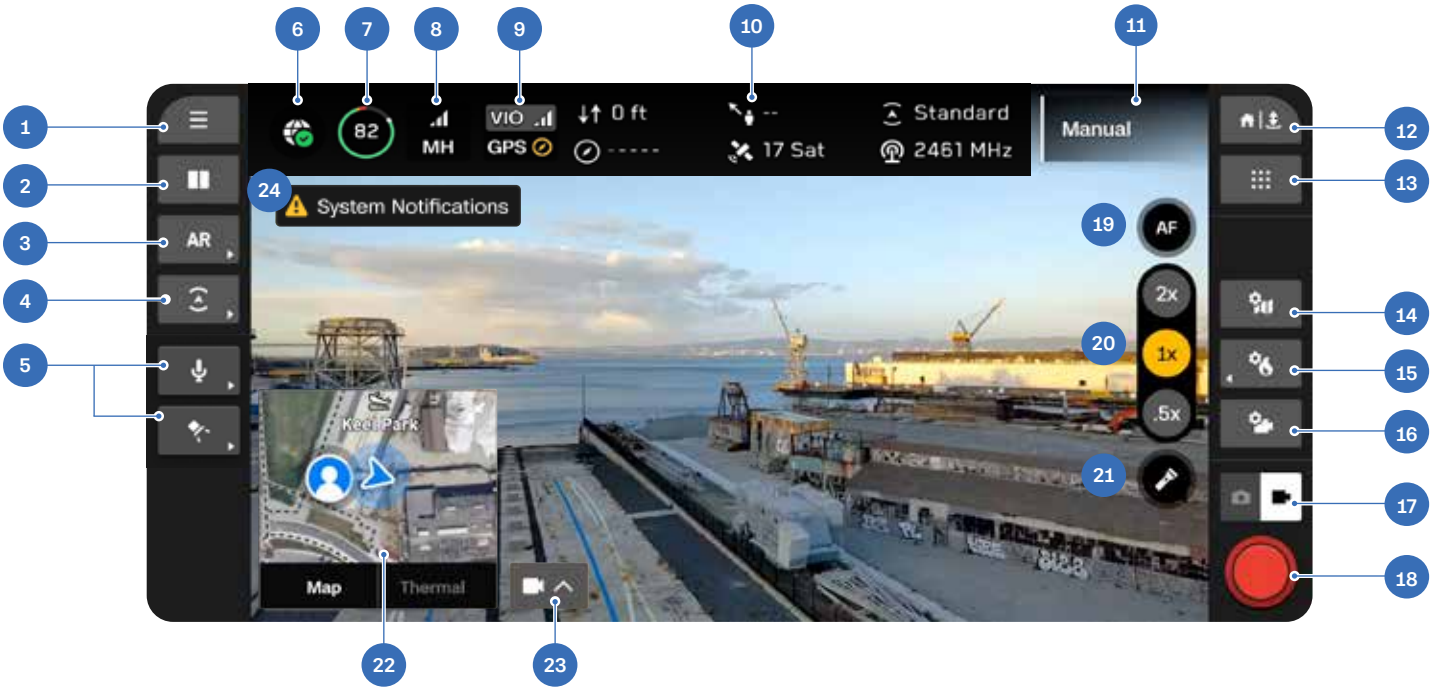
Step 3 - Launch

Press and hold the Launch Button on the X10D Controller. Slowly relax your grip as Skydio X10D launches.

- Do not push or throw the drone up in the air
- Keep your hand still - the drone will slide off your palm and take flight on its own

TIP: *Quick Launch allows you to use the battery power button to hand launch your Skydio X10D so that you do not have to balance the controller in one hand and your drone in the other. Press the battery button four times to initiate the launch. Press the battery power one additional time to abort the launch.*

Flight Screen



1. Global Settings
2. Display Layout
3. AR Quick Actions
4. Obstacle Avoidance Quick Actions
5. Attachments Quick Actions*
6. WiFi Enabled Indicator
7. Drone Battery Level
8. Radio Signal Strength
9. Navigation Mode/Health Indicator
10. Telemetry (customizable)
11. Active Flight Skill
12. Return/Land
13. Flight Skills
14. Map Settings
15. Thermal Settings
16. Camera Settings
17. Camera Mode
18. Shutter
19. Focus Control
20. Zoom
21. Flashlight On/Off (VT300-L Only)
22. Picture-in-Picture (PiP)
23. View Selector
24. Notifications

**Appears when you are currently using an attachment.*

Flight Screen

Display Layouts - While flying, you have the option to use a Single, Split or Grid layout to set the number of streams that appear while flying. Available feeds include:

- Color
- Thermal
- Map

Customize Display Layout - Select the Display Layout icon in the left sidebar. Cycle through the various layout options. The icon reflects the next layout in the queue rather than the layout you are currently using.

Single Layout

Split Layout

Grid Layout

Single Layout - Displays one stream at a time. A Picture-in-Picture (PiP) in the bottom left of the screen.

- Minimize using the two arrows in the top right
- Use the buttons on the bottom to select whether the Color, Thermal or Map feed displays in the PiP

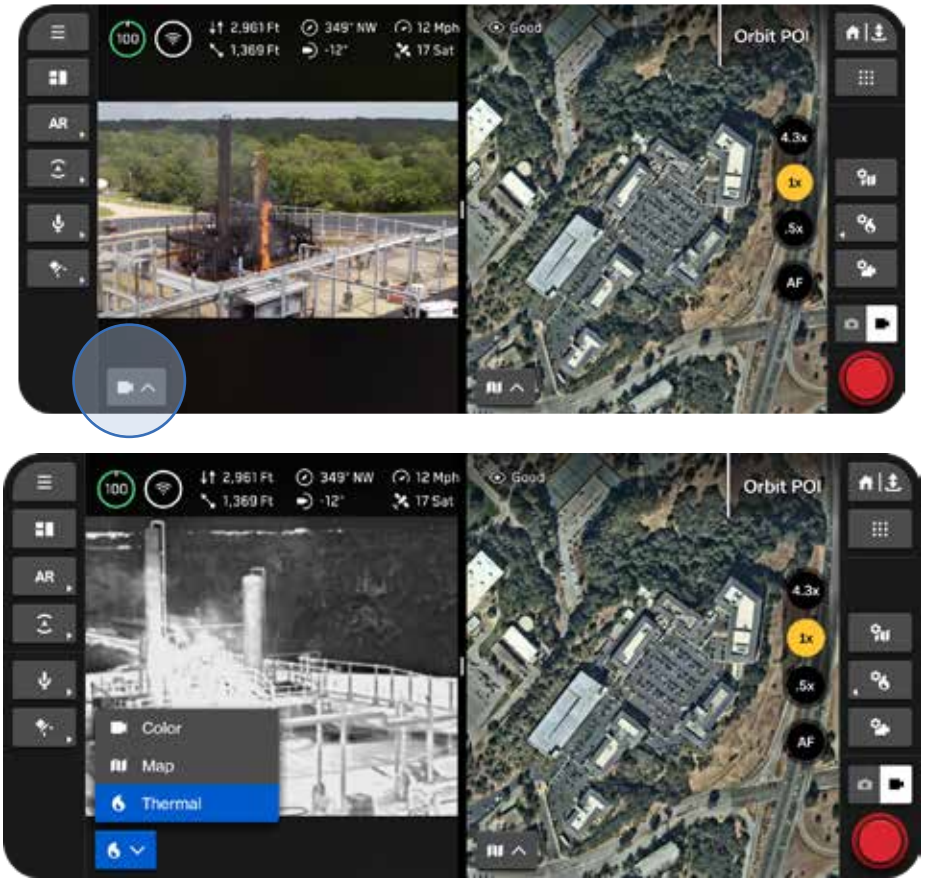
Flight Screen

Split Layout - Choose two streams to display. Drag the middle handlebar to resize streams. The primary feed displays on the right.

Grid Layout - Choose three streams to display. Press and drag the middle handlebar to resize streams. The primary feed displays on the right.

Flight Screen

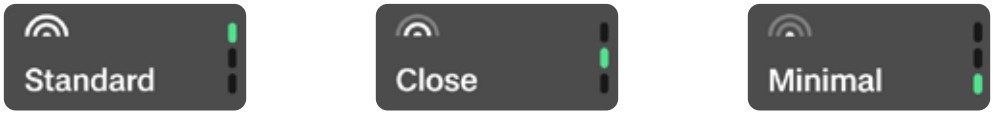
Use the View Selector to select which feeds display - A menu will appear with the stream options. Drag the middle handlebar to resize streams.



Quick Actions - The left sidebar of your Flight Screen contains a variety of Quick Action menus. With Quick Actions, you have the ability to quickly **toggle** a setting or **cycle** through setting options.

Toggle: Green bar indicates a setting is ON.

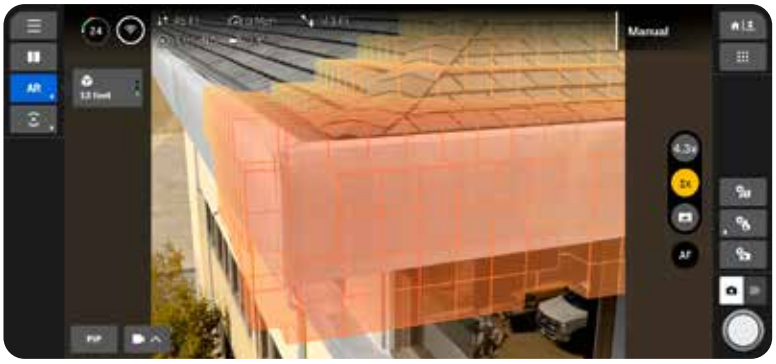
Cycle: A menu will pop out and label the current setting. The green bars indicate the number of available settings.



Flight Screen

Augmented Reality (AR) Quick Actions - Enable to visually display where Skydio X10D detects obstacles in the environment. Appears as either solid or outlined augmented reality (AR) boxes, depending on your selection within the **Display** menu. Use the **AR Quick Action** button to cycle between the distances from which obstacles are rendered on the screen. Objects that are closer appear red.

- Off
- 0 - 6 ft (0 - 2 m)
- 0 - 13 ft (0 - 4 m)



Obstacle Avoidance Quick Actions - Quickly cycle through the three obstacle avoidance settings, available in the **Sensing** menu. A yellow border appears when in Close or Minimal obstacle avoidance mode.

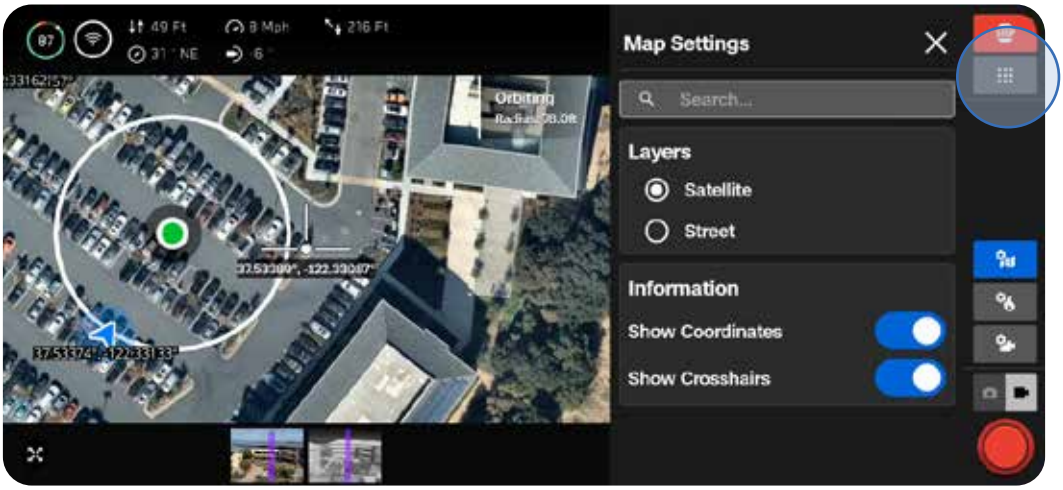
Flight Screen

Inflight Map - View your current location, search, set a Home Point, and configure map settings.

- The location of Skydio X10D, the controller, Launch Point, and Home Point (if set) are indicated on the map
- Press and hold on a location to set a **Home Point**

X10D **Controller** **Launch Point** **Home Point**

Adjust your map settings during flight using the **Map Settings** icon.



Battery Indicator

The vehicle battery level percentage **dynamically changes** during your flight based on altitude and distance from the return location and attachments in use. Monitor the Battery Indicator while flying to understand how much battery is:

- Available for flight
- Available for return
- Required to land

The battery on Skydio X10D has the ability to warm itself in cold environments. For more information, read the Maintenance section.

Green indicates the battery capacity for nominal flight before the time limit required to safely return and land.

- Decreases as battery capacity diminishes
- Adapts based on your altitude and distance from the return location

Yellow indicates how much battery is required to safely return.

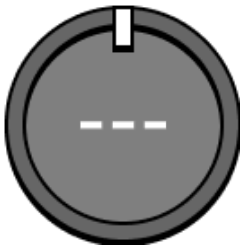
- Adapts based on your altitude and distance from the return location

Red indicates how much battery is required to land.

- Adapts based on your altitude and distance from the return location

Lightning bolt indicates the battery is connected and charging.

Three dashes indicate the battery is disconnected.



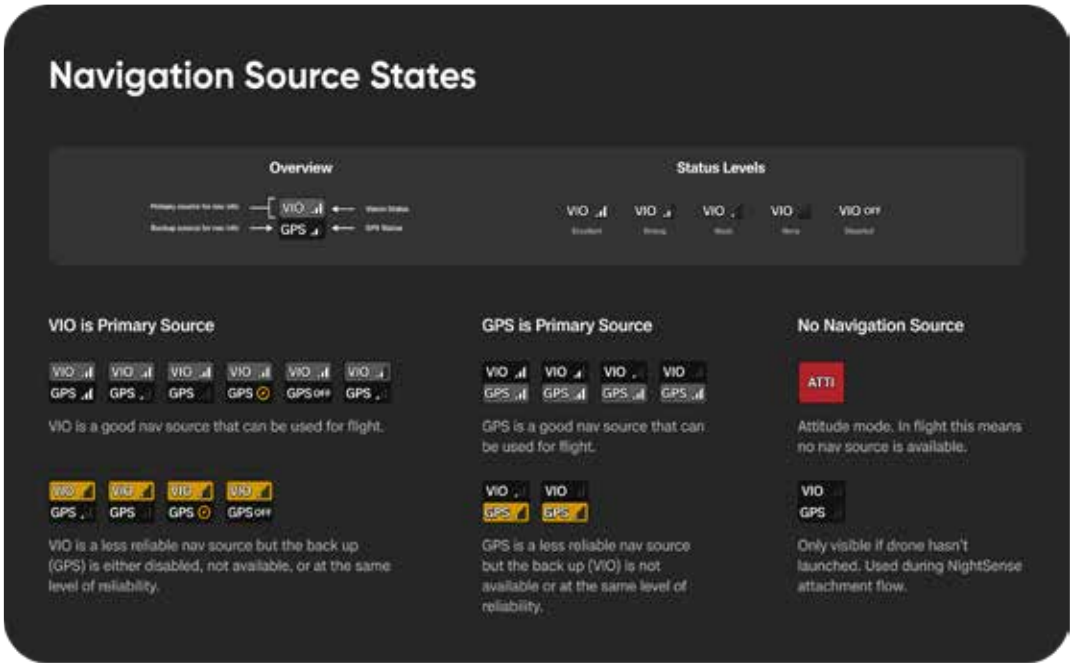
Navigation Indicator

Indicates the health of the drone navigation systems, and which navigation mode is actively in use (highlighted).

- **VIO** - Visual Inertial Odometry. This is the visual navigation system of the drone.
- **GPS** - Global Positioning System
- Attitude Mode

VIO and GPS states: Healthy, Degraded, Failed, or Disabled:

- Gray background highlights the primary navigation mode
- White status bars indicates VIO/GPS stability
  - One white bar indicates a degraded state that may be close to failure
  - Zero white bars indicates that the navigation source has failed
- GPS Off will display if GPS has been toggled off
- The yellow compass indicates GPS is awaiting heading
- If the GPS heading has not set, you will receive a notification prompting you to move the drone laterally to establish heading.
- Yellow highlight indicates that your active navigation source is weak and your backup source is unavailable.
- If the highlighted source fails, the drone will enter Attitude Mode



Navigation without GPS

Anchor Point

Navigate without GPS by setting a reference position on a map, allowing the drone to fly, execute waypoints, and return just as it would with GPS. Set a reference point to enable full vision navigation capabilities.

Step 1 - Ensure that you have the maps you need for your area

Step 2 - Select Global Settings > Sensing > Toggle Vehicle GPS off

- If the toggle is enabled, GPS Navigation will remain off across flights and power cycles.
- If the GPS Navigation Off toggle is not enabled, the system defaults to GPS Navigation On.

Step 3 - Select Fly Now > the Map settings > Set Anchor Point

Step 4 - Drag the map to place the anchor point at the estimated position of the drone

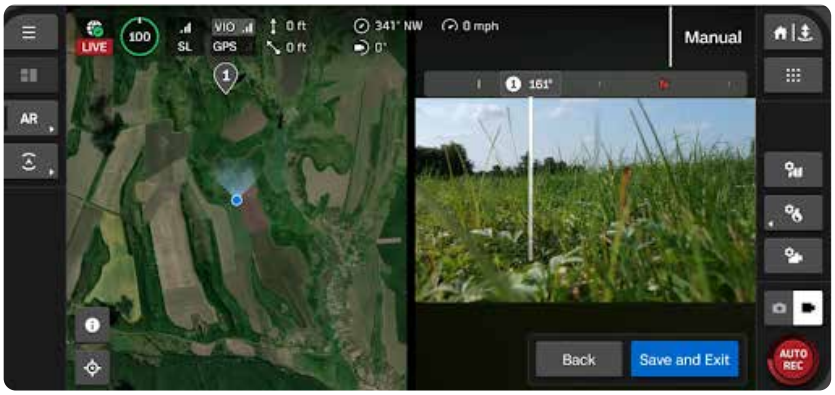
Step 5 - Long-press on a visible feature on the map (ensure the feature matches in the camera view) to set a heading point

Step 6 - Rotate the drone until the heading point (physical feature) appears in the camera view

Step 7 - Drag the compass ribbon to adjust the bearing until the vertical marker is aligned with the physical feature

- Tap to Set Anchor Point Heading: The heading marker is fully interactive in the live camera view. Users can tap to place or move it, without breaking camera or vehicle movement, making alignment faster and more intuitive.
- Anchor Point Heading: The heading camera view is fully interactive when setting Anchor Point heading. Pilots can tap anywhere on the view, even if the marker was previously offscreen, to place or reposition the heading marker, and can rotate or tilt the drone freely without breaking the interaction.

Step 8 (optional) - Adjust or relocalize the anchor point mid-mission in flight as needed



Visit [How to use Anchor Point on Skydio X10D] for detailed instructions.

Flight Skills

Skydio offers a range of manual and autonomous controls called **Flight Skills**. Select your desired skill and Skydio X10D will intelligently fly itself to assist with the task at hand. By default, you will start in the Manual Flight Skill, which provides a traditional flying experience.

Manual: Traditional flying experience. Obstacle avoidance settings will persist when flying manually, allowing Skydio X10D to route itself around obstacles, modifying any commands that could potentially cause a collision.

Orbit Point: Rotate around a user-selected point-of-interest in either a clockwise or counter-clockwise direction, keeping the point in the center of the frame. Set a GPS position on a map.

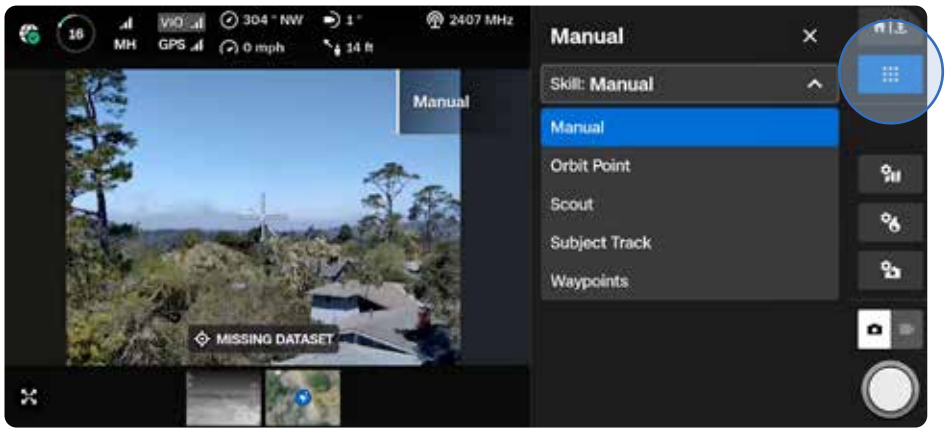
Scout: Follow and track a GPS position at long range, with the ability to adjust and reposition your drone. Skydio Scout supports GPS tracking of the Skydio X10D Controller

Track in Place: Initiate tracking a person or vehicle and Skydio X10D will hover in a fixed position, as if affixed to a virtual tripod. The drone will automatically yaw and adjust the sensor package pitch to maintain tracking. Tracking in both Color and Thermal is available.

Waypoints: Create and executive multi-waypoint GPS missions, preflight or postflight.

Flight Skills Settings

Each skill may have its own adjustable settings which only affect the selected skill. If the selected skill has adjustable settings, they will appear below the skill name within the Flight Skills menu.



Scout Flight Skill

Scout autonomously maintains the Skydio X10D's position relative to its paired controller while the controller is moving. Scout can support missions requiring situational awareness around a moving operator, vehicle, or convoy while reducing pilot workload.

Step 1 - Select Fly Now

Step 2 - Select the Skills menu in the upper-right corner of Flight Deck

Step 3 - Select Scout

- The settings menu will display

Step 4 - Configure Altitude Behavior: Ignore Subject Height

- Enable to maintain a fixed aircraft altitude as the controller's elevation changes
- Disable to command the aircraft to climb and descend with the controller

Step 5 - Position Behavior

- Relative - maintain the aircraft's orientation based on the controller's direction of travel. Use Relative behavior when the aircraft should remain in front of, behind, or beside a moving convoy as its direction changes. Relative heading changes require controller movement faster than approximately 4 mph (2 m/s).
- Fixed -maintain a fixed geographic orientation relative to the controller. Use Fixed behavior when the aircraft should remain north, south, east, or west of the controller without making large sweeping movements as the controller turns.

Step 6 - Configure the Range Limit

- Toggle Range Limit on
- Enter the maximum permitted distance between the aircraft and controller
- The pilot may manually reposition the aircraft within the configured distance. When the aircraft reaches the Range Limit, it synchronizes its movement with the controller to remain within the limit.

Step 7 - Configure Subject-Location Tools

- Enable to display a purple augmented reality box above the controller's location in the camera view. The AR box appears at the aircraft's altitude.

Step 8 - Show Find Subject Button

- Enable to add the Find Subject control to the lower-right corner of Flight Deck. Find Subject adjusts aircraft yaw only. It does not adjust camera pitch or vertically center the controller in the camera view.

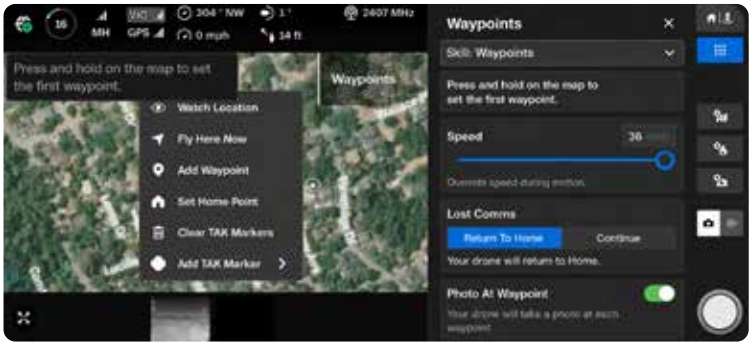
Step 9 - Start Scout

- Begin moving the controller
- Use the flight controls to manually reposition the aircraft along any axis during Scout
- When the sticks return to neutral, the aircraft resumes the configured Scout behavior

Waypoints Flight Skill

The Waypoints Flight Skill allows Skydio X10D to autonomously fly a route consisting of multiple map-based locations. Prepare for the Mission:

- Confirm the required map is available on the controller
- Verify sufficient GPS signal or configure an Anchor Point
- Configure Return and Lost Connection behaviors
- Review the Height Ceiling and other flight limits
- Confirm sufficient route clearance, battery level, and communication status



Create the Route:

Step 1 -Select Fly Now

Step 2 - Select Waypoints from the Skills menu

Step 3 - Open Map View

Step 4 - Press and hold a location on the map.

- Select Add Waypoint
- Repeat until the route is complete
- Select each waypoint to configure:
  - Altitude
  - Heading
  - Gimbal Angle

Step 5 - Configure Mission Settings as needed:

- Mission Speed: Controls how quickly X10D travels between waypoints
- Return: Stops the mission and executes the configured Return behavior after link loss
- Continue Mission: Completes the route before executing the configured Return behavior after link loss
- Photo at Waypoint: Captures a photo at each waypoint

Step 6 - Save and Edit

- Tap an open area of the map to deselect the mission. The mission saves automatically
- To delete one waypoint, press and hold the waypoint
- To delete the entire route, press and hold the map and select Delete All Waypoints
- Only one Waypoint Mission is saved at a time. Creating a new mission overwrites the previously saved route.

Step 7 - Start the Mission

- Free Look: Yaw the drone or adjust the gimbal to enter Free Look. X10D continues the mission while you adjust the camera view. Select Exit Free Look to return to the configured waypoint heading and gimbal angle.

Watch and Fly with Standoff

Watch keeps the camera pointed at a selected location or TAK marker while you continue flying. Fly with Standoff flies toward a selected point and stops at the configured standoff distance. Watch from Standoff combines both functions, keeping the camera on the selected point during the approach.

NOTE: *The aircraft maintains the configured distance from the selected point. If it starts inside the standoff distance, it will fly away from the point. If it starts outside the distance, it will fly closer.*

Watch controls the camera direction but does not control the aircraft flight path. It can track:

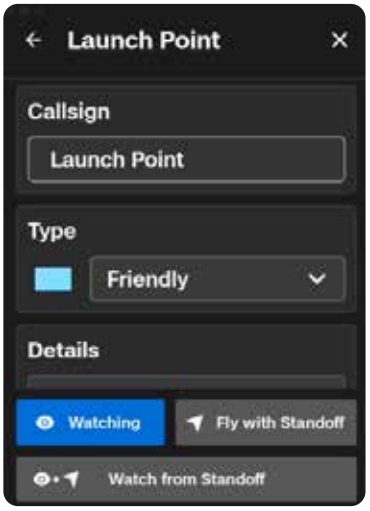
- A static or moving TAK marker
- A selected ground location

To watch a TAK marker:

Step 1 - Select the marker from the map or AR view

Step 2 - Select Watch

- Continue flying manually or start another autonomy function
- Select Watch again to stop



To watch a ground location:

Step 1 - Point the camera at the desired location

Step 2 - Select Watch Location or long-press the location on the map

- Continue flying while the camera remains pointed at the selected location.
- While Watch is active, you can orbit the point, change altitude, or move toward or away from it. Yaw control is limited to maintain camera pointing.
- Avoid flying directly over the watched point. The camera may rotate quickly and aircraft response may feel unexpected.

Watch and Fly with Standoff

To Fly with Standoff:

Fly the aircraft toward a selected point and stop at the configured standoff distance.

Step 1 - Select the Flight Controls menu and the Limits tab

Step 2 - Set the Fly to Point Speed

- Between 1 and 45 mph

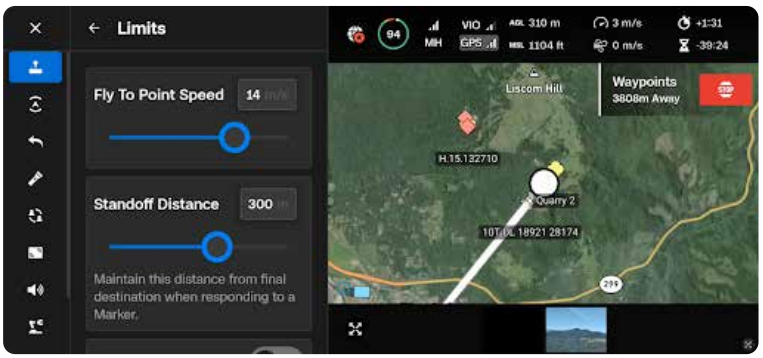
Step 3 - Set the Standoff Distance

- Between 0 and 1,640 ft

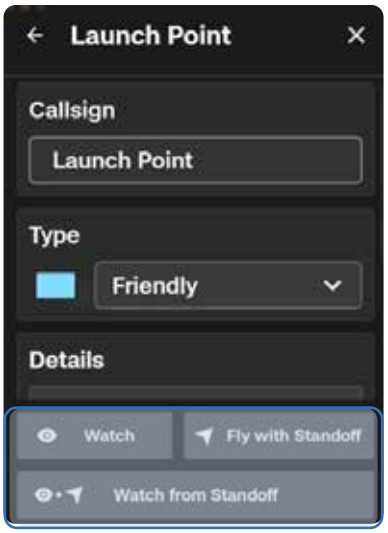
Step 4 - Select Fly Now

Step 5 - Select a map point or TAK marker

Step 6 - Select Fly with Standoff



- Fly with Standoff controls the flight path only. It does not activate Watch.



To Watch from Standoff:

Fly toward a selected point while keeping the camera directed at it.

Step 1 - Select a map point or TAK marker

Step 2 - Select Watch from Standoff

- Watch remains active until stopped. You may continue flying manually, orbit the point, or adjust your distance.
- Use Watch from Standoff to keep a point of interest in view throughout the approach.

Expected Behavior

- Watch controls camera pointing
- Fly with Standoff controls the aircraft flight path
- Watch from Standoff combines both functions
- Watch remains active after the aircraft reaches the standoff point
- Watch supports static points and static or dynamic TAK markers
- Manual flight remains available while Watch is active
- If the aircraft starts inside the configured standoff distance, it moves away until the distance is reached

Visit How to use Watch and Fly with Standoff on Skydio X10D for detailed information.

TAK Markers

TAK markers share locations, tracked subjects, vehicle position, controller position, and crosshair position across a TAK network using Cursor on Target (CoT). Skydio Flight Deck can send and receive multicast CoT messages, connect to TAK servers, and display MIL-STD-2525C/NATO APP-06C symbology.

Before You Start

Full functionality requires DTED terrain data. Download regional terrain data from ISR Manager, unzip it, and copy it to the DTED folder on the vehicle media SD card. X10D automatically imports terrain data within 10 km of the launch site.

Visit How to Download Terrain Data from ISR Manager for detailed instructions.

To Share Vehicle and Controller Markers:

Step 1 - Select Global Settings > Sharing > TAK/CoT > Share to TAK

Step 2 - Enable Share Drone and Controller Markers

Step 3 - Enter the vehicle and controller callsigns

Step 4 - Choose which tracked subjects to share: All, Selected, or None

- When enabled, Flight Deck shares the vehicle, controller, and crosshair positions with the TAK network.

To Add a Marker at the Crosshair:

1. Open the Add TAK Marker quick action
2. Select a marker type
3. Select Add at Crosshair
   - You can also map Add TAK Marker at Crosshair to a controller button.

To Add a Marker at a Coordinate:

Step 1 - Open Add TAK Marker

Step 2 - Select a marker type

Step 3 - Select Add at Coordinate

Step 4 - Enter a latitude/longitude, MGRS, or UTM coordinate.

Step 5 - Select Add TAK Marker

- Use Center on Coordinate to verify the location before adding the marker. This workflow is available before launch when the vehicle is paired.
- MapBox terrain data is required for AR overlays

TAK Markers

To Add a Marker from the Map:

Step 1 - Long-press the desired map location

Step 2 - Select Add TAK Marker

Step 3 - Select a marker type

- MapBox terrain data is required for AR overlays.

To Share Subject Tracking Markers:

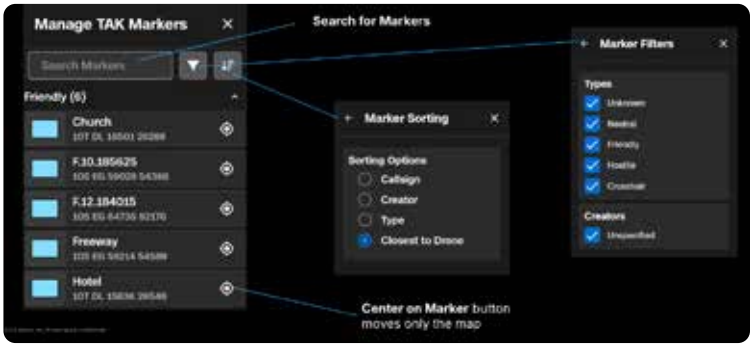
- Subject tracking can automatically create TAK markers. In Share to TAK, select All, Selected, or None.
- Automatically created subject markers initially appear as Unknown. Update the marker type when the subject is identified.

To Move or Edit a Marker:

Step 1 - Long-press the marker

Step 2 - Select Move TAK Marker

Step 3 - Tap or drag the marker to its new location



To watch a marker:

Step 1 - Open the marker details.

Step 2 - Select Watch

- Use the quick action to stop Watch.
- To watch a location, use the mapped Watch Location button, the crosshair quick action, or long-press the map and select Watch Location

To Control Marker Visibility:

- AR view: Open Augmented Reality controls and toggle AK Markers
- Map: Open Layers and toggle the TAK Markers layer

Best Practices

- Select the correct marker type before creating a marker.
- Confirm terrain data is available before using AR overlays or terrain-dependent marker workflows.
- Customize vehicle and controller callsigns before sharing.
- Close ATAK when using Flight Deck to prevent conflicts.

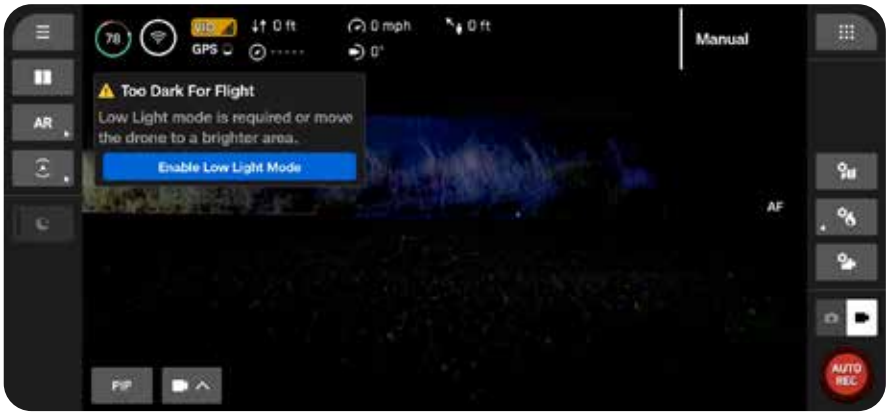
Visit How to use TAK Markers on Skydio X10D for detailed instructions.

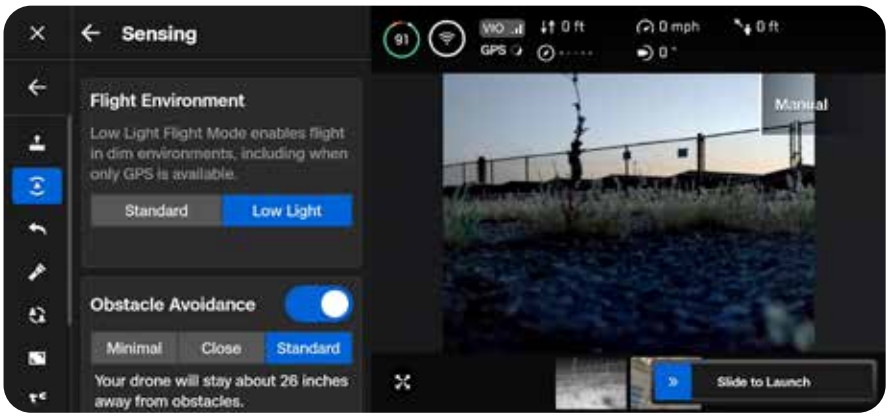
Flying at Night

When flying at night or in low light conditions without NightSense, Skydio X10D will primarily use GPS to navigate and obstacle avoidance will be disabled.

Step 1 - Enable Low Light mode

- An on-screen notification will display to enable Low Light mode if there is insufficient light. You may also select the Global Settings icon > Sensing > Flight Environment > Low Light.



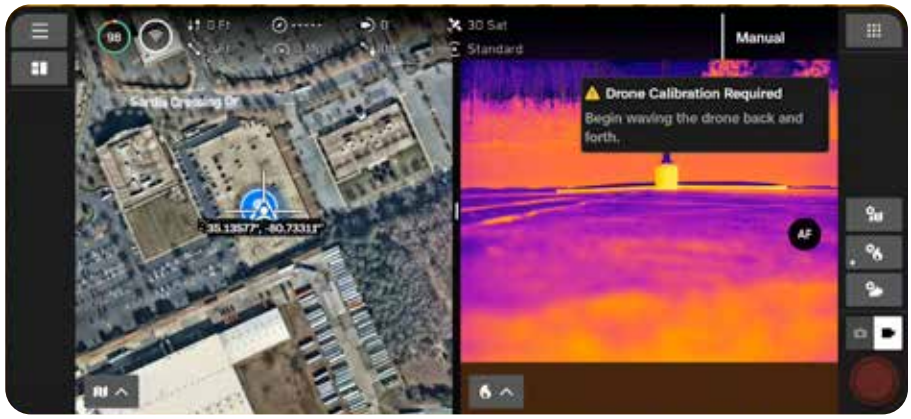


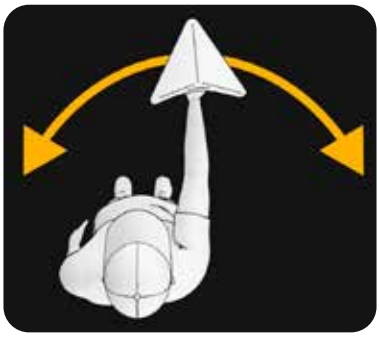
Step 2 - Configure your lighting settings

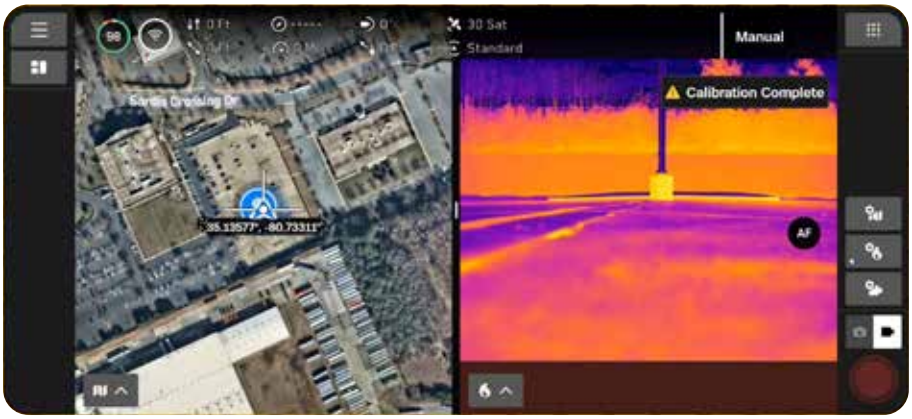
- Improve visibility by enabling infrared or visible strobe lights. Select the Lighting menu then toggle on RGB (default navigation lights), Infrared, or Strobe lights. Infrared and Strobe lights cannot be on at the same time.

Step 3 - Calibrate your drone

- Exit the Global Settings menu
- Select Fly Now. Hold your drone from the bottom with the camera facing away from your body and wave from side to side to calibrate. A message will display when calibration is complete.







Step 4 - Launch Skydio X10D

- X10D will rotate 360° to calibrate its Inertial Measurement Unit (IMU) climb to 16.5 ft (5 m), and hover.
- Obstacle avoidance will be disabled.

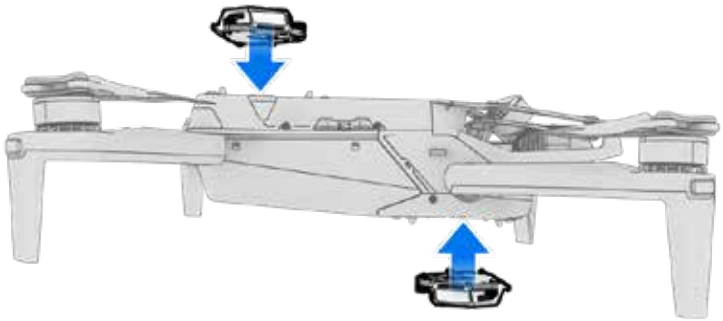
Flying at Night with NightSense

The Skydio NightSense attachments and add-on software allow you to leverage Skydio X10D visual navigation and obstacle avoidance capabilities even when flying at night. The set of two NightSense attachments cast a light above and below your drone. This light illuminates the area, unlocking Skydio visual navigation and obstacle avoidance when flying at night and in low-light conditions.

WARNINGS:

- *After prolonged use of the NightSense attachments, they may be hot to the touch and could burn your hand. After landing, wait for your attachments to cool down before handling.*
- *Do not stare directly into your NightSense modules at close range. NightSense attachments, both Visible and Infrared, may cause eye damage if held closer than an arm's reach for 30 seconds or more.*
- *Due to potential burn risk and eye damage, Skydio does not recommend Hand Landing your drone while using NightSense.*

Step 1 - Install the NightSense attachments



Visit *Getting Started with NightSense for Skydio X10D* for step-by-step installation instructions.

Step 2 - Enable Low Light mode

- An on-screen notification will display to enable Low Light mode if there is insufficient light. You may also select the Global Settings icon > Sensing > Flight Environment > Low Light.

Step 3 - Configure your lighting settings

- Improve visibility by enabling infrared or visible strobe lights. Select the Lighting menu then toggle on RGB (default navigation lights), Infrared, or Strobe lights. Infrared and Strobe lights cannot be on at the same time.

Flying at Night with NightSense

Step 4 - Enable NightSense

By default, NightSense will automatically turn on when entering Low Light mode. Use the left sidebar quick action to subsequently turn NightSense on or off. The visible or infrared lights from the NightSense attachments will illuminate the area around the drone.

Step 5 - Launch Skydio X10D

- X10D will rotate 360° to calibrate its Inertial Measurement Unit (IMU) climb to 16.5 ft (5 m), and hover.
- Max speed of 18 mph (8 m/s) with NightSense attached

Flying at Night Safety Considerations

WARNING: *Do not hand launch or land with NightSense to avoid potential burn risk and eye damage.*

Obstacle Avoidance

- **NightSense ON:** Obstacle avoidance is active when NightSense is on. Enable the AR Depth View to visually display where Skydio X10D detects obstacles in the environment, especially when using Infrared NightSense attachments, to assist with situational awareness.
- **NightSense OFF:** When in Low Light mode, obstacle avoidance is disabled. Take extra caution when piloting the drone to avoid obstacles and stay clear of people.

GPS Signal

- **NightSense ON:** When NightSense is on, visual navigation (VIO) is the primary navigation method, however if flying at high altitudes the drone will rely on GPS. Monitor your VIO and GPS health status during flight; if both VIO and GPS degrade the drone will enter Attitude Mode.
- **NightSense OFF:** Maintaining a strong GPS signal is paramount when operating X10D at night. If Skydio X10D loses GPS while in Low Light mode, and there is not enough ambient light for VIO, it will enter Attitude Mode.

Visibility: Improve visibility by enabling infrared or visible strobe lights. Skydio X10D strobe lights meet the FAA requirement of being visible at a distance of 3 statute miles.

Return Behavior: Review the return behavior height setting in the Global Settings menu.

NightSense OFF: Skydio X10D does not avoid obstacles when in Low Light mode and NightSense off, so you may want to set the drone's return height such that it will be above any potential obstacles.

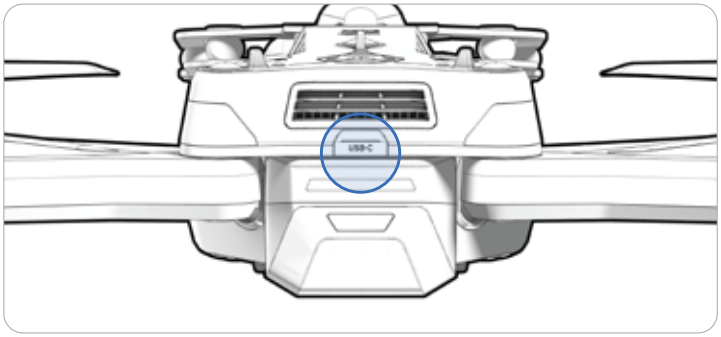
Landing: When landing, use the controller joystick to descend down to 15 feet (4.6 meters), when you are ready to land, press and hold the LAND button on the screen or the controller. Do not hand launch or hand land at night.

Flying in Precipitation

Skydio X10D is IP55 rated and able to fly in light to moderate precipitation when **obstacle avoidance** is disabled. Skydio will primarily use GPS to navigate, so it is critical to have a strong GPS signal when flying in precipitation.

Flying in precipitation during the day	• Select Standard as your Flight Environment • Disable obstacle avoidance via the quick action or the settings menu • Only fly with a strong GPS signal
Flying in precipitation at night	• Select Low Light as your Flight Environment • Disable obstacle avoidance, disable NightSense (if you have NightSense attachments installed) • Only fly with a strong GPS signal

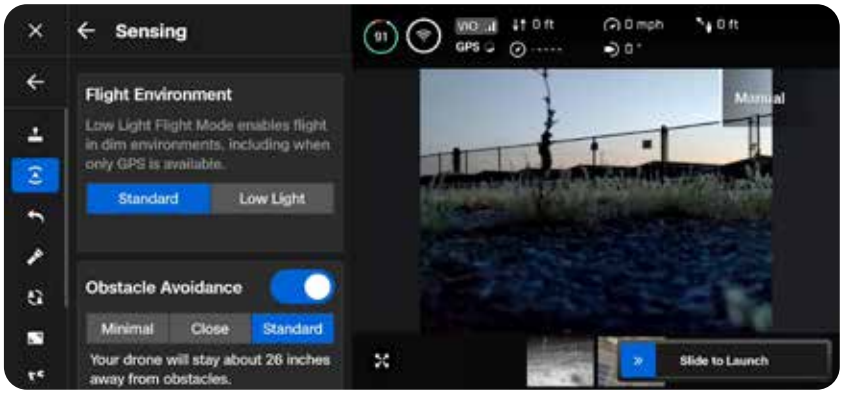
Step 1 - Ensure all rubber seals on the drone are securely closed



Flying in Precipitation

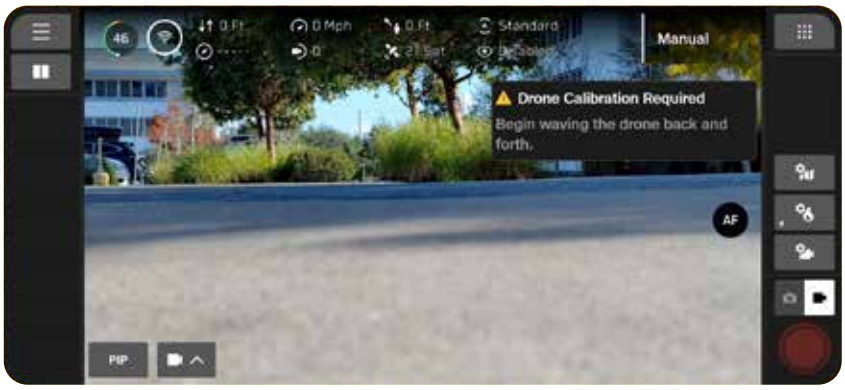
Step 2 - Select your Flight Environment

- Select the Global Settings > Sensing > Standard (flying in precipitation during the day) or Low Light (flying in precipitation at night).



Step 3 - Calibrate your drone (if in Low Light mode)

Exit the Global Settings menu, then select Fly Now. Turn off NightSense (if on). Hold your drone from the bottom with the camera facing away from your body and wave from side to side in a straight line to calibrate. You will see an on-screen message when calibration is complete.



Flying in Precipitation

Step 4 - Disable obstacle avoidance

- Disable obstacle avoidance from the quick action menu on the Flight Screen. Turn off NightSense if on.

Step 5 - Launch Skydio X10D

- Your drone will rotate 360° during launch to calibrate its Inertial Measurement Unit (IMU) climb to 16.5 ft (5 m), and hover. Obstacle avoidance will be disabled.

Step 6 - Lock controller touchscreen (optional)

- To prevent touchscreen interference from precipitation, you have the ability to lock all touchscreen inputs. While holding the back button, press the D-pad down to lock or unlock the screen.

Flying in Precipitation Safety Considerations

Obstacle Avoidance
When flying in precipitation, obstacle avoidance must be disabled. Take extra caution when piloting the drone to avoid obstacles and stay clear of people.

GPS Signal
Maintaining a strong GPS signal is paramount when flying in precipitation, since Skydio X10D is navigating primarily using GPS. If Skydio X10D loses GPS, it will enter Attitude Mode.

Visibility
Improve visibility by enabling infrared or visible strobe lights. Skydio X10D visible strobe lights meet the FAA requirement of being visible at a distance of 3 statute miles.

Wireless Range
Moisture in the air may significantly reduce wireless range.

Return Behavior
Review the return behavior height setting in the Global Settings menu. Obstacle avoidance must be disabled when flying in precipitation, so you may want to set the drone's return height such that it will be above any potential obstacles.

Landing
When landing, use the controller joystick to descend down to 15 feet (4.6 meters), when you are ready to land, press and hold the LAND button on the screen or the controller. Do not hand launch or hand land in precipitation.

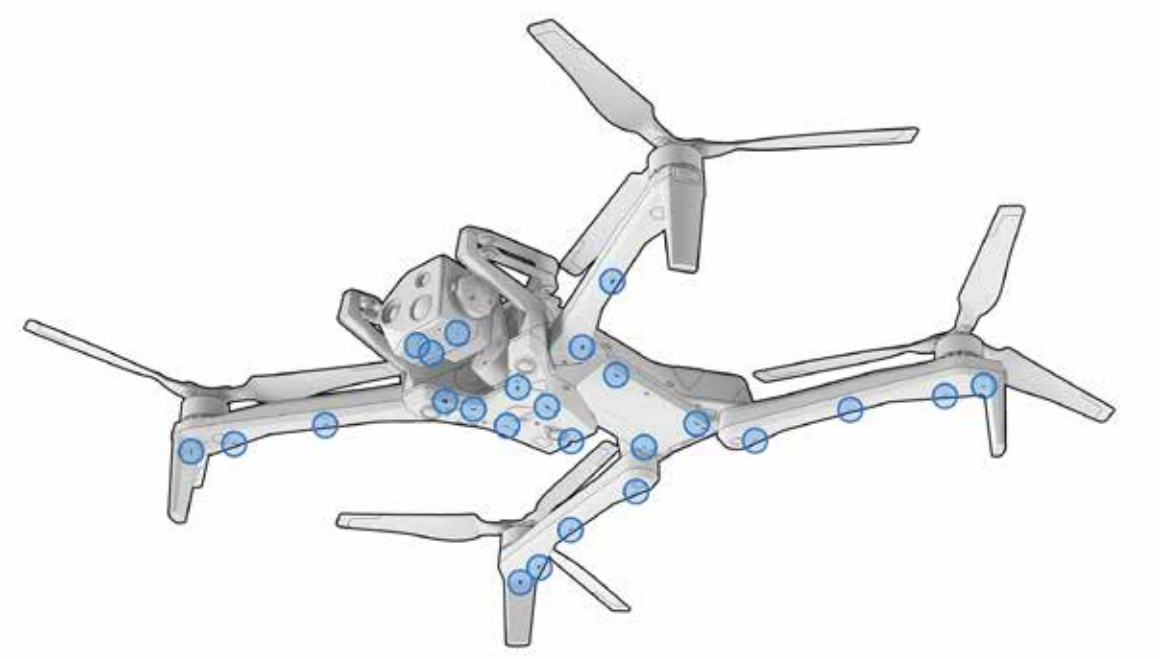
Flying in Precipitation Postflight

After flight operations in precipitation, follow all postflight steps before stowing your drone to ensure it is properly maintained and does not sustain any water damage. Skydio X10D is IP55 rated and able to fly in light to moderate precipitation. It is expected for water to enter different areas of the drone and draining postflight is normal. Sensitive components are protected.

Step 1 - Power off Skydio X10D

Step 2 - Allow water to drain

Install the sensor package lock to hold the sensor package in place. Rotate the drone to allow water to drip out of all egress areas.



Step 3 - Remove the battery

Step 4 - Wipe camera lenses clean

- Use a microfiber cleaning cloth to wipe the lenses clean and prevent dried water spots from forming.

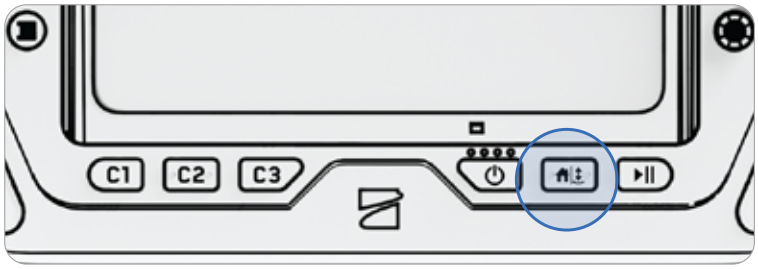
Step 5 - Air dry for a minimum of 12 hours

- Leave the drone to air dry in a ventilated, temp-controlled environment with the arms deployed in an upright position. Do not open any seals, including the USB-C charge port, until after the drone is dry. Do not remove the sensor package or any attachments while the drone is wet.

Returning and Landing

Visit [How to set Return and Lost Connection behaviors on Skydio X10](#) for more information about Return and Lost Connection Behaviors.

Step 1 - Select the Return/Land button in the top right of your screen or on the controller



Step 2 - Choose your return location or land in place

Home: Returns to a Home Point previously set on the map (GPS required)

Launch: Returns to the Launch Point

Pilot: Returns to the location of the X10D Controller

Returning and Landing

In preparation for landing, stop active autonomous Flight Skills and fly to a clear and stable area. Avoid areas with people, animals, and moving objects. Try to avoid areas with lots of fine dirt, sand, rocks, or similar materials.

- The lights on X10D will turn yellow as the drone descends below 10 ft (3 m) indicating that obstacle avoidance is disabled.
- While Skydio X10D is landing you may nudge the drone forward, backward, left, or right using the Skydio X10D Controller joysticks.
- Always monitor Skydio X10D during landing and be prepared to use the nudge feature or cancel the landing if Skydio X10D is landing in an undesirable location. Use extreme caution and care when landing on elevated platforms, such as the roof of a car or truck, as the Skydio X10D may move laterally to avoid the platform before descending to the 10 ft (3 m) threshold.

WARNING: *Obstacle avoidance is disabled when the drone is below 10 ft (3 m) during landing. Exercise extreme care to avoid injury or damage. Do not touch spinning propellers.*

You have three options when landing in place:

Option 1 - Select and drag the on-screen slider

- Landing begins when you lift your finger away from the screen.

Option 2 - Press and hold the Return/Land button on the controller

- Landing begins when you see the on-screen check mark.

Option 3 - Press and hold the Return/Land button on-screen

- Landing begins when you see the on-screen check mark.

Hand Landing

Landing Skydio X10D in your hand is a quick and convenient way to start or end your flight, particularly if you are not in a clear, level area. For your safety, always use caution when hand launching or landing.

> ***WARNING:*** *Do not hand launch or hand land during windy days, when flying at night, or extreme environmental conditions as serious injury and/or damage may occur. Do not attempt to grab or catch Skydio X10D without initiating a landing, the motors will continue to spin at full speed and may cause severe injury. Do not attempt to hand land until the lights turn yellow. Attempting to hand land while obstacle avoidance is active will cause it to attempt to avoid your hand and may result in Skydio impacting yourself or another nearby object.*

Step 1 - Position Skydio X10D above a clear area so that you can move underneath it

- Extend your arm
- The sensor package should face away from your body

Step 2 - Initiate landing

- Skydio X10D will descend vertically with full obstacle avoidance until it is 10 ft (3 m) above the ground.
- Once your drone is below 10 ft (3 m), the lights on the drone turn yellow to indicate obstacle avoidance is disabled for the remainder of the landing.

Step 3 - Lightly grab the drone by the battery from underneath as it touches down on your open palm

- After the battery has made contact with your palm, keep your hand steady until the propellers completely stop spinning.

Hot Sensor Package

If you have the VT300-L sensor package and use the flashlight for an extended period of time, the sensor package may be hot to the touch after flight and could present a serious burn risk. If the flashlight is used for the duration of a flight in ambient temperatures of 100°F (38°C), the sensor package can reach temperatures up to 142°C (61°C). Monitor your controller for any safety notifications and be careful when handling the sensor package after flight.

WARNING: *After prolonged use of the flashlight, your sensor package may be hot to the touch and could present a serious burn risk. After landing, wait for your sensor package to cool down before handling.*

Postflight

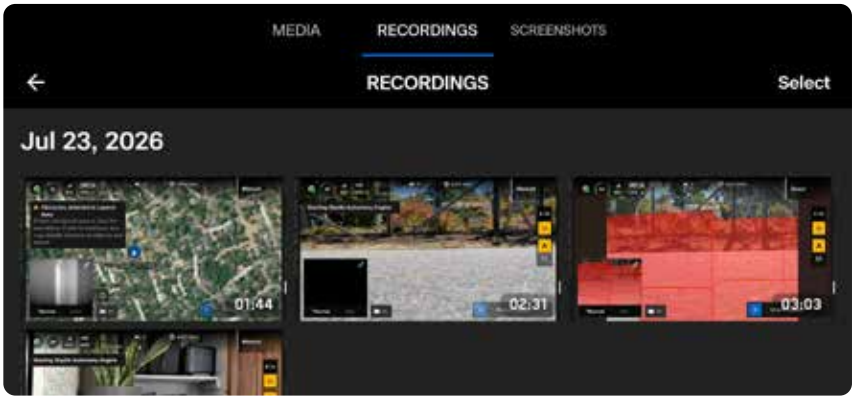
Learn how to access media and properly store your drone.

This section covers

Offloading Media

Select the **Media** menu within **Global Settings** to view photos, videos and scans from your recent flights.

- Select an image or video to view
- Press and hold on a thumbnail to select multiple or delete
- If you captured photos using **Interval**, all photos captured will appear as a single stack. Selecting the stack will allow you to scroll through individual images one by one.
- Only standard color and thermal JPGs will display in the Media menu. To access your DNG or RJPG files, you must transfer the files from your drone.
- Media is not accessible during flight



Screen recordings and Screen captures are stored and managed in the Recording and Screenshot tab.

To enable, select Global Settings > Display menu > Enable Screen Recording: Toggle on/off.

- Screen captures can be exported to a USB-C drive from the controller
- Select the screenshot or recording to export
- Select Export > Done to move the file to an external USB-C drive
- Wait at least 30 seconds before ejecting the memory drive to ensure the media exported.

Transfer Media

Step 1 - Power on Skydio X10D

Step 2 - Connect X10D to your computer

Step 3 - Import your media

- Use the Apple Photos app or the Image Capture app to transfer your files.
- Connect the USB-C cable into the port on the back of your drone to a device to transfer files

Export Logs

Flight logs provide Skydio Support with the diagnostic information needed to troubleshoot technical issues and answer questions about your system. Skydio will not access or review videos or other data without your permission.

- Do not reformat or factory reset the drone before contacting Skydio Support.
- After a landing or crash, allow the drone to complete all post-flight operations before powering it off. Powering off too soon may result in incomplete or missing flight-log data. Removing files, replacing media cards, or changing file names may also affect log availability.
- If the drone body or cameras are damaged, do not attempt another flight until Skydio Support has reviewed the logs and provided further guidance.
- Skydio Support will tell you whether to export controller logs, logs from a specific flight, or vehicle logs.

Export controller or individual flight logs

Step 1 - Power on and pair the system

Step 2 - Navigate to Global Settings > Information > Skydio Support Logs

Step 3 - Insert a USB-C drive into the back of the controller

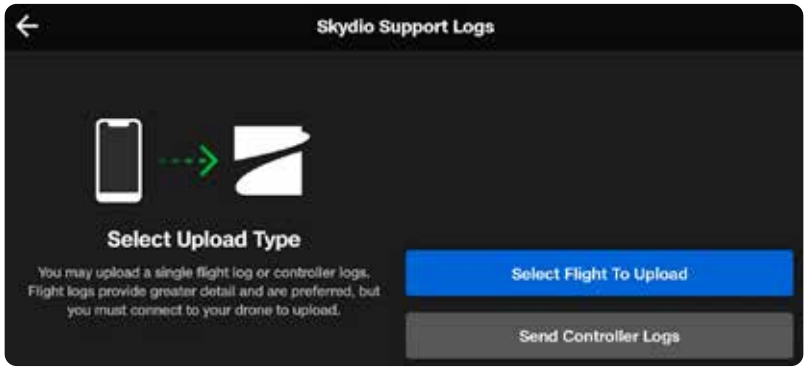
- The USB-C drive must be formatted as exFAT

Step 4 - Select Export to Drive and the logs to export

- The system will download the flight data from the X10D to the controller. This process may take several minutes.

When the export is complete:

- Insert the drive into a computer or other compatible device.
- Locate the exported log files and submit them to Skydio Support as instructed.



Export Logs

Export vehicle logs

Step 1 - Power on and pair the system

Step 2 - Insert a USB-C memory drive into the rear USB-C port on the X10D vehicle

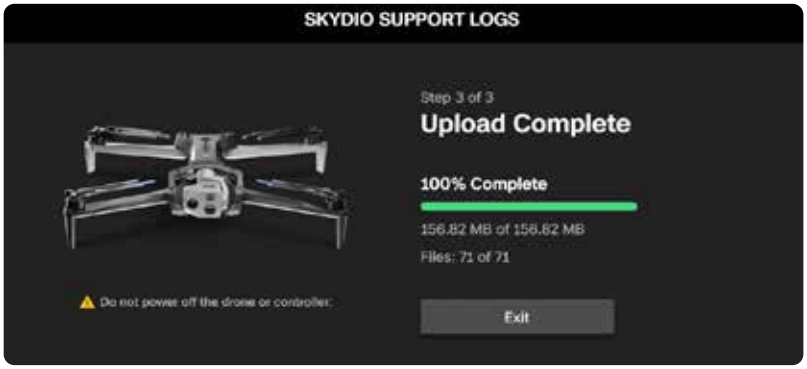
- The USB-C drive must be formatted as exFAT

Step 3 - Navigate to Global Settings > Information > Vehicle > Export Vehicle Logs to USB-C

- The drone lights will breathe yellow to indicate that a log transfer is active
- A Log Export message will display the export percentage.

When the export is complete:

- Insert the drive into a computer or other compatible device.
- Locate the exported log files and submit them to Skydio Support as instructed.



NOTE: *Skydio Support will tell you which logs to export and submit. For assistance, contact FedSupport@skydio.us*

Stowing X10D

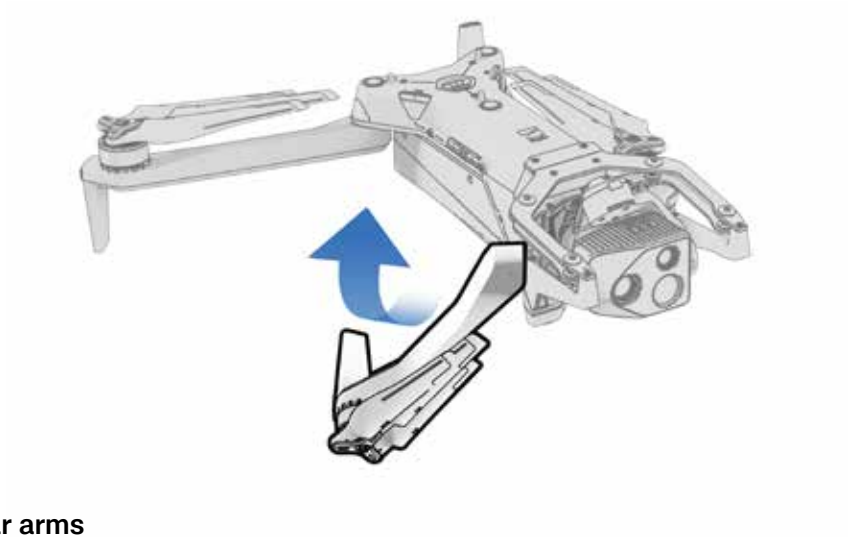
Step 1 - Wait for postflight tasks to complete

- If the battery is low while performing a longer postflight task, such as Onboard Modeling with Map Capture, ensure the drone is plugged into a power source.
- Powering off or removing the battery during postflight tasks will result in loss of data

Step 2 - Power off Skydio X10D vehicle and the X10D controller

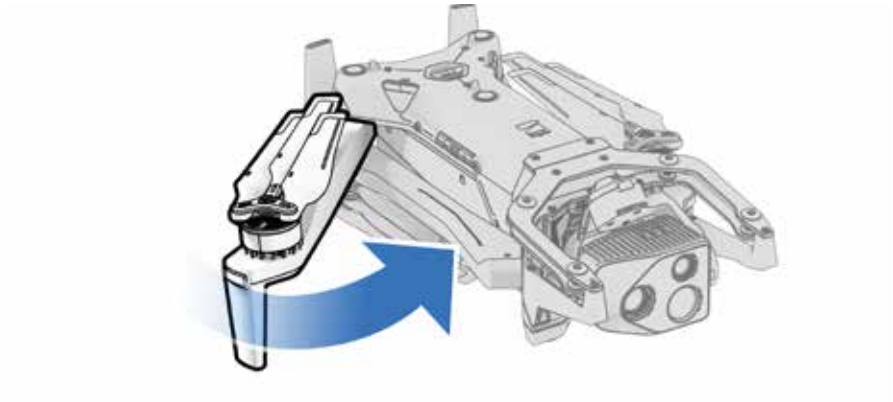
Step 3 - Fold in the front arms

- Hold the drone with the sensor package facing away from you. Gently pull the arm toward the back of the drone and rotate until it is tucked into place.



Step 4 - Fold in the rear arms

- Push laterally toward the chassis. Gently continue until you meet resistance.



Step 5 - Attach the sensor package lock

- Hold the sensor package and gently reattach the lock to the top of your drone.

Contingency Behaviors

Learn about the behaviors during events such as lost connection or low battery. Always monitor Skydio Flight Deck for alerts.

This section covers

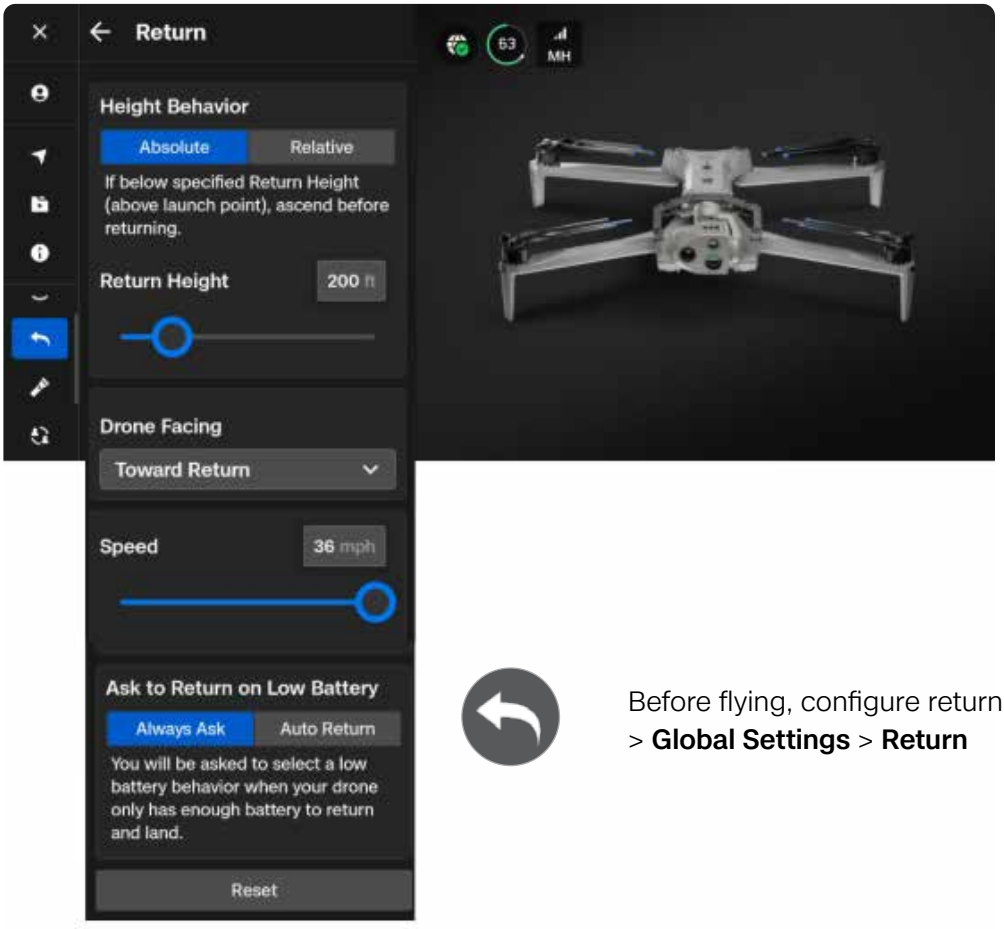
Low Battery

WARNING: *While flying, always monitor Skydio Flight Deck for in-app alerts relating to battery levels, signal quality and other inflight notifications. You may only choose to cancel an automated landing at your own sole risk; you are responsible for the potential loss of the drone and/or serious bodily harm and property damage.*

The Battery Indicator dynamically updates during flight based on weather, altitude, payload attachment weight, and distance from the return location. Monitor the indicator while flying to understand how much battery is:

- Available for flight
- Required for return
- Required to land

Skydio X10D will assess the altitude and distance from the Launch or Home Point and alert you when it is time to return and land.



Before flying, configure return settings > **Global Settings** > **Return**

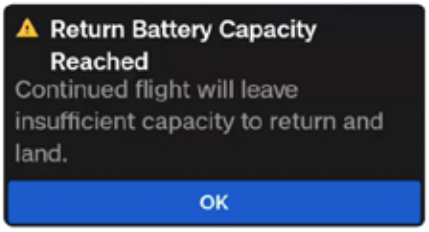
Low Battery

A series of alert notifications will display depending on the charge level remaining.

Return Battery Capacity Reached: The drone only has enough battery to return and land. This is based on conditions such as weather or attachment usage. If you delay your return, you may not have sufficient battery power to reach the return point.

- An audible tone will play over the X10 Controller
- If the drone is within 32 ft (10 m) of the return location, it will begin returning without displaying this notification
- If you selected **Ask to Return** (default) in your Return settings, you will be prompted to choose **Return** or **Keep Flying**
- If you selected **Auto Return on Low Battery** in your Return settings, the drone will begin returning automatically. Select OK in the notification to dismiss the notification but not cancel the return
- If no Home Point is set, the drone will return to the Launch Point

Ask to Return (default)



Auto Return on Low Battery

Land Soon: The drone will continue flying and a notification will display one minute before the drone will begin to land in place. Autonomous actions, such as Waypoints, 3D Scan, or Subject Tracking, are disabled. You may choose to continue flying, however, it is strongly recommended that you fly to a safe location and land soon.

Low Battery

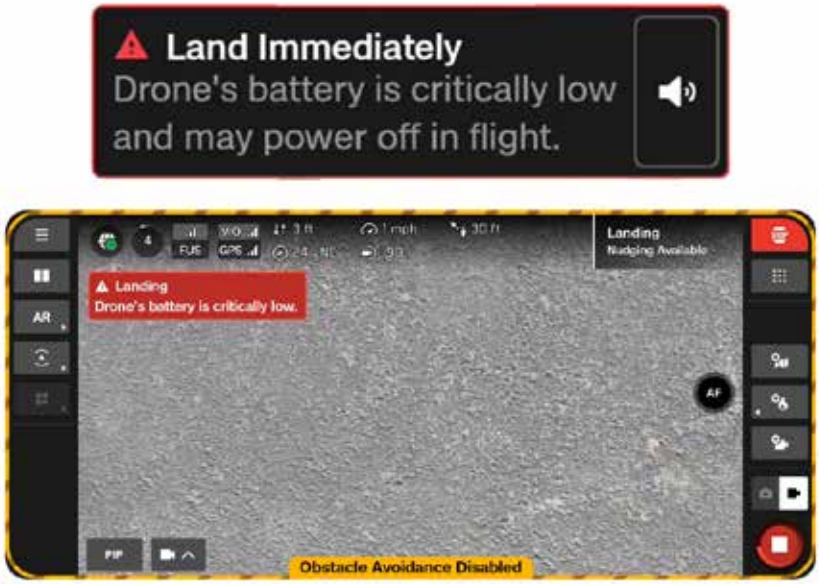
Drone Battery Low: The battery level is too low to continue flying and the drone will begin looking for a clear and flat landing surface. The drone will land in place and may make minor adjustments to land in the flattest spot. You have the ability to make small, nudging adjustments. It will not return to any designated return location.

- An audible tone will play over the X10 Controller
- Select the sound icon within the notification to mute, or adjust all notifications using the Sound menu (Global Settings > Sound)

Land Immediately: The battery level is critically low and the drone may power off mid-flight without warning. The warning displays if the earlier Drone Battery Low automatic landing and continue flying is ignored. If the drone is descending toward an unsafe area (e.g., water, traffic), you may cancel the landing, move to a safer location, and then resume the landing process.

- A series of audible tones will play over the X10 Controller

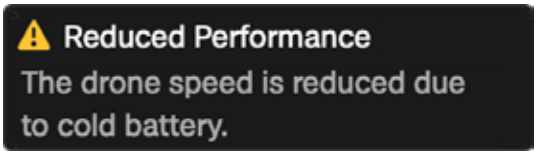
WARNING: *Continuing to fly greatly increases the risk of a crash, loss of the drone, or serious bodily harm or injury.*



Battery Capability Limitation

At times of reduced battery performance, extreme cold, extremely low battery level, overheating, and cell imbalance, the drone will reduce it's top speed and acceleration in order to enhance safety:

- Max ascent speed: 2 m/s
- Max ground speed: 12 m/s



Low Controller Battery

To ensure a safe and uninterrupted flight, monitor the controller battery levels. If the battery drops below 20%, an alert will display.

Controller Battery Low: Controller battery reaches 10%

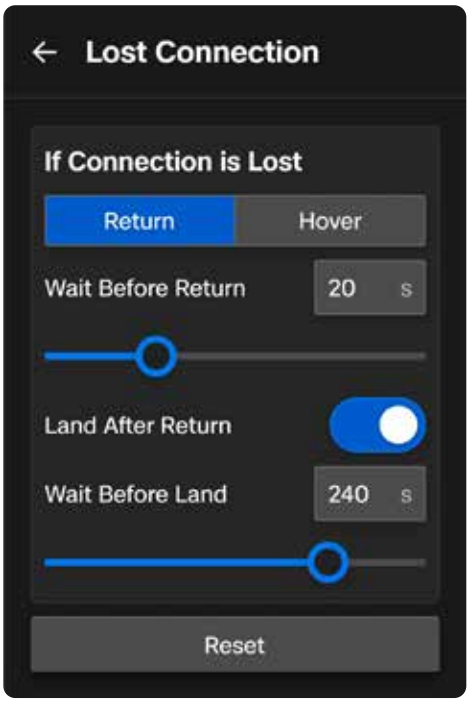
Controller Battery Critical: Controller battery reaches 5%

- If the controller powers off, the drone will honor the configured Lost Connection behaviors
- An audible tone will play over the X10 Controller

Lost Connection

If connection is lost, Skydio X10D will default to the Lost Connection settings. Select between Return (default) and Hover upon lost connection. Before flying, ensure you have set your Lost Connection Return Behaviors. This is a critical step that ensures your drone returns safely and lands in an accessible location.

Return (default)



Wait Before Return - set the amount of time you want Skydio X10D to wait before it initiates a return flight, allowing time to reconnect

Land After Return - when enabled, your drone will return, hover for a specified amount of time, then land.

Wait Before Land - the amount of time between 0 to 300 seconds (default is 240 seconds) that you want your drone to wait above the landing location before landing. This setting is only enabled when Land After Return is toggled on.

Hover

Land After Hover - when enabled, Skydio X10D will hover for a specified amount of time, then use visual navigation to find a safe area to land.

Wait Before Land - the amount of time between 0 to 300 seconds (default is 240 seconds) that you want your drone to wait before landing. This setting is only enabled when Land After Hover is toggled on.

Skydio X10D will continue hovering as it tries to regain connection. If it fails to reconnect and reaches low battery:

- If you have an automatic return set, your drone will return to either the Launch Point or Home Point (if set)
- If you do not have an automatic return set, your drone will use visual navigation to find a safe area to land
- If you do not have strong VIO (e.g. you are flying in Low Light mode without NightSense), your drone will be unable to use visual navigation and will descend vertically and land

Lost GPS and Attitude Mode

If Skydio X10D loses GPS signal, the drone will continue flying using the vision system. Actions that require GPS will be disabled.

If visual navigation (VIO) is also unavailable, the drone will enter Attitude Mode, a mode of flying that relies on the drone barometer to maintain altitude. By default, if there are no joystick inputs for 5 seconds, the drone will begin emergency landing. Monitor your GPS and VIO health in the telemetry bar. If VIO and GPS both drop below 2 bars of health, your drone will enter Attitude Mode.

In this mode, the drone will use internal barometer readings to maintain altitude when the throttle joystick is centered.

The drone will drift, in which case you will need to adjust roll and pitch movements to maintain the drone's position. The drone will not automatically hold position or automatically brake when the joysticks are centered.

CAUTION: *Obstacle Avoidance is not available in attitude mode.*

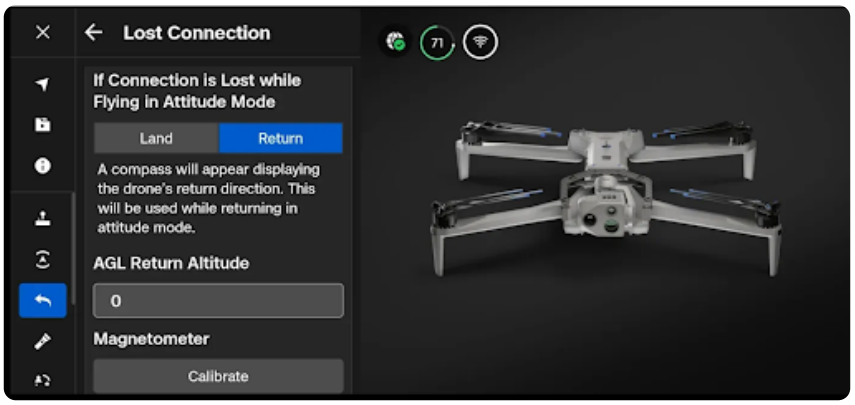
Attitude Mode

If the drone regains GPS and/or VIO while in Attitude Mode, it will switch out of Attitude Mode and use whichever navigation system is strongest.

- To have the best chance of recovering VIO, descend below approximately 60 feet above the ground and fly within sight of visual features.
- When GPS becomes available again, a prompt will be displayed. Fly the drone horizontally (either left and right, or back and forth) to regain GPS heading and resume GPS navigation.

Land in Attitude Mode: Navigate to **Global Settings** > **Flight Controls** > **Landing** to configure landing behavior while in attitude mode.

- **Toggled On (default)** - After 5 seconds of inactivity in Attitude Mode (i.e. the joysticks are centered and not touched), Skydio X10D will automatically initiate an emergency landing.
- **Toggled Off** - The drone will remain in attitude mode indefinitely under user control while no navigation sources are healthy.



After 5 seconds of inactivity in Attitude Mode (i.e. the joysticks are centered and not touched in a neutral position and not engaged), Skydio X10D will automatically initiate an emergency landing and descend autonomously. An alert notification will display that Skydio X10D is initiating an emergency landing. If you input any joystick command while the drone is emergency landing, it will stop descending landing and you can continue to fly in Attitude Mode.

Return in Attitude Mode: Your X10D returns using a compass to assign a heading by autonomously flying in an operator-defined direction when navigation and communication are lost.

- Set the return altitude AGL taking the terrain into consideration
- Calibrate the magnetometer
- A compass will display on the fly screen the return heading. Manually adjust the compass to set return heading.

Attitude Mode

Low Battery in Attitude Mode: The X10D will not return or land automatically at low battery while flying in Attitude Mode.

- It is your responsibility to monitor battery level and manually fly the drone to a safe landing location and land the drone when the battery is low.
- When the battery is low and the throttle stick is centered, the drone will descend to remind you that it is time to land.

Lost Connection in Attitude Mode

- If you lose connection with the drone while flying in attitude mode, the drone will descend and emergency land in place.

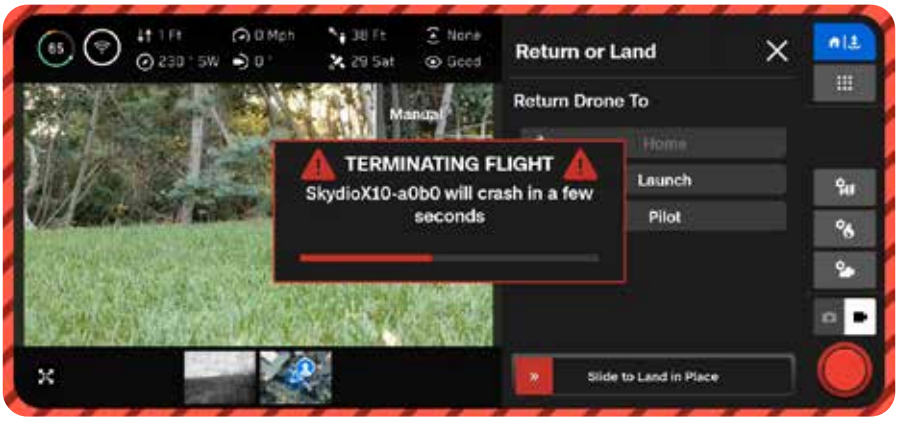
Landing in Attitude Mode: To land the X10D in attitude mode, you can press or hold the Land button to autonomously descend and touch down, or you can manually descend and touch down.

- The drone will automatically disarm and spin down the propellers after a few seconds when it detects that the drone is safely on the ground and the throttle joystick is held in a full down position.

Flight Termination

WARNING: *Terminating a flight will cause your drone to crash. Damage resulting from Flight Termination is not covered under warranty and may result in injury or damage.* ***Use only in extreme situations****.*

In the event of an extreme emergency, you have the option to immediately terminate your flight. **Simultaneously press and hold the C3 button and Launch/Return/Land button for three seconds** while in flight to immediately stop the motors.



Controller Overheating

If the Skydio X10D Controller reaches critical temperatures and overheats in flight, it will shut down and lose connection to the drone, triggering the X10D Lost Connection behavior.

To mitigate overheating and reduce the risk of lost connection during flight, the controller will issue two alerts and provide guidance to the operator.

Alert	Operator Action
Controller is Heating Up	Take mitigation actions: • Move the controller screen out of direct sunlight • Move to a shaded or cooler area if possible • Continue flight - this alert is cancellable
Controller Too Hot to Operate	Take immediate action to land: • Launch will be prevented • If the drone is in flight the signal between the controller and the X10D will be lost and your drone will default to the operator-defined lost connection settings • This alert is non-cancellable

Maintenance

Learn how to replace your propellers and best practices for battery and equipment storage.

This section covers

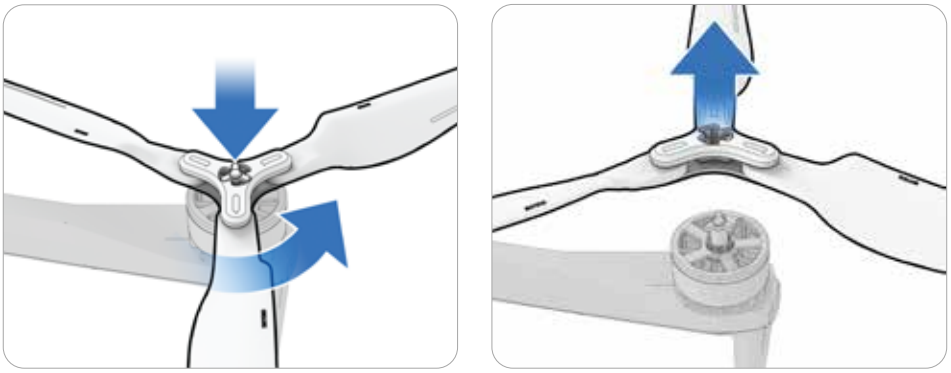
Replacing Propellers

For optimal performance, Skydio recommends replacing your propellers **after 250 hours of flight time** or whenever you notice any damage.

WARNING: *Propellers with hairline cracks or large breaks, chops, or bends should be replaced immediately. Do **NOT** fly Skydio X10D with propellers that are not in good condition as serious bodily harm or injury may occur.*

Step 1 - Remove old or damaged propeller set

- Hold onto the motor with one hand and take the propeller hub in the other. Press down on the propeller hub and twist to release.
- Twist either clockwise or counterclockwise depending on the motor.



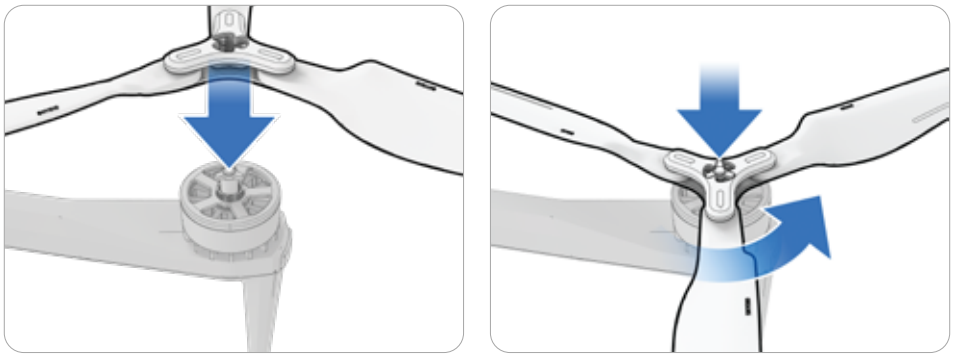
Step 2 - Identify the propeller set that matches the motor

- Match the replacement set of propellers to the color on the motor.

Step 3 - Inspect for any debris

Step 4 - Install new propeller set

- Hold onto the motor with one hand and take the propeller hub in the other. Flip the propeller hub so the opening on the hub aligns with the motor. Press down and twist to lock in place.
- If the propeller set does not fit on the motor it might be the incorrect set or side.



Cleaning Your System

It is recommended to wipe down your drone after flights in environments with significant dust or debris.

WARNING: *Do not submerge your drone or batteries or place them under running water. Water volumes from flight in precipitation are much lower than those from a faucet or hose. Water may get into areas where the drone is not designed to withstand and you may compromise the sensors.*

- Wipe down your drone with a dry or water-damp microfiber cleaning cloth.
- Only use lens cleaner on cameras.
- Do not submerge your drone or batteries.
- Do not place your drone or batteries under running water.
- Use a compressed air canister to remove any debris in hard to reach areas.
- If needed, mild soap and water may be used to remove heavier dirt or debris. Avoid getting any soap near ingress areas on the drone.
- Keep all the drain holes on the drone and battery clear. If any debris is blocking a drain hole (e.g., mud), use compressed air or gently scrape with a toothpick to remove.

Storage

- Do not store Skydio X10D while wet. After flying in precipitation, allow the drone to air dry in a dry, temperature-controlled environment before stowing. Visit the **Flying in Precipitation** section of this manual for more information.
- Store batteries at room temperature 71°F - 82°F (22°C - 28°C) for optimal performance and longevity.
- Store batteries in a cool, dry area with less than 75% relative humidity. Do not store your batteries in extreme environmental conditions.
- Batteries in an idle state (14 days of idle time with no flights) will start to self-discharge in an effort to retain capacity. This may take several days to complete and it is normal for the battery to be slightly warm during this discharge process.

Maintenance Schedule

To optimize the performance of your Skydio X10D it's important to keep your drone updated, inspect your equipment, store your equipment properly, and occasionally replace your propellers and batteries.

Action	Interval
Update system	When an update is available (per your organization's guidelines).
Clean drone navigation cameras	Before each operational session, and after sessions in dust or precipitation. If flying in areas with high amounts of dust or debris, you may be prompted to clean your camera lenses before each flight.
Replace propellers	Per 250 hours of flight time
Replace battery	After 300 battery cycles • A battery cycle is the depletion of at least 80% of the charge. • An undamaged and properly stored battery can be safely used beyond 300 cycles.

Visit How to maintain your Skydio X10D for more information and the complete Skydio X10D maintenance Manual.

Specifications

This section covers

X10D Drone

Dimensions fully deployed	31.1 x 25.6 x 5.7 in / 79 x 65 x 14.5 cm
Dimensions (folded, no battery)	13.75 x 6.5 x 4.7 in / 35 x 16.5 x 11.9 cm
Weight (incl. batteries)	4.72 lb / 2.14 kg
Max Launch Weight	5.49 lb / 2.49 kg
Operation Frequency	MicroHard 1790-1850 MHz 2040-2110 MHz 2200-2300 MHz 2300-2390 MHz 2400-2500 MHz
Transmitter Power (EIRP)	38 dBm
Hovering Accuracy (windless or breezy)	VIO: +/- 10 cm GNSS: +/- 1 m
Max Angular Velocity	Yaw: 100° /s Roll and Pitch: 225° /s
Max Tilt Angle	40°
Max Ascent Speed	13.4 mph / 22 km/h
Max Descent Speed	9 mph / 14.5 km/h
Max Non-Vertical Descent Speed	13.4 mph / 21.5 km/h
Max Horizontal Speed (at sea level)	45 mph / 72 km/h
Max Horizontal Speed with Obstacle Avoidance	36 mph / 58 km/h
Max Service Ceiling Above Sea Level	15,000 ft / 4572 m density altitude
Max Gust Handling	28 mph / 45 km/h
Max Hover Time	35 minutes
Max Flight Time	40 minutes
Processors	NVIDIA Jetson Orin SoC Qualcomm QRB5165 SoC
Ingress Protection Rating	IP55
GNSS	GPS + Galileo + GLONASS + BeiDou
Operational Temperature Range	-4° to 113°F / -20° to +45°C
Obstacle Avoidance Coverage	True 360°

X10D Controller

Dimensions closed	10 x 5 x 3 in / 25.4 x 12.7 x 7.6 cm
Dimensions open	10 x 9 x 3 in / 25.4 x 22.8 x 7.6 cm
Dimensions screen	6.6 in / 16.7 cm
Screen	Dynamic AMOLED touchscreen 120 Hz Adaptive Refresh Rate Resolution: 2340 x 1080 pixels Brightness: 1750 nits (outdoor peak) 392 ppi
Weight	2.5 lb / 1135 g
Operation Frequency	Multiband
Max Range	up to 10 km
Transmitter Power (EIRP)	38 dBm
Ingress Protection Rating	IP54
Operating time	5 hours
Battery	9600 mAH
GNSS	GPS + Galileo + GLONASS + BeiDou
Operational Temperature Range	-4° to 113°F / -20° to +45°C
Wired outputs	HDMI & USB-C
Security	NDAA compliant AES-256 encrypted data link Encrypted internal disk storage Password protected Root of trust Trusted boot Secure update

VT300-Z Sensor Package

Angular Vibration Range	+/-0.01°
User Controllable Range	+/-90° pitch
Mechanical Range	+/-140° pitch, +/-90° yaw, +75° to -230° roll

VT300-L Sensor Package

Angular Vibration Range	+/-0.01°
User Controllable Range	+/-90° pitch
Mechanical Range	+/-140° pitch, +/-90° yaw, +75° to -230° roll
Flashlight Illumination	22 lux at 3 meters

Telephoto Camera (VT300-Z only)

Sensor	1/2” 48MP CMOS
Diagonal Field of View	13°
Focal Length	35 mm (190 mm equivalent)
Aperture	f/2.2
Focus	hybrid PDAF, 5 m to ∞
Exposure Compensation	+-3
Electronic Shutter Speed	1/30 to 1/8000
ISO Range	100 to 16000
Max Video Resolution	3840 x 2880
Max Photo Size	8000 x 6000

Wide Camera (VT300-L only)

Sensor	IMX989 1” 50.3MP CMOS
Diagonal Field of View	93°
Focal Length	8 mm (20 mm equivalent)
Aperture	f/1.95
Focus	100% focus pixel, 1 m to ∞
Exposure Compensation	+-3
Electronic Shutter Speed	1/30 to 1/8000
ISO Range	100 to 16000
Max Video Resolution	3840 x 2880
Max Photo Size	8192 x 6144

Narrow Camera (VT300-Z and VT300-L)

Sensor	1/1.7” 64 MP CMOS
Diagonal Field of View	50°
Focal Length	10 mm (46 mm equivalent)
Aperture	f/1.8
Focus	hybrid PDAF, 1 m to ∞
Exposure Compensation	+-3
Electronic Shutter Speed	1/30 to 1/8000
ISO Range	100 to 16000
Max Video Resolution	3840 x 2880
Max Photo Size	9248 x 6944

Thermal Camera (VT300-Z and VT300-L)

Thermal Imager	Flir Boson+ Uncooled VOx Microbolometer
Diagonal Field of View	41°
Focal Length	13.6 mm (60 mm equivalent)
Aperture	f/1.0
Focus	5 m to ∞
Thermal Sensitivity	<30mK NEDT
Infrared Temperature Measurement Accuracy	Larger of +- 5°C or 5%
Image Processing	Adreno 650 GPU accelerated ISP pipeline
Max Video Resolution	640 x 512
Photo Size	640 x 512
Photo Format	JPEG, RJPEG
Pixel Pitch	12 um
Temperature Measurement Method	Spot Meter, Region of Interest
Temperature Measurement Range	-40° to 150° C (-40° to 350° C low gain)
Palette	White hot Black hot Ironbow Rainbow

Vision Systems / Navigation Cameras

Configuration	6x cameras in trinocular configuration top and bottom
Sensor	Samsung 1/2.8” 32 MP color CMOS
Light Sensitivity	Visible Light
Aperture	f/1.8
Diagonal Field of View	200°
Obstacle Sensing Range	20 meters
Environment Coverage	True 360°

System Security

Wireless Encryption	Connect SL: AES-256
NDAA Compliance	NDAA Compliant
Root of Trust	HSM protected keys
System Integrity	Secure boot
Secure Update	AES-256 encrypted, signed, & verified
Internal Disk Storage	Encrypted
SD Cards	Unencrypted
Pairing	Secure wired pairing

Flight Battery SBR47V1

Capacity	8419 mAh
Voltage	18.55 V
Battery Type	Rechargeable Lithium Ion Polymer
Energy	156.17 Wh
Net Weight	1.56 lb +/- 0.003 lb
Operational Temperature Range	-20° to 60°C
Storage Temperature Range	-20° to +45°C (storage less than 3 months)
Charging Temperature Range	5° to 45°C
Chemical System	Lithium Ion Polymer

Flight Battery SBR47V2

Capacity	8800 mAh
Voltage	17.5 V
Battery Type	Rechargeable Lithium Ion Polymer
Energy	154 Wh
Net Weight	685g / 1.51 lb
Operational Temperature Range	-20° to 60°C
Storage Temperature Range	-20° to +45°C (storage less than 3 months)
Charging Temperature Range	5° to 45°C
Chemical System	Lithium Ion

X10D Dual Charger and Power Supplies

Dimensions	180 x 75 x 48 mm
Weight (w/o Battery)	0.73 lb
Charge Time 230 W barrel jack	1 hour (0-100%)
Charge Time 100 W USB-C	1 hour 45 minutes (0-100%)
Weatherproofing	No ingress protection
Power input (100 W USB-C)	5 VDC, 3 A / 20 VDC, 5A (USB PD)
Power input (230 W barrel jack)	20 VDC, 11.5 A

Legal

This section covers

Legal

Before operating Skydio X10D, review the *Getting Started* information including the *Operator Manual* available at *www.skydio.com/manuals*. Retain documentation for future reference.

Safety
Review the *Skydio Safety and Operating Guide* available at *www.skydio.com/safety*.

Battery
Handle the battery with extreme care and refer to the Operator Manual and to the *Skydio Safety and Operating Guide* for additional information.

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Carefully dispose of batteries according to manufacturer's instructions and to your local environmental laws and guidelines.

Risque d'explosion si la batterie n'est pas correctement remplacée. Remplacer uniquement par un type identique ou équivalent recommandé par le fabricant de l'équipement. Jeter les batteries conformément aux instructions du fabricant et aux lois et directives environnementales locales.

Charging
Do not use the X10D Dual Charger near wet locations. To avoid the risk of electric shock, use only in dry locations. Do not allow anything to rest on the power cord. Do not locate this device where the cord will be abused by persons working on it. Do not overload wall outlets and extension cords as this can result in fire or electric shock.

N'utiliser pas le X10D Dual Charger à proximité d'endroits humides. Pour éviter tout risque de choc électrique, utiliser uniquement dans des endroits secs. Ne laisser rien reposer sur le cordon d'alimentation. Ne placer pas ce moniteur dans un endroit où le cordon pourrait être maltraité par les personnes travaillant dessus. Ne surcharger pas les prises murales et les rallonges car cela pourrait provoquer un incendie ou un choc électrique.

Skydio One (1) Year Limited Warranty
Skydio warrants the included hardware product against defects in materials and workmanship in hardware under normal use in accordance with published guidelines including but not limited to the *Terms of Use*, *Operator Manual* and the *Skydio Safety and Operating Guide* for one year from the date of delivery (the "Limited Warranty"). The Limited Warranty does not warrant against normal wear and tear or damage caused by accident or abuse and is not applicable to any software provided with the hardware product. The Limited Warranty is subject to the full terms and detailed information about how to obtain service available at *www.skydio.com/legal/limited-warranty*. If you submit a valid claim under this Limited Warranty, Skydio will either repair, replace, or refund your hardware product at its sole discretion. You may be required to furnish proof of purchase details when making a claim under this Limited Warranty.

Skydio Care
Skydio offers Skydio Care as a subscription service at an additional cost that provides protection from collisions, water damage, or lost drones which are not covered under the Limited Warranty. Skydio Care can be purchased as a one (1) year plan co-extensive with the Limited Warranty, or as a three (3) year plan, which includes a two (2) year extension to the one (1) year term of the Limited Warranty. Skydio Care is subject to the full terms and detailed information about how to obtain service available at *https://www.skydio.com/legal/skydio-care-terms-of-service*. If you submit a valid claim under Skydio Care, you may be eligible to purchase discounted drone replacements for otherwise uncovered damage or losses. The Skydio Care benefits are in addition to the rights provided under the Limited Warranty.

California Prop 65 Warnings
Skydio X10D uses lithium-ion batteries. Exposure to lithium-ion, containing cobalt lithium nickel oxide, and nickel, is known to the State of California to cause cancer and birth defects, or other reproductive harm. For more information visit:
www.P65Warnings.ca.gov.

Skydio X10D Controller contains chemicals including cadmium, which is known to the State of California to cause cancer and birth defects, or other reproductive harm. For more information visit: *www.P65Warnings.ca.gov*.

Skydio X10D Dual Charger contains chemicals including BPA and nickel, which are known to the State of California to cause cancer and birth defects, or other reproductive harm. For more information visit: *www.P65Warnings.ca.gov*.

Legal

FCC Compliance Statement
These devices comply with Part 15 of the FCC Rules and with ISED Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) these devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation. This equipment should be operated with a minimum distance of 22 cm between the X10 antennas and your body.

Cet équipement doit être utilisé avec une distance minimale de 22 cm entre les antennes X10 et votre corps. Ces appareils sont conformes aux normes RSS exemptes de licence d'ISDE Canada. Leur fonctionnement est soumis aux deux conditions suivantes: (1) ces appareils ne doivent pas causer d'interférences nuisibles, et (2) ces appareils doivent accepter toutes interférences reçues, y compris les interférences susceptibles d'entraîner un fonctionnement indésirable.

Changes or modifications not expressly approved by Skydio could void the user's authority to operate these devices.

These devices have been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when these devices are operated in a commercial environment. These devices generate, use, and can radiate radio frequency energy and, if not installed and used in accordance with the Operator Manual and Safety and Operating Guide, may cause harmful interference to radio communications. Operation of these devices in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numerique de classe A est conforme a la norme Canadienne NMB-003.

Legal

FAA Compliance Statement
Unless specifically exempt, this product complies with 14 CFR Part 89 regulations on Remote Identification per ASTM F3411-22a-RID-B and ASTM F3586–22.

Software License
The *Skydio Software End-User License Agreement* available at *www.skydio.com/legal/eula* governs the use of any Skydio software that is pre-installed, downloaded, installed, or otherwise provided in connection with any included hardware.

Additional Resources
For all the latest information about Skydio and our products visit: *www.skydio.com*.
For Skydio legal information and product terms of use visit: *www.skydio.com/legal*.
Skydio products are protected by patents and trademarks, registered in the United States and other countries. For Skydio intellectual property information visit: *www.skydio.com/legal/ip*.

If you need assistance, please reach out to: FedSupport@skydio.us

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