# User Guide
## Beacon

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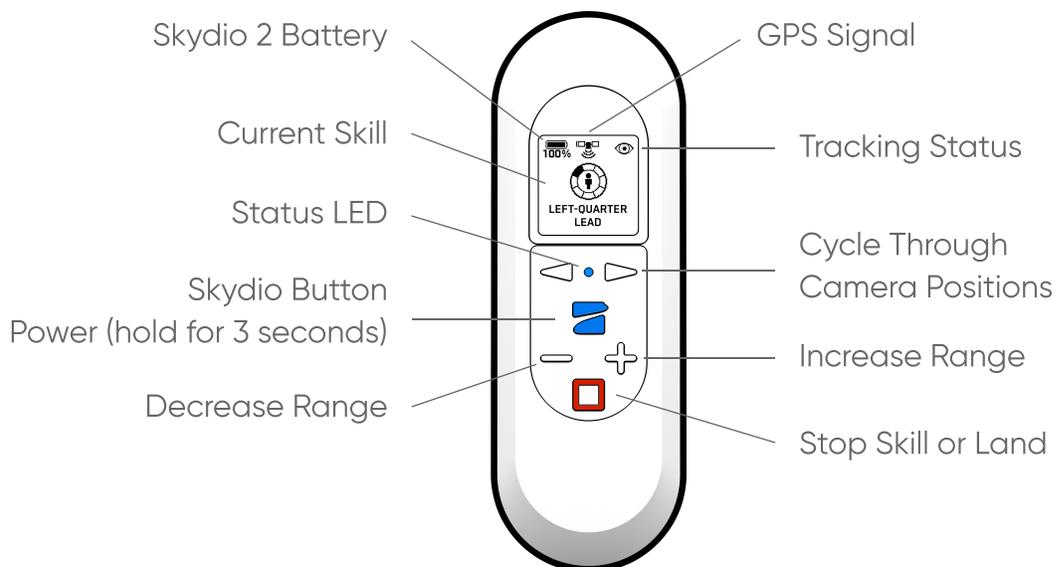
# Total Control in Your Palm

Thank you for purchasing the Skydio Beacon. The Skydio Beacon unlocks a new level of robustness by extending communication range and providing accurate user positioning while also enabling lightweight controllability.

> **Note:** If you have not done so, we **highly recommend** that you perform your first Skydio 2 flights without the Beacon to complete the Learn to Fly experience. See the Your First Flight section of the Skydio 2 User Guide for more details**.**

# Overview



Skydio 2 Battery

Current Skill

Status LED

Skydio Button
Power (hold for 3 seconds)

Decrease Range

GPS Signal

Tracking Status

Cycle Through
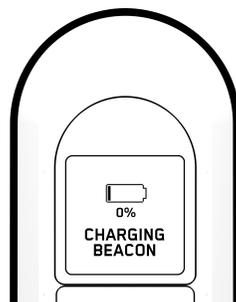Camera Positions

Increase Range

Stop Skill or Land

# Charging the Beacon

The **USB-C charging port** allows you to charge your Beacon by connecting the USB-C cable and power adapter that came with your Skydio 2.
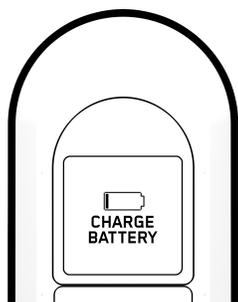


*Needs Charging*          *Charging*

The beacon's screen will indicate that it is currently charging. When the beacon is fully charged the screen will turn off.

# Pairing the Beacon to Skydio 2

To fly with the Beacon, you must first pair the Beacon with Skydio 2.  Each beacon may only be paired to a single Skydio 2 at a time.  Once a beacon is paired with a drone, it will automatically connect to that drone every time it is turned on until it is paired with a different Skydio 2.
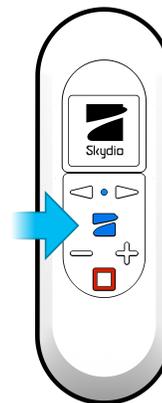
## Step 1

Connect a Skydio battery to Skydio 2; to turn on, **press** and **hold** the power button for **5 seconds.**
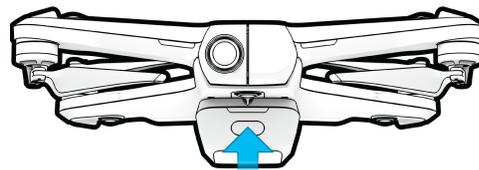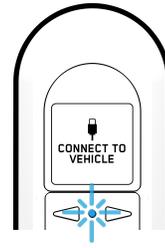


## Step 2

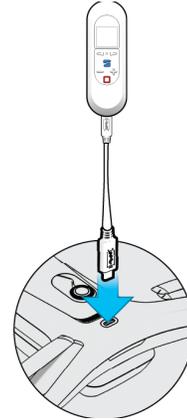**Press** and **hold** the **Skydio button** for 3 seconds to turn on the Beacon.

## Step 3

If your Beacon has never paired with a Skydio 2 drone before, the screen will instruct you to connect the beacon to a vehicle.

## Step 4

Plug the **Beacon** into **Skydio 2** using the **USB-C cable** that came with the Skydio 2.

## Step 5

The Beacon will say "Connected to Skydio-XXXX" when it has sucessfully paired and connected to Skydio 2.
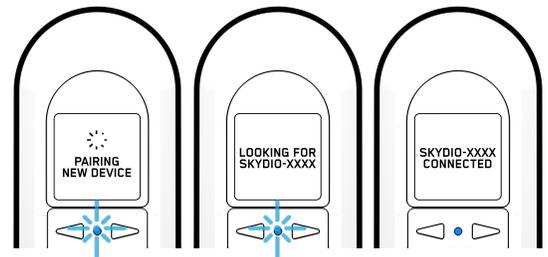
## Updating Beacon Software

The Beacon will automatically check for a software update every time it connects to Skydio 2. If an update is available, the screen will display "Updating Beacon". The Beacon will automatically apply the new software update and reconnect to the Skydio 2 when it is finished. **Do not power off Beacon while update is in progress.**
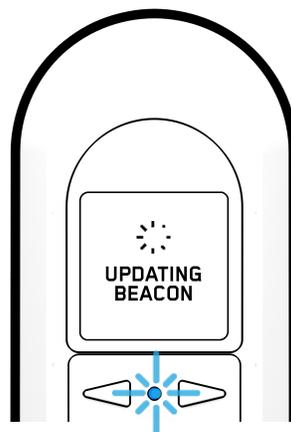
# Learning to Fly

If you have not done so, Skydio highly recommends you perform your first Skydio 2 flight without the Beacon in order to complete the Learn to Fly experience. See the Your First Flight section of the Skydio 2 User Guide for more details.

# Preparing for Launch

### Step 1

Before launch, your Beacon will perform pre-flight checks such as looking for updates. The Beacon relies on a strong GPS signal to operate and is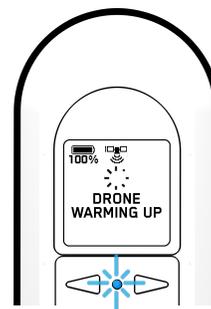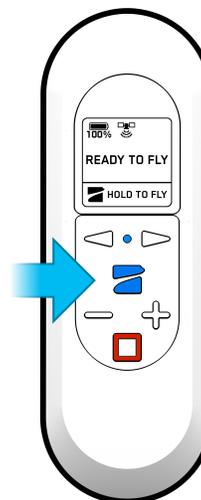 required for launch. The GPS strength indication can be found in the center icon of the header. If GPS is poor you may be prompted to connect your phone to the beacon's WiFi to speed up the process.

### Step 2

To fly, **press** and **hold** the **Skydio button** to launch.

# Flying with Beacon

When launching from the ground using a Beacon, Skydio 2 will hover in place. The Beacon holder should stand in front of the camera and tap the **Skydio button** to begin subject tracking. This significantly improves Beacon tracking performance when starting from a ground launch and allows for a strong visual tracking lock. If the Beacon holder is not standing in front of Skydio 2, it will use the GPS signal of the Beacon to locate the subject.

When performing a hand launch with the Beacon, Skydio 2 will fly forward while rising up, then automatically turn around and lock on the pilot.

# Tracking

When tracking a subject the Skydio 2 relies on Visual recognition of a subject to follow. However there may be cases, such as going through dense trees, where the subject is not completely visible. In cases such as these, Skydio 2 will rely on GPS tracking to maintain subject lock. These fluctuations in subject tracking are surfaced by the icon in the top right corner.
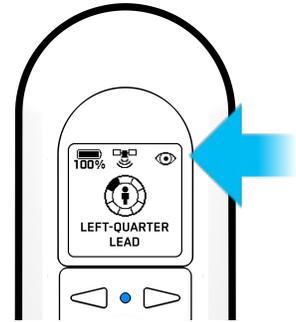
**Troubleshooting:** If it looks like the vehicle has locked onto the wrong subject when using the Beacon, check to see if the Ambiguous Visual Tracking icon is present (see below). You may either go into **Steering Mode** to move the vehicle directly in front of you, **begin moving away from others** so that the vehicle can better distinguish you, or **select yourself from your phone.**

### Tracking Icons and States

- Ambiguous Visual Tracking

    Skydio 2 picks a subject out of a group but isn't 100% confident it's the right person.

- Implicit Visual Tracking

    Skydio 2 is confident it has automatically identified the subject.

- Explicit Visual Tracking

    A subject is selected specifically on the phone.

- GPS Tracking

    Skydio 2 is using the Beacon's GPS to track a subject.

- Not Tracking

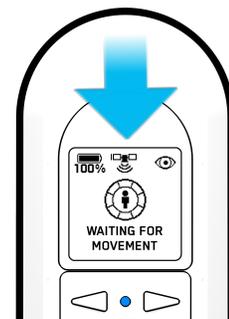    Skydio 2 is not tracking a subject.

# Beacon GPS

GPS strength can be seen via the center header icon. If the three satellite rings are present then GPS is good. If GPS drops below an optimal connection, the beacon will prompt you to check the phone.

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## Range

Pressing the "**+**" and "**-**" buttons will change the range that Skydio 2 will track you from. There are four options you may choose from for tracking range:

- 5m (16 ft)
- 10m (32 ft)
- 20m (65 ft)
- 40m (130 ft)
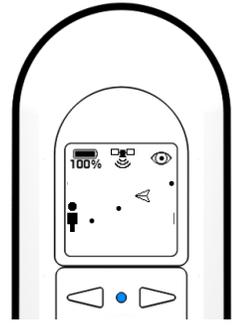
A strong GPS signal is required to track from 40m and poor GPS performance may impact tracking quality.  If GPS quality is insufficient, the maximum tracking range on the beacon will be capped at 20m in order to maintain a visual lock.

## Beacon Skills

The beacon comes with 5 available AI skills for you to choose from:  Motion Track, Fixed Track, Orbit, Hover, and Steering.  When Skydio 2 first takes off with the Beacon, it always begins in the Motion Track skill.  To change the current skill, tap the **Stop button** to command Skydio 2 to halt movement and hover in place.  While Skydio 2 is stationary you may select the skill you want by pressing the left and right arrows buttons.  Pressing the **Skydio button** activates the selected skill.  While Skydio 2 is stopped, you may use the "**+**" and "**-**" buttons to change height.
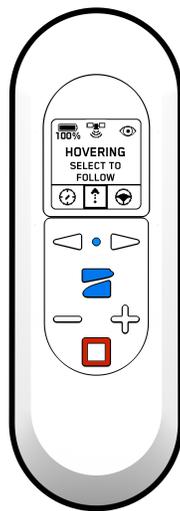
# Motion Track Skill

Motion Track is the default skill after launch and allows Skydio 2 to track and maintain a safe distance from the subject while avoiding obstacles. In this skill you may use the **Left and Right Arrows** or **Wand**, described below, to change the angle Skydio 2 films the subject from, such as from the front, side, or behind.

In order for Skydio 2 to track a subject in a specified orientation, the **subject must be moving** in order for Skydio 2 to determine where to move itself. If you change Skydio 2's orientation and notice it not changing to the newly selected orientation, begin moving so Skydio 2 can determine where to move.



*After Wanding: Subject Not Moving*          *Subject Moving*
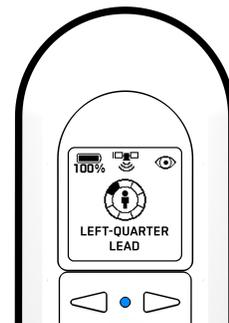
**Orientation Options**

- Lead
- Right-Quarter Lead
- Right Side
- Right-Quarter Follow
- Follow
- Left-Quarter Follow
- Left Side
- Left-Quarter Lead

# Fixed Track Skill

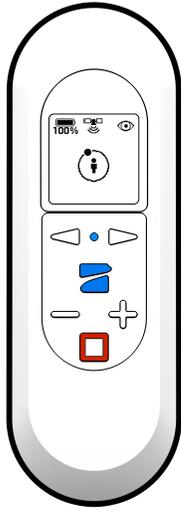When tracking a subject, the Fixed Track skill allows you to set Skydio 2 in a fixed position in relation to the tracked subject. Enter the Fixed Track skill by pressing the **Stop button**, then use the arrows to scroll left and select Fixed Track with the **Skydio Button**. Once in Fixed Track, you may re-enter **Hover** by pressing the **Stop button**.

<u>**The Fixed Track skill is ideal for maintaining a fixed recording angle.**</u>

*When entering the skill, the dot will always start at the top of the ring.*

# Orbit Skill

The Orbit skill causes Skydio 2 to rotate around in either a clockwise or counter-clockwise direction, keeping you in the center of the frame. When orbiting with the Beacon you may change the speed & direction of the orbit using either the Left and Right buttons or using the Wand controls to drag & drop Skydio 2 in the direction and speed you wish.
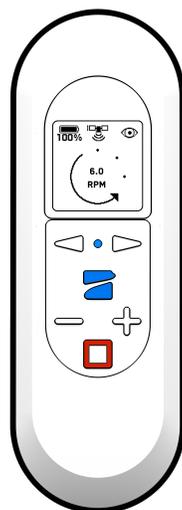
## Hover Skill

The Hover skill keeps Skydio 2 stationary while following your movement, like a camera on a tripod.  While Hovering, you may use **Wand controls** to move Skydio 2 as well as the "**+**" and "**-**" buttons to change its range from you.

## Steering

The Steering skill allows you to manually control Skydio 2 and can help you get out of tight situations where the drone may become stuck.
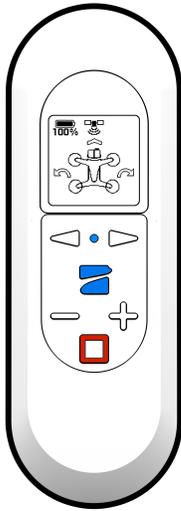


**While in Steering, you may:**

- Use the arrows to turn left or right.
- Press and hold **Skydio button** and move forward.
- Use the "+" and "-" buttons to change height.

# Other Controls

## Wand Controls

The Wand feature provides simple one-handed "drag and drop" controls, allowing you to quickly and easily change the angle and height Skydio 2 will follow from.  This feature is only enabled in the Motion Track, Fixed Track, Orbit, and Hover skills when a subject is being tracked.

- Point the Beacon at Skydio 2.
- **Press** and **hold** the blue **Skydio button**.
- While holding the **Skydio button**, slowly point the Beacon in the direction you want the drone to move. You can move the drone left, right, up, and down.
- Release the **Skydio button** to set the drone in the new position.
- After moving the drone to a new position, it will lock in the new filming angle.

### Instant Dronie

While using either the **Motion Track** or **Fixed Track** skills, you may double-tap the **Skydio button** to instantly fire off a Dronie one-shot.  While the Dronie is in progress, tapping the **Stop button** will cancel the Dronie and have Skydio 2 return to you.  Pressing stop while the vehicle is returning will place the Skydo 2 in Hover at its current location.
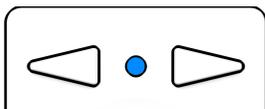
## Landing with Beacon

When you are ready to end your flight and land Skydio 2 using the Beacon, use the Wand and Decrease Range controls to bring Skydio 2 close to you.  Ensure the drone is situated over a safe landing spot that is flat, clear of debris and not overhead of any people or animals.  Once you're ready to land, press and hold the Stop button on the Beacon for three seconds.  You will see a countdown timer before landing begins.

When a landing is initiated, Skydio 2 will descend with full obstacle avoidance until it is 3m (10 ft) above the ground.  Once Skydio 2 is less than 3m from the ground its LEDs will turn yellow and all obstacle avoidance will be disabled for the remainder of the landing.

> *Warning: Do not attempt to hand catch Skydio 2 before the LEDs turn yellow. Attempting to hand catch Skydio 2 while obstacle avoidance is active will cause it to attempt to avoid your hand and may result in Skydio 2 impacting yourself or another nearby object.*
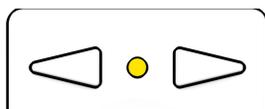
You may cancel a landing by tapping the Stop button on the Beacon, which will return Skydio 2 to hovering in place.
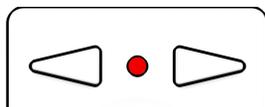
## Beacon LED

*Solid:* Connected to Skydio 2

*Blinking:* Looking for Skydio 2

*SOLID:* Notification

*BLINKING:* Warning and Low Battery

*BLINKING:* Critical Battery Low and Emergency Landing

## Using Beacon with the Skydio App

You may connect your mobile device directly to the Beacon's wifi, allowing you to have full control using the Skydio 2 app while utilizing the beacon's long range antenna.

### Connecting Phone to Beacon

WIFI data is labeled on the back of the Beacon.

### Changing Skills

You can only choose supported skills on the Beacon.

### Cancelling Subject Tracking from the Phone

If you choose to cancel subject tracking via the phone app, Skydio 2 will enter Hover and phone controls will become available.

## Troubleshooting

If you are having trouble operating your Beacon accessory, please visit https://skydio.com/support for the latest guides and troubleshooting articles.

# Compliance Information

## FCC

Any changes or modifications to this equipment not expressly approved by Skydio for compliance will void the user's authorization to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. The distance between user and products should be no less than 20cm. The end user must follow the specific operating instruction for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## California Prop 65 Warning

Lithium-ion Batteries and/or products that contain Lithium- ion Batteries can expose you to chemicals including cobalt lithium nickel oxide, and nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to **www.P65Warnings.ca.gov**

## IC

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- This device may not cause interference.
- This device must accept any interference, including interference that may cause.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- L' appareil ne doit pas produire de brouillage.
- L' appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d' en compromettre le fonctionnement.