SHIFT
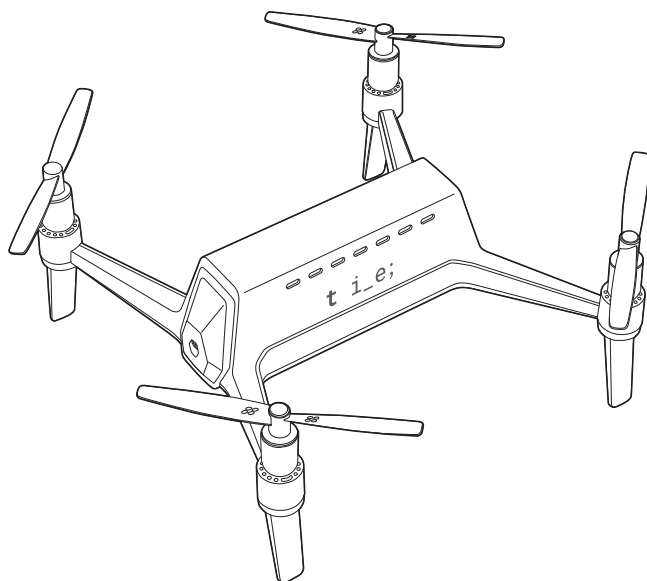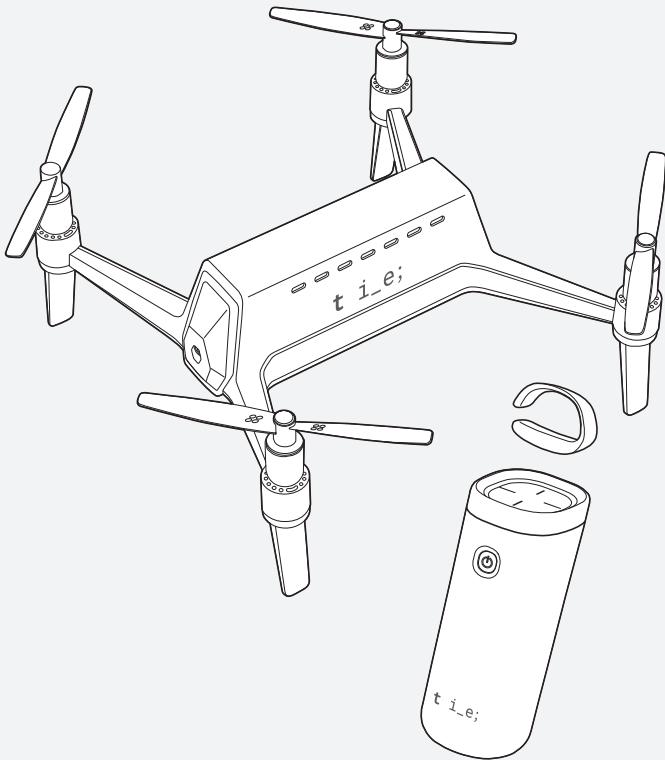
SHIFT RED User Manual

Ver. 3.0

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Flight altitude is restricted and not allowed to fly more than

50 ft (15 m) from AGL (above ground level).

Batteries must be charged before use.

When not in use, remove the battery from the aircraft.

For tips on how to use the product, check out the tutorial videos

on our website (www.thisiseng.com/support/videotutorials) and

Youtube channel (https://www.youtube.com/c/SHIFTDRONE/playlists).

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01
PRODUCT OVERVIEW

About SHIFT RED

SHIFT RED is a package consisting of the SHIFT drone and its controller.

This drone product is a portable and compact quadcopter equipped with software gimbal, vision recognition, and hyper-sensor fusion technology. Anti-shake FHD video shooting and real-time video transmission functionality offer you a stable yet, dynamic drone flight.

One of the most important features of SHIFT RED is its controlling method. The Near-Field Micro-Sensing technology offers you the most intuitive, precise flight controlling experience as the world's first invented one-hand drone control system.

Opening a New Era with Art of Flight
SHIFT RED the Perfect Small

Product Components

* The pictogram below describes the details of the package components.
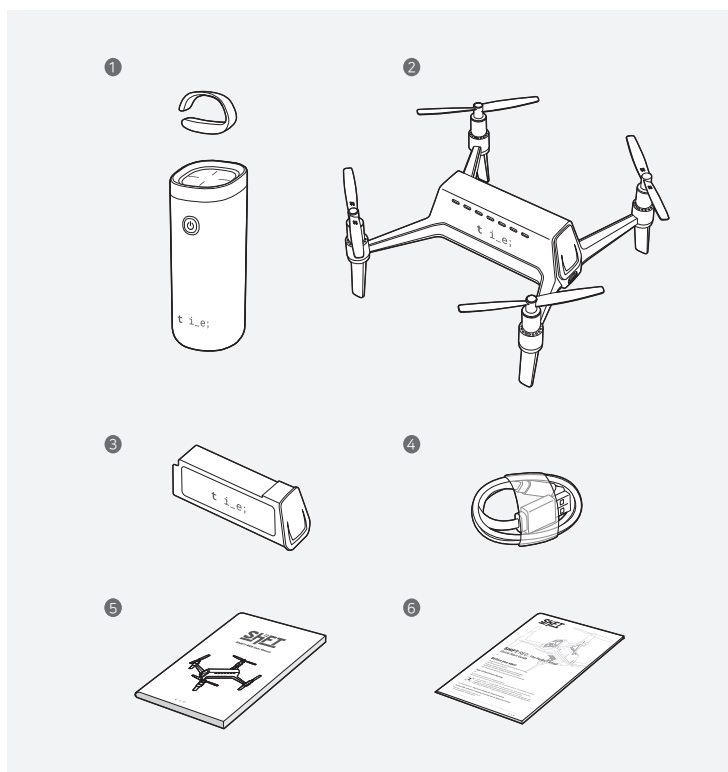
❶ Controller with control Ring (1 pc)　　❹ USB Type-C cable (1 pc)
❷ Aircraft with propellers (1 pc)　　　　❺ User manual (1 pc)
❸ Battery (1 pc)　　　　　　　　　　　　❻ Quick start guide (1 pc)

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Aircraft Parts
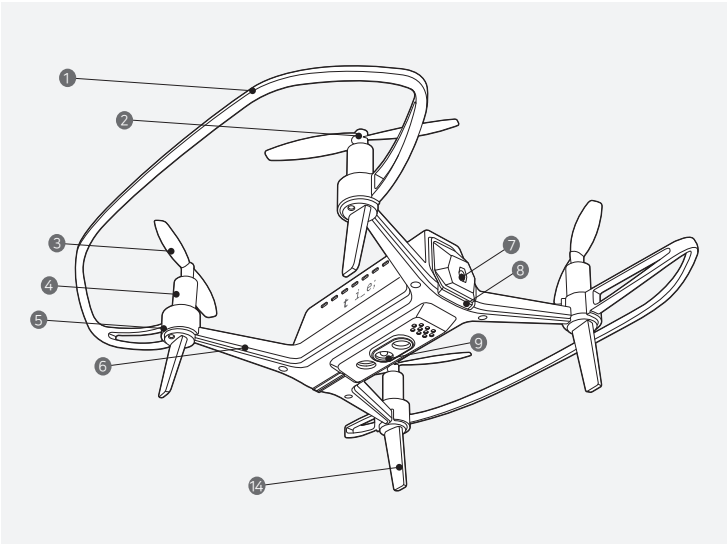
1. Protectors
2. Propellers (CCW)
3. Propellers (CW)
4. Motors
5. Motor housings
6. Arms
7. Vision camera
8. Front LED
9. Integrated 3D sensing system
10. Micro SD slot (inside)
11. Battery
12. USB port (Type-C)
13. Power button (LED)
14. Landing gears
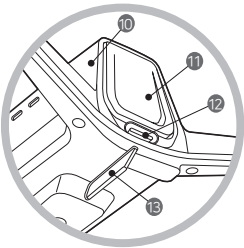
Protectors and micro SD cards are sold separately.

Specifications

Weight with Battery	93 g
Dimension (WxDxH) without Propellers	115 X 115 X 57 mm
Dimension (WxDxH) with Propellers & Protectors	194 X 188 X 59 mm
Radio Frequency	2.4 GHz, 5 GHz Dual Band
Max Distance	300 m
Max Altitude	15 m
Flight Time	13 min (Max)
Operating Temp.	0~40 ℃
Streaming Range	100 m (Max)
Video Streaming	HD 720 p @ 30 fps (Max)
Video Recording	FHD 1080 p @ 30 fps
Camera Sensor	5 M CMOS
Lens Shooting Range	40 cm to ∞
Photo Filename Extension	JPG
Video Filename Extension	MP4
Battery	Li-Po, 3.7 V, 1100 mAh
DC Input	5 V, 1.2 A
Charging Type	USB Type-C
Charging Time	60 min

❗ The maximum flight time has been measured based on takeoff under windless conditions, and this may vary with flight conditions and operations. The maximum flight time should be used only as a reference.

❗ The streaming range may vary with capabilities of your smartphone and surrounding signals.
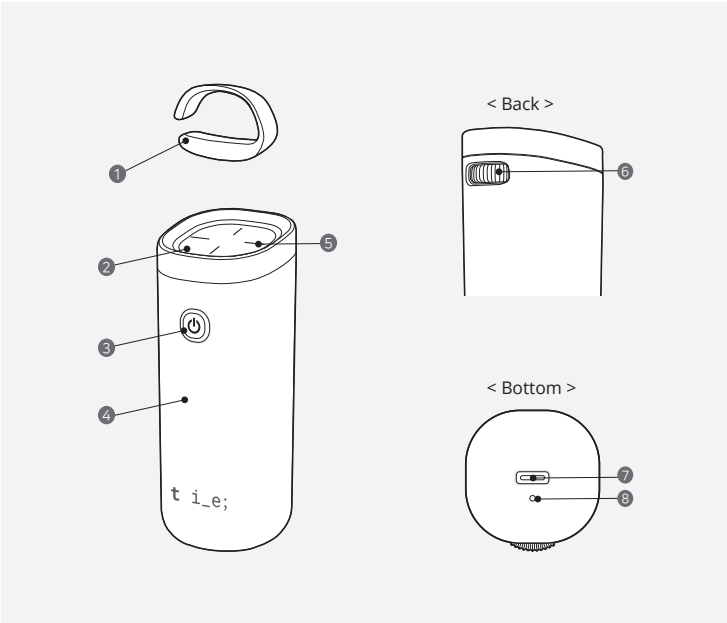
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Controller Parts

< Back >

< Bottom >

① Control ring
② Control pad
③ Power/setting
④ Control stick

⑤ LED indicators
⑥ Jog button
⑦ USB port (Type-C)
⑧ Reset hole

Specifications

Weight	67 g
Dimension (WxDxH)	37 X 39 X 96 mm
Radio Frequency	2.4 GHz
Control Range	300 m (Max)
Operation Time	60 min (Max)
Operating Temp.	0~40℃
Battery	Li-Po, 3.7 V, 300 mAh
DC Input	5 V, 400 mA
Charging Type	USB Type-C
Charging Time	60 min

❗ The maximum control range (maximum flight distance) can vary with surrounding signals.

Exercise caution not to let the drone out of your sight; an uncontrolled drone may disappear or cause accidents.

02
PRECAUTIONS

Precautions

Please observe the following when using the SHIFT RED to prevent accidents and situations of potential legal liability.

▌ Age Recommendation

· The SHIFT RED is not recommended for children below 14 years of age. Children below 14 years of age must be accompanied and supervised by an adult guardian when flying the drone.

▌ Compliance with Relevant Laws
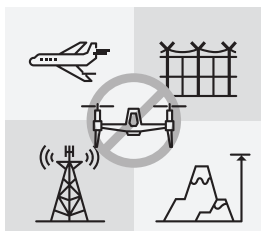
· When flying unmanned aerial vehicles (UAVs), you must observe the rules and regulations of the authorities having jurisdiction over the relevant airspace.
· The operation of drones is prohibited near airports and areas where manned aerial vehicles are flying at low altitudes. Borders and other areas where the operation of drones may result in security issues are classified as restricted. Please observe all guidelines concerning altitude limit, flight prohibition, and restricted zones.

■ Pre-flight Inspection
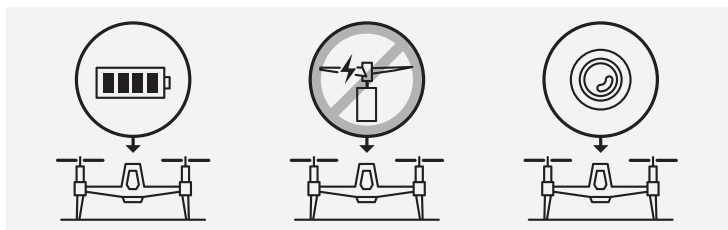
· Charge the controller before use if it does not power on.
· Make sure that the drone and controller batteries are fully charged. The charging status of the drone and controller can be checked using the SHIFT Drone application.
· Inspect the propellers. All propellers should be firmly fixed. Worn, cracked, bent or damaged propellers must be replaced.
· Make sure that the intelligent vision (camera) on the front side of the drone, and the lenses and sensors of the bottom sensor system are clean and free of stains.

· Pay special attention to the battery level of the drone and controller, and take the necessary safety measures when the drone, controller, or mobile application gives a warning. Read the "Emergency Measures" section.
· Check that the intended flight path is free of obstacles such as people, animals, trees, and buildings (This product lacks functions such as return-to-home, and collision avoidance or speed control based on obstacle detection).

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· Do not fly the drone in areas under the influence of strong magnetic fields or magnets.

· The recommended flight conditions are mild weather conditions with a temperature between 0°C–40°C (32°F–104°F). Be wary of sudden changes in wind direction or weather. Do not use the aircraft in adverse weather conditions such as rain, snow, fog, and wind.

▌ Precautions During Flight
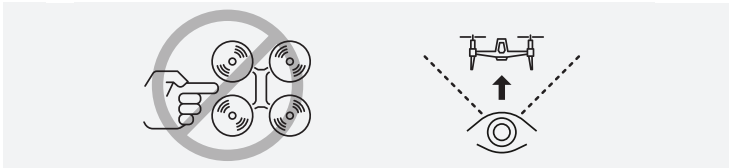
· Only use the genuine SHIFT RED propellers. Do not use together with propellers of other brands.

· Do not attempt to grab or touch propellers that are in operation. Doing so may result in serious injury.

· Keep a safe distance away from the drone.

· The distance between the drone and user should be no more than 300 m (984 ft), and the drone should be controlled within visible range.

· In cold regions, fit the battery in the battery slot, and pre-heat the drone for 1 to 2 minutes before takeoff.

· Do not fly in places requiring significant changes in altitude (e.g. from the top of a building to ground level). You may experience control issues due to problems in hovering and flight performance.

· The drone may not work properly when flying over highly reflective surfaces such as water- or snow-covered areas, or when flying in dark.

· Exercise caution right after flight as the motor and aircraft are heated up from operation.

· Using the controller in the proximity (within 30 cm [1.0 ft]) of other rings, metallic objects or magnetic materials, near electronic devices that employ wireless communication or run on motors, inside a steel-framed building, or within the influence of a utility pole or a wireless station may affect the detection range of the controller and controllability of the drone.

· In particular, a high density of Wi-Fi APs may disturb communications between the drone and application. Before using the application, check your Wi-Fi environment.

· When the drone is flying over a dark (below 300 lux, home bathroom) or extremely bright (over 100,000 lux, direct sunlight) surface, or toward a bright light source, its flight performance may be affected. Check the surrounding brightness before operating the drone.

■ Precautions on Managing Drone and Controller Batteries

· Always use genuine SHIFT RED Li-Po batteries.

· Inspect batteries before charging or use.

· If a battery has been shocked, or if you notice abnormal smell, heat, discoloration, deformation, or signs of leakage from it, never charge or use the defective battery.

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· Do not modify or disassemble the battery wiring.
· Do not touch battery terminals with a pointed tool such as tweezers or a needle.
 This may damage the battery and potentially cause a fire.

· The ideal temperature range for battery charging is 5°C–45 °C (41°F–113°F). Make
 sure that the battery temperature does not exceed 60°C (140°F). An overheated
 battery may cause serious damage or catch fire. Do not charge a battery near a
 heating apparatus or flammable material, inside a vehicle, and any other area
 exceeding 50°C (122°F).
· Do not expose batteries to moisture or direct sunlight.
· Do not charge the drone immediately after flight as the battery temperature may be
 too high. Wait for the battery to cool to a temperature similar to room temperature
 before charing.
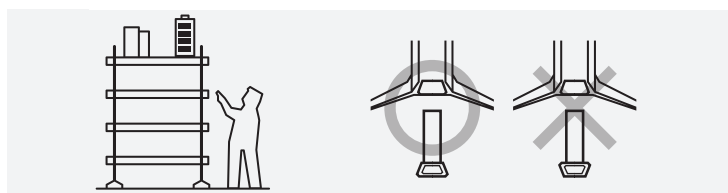
· Keep batteries out of reach of children.
· Inserting the drone battery in the wrong direction may damage both the battery
 and drone.
· Exercise caution when handling the battery immediately after flight as it is heated
 up from operation.

❚ Unauthorized Disassembly Prohibited

· Unauthorized disassembly, replacement of parts, and reassembly of the SHIFT RED and controller are strictly prohibited, except for the removal, installation, or replacement of propellers, protectors, or batteries. this is engineering Inc. shall not be included in any legal action or held liable for direct or indirect damage resulting from the aforementioned unauthorized changes to the drone or controller by the user. Where an unauthorized change has been made, the product shall not be covered by the warranty policy. Repairs may be denied or performed for a fee.

❚ Legal Responsibility for Footage

· Unauthorized recording or distribution of footage containing other persons falls under privacy infringement, and violators must assume legal responsibility. Prior permission must be obtained if using the SHIFT RED to take photos or videos of other persons, and saving or distributing such content.
· Unauthorized recording or distribution of footage containing private property falls under trespassing, and violators must assume legal responsibility. Always obtain permission in advance.

03
CONTROLLING THE DRONE

This section describes how to control the drone for takeoff, landing, and flight, and take actions for an emergency stop. Before proceeding with each maneuver, read the 'Pre-flight inspection(14p)' and 'Precautions during flight(15p)' subsections under Section 02 Precautions. The drone has a flight altitude limit of 15 m (50 ft), and the maximum flight distance(maximum control range) may vary with surrounding signals. Exercise caution not to let the drone out of your sight; an uncontrolled drone may disappear or cause accidents.

Aircraft Powering On / Pairing with the Controller

1. Press and hold the power button for two seconds after inserting the battery into the aircraft, and the aircraft will power on with the power LED turning solid orange. If the aircraft has successfully started up (taking approximately 9 to 10 seconds), the front LED turns solid blue, indicating that it is ready for flight.


Long-press the power button   Powers on

Light On
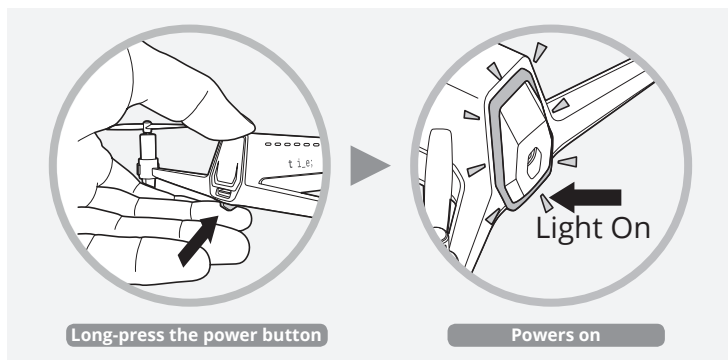
🛈 After the power LED turns solid, the aircraft should be placed on a horizontal surface to start up with the front LED turning solid.

2. When the aircraft and controller are ready for flight, the front LED and power LED on the bottom blink three times, and the propellers rotate in order.
   (For how to turn on the controller, see 'Controlling the Drone' > 'Controller Powering On / Pairing with the Aircraft(21p)')

Aircraft Powering Off

1. Press and hold the power button on the aircraft for two seconds, and the aircraft will power off with the front LED and power LED on the bottom going off.


Long-press the power button   Powers off
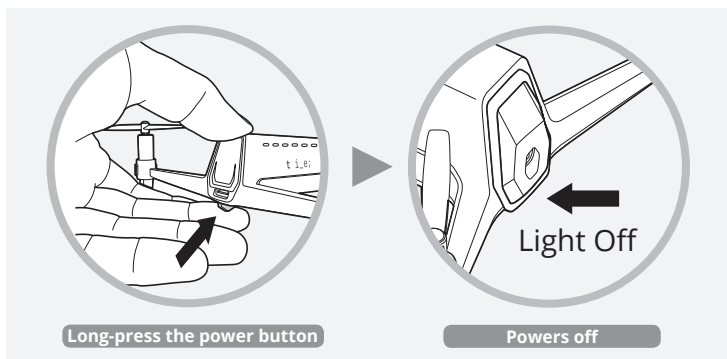
🛈 Turn off the aircraft only when it has safely landed. Using the power button while the aircraft is still in flight may result in accidents.

🛈 Data loss may occur if the battery is removed without turning off the aircraft. Turn off the aircraft using the power button, not by removing the battery.

🛈 When the aircraft is powered on for more than 10 minutes without taking off, it is automatically powered off to prevent battery discharge.

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Controller Powering On / Pairing with the Aircraft

To secure a safe and accurate control experience, the controller needs to be placed at least 30 cm (1.0 ft) away from the ring when it is turned on. It is recommended to turn off/on the controller whenever the user moves to a different location to operate the drone.

1. Before turning on, place the control ring at least 30 cm (1.0 ft) away from the controller.
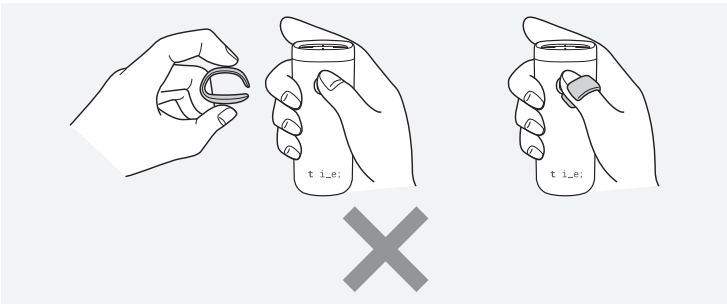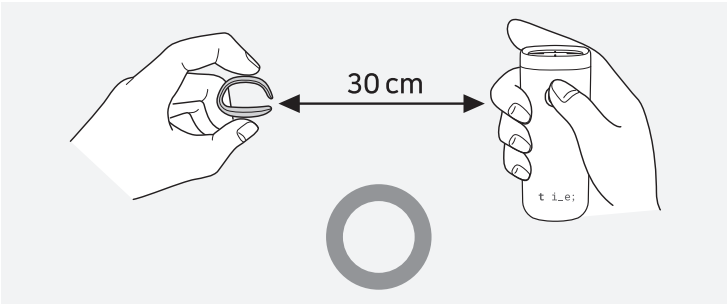
ℹ️ When turning on the Controller, ensure that there are no electronic devices or metallic objects that may interfere with the Controller and place the control ring at least 30 cm (1.0 ft) away from the Controller. If the distance between the Controller and the Control Ring is too close, the Controller will not turn on or cause a severe malfunction.
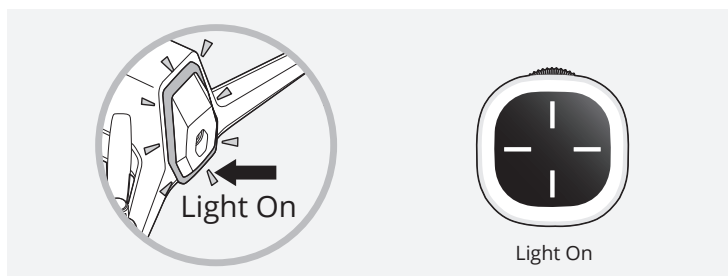
2. Press and hold the power button for at least two seconds to turn on the controller. After the welcome ceremony, the controller displays the battery level for about two seconds.

Welcome ceremony (melody)
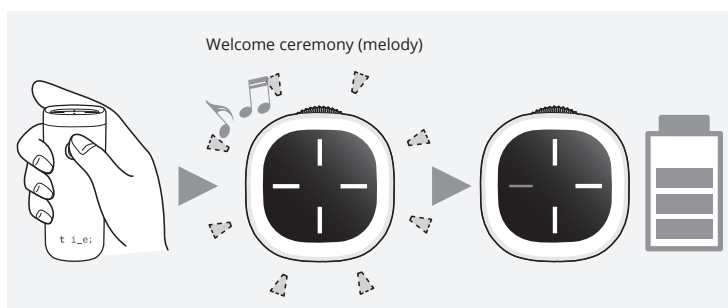
🔴 If the distance between the Controller and Control Ring is within 3cm, the Controller will give off a warning sound and automatically turn off.

3. When the aircraft and controller are ready for flight, they are automatically paired and the controller's LED indicator turns solid white (For how to turn on the aircraft, see 'Controlling the Drone' > 'Aircraft powering On / Pairing with the Controller(19p)')

Light On

Light On

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Controller Powering Off

1. Press and hold the power button for at least two seconds to turn off the controller.
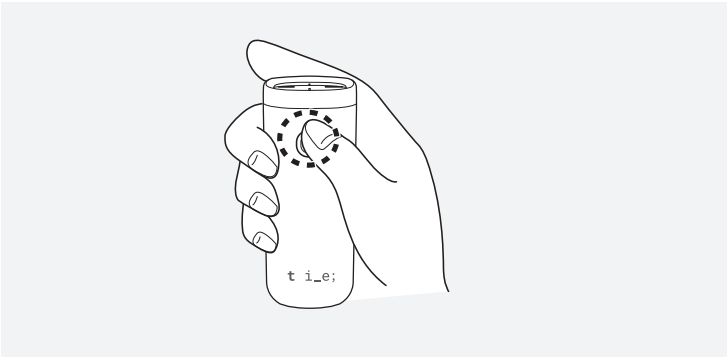
ℹ️ If the controller does not turn off properly, use the reset hole on the bottom. Force the controller to shut down by pressing the reset hole with a pin of appropriate thickness. Hold the pin vertically when pressing the reset hole to prevent damage to the controller.

Taking Off

1. Place the drone on a level surface in the same direction you are facing and pair the controller.


2~3 m
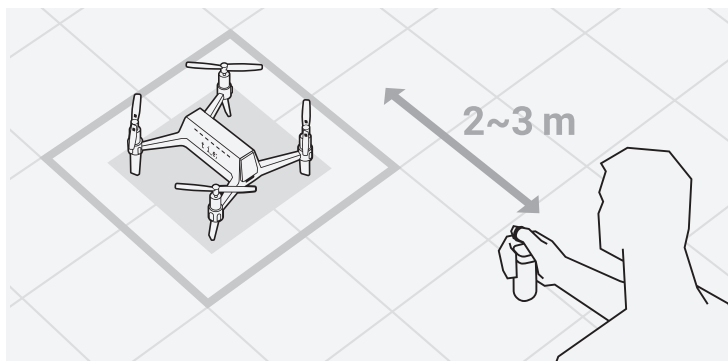
❗ The drone may not take off if it is: not placed on a stable surface, not placed on a horizontal surface, not placed in a bright environment, not placed on a flat surface, or does not have enough battery. If this case the drone only tests its propeller's condition and will fail to take off.

❗ Take note, if the front side of the drone is facing the user, the control directions will be inverted.

2. Wear the control ring on your thumb, and wrap your hand gently around the controller. For details on wearing the control ring and using the controller, read the 'Flight Control(27p)' subsection.
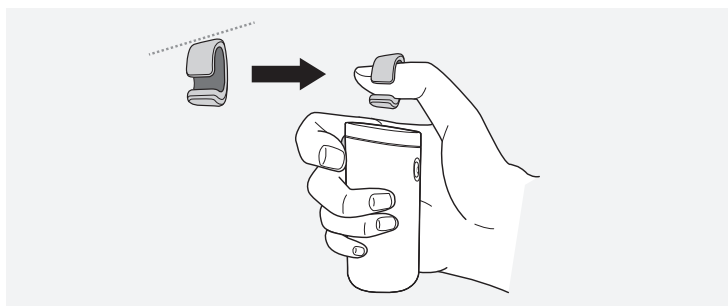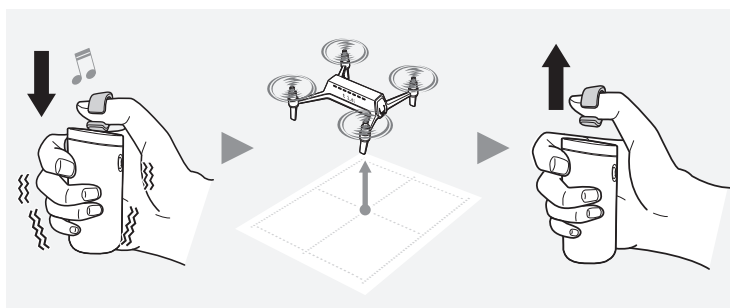
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3. Touch the center of the control pad with the control ring.
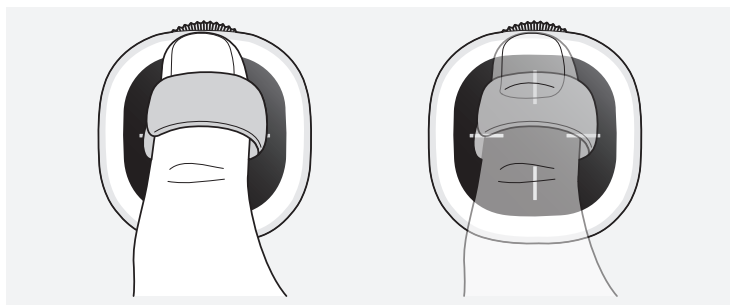
4. Maintain the contact with the pad for over one second, and the drone will take off while playing a takeoff melody. After takeoff, lift the control ring off the pad.

5. When the drone succeeds in automatic takeoff, the front LED and power button LED on the drone blink once, and the drone stands by while hovering at a height of 1 m (3.3 ft). For details on controlling after takeoff, read the 'Flight Control(27p)' subsection.
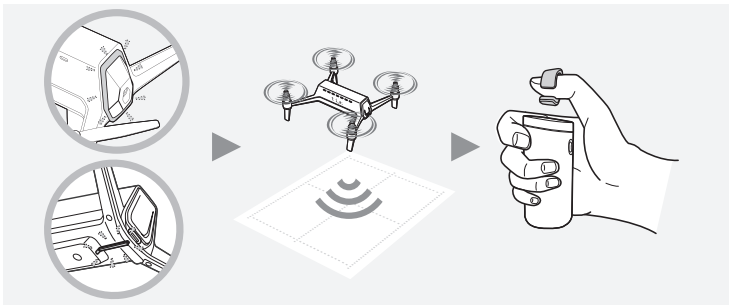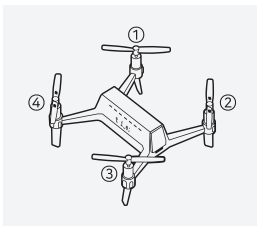

🛑 Note that pressing the control ring on the pad for over one second during hovering initiates automatic landing.

▮ Takeoff Restrictions Warning

Place the camera lens facing forward and prepare for takeoff.

When the correct takeoff conditions are not met SHIFT RED will indicate by making the following propeller movements.

· If one of propeller ①, ②, ③ spins briefly :

   Pace the aircraft on a firm, steady and horizontal surface.

· If propeller ① and ② spins briefly :

   Please re-attempt takeoff in a brighter environment.

· If propeller ④ spins briefly :

   Make sure the battery is sufficiently charged.

   You may check the status of the battery through the mobile app. The battery should be charged to at least 50% for a stable flight experience.
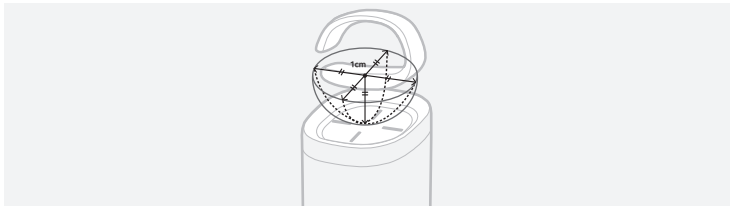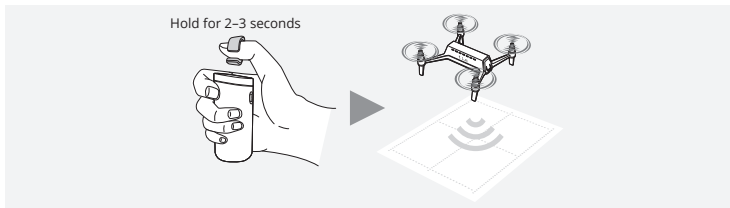
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Flight Control

1. As shown in the figure, wear the control ring on your left or right thumb with the thicker part facing downward. Wrap your other fingers around the controller, and place your index finger on the jog button.
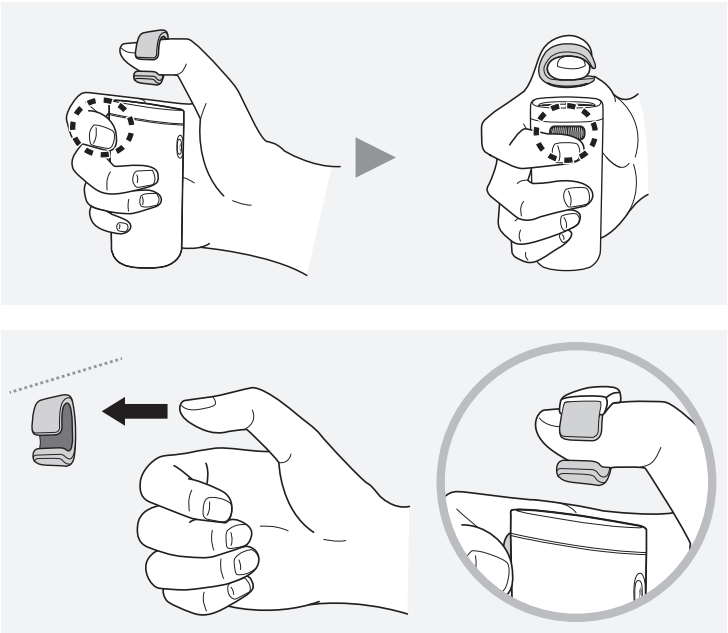
❗ The control ring is ergonomically designed with different shapes at the top and bottom; insert your thumb through the wider opening so that the narrower opening is nearer to your fingertip.

❗ A control ring fit-band is provided to allow a better fit if your thumb is smaller or thinner than the control ring. Attach the fit-band on the top side of the control ring.

2. While in hovering mode after takeoff, automatic control switching using the control ring allows the drone to switch to free flight mode. While the drone is hovering, place the control ring above the center of the controller pad for at least two seconds switch to flight mode automatically. When this function is activated, the controller vibrates with increasing intensity and beeps three times. Mode switching is complete when the controller stops vibrating and beeping.


Hold for 2–3 seconds

❗ The automatic mode switching function is a activated only while the control ring is placed above the center of the controller pad. If you do not wish to switch, move your thumb before the vibration and beeping ends so that the control ring is away from the center.

❗ The automatic mode switching function is activated only during takeoff and when the drone enters automatic hovering after the control ring falls out of the sensing range of the controller.

❗ When switching to flight mode, exercise caution in moving the control ring as accidents may occur from sudden movement of the drone.

❗ Manual mode switching : While mode switching : While the drone is hovering, press the jog button. The flight mode is switched after the controller vibrates and beeps once. When switching to flight mode using the jog button, the center of the ring on your thumb should be within 1 cm (0.4 in) around and above the center of the controller pad. If the control ring is out of the range, the controller gives off a warning and fails in switching to flight mode.

3. The drone flies by mirroring the movement of the control ring. Move your control ring-wearing thumb in the desired direction of flight, and the drone will fly in the same direction.
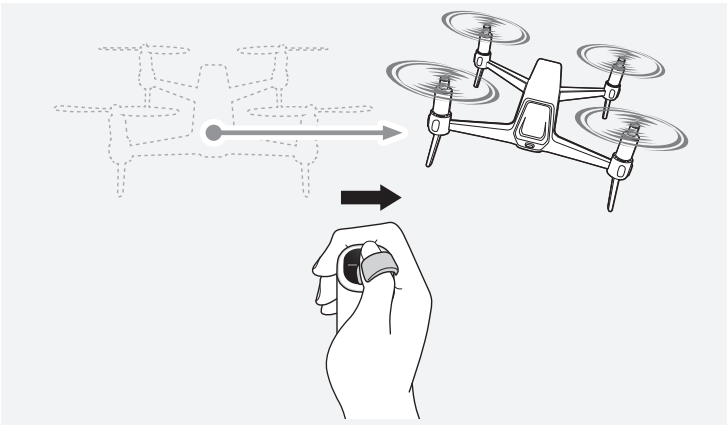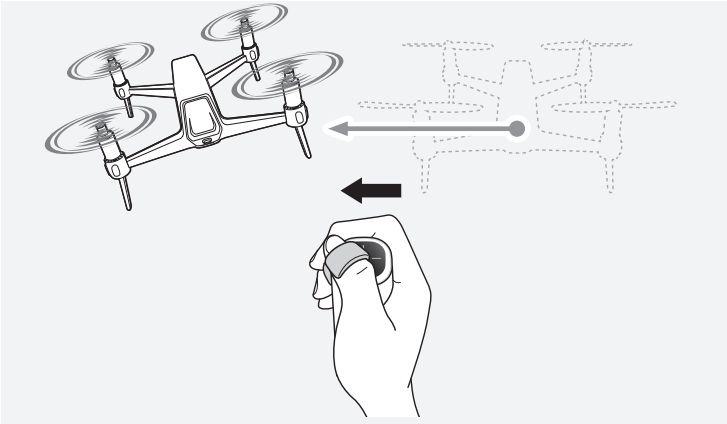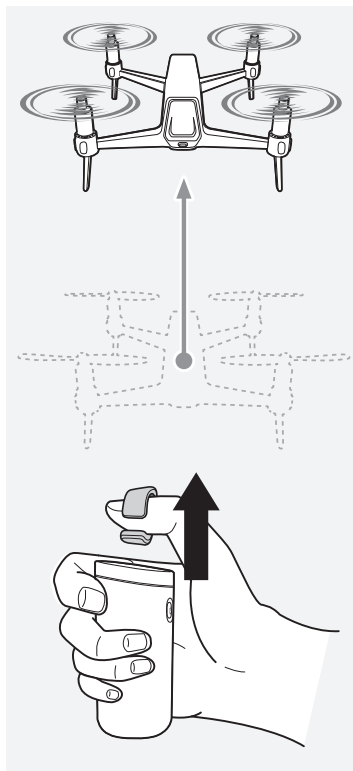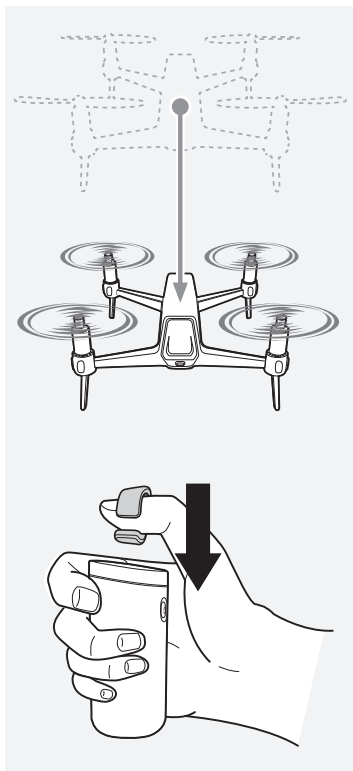
❗ Your control ring-wearing thumb should be at an adequate height above the controller pad to allow better control over the flight altitude.

❗ The degree of acceleration or deceleration can be set proportionately to the distance moved by the control ring. Read the 'Preference Settings(51p)' subsection under the 'Handling the controller' section.

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4. When turning the head of the aircraft to the desired direction, turn the jog button accordingly.
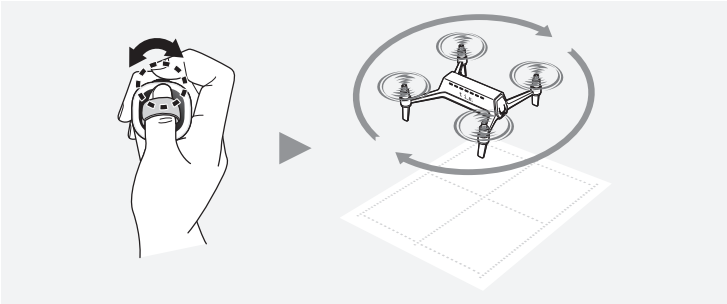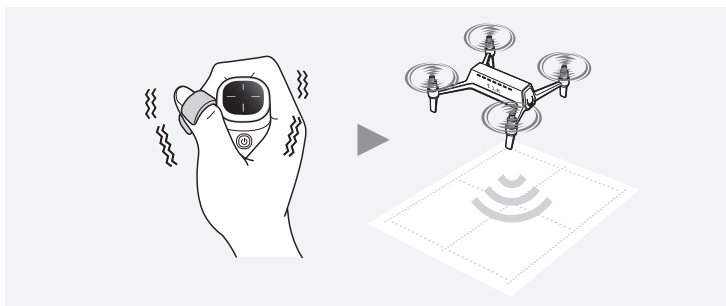

5. If you press the jog button during flight, the controller vibrates once and the drone switches to hovering.
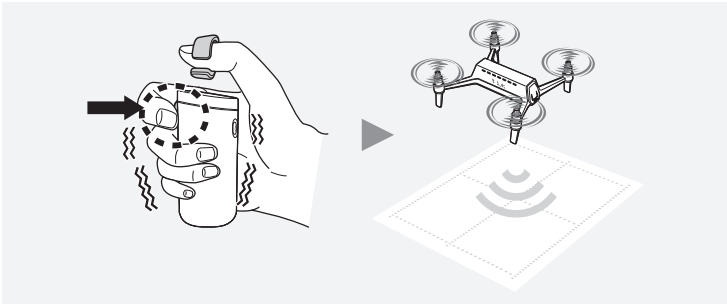
❗ The automatic mode switching function is disabled when in the hovering state after pressing the jog button.

6. If the control ring is out of the sensing range of the controller, the controller vibrates once and the drone automatically switches to hovering.

🖢 To prevent unintended loss of control over the aircraft during flight, the controller warns the user by vibrating at different levels as the control ring approaches the detection limit.

🖢 The controller's range of control ring detection may change unpredictably depending on surrounding sources of electromagnetic interference, and this may hinder flight control.

🖢 If the drone has automatically switched to hovering because the control ring is out of range, you can use the automatic mode switching function to quickly return to flight mode.

Flight Mode

You can switch between stable shooting mode and a free flight mode by holding the jog button during flight for over one second until the controller vibrates. Free flight mode is selected by default when the controller is initially paired with the drone. When the drone and controller are re-paired, the flight mode initializes into free flight mode.

1. Free flight modes : The flight direction and altitude are set according to the movement of the control ring. These modes allow greater precision and degree of freedom in flight control.

2. Stable shooting mode : The drone maintains a constant speed and altitude. This mode is useful if you are unfamiliar with controlling the drone or need to shoot a video under stable conditions. When switched to stable shooting mode, the drone maintains the previous flight altitude, which may be adjusted by moving the control ring up or down. Note that there is no vibration feedback for control range in stable shooting mode.
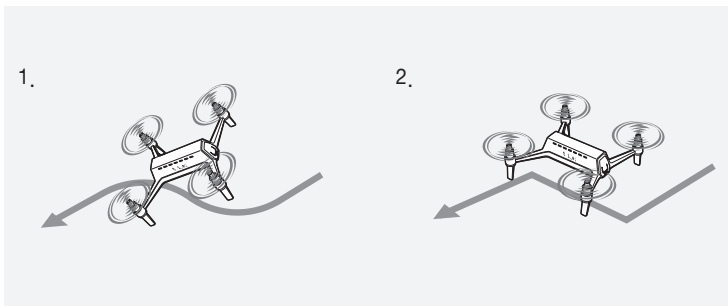
Landing

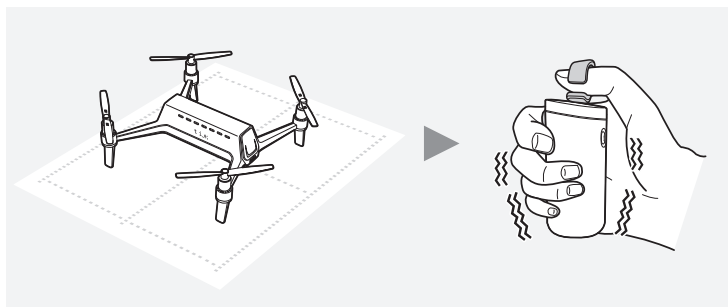1. While the drone is hovering, touch the center of the pad with the control ring for over one second to initiate automatic landing. During automatic landing, you cannot control the drone by moving the control ring.
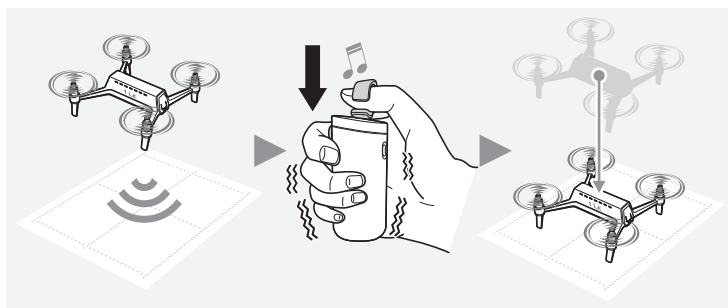
2. Once the drone comes to a complete stop, the controller vibrates and the motors stop automatically.
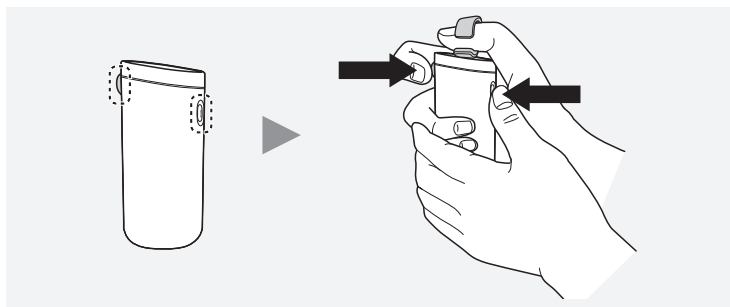

❗ Make sure the drone is within 10 m (33 ft) around you during takeoff or landing.

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Emergency Measures

▍Manual emergency stop

· The drone motors stop immediately when you press the jog button and power
  button on the controller at the same time.

❗ Exercise caution as a manual stop in midflight may cause damage to the aircraft or personal injuries.

▍Self-stopping of the drone

· In case of a sudden change in surroundings such as a temperature drop or battery
  shortage, the drone switches to self-stopping to protect itself and maintain the
  battery performance.

· Before the drone switches to self-stopping, the front LED and power button on the
  aircraft blink twice repeatedly and the controller vibrates and sounds to declare an
  emergency. At this point, you should perform a safe landing within thirty seconds.
  About one minute later, the drone enters self-stopping mode. In this mode, the
  drone keeps hovering and its flight becomes uncontrollable, while its front LED
  and power LED are blinking three times repeatedly, until it lands automatically in
  five seconds. Meanwhile, the controller vibrates (3 times/second) and gives off a
  warning sound.

▉ Self-stopping of the controller

· In case of a sudden change in surroundings such as a temperature drop or battery shortage, the controller switches to self-stopping to protect itself and maintain the battery performance.

· Once the controller switches to this mode, it vibrates and sounds for 30 seconds to notify the user of an emergency. After the 30 seconds of warning, the controller is automatically powered off. The aircraft then blinks its front LED and power button three times repeatedly before automatically landing. Before the controller is powered off, make sure the aircraft is positioned in a safe place or landed.

❗ The controller may be charged during use with a portable charger.

▉ Self-stopping due to weak signals

· In case of weak signals between the controller and drone due to interference, the controller gives off a warning sound and vibrates (1 time/2 seconds) to indicate weak signal strength. At this point, you should immediately perform a safe landing. When the signaling between the controller and drone is lost, the controller vibrates (3 times/second) to declare an emergency. The drone then switches to hovering, and lands automatically in five seconds.

❗ The signal strength between the controller and drone depends on your surroundings.

04

USING THE MOBILE APPLICATION

Installation and Execution

The SHIFT RED comes with a mobile application, 'SHIFT Drone'.
You can use the application to preview a drone video in real time, and try various flight modes for the drone to shoot from different perspectives.

1. Check the model and mobile OS version of the smartphone on which the application is intended to run. Below are the minimum requirements to use 'SHIFT Drone' :
   · Android: Any device compatible with Wi-Fi Dual Band and 802.11ac / Android 4.4 (KitKat) or later
   · iPhone: iPhone 6/iOS 10.0 or later

2. Search 'SHIFT Drone' in Google Play or App Store, and download the app to your smartphone.

3. Turn on the drone, connect to SHIFT-DRONE-XXXXXXXX from your smartphone's Wi-Fi settings, and run the application. The initial password to connect to SHIFT-DRONE-XXXXXXXX is 1234567890.

❗ Each SHIFT RED unit has a unique Wi-Fi network name in the form of SHIFT-DRONE-last 8 digits of the serial number.

❗ Please reset the Wi-Fi password for security, and remember it for future use.

❗ While the drone is powered on, pressing and holding the power button for over three seconds turns off the front LED and power LED on the bottom and shuts down the drone.
If you hold for over ten seconds, the Wi-Fi network name and password will be initialized while the front LED and power LED on the bottom are blinking. The drone is turned off once initialization is complete.

4. See below for details on the interface of the application.
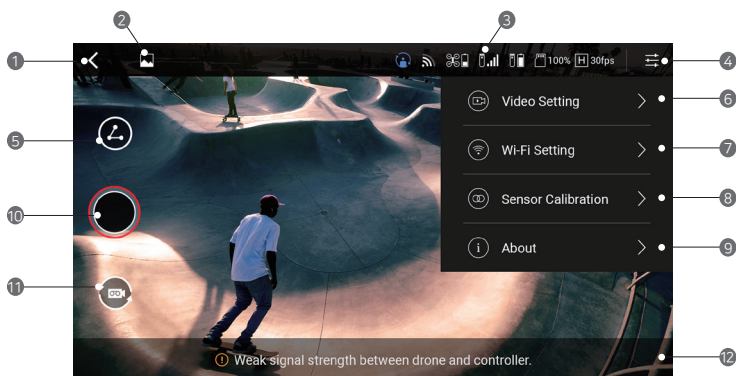
1. Go to the main screen
2. Go to the gallery
3. Drone/controller status information
4. Setting menu
5. Lezero Pilot mode
6. Video quality/frame settings
7. Wi-Fi setting
8. Sensor calibration
9. Version information
10. Take video/photo
11. Change video/photo mode
12. Notice

The screenshots of the application interface provided in this User Manual are for illustration purposes only, and may not be an exact representation of the application.

Using Lezero Pilot Modes

Application 'SHIFT Drone' offers various flight modes (Lezero Pilot modes) for users to take semi-professional videos and photos. Exercise caution against collisions when in a flight mode. Maintain a distance of at least 2 m (6.6 ft) away from the drone during operations. Visit the this is engineering website (www.thisiseng.com) for detailed instructions on using the 'SHIFT Drone' application.

1. To start a Lezero Pilot mode, tap on the button indicated below. The button to enter Lezero Pilot mode becomes active only when the drone is hovering.
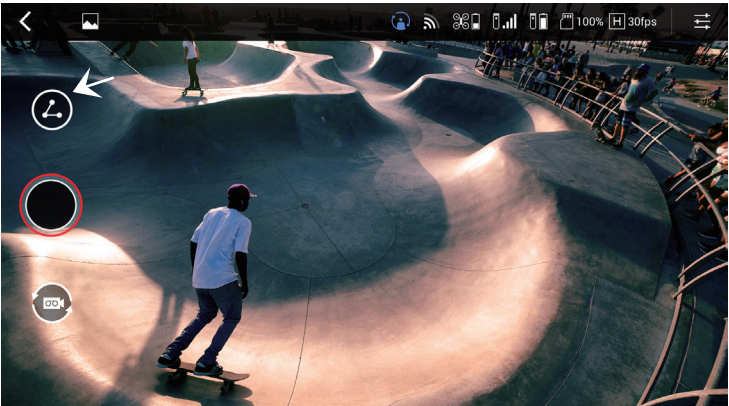
2. Choose one of the eight Lezero Pilot modes while referring to the descriptions below.
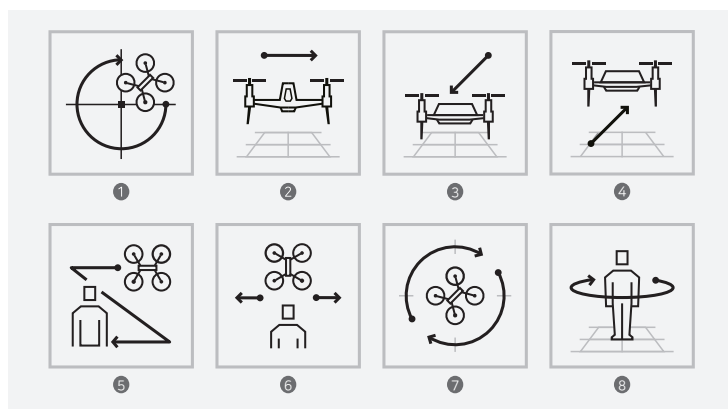

❶ Orbit: The drone flies in orbit.
❷ Dolly: The drone flies steadily from right to left.
❸ Dolly In: The drone starts far and moves near.
❹ Dolly Out: The drone starts near and moves far.
❺ Following: The drone flies while following the target.
❻ Horizontal Tracking: The drone tracks the target while in horizontal flight.
❼ Yaw Tracking: The drone performs a yaw rotation toward the target while flying in position.
❽ Hero: The drone flies while tracking the target, and orbits once when the target stops.

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3. Long-press the screen to begin free flight in the selected mode. While flying in the selected mode, you can take photos or videos.
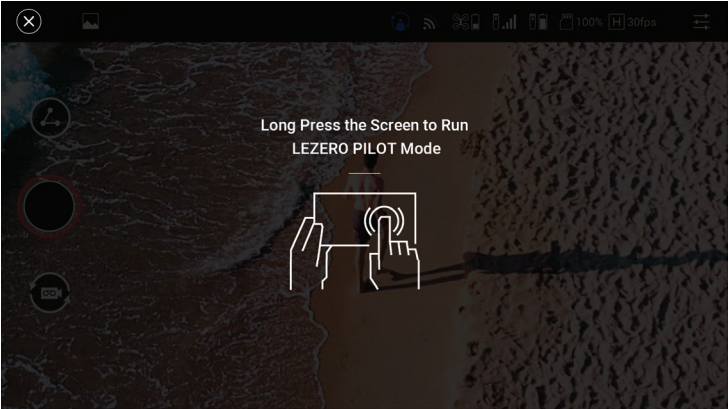
4. A target must be designated in the Following, Horizontal Tracking, Yaw Tracking or Hero mode. Place the target in the center of the target box, and drag across the screen to designate the target. When the target is successfully designated, the border of the drag box changes from red to green and flight begins in the selected mode.
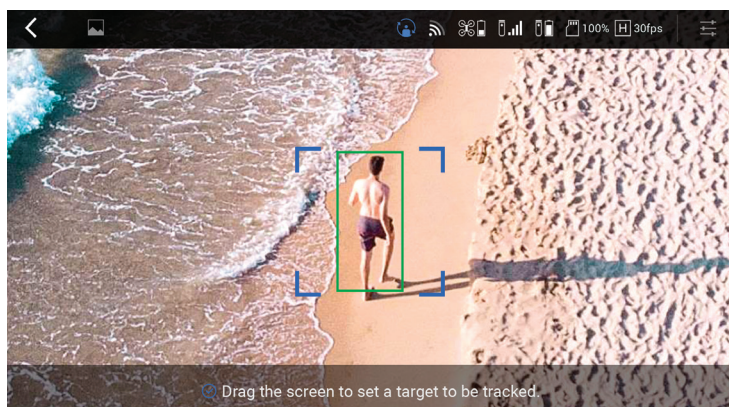

🖐 The altitude must be at least 2 m (6.6 ft) in Following mode and Hero mode. In these modes, check the altitude of the drone before designating a target. The appropriate altitude for the selected mode is indicated by the 👤 icon turning active.

🖐 When designating a target, the drone should be in a well-lit environment. The target must stand out from the background in terms of form and color to be successfully detected. The drone switches to hovering if the target is moving too fast or if tracking has failed due to obstacles. If the target falls inside the red drag box while maintaining a distance similar to the initial distance, tracking resumes after about two seconds.

🖐 When in a Lezero Pilot mode, make sure that the flight path is free of obstacles such as people, animals, trees, and buildings. Since this product is not equipped with functions such as collision avoidance or speed control based on obstacle detection, you need to be extremely careful.

5. To stop the selected Lezero Pilot mode, long-press the screen, or short the controller's jog button.
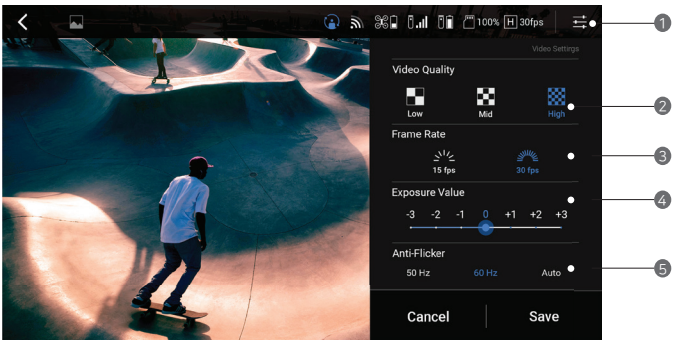
🖐 If the Lezero Pilot mode is stopped, the drone switches to hovering. To switch to flight mode, press the jog button of the controller.

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Recording Preference Settings

1. To change the photo/video quality settings, tap on the button indicated below.
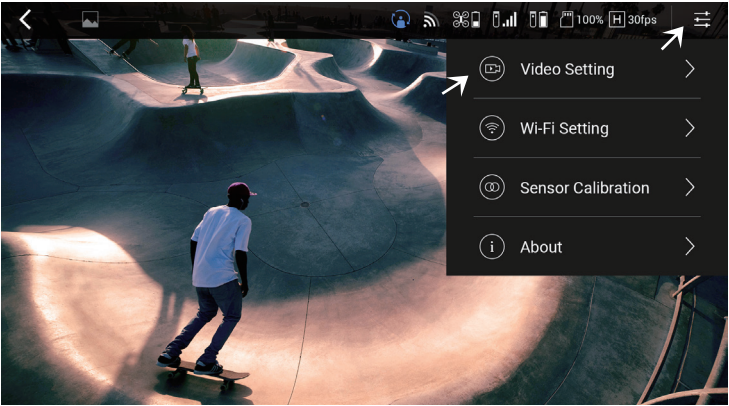
2. Set the desired photo/video quality while referring to the following description.
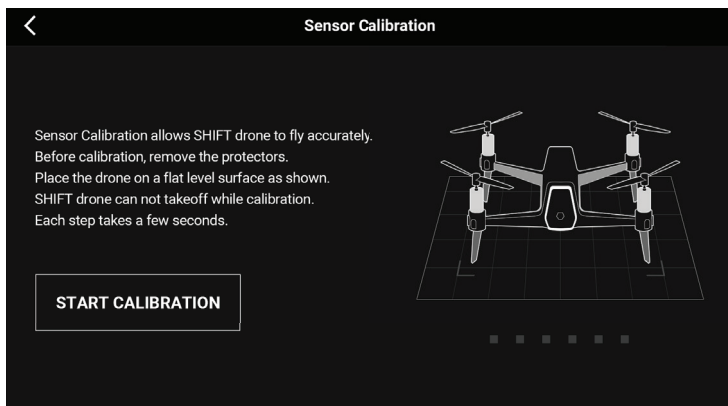

① Setting menu
② Select Video Quality
   (Low / Mid / High)
③ Select Frame Rate (15 fps / 30 fps)
④ Select Exposure Value (7 level)
⑤ Select Anti-Flicker (50 Hz / 60 Hz / Auto)

Sensor Calibration

The SHIFT RED achieves greater flight accuracy through sensor calibration.

1. Before using the 'SHIFT Drone' application, place the drone on a flat surface with the protectors removed.

2. Turn on the drone, but do not run the motors.

3. To perform calibration, position the drone as illustration in the 'SHIFT Drone' application.


Sensor Calibration

Sensor Calibration allows SHIFT drone to fly accurately.
Before calibration, remove the protectors.
Place the drone on a flat level surface as shown.
SHIFT drone can not takeoff while calibration.
Each step takes a few seconds.

START CALIBRATION

❗ The application and drone must be connected with Wi-Fi during sensor calibration.

❗ Each step of calibration may take some seconds (Max. time of 6 minutes with max. 1 minute per step).

❗ Contact the customer center if flight performance does not improve even after sensor calibration.

❗ For safety reasons, flight is disabled during sensor calibration.
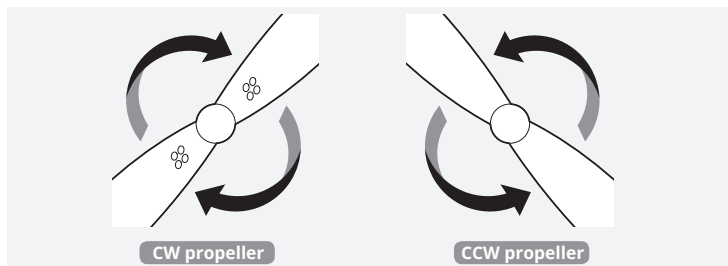
05

HANDLING THE AIRCRAFT

Attaching the Propellers

Before your flight, firmly mount all propellers in the correct positions. Note the rotational direction of each propeller.
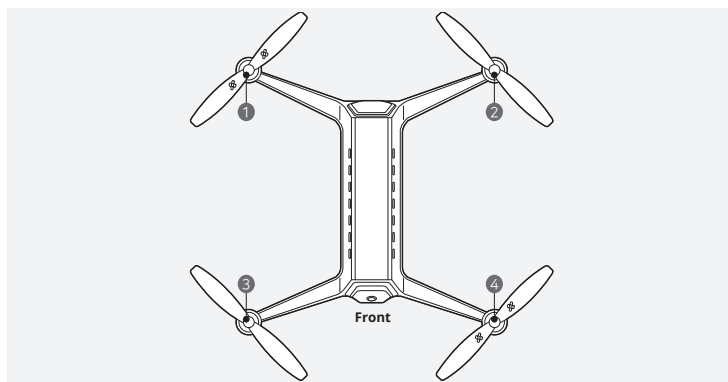
❶,❹ : Position of CW propeller (use propellers marked with the SHIFT emblem)

❷,❸ : Position of CCW propeller

CW propeller   CCW propeller

❗ If the propellers are not positioned correctly, the aircraft will be incapable of normal flight. Ensure that the propellers are mounted in the correct positions.

❗ When detaching the propellers, use the provided removal wrench.

❗ For safer use, always check that the propellers are firmly installed before every flight. Do not attempt to grab or touch propellers that are in operation. Read the 'Precautions(13p)' section before operating the propellers.
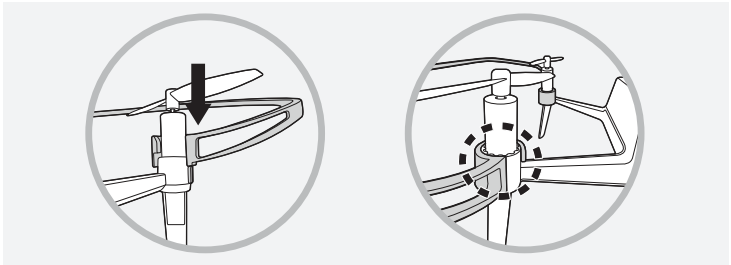
Attaching the Protectors

The SHIFT RED comes with two protectors, to be attached on each side during flight. Attaching the drone with the protectors is recommended to protect the aircraft and propellers. Read the instructions on attaching/removing protectors before flight.

▌ Attaching the protectors
The inner side of the protector has a groove that fits the shape of the motor housing. The mounting part is designed to be placed upon the arm of the aircraft. Push the protector downward until in contact with the motor housing. Slightly stretch the mounting part, and make sure it clicks into place.


▌ Removing the protectors
The protector can be easily removed from the aircraft by holding its holed part and lifting it upward.

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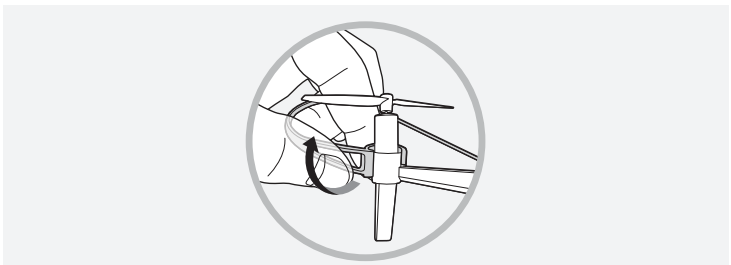
Mounting the Micro SD Card

To take photos and videos using the 'SHIFT Drone' application, a micro SD card must be inserted in the aircraft. The micro SD card slot can be seen when the battery is removed. The micro SD card can only be inserted in the designated direction. Use the dedicated micro SD card, or a micro SD card of video speed class 10 or UHS class 1 or higher with a capacity of no more than 128 GB.
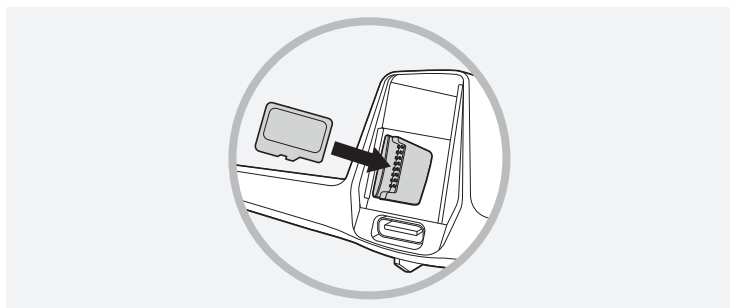
❗ Before removing the micro SD card, always check that the drone is powered off.

❗ Keep the micro SD card out of reach of children as it is dangerous if swallowed.

❗ Check the free space of the micro SD card. When it falls below 100 Mbytes, video or photo recording becomes disabled.

❗ Video and photo recording may not function properly if using micro SD cards other than dedicated micro SD cards and micro SD cards of video speed class 10 or UHS class 1 or higher with a storage capacity of up to 128 GB.
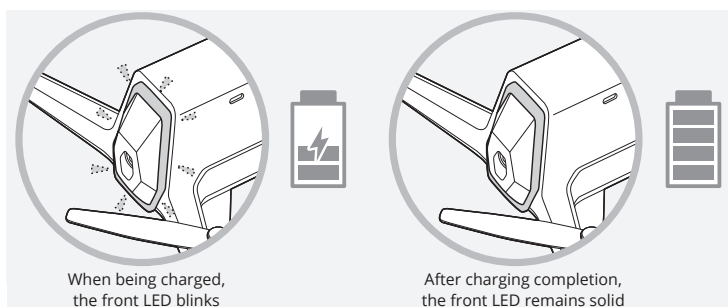
Charging

1. Insert the battery into the battery slot. 2. Connect the aircraft to a USB port using the provided USB cable to begin charging.
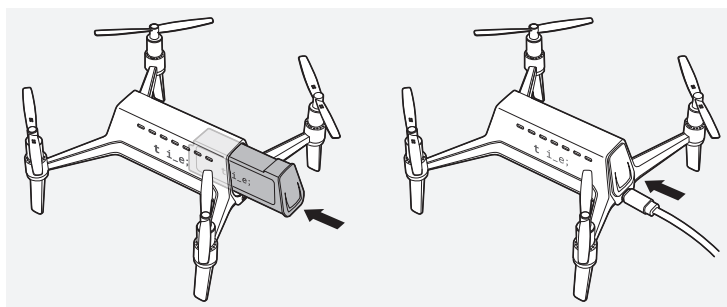
🛈 A certified USB adapter rated at 5 V and 1.5 A (At least 1.5 A) is recommended for charging. Connecting to a PC may cause delayed or unsuccessful charging.

3. During charging, the front LED of the aircraft displays the charging status.

When being charged,
the front LED blinks

After charging completion,
the front LED remains solid

🛈 The aircraft cannot fly while charged (unpaired from controller and mobile application).

🛈 After charging the battery, disconnect and store it from the aircraft.

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Aircraft Status Indication

| Aircraft Status	Pattern
Charging in progress	Front LED blinks
Charging complete	Front LED stays solid
Firmware update in progress	Front LED blinks
Firmware update complete	Power turns off
Powered on	Power button LED and front LED stay solid
Powered off	Power button LED and front LED turn off
Controller pairing complete	Power button LED and front LED blink three times, then turn solid
Takeoff complete (hovering)	Power button LED and front LED blink once, then turn solid
Manual control mode	Power button LED and front LED stay solid
Landing complete	Power button LED and front LED blink twice, then turn solid
Emergency	Power button LED and front LED blink three times repeatedly

06

HANDLING THE CONTROLLER

Charging

1. Connect the USB port of the controller to a USB charger using the provided USB cable to begin charging.
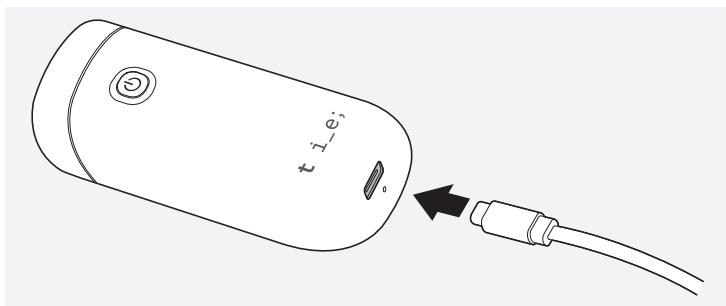
ⓘ A certified USB adapter rated at 5V 0.5A (At least 0.5 A) is recommended for charging. Connecting to a PC may cause delayed or unsuccessful charging.

2. While the controller is being charged when powered off, the LED indicator on the controller pad displays the charging status.
   · Charging in progress: The number of bars blinking on the LED indicator shows the battery level.
   · Charging complete: All LED indicators turn solid white.
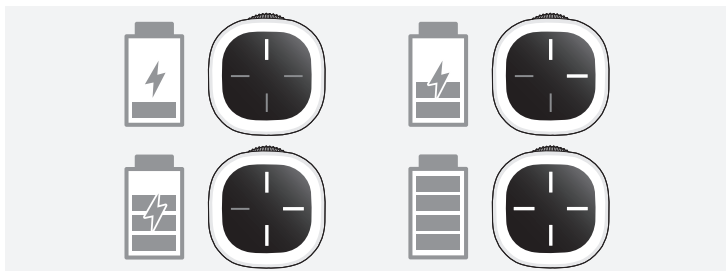
ⓘ The controller may be charged while using it. In this case, the LED indicator does not display the battery level.

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Preference Settings

Before takeoff, you can press the power button once to enter preferences setting mode, and adjust settings such as control sensitivity, vibration intensity, and volume. Turn the jog button left or right to switch between options: control sensitivity ↔ vibration intensity ↔ volume.

1. Press the power button of the controller before flight to enter preference settings mode.

2. The first menu selected upon entering preference settings is "control sensitivity setting." Turning the jog button left and right switches between menus in the order of control sensitivity, vibration intensity, and volume. The selected setting is indicated through a distinct alarm pattern as shown below.
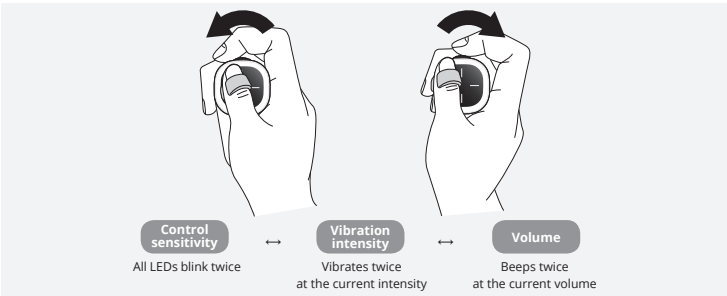
3. Check the current settings from the lit LEDs on the upper pad of the controller.

|	Control sensitivity	Vibration intensity	Volume
	Level 1 (default)	No vibration	Sound off
	Level 2	Weak vibration	Low volume
	Level 3	Medium vibration (default)	Medium volume (default)
	Level 4	Strong vibration	High volume

❗ In control sensitivity setting mode, you can set the acceleration or deceleration of the aircraft according to the distance moved by the ring.

4. Place your thumb with the control ring slightly above the control pad, and move in the direction of the desired level (as shown in the figure above). The LED representing the selected direction will turn on.
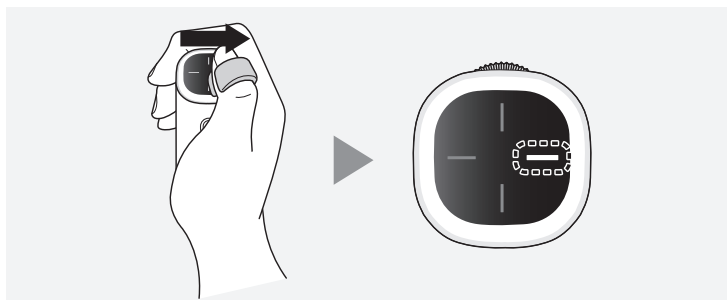
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5. Lightly make contact with the center of the control pad to save your setting.
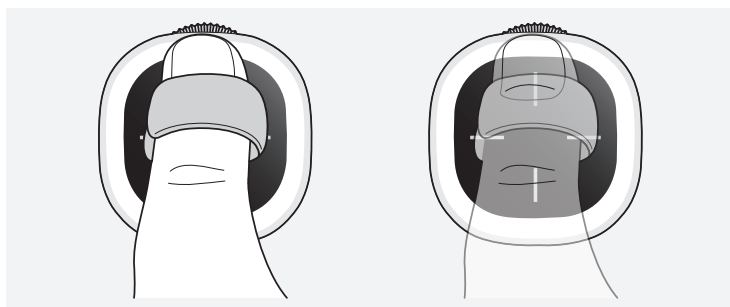
6. Press the power button on the controller to end the preference setting mode. Your setting is stored even after the controller and drone are powered off.
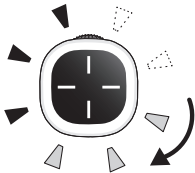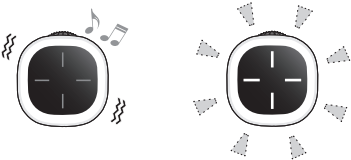

🛈 When vibration and volume are turned off under preferences, be extra cautious during takeoff and landing (Note that LEDs indicating power on/off, warnings and emergency alarms remain active regardless of vibration and volume settings).
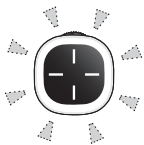
Controller Status Indication

Controller Status	Pattern
Charging in progress	 While powered off, corresponding LED indicators begin blinking from top in clockwise direction according to the charging level
Charging complete	 While powered off, all LED indicators turn solid
Powered on	 Welcome ceremony, then current charging status displayed
Powered off	 Farewell ceremony

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Controller Status	Pattern
Controller pairing in progress	 All LED indicators blink in clockwise direction
Controller pairing complete	 All LED indicators stay solid
Takeoff begins	 LED indicators turn solid sequentially in upward direction

Controller Status	Pattern
Control mode switching (flight ↔ hovering)	Vibrates and beeps once
Automatic mode switching	Vibrates with increasing intensity and beeps three times
Control range feedback	Vibrates at different levels as the control ring approaches maximum control range (active only in free flight mode)
Flight mode switching (stable shooting mode ↔ free flight mode)	Vibrates and beeps once

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Controller Status	Pattern
Landing begins	LED indicators turn solid sequentially in downward direction
Preference settings and mode alert	**Level 1** · Control sensitivity 1 · Vibration off · Volume off **Level 2** · Control sensitivity 2 · Weak vibration · Low volume **Level 3** · Control sensitivity 3 · Medium vibration · Medium volume **Level 4** · Control sensitivity 4 · Strong vibration · High volume Different patterns indicate current settings
Warning (low battery voltage, weak signal)	Drone battery voltage warning: Two beeps every two seconds Controller battery voltage warning: One beep every two seconds Weak signal warning: One beep every 1.5 seconds
Emergency alert (Self-stopping mode; communications disconnected)	Emergency warning : Three beeps every a second

07

FIRMWARE UPDATES

Firmware Updates to Aircraft

Firmware updates are provided to optimize the performance of SHIFT RED. Update the aircraft to the latest firmware by following the procedure below:

1. From the download page (www.thisiseng.com/support/download/) of the this is engineering website, download the firmware to the root directory of a micro SD card. Do not change the file name or extension.

2. With the aircraft powered off, remove the battery and insert the micro SD card into the micro SD slot.

3. When the aircraft is powered on after inserting the battery, the firmware update begins automatically and the front LED blinks.

4. The firmware update takes approximately two minutes. Do not remove the battery or turn off the aircraft while updating.

5. Upon the completion of the firmware update, the aircraft is automatically powered off, and the firmware file in the micro SD card is deleted.

6. For the best flight experience, this is engineering recommends users to update to the latest firmware versions.

❶ Refer to the following link when updating the aircraft's firmware. (https://thisiseng.com/support/videotutorials)

❶ Before starting the firmware update, make sure that the battery is charged more than a half. The battery condition can be checked in the 'SHIFT Drone' application.

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Firmware Updates to Controller

Firmware updates are provided to optimize the performance of SHIFT RED. Update the controller to the latest firmware by following the procedure below:

1. Download and unzip the 'Firmware updater' file from TIE's support download page(www.thisiseng.com/support/download/). Once unzipped, SHIFT Updater folder will generate.

2. Download the latest controller firmware from the download page. Make sure that the firmware file and the Update.exe is in the same folder and run SHIFT Updater.exe.

3. The controller needs to be turned off before connecting to a computer. Connect the USB cable directly to the computer and connect the controller with the Jog-button pressed down. Refrain from using a USB hub and directly connect the USB cable with the computer.

4. The SHIFT Updater will identify and compare firmware versions as the controller is successfully connected with the computer. Please proceed with the update by following the guideline presented on SHIFT Updater. Do not remove the controller while the update is in process.

5. Once the update is finished, the controller will automatically switch to charging mode.

6. For the best flight experience, this is engineering recommends users to update to the latest firmware versions.

❗ Refer to the following link when updating the controller's firmware. (https://thisiseng.com/support/videotutorials)

❗ Before starting the firmware update, make sure that the battery is charged more than a half. The battery condition can be checked in the 'SHIFT Drone' application.

❗ Depending on the operating system, an error may occur when updating the controller's firmware. If this is the case, simply retry the update from the beginning.

08

DECLARATIONS OF CONFORMITY

■ CE Information

DECLARATION of Conformity

We, "this is engineering Inc." declare that the radio equipment complies with all essential requirements in accordance with Directive 2014/53/EU.

This product is indoor use only.

Product

Model name	: SHIFT Drone1
Description	: Shift RED Drone
Hardware version	: v1.0
Software version	: v1.0
Frequency band(s)	: 2.4 GHz, 5 GHz
Transmitted power	: 8 dBm

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Product

Model name	: SHIFT Controller1
Description	: Shift RED Controller
Hardware version	: v1.0
Software version	: v1.0
Frequency band(s)	: 2.4 GHz
Transmitted power	: 8 dBm

Essential Requirement

Directive 2014/53/EU

Article 3.1(a)

  - EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013, EN50663

Article 3.1(b)

  - EN 301 489-1 V2.1.1, EN 301 489-17 V3.1.1

Article 3.2

  - EN 300 328 V2.2.2, EN 301 893 V2.1.1

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■ FCC Information

Product

Model name : SHIFT Drone1
Description : Shift RED Drone
FCC ID : 2AR74-SFD1D
IC ID : 26521-SFD1D

FC IC

Product

Model name : SHIFT Controller1
Description : Shift RED Controller
FCC ID : 2AR74-SFD1C
IC ID : 26521-SFD1C

■ FCC Statement

[EN] 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:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

[FR] RF du IC d'exposition aux radiations: Cet équipement est conforme à l'exposition de la IC rayonnements RF limites établies pour un environnement non contrôlé. L'antenne pour ce transmetteur ne doit pas être même endroit avec d'autres émetteur sauf conformément à la IC procédures de produits Multi-émetteur. Any changes or modifications (including the antennas) to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

■ NOTE

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 an experienced radio/TV technician for help.

· For Shift RED Controller : This appliance and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter.

· For Shift RED Drone : This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

■ **RoHS Information**
　RoHS DECLARATION of Conformity

RoHS

In accordance with the following Directives
2011/65/EU

The restriction of the use of certain hazardous substances in electrical and electronic equipment
This declaration of conformity is issued under the sole responsibility of the manufacturer. The Object of the declaration does not contain any of the substances in excess of the maximum concentration values in EU Directive 2011/65/EU of the European Parliament

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and of the Council of 8 June 2011, unless the substances are in an application that is exempt under RoHS. "this is engineering Inc." is compliant with the amendment to Annex 2, dated March 31, 2015 additionally restricts the use of DEHP, BBP, DBP and DIBP in Electrical and Electronic Equipment and becomes effective July 22, 2019.

The following harmonized European standards and technical specifications have been applied:
IEC 62321 series

Manufacturer
Name : this is engineering Inc.
Address : 514, 42, Changeop-ro, Sujeong-gu, Seongnam-si, Gyeonggi, Korea
Telephone number : +82-31-721-2300
Fax number : +82-31-721-2307
e-mail : support@thisiseng.com
web : www.thisiseng.com

■ Laser Safety Consideration

The SHIFT RED contains a laser emitter and corresponding drive circuitry. The laser output is designed to remain within Class 1 laser safety limits under all reasonably foreseeable conditions including single faults in compliance with IEC 60825-1 Safety Standards. The laser output will remain within Class 1 limits as long as this is engineering Inc. recommended device settings are used and the operating conditions specified are respected. The laser output power must not be increased by any means and no optics should be used with the intention of focusing the laser beam.

Figure : Class 1 laser product label.

■ KC Information

Product
Model name   : SFD1D
Description   : 특정소출력 무선기기 (무선데이터통신시스템용 무선기기)
KCC certification number : R-C-tie-SFD1D

Product
Model name   : SFD1C
Description   : 특정소출력 무선기기 (무선데이터통신시스템용 무선기기)
KCC certification number : R-C-tie-SFD1C

■ ENVIRONNEMENTAL PROTECTION NOTES

This product must not be disposed of with other waste. Instead, it is the user's responsibility to their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the produce.

■ J-MIC Information

Drone   Controller

R 022-190213   R 022-190214

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WARRANTY AND SERVICE INFORMATION

Warranty

this is engineering Inc. guarantees that the SHIFT RED product shall be free from defects in materials or manufacturing for the periods specified below. If the SHIFT RED product malfunctions under normal use during the warranty period, please visit the nearest service center or the this is engineering website (www.thisiseng.com) to file a warranty claim.

Product	Component	Part	Warranty Period
SHIFT RED	Drone	Main Board	12 months
		Motor	6 months
		Battery	6 months and charge cycle less than 150 times
		Propeller	No warranty
		Protector	No warranty
		Landing Gear	No warranty
	Controller	Ring	6 months
		Main Board	12 months
		Battery	6 months and charge cycle less than 100 times

❶ The warranty policy of this is engineering Inc. may vary by the country or region of purchase. Details are available on the this is engineering website (www.thisiseng.com/support/warranty/).

Multilingual Manual

The SHIFT RED User Manual is available in various languages to help global users learn how to use the product. Download the User Manual in your language from the this is engineering website, and read the instructions before use.

www.thisiseng.com/support/download/

English

Español Latino

Deutsch
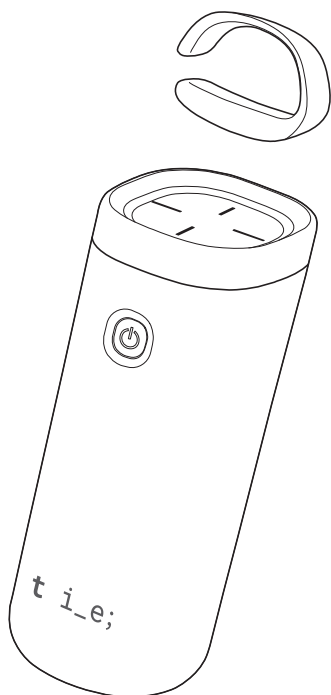
Français

Italiano

Svenska

Русский

한국어

日本語

t i e;

The batteries may be discharged after purchase.
Please charge the batteries of drone and controller before first use.

www.thisiseng.com
this is engineering Inc.