

3 Aircraft

- The Bwine F7MINI 4K drone mainly consists of a remote controller, a gimbal stabilization system, a communication system, a video downlink system, a propulsion system, and an intelligent flight battery. This section will provide a detailed description of the functions of each component.

3.1 Flight Speed Mode

- Bwine F7MINI 4K has three types of speed: low speed, medium speed and high speed, which can be adjusted by pressing the speed button to meet your different flight speed experience.



- When wind speed is high, sport mode should be maintained to improve wind resistance effect. High speed mode is sport mode.
- When flying in sport mode, the pilot should reserve at least 3 meters of braking distance to ensure flight safety.
- When flying in sport mode, the power of the aircraft will be greatly improved, please reserve enough flying space to ensure the safety of the flight.

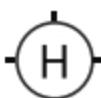
3.2 Calibration and Aircraft Status Indicator

- The F7MINI 4K aircraft's status indicator is located under the rear arm of aircraft to indicate the current status of the flight control system. Please refer to the following table for the status of the flight control system represented by different blinking modes.

	Blinking status of the indicator	Conditions
Aircraft		The red light blinks twice at short intervals
		Slow flash
		Slow flash
		Stay on
		Green light out
		Stay on
		Quick flashing
Remote Controller		Flash
		Stay on
		Extinguish
		Remote controller battery indicator
		Flash quickly together
		Three green lights flashing slowly together
		Three green lights flash in turn
		Blue light and three green lights flash in turn

3.3 Return to Home

- The F7MINI 4K aircraft has an automatic return-to-home function in GPS mode, making the aircraft return to the take-off point. The Return to Home (RTH) function brings the aircraft back to the last recorded home point. There are three types of RTH: Smart RTH, Low Battery RTH, and Signal Disconnection RTH. If you activate the RTH function under the condition that the aircraft successfully recorded the home point and GPS signal is good, the aircraft will automatically return to the home point and land.
- Note: When the drone is not unlocked, long pressing the return button will turn on the drone's buzzer. The buzzer function can be used to locate the drone and assist in finding the drone.**

	GPS	Description
		<p>When flying outdoors, the GPS signal icon is displayed with 3 bars or more for the first time, and the take-off location will record the aircraft's current position as the Home Point. During the flight, if the aircraft lands at a new location, the point from which it retook off will become the latest home point, and the aircraft will return to the latest home point.</p>

Smart RTH



Return

During the flight, press the "⚡" button, the remote control will make a "di" sound, and the aircraft will return to the take-off point automatically. During the return flight, the power indicator of the remote control will flash cyclically.

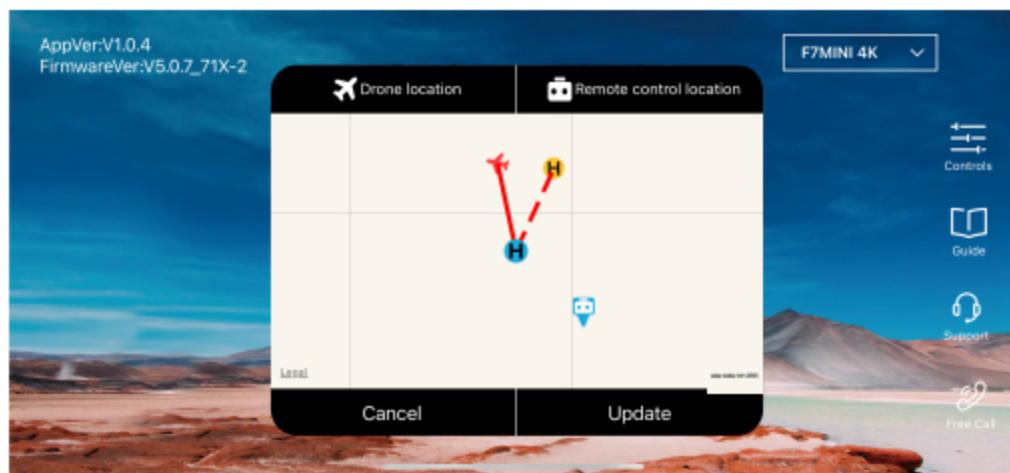
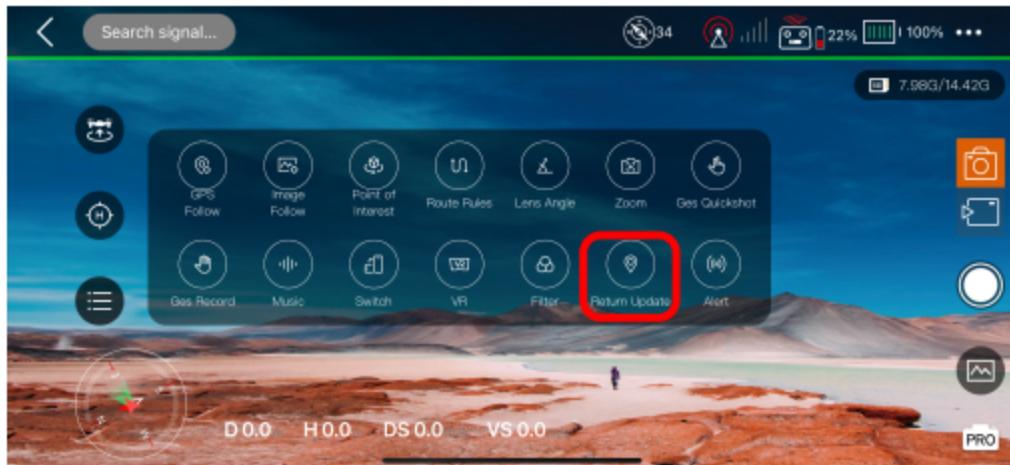
Stop return

To stop the return flight, just press this button again.

1. When the pilot needs the aircraft to return home automatically, you can press the smart RTH button(⚡) on remote controller or tap the return icon(⚡) on the App interface to start RTH.
2. During the return process, the user can operate the aircraft to ascend, descend, forward, backward, fly to the left or right to avoid obstacles.
3. During the return home, short press the smart return button on the remote controller or tap the return icon (⚡) on the F7MINI 4K interface again to exit the return home.

Return Point Update

- After the drone acquires a GPS signal and takes off outdoors, the return point location can be updated via the App.



Drone location	New return point location
Original return point location	Remote control location

- You can select a new return point location on the map or set the latest location of the drone or remote controller as the new return point location.

1. Select a new return point location:

- Drag freely on the App map to select a new return point.
- Tap "Update" to complete the setup.

2. Drone location:

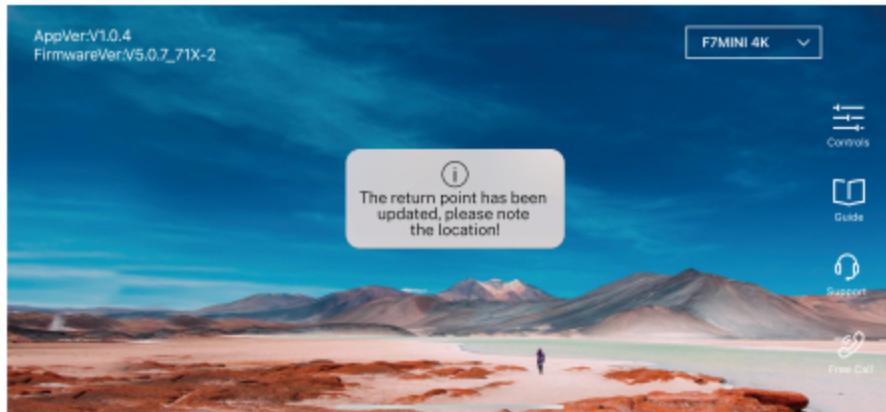
- Tap "Drone location."
- Tap  will navigate to the current location of the drone.
- Tap "OK" to complete the setup.

3. Remote control location:

- Tap "Remote control location."
- Tap  will navigate to the current location of the remote controller.
- Tap "OK" to complete the setup.

Complete setting

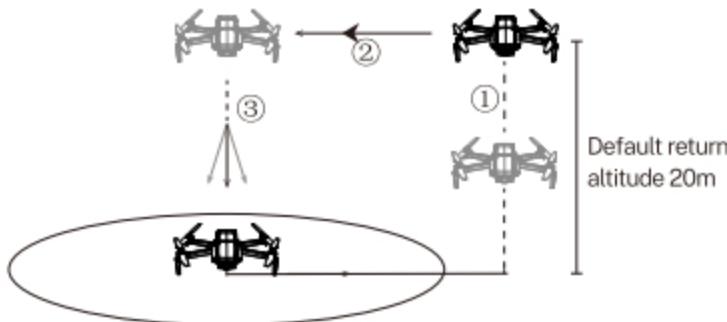
- After the new return point is set, a confirmation popup will appear, indicating that the new return point has been successfully configured.



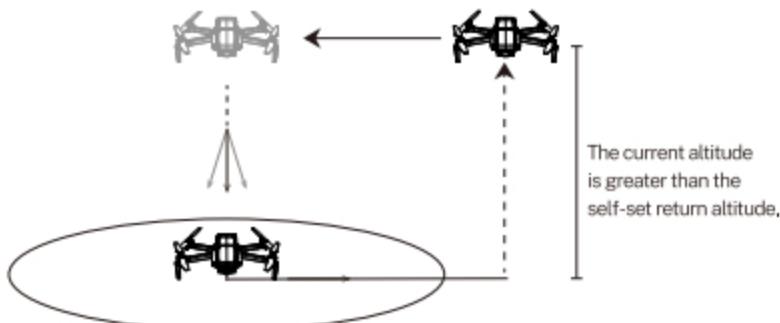
- Warm Tip:
It can be used after the drone takes off in GPS mode.

Note:

- If the return-to-home altitude is not set and the drone's flight altitude is below 65 feet (20 meters), the drone will automatically ascend to the default return-to-home altitude of 65 feet (20 meters) before returning. If the drone's flight altitude is above 65 feet (20 meters), it will return at its current altitude.



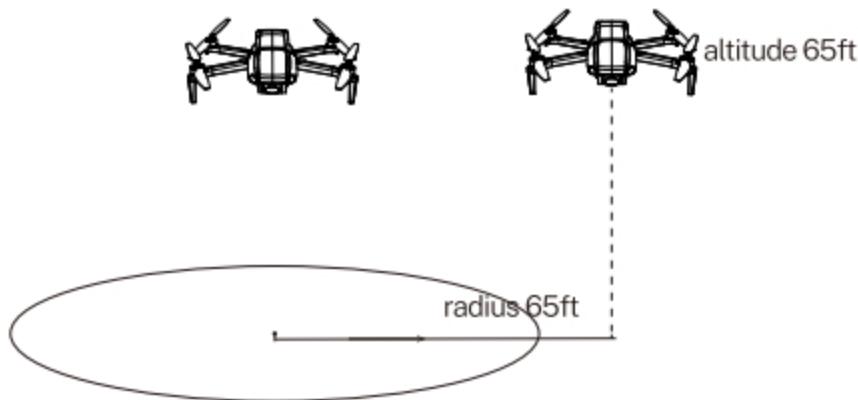
- 65ft (20m) is the default return height. The return height range that can be set in the App is 10-120 meters.
- If a return-to-home altitude is set and the drone's flight altitude is below the set return-to-home altitude, the drone will automatically ascend to the set altitude before returning. If the drone's flight altitude is above the set return-to-home altitude, it will return at its current altitude.



- The drone is not equipped with an obstacle avoidance function. During the flight, please assess the flight situation reasonably, avoid obstacles in time, and set the corresponding flight and return height according to the flight environment.

Low Battery RTH

- When the intelligent flight battery is too low or there is not enough power to return home, the user should land the aircraft as soon as possible to avoid aircraft damage or other dangers.
- In order to prevent unnecessary dangers due to insufficient battery power, when the aircraft battery power is low, the low battery return home function will be automatically triggered. According to the remaining power after returning, there are 2 situations after returning:
 - First-level low battery: the aircraft returns to the point 98 feet (30 meters) above the take off point and hover. After hovering, you can continue flying the aircraft at a height of 98 feet (30 meters) and within a radius of 98 feet (30 meters).

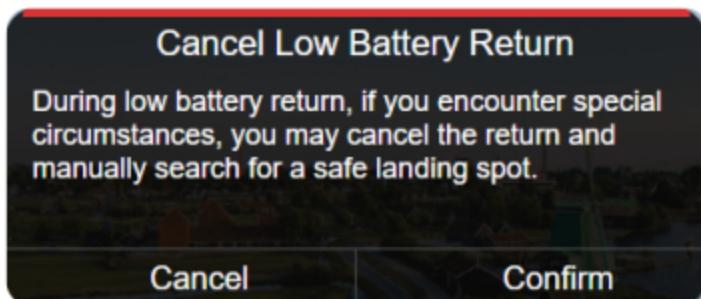


- Second-level low battery: The aircraft will directly descend from its current altitude to the ground.



3. In the event of a special situation during low battery return, you can cancel the return and take control.

- Tap the return button on the remote controller or the return button on the App.
- After tapping the confirmation button on the App's pop-up, the return will be canceled.



- After cancellation, you can take control of the drone, but you can only operate the drone to fly toward the return point.



- Must pay attention to the flight altitude when the battery is low. Avoid hitting obstacles due to the low flying altitude when returning home with the second-level low battery.
- The remaining power after returning is related to the return distance, wind speed, and wind direction.

Lost Signal RTH

- When the remote controller has low battery or is turned off or loses signal for 10 seconds, the aircraft will enter the auto-return mode and return to the take-off point. If the signal is recovered during the return home process, you can press the return button to cancel the return, and the remote control can control the aircraft again at this time.

Automatically Return to Home:

- Aircraft stores its position when taking off after the GPS signal is successfully received, and records it as the home point.
- Loss of signal will trigger RTH 10 seconds later (triggered by low battery of remote controller, signal loss, etc.).
- After triggering the Return-to-Home function, the aircraft adjusts the nose direction and starts to return home.
- The aircraft automatically flies over the home point, then starts to land, and completes the home return.

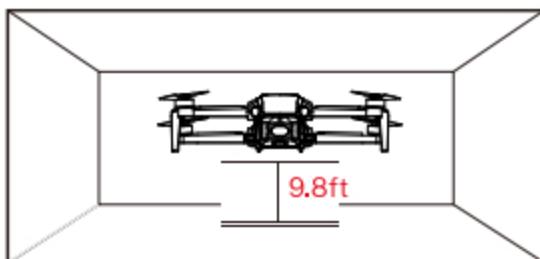


Note:

- When out of control, the aircraft cannot avoid obstacles.
- When the GPS signal is weak, the aircraft cannot return to home automatically.

3.4 Optical Flow Positioning/TOF (Indoor Attitude Mode)

- The underside of the aircraft is equipped with a downlook optical flow system and a TOF altitude sensor, which allows the aircraft to better adapt to its environment.
- The downlook optical flow system, consisting of downlook vision camera sensors, enables the drone to hover stably at low altitude in indoor attitude mode without GPS.



Note:

1. The optical flow vision system can only assist flight when the surrounding environment is well lit and rich in texture, can not completely replace the user's judgement.
2. The optical flow vision system may be ineffective or perform poorly in environments with excessively bright or dark lighting, mirrors, solid-colored smooth surfaces, water, reflective materials, or sparsely textured areas.
3. The optimal working range of the optical flow vision system is below 3 meters and above 0.5 meters, beyond the range, the positioning of the optical flow vision system may be poor, please fly carefully.
4. Please make sure that the optical flow vision system lens is clear. And it can only be used in the attitude mode.



- If the GPS signal is weak and you are flying indoors, you will need to manually turn off the GPS and switch to the indoor attitude mode before take-off.
- Once GPS is turned off, the drone will not be able to return automatically, and the smart flight feature will not be used.

3.5 Intelligent Flight Mode

- The F7MINI 4K features 6 intelligent flight modes: Route Rules, GPS Follow, Point of Interest, Gesture Quickshot/Gesture Recording, Image Follow, and Cruise Control Function. Depending on the user's shooting needs, the operation can be completed with a single tap, making it simple and fast.



Route Rules: In this mode, aircraft flies along paths marked with way points.



GPS Follow: In this mode, the aircraft will lock on to the user and automatically follow the operator's movement trajectory to capture and shoot.



Point of Interest: In this mode, the aircraft is centered on the location set on the App, flying around at a specific distance to shoot.



Cruise control: When the GPS signal is strong, the aircraft automatically flies at a constant speed according to the current flight action.



Ges Quickshot/Ges Record: The aircraft takes pictures or videos according to the steering instructions of different gestures.



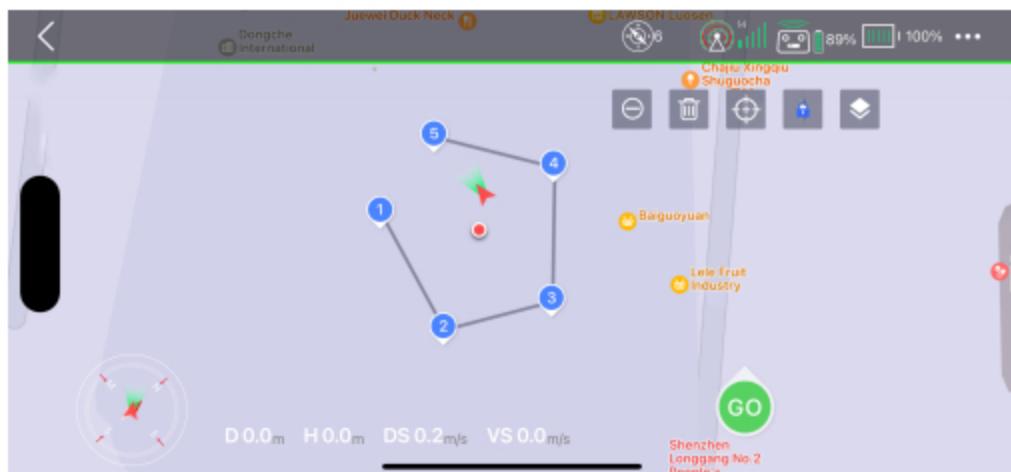
Image Follow: Image Follow function enables the drone to follow the object's in circle movement to rotate.

Route Rules



1. Ensure that you have downloaded the Bwine GPS App on your phone;
2. Connect the phone with the remote control via the data cable and open the APP;
3. After the aircraft takes off, in GPS mode, tap the icon ();
4. Mark interested of points (up to 16) which you plan to fly on App map's within red circle (limited flight range);
5. Tap "Delete Single Point" or "Delete All" to reset the marked point;
6. Make sure the marks are correct, tap "Send", The aircraft will start waypoint flight;

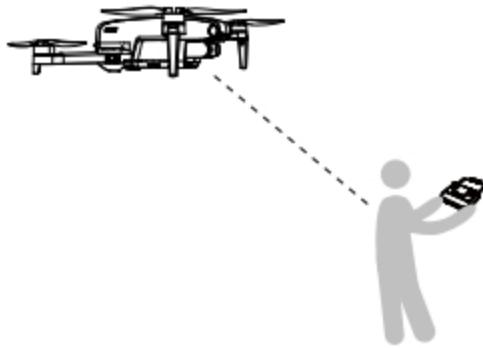
• Note: Push right joystick to cancel waypoint flight function.



GPS Follow

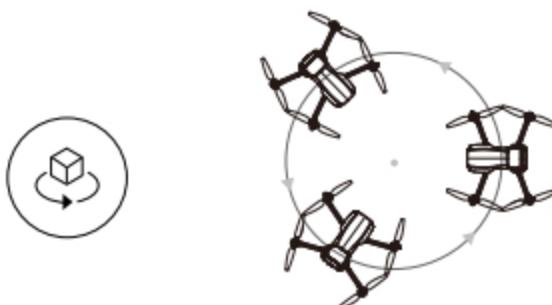


1. Ensure that you have downloaded the Bwine GPS App on your phone;
2. Turn on the smartphone's GPS location; connect the phone with the remote control via the data cable and open the App;
3. After the aircraft takes off, the best effect is to ensure that the flight range is within 50 meters in an open environment with good GPS signal;
4. Tap the (≡) icon on the App interface to start the () mode;
5. "GPS Follow" () will be displayed on the App interface and try to fly. The aircraft will track your movements to fly;
6. Tap the icon on the App interface again to exit the GPS Follow mode.



- The GPS Follow function only works when the GPS signal is strong. Please avoid high buildings, trees, and areas where signal might be interfered.
- Aircraft is not equipped with obstacle avoidance function. Please use it in open areas free of obstacles.

Point of Interest



1. Ensure that you have downloaded the Bwine GPS App on your phone;
2. Turn on the smartphone's GPS location; connect the phone with the remote control via the data cable and open the App;
3. Launch the aircraft and make it hover around the target center point. Fly to the target point where you want the aircraft to fly around;
4. Tap the () icon on the App to activate Fly Around mode;
5. Move the right rocker forward and backward to set the radius of the drone to fly (within 5-50 meters);
6. The aircraft begins to orbit according to the radius set in step 5;
7. Tap the icon on the App interface again to exit the Point of Interest.



- The default minimum surround mode radius is 16 feet (5m).
- If the altitude is below 5 meters, the drone will automatically rise to 5 meters and then start orbital flight.
- Move the right direction bar left and right to adjust the circling speed and direction.

Cruise Control



- This function needs to be used when sufficient satellite signals are searched in GPS mode.

1. Set the automatic flight distance and altitude.
2. Fly the drone to a height of more than 15 meters (This function cannot be used when it is lower than 15 meters).
3. When operating the left joystick or the right joystick, short press the cruise control button.
4. Release the joystick, and the drone will automatically fly according to your operation (For example: operate the right joystick to move forward, and the drone will automatically fly forward).
5. During the automatic flight, you can control and correct the flight direction and altitude of the drone. Press the cruise control button again during the operation. After releasing the joystick, the drone will perform cruise control according to the latest flight action.
6. Short press the cruise control button once without operating the remote control stick or tap Cancel on the APP to exit the cruise control.



- The drone cannot use this function if the flight altitude is below 15 meters.
- The function cannot be used when the drone's battery is low.
- The drone will automatically exit this function after reaching the set distance.
- If the drone descends to 15 meters during automatic cruising, it will automatically exit this function.
- The drone does not have obstacle avoidance features. Please ensure flight safety.

Ges Quickshot/Ges Record

1. Ensure that you have downloaded the Bwine GPS App on your phone; Turn on the smartphone's GPS location; connect the phone with the remote control via the data cable and open the App;
2. After the drone takes off, use it in GPS mode;
3. Open the App, tap the Multi-function icon on the App interface, and tap the () icon. In this mode, raise the right hand and pose() at the same height of the shoulder to take photos;
4. Tap the () icon. In this mode, raise your right hand and show your palm at the same height of the shoulder to open the recording mode.



- Use in a well-lit environment. Tap the icon again to exit Ges Quickshot/Ges Record mode.
- Ges Quickshot/Ges Record mode can only be activated with the right hand.

Image Follow

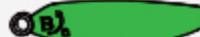
1. Launch aircraft and ensure flight height is higher than the nearby obstructions, access to the App CONTROL interface.

2. Tap(), slide to start and tap on the object or person plans to track, tap to confirm the selection, drone rotates following the object's in circle movement.

Note: Make sure the size of the frame isn't too large, so as to ensure the recognition is achievable.

3.6 Propeller

- The adjacent propellers on the motors of the F7MINI 4K are forward and reverse propellers. The two propellers on the same motor are the same, and the propellers are marked with A and B respectively.
- The rotation directions of the propellers with the same mark are the same.

Propellers	Mark A	Mark B
		
Installation location	Installed to the motor with A mark on the arm	Installed to the motor with B mark on the arm



Installation location