

REEBOT



# UniDrone E900 Emergency Response Application Manual

Lead from the Air.  
Every Second Counts.



Reebot Robotics  
Dec, 2025



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Application Scenarios

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**Nighttime Illumination Rescue**  
Rapid aerial lighting coverage to overcome ground-level blind spots



**Wilderness Search & Rescue**  
Wide-area aerial search to accelerate rescue efforts



**Emergency Supply Delivery**  
Deliver critical supplies without entering hazardous zones



**Disaster Scene Situational Awareness**  
Rapid aerial vantage points for fast, large-area assessment








**Crowd Management & Security Patrol**  
Efficient crowd guidance and enhanced deterrence





**Hazard-Zone Inspection**  
Enable no-entry inspection to improve operational safety



Scenario	Key Tasks	Recommended Solution
<ul style="list-style-type: none"><li>• Nighttime Rescue</li><li>• Emergency Repairs</li><li>• Event Security</li></ul>	Continuous illumination, fixed-position monitoring, temporary aerial lighting	<div> UniDrone E900 Tethered Drone (with Matrix Light)</div> <div>+</div> <div> Mini Quad-Sensor Optical Pod UniPod MT11 / Loudspeaker (optional)</div>
<ul style="list-style-type: none"><li>• Crowd Guidance</li><li>• Alerts</li><li>• Traffic Control</li></ul>	Large-area crowd management and perimeter control	<div> UniDrone E900 Industrial Drone + UniPod MT11 Mini Quad-Sensor AI Optical Pod + Loudspeaker</div>
<ul style="list-style-type: none"><li>• Night Search &amp; Rescue</li><li>• Integrated Law Enforcement</li></ul>	Illumination + warning + broadcast	<div> UniDrone E900 Industrial Drone + UniPod MT11 Mini Quad-Sensor AI Optical Pod + Multi-Function Module (Loudspeaker + Red/Blue Beacons + Spotlight)</div>
<ul style="list-style-type: none"><li>• Water Rescue</li><li>• Wilderness Rescue</li></ul>	Airdrop of life buoys, medical kits, and other rescue payloads	<div> UniDrone E900 Industrial Drone+UniPod MT11 Mini Quad-Sensor AI Optical Pod+Drone Drop Kit+Loudspeaker (optional)</div>



Scenario	Key Tasks	Recommended Solution
Warning & Enforcement	Voice broadcast only	<div></div> <div>UniDrone E900 Industrial Drone + UniPod MT11 Mini Quad-Sensor AI Optical Pod + Loudspeaker</div>
	Voice broadcast + warning lights + searchlight	<div></div> <div>UniDrone E900 Industrial Drone + UniPod MT11 Mini Quad-Sensor AI Optical Pod + Multi-Function Module (Loudspeaker + Red/Blue Beacons + Spotlight)</div>
Nighttime Illumination	Wide-area, long-duration static lighting	<div></div> <div>UniDrone E900 Tethered Drone (with Matrix Light)</div>
	Mobile lighting; follow-flight illumination	<div></div> <div>UniDrone E900 Industrial Drone + UniPod MT11 Mini Quad-Sensor AI Optical Pod + Multi-Function Module (Loudspeaker + Red/Blue Beacons + Spotlight)</div>
Nighttime Illumination	Precision drop	<div></div> <div>UniDrone E900 Industrial Drone+UniPod MT11 Mini Quad-Sensor AI Optical Pod+Drone Drop Kit+Loudspeaker (optional)</div>



## Nighttime Illumination Rescue



## Nighttime Illumination Rescue

### Painpoints

1. Low nighttime visibility slows rescue operations, while terrain obstacles create large blind zones for ground-based lighting.
2. Light towers and portable lamps require lengthy setup, offer limited coverage, and are difficult to reposition.
3. When multiple work sites need illumination simultaneously, traditional methods cannot provide flexible or mobile coverage.

### Solutions

1. The UniDrone E900 tethered drone lighting solution is equipped with an 85,360-lm high-intensity matrix light, delivering 4,500+ m<sup>2</sup> of coverage from a 50 m altitude—supporting command and coordination, material transfer, team staging, and other key nighttime rescue tasks that require wide-area illumination.
2. The UniDrone E900 integrates dual-antenna RTK centimeter-level positioning and an 11.5 m/s wind-resistance design, enabling stable hovering and steady beam output even in complex environments.
3. The UniDrone E900 tethered drone provides up to 24 hours of continuous illumination, overcoming endurance limitations of traditional lighting equipment and supporting prolonged nighttime rescue and on-scene operations.



## Wilderness Search & Rescue



### Wilderness Search & Rescue (Mountain / Water / Disaster Sites)

## Painpoints

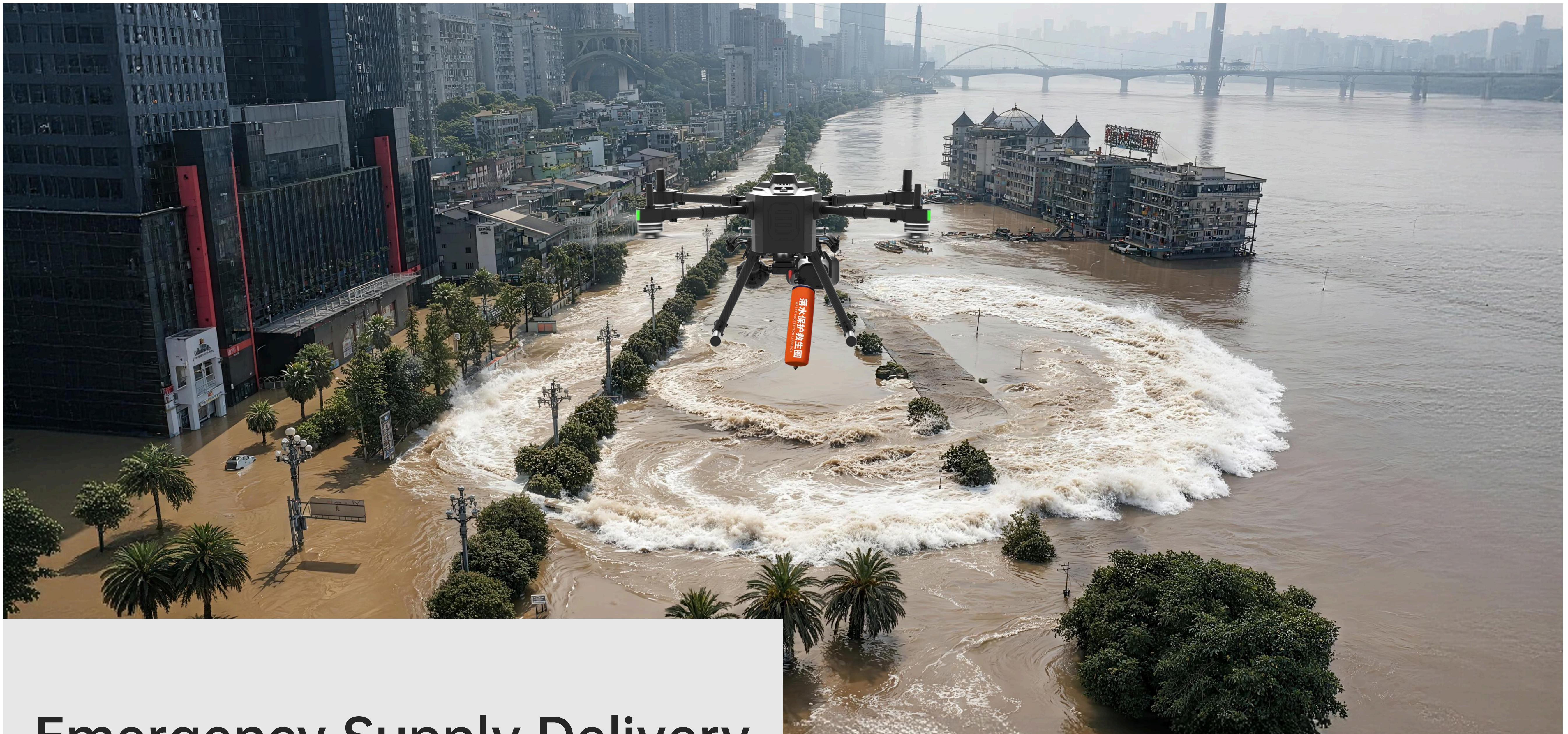
1. Complex terrain such as mountains, forests, and river valleys limits ground access and slows search progress.
2. Low-light or nighttime conditions make victims difficult to detect; handheld flashlights and spotlights offer limited range.
3. In water rescues, victims drift with currents, making it hard for ground teams to reach the location in time.

## Solutions

1. The UniDrone E900 equipped with the UniPod MT11 mini quad-sensor AI optical pod provides 8× IR zoom and AI super-resolution up to 2560 × 2048, enabling clear thermal detection through tree canopy and surface reflections—improving target identification speed and search efficiency.
2. The UniDrone E900 features a quick-release design, enabling 1-minute deployment and 20 m/s transit speed to rapidly reach the search area.
3. The loudspeaker supports 500 m voice projection for remote calling and guidance, while the multi-function module integrates an enhanced loudspeaker with an 800 m range for clearer communication.
4. The UniDrone E900's drop kit enables precise aerial delivery of life-saving supplies—such as life rings and first-aid items—directly to trapped individuals, providing a safe and efficient resupply method in hazardous environments.



## Emergency Supply Delivery



## Emergency Supply Delivery

### Painpoints

1. Floods, landslides, and fires often block ground access, making traditional delivery slow and unreliable.
2. Dynamic and hazardous conditions prevent rescuers from approaching safely, increasing the risk of secondary injury.
3. Ground routes are uncertain, reducing the timeliness of aid.

### Solutions

1. The UniDrone E900 equipped with a drop kit enables precise point-delivery of critical supplies—such as lifebuoy, rope kits, and first-aid items—providing trapped individuals with rapid life-support resources.
2. Its high mobility allows the UniDrone E900 to deliver across collapsed zones, gorges, and flooded areas, reducing the need for rescue teams to enter dangerous terrain.
3. With a maximum payload capacity of 2.1 kg, the UniDrone E900 supports most lightweight emergency-supply requirements.
4. Its onboard optical pod provides real-time visual confirmation of the delivery zone, ensuring supplies reach the intended target safely and accurately.



## Disaster Scene Situational Awareness



### Disaster Scene Situational Awareness (Floods, Landslides, Earthquakes, etc.)

## Painpoints

1. Roads blocked by disasters, large areas need simultaneous assessment; ground teams cannot cover quickly.
2. Nighttime or harsh conditions limit ground inspection capabilities.
3. Commanders require real-time, high-definition, adjustable aerial views.

## Solutions

1. The UniDrone E900 with UniPod MT11 quickly takes off to capture wide-area disaster imagery and transmit it to the command center in real time. At night, its thermal camera combined with AI super-resolution delivers  $2560 \times 2048$  thermal images, clearly identifying people, smoke, and ground conditions.
2. UniPod MT11 supports up to  $165\times$  hybrid zoom and  $360^\circ$  continuous rotation, enabling detailed, no-blind-spot aerial inspections.
3. The UniDrone E900 with UniPod MT11 offers up to 50 minutes of flight time, supporting extended aerial inspections.
4. With 11.5 m/s wind resistance and IPX4 protection, the drone maintains stable flight in complex disaster environments.
5. Faster than ground teams, the drone can flexibly switch payloads—for example, using the loudspeaker to guide trapped individuals—making it ideal for multi-point disaster situational management.



## Crowd Management & Security Patrol



### Crowd Management & Security Patrol (Large-scale Events / Public Safety)

## Painpoints

1. Large venues make full ground coverage and rapid coordination difficult.
2. Nighttime crowd density increases management complexity and accident risk.
3. Traditional loudspeakers have limited range and poor directional control.
4. Standard drones have short endurance, unsuitable for extended security missions.

## Solutions

1. UniDrone E900 provides a high-altitude panoramic view, monitoring crowd congestion and abnormal behavior in real time for precise risk alerts, ideal for festivals, large gatherings, and emergency response.
2. Equipped with a loudspeaker, it delivers clear audio up to 500 m; or with an integrated multi-function module (loudspeaker + red-blue warning lights + searchlight), all three functions operate without swapping payloads, ensuring efficient communication and command.
3. Combined with UniPod MT11 and tether system, UniDrone E900 supports 24-hour aerial monitoring: 360° rotatable payload eliminates blind spots, while tethered power ensures continuous operation for long-duration security and emergency management.



## Hazard-Zone Inspection



### Hazard-Zone Inspection (Fire Zones, Hazardous Materials, Collapse Sites)

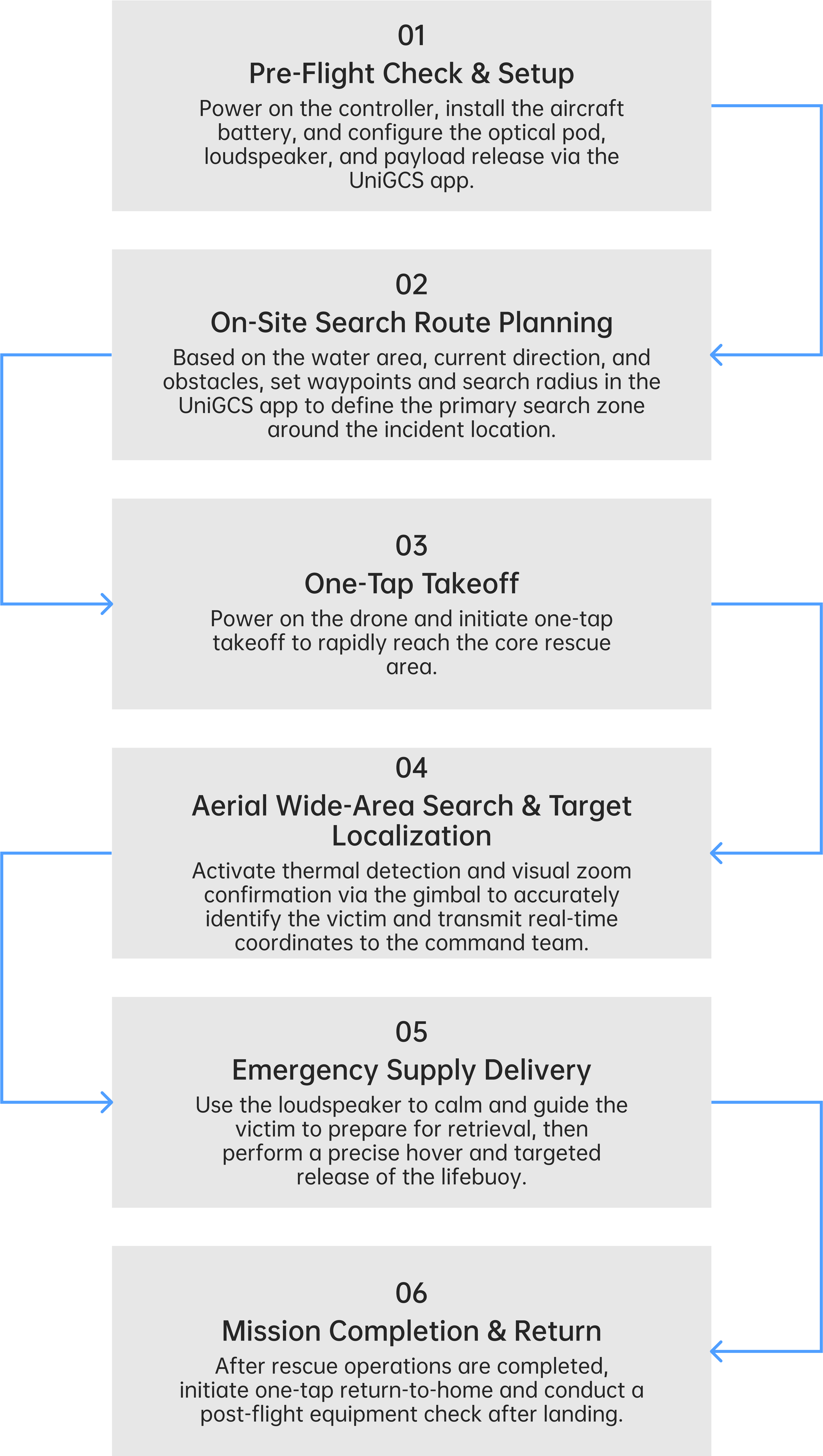
## Painpoints

1. Fire, high temperatures, smoke, and toxic gases prevent personnel from approaching.
2. Unstable structures in collapse zones or chemical spill areas create secondary risks.
3. Nighttime or low-light conditions limit rescue operations.

## Solutions

1. UniDrone E900 with UniPod MT11 offers up to 50 min endurance, enabling extended aerial inspections of high-risk areas and providing continuous, detailed visual data for decision-making and risk assessment.
2. Equipped with UniPod MT11 mini quad-sensor AI optical pod: 8K wide-angle photos, 4K video, and high-sensitivity thermal imaging ( $\text{NETD} \leq 50 \text{ mK}$ ) allow precise target identification and documentation, even in smoke, darkness, or complex conditions.
3. Loudspeaker covers up to 500 m, enabling remote instruction, risk warnings, or emotional support, enhancing emergency coordination.
4. Multi-function module with searchlight illuminates key zones in low-visibility environments.
5. Dual IMU + dual magnetometer redundancy and dual-antenna RTK centimeter-level positioning ensure stable, safe flight in complex scenarios.







Pre-Flight Inspection

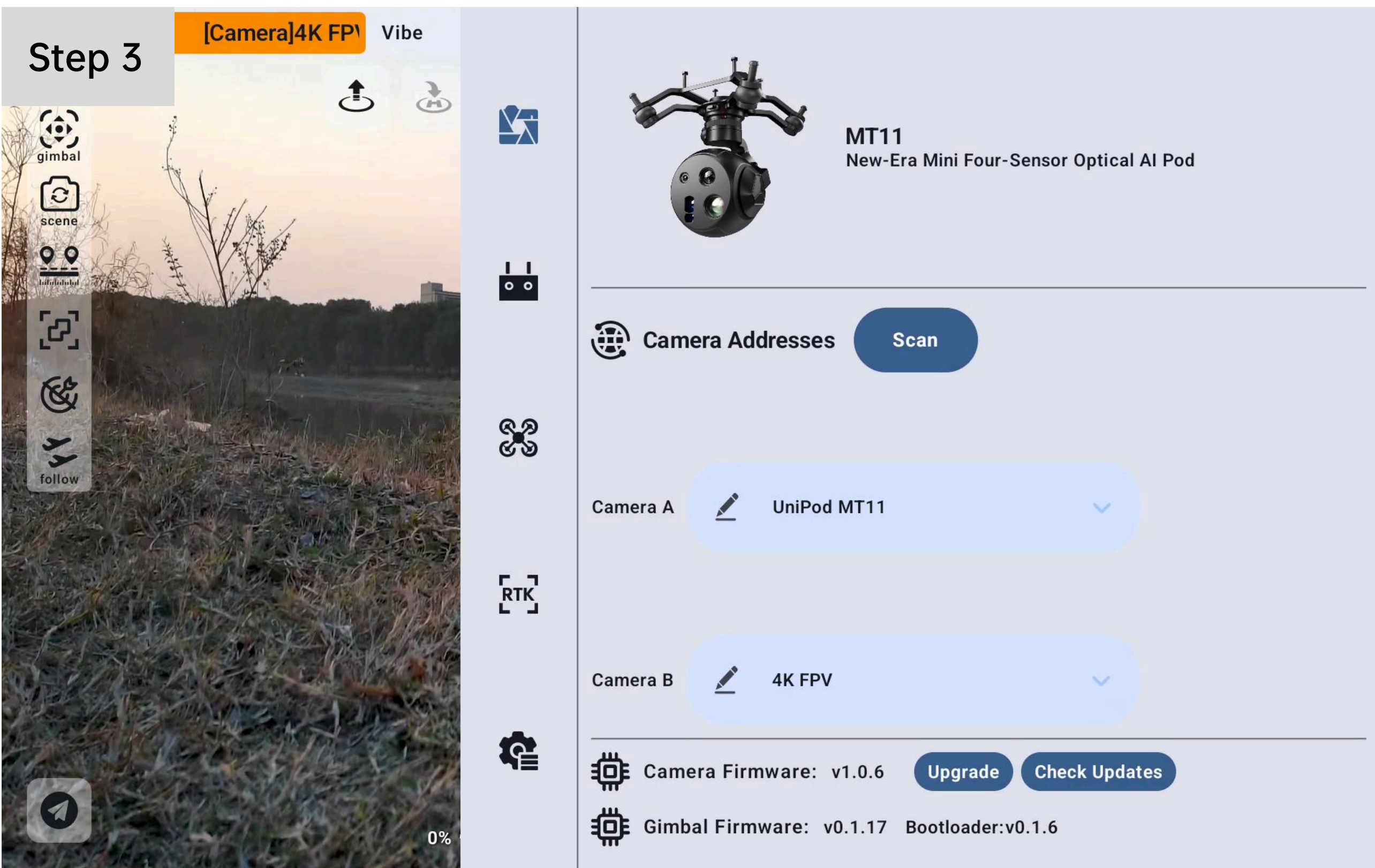
REBOOT



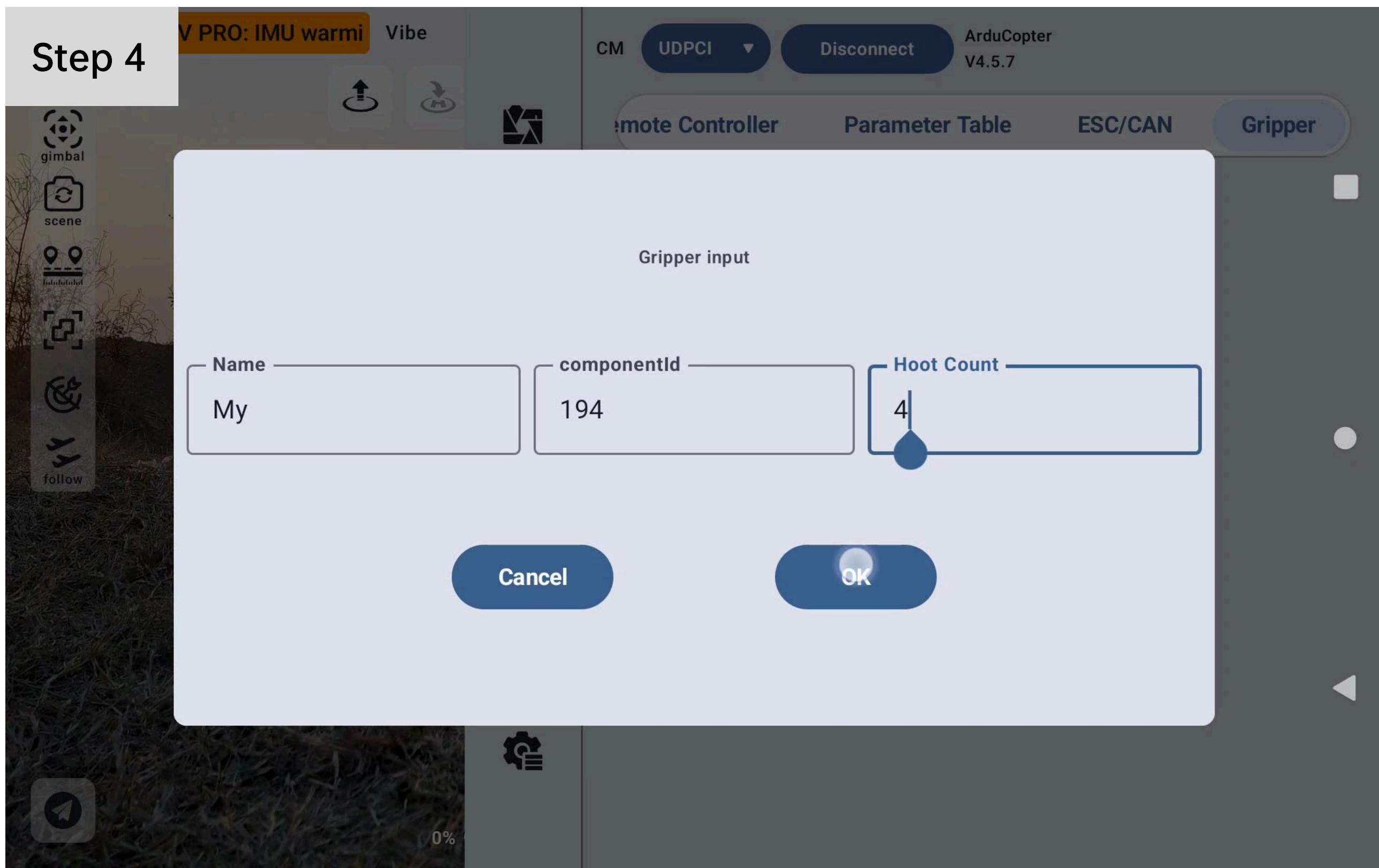
Arrive on site, deploy the UniDrone E900, unfold and lock the arms, and deploy the propellers. Power on the remote controller.



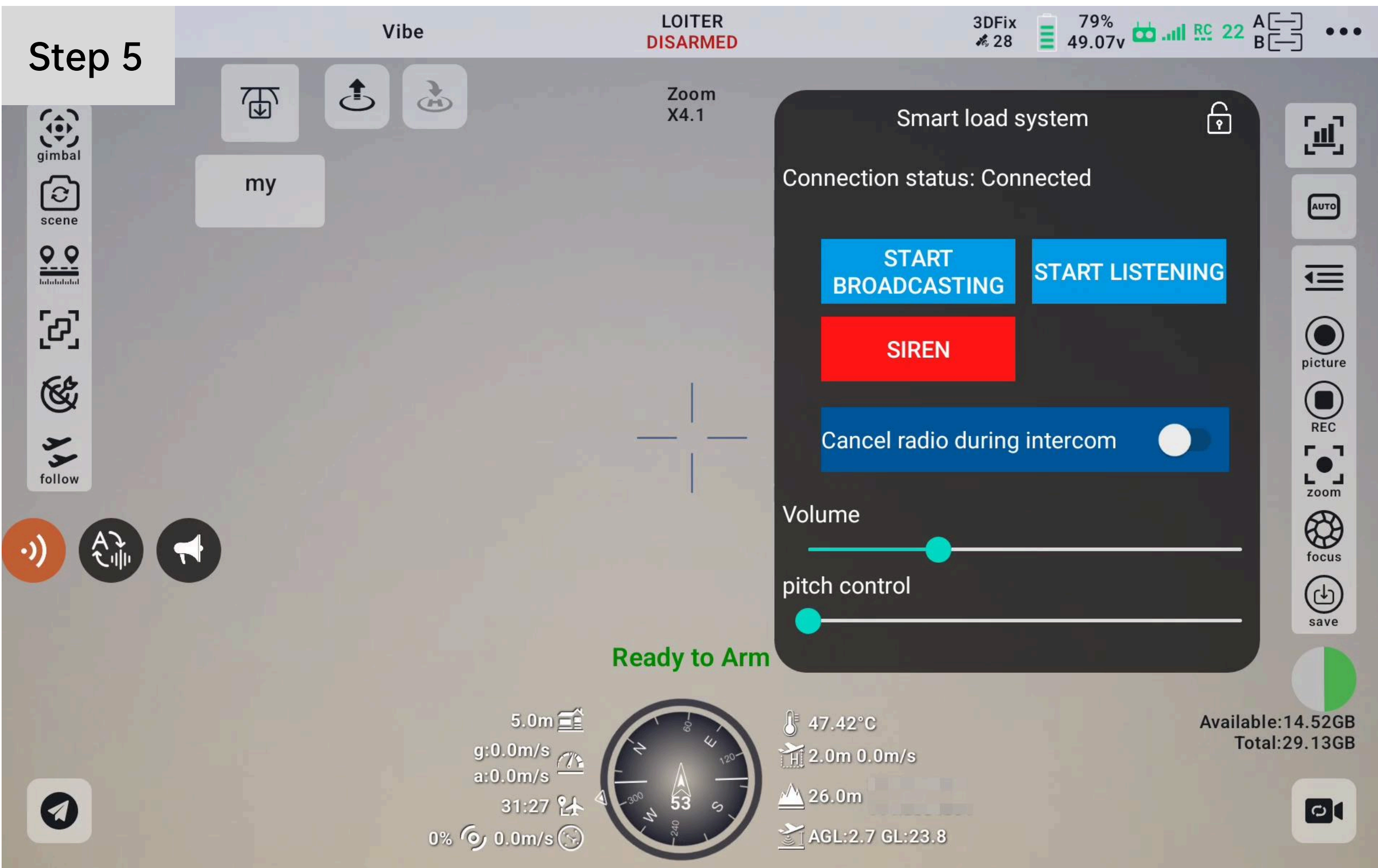
Install the aircraft battery, press the power button once, then press and hold for 2 seconds to power on the aircraft.



Launch the UniGCS app. Set Camera A to UniPod MT11 and Camera B to 4K FPV.



Check drone drop kit status. For first use, add the drone drop kit (componentId: 194, Hook Count: 4).

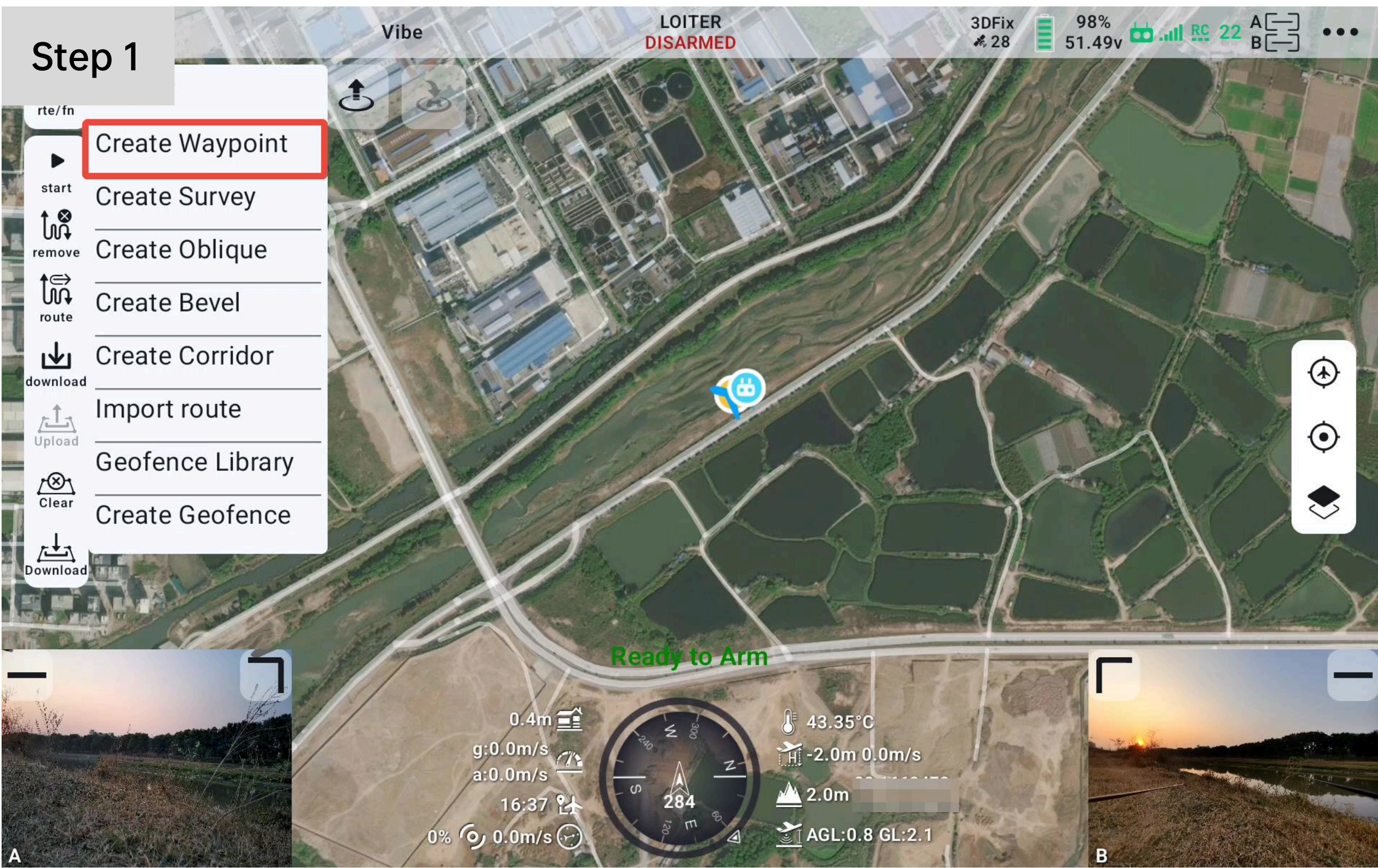


Verify loudspeaker audio playback and gimbal tilt control are functioning properly.

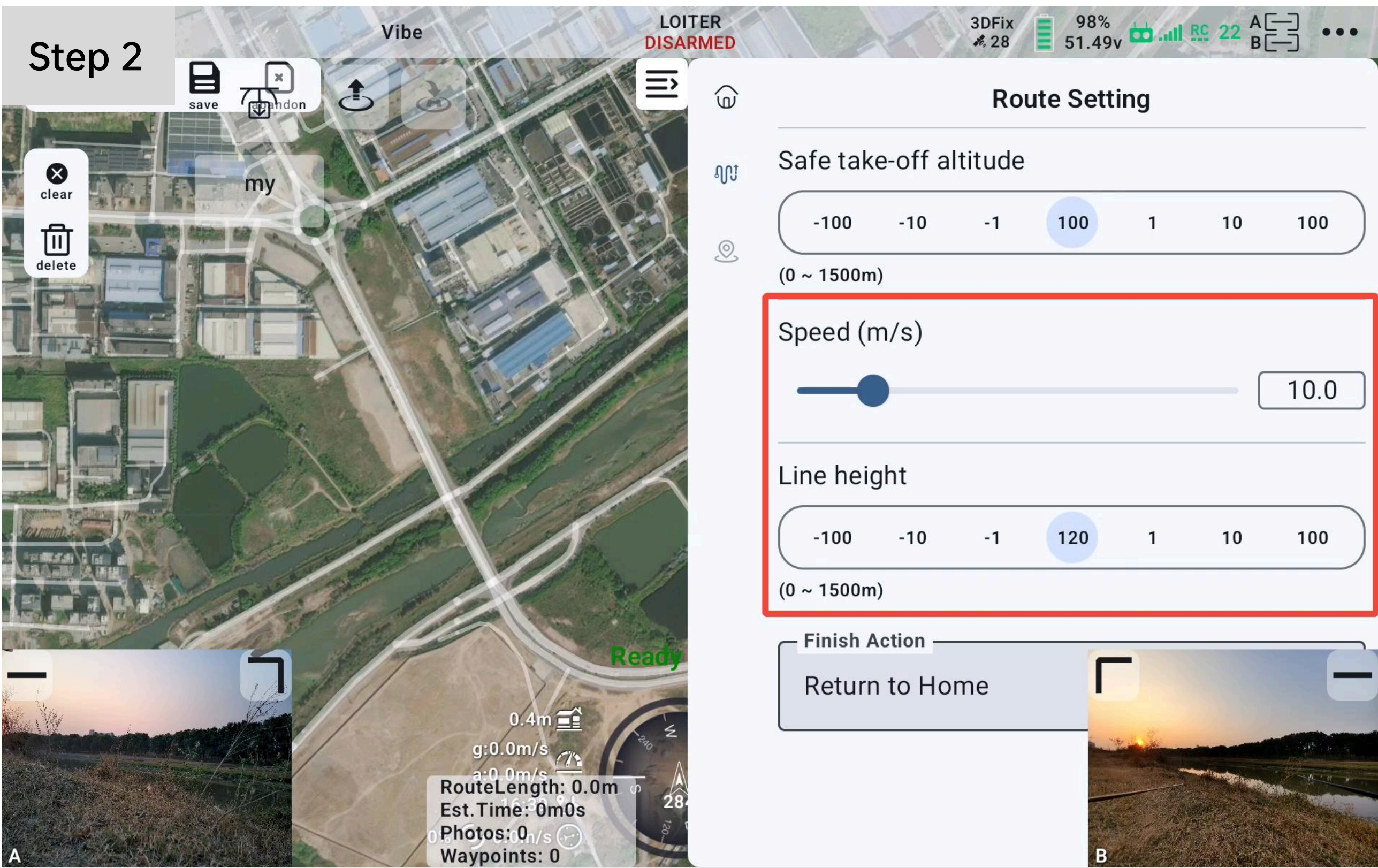


Complete the Pre-Operation Flight Checklist and confirm the surrounding area is clear of pedestrians and vehicles before takeoff.





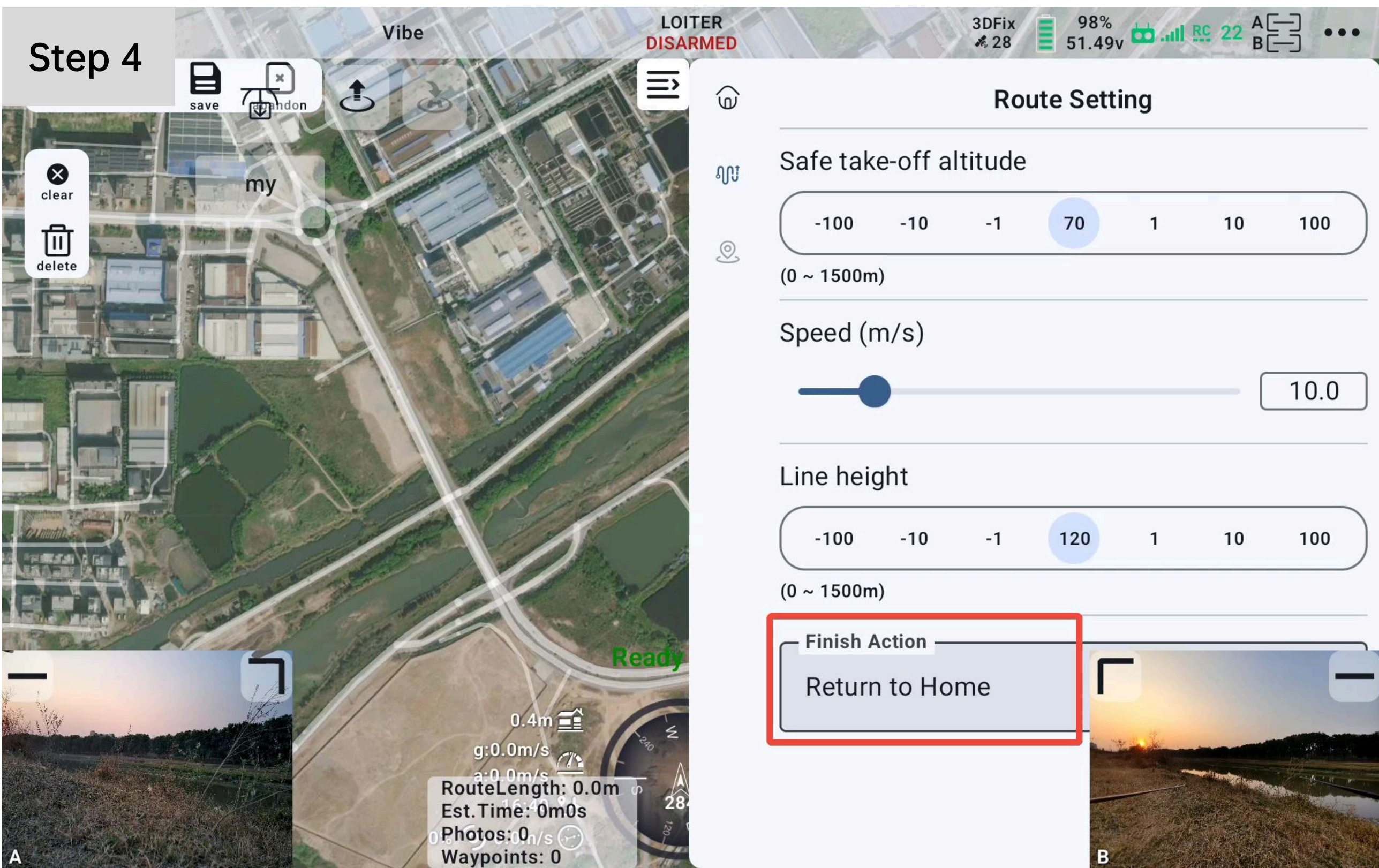
Click "Create Waypoint" and create a Waypoint Route.



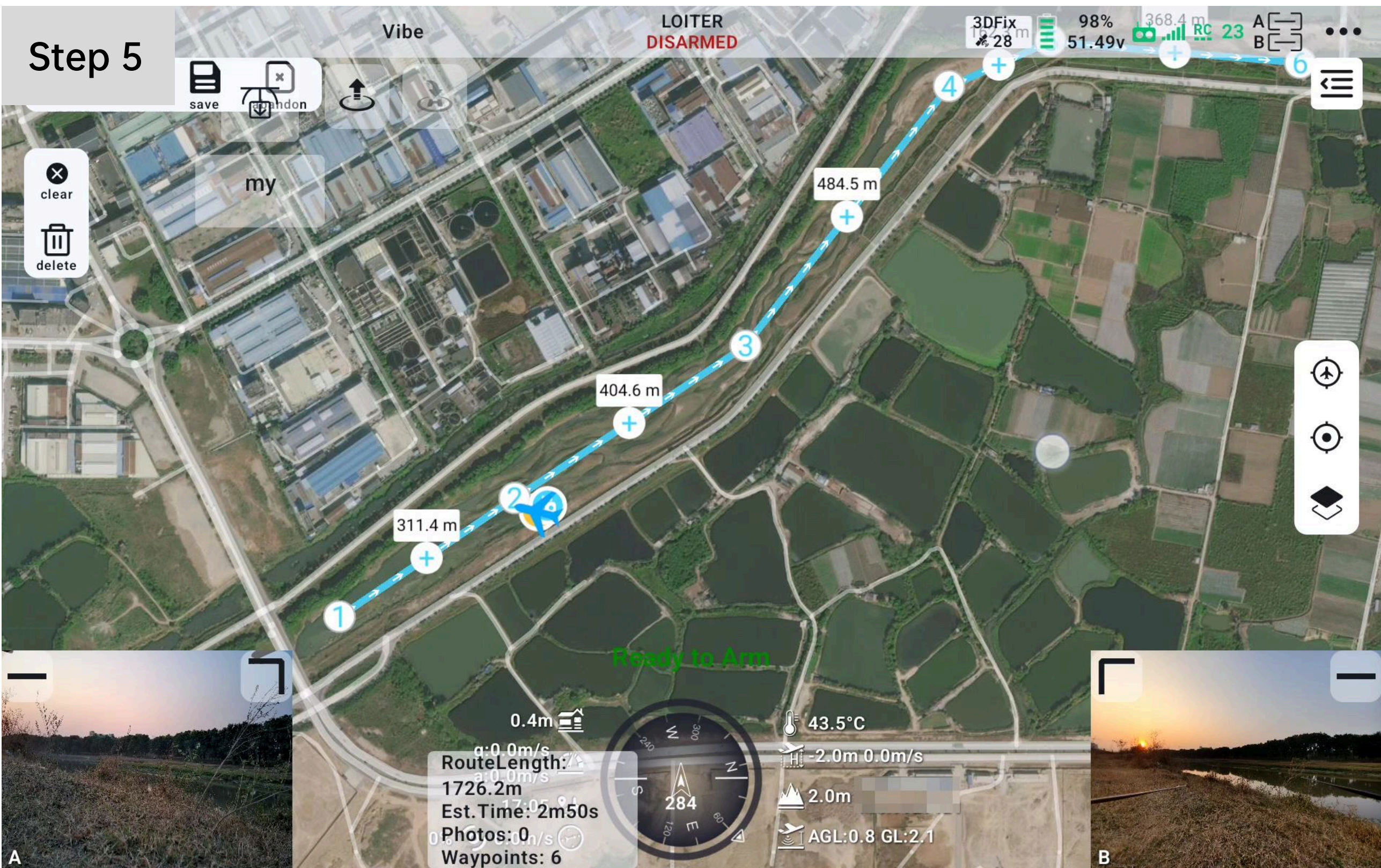
Set "Speed" and "Line height" as required.



Configure "Safe take-off altitude".



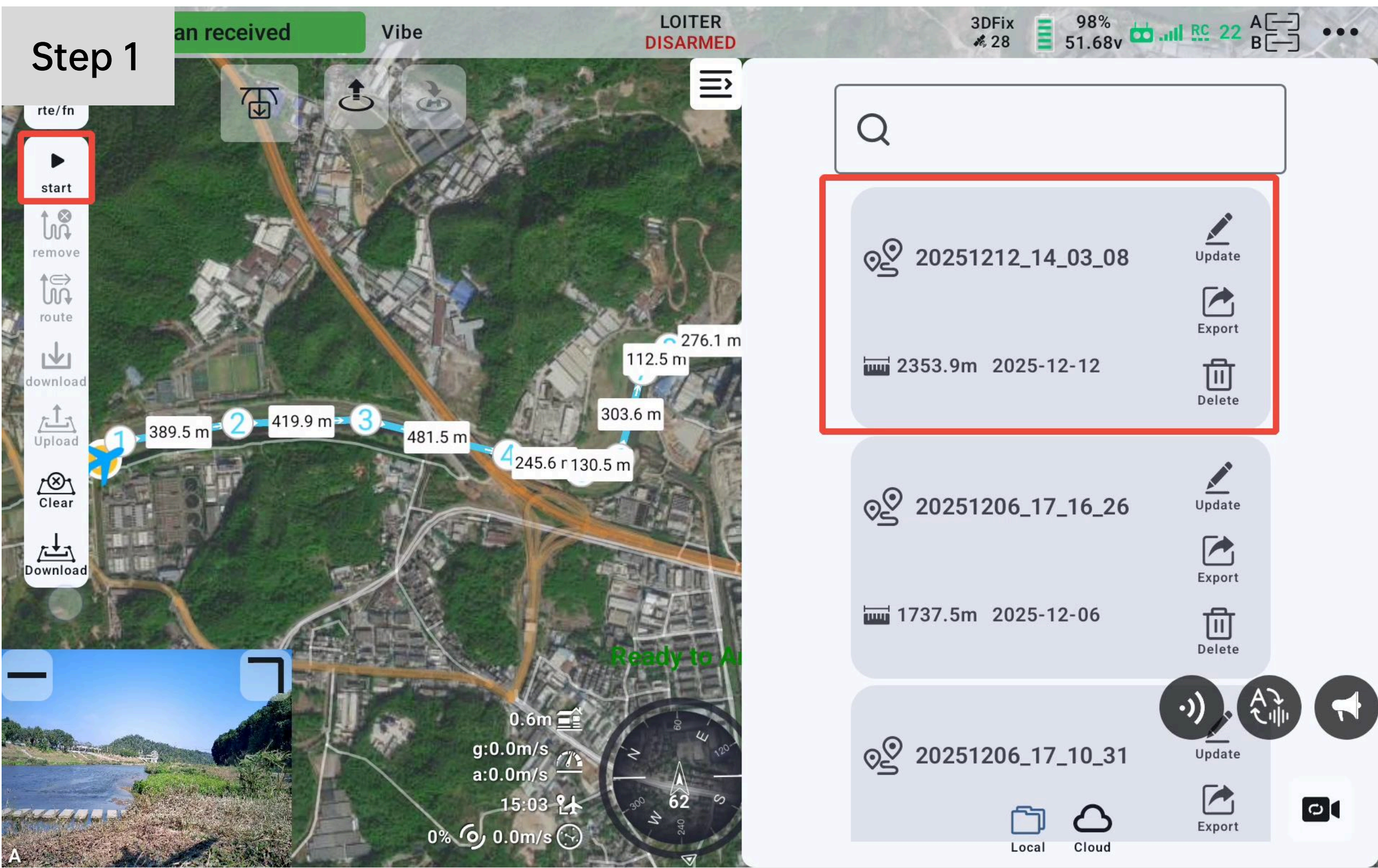
Set Finish Action to Return to Home (RTH).



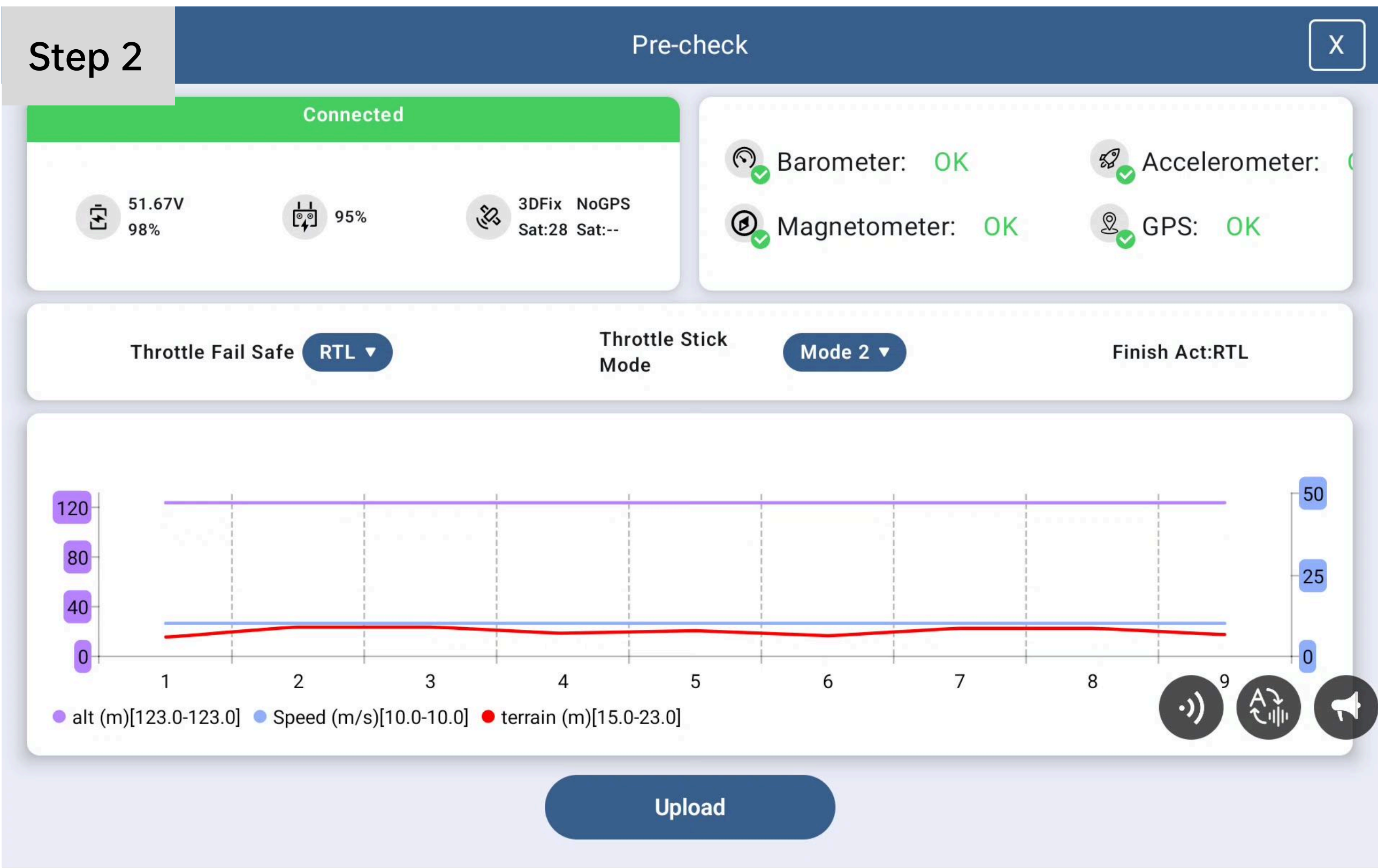
Define the search area on the map.



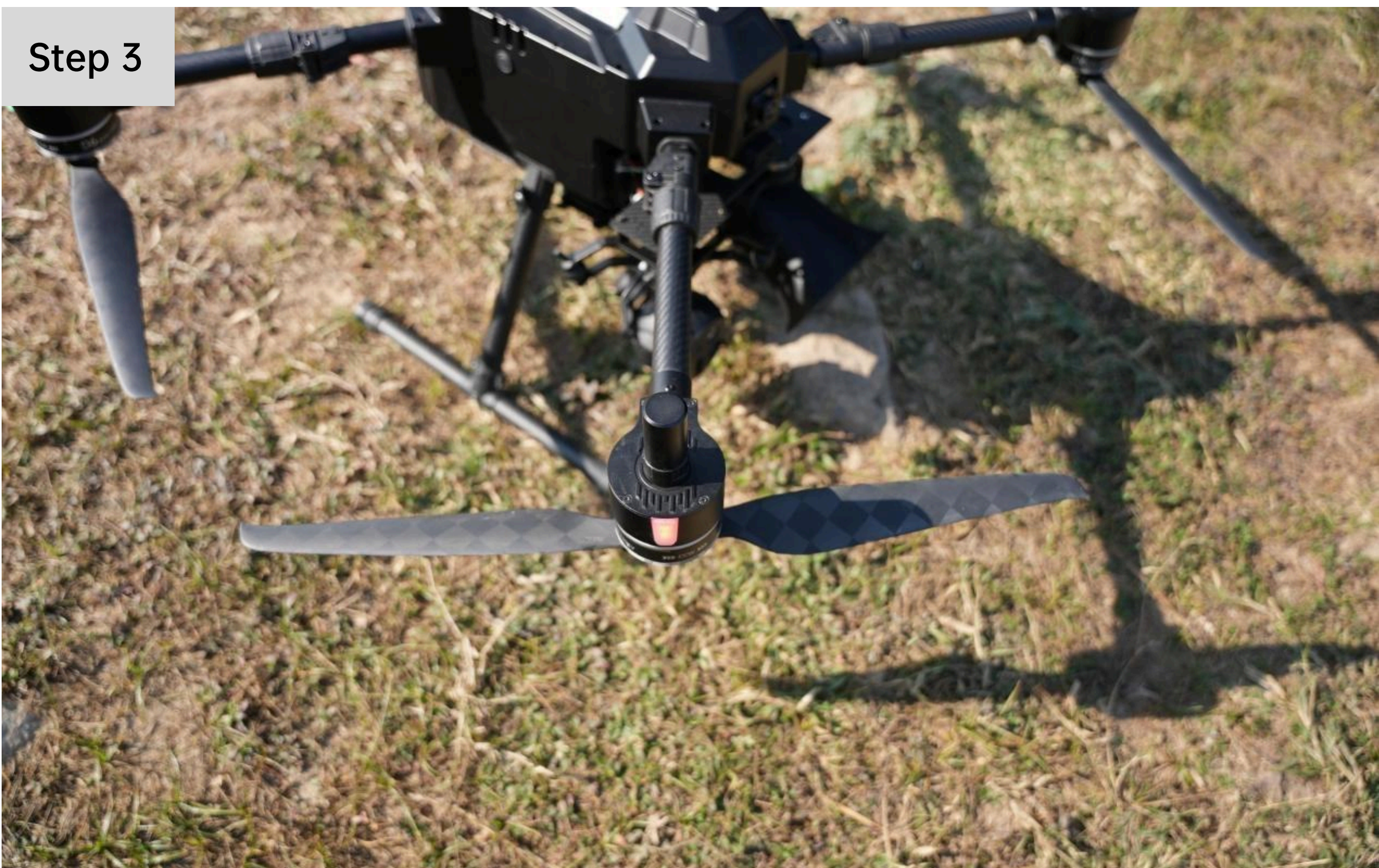
One-Tap Takeoff · Mission Execution



Select the required mission from the route library and tap Start to check mission parameters and drone status.



Upload the flight route.



Perform a final pre-takeoff check (arm locks, propellers, overall status).



Arm the drone and tap Start to launch the mission.



The drone takes off vertically to the preset safe altitude, then proceeds to the first waypoint to execute the task.

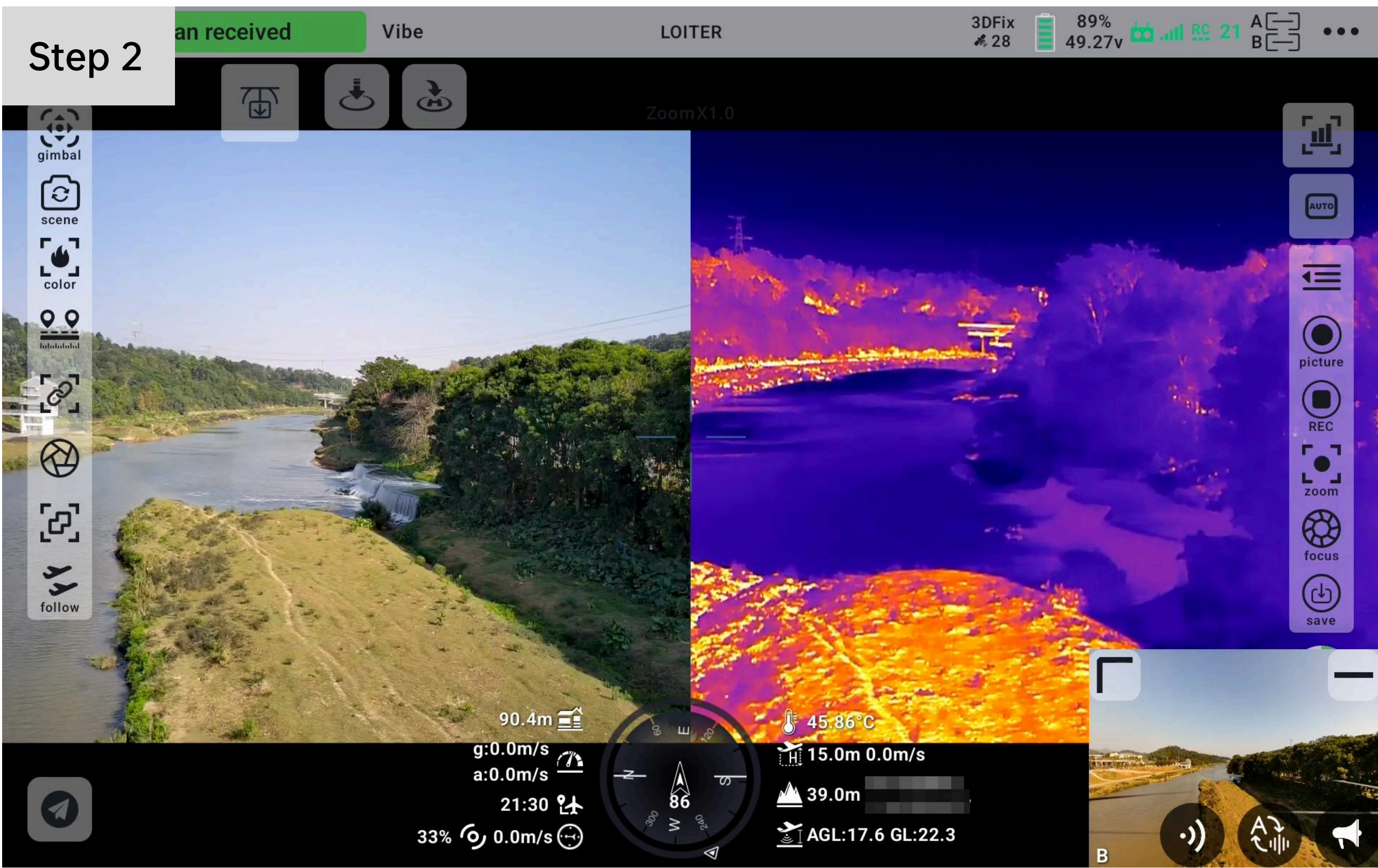


Target Search and Localization

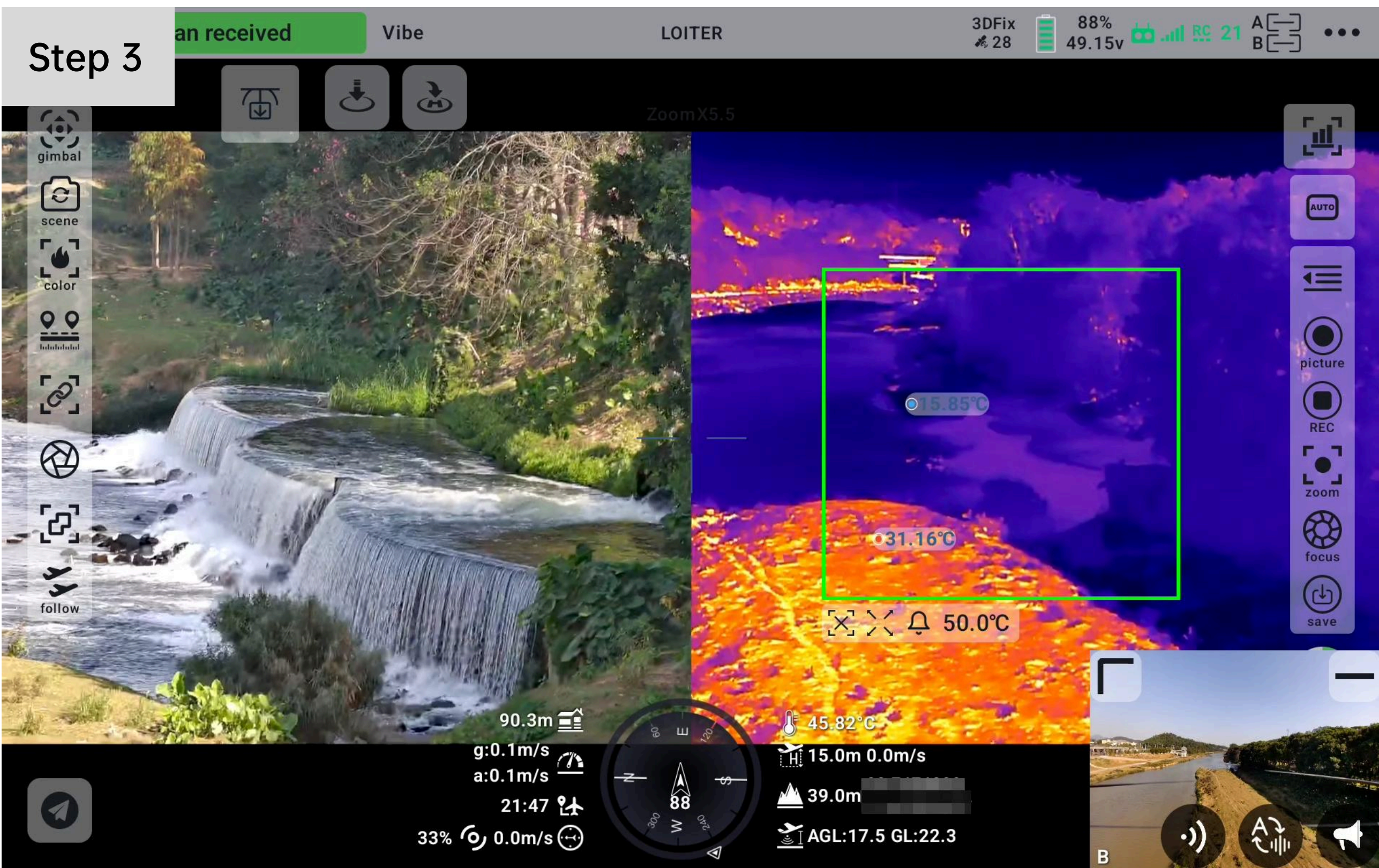
REEBOT



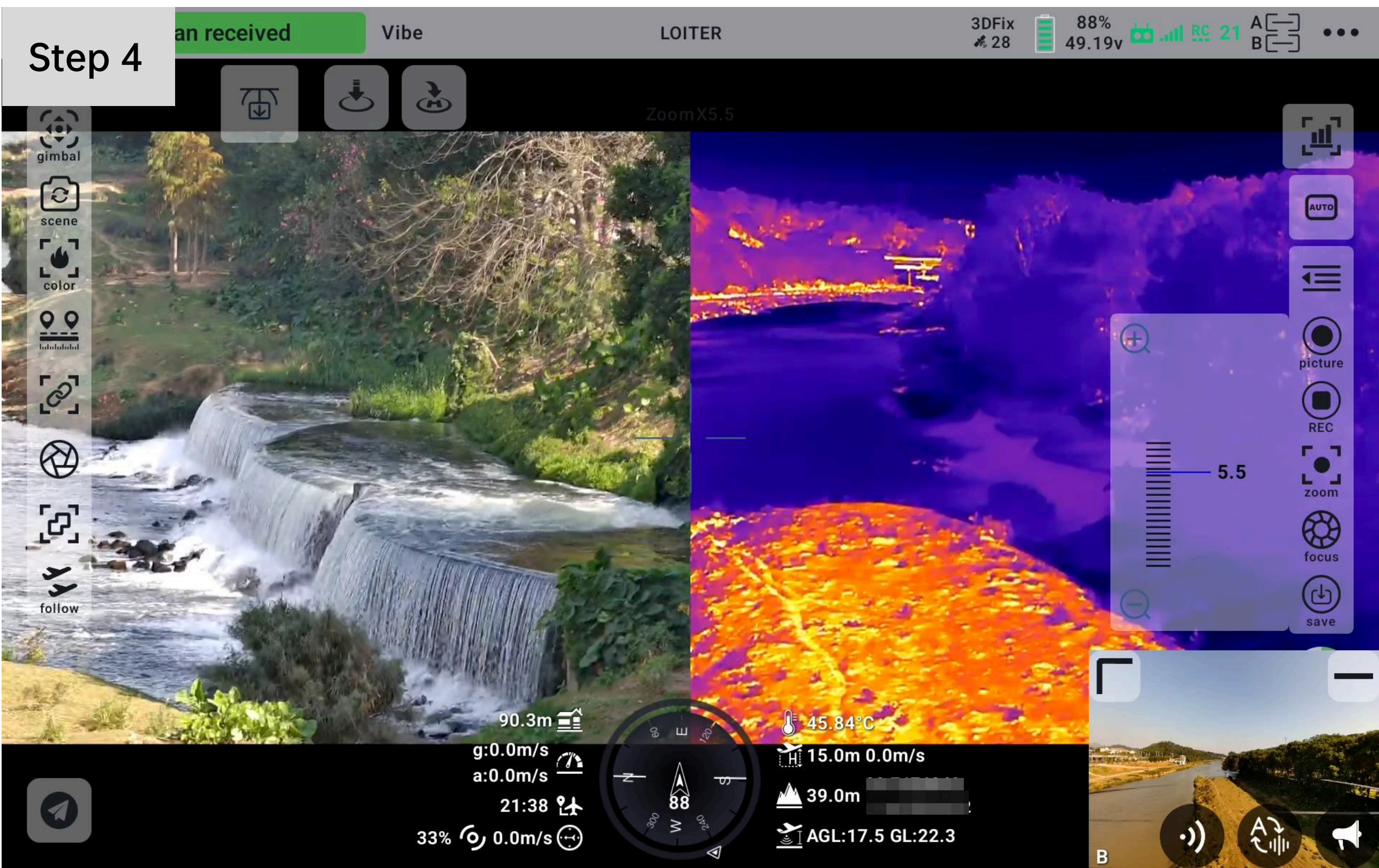
Tap "scene" to switch between visible, thermal, or dual-view display.



Use dual view for wide-area search: visible imagery for situational awareness, thermal imagery to detect suspected heat signatures.



Enable full-image measurement to scan large areas; set temperature alarms to trigger alerts on abnormal heat sources.



Apply optical zoom to confirm and assess the target in real time.



Supply Delivery

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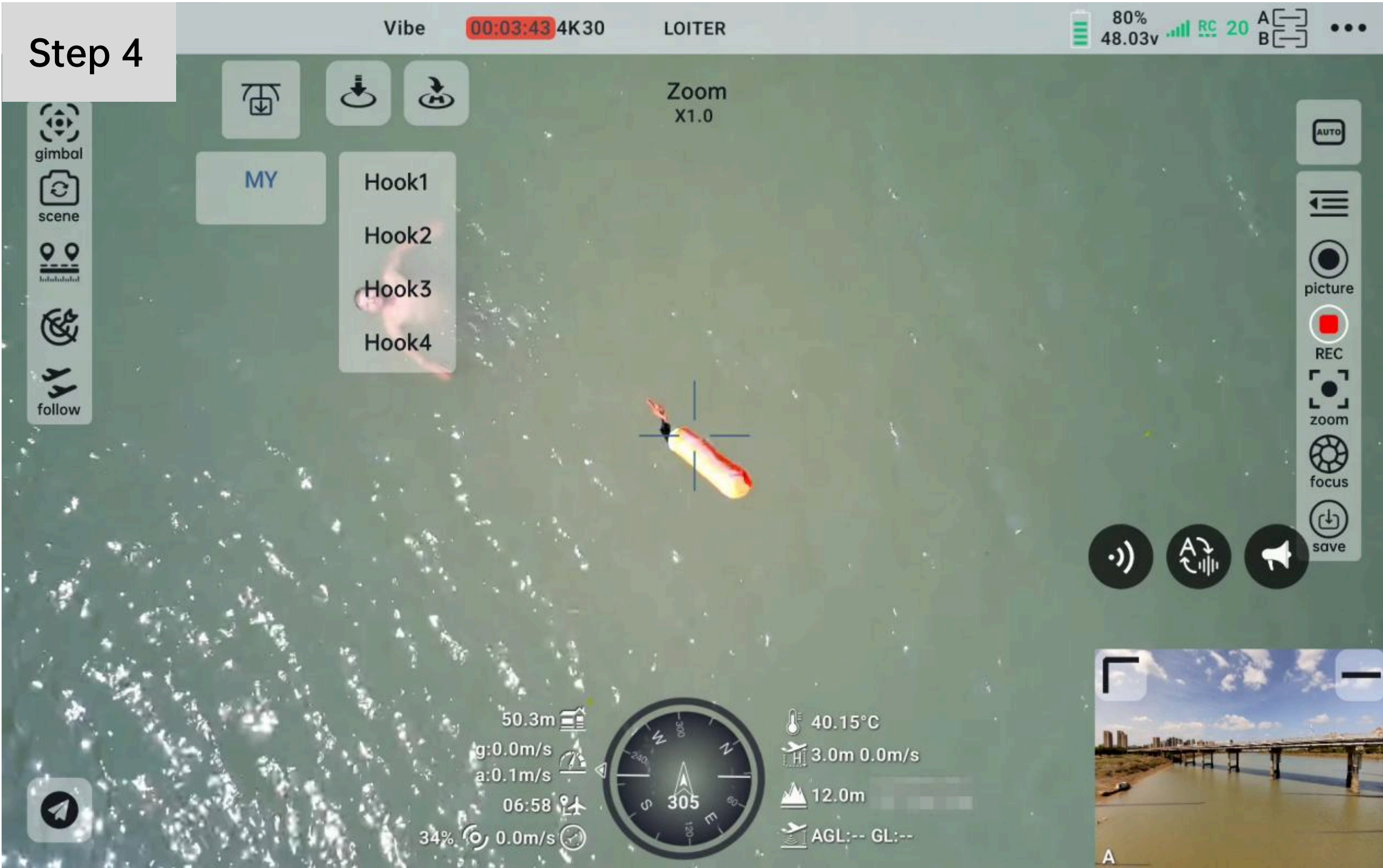
Once the target is identified, fly to a position directly above the victim.



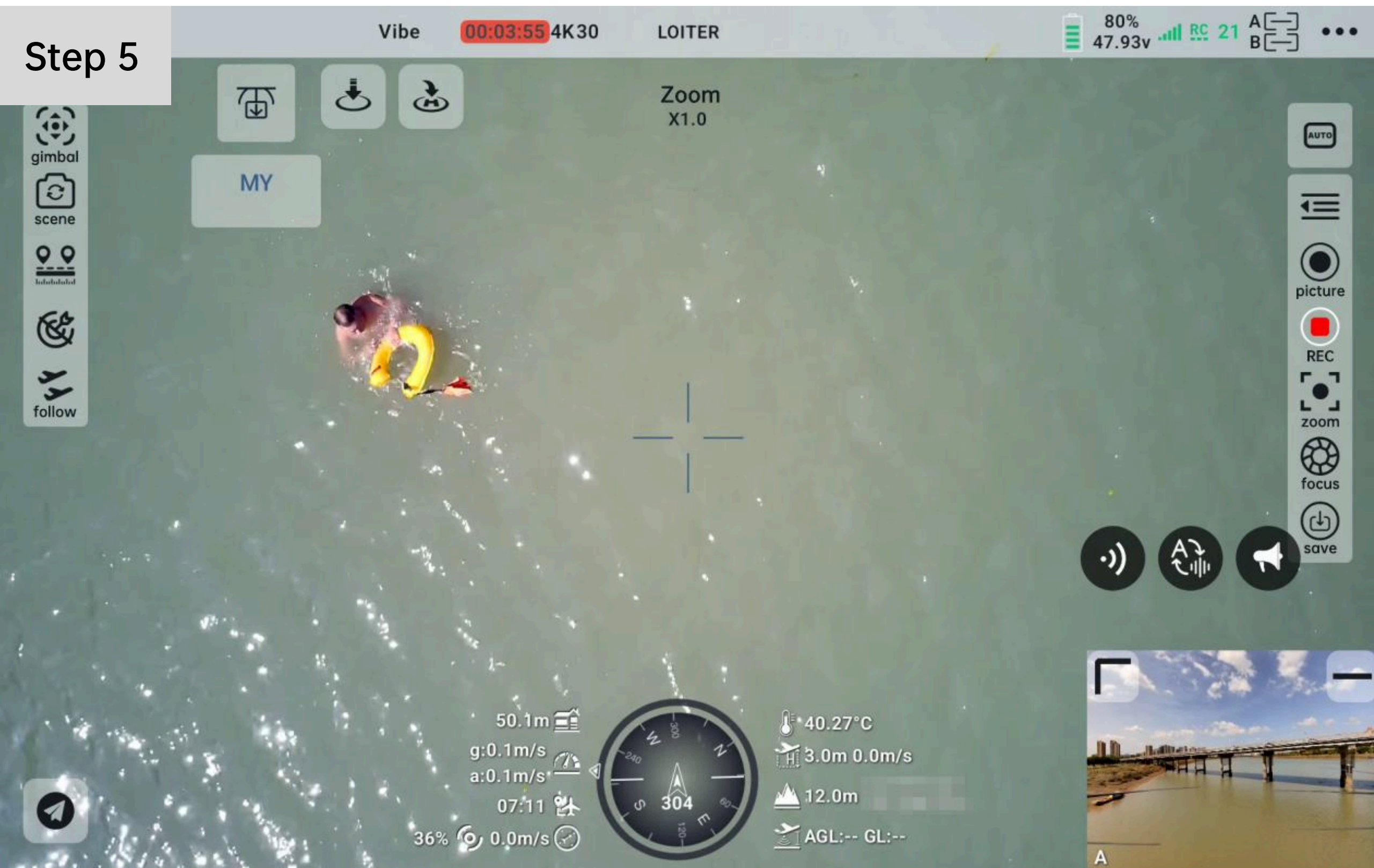
Use the loudspeaker to reassure and instruct the victim to prepare for the lifebuoy drop.



Tilt the gimbal downward and align the crosshair with the target.





Tap "Hook" to deploy the lifebuoy.





Hover to monitor the scene and the victim's condition until rescue teams arrive.




		 Purchase Index	
Name	Parameter	Name	Parameter
Wheelbase	900 mm	Payload Capacity	10.5 kg (maximum takeoff weight) 2.1 kg (maximum payload weight)
Tramsmission Range	35 km	Positioning and Orientation Accuracy	RTK Centimeter-level Precision
FPV Mode	Pitch Follow Mode + FPV Mode	Frequency	2.4G & 5G
Ground Station Display	7 inch 1080P	AI Function	Any Object Recognition AI Tracking Smart Flight Follow
Max Horizontal Flight Speed	20 m/s	Battery Type	Smart Battery Softpack Battery
Max Flight Altitude	5000 m	Maximum Wind Resistance Speed	11.5 m/s
Flight Time	55 min (no payload) / 43 min (full payload) / 50 min (with UniPod MT11)		
Aircraft Dimensions	Full Dimensions (Unfolded): L738 x W673 x H425 mm Folded Dimensions: L428 x W412 x H425 mm		
Features	AI Tracking & Smart Flight Follow, Forward-facing LiDAR Obstacle Avoidance, 4K Ultra-wide FPV Camera, Dual-antenna centimeter-level positioning and orientation, Supporting third-party payloads, Dual IMU redundancy, FOC ESC, Auto RTH, Quick Release, Open Source Ardupilot...		





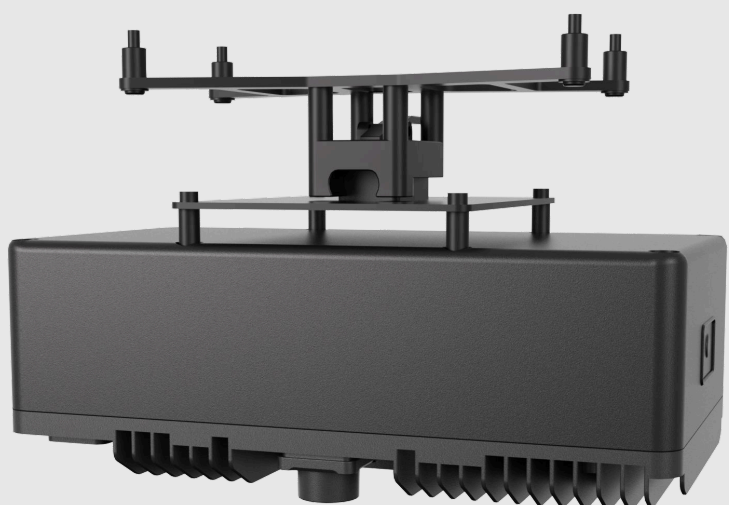
<div><div></div><div></div></div> <div>REEBOT UniPod MT11 Basic Mapping Camera</div> <div>Purchase Index</div>			
Zoom Camera	Focal Distance: 15-50 mm (Effective focal distance: 81 - 270 mm)  Image Sensor: 1/2" CMOS, effective resolution 48 MP  FOV: 28.98°(D) 23.48(H) 17.81(V)  Video Resolution: 3840 x 2160, 2560 x 1440, 1920 x 1080, 1280 x 720  Photo Resolution: 3840 x 2160, 8000 x 6000	Quick-Release Structure	Supported
		Controllable Yaw Angle	Pitch: -90° to 20°
		Laser Rangefinder	5 - 1200 m
		Video Output Interface	Ethernet Port
Infrared Camera	Focal Distance: 18 mm  FOV: DFOV: 31°  Digital Zoom: 8x  Video Resolution: 640 x 512, 1280 x 1024@AI  Photo Resolution: 640 x 512, 1280 x 1024@AI, 2560 x 2048@AI  Wavelength: 8 ~ 14 μm  Temperature Measurement Range: -20°C ~ 60°C ambient temperature  Color Palette: 11 selectable palettes	Control Signal Input Methods	S.BUS, UART, Ethernet (TCP, UDP)
		Product Dimensions (With the Quick Release Anti-Vibration Board)	141.5 x 141.5 x 169 mm
		Product Weight (With the Quick Release Anti-Vibration Board)	533.5 g




<div><div></div><div></div></div> <div>Purchase Index</div> <div>SIYI ZR30 Optical Pod</div>			
Zoom Camera	30X Optical Zoom (180X Hybrid Zoom) 4K 1/2.7-Inch CMOS 8 MP Effective Resolution	Quick-Release Structure	Supported
		Controllable Yaw Angle	-270° to +270°
		Video Output	Ethernet, Micro-HDMI
		Control Signal Input	S.Bus, UART, Ethernet UDP
		Product Dimensions (Including the Quick Release Anti-Vibration Board)	132 x 100 x 159 mm
		Product Weight (Including the Quick Release Anti-Vibration Board)	628 g

<div><div></div><div></div></div> <div>Purchase Index</div> <div>SIYI ZR10 Optical Pod</div>			
Zoom Camera	10X Optical Zoom (30X Hybrid Zoom) 2K 1/2.7-Inch CMOS 4 MP Effective Resolution	Controllable Yaw Angle	-160° to +160°
		Video Output	Ethernet
		Control Signal Input	S.Bus, UART, Network UDP
Product Weight	381 g	Product Dimensions	121 x 101 x 78 mm




<div></div> <div>TK3 Ground Unit</div>	Dimensions	356 x 310 x 229 mm	Rated Input Voltage	90 - 264 VAC+10%
	Weight	7.5 kg ± 5%	Rated Frequency	50/60 Hz
	Rated Output Voltage	400 VDC		
	Power	<div>≥3000 W (176 VAC - 264 VAC Input)</div> <div>≥1500 W (90 VAC - 175 VAC Input)</div>		
	Cable	80 m Cable Diameter < 2.8 mm; Overcurrent Capacity > 10 A Weight < 1.2 kg/100 m; Tensile Strength > 20 kg Withstand Voltage 600 V Internal Resistance < 3.6 Ω/100 m @ 20 °C		
<div></div> <div>ML-200 Matrix Light</div>	Dimensions	304 x 106 x 54 mm	Total Power	800 W ± 10%
	Weight	925 g	Luminous Efficacy	110l m/W ± 10%
	Rated Voltage	DC48 V	Luminous Flux	85360 lm ± 10%
	Illumination Distance	30 m	40 m	50 m
	Beam Diameter	≥58 m	≥68 m	≥76 m
	Illuminated Area	≥2642 m²	≥3631 m²	≥4536 m²
	Center Illuminance	≥80 lx	≥40 lx	≥26 lx
	Half-Power Beam Illuminance	≥40 lx	≥20 lx	≥13 lx
	Mounting Method	Quick Release	Control Method	TTL High-Level
	IP Level	IP55		
	Operating Environment	Temperature:-20°C to +50°C / Humidity: 15% to 95%		
	Storage Environment	Temperature:-20°C to +60°C / Humidity: 15% to 95%		
<div></div> <div>TK3- UniDrone E900 Drone Unit</div>	Dimensions	162.4 x 87.9 x 54.9 mm	Rated Input Voltage	260 - 410 VDC
	Weight	664 g ± 5%	Rated Output Voltage	36.5 - 52.5 VDC
	Power	Rated 3000 w	Rated Output Current	60 A



 VT100R Drone Loudspeaker	Dimensions	125*135*145mm	Sound Pressure Level	130dB
	Weight	430g	Supported Format	MP3/WMA/FLAC/AAC/WAV
	Power	40W	Mode	Real-time shouting, TTS, Recording, Warning
	Control Interface	Network port	TTS	Male voice, Female voice, Speech rate, Intonation, Cycle
	Operating Voltage	12-24 V	Pitch Adjustment	90°
	Sound Projection Distance	500m	Operating Temperature	-20°C~60°C

 Multi-Function Module (Loudspeaker + Red/Blue Beacons + Spotlight)	Dimensions	200 x 155 x 132 mm (±2 mm)	Sound Projection Distance	500 m
	Weight	970g (±10g)	Max Sound Transmission Distance	800 m
	Operating Voltage	12-48 V	Max Brightness	3000 lm
	Red & Blue Indicator Light Mode	16 Operating Modes	Loudspeaker Angle	0 - 90°
	Operating Temperature	-10°C ~ 40°C	Spotlight Angle	+30° - 70°
	Sound Pressure Level	130 dB	Light Beam Angle	15°
	Supported Format	MP3/Wav/Flac/AAC		
	Power	Total≤58 W, Light: 25 W, oudspeaker: 30 W, Red/Blue Beacons: 3 W		
	Function	Real-time Talk, Recording Upload, Audio File Playback, Text-to-Speech (TTS), One-touch Brightness Adjustment, Strobe Lighting, Red & Blue Strobe, Red & Blue Mode Switching, Remote Audio Capture		

 FT100R Four-Stage Thrower	Dimensions	125 x 117 x 60 mm	Operating Temperature	-20 ° - 60 °
	Weight	330 g	Control Method	Independent Per-Channel Release Control
	Rated Power	20 W	Per-Channel Payload Capacity	2.1 kg
	Channels	4	Mounting Method	Quick-Release Snap Mount
	Interface	Serial Port (MAVLink Protocol)		



# REEBOT

Empower Global Intelligent Robotics & Drone Industries

## Business Area



Industrial-grade  
Multirotor UAV Platform



Industrial-grade  
VTOL Drone Platform



Support Third-party  
Various Drone Payloads

Electric Inspection | Traffic Inspection | Search & Rescue |  
Surveying & Mapping | River Inspection Oil, Gas, Pipelines and Mines Inspection |  
Tethered | Security | Firefighting



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