EaseDip C1 Smart Water Sampling System for DJI M300/M350 Drones

User Manual

Thank you for choosing our product. Please read this user manual carefully before use.

Contents

Disclaimer

This disclaimer applies to all licensees using the EaseDip C1 Smart Water Sampling System (hereinafter referred to as "this product"), including purchasers, authorized dealers, distributors, and developers. Before using this product, please read this disclaimer carefully to ensure that you fully understand and accept all its contents. By using this product, you acknowledge and agree to all terms and conditions stated herein.

This product is an intelligent water sampling system designed to achieve automated water collection through drone technology. Users bear certain responsibilities and obligations when using this product and must comply with the following provisions:

Users must read and understand the user manual carefully and use this product correctly according to the instructions. Users must also ensure a safe operating environment and comply with relevant national laws and regulations.

Users must strictly adhere to the usage agreement. This product must not be used for illegal or unlawful purposes, malicious attacks, or any form of abuse. Users are fully responsible for their actions when using this product and bear all potential legal consequences.

The intellectual property rights of this product belong to our company. Without written authorization from the company, no individual or entity may copy, modify, distribute, display, or otherwise utilize any part or all of this product.

This product may contain third-party software or technologies, which may be protected by third-party intellectual property rights. Users must comply with the corresponding usage agreements.

Our company reserves the right to modify this disclaimer. The updated disclaimer will be published on our company’s website or official platform. Users should regularly check for and review the latest version of this disclaimer.

Safety Instructions

During initial use, strictly follow the operation manual. If you encounter any operational issues, please contact our professional support team for guidance to avoid unnecessary property damage or personal injury.

Do not use this product under adverse weather conditions.

This product is intended for operation within standard usage scenarios and operational ranges. If users need to operate the product in other scenarios or beyond the specified operational range, prior written authorization from the company is required.

Storage and Transportation

This product must be properly stored to avoid prolonged exposure to high temperatures, humidity, high pressure, strong magnetic fields, or other unsuitable environments that may affect its performance and lifespan.

During transportation, follow the company's transportation guidelines to ensure that the product is adequately protected to prevent damage or any other losses.

Export Compliance Disclaimer

This product is intended for use and export only in designated countries/regions. Users and exporters must comply with applicable laws, regulations, and export control requirements.

Our company assumes no legal liability for any violations committed by users or exporters. Any losses or liabilities arising from non-compliance with applicable laws and export control requirements shall be borne solely by the user.

General Provisions

Our company is not liable for any direct or indirect losses, damages, or liabilities incurred by users from using this product, including but not limited to property damage or personal injury.

Our company reserves the right to modify this disclaimer at any time. The updated disclaimer will be published on the company's official platform and will take effect immediately upon publication.

Users should regularly review this disclaimer and pay attention to any updates. If you have any questions, please contact our customer service department.

Product Manual

Product Overview

The EaseDip C1 Smart Water Sampling System is a highly efficient water sampling payload designed specifically for the DJI Matrice 300/350 RTK drones. Featuring a lightweight and compact design, the system weighs approximately 640g. Equipped with a high-precision millimeter-wave sensor and a high-definition camera, it enables fully automated depth-specific water sampling. Users can easily control the system from the ground via a visualized interface, eliminating the need for professional expertise and significantly reducing operational difficulty and cost.

The EaseDip C1 utilizes intelligent algorithms to precisely control the sampling bottle's speed, adapting to various water depths ranging from 0.3 to 10 meters for efficient sampling. This system is applicable across multiple industries, including environmental monitoring, water quality assessment, and geological exploration:

Environmental Monitoring: Rapid and accurate water sampling for real-time water quality monitoring and assessment.

Water Quality Testing: Depth-specific water collection for precise chemical and biological analysis.

Geological Exploration: Groundwater sampling to support mineral resource exploration.

In summary, the EaseDip C1 Smart Water Sampling System provides a high-efficiency, user-friendly, and reliable solution for automated water sampling, significantly enhancing efficiency while ensuring high-quality sampling operations.

Product Picture

Product Features

The **EaseDip C1** offers the following key advantages:

Custom-Tailored for DJI Matrice 300/350 RTK： Developed using DJI's PSDK V3 protocol, the system is optimized for DJI Matrice 300/350 RTK drones in terms of payload capacity, frame height, and mounting position, ensuring seamless integration and stable performance.

Fully Automated One-Touch Depth-Specific Water Sampling： Incorporates an advanced intelligent control algorithm to dynamically adjust the descent speed, preventing issues such as cable entanglement or snapping.

- Automatic mode: 5-speed control
- Manual mode: 3-speed control
- Intelligent technology improves efficiency and effectiveness of each sampling process.

Easy and Quick Installation： Designed with a "cart-style" push-pull mechanism for intuitive and stable operation.Features a press-fit quick-release system, which is 60% faster than traditional threaded connections, significantly reducing operational workload.

Real-Time HD Camera Monitoring:1080P HD camera, 30 FPS, gyroscope-based stabilization, 160° wide-angle view.Provides real-time monitoring of the sampling process, enhancing beyond-visual-line-of-sight (BVLOS) operations.

High-Precision Millimeter-Wave Radar： 0.001m resolution radar for real-time detection of the drone's altitude above water and sampling depth, enhancing accuracy and efficiency while minimizing human error.

Descent Protection & Emergency Safety Features：

Descent Protection Switch:

Equipped with a ground protection switch that allows users to enable or disable the protection mode as needed.

Integrated buzzer alerts for multi-scenario safety responses.

Emergency Protection Switch:

Optimized emergency release function, with on-screen guidance for quick troubleshooting.

Motor stall detection, guiding users to identify and resolve potential issues.

Multi-Layered Safety Mechanisms：

Auto-release line protection and default anti-tangling functionality to ensure operational safety.

Failsafe feature: Automatically prevents cable deployment while the drone is on the ground, ensuring takeoff safety and avoiding cable entanglement.

Intuitive Human-Machine Interface：

Minimalist interface displaying comprehensive system information on a single screen.

Logical menu hierarchy for seamless operation.

Standard DJI icon system, with inactive icons in gray and active functions in blue for easy recognition.

Environmental Safety & Compliance：

Drone-based sampling eliminates human exposure risks, improving operator safety.

Constructed using eco-friendly materials, the system complies with environmental standards and ensures zero contamination of sampled water bodies.

Overall, the EaseDip C1 Smart Water Sampling System is a high-efficiency, precise, and reliable solution for scientific research, environmental monitoring, and water resource management applications.

EaseDip C1 Smart Water Sampling System(M350 Platform, Indoor Testing Demonstration)

Product Technical Specifications

Dimensions & Weight

a. **Dimensions**: **221 × 96 × 90 mm** (L × W × H)

b. **Weight**: **Approx. 640g** (±5g variation due to manual measurement)

c. **Sampling Bottles**: Compatible with **1L and 1.5L acrylic sampling bottles** (including quick-release mounting brackets)

d. **System Weight:**

1L bottle (full water load): Approx. 1950g

1.5L bottle (full water load): Approx. 2500g

Electrical System

a. Auto-lock upper limit when unpowered

b. Supports automatic and manual sampling modes

c. Real-time detection of deployed cable length and bottle descent speed

d. Power Consumption:

1L water lift/drop power: 0.25A

Standby power consumption: 0.11A

e. Integrated DJI Skyport Adapter: Enhances dust resistance and aesthetic integration

f. Dual right-angle Type-C ports: Ensures fast and stable communication with M300/M350 drones

---

Core Functional Features

1）Real-Time Monitoring Functions

a. **Radar status**: Normal / Disconnected

b. **Current mode**: Auto Sampling / Manual Sampling

c. **Auto Sampling Status**: Standby / Ascending / Descending / Paused / Line Calibration / Sampling Complete

d. **Manual Sampling Status**: Ascending / Descending / Hovering

e. Sampling Bottle Speed Display

f. Water Surface Distance Display

g. Current & Target Depth Display

h. Cable Length Display

i. Motor Control Speed Display

Drone Distance & Direction to Sampling Point

2）One-Touch Sampling Function

a. Enables fully automated sampling with a single button press:

Switch to Auto Sampling Mode

Set desired depth

Click Descend to initiate fully automated sampling

3）Multi-Layered Safety Protections

Ground Protection Switch: Allows users to toggle protection mode

a. Buzzer Alerts: Multi-scenario safety alerts

b. Emergency Release Function: On-screen guidance for safe emergency operation

c. Motor Stall Detection: Identifies and resolves equipment malfunctions

4）Environmental Perception

a. Millimeter-wave radar: 0.001m resolution, real-time water surface and depth detection

b. Imaging System: 1080P, 30 FPS, gyroscope stabilization, 160° wide-angle, providing real-time monitoring

5）User-Friendly Design

a. Minimalist UI design, displaying all critical information on a single screen

b. Lightweight and highly optimized structural design

c. Quick Installation:

5-second drone attachment

3-second sampling bottle setup

Single-hand removal of sampling container

d. Built-in emergency safety release mechanism

Complete Technical Specifications

Parameter	Operating Water Temperature	0 ℃ ~ +40 ℃	
	Net Weight	640g	
	Sampling Capacity	1L	1.5L
	Total Weight (Fully Loaded)	1.95 kg	2.5 kg
	Dimensions	221×96×90 mm	
	Power Supply	13.6V/4A	
	Standard Cable Length	13m (Expandable)	
Material & Surface Treatment	Material	ABS vacuum-coated	
	Surface Treatment	Black or gray	
	Silkscreen Printing	None	
	Color	Matte black spray paint	
Key Features	Sampling Mode	Fully automated one-touch depth-specific sampling / Manual sampling mode	
	Safety Features	Descent protection switch, Emergency protection switch (automatic line release)	
	Standard Sampling Depth	0.3m - 10m (Expandable)	
	Typical Auto Sampling Time	1 min 30 s (for 1L bottle, when drone is 2.5m above water)	
	Millimeter-Wave Radar	Real-time water distance display	
	HD Camera	Real-time visual monitoring	

System Composition

DJI Matrice 350 RTK Drone (Example)

The DJI Matrice 350 RTK (M350 RTK) is a highly advanced industrial drone with intelligent flight capabilities, a 55-minute flight time, and six-directional obstacle avoidance. Compared to its predecessor, the M350 RTK features an enhanced 15KM transmission range and is widely used in firefighting, emergency search and rescue, law enforcement, power line inspections, and oil & gas infrastructure monitoring.

DJI Matrice 350 RTK Features

· Intelligent Flight Platform combined with multi-sensor payload integration

· IP45-rated water and dust resistance, making it ideal for harsh environments

· Advanced six-directional obstacle avoidance for safer operations

· Smart flight modes, dual control capability, and real-time positioning, enhancing operational efficiency for public safety and industrial applications

Specification		
Aircraft	Dimensions	Unfolded(excluding propellers)：810×670×430 mm (L×W×H) Folded (including propellers)：430×420×430 mm(L×W×H)
	Diagonal Wheelbase	895 mm
	Weight (including single downward gimbal mount)	Weight without battery：3.6 kg Weight with dual batteries：6.3 kg
	Max Payload	2.7 kg
	Max Takeoff Weight	9 kg
	Operating Frequency	2.4000-2.4835 GHz 5.725-5.850 GHz
	Transmission Power (EIRP)	2.4000-2.4835 GHz：29.5 dBm（FCC）；18.5dBm（CE） 18.5 dBm（SRRC）；18.5dBm（MIC） 5.725-5.850 GHz：28.5 dBm（FCC）；12.5dBm（CE）；28.5 dBm（SRRC）

	Hovering Accuracy (P-GPS)	Vertical：±0.1 m (with vision positioning enabled); ±0.5 m (with GPS enabled); ±0.1 m (with RTK fixed) Horizontal±0.3 m (with vision positioning enabled); ±1.5 m (with GPS enabled); ±0.1 m (with RTK fixed)
	RTK Accuracy	1 cm + 1 ppm (horizontal); 1.5 cm + 1 ppm (vertical)
	Max Angular Velocity	Pitch 300°/s Yaw 100°/s
	Max Tilt Angle	30° (P-mode with forward vision system enabled: 25°)
	Max Ascent Speed	S-mode：6 m/s P-mode：5 m/s
	Max Descent Speed (Vertical)	S-mode：5 m/s P-mode：3 m/s
	Max Tilt Descent Speed	S-mode：7 m/s
	Max Horizontal Flight Speed	S-mode：23 m/s P-mode：17 m/s
	Max Flight Altitude	5000 m (with 2110 propellers, takeoff weight ≤7 kg) / 7000 m (with 2195 high-altitude propellers, takeoff weight ≤7 kg)
	Max Wind Resistance	15 m/s (Level 7 wind)
	Max Flight Time	55 min
	Compatible DJI Gimbals	Zenmuse XT2, Zenmuse XT S, Zenmuse Z30, Zenmuse H20, Zenmuse H20T
	Supported Gimbal Mount Configurations	Single downward gimbal, single upward gimbal, dual downward gimbals, single downward + single upward gimbal, dual downward + single upward gimbal
	IP Rating	IP45
	GNSS	GPS+GLONASS+BeiDou+Galileo
	Operating Temperature	-20°C to 50°C
Remote Controller	Operating Frequency	2.4000-2.4835 GHz 5.725-5.850 GHz
	Effective Range (no interference, no obstacles)	NCC/FCC：15 km CE/MIC：8 km SRRC：8 km
	Transmission Power (EIRP)	2.4000-2.4835 GHz：29.5 dBm（FCC）；18.5dBm（CE）;18.5 dBm（SRRC）; 18.5dBm（MIC） 5.725-5.850 GHz：28.5 dBm（FCC）； 12.5dBm（CE）;20.5 dBm（SRRC）
	External Battery	Model：WB37 Intelligent Battery

		Capacity：4920 mAh Voltage：7.6 V Battery Type：LiPo Energy：37.39 Wh Charging Time (with BS60 Battery Station)：70 min (15°C to 45°C); 130 min (0°C to 15°C)
	Built-in Battery	Type：18650 Lithium-Ion Battery (5000 mAh @ 7.2 V) Charging Method：USB charger (12V/2A) Rated Power：17 W Charging Time：2h 15min (with 12V/2A USB charger)
	Battery Life	Built-in Battery ~2.5 hours Built-in + External Battery ~4.5 hours
	Power Supply Voltage/Current	5 V / 1.5 A
	Operating Temperature	-20° to 40° C
Vision System	Obstacle Detection Range	Forward, Backward, Left, Right 0.7 - 40 m Upward, Downward 0.6 - 30 m
	FOV	Forward, Backward, Downward 65° (H), 50° (V) Left, Right, Upward 75° (H), 60° (V)
	Operating Conditions	Surfaces with rich texture, adequate lighting (>15 lux, typical indoor lighting)
Infrared Sensing System	Obstacle Detection Range	0.1-8 m
	FOV	30°（±15°）
	Operating Conditions	Large, high-reflectivity (≥10%) obstacles
Auxiliary Bottom Light	Effective Illumination Distance	5 m
FPV Camera	Resolution	960p
	FOV	145°
	Frame Rate	30 fps
Intelligent Flight Battery	Model	TB60
	Capacity	5935 mAh

	Voltage	52.8 V
	Battery Type	LiPo 12S
	Energy	274 Wh
	Battery Weight	~ 1.35 kg
	Operating Temperature	-20℃ to 50℃
	Ideal Storage Temperature	22℃ to 30℃
	Charging Temperature	-20°C to 40°C (Battery will self-heat below 5°C; charging in low temperatures may reduce lifespan)
	Charging Time	220V Power ~60 min for two TB60 batteries (full charge); ~30 min (20% to 90%) 110V Power ~70 min for two TB60 batteries (full charge); ~40 min (20% to 90%)
BS60 Battery Station	Dimensions	501×403×252 mm
	Empty Weight	8.37 kg
	Battery Slots	8 TB60 batteries, 4 WB37 batteries
	Input Voltage	100-120 VAC，50-60 Hz / 220-240 VAC，50-60 Hz
	Max Input Power	1070 W
	Output Power	100-120 V：750 W 220-240 V：992 W
	Operating Temperature	-20℃ to 40℃

EaseDip C1 Smart Water Sampling System

The EaseDip C1 Smart Water Sampling System is a specialized payload designed for DJI Matrice 300/350 RTK drones. It provides a comprehensive beyond-visual-line-of-sight (BVLOS) water sampling solution, offering a fast and cost-effective method for water sample collection.

a. **Lightweight Design**: Net weight starts from 640g

b. **Quick-Release Mechanism**: Push-pull attachment system for the sampler and **press-fit** bottle replacement

c. **Sampling Volume**: Supports 1L or 1.5L bottles (2L option available upon request)

d. **Automated Sampling:** Fully automated one-touch depth-specific sampling

e. **Real-Time Monitoring**: Integrated downward-facing HD camera for live water surface monitoring

f. **±1mm Radar Resolution**: Uses millimeter-wave radar for real-time drone-to-water height detection, ensuring safe operations over water

EaseDip C1 Smart Water Sampling System

DJI Matrice 350 RTK Firmware Requirements

a. Matrice 350 RTK：V03.00.01.01 or above

b. DJI Smart Controller (Enterprise Edition)：V03.00.01.02 or above

c. DJI Pilot APP For Matrice 350 RTK：or above

DJI Pilot Remote Controller Interface

The remote control system is developed based on DJI PSDK V3.2, with integrated operation and display on the DJI Matrice 300/350 RTK remote controller.

EaseDip C1 Smart Water Sampling System Interface

1）Sampling Equipment Status Display

Displayed on the left side of the screen, indicating the current system state.

Radar Communication Status	Normal
	Disconnected
Sampling Mode	Auto Sampling
	Manual Sampling

Current Status	Sampling system standby
	Paused
	Ascending
	Descending
	Line Calibration in Progress
	Line Calibration Complete
	Auto Sampling Complete
	Manual Sampling Complete
Current Height	H > 10m (Too High for Sampling) / H < 10m (Water Surface Height: x.xx m)
Line Deployment	x.xxx m
Target Depth	x.x m(Max:10m)
Current Water Depth	x.xxx m
Sampling Speed	x.xx m/s

2）Sampling Equipment Operation Controls

Displayed on the right side of the screen, providing key operational functions.

	Shows system status
	Auto Sampling Mode
	Manual Sampling Mode
	Set Water Depth
	Ascend Sampling Equipment
	Lowers the sampling bottle / Triggers auto sampling mode
	Resumes paused operations
	Halts current operations

3）Camera Monitoring

The lower-right corner of the interface allows users to switch between DJI FPV view and downward-facing sampling camera view.

Camera Switching (DJI FPV View / Downward-Facing Camera)

Product Installation & Assembly

Product Components List

The EaseDip C1 Smart Water Sampling System is a dedicated payload designed for DJI Matrice 300/350 RTK drones, offering a comprehensive beyond-visual-line-of-sight (BVLOS) water sampling solution. It features a compact and lightweight structure, one-touch fully automated depth-specific water sampling, and a visualized operation system.

EaseDip C1 Smart Water Sampling System – Components List

Product Assembly Steps

Preparation： Before assembly, ensure that all required components and tools are ready. Verify that the drone's flight controller is functioning properly and is connected to the remote controller and smart device.

Installing Accessories： Install the necessary accessories based on the operational needs, such as the mounting bracket, main sampling unit, and water sampling bottle. Ensure that all attachments are securely connected to the drone to prevent loosening or detachment during flight.

Configuration & Calibration：

After assembly, perform calibration and configuration:

Power on the DJI M300/M350 remote controller and smart device, ensuring proper connection.

Check the DJI Pilot interface to verify that the device is recognized, all operational icons are displayed, and the left-side information panel is active.

Conduct a pre-flight inspection to confirm correct installation and no component damage.

Perform a site survey to evaluate environmental conditions before actual deployment.

Safety Inspection： Before flight, conduct a comprehensive safety check to assess flight environment and operational risks.

Flight Operation： After completing all pre-flight steps, proceed with drone operation.

Adhere to operational protocols and safety guidelines to ensure safe flight and device functionality.

If any abnormalities occur, take immediate action or abort the mission.

Note: The assembly process may vary depending on the product model and user requirements. Always refer to the official manual and safety guidelines before assembly. If any issues arise, contact the manufacturer or a professional technician for assistance.

Installation Guide

To ensure the safe operation of the EaseDip C1 Smart Water Sampling System, follow these installation steps precisely.

1）Installation & Securing of the Sampling Unit

Before installation, confirm that both the drone system and sampling system are fully operational.

Step 1: Mounting the Bracket to the DJI M300/M350 Drone

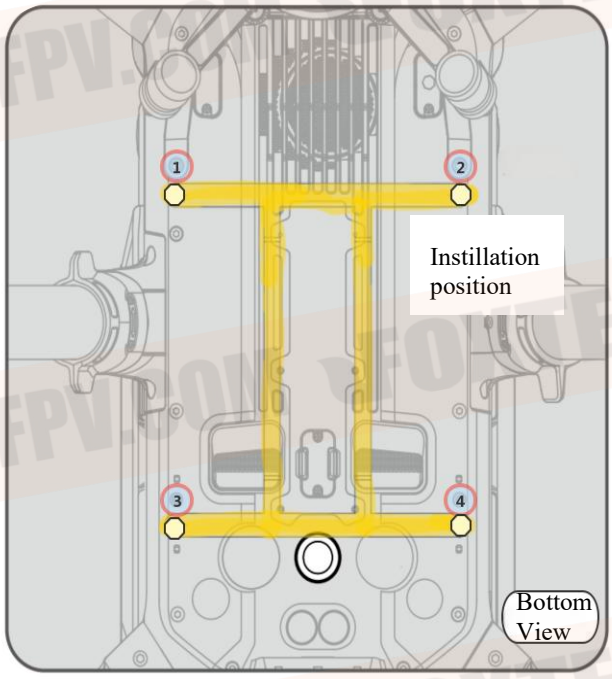
· Invert the DJI Matrice 300/350 RTK drone for easier access.

· Remove the rear gimbal screws (Positions 1 & 2).

· Replace them with the provided M3*10 screws and secure them.

· Use M3*8 screws to secure positions 3 & 4.

· Attach the mounting bracket (yellow-highlighted component) to the bottom of the DJI M300/M350 RTK drone.



Mounting Bracket Installation on M350 Aircraft Platform

Step 2: Securing the Sampling Unit to the Drone

· Align the front end of the EaseDip C1 sampling unit with the sliding rail under the DJI M300/M350 drone.

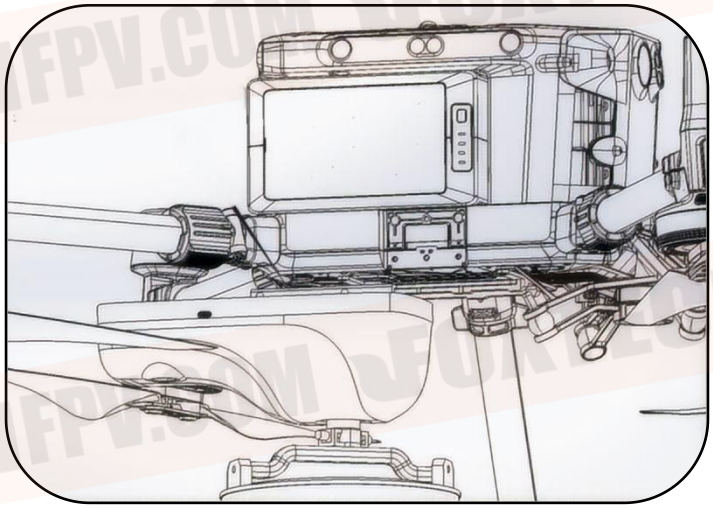
· Push the unit into the rail system until it locks into place.

· The sliding rail has three stop positions, with the third stop as the standard setting.

· Ensure that the sampling module is securely in place and does not move.

· For users requiring additional payloads, the sampling unit can be mounted at the second stop position, allowing it to be used alongside the DJI Zenmuse H20 gimbal camera.

· After installation, check for secure attachment (Note: The locking screws on both sides of the rail must be tight to prevent module detachment under external force).



Sampling Device Installed via Rail System on M300/M350 Aircraft Underside

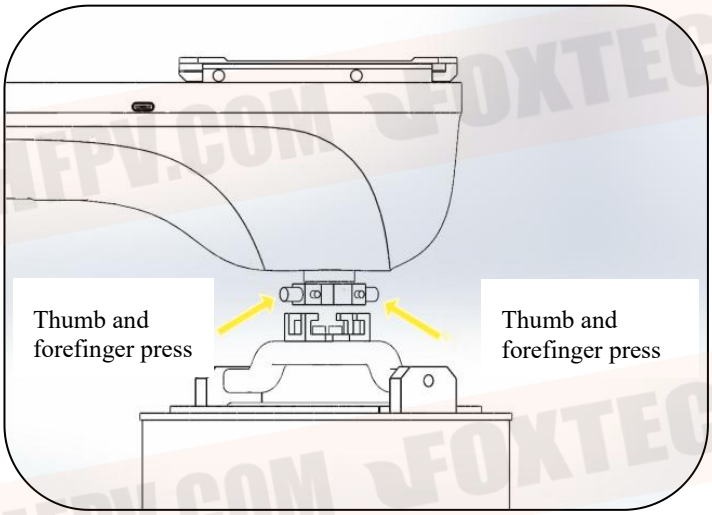
2）Installation & Securing of the Sampling Bottle

· Attach one end of the quick-release mount to the sampling bottle handle and the other end to the bottom of the sampling unit.

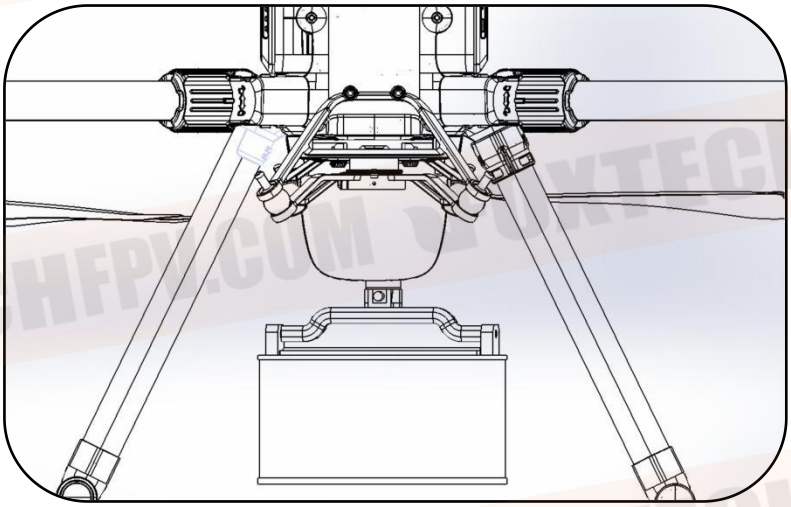
· Press the quick-release buttons on both sides of the sampling unit using your thumb and index finger.

· Align the sampling bottle with the quick-release mount and securely attach it.

· Ensure firm and stable connection between the sampling bottle and the drone to prevent disconnection during flight.



Sampling Bottle & Device Installation



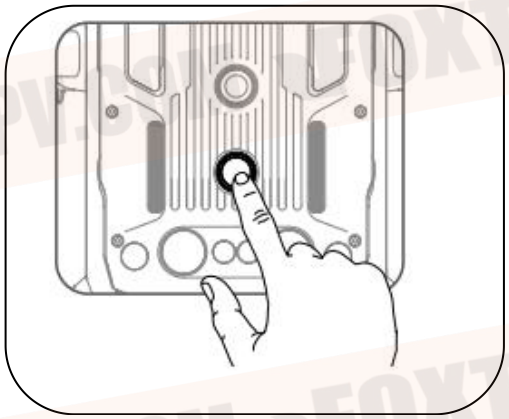
Sampling Bottle Installation Completed

Operating Instructions

Powering the Sampling System

1）Powering on the Remote Controller & Drone

- Turn on the drone’s remote controller.
- Press the drone’s power button once, then press and hold for 3 seconds to power it on.
- Once powered on, the indicator light will remain steady.



Powering on the Aircraft

2) Installing the DJI Skyport V2 Adapter：

1. Post-Installation Verification

After mounting the gimbal, ensure the locking mechanism is securely engaged to prevent unintended detachment during operation. Confirm that all fasteners and interfaces are fully tightened.

2. Removal Procedure

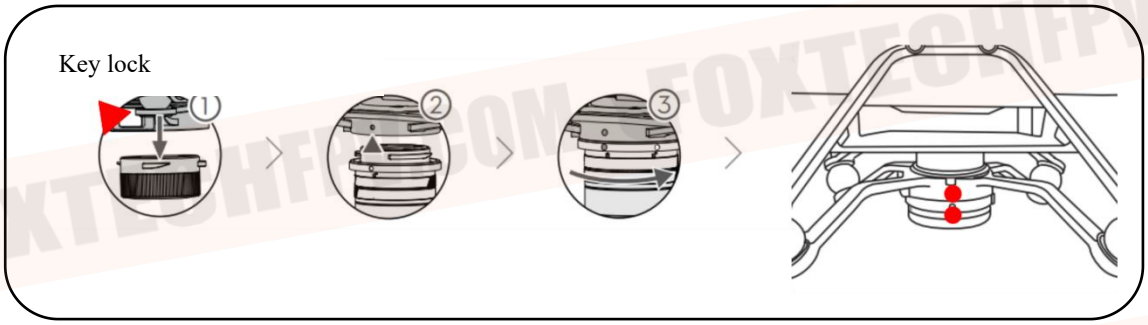
To detach the DJI Skyport integrated adapter ring:

Step 1: Press and hold the unlock button located on the adapter ring.

Step 2: While maintaining pressure on the unlock button, rotate the quick-release interface counterclockwise until it disengages.

3. Precautions for Reinstallation

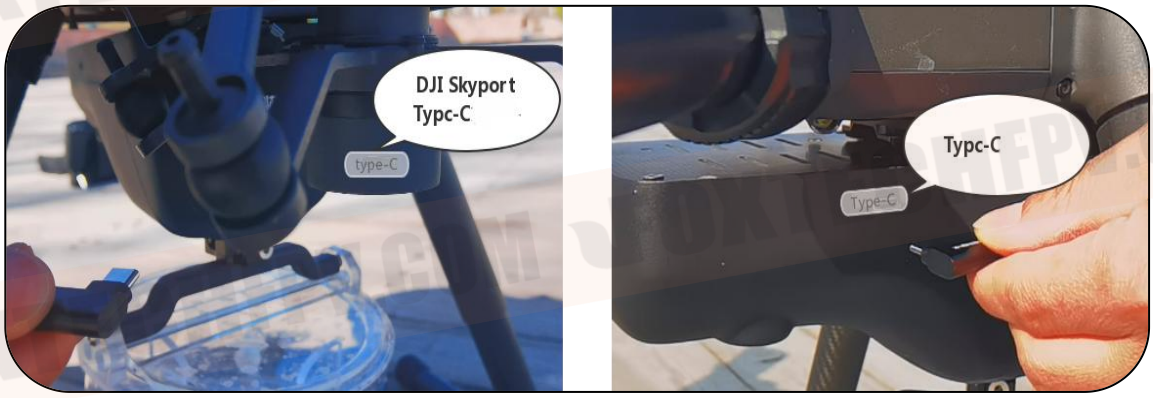
When removing the gimbal, rotate the interface to the designated alignment position before fully detaching the adapter ring. This ensures proper orientation for future installations and maintains mechanical integrity



DJI Skyport Integrated Adapter Installation

3）Connecting the Dual Right-Angle Type-C Cable

- Connect one end of the dual right-angle Type-C data cable to the DJI Skyport adapter.
- Connect the other end to the EaseDip C1 sampling system.



DJI Skyport Integrated Adapter Installation

Pre-Flight Equipment Check

· Verify that the DJI Pilot software on the remote controller displays the device name, confirming successful connection.

· If the device does not appear, restart the power or check hardware connections.

Single Automated Water Sampling Process

1) Entering the Sampling Operation Interface

Tap the PSDK icon on the right side of the DJI Pilot interface to access the sampling control menu.

DJI Pilot Software – PSDK Interface

DJI Pilot Software – PSDK Interface – Operation Interface

2) Confirming Sampling Status

· Tap the information box to display the left-side status panel.

Information Panel

3) Navigating to the Sampling Location

· Fly the DJI M300/M350 RTK drone to the designated water sampling location.

· Position the drone approximately 3-5m above the water surface.

Note: If sampling at 10m depth, the drone must be positioned below 3m, as the sampling system has an auto-release function that triggers at 11m cable length. This function is only for emergency use.

4) Selecting the Sampling Mode

· Confirm that the sampling unit is in standby mode.

· Tap the sampling mode button and select Auto Sampling Mode.

· The left-side information panel will display "Auto Sampling Mode".

Mode Selection

5) Setting the Water Depth

· Tap the depth setting button to access the depth adjustment slider.

· Adjust the depth using the "+" and "-" buttons until the desired depth appears on the left-side information panel.

Sampling Depth Preset

6) Initiating the Sampling Process

· Tap the Descent Button to trigger automatic sampling.

· The left-side information panel will display "Sampling Unit Descending".

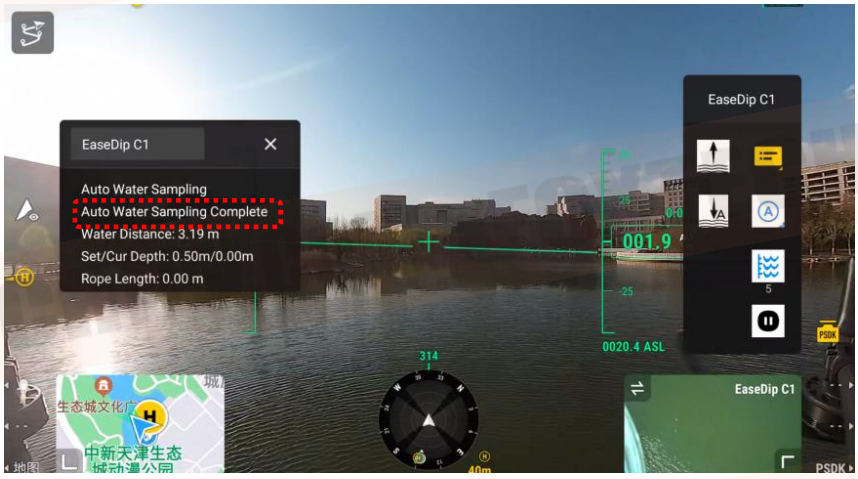
Descent Button as Sampling Trigger

7) Monitoring the Sampling Process

· Observe the status updates in the left-side panel:

Sampling Unit Descending → Sampling Unit Ascending → Automatic Line Calibration in Progress → Calibration Complete → Auto Sampling Complete

· When the sampling unit ascends to the top, the left-side panel will display "Auto Sampling Complete".



Left-Side Information Panel Dynamic Display (Auto Sampling Complete)

a. If you need to pause the sampling process during auto sampling, press the "Pause" button. Press "Continue" to resume the previous automatic sampling process.

Continue/Pause Button

b. After completing the sampling process, operate the drone to return and land. Once landed, remove the sampler and store the collected water sample.

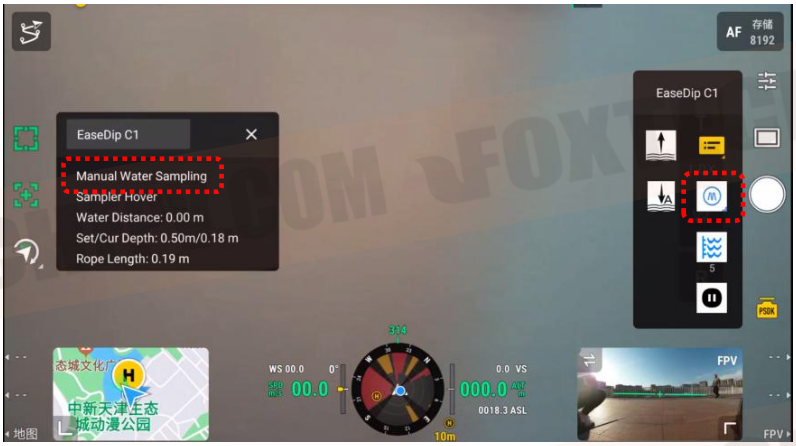
Press-Release Sampling Bottle Removal

Manual Sampling Process

a. Selecting Manual Sampling Mode

· Tap the "Mode Selection" button to switch to manual mode.

· The left-side information panel will display "Manual Sampling Mode".

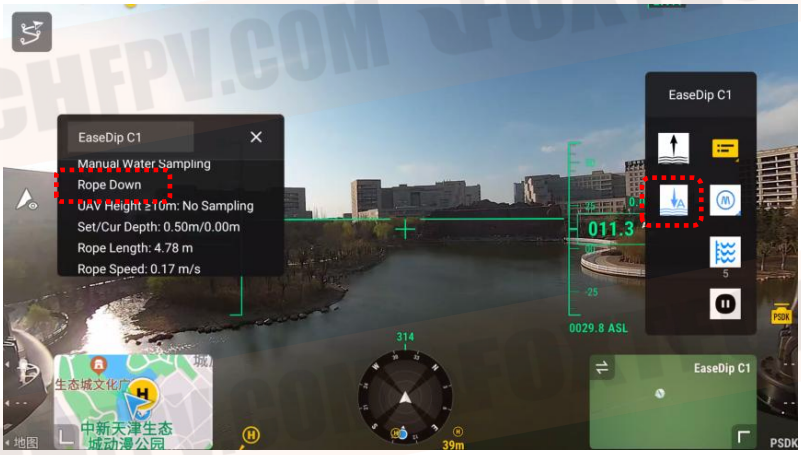


Sampling Mode Selection

b. Lowering the Sampling Unit

· After reaching the designated sampling location and positioning the drone 3-5m above the water surface, press the "Descent" button.

· The sampling unit will start to descend, and the left-side panel will display "Sampling Unit Descending".



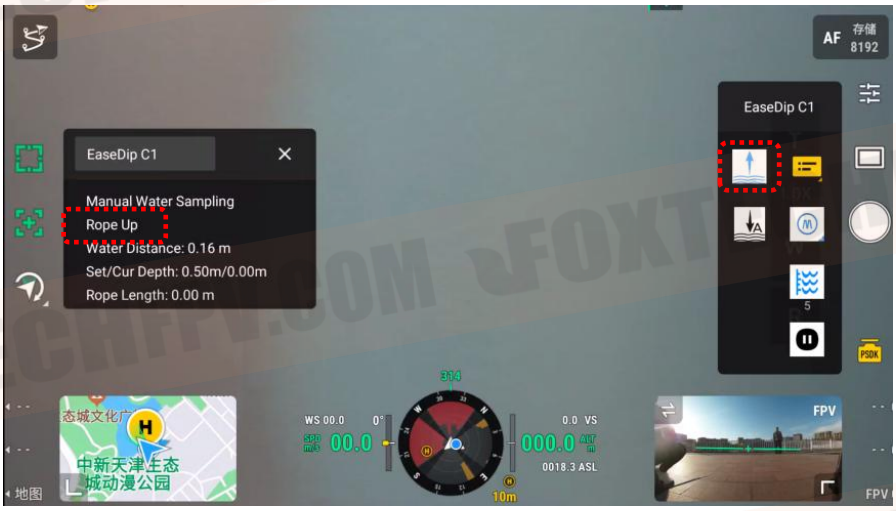
M350Manual Sampling Descent Button

c. Lifting the Sampling Unit

· Monitor the left-side information panel and wait until the desired depth is reached.

· Press the "Ascent" button to lift the sampling unit.

· The left-side panel will display "Sampling Unit Ascending".



Manual Sampling Ascent Button

d. Completing the Manual Sampling Process

· When the sampling unit reaches the top position, the "Ascent" button will turn gray.

· The left-side panel will display "Manual Sampling Complete".

Manual Sampling Complete

Safety Precautions

General Safety Guidelines

The EaseDip C1 Smart Water Sampling System is designed to be used with the DJI Matrice 300/350 RTK drone platform. Operating a drone involves high-speed rotating propellers and aerial flight risks, which may cause property damage or personal injury. Follow all safety protocols carefully when using the system.

General Safety Guidelines

· Ensure the sampling system is installed on the designated drone platform. Before initiating mobile water sampling operations, confirm that the surrounding environment is safe. During operation, only authorized personnel should be present to prevent accidents.

· Do not exceed the maximum payload capacity of the drone. Overloading may result in structural damage or flight failure.

· Keep a safe distance from the drone’s propellers and motors to avoid injuries.

· Check communication between the device and the drone before use to ensure all components are functioning correctly.

· Inspect all components for wear or damage before each flight. If any parts are aged or damaged, replace them immediately.

· Do not operate the system under the influence of alcohol, medication, or any condition that affects concentration or coordination.

· Maintain a safe distance from the drone during flight to avoid collisions or accidents.

· Familiarize yourself with the remote controller's operation before using the system.

· Follow all applicable regulations and laws regarding drone operation and water sampling to ensure safe and legal use.

Ground-Level Anti-Tangling Protection

· When powered on and successfully recognized by the DJI Matrice 300/350 RTK, the system automatically enables anti-tangling protection.

· Before takeoff, the system prevents the cable from being deployed to avoid entanglement.

· After takeoff, the system can be used normally.

Emergency Automatic Line Release Protection

What to Do If the Sampling Bottle Gets Entangled in Aquatic Plants

· If the sampling bottle becomes entangled in aquatic plants during operation and cannot be retrieved normally, the system will activate automatic line release protection when the sampling cable exceeds 10m.

· The pilot must decide whether to continue deploying the cable:

Press the "Descent" button to confirm further line deployment.

If pressed "Descent" button again, the system will pause the cable deployment.

Press the "Ascent" button to retract the sampling line.

Product Customization Services

The EaseDip C1 Smart Water Sampling System offers customization services to meet specific customer requirements.

1) Standard Customization Options

a. Customizing the EaseDip device exterior shell

b. Brand logo and manufacturer logo customization

c. Custom gearbox size modifications

d. Custom water sampling bottle logos

e. Custom packaging and aviation case designs

f. DJI Pilot interface product name customization

g. DJI Pilot information panel customization

h. DJI Pilot operational icon customization

i. DJI Pilot operation logic customization

And more…....

---

2) Advanced Secondary Development Customization

Advanced secondary development allows for further customization to meet specific business needs.

However, before proceeding with advanced customization, we conduct a thorough feasibility assessment and collaborate closely with customers to ensure quality and functionality.

Advanced customization services include but are not limited to:

Customization Requirement Analysis:

We analyze customer-provided requirements to ensure technical and commercial feasibility.

Product Development & Testing:

We design, develop, and test customized products to meet customer specifications.

Samples and test reports are provided for validation.

Customized Production & Quality Control:

Once the customer confirms the sample, we proceed with batch production.

Strict quality control processes ensure products meet customer expectations.

After-Sales Support & Maintenance:

We provide professional after-sales service and technical support for customized products.

If issues arise, we offer technical troubleshooting and repair services.

We are committed to providing comprehensive customization and after-sales support for the EaseDip C1 Smart Water Sampling System, ensuring customer satisfaction and product quality.

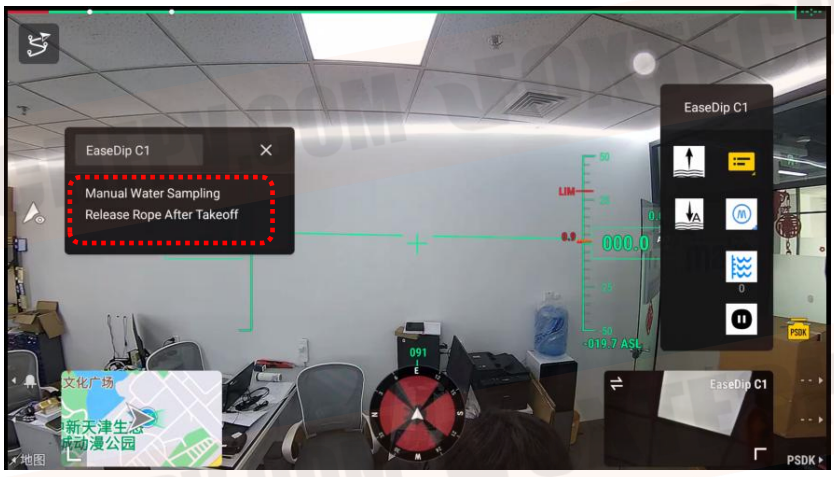
Appendix – Frequently Asked Questions (FAQ)

Why Can't the Sampling Device Be Operated on the Ground?

a. Once powered on and successfully recognized, the EaseDip C1 Smart Water Sampling System automatically enables anti-tangling protection.

b. Before takeoff, the system prevents the cable from being deployed.

c. After takeoff, the system can be used normally



Ground-Level Anti-Tangling Protection

What Should I Do If the Sampling Bottle Gets Entangled in Aquatic Plants?

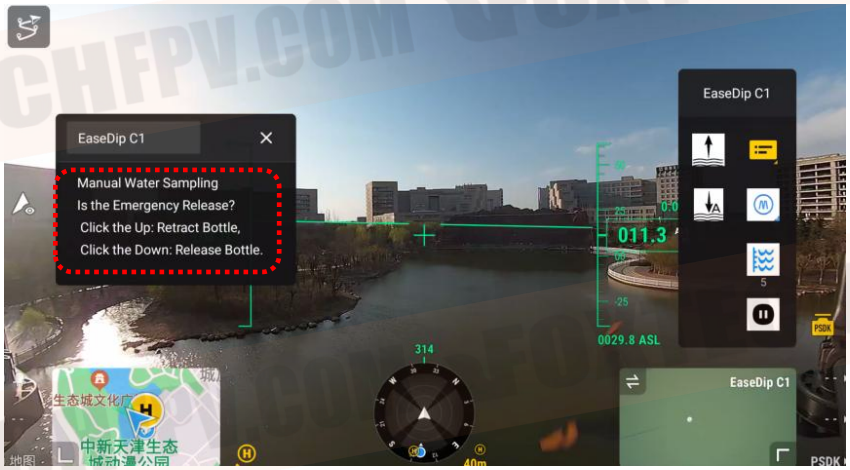
a. During the water sampling process, if the sampling bottle gets entangled with aquatic plants and cannot be retrieved normally, the system automatically activates line release protection when the sampling cable exceeds 10m.

· If the sampling bottle cannot be retrieved, the pilot must:

Press the "Descent" button to confirm further cable deployment.

· If pressed "Descent" button again, the cable deployment pauses.

· Press the "Ascent" button to retrieve the cable and sampling bottle.



Emergency Automatic Line Release Protection