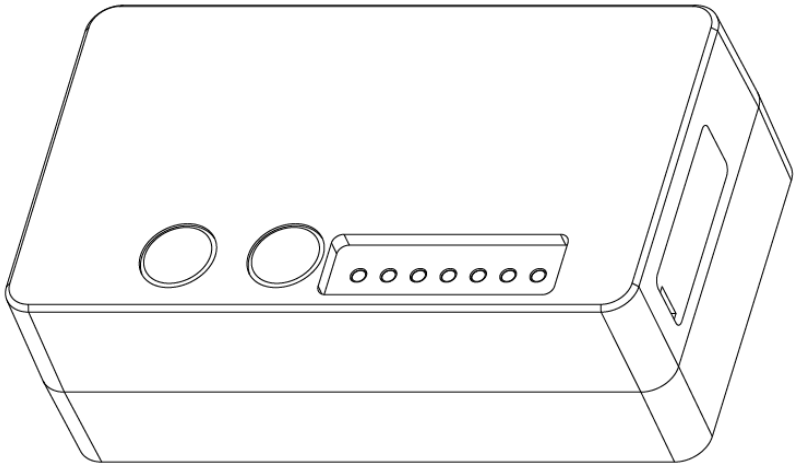
AquaRID

User Manual



SwellPro

Please visitwww.swellpro.cnOr check out the latest user manual on the WeChat official account (Sweep Waterproof Drone).

BETA1.1 – 2024.02

1.1 Thank you

Thank you for purchasing and using Sweep products!

The AquaRID Remote Identification (Remote ID) module adds a "beacon" function to drones to broadcast basic information about the onboard drone, such as the operator's registration number, drone serial number and current location. The European Union and the United States have new regulations that require drones weighing more than 250 grams to use remote identification broadcasts. The beacon information can be used by the public, law enforcement and drone management to better understand conditions in the surrounding airspace.

AquaRID is a drone add-on that broadcasts a remote ID beacon signal.

Please study this manual carefully, especially the highlighted content; visit www.swellpro.cn to obtain the latest manuals, software and tips. Please see the Version Information section at the end of this manual which details additions and corrections to this manual.

1.2 Using this manual

This document is designed to be printed or viewed on a computer or mobile device. If used electronically, you can search directly for what you are looking for. Additionally, you can click on any topic in the table of contents to navigate directly to that topic for quick viewing.

1.3 FAQ

The user manual is the best tool when using this product. For frequently asked questions about product use, please visit the FAQ page of Swellpro website www.swellpro.cn>.

Content

1 Introduction

Thank you for purchasing and using Sweep products!

The AquaRID Remote Identification (Remote ID) module adds a "beacon" function to drones to broadcast basic information about the onboard drone, such as the operator's registration number, drone serial number and current location. The EU and USA have new rules that make Remote ID mandatory for drones over 250 grams weight. The beacon information can be used by general public, law enforcement and drones to give better situation awareness of the airspace around them..

AquaRID is a an add-on for drones that broadcasts Remote ID beacon signals.

1.1 User

This document is intended for users that want to use the AquaRID as a stand-alone Remote ID add-on for their drone.

1.2 Specification

AquaRID	
Waterproof Rating:	IP67
Size:	64*36.5*23.5mm
Weight:	28g
WiFi:	Broadcast RID data; 802.11b
Frequency	BT:2.402-2.480GHz; WIFI:2.412-2.462GHz(FCC)
Transmitter Power (EIRP)	<26 dBm (FCC), <20 dBm (CE)
Receive Sensitivity:	-92dB
Battery:	3.7V 500mAh
Working Time:	9 hours
Charging Time:	1Hour
Power Input:	USB TYPE-C
Operating Temperature:	-10° C - 40° C
System Language:	Chinese;English

1.3 Install

Attach AquaRID on the top of your drone for optimal performance.

- Install AquaRID using brackets and 3M double-sided adhesive tape

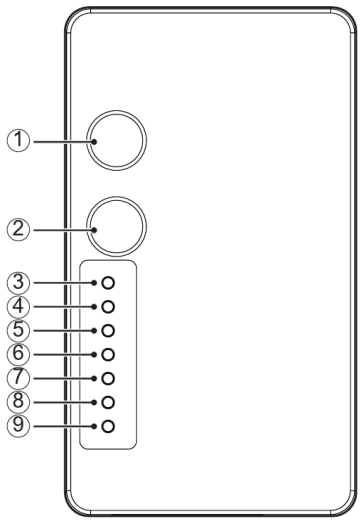
First clean the surface and remove the 3M double-sided adhesive protective sticker, and apply even pressure to stick the A-RID to the drone or bracket.

Note: for a good adhesion/grip, place the double-sided tape and apply firm consistent pressure to assure good contact with the substrate you are adhering. Also, it needs 1 hour to 72 hours (preferred) to build a (full) adhesion to the surface. In addition, it is important that the adhesive base for the tape is free of grease and dry, and that it is not covered with a removable lacquer or a layer of paper.

1.4 Use

- Attach the AquaRID to drones
- Turn on the power switch to power the beacon.
- Waiting for GPS positioning, the GPS status light starts to flash slowly. This is typically within 90 seconds if the db120 is used outdoor.
- Ready to take off.
- After your flight, turn off the drone the AquaRID.

Illustration



1. Power button
2. Bluetooth button/reset
3. GPS status light
4. Data light
5. Bluetooth light
6. 25% battery level
7. 50% battery level
8. 75% battery level
9. 100% battery level

Key Operation

- Power on: Press and hold the power button for 2 seconds, the data light flashes, release the button, and the beacon is powered on.
- Power off: Press and hold the power button for 5 seconds, the Bluetooth light will flash quickly,, release the button, and the beacon powers off.
- Power inquiry: Battery charge can be briefly checked by short pressing the button once while turned off.
- Bluetooth on: Short press the Bluetooth button, the Bluetooth light will light up, release the button, and the Bluetooth will turn on.
- Reset: Press and hold the Bluetooth button for 8 seconds, release the button to complete the reset.

Indicator Light

- GPS Status Light: Blinks to indicate successful positioning.
- Data Light: Blinks to indicate normal data sending.
- Bluetooth light: Blinks to indicate that it is not connected, and solid to indicate that the connection is successful.
- Power Lamp: Indicates the current power level of the module.

Charge

Connection: Please open the waterproof cover of the USB port of the AquaRID, and connect the module to the mobile phone charger with USB-C charging cable.

1. When charging, when the current battery level does not reach 25%, the 25% battery indicator will blink to indicate that charging is in progress.
2. When 25% of the battery level is fully charged, the indicator will be solid on, and the 50% charged indicator will blink to indicate that charging is in progress.
3. When the battery is fully charged, all 4 battery indicators will stay on.

Notice

- For typical use in the USA no configuration is required. USA: use the AquaRID **body serial number** (S/N number) for registering your drone at the FAA.
- **For the EU, you need to enter your operator ID.**

⚠ Operating drones can pose risks to personnel, air traffic and other assets. Before flying, drone operators must ensure they understand local regulations regarding drone flying and have the necessary authorization to operate the drone.

1.5 EMC test

In order to verify that AquaRID will not cause interference to or receive interference from the drone, it is recommended to conduct a quick interference test. (Only needed when connecting to the drone for the first time)

- Power on the drone and remote controller. Keep AquaRID powered off.
- Verify that the drone, remote controller, and wireless link are working properly.
- Turn off the drone and remote controller.
- Turn on the power of AquaRID. Keep the drone and remote controller powered off.
- Verify that AquaRID is working properly. For example, use the Android mobile phone software in **Section 1.6** to test the broadcast signal (ready to take off).
- Power on the AquaRID, drone and remote control and repeat the test. If AquaRID and drone, remote controller and wireless links are all working properly, there is no interference between the two systems.
- If there is interference, move the AquaRID to another location on the drone and repeat the test.

1.6 Signal Test

You can view remote ID signals using the free **OpenDroneID OSM** Android app:

https://play.google.com/store/apps/details?id=org.opendroneid.android_osm

Or **Drone Scanner** Android app:

https://play.google.com/store/apps/details?id=cz.dronetag.dronescanner

NOTE: Only a few Android smartphones support remote Bluetooth reception/or WLAN NaN signals reception. Additionally, in the default Android configuration, Wi-Fi beacon signals are typically received only once every few minutes. The list of supported smartphones is shown in the link below.

https://github.com/opendroneid/receiver-android/blob/master/supported-smartphones.md

iOS

The drone scanner app is also available for iOS. Due to iOS limitations, only BT4 can be received.

https://apps.apple.com/gb/app/drone-scanner/id1644548782

1.7 Lipo Battery

⚠ AquaRIDA uses internally a LiPo battery. In general LiPo batteries are safer and more environmentally friendly than other batteries like NiCd and NiMH. While LiPo fires are rare,

they can happen incredibly quickly and can do a lot of damage.**Always use a fire proof LiPo safety bag, metal ammo box, or other fire proof container** when you are charging, discharging, or storing db120 transponders.

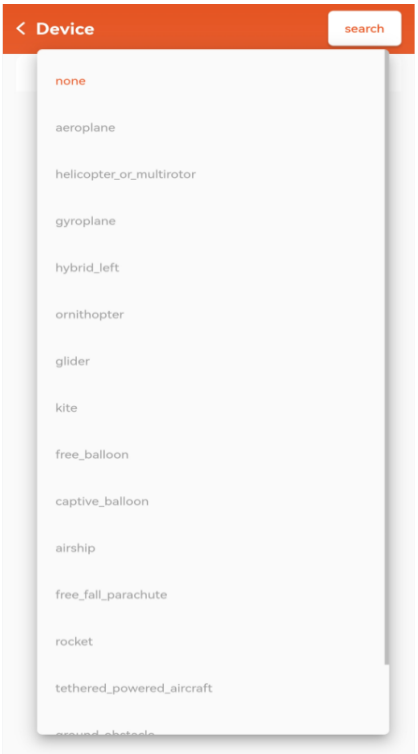
2 Configuration

AquaRID can be configured via Bluetooth. To activate the configuration mode, follow these steps:

1. Power on AquaRID and press and hold for 2 seconds to turn it on.
2. Short press the Bluetooth button, the Bluetooth light flashes, and Bluetooth is turned on.
3. Turn on Bluetooth on your phone and connect to Bluetooth (name: starts with AirBeaconTx, no password required)
4. Open the APP (named: AquaRID) to configure, click to search for Bluetooth, authorize the application, connect to Bluetooth, the Bluetooth light is always on, and the Bluetooth connection is successful.
5. After the configuration is completed, close the APP and Bluetooth will automatically turn off.

⚠ The mobile phone needs to support Bluetooth version 5.3 or above; mobile phones with versions below 5.3 cannot search for beacons when using the APP.

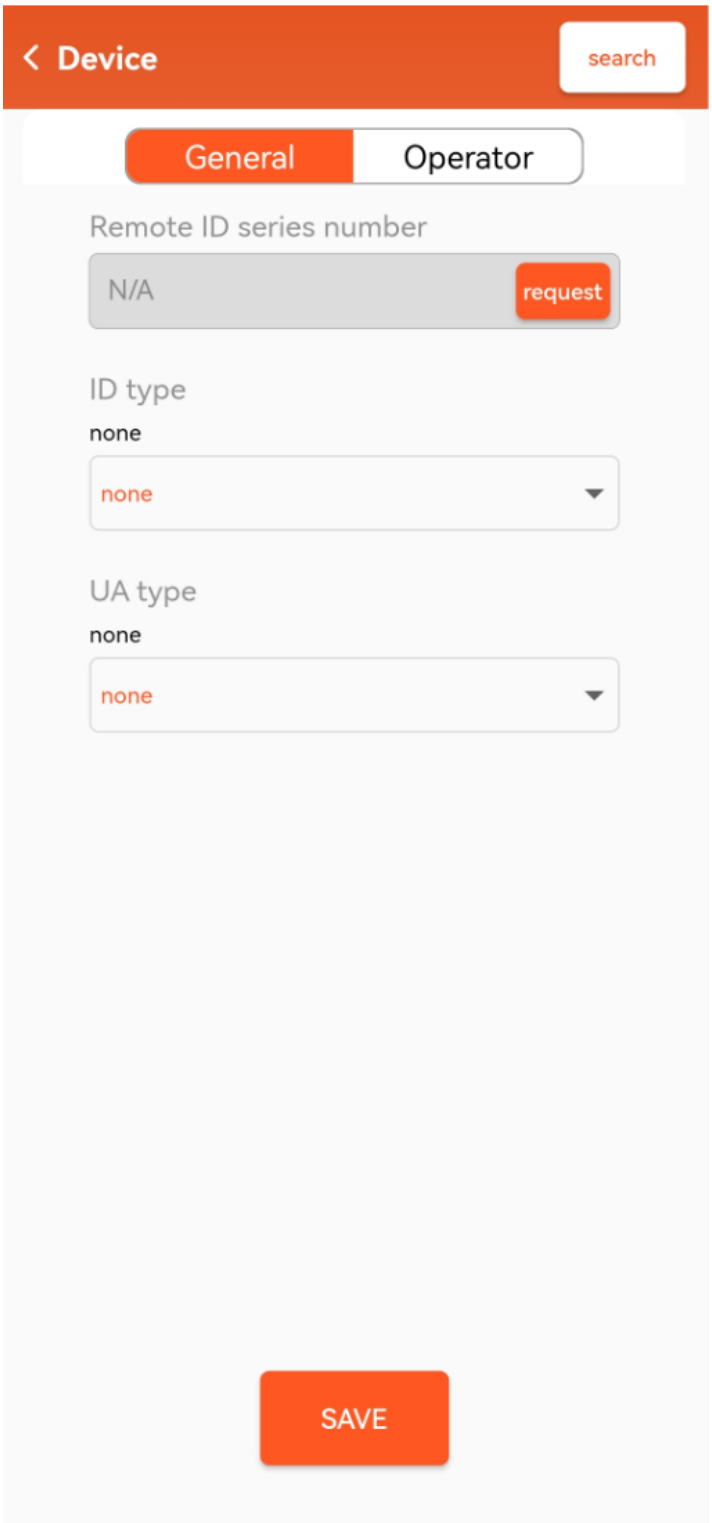
2.1 Connect



After opening the APP, click "search" to find the AquaRID Bluetooth device and connect.

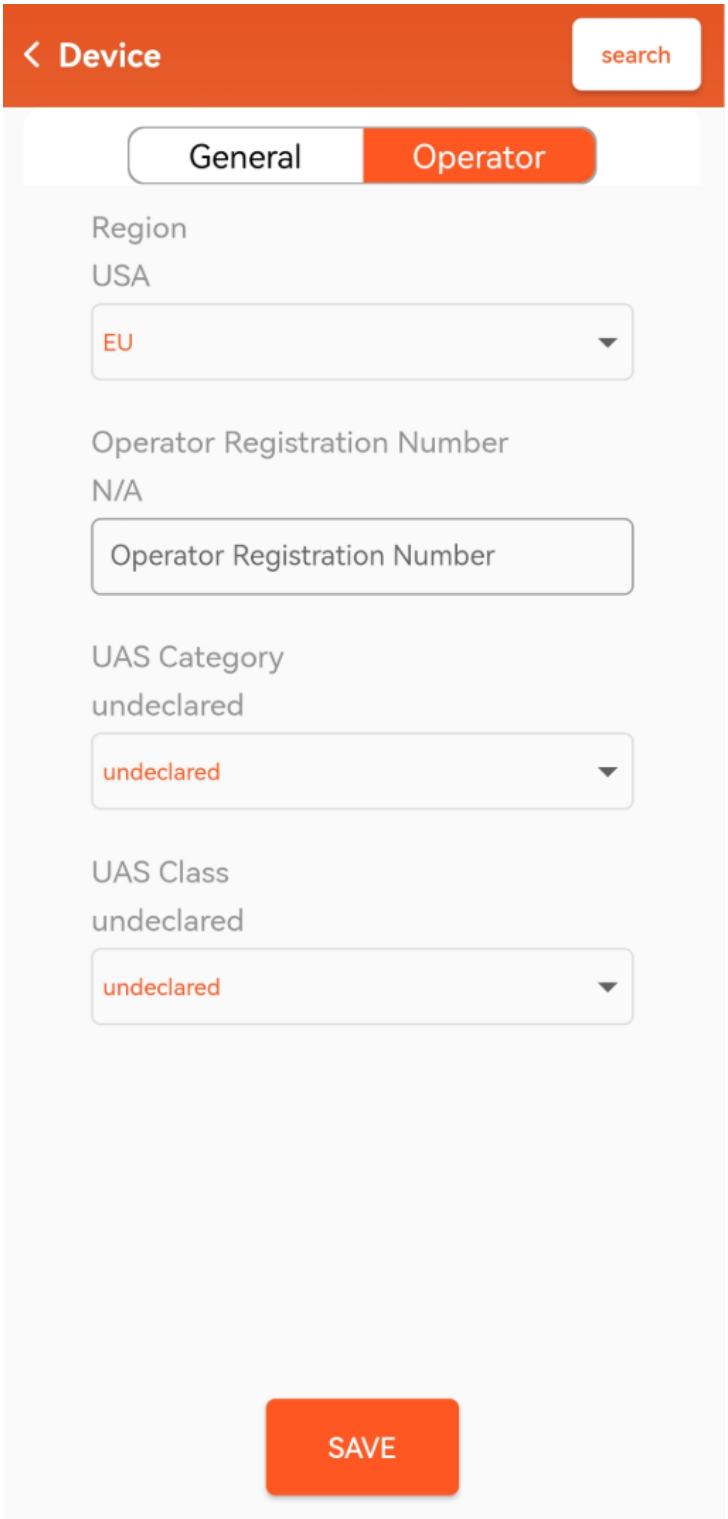
2.2 General

After the APP is successfully connected, you can proceed Configuration.



Fill in the type of drone.

2.3 Operator



1. In the operator tab, you can configure the details of your license provided by the National Aviation Authority. This is an optional setting for the USA.
2. In the USA you need to use the serial number of the AquaRID instead for register your drone at the FAA.
3. In the EU, this is a mandatory setting that must be filled in and saved to the device.

3 Troubleshooting

Reported Height Error

AquaRID uses GNSS (GPS) signals to determine altitude. To do this, it requires good GPS reception. Make sure you install the AquaRID on top of your drone.

AquaRID Interferes With Drone Communication Link

Move the AquaRID to a location further away from the drone communication antenna. Even 10 cm extra distance can make a huge difference. See also section 1.5 EMC test. In addition, change the transmission protocol if the interference persists.

AquaRID GPS Gets No GPS Lock/Location Data

In normal outdoor situations, the AquaRID gets a GPS fix typically within 90 seconds. In indoor locations or blocked GPS reception, a GPS fix may take considerably longer or not all. please contact our after-sales support., in case the GPS fix takes always a very long time or there is no GPS fix at all.

After Turning On AquaRID, There Is No Indicator Light

In this case, the battery may be out of power. Please fully charge the AquaRID. When AquaRID battery is low, broadcasting any remote ID signal or broadcasting distance will be very close, please fully charge the ARID at this time.

4 Warranty

The product has a ONE-year warranty period, starting at the date of receiving the product. Outside warranty are issues like crash damage, improper use, (extreme) weather conditions that damages the product. Also, the battery is excluded from warranty.

Warranty Service

Please email or call us first with a description of the problem. Typically, the customer is responsible for transportation costs to our office. For post-warranty cases contact us too; we will try to do our best to find a solution.

5 FCC Statement

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.

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

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 & your body.

6 Disclaimers and Warnings

This product is not a toy and can only be operated by persons over 18 years of age. Please keep it out of the reach of children and pay special attention to the unexpected presence of children during the flight.

Before using this product, be sure to read the user manual carefully to understand your legal rights, responsibilities, and safety instructions; otherwise, property damage, safety accidents, and personal safety hazards may result. By using this product, you are deemed to have understood, recognized and accepted all the terms and contents of this statement. Users promise to be responsible for their own actions and all consequences arising therefrom. Users promise to use this product only for legitimate purposes and agree to these terms and the relevant policies and guidelines for endorsement that Sweep may specify. To the maximum extent permitted by law, Sweep will not be liable for any indirect, consequential, punitive, special or criminal damages, including losses suffered as a result of your purchase, use or inability to use this product.

Sweep does not accept personal injury or property damage caused by improper use of:

- Injury or loss caused by operating an aircraft under the influence of alcohol or drugs.
- Injury or damage caused by failure to follow the operating manual for assembly or operation.
- Injuries or losses caused by learning to use the product (watching instructional videos and reading the user manual) before flying.
- Injuries or losses caused by the use of third-party accessories not authorized by Sweep or counterfeit Sweep accessories.
- Injuries or losses caused by flying beyond line of sight (flight distance exceeding 300 meters).
- Injuries or losses caused by flying in areas with magnetic field interference or radio interference.
- Injury or damage caused by flying in a no-fly zone specified by local regulations or ordinances.
- Injuries or losses caused by explosion, crash, loss of control, water intrusion, etc. caused by unauthorized modification or disassembly.
- Injury or loss caused by the use of damaged or aged parts.
- Injuries or losses caused by forced continuous flight after a low voltage alarm.
- Injuries or losses caused by contact with corrosive liquids such as seawater and failure to rinse promptly with clean fresh water.
- Injuries or losses caused by irresistible forces such as accidental collisions, fires, explosions, floods, tsunamis, subsidence, ice subsidence, avalanches, mudslides, landslides, earthquakes, etc.
- Injury or loss caused by intentional fall into water from high altitude or strong impact.
- Injury or damage caused by failure to follow the owner's manual and maintenance manual.

- Injuries or losses caused by not following the user manual and operating the product at a weight greater than the safe take-off weight.
- The user knew that the product was malfunctioning but failed to contact after-sales service to diagnose and inspect the aircraft, resulting in injuries or losses.
- Injury or loss caused by user's unwillingness to provide flight logs to Sweep for diagnosis and inspection.
- Any modification of flight log data.
- Other injuries or losses that are not within the scope of Sweep's responsibility.

7 Version Information

Sweep's products are continuously improved and upgraded, and product firmware and user manuals are also constantly updated. You can visit www.swellpro.cn or follow the Swellpro WeChat official account (Swellpro Waterproof Drone) to view and download the latest user manual.

1.0 AquaRID User Manual Version 1.0

