

POLLICINO

Drone Tracker

USER MANUAL

v1.6 | January 2024



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TopView would like to thank you for purchasing and using our products.
The latest version of this user manual can be downloaded at the following link:
<https://topview.it/pollicino-remoteid/manuale-utente>

You can contact us if you have any doubts about the Pollicino system or for more information send a mail to info@topview.it

The document contains graphic symbols to indicate suggestions, possible hazards, or damage to the equipment or its components. They are used as follows:



This symbol indicates that the box contains suggestions and clarifying information.



This symbol indicates important information that the user must follow for the device to function properly.

1 Introduction

Pollicino™ is a tracking and remote identification device for aircraft systems compatible with U-Space. U-Space is the set of services aimed at regulating the safe and efficient access of drones in airspace. The device connects to U-Space Service Providers (USSPs) through the LTE NB-IoT mobile telecommunications network, according to the ASTM 3411-22 standard and the AMC and GM to Implementing Regulation (EU) 2021/664 — Issue 1.

Pollicino™ is designed to be "**board & go**", it does not need external connections, as the GNSS and LTE antennas are integrated.



1.1 Package

In the box, in addition to the device, the user will find:

- USB Type A – USB Type C charging cable
- Quick Start Guide
- Canopus 3M Lock Fastener Tape



1.2 LED Indicators

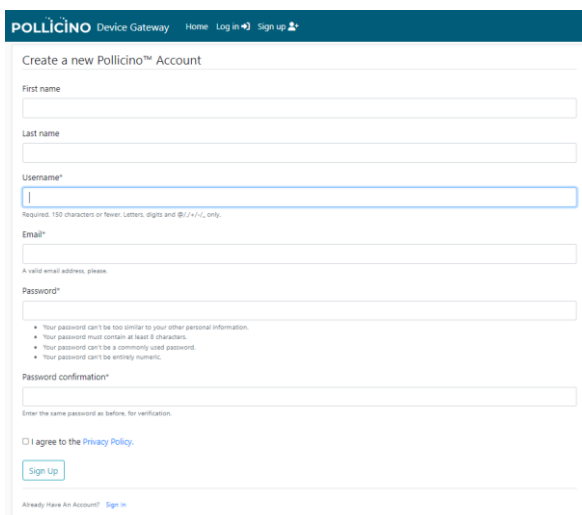


STATUS		Flashing Yellow Component Preparation
		Flashing Green Ready to fly
		Alternating flashing Green and Red – Prevailing Green Battery level < 40%
		Alternating Green and Red – Prevailing red Battery level < 30%
		Flashing red Device in sleep – Please recharge
CHARGE Built-in battery charging		Solid Red: Charging Off: Charging complete.
NET Cellular Network Status		Blue two flashes per second: Connected
RID Remote Identification Status		Flashing blue: RID is active

2 Configuration

The configuration of the Pollicino is done through the device portal: <https://pollicino.topview.it/>. Once registered, the user can access the user's settings, the map to view the track, and the list of paired devices.

To register as a new user, log in to the device portal and click on "Sign up" in the top menu.



The screenshot shows the 'Create a new Pollicino™ Account' form on the Pollicino Device Gateway. The form includes fields for First name, Last name, Username*, Email*, Password*, and Password confirmation*. The Username field is highlighted with a blue border. Below the Password* field, there are four bullet points: 'Your password can't be too similar to your other personal information.', 'Your password must contain at least 8 characters.', 'Your password can't be a commonly used password.', and 'Your password can't be entirely numeric.'. Below the Password confirmation* field, there is a checkbox for 'I agree to the Privacy Policy.' and a 'Sign Up' button. At the bottom, there is a link for 'Already Have An Account? Sign In'.

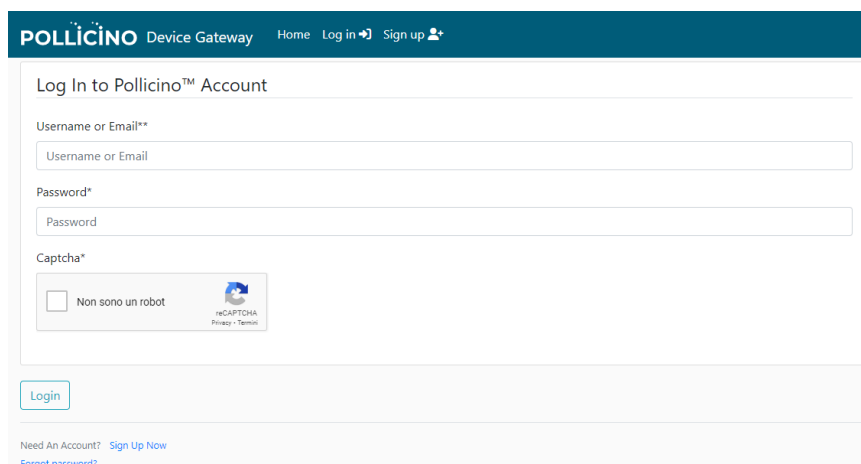


The password cannot be too similar to personal information (e.g. first or last name) and must contain at least eight alphanumeric characters. The data is processed according to TopView's Privacy Policy.

2.1 Pairing the device and powering on for the first time

To pair the Pollicino with your user account, please follow these steps when you turn it on for the first time:

1. Connect to the device portal: <https://pollicino.topview.it/>
2. Log in

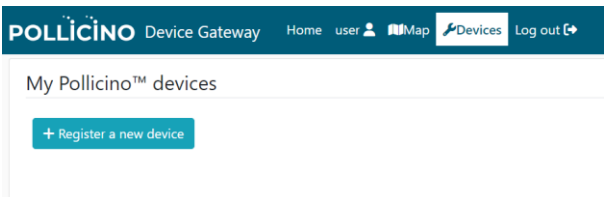


The screenshot shows the 'Log In to Pollicino™ Account' form on the Pollicino Device Gateway. The form includes fields for Username or Email** and Password*. Below the Password* field, there is a Captcha* section with a checkbox for 'Non sono un robot' and a reCAPTCHA logo. Below the Captcha* section, there is a 'Login' button. At the bottom, there are links for 'Need An Account? Sign Up Now' and 'Forgot password?'.



In case of a forgotten password, click on "forgot password?"

3. From the top menu, select "DEVICES" to register your device and then click on "Register a new device".



4. Enter the Serial Number printed on the label on the back of the device and click "Submit"



Register a new device to your account:

Enter the serial number on your Pollicino device:

5. Turn on the device using the slide switch and wait for the first registration to be made to the telephone network.



When first turned on, the NET LED will flash for about two minutes. Do not turn off the device. This phase ends when the STATUS LED flashes green along with the NET and RID LEDs in blue.

2.2 User Settings

By clicking on your name in the top menu, you can access your profile settings. You can change your first name, last name, phone, company and country.

Profile Information:



mario.rossi (moderator)
Mario Rossi

Edit Profile Information

First name

Last name

Email*

Phone

Company

Country

[Change password?](#)

Scrolling down is the U-space Service Provider selector. The toggle enables the transmission of the location to the chosen suppliers and the display of specific fields to be configured in the devices section.

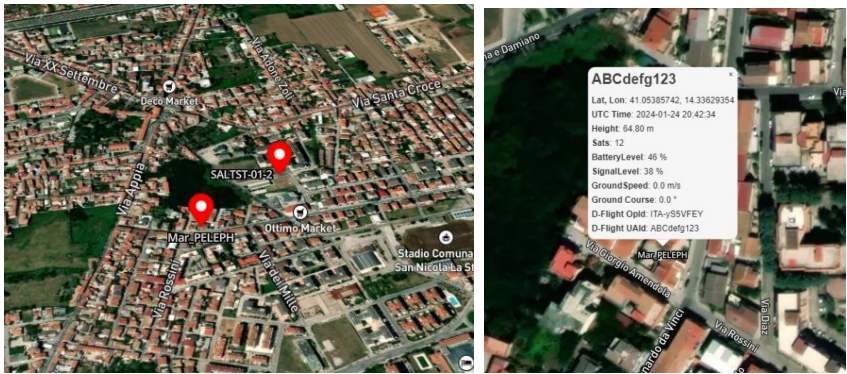
USSP Selection

Choose which USSP use to send tracking information:

- ☒ D-Flight
- ☒ Sentinel

2.3 Map

In the map section, you can view the location of active devices and the information transmitted.



Clicking on the icon will bring up a pop-up window with the tracking information described in the table below.

Field Name	Description
Lat, Lon	Geographic coordinates in degrees with eight decimals
UTC Time	Coordinated Universal Time (Greenwich Meridian) In the format YYYY-MM-DD hh:mm:ss
Height	Altitude from Mean Sea Level (MSL)
Sats	Number of satellites docked
BatteryLevel	Battery level in %
SignalLevel	Cellular Signal Level in %
Ground Speed	Horizontal speed in meters per second (m/s)
Ground Course	Direction in which the track moves in degrees (°)
D-Flight OpID	EASA Operator Code
D-Flight UASID	Drone Identification Code

2.4 Device Manager

My Pollicino™ devices

+ Register a new device

GjrVnaHg7h

Firmware Update

Device SIM ICCID: 89999202103110549305
Activation Date: Jan. 10, 2024, 4:47 p.m.
D-Flight EASA Operator Code(optional) ⓘ

D-Flight UAS ID ⓘ

Update

In the devices section of the portal, you can see the Pollicino associated with your account. For each device, the user can configure the EASA Operator Code and UAS ID.



The EASA operator code consists of 16 alphanumeric characters. In Italy, the code is assigned to operators registered on the d-flight portal.

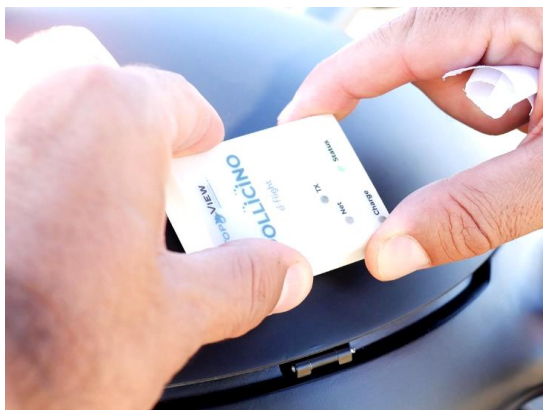
3 Using the Device

Once registered on the portal, the device will work in all outdoor areas with GNSS signal and cellular coverage.

3.1 *Installation on the drone*

In the package there is the CANOPUS 3M Dual Lock tape, which is made up of two parts, the first must be glued on the back of the Pollicino while the counterpart must be placed on the drone.

1. Find the flat surface on the drone for the Dual Lock counterpart.
2. Wipe the surface with an alcohol cloth.
3. Wait a few minutes for the alcohol to evaporate.
4. Remove the film from the coupling piece and stick it on the drone.
5. Wait five minutes, so that the glue adheres.
6. Clip the device to the coupling piece on the drone.
7. Make sure the glue on both sides holds securely by repeatedly removing the device from the drone



The CANOPUS 3M Dual Lock tape supplied in the package guarantees superior performance compared to traditional Velcro.

3.2 *During flight activities*

It is recommended to follow these steps:

- Turn on the device with the toggle switch.
- Check the battery level as indicated in section 1.2.
- Wait until all components of the device are ready (Status LED flashing green)
- Carrying out the mission
- At the end of the mission, turn off the device via the toggle switch.



Check the battery level of the Pollicino the day before the mission and if necessary, recharge it to 100%



3.3 Track display on d-flight

The operator registered on the d-flight platform can access the tracking service by associating Pollicino with the EASA operator code.

The tracking service allows the user to share the position of their UAS on the map with all other users who have access to the portal in relation to the area of interest, with a view to situational awareness. In particular, Italy has been divided into multiple areas of interest and users belonging to the same area of interest will be able to view the tracks of other d-flight users.



The position will be accompanied by the following information:

- UAS Identifier
- EASA Operator Code
- UAS coordinates (Latitude/Longitude)
- UAS Height and Speed
- Track Status



To view the tracks in your area of interest, it is essential to allow access to the displaying device's location to d-flight and set the map to a zoom of 1:25000 or more.

The UAS track is represented by a dotted line and is also highlighted with the following colors:

- Green: data properly transmitted.
- Gray: Data Transmission Error.



The operator is required to fly according to the UAS regulations and, if necessary, obtain authorization to fly the drone.

Before flying, check the geographical zones on the d-flight platform.

For more information, visit the <https://www.enac.gov.it/sicurezza-aerea/droni/normativa-droni> page.

3.4 Recharge

The Pollicino can be charged via the USB cable in the box from any 5V compatible source, such as a computer's USB port, a powerbank or a smartphone adapter. The CHARGE LED on indicates that the device is charging. The same LED will turn off once charging is complete.



Charging via cables with the USB-C connector on both sides is not supported for the moment.

APPENDIX

Technical Specifications



Dimensions (WxHxT)	62x47x18 mm
Weight	42 g
Enclosure	Self-extinguishing ABS
Fixing mechanism	CANOPUS 3M Dual Lock SJ3550 CF Extra; mechanical adapters for DJI (opt.)
Degree of protection	IP43
Operating Temperature	-20°C / +50°C
Turning on	Manual (slide switch)
LED Indicators	NET, RID, STATUS, CHARGE
Battery life	Up to 14 hours continuous transmission
Battery type	Lithium-ion battery with built-in BMS (3.7V-900mAh)
Charging	5V - USB/C connector
Positioning	GPS/GLONASS/GALILEO/SBAS (U-blox with built-in antenna)
Data Transmission Frequency	1 Hz (1 sample per second)
Network connection	NB-IoT with built-in antenna
Frequency Bands	B1, B3, B5, B8, B20, B28
Built-in SIM	MFF2-V7 eUICC (Embedded Universal Integrated Circuit Card)
Reference Standards	EASA 2022/024/R (U-Space); ASTM F3411-22 (Specification for remote ID and tracking)