



UAV Tracker G2



User Manual

Version 1.0 | September 2024






Garuda Robotics
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About This Manual

This user manual contains the information you need to set up, operate and maintain your tracker. For your safety, please read this manual before operating the tracker.

The information contained in this manual has been verified to be accurate at the time of publishing. The latest version may be downloaded from <https://mydronefleets.com>.

Some sections of this manual may be annotated with one or more of the following icons:

	NOTE	Indicates important information that helps you make better use of your device.
	CAUTION	Indicates potential hardware damage or data loss if instructions are not followed.
	WARNING	Indicates potential for property damage, personal injury, or death if instructions are not followed.

Versions

v1.0	1 September 2024	Initial release
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About Your Tracker

Congratulations on your purchase of a MyDroneFleets UAV Tracker G2!

Once the tracker has been mounted on your UAV, it will publish its location via a 4G cellular network. This enables you to comply with applicable regulator or airspace manager requirements for tracking and surveillance of UAVs during flight operations.


You will be able to monitor the location of your tracker using the Airspace Visualizer dashboard. A licence for the Free Edition of the MyDroneFleets Airspace Visualizer dashboard is provided with all retail trackers, allowing you to monitor your tracker's position on a map.



Compliance

Depending on where you purchased and use your tracker, you may need to comply with one or more specific usage conditions described in the following table:

MDF Trackers	<p>This tracker is linked to your Garuda Plex account. By using this tracker, you consent to Garuda Robotics operating a location tracking service for your UAVs.</p> <p>The location tracking service (MyDroneFleets) is located at https://track.mydronefleets.com.</p> <p>All your location data will be kept strictly private according to our product Terms and Conditions at https://garuda.io/terms and https://garuda.io/privacy</p>
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 NOTE While we make reasonable efforts to ensure the information contained in this section is up to date at the time of publishing, the user of the UAV Tracker G2 bears final responsibility for ensuring compliance with all applicable local regulations.

Warranty

The warranty policy that applies to your tracker depends on where it was purchased. These policies are described in the following table:

MDF trackers	<p>Trackers are covered by one (1) year warranty against manufacturing defects.</p> <p>This warranty does not cover wear and tear experienced in the course of normal usage. It does not cover failure or damage caused by improper usage.</p>
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Support

For all technical support matters, please contact support@garuda.io.

Specifications

Tracker G2

Dimensions	59.0 x 44.0 x 23mm (2.32 x 1.73 x 0.91 in)	
Weight	45 g (1.59 oz)	
Casing	High-strength engineering plastic	
GNSS	GPS/GLONASS/Beidou	
Cellular Mobile Terminal	4G LTE LTE-FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66
	LTE-TDD UMTS/HSDPA/HSPA+	B34/B38/B39/B40/B41 B1/B2/B4/B5/B6/B8/B19
	Complies with IMDA standards – DA109033	
SIM	Nano SIM	
Sensors	Accelerometer Gyroscope Compass Temperature	
Battery	Built-in Lithium Polymer 500mAh	
Charging time	60 min	
Operating time	60 min	
Operating temperature	0 to 55 °C (32 to 131 °F)	

Tracker G2 Mount

Weight	4 g (0.14 oz)
Tracker attachment	Physical lock with quick release
UAV attachment	High strength adhesive



NOTE

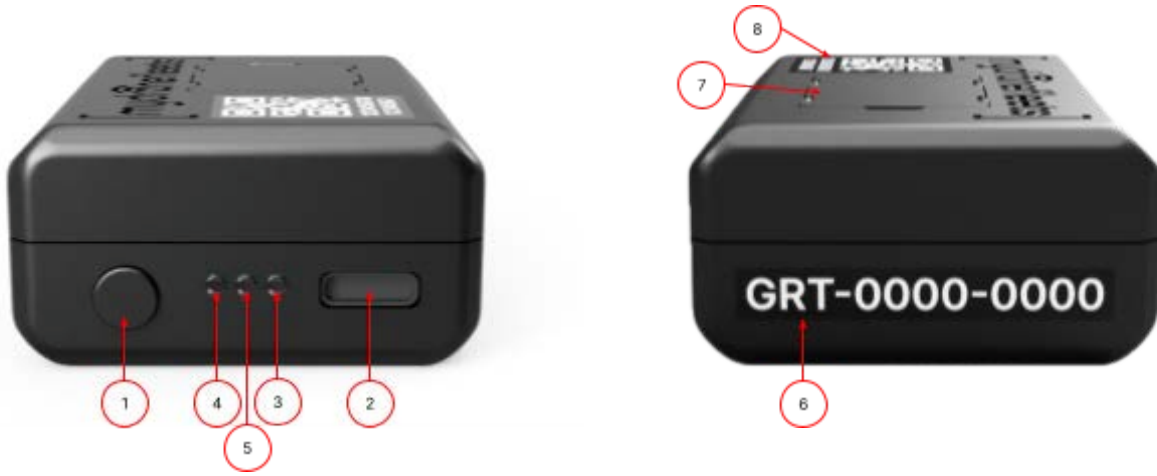
The UAV Tracker is designed to be lightweight. Depending on the weight class of your UAV, you may experience a slight reduction in flight endurance when operating with the tracker mounted.

The flight time reduction for UAVs weighing more than 1kg is expected to be negligible.

Identifying Parts and Controls

Tracker G2

Side Views



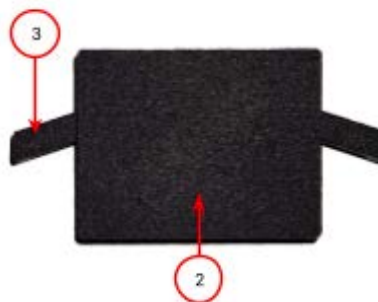
-
- | | |
|---|----------------------------|
| 1 | Power button |
| 2 | USB-C charging port |
| 3 | Charging indicator |
| 4 | Power indicator |
| 5 | Status indicator |
| 6 | Serial number |
| 7 | SIM card compartment cover |
| 8 | IMEI number |
-

Tracker G2 Mount

Top View



Bottom View



-
- | | |
|---|-------------------------------|
| 1 | Mounting lock |
| 2 | Surface for adhesive mounting |
| 3 | Quick-release mechanism |
-

Setting Up the Tracker

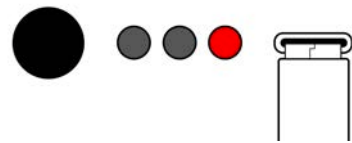
Charging the Tracker

Ensure the tracker is turned off before you start.



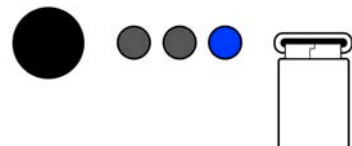
Connect a USB-C cable to the tracker and a USB power source supplying at least 1A @ 5V.

Once connected, battery charging will begin and the charging indicator will light up solid red.



When the battery is fully charged, the charging indicator will light up solid blue.

A full charge of a depleted tracker battery should take around 60 minutes.



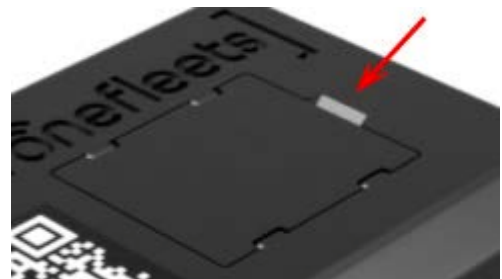
Inserting the SIM card

Remove the SIM card compartment cover by lifting it at the catch.

Unlock the metal latch by sliding it in the direction indicated.

Insert your SIM card into the holder. The holder only accepts nano SIM cards.

Lock the metal latch and replace the SIM card compartment cover.



The SIM card cover is designed to fit tightly against a rubber gasket in the tracker case body to maintain a weatherproof seal.

Make sure to press down on all four corners until the latches are secure.

Initial Setup

Visit <https://track.mydronefleets.com>.

Login using your **Garuda Plex** account.

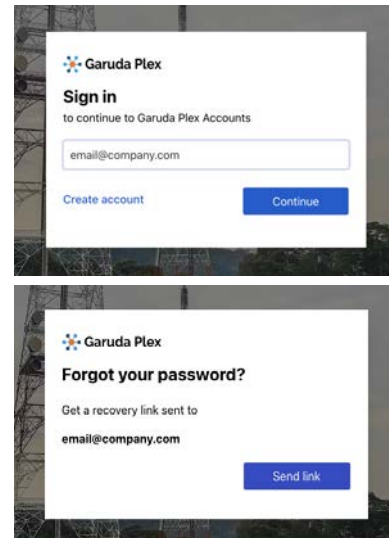
If you are logging in for the first time, you will have to change the temporary password provided to you either by your company administrator or on the packaging.

If you have forgotten your password, visit <https://identity.garuda.io/forget> to reset it.

If you are using MyDroneFleets as part of an organisation and do not have a Garuda Plex account, contact your company's administrator or the party who purchased the trackers.

Your company administrator will provision a Garuda Plex user account for you on <https://accounts.garuda.io/general/team>.

Do not sign up for a separate Garuda Plex company account as your company trackers are assigned to the organisation's account.



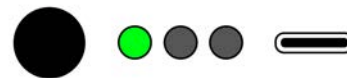
Select **My Trackers**. Click on the chevron at the bottom left to expand the left navigation if you need help identifying this option.

You will see all the trackers you purchased listed.

You may designate owners of your trackers. Owners will get warnings for non-conforming trackers.

Serial Number	Hardware IMEI	Sim Card IMSI / ICCID	Notes	Assigned to
GRT-0012-0100	861123054827470	502162059021010 89601620062201507836	Deployed to Malaysia	fredrick@garuda.io
GRT-0012-0074	861123052203359	502162059021011 89601620062201507844	Deployed to Malaysia	fredrick@garuda.io

If you haven't done so, turn on your tracker by pressing the power button **once**, and then holding it for at least **3 seconds** until the green power indicator light comes up.



The green power indicator should stay lit continuously during this boot up process.

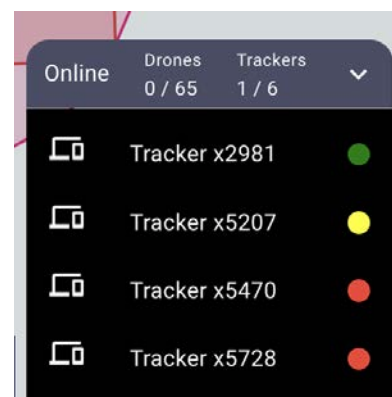
Select **Dashboard**.

When your tracker comes online in about a minute, the power indicator light will change from being continuously lit to flashing.

At the same time, the online indicator for the tracker on the website will turn yellow ●.

This confirms that your 4G connectivity is in order.

The startup process should take no more than 30 seconds. If you are unable to connect after 30 seconds, you may be in a location with poor 4G connectivity. Repeat this step in another location with better 4G coverage.



Take the tracker outdoors to a location where it has an unobstructed view of the sky to receive GNSS and 4G network signals. When the tracker gets a GNSS lock, the

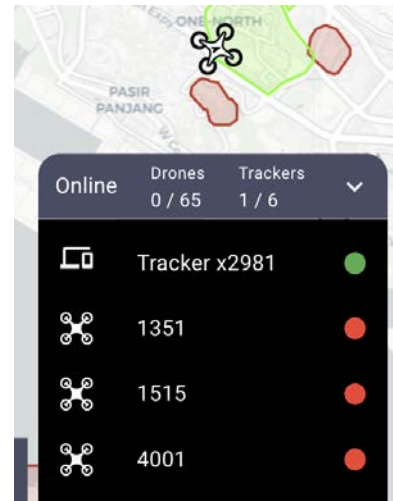


orange status indicator should be flashing once every 3 seconds.

The online status indicator on the dashboard will turn dark green and you will see a UAV icon representing your tracker animated on the map. This confirms your GNSS signal coverage is sufficient.

If the orange status indicator is flashing two times or more per second, the tracker has yet to lock onto a GNSS signal. The GNSS lock procedure usually takes around 1 minute. If you are unable to receive the location information after 1 minute, consider moving to a different location.

If you see any other combination of activity from the status indicator, consult the Troubleshooting section of this manual.



Place your tracker on or near your UAV. Turn on your UAV.

Ensure that the online status indicator remains green or yellow. Monitor your UAV's GCS for warnings of signal interference.

This confirms that your UAV and tracker are compatible and will not interfere with each other.

You have successfully completed the initial setup of your tracker. You may now turn it off.

Press and hold the power button for at least **3 seconds**, and release it once you see the indicator blinking slowly.

Mount Setup

Before you can operate your UAV with the tracker, you must ensure the tracker is securely mounted.

The following guidelines are provided to help you select a suitable location for the mount.

You should:

1. Keep the tracker as far away from propellers and other moving parts as possible. If the tracker must be mounted in the vicinity of propellers or other moving parts, it should be mounted equidistant from all such parts.
2. Place the tracker on the top surface of the UAV to ensure its GNSS and LTE antennas have a clear view of satellites and cellular transmission towers respectively.
3. Attach the tracker mount to a flat surface. If there are no flat surfaces available, you must ensure that sufficient adhesive strip is in good contact with the UAV for secure mounting.
4. Place the tracker as close to the centre of gravity of the UAV as possible. This is especially important for smaller UAVs.

Avoid:

1. Mounting the tracker on removable parts such as batteries.
2. Mounting the tracker directly over critical radio-frequency transmitting and / or receiving components such as transmitter antennas or GPS antennas.

Ensure that the target surfaces are clean and free of any dust, debris or loose parts. Clean the surface with an alcohol pad if necessary to remove any oil or grease.

Identify the exact position where the mount base will be positioned, taking care to ensure that the mount orientation is correct.



Verify that the tracker does not obstruct or impede in any way the moving parts of the UAV while in operation, including propellers and any other rotating propulsion components.

Verify that you can easily remove the battery, propellers and any other user-swappable parts of the UAV without having to remove the tracker mount.

Place the mount onto the UAV at its chosen location. Apply firm pressure onto the mount to ensure both velcro strips on the tracker mount and UAV surface are fully secured.



CAUTION

The mounting configurations shown here are intended as general recommendations based on our internal testing. The UAV operator is ultimately responsible for ensuring the secure mounting of the tracker. The security of the final mount may be affected by the cleanliness of the UAV surface and other factors.



NOTE

Before you can use the tracker on the UAV, you must position the velcro strip in a suitable location. The following procedure may be carried out with or without the tracker inserted in the mount to help with estimating the physical footprint required. If you are attaching the mount without the tracker inserted, take extra care to verify the conditions described in Step 3.



NOTE

All mounting methods mentioned below are recommended based on UAVs that have a top flat surface. Users should assess the stability of the mounted tracker on their specific UAV before determining the suitability of such methods.



WARNING

Adhesive strips require a clean mounting surface to provide its rated holding capacity. Adhesive strips should not be reused after removal from a surface.

Mounting the Tracker

Take note of the tracker's intended orientation. The tracker, when correctly mounted, should have its power button and indicator lights facing to the right, when viewing the UAV from the back.

Align the base of the tracker with the appropriate section of the mount.

Fully depress the mount quick-release arms, slide the tracker fully onto the mount, then let go of the quick release arms. The tracker is now attached to the mount.



Verify that the tracker is securely attached by moving it back and forth.

Verify that the tracker is securely attached by turning the UAV upside down and shaking it.



WARNING

Ensure the mount and tracker are secure prior to each flight. Improper insertion of the tracker into the mount or failure of the mount attachment during flight may result in detachment of the tracker.



WARNING

The tracker mount is designed to securely attach the tracker to the UAV.

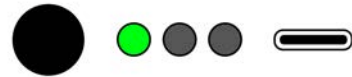
It is not designed for use as a carrying handle. Do not carry your UAV using the mounted tracker.

Operating the Tracker

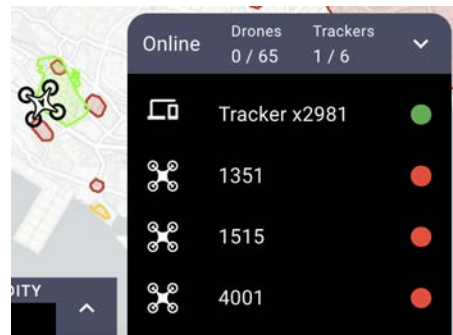
In the Field

Ensure the tracker is securely mounted on the UAV and facing the correct direction.

Turn on the tracker.



Verify that the tracker is transmitting its location to the MyDroneFleets app.



Turn on the UAV and proceed with your flight operations.

About Airspace Visualizer Editions

The free edition provided with all retail trackers allows you to monitor your tracker's position on the map or on the data card.

Select the UAV icon or the tracker in the bottom right panel to view the full data card.

Altitude is reported above mean sea level (AMSL) based on the WGS84 ellipsoid.

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For SME / Enterprise / Regulator edition features such as geofence, custom airspace design / geoids, flight reservation and more, see MyDroneFleets Airspace Visualizer User's Manual or the custom training materials we provided to your organisation.

Tracker
✕

Tracker x3704
 ua_id: 66b4abd8033b14a91fd29784
No Active Flight

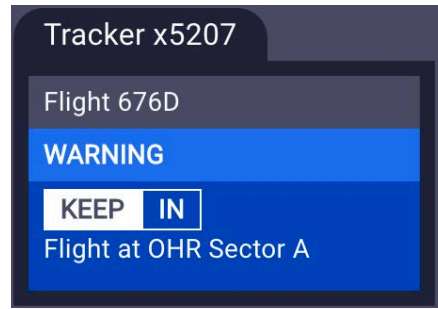
Follow 📍

Latest Track

Time (UTC)	2024-09-02T03:04:51.00Z
Time (Local)	Mon 02 Sep 2024 11:04:51
Latitude	1.2754315
Longitude	103.7956009
Altitude (HAE WGS84)	66.20 meters, 217.19 feet
Speed	0 m/s
Acceleration	0 m/s ²
Heading	64 deg (magnetic north)
Operational Status	unknown status 0
Vertical Accuracy	unspecified or invalid
Horizontal Accuracy	unspecified or invalid
VDOP	0.70
HDOP	0.50
Roll	-2.000 °
Pitch	-3.000 °
Yaw	64.000 °
Battery Remaining	00:46:50
Battery Voltage	4.00 mV
Temperature	38.100 °C

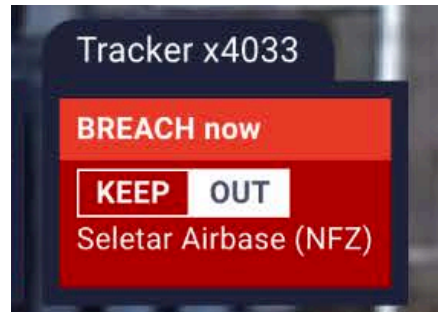
If you fly too close to the boundary of a No Fly Zone, the app will issue you a warning.

The default setting for this buffer zone is 50 metres outside the No Fly Zone.

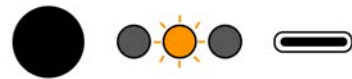


If you breach the boundary of a No Fly Zone, the app will issue you a violation for breaching the airspace restriction.

The violation will continue to be issued until you take actions to exit the No Fly Zone.



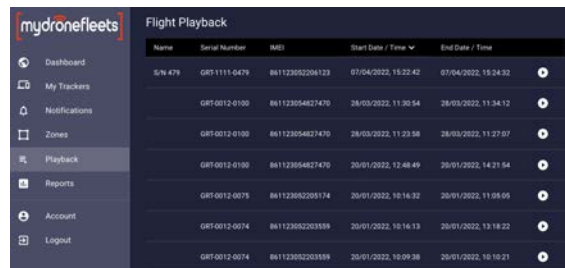
Turn off the tracker after the mission is complete.



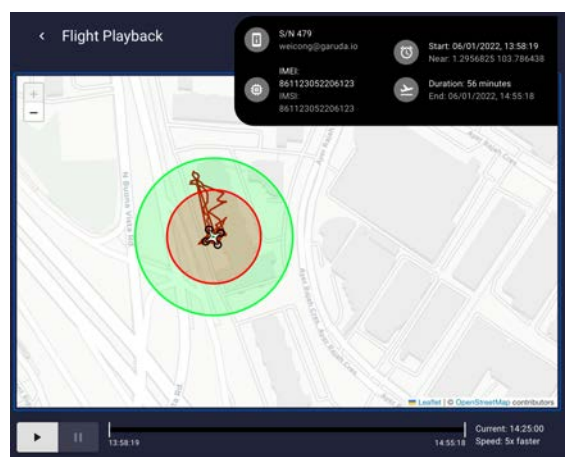
The tracker's icon and all its status will be gone from the Live Airspace screen in 1 minute.

To review your previous flight, click on Playback. Select the most recent entry.

Click on the Play button to start the animated playback of the flight based on the tracks received.



You can play and pause the flight and investigate values sent by the tracker, or click on the Data to see the values in the data card.



Monitoring Battery Status

During normal operations, the battery indicator light will blink green at different rates to indicate the state of charge of the battery.

Sequence	Battery Status	Action
Solid green	Tracker is starting up	
1 blink every 3 seconds	50% to 100% charge remaining	Sufficient for flights
1 blink every second	10% to 50% charge remaining	Sufficient for 1 flight
2 blinks every second	Less than 10% charge remaining	Do not fly, charge tracker

You can also monitor the remaining battery on the Flight Panel. The time remaining is only an estimate.

Care and Maintenance

Although the tracker is designed to operate in a variety of environmental conditions, you should take proper care of your tracker to enable it to perform optimally.



WARNING

The tracker contains a Lithium Polymer rechargeable battery. You must follow the recommended procedures for safely charging and operating your tracker.

General Care

- 1 Do not open the tracker. Unauthorised disassembly of the tracker will void its warranty.
 - 2 Do not insert foreign objects into the tracker.
 - 3 To prevent electric shock, explosion, or other injury, do not operate the tracker if it has been damaged in any way, whether by immersion in liquid, crushed by mechanical forces, etc.
 - 4 Do not subject the tracker to extreme forces such as crushing, bending, puncturing, or shredding.
 - 5 Avoid placing heavy objects on the tracker.
 - 6 Avoid dropping the tracker.
 - 7 Store the tracker in a cool dry place when not in use.
-

Operating Environment

- 1 Do not submerge the tracker in liquids of any form. The tracker is designed to resist splashes but is not waterproof.
 - 2 Avoid using the tracker in extremely dusty conditions. The tracker is designed with limited dust resistance, but using it in environments with plenty of fine particles may cause its performance to degrade over time.
 - 3 Do not expose the tracker to environments that contain fine metallic particles or any other substances that may lead to electric short circuits.
 - 4 Do not expose the tracker to corrosive environments.
 - 5 Keep the tracker away from heat sources, combustible gases, and liquids.
-

Charging and Power

- 1 Do not leave the tracker unattended while charging. Do not charge the tracker overnight.
 - 2 Stop charging the tracker once it is fully charged.
 - 3 Always charge the tracker in a ventilated area. Do not place the tracker under pillows, blankets, fabrics, or other flammable materials while charging.
 - 4 If you will not be using the tracker for an extended period, the battery should be charged/discharged to approximately 50% before storage.
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Troubleshooting

This section describes the common problems you may encounter while using the tracker.

Diagnosing Common Problems

The Status indicator allows you to quickly determine the operating condition of the tracker.

Indicator Sequence	Status	Actions
Normal Operation		
1 short blink every 3 seconds • • •	Normal operations	None, good for flights
Long blinks only -----	Tracker auto restarting due to an internal system error	Wait up to 1 minute for the restart to complete
Common Statuses or Errors		
2 short blinks / irregular blinks ••••••••	Normal operations, GNSS no lock	Go outdoors
3 short blinks ••• •••	Searching for network	Go outdoors or anywhere with 4G LTE coverage Re-insert the SIM card
1 short blink followed by 2 long blinks •--- •---	4G LTE failure a) Missing / invalid SIM card b) Telco subscription expired	Re-insert the SIM card Be in your Telco's 4G LTE coverage (Note: while the tracker has Roaming enabled by default, you might need to configure the APN settings)
3 short blinks followed by 1 long blink •••--- •••---	Data transmission failure a) Low power b) Drop in 4G LTE signal strength c) Server not available	Stop using the tracker, recharge it, and try again. If left alone, tracker will auto restart to try to resolve the issue after 1 min
Unexpected Errors		
1 short blink followed by 1 long blink •- •-	Abnormal readings from IMU	If the issue persists, please contact technical support.
1 short blink followed by 3 long blinks •--- •---	Abnormal readings from GNSS	If the issue persists, please contact technical support.

2 short blinks followed by 1 long
blink



Authentication failure

- a) Security tokens no longer valid
- b) Tracker is officially decommissioned

If the issue persists, please contact technical support.
