



User Manual



PLB1

**Personal Locator
Beacon**

English

www.oceansignal.com



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OWNER DETAILS

Name

Organisation

CONTACT

Tel.

Email

IN CASE OF EMERGENCY



USE ONLY IN CASE OF GRAVE OR IMMINENT DANGER

- PULL THE ANTENNA OUT FROM THE BODY TO ITS FULL EXTENT USING THE BLACK TAB
- LIFT THE FLAP UP
- PRESS THE ON KEY FOR ONE SECOND TO ACTIVATE THE BEACON. THE GREEN LED WILL FLASH TO INDICATE ACTIVATION
- RELEASE THE ON KEY
- ENSURE THE ANTENNA IS HELD VERTICALLY WHILE OPERATING THE PLB
- THE STROBE LIGHT WILL START FLASHING TO INDICATE IT IS ACTIVATED



NOTE: Refer to section 3.2 for deactivation instructions.









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1. GENERAL

1.1 Exposure to Electromagnetic Energy

This product complies with EN50371 (EU) and RSS-102 (Canada).

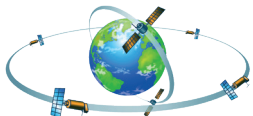
1.2 Warnings

-  It is a legal requirement to register your PLB with your National Authority.
-  Only use your PLB1 in a situation of grave and imminent danger. Deliberately misusing your PLB1 or accidental activation may result in prosecution and a fine.
-  Your PLB1 contains lithium batteries. Please see section 5 for information on safe transportation.
-  The battery in your PLB1 should be replaced immediately if it has been activated, or if the test indicator shows the battery as "used", or if the expiry date marked on the unit has been exceeded.
-  THE PLB1 WILL NOT FLOAT, unless fitted with a flotation pouch.
-  The PLB1 is not designed to be operated floating in water. Hold above the water when activated.
-  Read these instructions carefully. Failure to follow the guidance in this manual may result in incorrect operation and loss of warranty.
-  Always refer to the manufacturer for specific instructions before installing this product directly to your life jacket or other personal flotation device.

1.3 COSPAS/SARSAT System

The COSPAS/SARSAT system uses two satellite arrays to provide distress alert and location data to search and rescue authorities. The GEOSAR system can provide near immediate alerting within the coverage of the receiving satellite. The LEOSAR system provides coverage of the polar region beyond the range of the GEOSAR system.

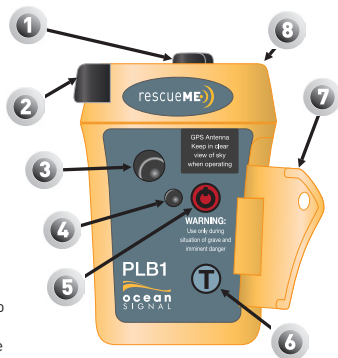
Ground receiving stations, referred to as Local Users Terminals (LUTs) receive and process the satellite downlink signal to generate the distress alerts, which are then received by Mission Control Centres (MCCs) which then forward the alert to Rescue Co-ordination Centres (RCCs), Search and Rescue Points of Contacts (SPOCs) and other MCCs.



GEOSAR – Geostationary Earth Orbit
LEOSAR – Low-altitude Earth Orbit

2. PLB1 OVERVIEW

1. Antenna rewind knob
2. Antenna pull grip
3. Strobe light
4. Indicator LED
5. ON key (under flap)
6. Test key (under flap)
7. Lift up flap
8. Lanyard fixing (on rear of case)







The unique cradle mounting system allows the PLB to be easily attached to a belt, clothing or other protective equipment. Simply fit the rubber strap around the mounting point and attach to the cradle as shown.

The cradle securely clips to the PLB at the four fixing points.

The PLB can also be carried in the supplied (Australia and New Zealand units only) flotation pouch. Secure the pouch to your clothing using the belt loop on the rear of the pouch.



For non AUS/NZ customers the Flotation pouch is available as an accessory with part number 731S-04078.


-  **When attaching the PLB1 to a life jacket or other personal flotation device ALWAYS refer to the manufacturer's instructions for correct installation.**
-  **Secure PLB1 using lanyard attachment**
-  **Once affixed using the cradle or pouch, the PLB should be securely tethered to your person or clothing using the supplied lanyard. This will guard against accidental loss if the PLB is unknowingly removed from its housing.**
-  **Following registration (see section 5.7) the PLB is supplied with a clear label to protect the UIN information on the rear of the product. Fit this before use.**

3. OPERATION

WARNING: USE ONLY IN SITUATIONS OF GRAVE AND IMMINENT DANGER MISUSE MAY RESULT IN A SEVERE PENALTY

Ensure that your PLB1 is always fitted with an unused battery that is within the marked expiry date. Failure to do so may result in reduced operation time when used in a real emergency. Please observe the recommendations on testing in section 4.

3.1 Activation

- Only activate your PLB in situations requiring emergency assistance from the rescue authorities. Deliberate misuse of your PLB may result in a fine.
- To activate your PLB in an emergency, pull the black antenna tab out completely.
- Lift the protective flap and press the  key for one second until the LED flashes green, then release the key. Do not force the flap through more than 180°, otherwise the hinge may break.
- During operation the green LED will flash green once every five seconds while the GPS is obtaining a fix. Once a fix is obtained, the LED will flash green quickly three times
- Each time a 406MHz transmission is made the LED will flash quickly five times; green for transmission with a GPS position and red for a transmission without a position.
- The LED will flash red every 2.5 seconds while the 121.5MHz homing beacon is active.
- When operating the PLB1 over water, tether the beacon to your body or the life raft. Keep the PLB1 clear of water when operating. When operating on land, place the PLB1 flat on the ground if possible.
- Keep your PLB1 laying flat with the antenna standing vertically. Keep the area marked "GPS Antenna" free from obstruction, which can interfere with the GPS reception.


NOTE:


The PLB1 does not transmit an alert until approximately 50 seconds has elapsed. This allows time to deactivate the unit if accidentally turned on.

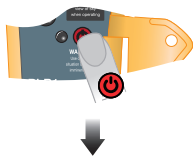


3.2 Deactivation

To deactivate your PLB1 after use, or if it is accidentally activated,

press the  key for one second until the indicator LED flashes red twice, then release. Rewind the antenna by turning the knob on the top of the PLB clockwise.

 **Do not push the antenna back into the PLB1 as this may cause it to be damaged.**



3.3 False Alerts

False alerts cause the rescue authorities unnecessary time and expense. To avoid false alerts make sure your PLB1 is safely stowed with the protective cover closed and the antenna fully wound in. Make sure that there is no excessive pressure applied to the protective cover. Ensure that anyone carrying the PLB1 is fully aware that this device is for emergencies and should only be used in situations of grave and imminent danger.



If you accidentally activate your beacon or otherwise set it off when a rescue is not required, contact your local emergency services as soon as possible and advise them of your beacon's 15 digit HEX code (UIN), your current location and the time the beacon was first activated.

The UIN is printed on the label on the rear of the PLB1.

For USA phone: 1-800-851-3051 (USAF Rescue Coordination Center)


For UK phone: +44 (0) 1326 317575 (UKCG)


4. TESTING

- NOTE:** Allow at least 30 seconds between each test and/or activation.
After all indicators have ceased flashing, the unit may still remain active for a short period of time.

Routine testing of your PLB1 is recommended to ensure it is in good working order when needed. Follow the guidance notes below on the frequency that tests should be carried out. Remember that each test will reduce the battery capacity slightly and reduce the operation time of your PLB1 during an emergency.




4.1 Beacon Test

-  Pull the antenna out fully before commencing the test.
Retract the antenna after the test.

- NOTE:** To test your PLB1 is functioning correctly, press and hold the  key. The LED will illuminate red to indicate the switch is depressed, followed by the LED flashing red rapidly. The key may now be released. After a delay, the strobe light will flash once and the indicator LED will flash to show the pass or fail status.
Note: This status indication is repeated a second time after a short delay.

The number of green/amber flashes in each group indicates the battery status as shown in the table below.

Green /Amber Indicator		Red Indicator
<i>Changes to Amber after 1 hour of use</i>		
No of Flashes	No of Hours Use	Type of Failure
1 Flash	0 to 1hr 59min	121.5MHz homer
2 Flashes	2hrs to 3hrs 59min	406MHz generation
3 Flashes	4hrs to 5hrs 59min	406MHz power amp
4 Flashes	6hrs to 7hrs 59min	Replace battery
5 Flashes	8hrs to 9hrs 59min	Other failure
6 Flashes	10hrs +	

-  Because the test transmits a short burst on the aircraft distress frequency of 121.5MHz, please only carry out this test in the first five minutes of each hour.
-  It is recommended to test your PLB1 once a month.
-  The amber test result is an electronic witness that indicates the battery has been used for over one hour or the allowed number of tests has been exceeded. The PLB1 will still operate normally in distress, but the battery should be replaced to ensure the full operating life when your PLB1 is needed.

4.2 GPS Test

- ! As testing the GPS Receiver expends significant amounts of battery energy do not test the GPS operation more than once year. Testing the GPS receiver is limited to 10 tests over the lifetime of the battery, after this the GPS test will fail to activate.
- ! This test must only be performed where the PLB has a clear and unobstructed view of the sky. This is required to allow the GPS receiver to acquire a signal from sufficient satellites to allow it to determine a position. Make sure the area marked "GPS Antenna" is not obstructed.

Press and hold the **T** key. The LED will illuminate red to indicate the key has been pressed, then start flashing. Shortly after, the LED will cease flashing and become a steady red light. The key can now be released.

During the GPS test the LED will repeat a long red flash followed by a short green flash until either a position fix is obtained or the GPS test fails. A successful test will be indicated by the strobe flashing and the LED flashing green. The number of green flashes indicates one more than the number of GPS tests remaining (eg. 8 flashes = 7 tests remaining). A failure is indicated by the LED flashing red. The

test can be ended by holding the **T** key for five seconds.

4.3 Special note for Commercial and DoD Users

Should it not be possible to maintain the suggested test schedules, the interval for the two tests detailed above is:

Recommended:

Section 4.1 Beacon Test: 6 monthly

Required:

Section 4.1 Beacon Test: Annually

Section 4.2 GPS Test: Annually

5. APPENDIX

5.1 Maintenance

Your PLB1 requires little maintenance except periodic cleaning, if required. Always use a damp cloth to clean the case and dry thoroughly. Do not use solvents or other cleaning fluids as this may cause the plastics to deteriorate. Ensure the antenna is free to unwind.

5.2 Battery

The PLB1 contains Lithium batteries for long operating life. Your battery must be replaced after the expiry date or after the PLB1 has been activated, even if only for a short period of time.



Battery replacement must be done at an Ocean Signal authorised battery replacement centre.

5.3 Transport

When shipping your PLB1 the following guidance and regulations should be followed, but you are advised to contact your nearest battery replacement centre or Ocean Signal prior to shipping as regulations may have changed. The PLB1 battery contains <2g of lithium.

Always pack the PLB1 securely in a stout cardboard carton. Ocean Signal advises that you keep the original packaging in case of return for service.

For surface transport the PLB1 may be shipped 'excepted' under special provision 188.

For air transport the PLB1 should be shipped as category UN3091 and packed under IATA packing instruction 970 section II. If you are hand carrying your PLB1 on an aircraft please contact your airline for advice.

5.4 Disposal

Care should be taken when disposing of your PLB1 should it be no longer required. It is recommended to remove the battery from the PLB1 by removing the case lid. The case screws are covered by the top label. Dispose of the battery in accordance with local waste regulations. Please note that the PLB1 is not user serviceable and removing the lid will invalidate the warranty.

5.5 Specifications

406Mhz Transmitter

Frequency 406.037 MHz \pm 1KHz
 Output Power
 Modulation

5W Typical
 Phase \pm 1.1 Radians Pk
 (16K0G1D)

Encoding Biphasic L
 Rate 400 bps

121.5MHz Transmitter

Frequency 121.5 MHz
 Output Power
 Modulation
 Modulation Depth
 Frequency Stability
 Duty Cycle ~35%

25-100mW PEP
 Swept Tone AM (3K20A3X)
 ~97%
 \pm 50ppm

Low Duty Cycle Strobe

Light Type High Intensity LED
 Light Colour
 Intensity 1 candela (typ)
 Flash Rate

White
 20-30 per minute

Battery

Type
 Operating >24hrs @-20°C
 Replacement Interval

Lithium Manganese Dioxide
 (LiMnO₂)
 7 years

GPS Receiver

Satellite Channels
 Sensitivity -148dBm
 Cold Start Re-acquisition
 GPS Antenna

66 [Acquisition]
 -163dBm
 Microstrip Patch

General

Height of Body
 Width of Body
 Depth of Body
 Weight 115grams

76mm
 52mm
 32mm

Environmental

IEC60945 Category
 Operating Temperature
 Storage Temperature
 Waterproof

Portable
 Class 2 -20C to +55C
 Class 2 -30C to +70C
 15m depth

5.6 Approvals

For approval documents see: <https://oceansignal.com/approvals-documents/>

5.6.1 USA

The PLB1 is approved for use in the USA under CFR47 part 95K,

5.6.2 Canada

The PLB1 is approved for use in Canada with AIS only under RSS287.

5.6.3 European Declaration of Conformity

Hereby, Ocean Signal Ltd. declares that the radio equipment type PLB1 is in compliance with Directive 2014/53/EU.

Country of Intended Use (The Country of Intended Use table is an EU requirement only)

Austria	✓	Finland	✓	Latvia	✓	Romania	✓
Belgium	✓	France	✓	Lithuania	✓	Slovakia	✓
Bulgaria	✓	Germany	✓	Luxembourg	✓	Slovenia	✓
Cyprus	✓	Greece	✓	Malta	✓	Spain	✓
Czech Republic	✓	Hungary	✓	Netherlands	✓	Sweden	✓
Denmark	✓	Iceland	✓	Poland	✓		
Estonia	✓	Italy	✓	Portugal	✓		

5.6.4 UK

The PLB1 is compliant with UK Radio Equipment Regulation 2017

5.6.5 Australia / New Zealand

The PLB1 is compliant with AS NZS 4208.2 and AS NZS 4869.4

6. REGISTRATION

To register your beacon, contact your national registration authority via post, email or online. Provide your 15 digit HEX ID (UIN), 5 digit checksum if required, your contact details and emergency contact information. Some countries also require additional information such as boat type and identification or alternative emergency contacts.

For UK registrations go to:

www.gov.uk/register-406-beacons

For USA registrations go to:

www.beaconregistration.noaa.gov/

7. WARRANTY INFORMATION

7.6.1 Limited Warranty

Your Ocean Signal product is warranted against manufacturing defects in materials and workmanship for a period of 2 years from the date of purchase and in accordance with the following conditions.

Ocean Signal will at its discretion, repair or replace faulty product free of charge excluding the cost of shipping. Proof of purchase from the original purchaser shall be required in order for a warranty claim to be valid. All claims shall be made in writing to Ocean Signal or an approved service dealer or distributor.

Ocean Signal shall not be liable to the buyer under the above warranty:

- for any repairs or modifications carried out on the product using parts that are not supplied or approved by the manufacturer Ocean Signal including batteries and for work carried out other than by Ocean Signal or approved service dealers,
- for any part, material or accessory that is not manufactured by Ocean Signal, the consumer will be covered by the guarantee / warranty offered to Ocean Signal by the manufacturer or supplier of such a component,
- for product which has not been fully paid for,
- for any product supplied by Ocean Signal to a customer under an alternative warranty or commercial agreement,
- for the cost of shipping product to and from the customer.

The Battery is only warranted until the date of expiry and provided the unit is tested in accordance with the information in the user manual as noted by the electronic witness stored within the product.

The following specific item is excluded from this warranty:

- Damage to the antenna

This warranty does not affect your statutory rights.

7.6.2 Extended Warranty



ENTER YOUR PRODUCT DETAILS TO GAIN THE EXTENDED WARRANTY PERIOD

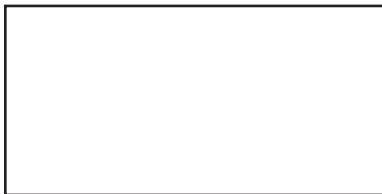


Apply for free at www.oceansignal.com/warranty

By entering your product details you can add 3 years to the warranty period.
For full details on extended warranty on this product see www.oceansignal.com/warranty.

For further assistance please contact our Technical Service Department.
Email: info@oceansignal.com

8. YOUR BEACON DETAILS



In the event of a false activation please contact the nearest Coast Guard Centre or Rescue Coordination Centre to explain that the PLB3 has been activated in error and there are no follow up rescue actions required.

Information required is:

- the 15 digit HEX ID (UIN) shown above
- the date, time, duration and cause of activation
- the location at the time of de-activation

ATTACH YOUR REGISTRATION DOCUMENTS HERE FOR SAFE KEEPING

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