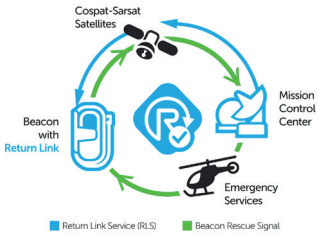
1. ABOUT YOUR RESQLINK AIS

1.1 COSPAS/SARSAT System

The basic Cospas-Sarsat System is composed of:

- distress radio beacons (ELTs for aviation use, EPIRBs for maritime use, and PLBs for personal use) which transmit signals during distress situations
- instruments on board satellites in geostationary and low-altitude Earth orbits which detect the signals transmitted by distress radio beacons
- ground receiving stations, referred to as Local User Terminals (LUTs), which receive and process the satellite downlink signal to generate distress alerts
- mission Control Centers (MCCs) which receive alerts produced by LUTs and forward them to Rescue Coordination Centers (RCCs), Search and Rescue Points Of Contacts (SPOCs) or other MCCs



The Cospas-Sarsat System includes two types of satellites:

- Low-altitude Earth orbit (LEO) which form the LEOSAR System
- Geostationary Earth orbit (GEO) which form the GEOSAR System

The future Cospas-Sarsat System will include a new type of satellite in the medium-altitude Earth orbit (MEO) which will form the MEOSAR System.

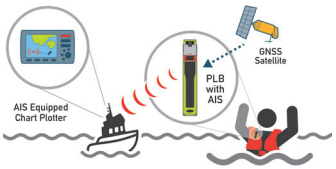
1.2 Return Link Service (RLS)

The Galileo Return Link Service (RLS) is a free-of-charge global service available to Cospas-Sarsat RLS compatible beacons. The RLS feature is an indication on the PLB3 that confirms to the User that the distress signal from the PLB3 has been localised by the Cospas-Sarsat system and is being sent to the SAR authorities. It does NOT mean that a search and rescue mission has been launched, but only confirms that the distress alert has been received by the Cospas-Sarsat system and is being routed to the appropriate SAR agencies. The RLS aims to send an acknowledgment to the beacon within 30 minutes following activation (the response may not be received by the beacon for significantly longer). RLS is an optional function and may not be permitted in all countries. The full RLS specification can be found here:
https://gsc-europa.eu/sites/default/files/sites/all/files/Galileo-SAR-SDD.pdf

1.3 AIS System

AIS systems operate on VHF radio bands and transceivers are fitted to all commercial shipping and an ever growing number of recreational vessels globally. Shortly after activation an AIS Man Overboard device will activate an alarm on all AIS equipped vessels within VHF range alerting them to the fact that a person is in the water needing assistance. Often it is a vessel in the close vicinity of an incident that is able to react and effect a rescue quicker than the emergency services.

Emergency service craft are fitted with AIS receivers allowing them to pinpoint a casualty in the water more precisely than any other system.



IN CASE OF EMERGENCY

Use only in situations of grave and imminent danger

MANUAL ACTIVATION

Following activation ensure the antenna is fully released and the unit has the best possible view of the sky for optimal performance.

- If the strobe light does not start flashing, manually switch the ResQLink AIS on by pressing the ON Key
- Always turn off the ResQLink AIS immediately after you have been rescued to avoid interference with other users.
- To turn off the beacon press and hold the TEST/OFF button until the red LED flashes twice.

LED Indications with RLS Enabled

LED	When	Transmit	GNSS	RLS
(x1)	Every 5 s		Searching	
(x3)	Once		Fix acquired	
(x5)	At transmit	406MHz	No Fix	Request sent
(x5)	At transmit	406MHz	Fix acquired	Request sent
(x8)	At transmit*	AIS	No Fix	
(x8)	At transmit*	AIS	Fix acquired	
(x1)	Every 2.5 s**	121MHz		Reply not received
(x1)	Every 2.5 s**	121MHz		Reply received
(x1)	Every 2.5 s			

LED Indications for units configured with non-RLS Protocol

LED	When	Transmit	GNSS
(x1)	Every 5 s		Searching
(x3)	Once		Fix acquired
(x5)	At transmit	406MHz	No Fix
(x5)	At transmit	406MHz	Fix acquired
(x8)	At transmit*	AIS	No Fix
(x8)	At transmit*	AIS	Fix acquired
(x1)	Every 2.5 s**	121MHz	
(x1)	Every 2.5 s		

NOTE:
Non-RLS Protocol is usually country specific and is not a user changeable function.

* The AIS transmissions will show as 8 flashes (1 every 2 seconds) as a sequence repeated once every minute.

** The 121MHz Homer will not transmit until after the first 406MHz transmission.

Warranty Information

Limited Warranty

Your ACR Electronics 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.

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

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

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.

Extended Warranty

ENTER YOUR PRODUCT DETAILS TO GAIN THE EXTENDED WARRANTY PERIOD

Extend your warranty for free at

www.acrartex.com/support/warranty/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.acrartex.com/products/resqlink-ais

DOWNLOAD THE FULL USER MANUAL

www.acrartex.com/products/resqlink-ais

For further assistance please contact our Technical Service Department.
Email: techsupport@acrartex.com

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ATTACH YOUR BEACON DETAILS HERE

OWNER DETAILS

Name	
Organization	

CONTACT

Tel.	
Email	

BEACON REGISTRATION

It is the owner's responsibility to register this beacon with the appropriate national authority before operation.

Documentation is provided within the packaging with information regarding registration with the relevant body to comply with the configuration requirements of the beacon.

USE YOUR SMART PHONE TO FIND OUT ALL ABOUT YOUR BEACON

Android iOS

Download on the App Store

GET IT ON Google Play

NFC Communication Enabled

ACR

ResQLink AIS

2. OPERATION

WARNING: Use only in situations of grave and imminent danger. Deliberate misuse may result in a severe penalty.

Ensure that your ResQLink AIS is always fitted with an unused battery that is within the marked expiry date. Failure to do so may result in reduced operating time when used in a real emergency. Please observe the recommendations on testing in section 3 of the User Information.

When fitted to a life jacket, to prevent accidental activation, ensure the clear cover is fitted over the grey slider as described in Section 5 of the User Manual with enough free length of the activation tape so it will not pull on the slider during normal activity of the life jacket. When carrying the ResQLink AIS ensure the Arming Slider is in the up position.

To prevent loss always secure the ResQLink AIS to your person or life jacket using the supplied lanyard.

Hold the ResQLink AIS with the antenna standing vertically. Keep the area marked 'DO NOT OBSTRUCT' below the red arming slider in clear view of the sky. Covering this area will interfere with the GNSS reception and may reduce position accuracy.

2.1 Activation when installed in a life jacket

When correctly packed in a life jacket the ResQLink AIS will activate when the life jacket inflates. Should the life jacket fail to fully inflate, it may be necessary to assist the Activation Slide by pulling on the Activation Tape to fully release the Activation Slide.

For installation details see the full User Manual:

acrartex.com/products/resqlink-450

2.2 Manual Activation

Only activate your ResQLink AIS in situations requiring assistance in an emergency. Deliberate misuse of your ResQLink AIS may result in a fine.

- **To manually activate your ResQLink AIS in an emergency:**
  Slide the red Arming Slide down.
  Slide the grey Activation Slide to the Left or Right.

Take great care to keep well clear of eyes and face as the antenna will be released very quickly. Keep at least 30cm (12") clear to avoid possible injury.

- **If the ResQLink AIS fails to activate when the slide is removed, press the ON Key until the green LED (blue if RLS is enabled) illuminates for 1 second and starts flashing. Release the key.**

2.3 Optical Indications on activation

- The LED green will illuminate (blue if RLS is enabled) for 1 second.
- The strobe light will start flashing.
- Within 30 seconds of activation, the indicator LED will flash indicating AIS transmission.
- Within 50 seconds* of activation, the indicator LED will flash a quick burst of 5 indicating 406MHz transmission.

2.4 Deactivation

To deactivate your ResQLink AIS after use or if it is accidentally activated, press the TEST/OFF Key until the red LED flashes twice, then release.

3.2 GNSS Test

This test should only be performed where the ResQLink AIS has a clear and unobstructed view of the sky. This is required to allow the GNSS receiver to acquire a signal from sufficient satellites to allow it to determine a position. Ensure the area marked "GNSS Antenna" is not obstructed.

Press and hold the TEST 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. Release the TEST Key now.

During the GNSS test the LED will repeat a short green flash until either a position fix is obtained or the GNSS test fails.

A successful test will be indicated by long red followed by a number of green LED flashes and an unsuccessful test will be indicated by a number of red LED flashes. The number of flashes indicates the number of GNSS tests remaining (e.g. 7 flashes = 7 tests remaining).

The test result flashes will be repeated after 2 seconds.

If there are 10 or more tests remaining then the LED will flash 10 times only (repeated).

The ResQLink AIS has the capacity to carry out 60 GNSS tests within the lifetime of the battery.

If there are no tests remaining immediately after the current test, the LED will flash green or red rapidly for three seconds (not repeated) depending on whether the GNSS test was successful or not, respectively.

When there are no tests remaining, the LED will flash red rapidly for three seconds (not repeated).

The test can be ended at any time by holding the TEST key for three seconds.

3.3 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 3.1 Functional Test:	monthly
Section 3.2 GNSS Test:	6 monthly
Required:	
Section 3.1 Functional Test:	Annually
Section 3.2 GNSS Test:	Annually

For further information regarding Self Test and Self Test history use the Ocean Signal App to connect to your PLB3 using Near Field Communication (NFC). GET THE MOBILE APP.:

Android iOS

4. APPROVALS

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

4.1 USA

The PLB3 is approved for use in the USA under CFR47 part 95K,

4.2 Canada

The PLB3 is approved for use in Canada with AIS only under RSS287.

4.3 European Declaration of Conformity

Ocean Signal Ltd. declares the radio equipment type PLB3 is in compliance with Dir. 2014/53/EU.

4.4 UK

The PLB3 is compliant with UK Radio Equipment Regulation 2017

4.5 Australia / New Zealand

The PLB3 is compliant with AS NZS 4208.2 and AS NZS 4869.4

3. TESTING

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

When carrying out any test the antenna should be extended.
If the ResQLink AIS activates during the removal of the antenna retainer, press and hold the Test/Off button until the LED flashes red twice to deactivate.
See section 2.6 of the user manual for antenna rewind instructions.

Should a test fail it is advised to repeat the test to confirm failure before returning the PLB3 to Ocean Signal or an approved service agent.

3.1 Functional test

To test your ResQLink AIS is functioning correctly, press and hold the TEST/OFF Key. The LED will illuminate red to indicate the key has been pressed, then start flashing. Release the TEST Key. After a short pause the strobe will flash and the indicator LED will produce a flash sequence.

The flash sequence indicates the total number of hours that the battery has already been in use, up to the time that the test was initiated.

3.1.1 LED Indications with RLS Enabled

No. of Flashes	Functional Test Pass	Fail
1	0 to 59min 1hr to 1hr 59min	121.5MHz homer
2	2hrs to 3hrs 59min	406MHz power
3	4hrs to 5hrs 59min	AIS signal
4	6hrs to 7hrs 59min	AIS Power
5	8hrs to 9hrs 59min	Battery failure
6	10hrs +	No GNSS

3.1.2 LED Indications for units configured with non-RLS Protocol

No. of Flashes	Functional Test Pass	Fail
1	0 to 59min 1hr to 1hr 59min	121.5MHz homer
2	2hrs to 3hrs 59min	406MHz power
3	4hrs to 5hrs 59min	AIS signal
4	6hrs to 7hrs 59min	AIS Power
5	8hrs to 9hrs 59min	Battery failure
6	10hrs +	No GNSS

Because this test transmits a short burst on the aircraft distress frequency of 121.5MHz, please only carry out this test in the first 5 minutes of each hour.
The battery must be replaced either prior to the expiry date shown on the rear label or after the ResQLink AIS has been activated.
If, during a self test, the LED flashes magenta or amber the ResQLink AIS may not have sufficient energy to operate for the specified 24-hour period. Battery replacement is recommended.

4.6 Specifications

AIS transmission

Transmit Power (EIRP)	1Watt
Frequency	161.975/162.025MHz ±500Hz
Baud rate	9600baud
Synchronisation	UTC
Messages	Message 1 (Position), Message 14 (Status)
Repetition interval	8 messages/minute Message 14 sent twice every 4 minutes

406MHz Transmitter

Frequency	406.031 MHz ±1KHz
Output Power	5W Typical
Modulation	Phase ±1.1 Radians Pk (16K0G1D)
Encoding	Biphase L
Rate	400 bps

121.5MHz Transmitter

Frequency	121.5 MHz
Output Power (PEIRP)	25-100mW
Modulation	Swept Tone AM (3K20A3X)
Modulation Depth	~97%
Frequency Stability	±50ppm
Duty Cycle	~35%

Visible Light Strobe

Light Type	High Intensity LED
Light Color	White
Intensity	>1 candela
Flash Rate	20-30 per minute

Infra Red Strobe

Light Type	IR LED
Light Colour	850nm
Intensity	7.5mW/sr
Flash Rate	20-30 per minute

Battery

Type	Lithium/Iron Disulfide (Li/FeS2)
Operating lifetime	>24hours @ -20°C (-4°F)
Lithium Metal Weight (for air transport)	<2mg
Replacement Interval	6 years from date of manufacture or 5 years from being placed into service

GNSS Receiver

Satellite Channels	72 acquisition 28 tracking
Sensitivity	-167dBm
Cold Start Re-acquisition	-148dBm
GPS Antenna	Microstrip Patch

Environmental

Temperature range (operational)	Class 2 -20°C (-4°F) to +55°C (+131°F)
Temperature range (storage)	Class 2 -30°C (-22°F) to+70°C (+158°F)
Damp Heat (humidity)	40°C (104°F) at 93%
Drop (hard surface)	1m : 6 sides)
Water immersion	>10m (1.0bar) : >60minutes
Thermal Shock	45° into 100mm of water : >1hour

General

Category	2
Class	2
Group	3
Size (Length / Width / Depth)	200mm (7.87") / 36mm (1.41") / 22mm (0.86")
Weight	190g (0.42lbs)