Category 1 and 2 406MHz EPIRB (With AIS and RLS)

DOWNLOAD THE FULL USER MANUAL
www.acrartex.com/products/globalfix-v5-ais-epirb

OWNER DETAILS

Name

Vessel

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 required configuration of the beacon.

ATTACH YOUR BEACON DETAILS HERE

GET THE MOBILE APP. TO SEE YOUR BEACON'S TEST INFORMATION

Android iOS

5. Specifications

406MHz Transmitter	
Transmit Power (EIRP)	12W
Frequency	406.031 MHz ±1KHz
Modulation	Phase ±1.1 Radians (16K0G1D)
Encoding	Biphase L
Rate	400 bps
AIS Transmitter	
Transmit Power (EIRP)	1Watt±3dB
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
121.5MHz Transmitter	
Transmit Power (PERP)	50mW±3dB
Frequency	121.5 MHz
Modulation Duty Cycle	>35%
Modulation Factor	0.85 to1.00
Frequency Stability	±50ppm
Duty Cycle	>98%
Strobe and Night Vision Lights	
Light Type	High Intensity LED & Infrared (IR)
Light Colour	White and IR
Average Intensity Visible	>1 candela
Average Intensity Night Vision Light	15mW/sr
Flash Rate	24 per minute (nom.)
Battery	
Type	Lithium Iron Disulphide (LiFeS2)
Operating Time	>48Hours @ -20°C
Battery Replacement Period	10 years
GNSS Receiver	
Satellite Channels	72 acquisition
Sensitivity	-167dBm
Cold Start / Re-acquisition	-148dBm / -160dBm
GNSS Antenna	Microstrip Patch
General	
Dimensions of EPIRB (Inc. antenna)	18.5 x 4.3 x 4.36 in. (470 x 109 x 111 mm)
Weight	1.78 lbs (810g)
Dimensions of Auto Release Housing	6.2 x 15.75 x 5.9 in. (157 x 400 x 150 mm)
Weight (Inc. EPIRB)	1,912grams (4.25lbs)
IEC60945 Category	Portable
Operating Temperature	Class 2 -20C to +55C
Storage Temperature	Class 2 -30C to +70C
Waterproof (EPIRB)	10m depth for 1 hour
Auto Release Depth	4m maximum

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IN CASE OF EMERGENCY

USE ONLY IN SITUATIONS OF GRAVE AND IMMINENT DANGER

MANUAL ACTIVATION

- Raise the red safety cover breaking the tape seal.
- Press the ON/OFF key down for 1 to 2 seconds until the green LED (blue if RLS is enabled) illuminates for 1 second and starts flashing. Release the key.
- Always turn off the GlobalFix V5 immediately after you have been rescued to avoid interference with other users.
- To turn off the beacon press and hold the ON/OFF key until the LED flashes red twice, then release.

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

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	RLS Request sent
(x5)	At transmit	406MHz	Fix acquired	RLS Request sent
(x8)	At transmit*	AIS	No Fix	
(x8)	At transmit*	AIS	Fix acquired	
(x1)	Every 2.5 s**	121MHz		RLS Reply not received
(x1)	Every 2.5 s**	121MHz		RLS 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		

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

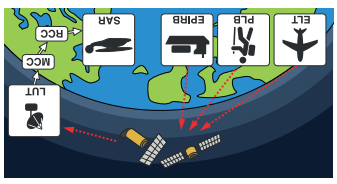
** The 121MHz Homer will not transmit until after the second 406MHz transmission.

1. ABOUT YOUR AIS EPIRB

1.1 COSPAS/SARSAT System

The basic Cospas-Sarsat concept is illustrated in the adjacent figure. The 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 Users 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:

- satellites in low-attitude Earth orbit (LEO) which form the LEOSAR System
- satellites in 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

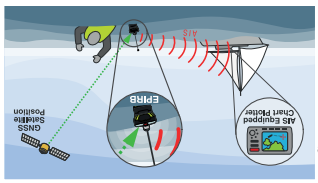
The Galileo Return Link Service (RLS) is a free-of-charge global service available to Cospas-Sarsat RLS compatible beacons. The new functionality, currently offered uniquely by Galileo, enables a communication link that relays Return Link Messages (RLM) back to the originating beacon through the Galileo Navigation Signal in Space.

The RLS feature is an indication on the GlobalFix V5 that confirms to the User that the distress signal from the GlobalFix V5 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. On activation an AIS Man Over Board 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.



2. OPERATION

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

Ensure that your beacon 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 9 of the User Manual.

Category 1 beacons are designed to be automatically deployed and activated in the event of a vessel sinking. The beacon may also be manually taken out of the Category 1 bracket and activated manually or immersed in water to activate automatically.

Category 2 beacons are designed to be manually deployed from the Category 2 bracket and then activated manually or placed in the water to activate automatically.

To prevent loss always secure the beacon to your person or life raft using the attached lanyard.

When active the beacon is designed to operate while floating in the water. For best operation do not take the beacon into a life raft or obstruct the upper case.

2.1 Optical Indications on activation

- The green LED will illuminate (blue if RLS is enabled) for 1 second.
- The strobe light will start flashing.
- Within 1 minute of activation, the indicator LED will flash a quick burst of 5 indicating 406MHz transmission*.
- AIS transmission will be indicated by the LED flashing 8 times at 2 second intervals (green if a GNSS fix has been acquired or red if there is no fix). This will not happen until after the first 406MHz transmission,

2.2 Deactivation

To deactivate your beacon after use or if it is accidentally activated, press the ON/OFF Key for 1 to 2 seconds until the LED flashes red twice, then release.

2.3 Category 1 Automatic Activation

When correctly installed in the Category 1 housing the beacon will automatically deploy before the housing sinks to a depth of 4m. As the beacon is released from the housing it will float to the surface, activating automatically.

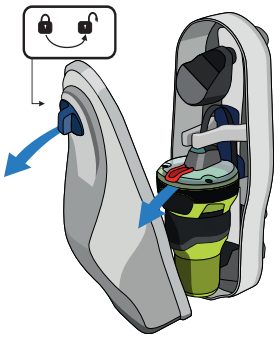
For installation details see the full User Manual:

www.acrartex.com/products/globalfix-v5-ais-epirb

* The first 406MHz transmission is made between 48 and 52 seconds after activation.

2.4 Category 1 Manual Activation

- Rotate the blue knob on the front of the housing counter clockwise
- Pull the front of the housing free and allow to fall free
- Pull the beacon with steady pressure from the bracket



- Release the lanyard and attach it securely to yourself or the life raft

DO NOT ATTACH THE BEACON TO THE VESSEL AS THIS MAY SINK SUBMERGING THE BEACON OR YOU MAY DRIFT AWAY FROM THE VESSEL

- Place the beacon in the water where it will activate automatically

Should the beacon not activate raise the red safety cover and press the ON/OFF key for 1 to 2 seconds (Until the green LED starts to flash).

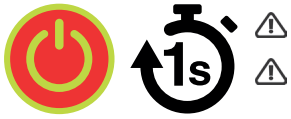
2.5 Category 2 Manual Activation

- Press the tab marked PUSH and pull the GlobalFix V5 EPIRB away from the bracket
- Release the lanyard from under the rubber cover and attach it securely to yourself or the life raft

DO NOT ATTACH THE BEACON TO THE VESSEL AS THIS MAY SINK SUBMERGING THE BEACON OR YOU MAY DRIFT AWAY FROM THE VESSEL

- Place the beacon in the water where it will activate automatically

Should the beacon not activate raise the red safety cover and press the ON/OFF key for 1 to 2 seconds (Until the green LED starts to flash).



ENSURE THE ANTENNA IS FULLY RELEASED

DO NOT LEAVE THE BEACON IN THE CATEGORY2 BRACKET IF THE VESSEL IS IN DANGER OF SINKING

3. TESTING

Routine testing of your beacon once a month is highly recommended to ensure it is in good working order. Follow the guidance notes in the User Manual for the frequency that tests should be carried out. Each test reduces operation time of your beacon in an emergency.

3.1 Functional test

To test your beacon is functioning correctly, press and hold the TEST key for 1 to 2 seconds. The LED will illuminate red to indicate the key has been pressed, then start flashing. Release the TEST Key now. After a short pause the strobe will flash and the indicator LED will produce a flash sequence.

A passed test 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 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 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 GlobalFix V5 has been activated.

If, during a self test, the LED flashes magenta or amber the GlobalFix V5 may not have sufficient energy to operate for the specified 48-hour period. Battery replacement is recommended.

NOTE: More information regarding test results is available using the Mobile App.

3.2 GNSS Test

This test should only be performed where the GlobalFix V5 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.

It is recommended that a GNSS test is carried out at least once every six months to ensure correct operation of the GlobalFix V5.

Press and hold the TEST key for 5 seconds. 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 when the LED is steady.

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

A successful test will be indicated 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 GlobalFix V5 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 on key release (not repeated).

The test can be ended at any time by holding the TEST key for 1 to 2 seconds.

For further information regarding Self Test and Self Test history use the ACR Mobile App to connect to your GlobalFix V5 using Near Field Communication (NFC).

4. APPROVALS

In addition to Cospas Sarsat Type Acceptance, the EPIRB3 complies with the following National Approvals:

4.1 European Union

Complies with the requirements of the EU Marine Equipment Directive (MED)

4.2 UK

Complies with MSN 1874 as amended

See "www.acrartex.com/products/globalfix-v5-ais-epirb" for documentation.