

# AIS Link<sup>™</sup> MOB Personal Locator Device

(Incorporating AIS and DSC)

User Manual Y1-03-0283 Rev. C



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## IN CASE OF EMERGENCY

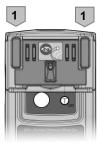


## Use only in situations of grave or imminent danger.



The MOB is intended to be fitted to a life jacket. If the MOB is correctly fitted to the life jacket, then it will automatically activate when the life jacket inflates. This guide shows how to manually activate the MOB.

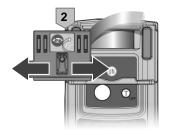
• Press either of the grey Arming Retainers down (1)



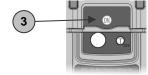
 Slide the grey Activation Slide (2) sideways towards the depressed Arming Retainer and remove. This will release the antenna and activate the MOB.



**Warning:** Do not place eyes near Activation Slide.



 If the strobe light does not start flashing, manually switch the MOB on by pressing the "ON" Key (3)



Always turn the MOB off immediately after you have been rescued to avoid interference with other users. To deactivate, press the "TEST/OFF" button until the LED flashes red twice, then release.

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#### 1. GENERAL

#### 1.1 Introduction

The AISLink range of products provides the user with the latest technology specifically designed for compact size and ease of operation. The MOB is intended to be fitted to a lifejacket in order to alert your vessel in the event that you fall over board. It will then plot your location on a suitable AIS equipped chart plotter.

#### 1.2 Exposure to RF Electromagnetic Energy

This product also complies with EN62479 (EU) and RSS-102 (Canada).

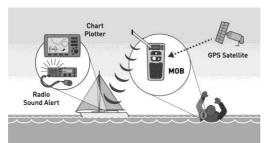
This product has been evaluated for compliance with the FCC RF exposure limits given in CFR 47 part 1.307(b) at a distance of greater than 5cms.

#### 1.3 Warnings



**Warning:** Do not place eyes near Activation Slide.

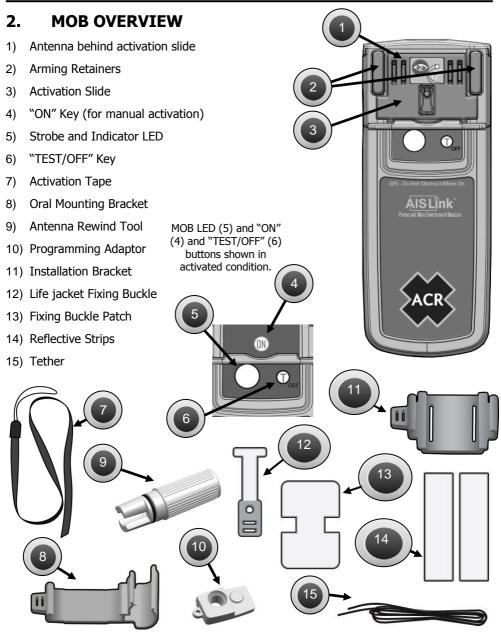
- A Man Over Board AIS transmitter is only intended for short range signalling to an AIS receiver installed on board your own vessel or on other vessels in the vicinity of the man over board.
- This equipment is intended for emergency use only and it should not be used for routine tracking of persons or property, including routine tracking of divers.
- If self-test is performed more frequently than once a month, then battery life may be reduced.
- This radio device is designed to only provide an effective alerting and locating capability in close proximity to a vessel. This radio beacon is NOT an EPIRB.
- DSC functionality may vary or be disabled according to individual country regulations. Older DSC radios may not respond to MOB DSC calls or the Individual Distress Relay call.



Interface diagram showing typical usage



## AISLINK MOB USER MANUAL





#### 3. INSTALLATION



**NOTE:** Be sure to load the activation tape EXACTLY as described in this section. Failure to do so may affect deployment.

If your AISLink MOB is not already pre-installed into the life jacket, please carefully follow the instructions below. The diagrams below assume that the life jacket inflation tube is on the left hand side (as viewed). If the tube is on the right hand side, then the tape should be fitted on the opposite sides shown. When reviewing this installation section, please note that there are two bracket mount locations (an upper and lower location) which exist for flexibility to vary the fit of the AISLink MOB. The upper location is the preferred mounting position for most user fit scenarios.

• Installing the activation tape: Take the oral mounting bracket or the installation mounting bracket and pass the activation tape through the loop as shown below.







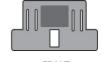
 The activation tape must be inserted into the activation slide. You must remove the activation slide from the MOB. Depress either the left or right arming retainer and push the slide either right or left. The antenna will deploy and the MOB will activate.





 To deactivate your MOB, press the "TEST/OFF" key until the LED flashes red twice, then release.

There is a front and rear section of the activation slide. Place the rear of the activation slide so that it sits over the activation tape and then pass the activation tape through the slot in the middle. As the tape is threaded through the middle, ensure that the tape is positioned between the small protrusions of the two up stands on the





FRONT

REAR

**Activation Slide** 







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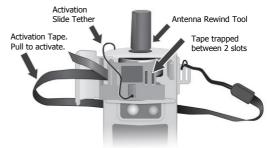


rear activation slide. Route the front of the activation slide along the tether and squeeze the front and rear sections tightly together. The activation tape will be trapped in place by the action of closing the front and rear sections together.

The assembled activation slide and tape is now ready for assembly onto the MOB.

NOTE: Ensure that the tape is trapped in place between the two slots on the opposite side of where the tape will be pulled to activate the MOB.

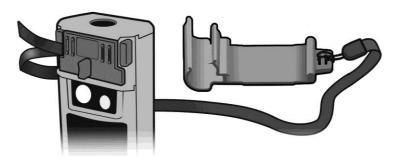
 Rewind the antenna (shown in section 6) and re-insert the activation slide back in-between the two arming retainers.



 Be sure your beacon is not activated. If it is, deactivate by pressing the "TEST/OFF" key until the LED flashes red twice, then release.

NOTE: Failure to remove the antenna winding tool will prevent automatic antenna deployment after the life jacket inflates. Additionally, ensure that the assembly of the activation slide onto the product is such that the activation tape is not passing over the top of the activation slide tether (activation slide tether shown in image above). This may restrict the release of the activation slide.

On completion, the tape should now be connected to the bracket and MOB as shown.





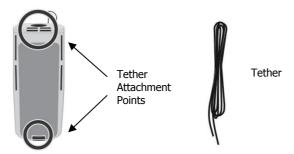
## AISLINK" MOB USER MANUAL



**NOTE:** When loading the activation tape, the tape must be positioned between the arming retainer and activation slide as shown below, or the MOB will fail to deploy.



 In all installation scenarios (A – E) below, ensure that the installed MOB is tethered to the life jacket using either of the tether attachment points (top of MOB or bottom of MOB) shown in the following images. When attaching the tether to the life jacket, ensure that the knot used is secure. Also make sure that the location of attachment will not lead to strangulation of bladder or any other potential bladder failure.



#### In all installation methods described below:

- Determine the best place for fitment.
- Ensure location is not within a heavily tapering section of the bladder.
- Ensure that the inflated life jacket will be able to provide a linear pull on the
  activation slide, perpendicular to the side of the product and with enough bladder
  width protruding to ensure full activation slide removal.
- On completion of fitting the MOB, the tape should be tight enough to provide
  enough movement when the bladder is inflated to completely remove the slider
  from the product. Do not over tighten the tape as this may allow the slider to
  become dislodged under repeated movement of the life jacket.

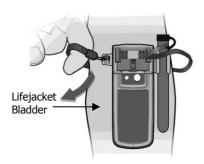


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- Note any particular jacket manufacturer's packing requirements. Repack the bladder into the cover, following the manufacturer's guidelines. Ensure the activation tape does not get trapped in the fastenings or tangled up.
- Once the MOB is fully attached to the life jacket, the device is armed.
- If the MOB has turned on during the installation process, make sure it is turned off by pressing the "TEST/OFF" key until the LED flashes red twice. Release the key.
- **NOTE:** In all installation scenarios, the AISLink MOB should be mounted on the life jacket so that the beacon is above the water when the life jacket is being worn in the water.

#### A. Oral bracket attachment onto jacket with separate bladder:

- **A1.** Pass the activation tape around the bladder of the life jacket and then clip the MOB to the mounting bracket.
- **A2.** Follow the steps indicated previously in Section 3 to attach the activation tape to the activation slide, rewind the antenna (section 6), and finally re-insert the activation slide back in-between the two arming retainers.



#### B. Oral bracket attachment onto jacket with bladder stitched into cover:

**B1.** Place one of the two reflective strips over the oral mounting bracket and adhere the strip to the life jacket as shown. Then mount the MOB to the oral mounting bracket.







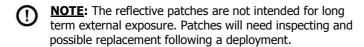
**B2.** Load the fixing buckle with the activation tape as shown below.



**B3.** Bond the fixing buckle to the fixing buckle patch. Ensure that the two ears of the 'T' are positioned on the side of the patch without the adhesive. This will ensure that when the buckle is tensioned it cannot be pulled through the adhesive patch.



- **B4.** Adhere the fixing buckle patch assembly to an appropriate position on the bladder in line with the activation slide.
- **B5.** Follow the steps indicated previously in Section 3 to attach the activation tape to the activation slide, rewind the antenna (section 6), and finally re-insert the activation slide back in-between the two arming retainers.



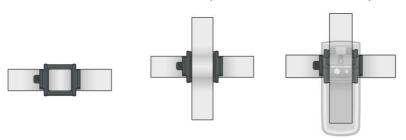
#### C. Installation bracket attachment onto jacket with separate bladder:

**C1.** Thread a reflective strip, with the protective backing removed, through the slots on the installation bracket. Attach the bracket to the product and position in the desired location on the bladder. Be sure to press down on the reflective strip in order to adhere it securely to the bladder. Now remove the product from the bracket and



## AISLink MOB USER MANUAL

attach the second reflective strip at 90 degrees to the first. Be sure to once again press down on this second reflective strip in order to adhere it securely to the bladder.

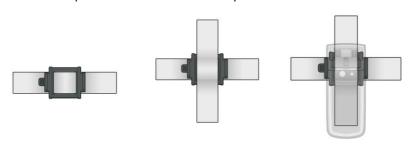


- **C2.** Pass the activation tape around the bladder of the life jacket and then clip the MOB to the installation bracket.
- previously in Section 3 to attach the activation tape to the activation slide, rewind the antenna (section 6), and finally reinsert the activation slide back inbetween the two arming retainers.



#### D. Installation bracket attachment onto jacket with bladder stitched into cover:

**D1.** Thread a reflective strip, with the protective backing removed, through the slots on the installation bracket. Attach the bracket to the product and position in the desired location on the bladder. Be sure to press down on the reflective strip in order to adhere it securely to the bladder. Now remove the product from the bracket and attach the second reflective strip at 90 degrees to the first. Be sure to once again press down on this second reflective strip in order to adhere it securely to the bladder.





## AISLink MOB USER MANUAL

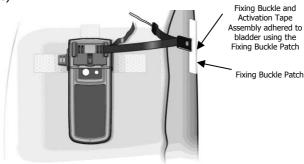
**D2.** Load the fixing buckle with the activation tape as shown below.



**D3.** Bond the fixing buckle to the fixing buckle patch. Ensure that the two ears of the 'T' are positioned on the side of patch without the adhesive. This will ensure that when the buckle is tensioned it cannot be pulled through the adhesive patch.



- **D4.** Clip the MOB to the installation bracket and then adhere the fixing buckle patch assembly to an appropriate position on the bladder in line with the activation slide.
- **D5.** Follow the steps indicated previously in Section 3 to attach the activation tape to the activation slide, rewind the antenna (section 6), and finally re-insert the activation slide back in-between the two arming retainers. The product is now correctly installed on the life jacket (see next image).



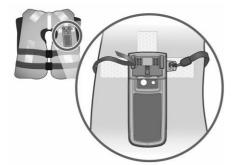






**NOTE:** The reflective patches are not intended for long term external exposure. Patches will need inspecting and possible replacement following a deployment.

#### E. Installation on non-inflatable (foam vest) life jackets:



The preferred mounting method in this scenario is use of the included installation bracket to attach the MOB to existing lifejacket webbing/straps. In the absence of adequately positioned webbing/straps, the included reflective strips can be used in conjuncture with the installation bracket as shown (see D1 in this section for detailed description). The MOB should also be tethered to the lifejacket as described earlier in section 3.

Once the MOB is fully attached to the lifejacket, it will need to be activated manually by pulling the Activation Tape when in distress.

**NOTE:** When installing the AISLink MOB using the reflective strips, it is important to regularly inspect the reflective strips used to adhere the installation bracket to the life jacket. These strips may not adhere well to certain fabric and the adhesive on these strips may degrade over time, requiring that the strips be replaced.

#### 4. MMSI configuration

If your vessel has a DSC enabled VHF radio telephone, it is strongly recommended to program your vessel's MMSI number into your MOB. This will allow the MOB to send the details of the man over board incident directly to the radio and sound the alarm.

#### 4.1 Self-Identification

The MOB is supplied with the self-identification number pre-programmed. This number is specific to each MOB and cannot be changed. The MMSI displayed on the DSC receiver will always start with '972' irrespective of the country in which it was purchased.

#### 4.2 User MMSI

(Applies to DSC enabled units only)

To be able to send DSC messages to your vessel, the MMSI number of the vessel needs to be programmed into the MOB. This is achieved using the downloadable PC software or the web programming software available on the AISLink MOB product web page.





#### 4.2.1 Installation

The programming software for configuring the User MMSI into the MOB can be downloaded from <a href="www.acrartex.com/">www.acrartex.com/</a> by going to the AISLink MOB product page and clicking on "Configure AISLink MOB". The software available will only allow the DSC options available in your country. Some functions described below may not be available to you. If accessing the downloadable PC software, save the .ZIP file to your Windows computer, open it, and click Installer.msi to run the installer and install the software on your computer.



There is also a web application which can be accessed by going to the AISLink MOB product page and clicking on "Configure AISLink MOB". This web application can be run on any computer or most modern smart phones and tablets using the web browser.

#### 4.2.2 Configuration

Run the downloaded programming software application from the location where it was saved on your Windows computer. The screen shown in 4.2.1 will appear. Please note that the screenshots shown in this section will appear slightly different than shown when using the web based programming software. Simply follow the on-screen instructions when using the web based software.

Enter the nine digit MMSI of the vessel in the box provided.

(In the USA, after the MMSI has been entered, a second box for a group MMSI will appear. Enter your group MMSI here if applicable, noting that group MMSI numbers should always start with a single zero. In the USA, leave the "Enable DSC Relay" box checked in order to enable DSC functionality)

Press the **Update Device** button on screen.

A new screen with further instructions will appear.



To put the MOB into programming mode, press the "TEST/OFF" key for at least fifteen seconds. The LED will start flashing green. Release the key. Fit the black rubber Programming Adaptor so that the aperture is over the Strobe LED.

When ready, press the **Continue** button on screen.

The display will now change to the programming mode. With the programming adaptor fitted, place the MOB over the screen so that the aperture of the programming adaptor is over the white box. Press the <F10> key on your keyboard to commence programming.





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When the programming is complete, the screen will change. Remove the MOB and check that the LED starts flashing green. Turn the MOB off by pressing the "TEST/OFF" key for one second. The LED will blink red twice. Press the <F12> key to exit the programming mode.

If the programming fails, the LED will start flashing red after a short period of time. Turn the unit off by pressing the "TEST/OFF" key and retry.



When programming is complete, your MOB is now ready for fitting to the life jacket (section 3) for use.

**NOTE:** Make sure the display screen is set to full brightness before commencing programming the MOB.

#### 5. **OPERATION**

<u>WARNING</u>: Use only in situations of grave and imminent danger.

Misuse may result in a severe penalty.

Ensure that your MOB 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 7.

#### 5.1 Automatic Activation

When correctly packed in a life jacket, the MOB will automatically 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.

#### 5.2 Manual Activation



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

- To manually activate your MOB in an emergency, slide the grey Activation Slide to the left or right over the left or right Arming Retainer. The antenna will deploy and the light will start flashing. The MOB will automatically start transmitting after 15 seconds.
- The antenna is automatically released. Keep the MOB well away from your eyes when activating.
- If the MOB fails to activate when the slide is removed, press the "ON" key down until
  the green LED starts flashing. Release the key.



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- Upon activation, the indicator LED will show eight short flashes during AIS transmission and one long flash during DSC transmission. The color of the flash will be red during position acquisition and green when the GPS position is being received.
- When operating the MOB, tether the beacon to your body or the life jacket.
- Hold your beacon with the antenna standing vertically. Keep the area marked "GPS

   Do Not Obstruct When On" free from obstruction, as this would interfere with the GPS reception.

#### 5.3 DSC All Ship Distress Alert transmission



Applies only in countries where DSC All Ships Alerts are allowed.

Press and hold the "ON" key for over 5 seconds to transmit a single DSC All Ships Distress Alert. This should only be done in a dire emergency, if it is obvious that your alert is not being acted upon by your own vessel. After the key is pressed, the green LED will start flashing, and then become steady. Release the key to commence transmission of a single DSC transmission. The LED will blink rapidly to indicate a DSC Distress is being transmitted to ALL SHIPS; red if there is no position available and green when GPS position is being received.

#### 5.4 Deactivation

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

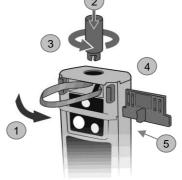
#### 6. Rewinding the antenna

To rewind the antenna after activation, transmission testing, or during installation, use the Antenna Rewind tool. Place the moulded cap of the antenna into the space (1). Pass the tool through the round hole in the top of the MOB and place over the antenna spring just behind the cap (2). Rotate the tool <u>anti-clockwise</u> until the antenna is fully wound up (3). Press the antenna rewind tool downwards into the case top to lock it in position. The activation slide can now be fitted. Remove the antenna winding tool (4).

If the MOB has activated, turn it off by pressing the "TEST/OFF" key until the LED flashes twice (5).



Rotating the antenna rewind tool in the clockwise direction will result in damage to the antenna.





#### 7. Testing

Routine testing of your MOB once a month is recommended to ensure it is in good working order if needed, but please follow the guidance notes below on the frequency that tests should be carried out. Please remember that each test will reduce the battery capacity slightly and reduce the operation time of your MOB during an emergency.

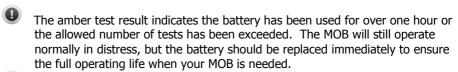
#### 7.1 Functional test

The functional test should be carried out once per month. To test that your MOB is functioning correctly, press and hold the "TEST/OFF" key for one second. The red LED will start flashing, indicating test mode is activated. The switch may now be released. After a short pause, the strobe will flash and then the unit will automatically turn off and the indicator LED will flash green or amber to show a pass or red to show fail status.

The number of flashes in each group indicates the battery status or failure as shown in Table 1. This battery indicator is used as the electronic witness that the MOB has been activated.

Green / Changes to A	Red indicator status	
No of Flashes	No of Hours Used	Type of Failure
1 Flash	0 to 1hr (Green)	
1110311	1 to 2hrs (Amber)	
2 Flashes	2 to 4hrs (Amber)	Frequency generation
3 Flashes	4 to 6hrs (Amber)	Transmit Power
4 Flashes	6 to 8hrs (Amber)	Battery failed
5 Flashes	8 to 10hrs (Amber)	No GPS Fix
6 Flashes	Over 10hrs (Amber)	

Table 1: Pass/Fail indication



• The Pass/Fail status indication is repeated a second time after a short delay.

#### 7.2 DSC Transmission Test

To initiate a DSC test transmission, press and hold the "TEST/OFF" key. The red LED will start flashing, then after five seconds become steady. Release the "TEST/OFF" key. After a short pause, a DSC Routine call to your vessel's DSC VHF will be transmitted. The strobe will flash and the indicator LED will flash green or amber to show a pass or red to show fail status, as indicated in Table 1. The MOB will then automatically turn off.





- The DSC test requires that a valid MMSI has been programmed into the MOB. See section 4 for instructions on programming the MMSI.
- The DSC test should only be carried out a maximum of two times a year to minimize battery consumption.

#### 7.3 AIS transmission test

To initiate an AIS transmission and GPS test, press and hold the "TEST/OFF" key. The red LED will start flashing and then become steady after five seconds. After a further five seconds, the LED will start flashing slowly. Release the key. The LED will give a long red flash followed by a short green flash until GPS lock is achieved. After GPS lock is obtained, the MOB will transmit a single burst of AIS messages indicated by eight short flashes of the green LED. The strobe will flash and the indicator LED will flash green or amber to show a pass, or red to show fail status, as indicated in Table 1. The MOB will then automatically turn off.

After a successful test, the message "MOB TEST" will be displayed on a suitable AIS receiver or plotter display.

- The AIS/GPS test should only be attempted with a clear view of the sky.
- The AIS/GPS test should only be carried out a maximum of three times a year to minimize battery consumption.





#### 8. Appendix

#### 8.1 Maintenance and Troubleshooting

Your MOB will require 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.

#### 8.2 Batteries

The MOB contains Lithium metal batteries for long operating life. Your battery must be replaced either prior to the expiry date or after the MOB has been used, even if only activated for a short period of time. Battery replacement must be carried out at an ACR Electronics, Inc. authorized battery replacement center.

#### 8.3 Transport

When shipping your MOB the following guidance and regulations should be followed, but you are advised to contact your nearest battery replacement center or ACR Electronics, Inc. prior to shipping as regulations may have changed.

- Always pack your MOB securely in a stout cardboard carton. ACR Electronics, Inc. advises that you keep the original packaging in case of return for service.
- For surface transport, the MOB may be shipped under special provision 188 of the U.S. Code of Federal Regulations.
- For air transport, the MOB should be shipped as category UN3091 and packed under IATA packing instruction 970 section II. If you are hand carrying your MOB on an aircraft, please contact your airline for advice.
- Consult the manufacturer's instructions for information on carrying a life jacket in your luggage on board aircraft.

#### 8.4 Disposal

Care should be taken when disposing of your MOB when it is no longer required. It is recommended to remove the battery from the MOB. Dispose of the battery in accordance with local waste regulations.

<u>WARNING</u>: The MOB is not user serviceable and opening the MOB will invalidate the warranty.





#### **Specifications**

AIS transmission	
Transmit Power (EIRP)	
Frequency	5MHz ±500Hz
Baud rate	
Synchronisation	
MessagesMessage 1 (Position), Message 14	(MOB status)
Repetition interval8 me	ssages/minute
	very 4 minutes
DSC Transmission <sup>1</sup>	,
Transmit Power (EIRP)	0.5Watt
Frequency	
Messages Individual D	
All Ships D	
Message repetition Once every 5 minute	
Baud rate	
*Single call made on press of the activation button, in regions whe	
Environmental	
Temperature range (operational)	-20°C - ±55°C
Temperature range (storage)	
Damp Heat (humidity)	
Drop (hard surface)	
Designed to meet Drop (water)	20m : 3cidoc
Water immersion	. 2011 . JSIUES
Thermal Shock	
	vater: >1110ur
Physical	02
Weight	
Dimensions	
Battery 59mr	n over bracket
Operational life	24 L hours
Battery Life	
Dallery Life	/ years

#### **Country of Intended Use** 8.6

Austria	✓	Germany	✓	Netherlands	✓
Belgium	✓	Greece	✓	Poland	✓
Bulgaria	✓	Hungary	✓	Portugal	✓
Cyprus	✓	Ireland	✓	Romania	✓
Czech Republic	✓	Italy	✓	Slovakia	✓
Denmark	✓	Latvia	<b>✓</b>	Slovenia	✓
Estonia	✓	Lithuania	<b>✓</b>	Spain	✓
Finland	✓	Luxembourg	<b>✓</b>	Sweden	✓
France	✓	Malta	>	<b>United Kingdom</b>	<b>\</b>

The Country of Intended Use Table is an EU requirement only

<sup>&</sup>lt;sup>1</sup> DSC functionality is subject to the regulations of the country.



#### 8.7 Approvals

The MOB is approved for use in the USA under CFR47 part 95K, and approved in Canada with AIS only under RSS287.

#### 8.7.1 European Declaration of Conformity

Hereby, ACR Electronics, Inc. declares that the radio equipment type AISLink MOB is in compliance with Directive 2014/53/EU.

https://www.acrartex.com/support/acr-support/acr-declaration-of-conformity/







#### 8.8 Limited Warranty

Your ACR Electronics, Inc. MOB is warranted against manufacturing defects in materials and workmanship for a period of 5 years from the date of purchase and in accordance with the following conditions.

ACR Electronics, Inc. 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, Inc. or an approved service dealer or distributor.

ACR Electronics, Inc. shall not be liable to the buyer under the above warranty:

- For any repairs or modifications carried out on the MOB using parts that are not supplied or approved by the manufacturer ACR Electronics, Inc. including batteries and for work carried out other than by ACR Electronics, Inc. or approved service dealers.
- For any part, material or accessory that is not manufactured by ACR Electronics, Inc.
  the consumer will be covered by the guarantee / warranty offered to ACR Electronics,
  Inc. by the manufacturer or supplier of such a component.
- For product which has not been paid for in full.
- For any product supplied by ACR Electronics, Inc. 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. This warranty does not apply to a used battery as indicated by the electronic witness (see section 7.1).

The following specific item is excluded from this warranty:

Damage to the antenna

This warranty does not affect your statutory rights. This warranty is to be interpreted under United States law.

For further assistance, please contact our Technical Service Department.

Email: service@acrartex.com

ACR Electronics, Inc. 5757 Ravenswood Road. Fort Lauderdale, Florida 33312 - U.S.A.

service@acrartex.com www.acrartex.com

