


# User Manual

## Crewsafe® Wireless Network



Model Number: Crewsafe IRC-001  
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# 1 Warnings and Safety Information

This installation and operation guide contains important information that must be adhered to for reliable use of the product. It is the owner's sole responsibility to make the effort to read this documentation, ensure that the installation is carried out to specification and understand the equipment's operation and limitations.



## WARNINGS:

- The Mobilarm Crewsafe Wireless system is not a 406 PLB or EPIRB. The Crewsafe Wireless system must be used as part of an integrated Marine Survivor Locating System (MSLS) established on board a vessel or maritime facility. Location and recovery of a man overboard is beyond the product's capability and must be accomplished by alternative means.
- No system can be 100% fail-safe. Installation faults and operator error will always introduce the possibility of undetected man overboard (MOB) events, as can circumstances and events beyond the equipment's design criteria. The Crewsafe Wireless system should never be relied upon as the only source of man overboard notification. The vessel master and crew must exercise common prudence and good seamanship. Installation and operation of a Crewsafe Wireless system in no way reduces the responsibility of the master and crew who have the primary responsibility for safety on board a vessel.
- Global Positioning System (GPS); Crewsafe Wireless systems can be integrated with an external GPS receiver to define the location of a man overboard and provide track-back information to the user. This configuration can only be as accurate as the positional data it receives. The Global Positioning System is managed and maintained by the US Government who can from time to time alter its effective accuracy. In addition, equipment errors or faults and operator errors can also result in misleading information being displayed by Crewsafe Wireless systems. Mariners must always use alternative means to confirm the location of a man overboard if the accuracy of the system is ever in doubt.
- Crewsafe Wireless systems can only facilitate the recording of the initial position of where a man overboard event occurred into third party devices. In some areas, drift will take a man overboard away from the location of the original position indicated by the Crewsafe Wireless system.
- The Crewsafe Wireless system uses a small amount of low voltage DC power. However, accidental short-circuiting of any of the product's cabling systems may cause sparks which in turn could ignite combustible gases or petrol vapors. Make sure that electrical circuits are isolated before making any changes to the system's cables.
- The Crewsafe Wireless system emits radio waves that can affect the operation of nearby electronics, including cardiac pacemakers. Do not wear Crewsafe Wireless Tags within 9 inches of a pacemaker. If you have a pacemaker or other implanted medical device, please do not wear a Crewsafe Wireless Tag without

first consulting your physician, or the manufacturer of your medical device. Observe and follow all regulations and rules regarding the use of wireless devices in locations such as hospitals and on aircraft. Operation in those locations may interfere with, or cause malfunctions of equipment, with resulting injuries to persons or damage to property.

**CAUTION:**

- The high intensity strobe light on a Crewsafe Wireless Tag or router may cause discomfort if viewed - avoid staring directly at the strobe when it is operational.
- Never attempt to charge a Tag using any device other than a Mobilarm Power Dock.
- A new rechargeable battery's full performance is achieved after 2-3 complete charge and discharge cycles.
- A Tag will not recharge if the battery temperature is greater than 45 degrees. If a Tag is hot because of environmental factors, let it cool down and reinsert it into the charger.
- Never short-circuit a Power Dock bay by placing metallic objects in the bays (e.g. paper clips, coins or pens).
- Never use a Power Dock or battery that is damaged.
- Do not place Crewsafe Wireless Tags near a radar set or expose them to radiation or damage may occur. Please do not clean them with detergents or solvents that may damage the integrity of the device. Seals may be damaged by many cleaning products. If the components require cleaning, use warm soapy water and wipe with a damp, not wet, cloth. Be sure to clean a Tag when it is switched off, or it may be activated by the moisture.

***Regular Testing***

Your Crewsafe Wireless system should be checked regularly. We recommend testing the system on a regular basis to ensure that alarms are audible and that the system is in good working order generally.

## 2 Manual Conventions



**Warnings:** Instructions that, if ignored, could result in death or serious personal injury caused by incorrect operation of the equipment. These must be observed for safe operation.



**Cautions:** Instructions that emphasise particular points about system operation that must be observed for safe operation.



**Important Note:** Important instructions that should be adhered to during system operation.




**Notes:** Additional instructions or information about system settings that are not usually essential to a performing a task.

### *Typographic Conventions*

1. Crewsafe Wireless hardware components are displayed in bold uppercase letters, e.g. **TAG STATUS LED**.
2. Crewsafe Wireless hardware operation states are displayed in bold uppercase letters surrounded by square brackets, e.g. **[OFF]** refer to operational states of the device.

## 3 Quick Start Guide

### System Startup

1. Press the Display Console **POWER**  button to turn the system on.



2. Remove fully charged Tags from the Power Dock.



3. Press the **BUTTON** on each Tag to turn it on.




4. Check that each Tag's LED on the Display Console is displayed as solid green.



5. Check that the network LED on the Display Console and any Internal or External Routers are solid blue.

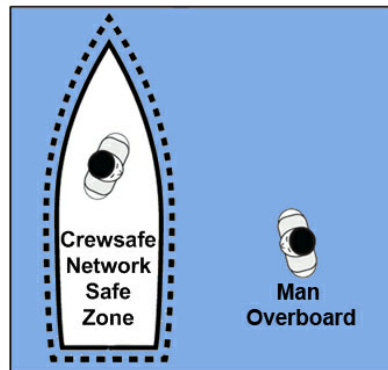


### System Shutdown

1. Press and hold the **POWER**  button on the Display Console for 5 seconds. Wait for all tones and LEDs to cease operating before disconnecting power.
2. Return Tags to the Power Dock for charging. Charging continues after system shutdown as long as power is supplied to the Power Dock.

## 4 Overview of Mobilarm Crewsafe

A wireless network of routers and transceivers keep crew in constant communication with their vessel. Every crew member wears a small transceiver - a Tag, which transmits a unique signal every second to the Crewsafe Wireless network. Any unexpected loss of this Tag signal, such as in a man overboard event, causes Crewsafe to automatically raise the alarm.

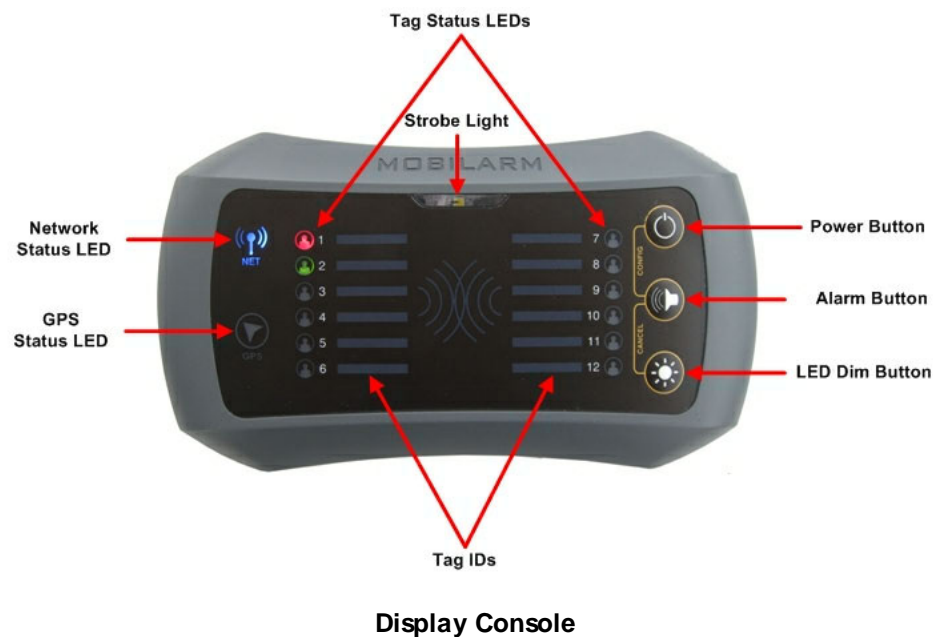


Following is an introduction to the various elements of the Crewsafe Wireless system.

### Display Console

Suitable for smaller vessels, the Display Console provides simplified Tag monitoring and alarm notification only.

- Monitors up to 12 Tags, network health and GPS signal.
- Reports alarms and network faults via LED displays and audio alerts.
- Can initiate general alarm, acknowledge/mute and cancel alarms.



## Crewsafe Wireless Tag

Personal transceiver worn by all crew members.

- Strobes and vibrates in an emergency.
- **BUTTON** to manually initiate Duress alarm.
- Operates for up to 48 hours between recharges.



## External Router

Provides network coverage for exposed areas outside:

- UV-stabilised case, heat-proof to 70°C (158°F) and fully sealed to IP67
- Strobe flashes during man overboard, duress, manual or general alarms.
- Features switch input and relay output to connect to other devices such as sirens and warning lights.



## Internal Router

Provides network coverage within enclosed areas or inside.

- Emits alarm tones and the strobe flashes during man overboard, duress, manual or general alarms.
- Can initiate a manual alarm and mute alarm sound/strobe.
- Features switch input and relay output to connect to other devices such as sirens and warning lights.



### ***Power Dock***

Stows and recharges Tags when not in use.

- Each Power Dock holds 4 Tags.
- Tile up to 4 Power Docks together from single power source.
- **TAG LED** indicates when fully charged.



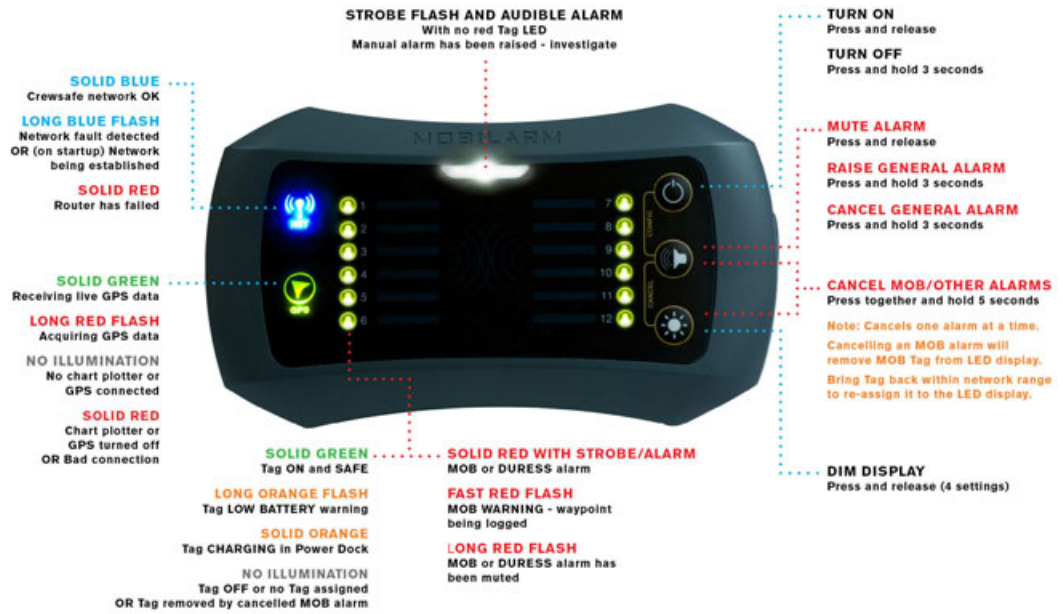
All Crewsafe Wireless components are fully compatible and can be added to the network at any time.

### ***Crewsafe Management System***

Crewsafe Wireless is best managed using the Windows®-based Crewsafe Management System. This provides an enhanced level of personnel safety and security through crew location monitoring and management, system alarms, individual paging and individual duress alarms. In addition, the system provides database management of rescue assets, safety equipment and personnel.

The Crewsafe Management System is a multi-function program that runs on a dedicated Mobilarm touch-screen tablet. It controls all aspects of the Crewsafe Wireless network from a single point of command. Smaller vessels can use the stand-alone Crewsafe Display Console. Please see the Crewsafe Management System User Manual for more information.

## Display Console Operation Guide



## 5 Getting Started


The following sections describe how to:

1. [Turn the system on](#),
2. [Turn system off](#), and
3. [Turn tags on and off](#).

### 5.1 Turn the System On

When the ship's power is turned on all LEDs on each installed router illuminate briefly. This places each router into standby mode.

#### *Turning the System On*

1. Ensure the ship's power is turned on.
2. Press the **POWER**  button on the Display Console. This will turn the Display Console and all other routers connected to it **[ON]**.

#### *Display Console Indications*

When the **POWER**  button is pressed:

- All LEDs on the router illuminate briefly and it emits ascending tones.
- The blue **NETWORK STATUS LED** flashes on all routers while the network is being established.
- Once the network is established, the **NETWORK STATUS LED** stops flashing and turns solid blue.



**Note:** A network comprises a Display Console and at least one other active device (Tag or router). If only a Display Console is installed on a vessel, the **NETWORK STATUS LED** will display long blue flashes until a Tag is switched on.

#### *Display Console and Router Network Status*

When the Display Console **POWER**  button is pressed, the **NETWORK STATUS LED** on it and any Internal and External Routers will:

1. Flash blue while the network is being established, and
2. Display as solid blue once the network is established.

If a router's **NETWORK STATUS LED** does not remain solid blue 20 seconds after being switched **[ON]** and starts to flash, please see the [troubleshooting guide](#) to diagnose the problem.

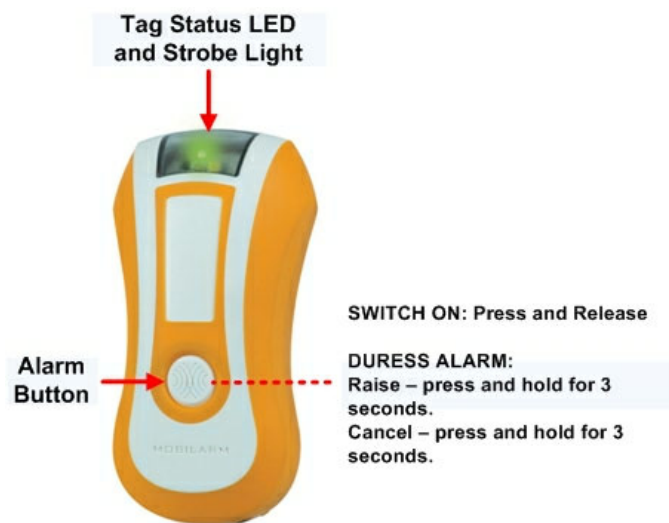
## 5.2 Turning Tags On/Off

### Turning Tags On

Press the Tag **BUTTON** once.

- As the Tag turns **[ON]**, the **STROBE** flashes twice and the **TAG LED** displays fast red flashes briefly.
- Once the Tag has joined the network successfully, the **TAG LED** flashes green every five seconds.

If the **TAG STATUS LED** does not turn green after several seconds it may not be correctly configured for the network. Please see the [troubleshooting guide](#) for help.



### Turning Tags Off


Tags are automatically turned **[OFF]** during a system shutdown, but they can also be turned off in the following ways:

1. Place Tags into a Power Dock and then press and hold the **BUTTON** on the Tag for 3 seconds.
2. If a Tag has triggered a false man overboard alarm, press and hold the Tag **BUTTON** for 10 seconds to turn it **[OFF]**.

As the Tag turns off, it vibrates and the **STROBE** flashes for several seconds.

See [False Alarms](#) for ways to cancel a variety of false alarms.

## 5.3 Turn the System Off

Press and hold the **POWER**  button on the Display Console for 5 seconds. This will turn the Display Console, all routers and Tags **[OFF]**.

### *Display Console Indications*

When the **POWER**  button is pressed:

- The Display Console will produce descending audio tones.
- **TAG STATUS LEDs** flash sequentially and the strobe light will flash.
- All LED and strobe indications cease when the Display Console has been turned **[OFF]**.



**CAUTION:** Please ensure the system is turned **[OFF]** before power to the system is disconnected - otherwise Tags may go into an alarm state. If the system loses power briefly and unintentionally for some reason, once power is returned to the system it should operate again normally.

### *Tag Indications*

A Tag is turned **[OFF]** during a normal system shutdown. During this process it vibrates and the strobe light flashes for several seconds.

## 6 Routine System Tasks

The following sections explain basic Crewsafe Wireless system functionality in relation to:

- [Monitoring the status of tags.](#)
- [Wearing tags.](#)
- [Recharging tags.](#)
- [Dimming LEDs on the Display Console](#), and
- [Confirming GPS Chart Plotter Data Status.](#)

## 6.1 Monitoring Tag Status

### Display Console Tag Monitoring

A Tag's status can be monitored by checking its **TAG STATUS LED** on the Display Console. Following is a list of the states that can appear on the Display Console:

TAG STATUS LED display	
No Illumination	Tag is <b>[OFF]</b> ; no Tag is assigned to the <b>TAG STATUS LED</b> on the display console; or a Tag has been removed by cancelling a man overboard alarm.
Solid Green	Tag is <b>[ON]</b> and is safe
Short Orange Flashes	A factory reset is in Progress
Long Orange Flashes	Tag is <b>[ON]</b> and the battery is low
Solid Orange	Tag is being charged in a Power Dock
Short Rapid Red Flashes	Tag has entered the man overboard warning state prior to an alarm and a man overboard way point is logged
Long Red Flashes	A man overboard or duress alarm has been muted
Solid Red	Tag has entered an active man overboard alarm state, or a duress alarm has been activated
Illuminated Red for 5 Seconds	Signifies cancelling of any active alarms



Example of Tags in Safe and Alarm States

## Tag LED States

The following table describes the possible states of the **TAG LED** when it is in use or being charged.

<b>Tag LED display when in use</b>	
No Illumination	Tag is turned <b>[OFF]</b> or battery is flat
Green Flashes	Tag is <b>[ON]</b> and safe.
Orange Flashes	Tag is connected to the network and the battery is low
Short Red Flashes	Tag is not configured with a network ID
Long Red Flashes	Tag is turned on and configured with an incorrect network ID
Short Rapid Red Flashes	Tag has been turned on and is attempting to join the network
<b>Tag LED display when charging in Power Dock and turned on</b>	
Solid Green	Tag is fully charged
Solid Orange	Tag is charging
Solid Red	Tag charging fault

## 6.2 Wearing Tags

Crewsafe Wireless Tags are small and lightweight so that they may be worn at all times in any marine environment. Tags are supplied with a short and long Clip to attach to belts, clothing, lifejackets or harnesses. Tags may also be secured using a lanyard or safety chain to avoid the loss of a Tag over the side of a vessel.

### How to Identify and/or Personalise Tags

Crewsafe Wireless Tags are supplied with blank adhesive labels to assist with identifying or assigning Tags to individual crew members or personnel. Write the name, role or other identifier on the label using permanent ink and carefully attach it to the label recess above the Tag **BUTTON**.

The Display Console is supplied with blank adhesive labels that can be attached alongside each **TAG STATUS LED** to correspond with the identity assigned to each Tag.

### Attaching a Tag

Mobilarm recommends that Tags are worn at waist level, both for comfort and to

ensure a man overboard alarm is activated in an emergency:

1. When using the short Clip, thread a belt, harness strap or webbing through the closed loop.
2. When using the long Clip, ease the open end away from the Tag and slide directly over waistbands and pockets.



**Important Note:** The long Tag Clip must be removed before placing a Tag into a Power Dock for charging.

### ***How to Remove and Attach a Tag Clip***

To remove a Tag Clip, pull the Tag locking clip away from the body of the Tag and slide it upwards.



To attach a Tag Clip slide it down onto the Tag until the Tag locking clip clicks firmly into place.

### ***How to attach a lanyard or safety chain to a Tag Clip***

Use the two holes towards the top of a Tag Clip to pass through a lanyard or safety chain cord.

**Important Note:** Lanyards are not recommended as the best method of attachment. Use only as an additional method of securing the Tag to prevent accidental loss.

## 6.3 Charging a Tag

Crewsafe Wireless Tags are factory fitted with rechargeable batteries that have been fully charged prior to shipping. However, Tags should be placed in the Power Dock and charged for at least 4 hours prior to first use.

A fully charged Tag should last for up to 48 hours of normal operation in a non-alarm state. The **TAG LED** flashes orange when the battery charge is getting low. If the battery is in good condition it should last in a non-alarm state for approximately 10 hours after the low battery warning is first indicated.



**Tag LED Charged  
in Power Dock**

### *Charging a Tag*

A Tag can be fully recharged in four hours.

1. Place the Tag into an empty Power Dock bay so that the button is facing outwards.

**Important Note:** If a long Tag Clip is attached to a Tag then it needs to be removed before placing it into the Power Dock.

2. Check that the **TAG STATUS LED** indicates that it is charging. If a Tag's battery charge level has dropped below 90 percent, the **TAG STATUS LED** while charging is solid orange.
3. When a Tag's battery is 90 percent charged or higher its **TAG STATUS LED** turns solid green. A Tag will continue to trickle charge after turning green until it is 100 percent charged.

During normal daily use it is not necessary to turn Tags off when they are charging in the Power Dock. However, you may wish to turn off a Tag in the Power Dock if it is a spare Tag. If a Tag is turned off and placed into the Power Dock the **TAG LED** will

illuminate green briefly to confirm charging has commenced. The Tag must be turned on before next use.

Tags continue to be charged when the system is turned off via the Display Console, as long the Power Dock is still connected to ship's power. If a Tag is not charging correctly see the Tag section in the [troubleshooting](#) guide.



**Important Note:** Tags should always be recharged after use, so ensure that power docks remain connected to a power supply even if the vessel is docked. Regular charging will ensure there is adequate charge in the Tag battery if there is a man overboard event. It also extends the life of the battery.

### ***Long-term Tag Storage***

If a Tag is likely to be stored for a long period, charge it fully and then turn it off.

1. Place the fully charged Tag into a Power Dock bay with the button facing outwards.
2. Press and hold the **BUTTON** on the Tag for 3 seconds.

An unused Tag battery will discharge itself slowly over time so each stored Tag should be recharged once a month to ensure the battery does not go completely flat. This will also maximise long-term battery life.

## **6.4 Paging Crewmembers**


The Crewsafe Management System supports paging of crew members wearing Tags. It is possible to page either an individual crew member or a group of specified crew members if the system is installed on a vessel.

To distinguish a page from an alarm Tags vibrate intermittently when paged and the **STROBE** light does not flash. Crewmembers can acknowledge being paged by pressing the Tag **BUTTON**.

See the Crewsafe Management System User Manual for more information.

## **6.5 Dimming LED Display Intensity**

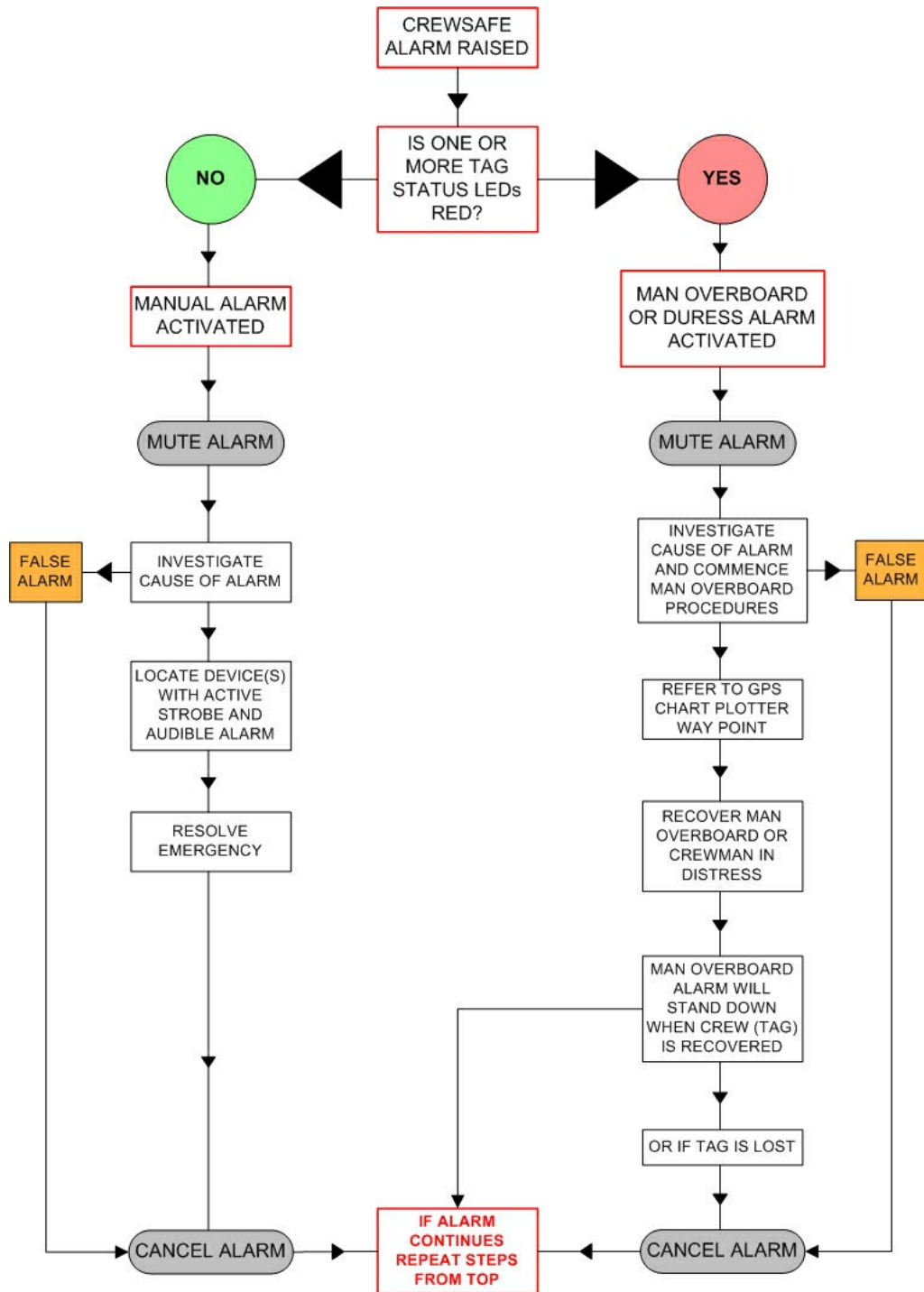
If routers are installed in sleeping areas or if the brightness of the LEDs is interfering with other equipment in the vicinity, the brightness of the LED displays can be dimmed.

Press the **DIM**  button on a Display Console or Internal Router to cycle through the four brightness settings - ranging from low to high intensity.

## 7 Managing Alarms

The Crewsafe Wireless network automatically activates a vessel-wide alarm to notify crew of an emergency situation. The following section explains how to recognise and respond to different Crewsafe alarms.

The flow chart below explains the process to follow on hearing the Crewsafe Wireless alarm in order to determine the type of alarm that has been raised and what action to take:



The following sections explain the management of:

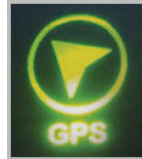
- [Man Overboard \(MOB\) alarms](#), which are automatically activated during man overboard events.
- [Duress alarms](#), which are manually activated by crew members in distress.
- [General alarms](#), which are manually activated from a system's Display Console.

- [Manual alarms](#), which can be manually activated from internal and external routers.
- [False alarms](#), and
- [Multiple Alarms](#).

## 7.1 Confirm GPS Chart Plotter Data Status

### *Display Console GPS Data Indications*

You can check the GPS chart plotter data connection by viewing the **GPS STATUS LED** on the Display Console.



The possible states of the **GPS STATUS LED** are listed in the following table to assist in troubleshooting GPS connections.

<b>GPS STATUS LED Display</b>	<b>GPS Data Connection Status</b>
No Illumination	No GPS or chart plotter is connected when the system is active.
Solid Green	GPS or chart plotter data is good
Long Red Flashes	Receiving chart plotter data but it is not valid (chart plotter is likely to be acquiring GPS data)
Solid Red	No data is being received from the GPS chart plotter (likely to be a cable/wiring issue, or GPS chart plotter is turned off)

## 7.2 Man Overboard Alarms

If a Tag is submerged in water, or if a crew member moves out of range while carrying an active Tag, the Tag will disconnect from the Crewsafe Wireless network and automatically activate a man overboard alarm.

When a man overboard is recovered and the Tag signal reconnects to the network, the alarm will automatically stand down. The entire Crewsafe Wireless system returns to normal operation unless other Crewsafe alarms have been activated.



**CAUTION:** If you are not using the Crewsafe Management System, which can distinguish between a man overboard and duress alarm, it is best to initially assume that an alarm from a Tag on the Display Console is a man overboard alarm.

### *Man Overboard Alarms*

When a Tag is immersed in water it blocks the signal to the network and the following

events occur:

1. After 4 seconds it goes into a man overboard warning state and:

- The man overboard Tag starts to vibrate.
- The **STROBE** on the Tag starts to flash.
- The Display Console LED displays fast red flashes.
- The Display Console creates a provisional way point of the position of the man overboard Tag.

2. After 8 seconds the system goes into a man overboard alarm state and:

- The man overboard Tag's **STROBE** flashes continuously until either the alarm is cancelled, or the Tag comes back within range of the network.
- The man overboard Tag vibrates initially for 60 seconds and then stops to conserve battery power.
- The **STROBE** on all other active Tags starts to flash and the Tags start to vibrate.
- The Display Console and any Internal Routers emit loud repetitive tones and the strobe on them starts to flash.
- The Display Console **TAG STATUS LED** turns red.
- The **STROBE** on all External Routers starts to flash.
- Any external safety or alarm warning systems that are attached to a router will also be activated when a network-wide alarm is activated (when using factory default relay settings).
- Way point data is sent from the Display Console to a compatible chart plotter.
- If you have the Crewsafe Management System connected to your system then this system will show an alert state.



**CAUTION:** If a crew member moves out of range while carrying a tag then connection to the network will be broken and Crewsafe Wireless will raise a man overboard alarm. This will cause the same sequence of events to occur within the Crewsafe Wireless system as for a man overboard event (See [False Alarms](#) for information on cancelling alarms).

### ***Network Mute/Acknowledgement of a Man Overboard Alarm***

Press the **ALARM**  button on the Display Console.

This mutes the man overboard alarm across the Crewsafe Wireless network.

Once muted:

- The audio alarm is reduced to a single beep every 2 seconds on the Display Console and Internal Routers.
- Active Tags continue to vibrate.

- The **STROBE** light on all routers and Tags will stop flashing, so that night vision is not affected.



**Note:** If a new man overboard, duress, general or manual network alarm is activated after an earlier alarm has been muted, the system will restart loud repetitive tones and the **STROBE** will start flashing again.

### ***Local Internal Router Mute/Acknowledgement of an Alarm***

Press the **ALARM**  button on an Internal Router.

This only mutes the man overboard alarm locally.

Once muted, the audio alarm is reduced to a single beep every 2 seconds on the local Internal Router router only. The **STROBE** on this device will also stop flashing, so that night vision is not affected.

### ***Cancelling an Man Overboard Alarm***



**WARNING:** Never cancel an alarm unless you are sure that everyone is accounted for.

You may wish to cancel a man overboard alarm if:

- A person leaves the vessel carrying an active Tag and disconnects from the network, or
- An active Tag is lost overboard and cannot be retrieved, or
- A Tag's battery runs flat.

To cancel the alarm using the Display Console:

Press and hold the **DIM**  and **ALARM**  buttons simultaneously for 5 seconds.

This will cancel the alarm across the network, except for the man overboard Tag that has disconnected (moved out of range of the wireless network). This temporarily removes the Tag from the Display Console and effectively places it into standby mode. The next time the Tag is turned on within range of the Display Console it will rejoin the network automatically.

To cancel the alarm on the disconnected Tag:

1. Press and hold the button on a Tag for 10 seconds (use this option only if the Tag is outside of network range), or
2. Bring the Tag back within range of the network.



### 7.3 Duress Alarm: Raise, Cancel, Mute

If a crew member finds themselves in distress but still connected to the network, they can initiate a manual duress alarm from their Tag.

**CAUTION:** If you are not using the Crewsafe Management System, which can distinguish between a man overboard and duress alarm, it is best to initially assume that an alarm from a Tag on the Display Console is a man overboard alarm.

#### *Raising a Duress Alarm*

Press and hold the **BUTTON** on a Tag for 3 seconds. During this process the Tag vibrates continuously and its **STROBE** flashes.

After a duress alarm is raised:

- The Tag initiating the alarm vibrates intermittently and the **STROBE** on it flashes.
- The **STROBE** on all other active Tags starts to flash and the Tags start to vibrate.
- The Display Console and any Internal Routers emit loud repetitive tones and the strobe on them starts to flash.
- The Display Console LED turns red.
- The **STROBE** on all External Routers starts to flash.
- Any external safety or alarm warning systems that are attached to a router will also be activated when a duress alarm is activated (when using factory default relay settings).
- Way point data is sent from the Display Console to a compatible chart plotter once the alarm is activated.
- If the Crewsafe Management System is connected to your Display Console then this will display an alert state.

### ***Network Mute/Acknowledgement of a Duress Alarm***

Press the **ALARM**  button on the Display Console.

This mutes the duress alarm across the Crewsafe Wireless network.

Once muted:

- The audio alarm is reduced to a single beep every 2 seconds on the Display Console and Internal Routers.
- Active Tags continue to vibrate.
- The **STROBE** light on all routers and Tags will stop flashing, so that night vision is not affected.



**Note:** If a new man overboard, duress, general or manual network alarm is activated after an earlier alarm has been muted, the system will restart loud repetitive tones and the **STROBE** will start flashing again.

### ***Local Internal Router Mute/Acknowledgement of a Duress Alarm***

Press the **ALARM**  button on an Internal Router.

This only mutes the duress alarm locally.

Once muted:

- The audio alarm is reduced to a single beep every 2 seconds on the local Internal Router only.
- Active tags continue to vibrate.
- The **STROBE** will stop flashing, so that night vision is not affected.

### ***Cancelling a Duress Alarm***



**WARNING:** Never cancel an alarm unless you are sure that everyone is accounted for.


There are two ways to cancel a duress alarm:

1. Press and hold the **BUTTON** on the Tag that the alarm originated from for 3 seconds. This sends a message to the network to cancel the duress alarm.
2. Press and hold the **DIM**  and **ALARM**  buttons simultaneously on the Display Console for 5 seconds.

## 7.4 General Network Alarm: Raise, Cancel, Mute

A general network alarm can be initiated from a Display Console and may be used to alert the crew that there is a problem onboard a vessel.

### *Raising a General Alarm*

1. Press and hold the **ALARM**  button on the Display Console for 3 seconds. While the button is being pressed the router emits ascending tones and the **STROBE** flashes quickly; or
2. Activate an external alarm system that has been wired to the Display Console's switch input (i.e. press an emergency button).

When a general network alarm is activated the following events occur:

- The **STROBE** on all active Tags starts to flash and the Tags start to vibrate.
- The **STROBE** on the Display Console and any Internal Routers starts to flash twice per second and the routers emit loud repetitive tones.
- The **STROBE** on all External Routers starts to flash.
- Any external safety or alarm warning systems that are attached to a router will also be activated (when using factory default relay settings).

### *Network Mute/Acknowledgement of a General Alarm*

Press the **ALARM**  button on the Display Console.

This mutes the general alarm across the Crewsafe Wireless network.

Once muted:

- The audio alarm is reduced to a single beep every 2 seconds on the Display Console and Internal Routers.
- Active Tags continue to vibrate.
- The **STROBE** light on all routers and Tags will stop flashing, so that night vision is not affected.



**Note:** If a new man overboard, duress, general or manual network alarm is activated after an earlier alarm has been muted, the system will restart loud repetitive tones and the **STROBE** will start flashing again.

### *Local Internal Router Mute/Acknowledgement of a General Alarm*

Press the **ALARM**  button on an Internal Router.

This only mutes the general alarm locally.


Once muted:

- The audio alarm on the Internal Router is reduced to a single beep every 2 seconds.
- Active tags continue to vibrate.
- The **STROBE** light on the Internal Router will stop flashing, so that night vision is not affected.

### ***Cancelling a General Alarm***



**WARNING:** Never cancel an alarm unless you are sure that everyone is accounted for.


1. Press and hold the **ALARM**  button on the Display Console for 3 seconds.
2. Reverse the switch or repress the button used to activate the warning system wired to the Display Console's switch input.

After cancellation, all network routers and Tags return to their normal operational state.

## **7.5 Manual Network Alarm: Raise, Cancel, Mute**

A manual network alarm can be initiated across the Crewsafe Wireless network from either an Internal Router or External Router, to alert the crew to an emergency.

### ***Raising a Manual Alarm***

1. Press and hold the **ALARM**  button on the Display Console for 3 seconds. While the button is being pressed the router emits up ramping tones and the **STROBE** flashes quickly; or
2. Activate an external alarm system that has been wired to an Internal or External Router's switch input (i.e. press an emergency button).

When a manual network alarm is activated the following events occur:

- The **STROBE** on all active Tags starts to flash and the Tags start to vibrate.
- The **STROBE** on the Display Console and any Internal Routers starts to flash twice per second and the routers emit loud repetitive tones.
- The **STROBE** on all External Routers starts to flash.
- Any external safety or alarm warning systems that are attached to a router will also be activated (when using factory default relay settings).

### ***Network Mute/Acknowledgement of a Manual Alarm***

Press the **ALARM**  button on the Display Console.

This mutes the manual alarm across the Crewsafe Wireless network, except for the

Internal Router that the alarm originated from. This device continues to emit loud repetitive tones and/or strobe to enable the crew to identify the source of the alarm.

Once muted:

- The audio alarm is reduced to a single beep every 2 seconds on the Display Console and Internal Routers (except for the router from which the alarm originated).
- Active Tags continue to vibrate.
- The **STROBE** light on all routers and Tags will stop flashing, so that night vision is not affected (except for the router from which the alarm originated).



**Note:** If a new man overboard, duress, general or manual network alarm is activated after an earlier alarm has been muted, the system will restart loud repetitive tones and the **STROBE** will start flashing again.

### ***Local Internal Router Mute/Acknowledgement of a Manual Alarm***

Press the **ALARM**  button on an Internal Router.

This only mutes the manual alarm locally.

Once muted:

- The audio alarm on the Internal Router is reduced to a single beep every 2 seconds.
- Active Tags continue to vibrate.
- The **STROBE** light stops flashing, so that night vision is not affected.






**Note:** It is not possible to mute the alarm on the Internal Router that has raised a manual alarm so that it can be identified.

### ***Cancelling a Manual Alarm***



**WARNING:** Never cancel an alarm unless you are sure that everyone is accounted for.

There are three ways to cancel a manual alarm:

1. To cancel a manual alarm using the Internal Router that raised the alarm, press the **ALARM**  button on that device for 3 seconds.
2. To cancel a manual alarm using the Display Console, press and hold the **DIM**  and **ALARM**  buttons simultaneously on that device for 5 seconds. This cancels the manual alarm and all other active general and manual alarms within the system.
3. To cancel an alarm activated by an external warning system wired to an Internal or External router's switch input, reverse the switch or re-press the button used to raise the alarm.

After cancellation, all network routers and Tags return to their normal operational state unless another alarm is active.

## 7.6 False Alarms



**WARNING:** Never cancel an alarm unless you are sure that everyone is accounted for.


A false man overboard alarm may occur on the Crewsafe Wireless system if:

- a. A person leaves the vessel carrying an active Tag and disconnects from the network.
- b. An active Tag is lost overboard and cannot be retrieved.
- c. A Tag's battery runs flat.

A false duress alarm may occur if:

- a. Someone unintentionally presses the Tag **BUTTON** for 3 seconds.

A false manual or general alarm may occur if:

- a. Someone unintentionally presses the **ALARM**  button on a Display Console or Internal Router, or
- b. Someone unintentionally activates an external alarm system that has been wired to an Internal or External Router's switch input (i.e. presses an emergency button).

To cancel alarms raised in error, please see the relevant section:

- [Cancelling a Man Overboard Alarm](#)
- [Cancelling a Duress Alarm](#)
- [Cancelling a General Alarm](#)
- [Cancelling a Manual Alarm](#)

## 7.7 Managing Multiple Alarms



**WARNING:** Although it is possible that multiple alarms will occur as a result of several people activating an alarm for the same reason or incident, it is important to ensure that each alarm is investigated before it is cancelled, or before multiple alarms are cancelled from the system simultaneously.



**CAUTION:** If you are not using the Crewsafe Management System, which can distinguish between a man overboard and a duress alarm, it is best to initially assume that an alarm from a Tag is a man overboard alarm.

### ***Mute and Cancel Functions***

Mute and cancel alarm functions can be performed from a Display Console using the following actions.

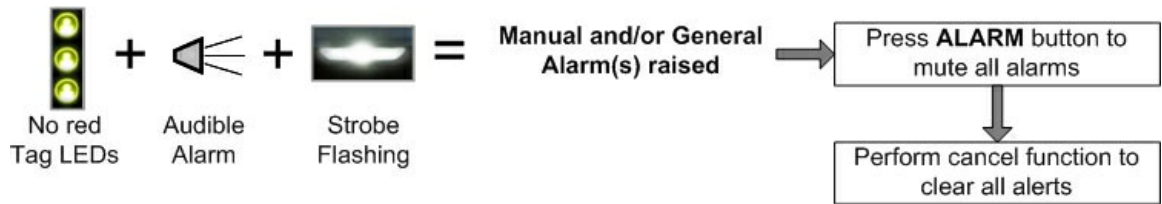
**Mute Alarms**



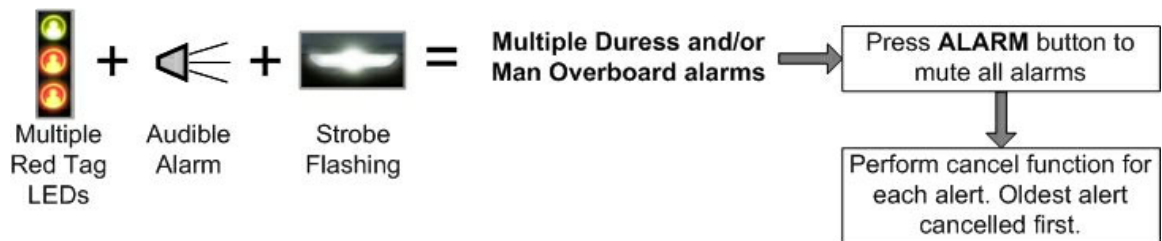
**Cancel Alerts**



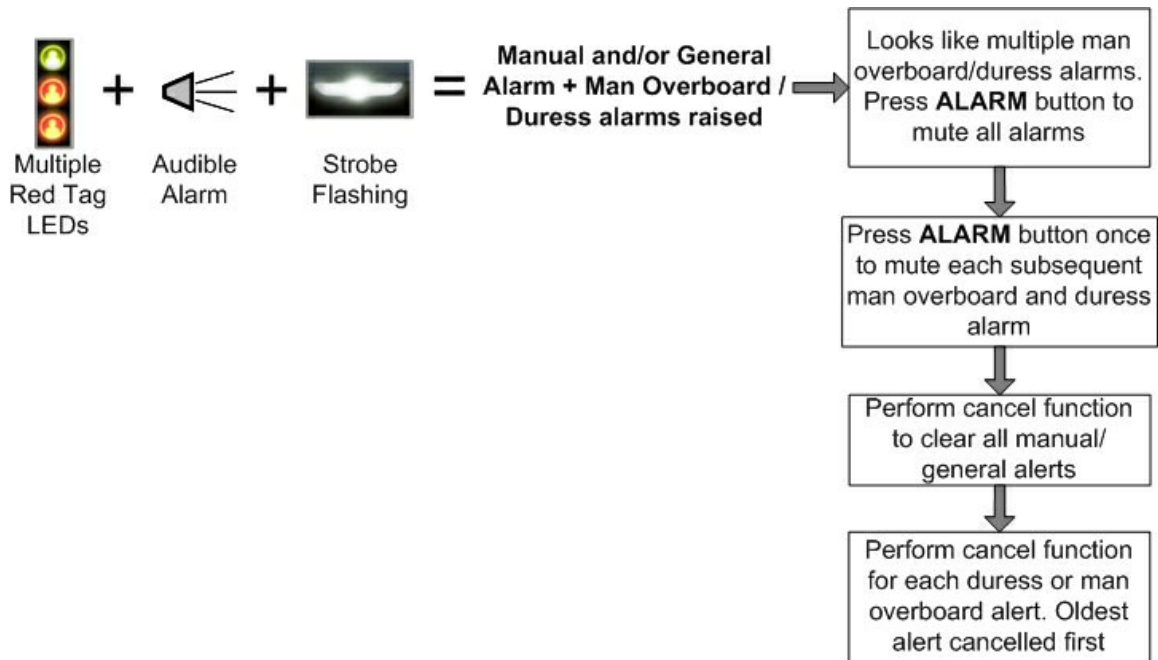
**Managing Multiple Manual/General Alarms via the Display Console**





**Managing Multiple Man Overboard and Duress Alarms via the Display Console**



## Managing Multiple Man Overboard, Duress and Manual/General Alarms via the Display Console




### Canceling a Man Overboard and Duress Alarm from the Same Tag

If both a duress and man overboard alarm are activated at the same time from the same Tag, it is only necessary to perform a single cancel function on the Display Console to clear the two system alarm states. Press and hold the **DIM**  and **ALARM**  buttons simultaneously on the Display Console for 5 seconds to cancel the alarms and remove the Tag from being in an active monitoring state on the Display Console.

If you are using the Crewsafe Management System, and cancel either a man overboard alarm or a duress alarm when they are active concurrently, both alarms will be cancelled.

### Cancel all System Alarms via the Display Console

As a last resort, it is possible to clear all alarms from the system by turning the system off at the Display Console.

It is important to turn the system off using the **POWER**  button on the Display Console, rather than disconnecting the supply of power to the unit. Otherwise, the Display Console will retain all previous alarm states. In addition, all Tags will go into a man overboard alarm state and all other routers will lose network connectivity.



**WARNING:** If you turn the system off at the Display Console then it will be unable to monitor crew on the vessel. The Display Console shuts down all network

components in range. A man overboard, duress, general or manual alarm cannot be raised while the system is shut down and any man overboard or duress situation that may occur will not be recorded. All Tags need to be individually turned on again if the system is temporarily shut down using the **POWER** button on the Display Console.

## 8 System Maintenance

The following system maintenance tasks may affect the performance of your Crewsafe Wireless system if not carried out correctly. If in any doubt, Mobilarm recommends that you contact your authorised Mobilarm service agent.

- [Adding a new router](#) to the system,
- [Adding a new tag](#) to the system,
- [Removing a tag](#) from the system,
- [Replacing Tag batteries](#),
- [Update system firmware](#), or
- [Factory reset to assign tags](#) to a Display Console.

### 8.1 Adding a Tag to the System

New Tags may be added to the Crewsafe Wireless network as replacements for lost tags or to accommodate an increase in crew members.

New Tags may be supplied:


- a. Pre-configured with the correct Network ID, or
- b. Pre-configured with an incorrect Network ID.

If a Tag is pre-configured with the correct Network ID then it should automatically connect to the network once it is turned on.

When a Tag that is pre-configured with an incorrect Network ID is turned on and tries to connect to the existing network, its **TAG STATUS LED** will flash red.

If a Tag is pre-configured with an incorrect Network ID it needs to be reconfigured with the correct Network ID for the existing network

#### ***Adding a Tag with the Correct Network ID***

1. Press the Display Console **POWER**  button to turn the Crewsafe Wireless system on.
2. Press the Tag **BUTTON**.

When a configured Tag is turned on:

- The **STROBE** light flashes twice and the **TAG STATUS LED** flashes red briefly.




- The **TAG STATUS LED** flashes green once it has been registered to the network successfully.
- The next available **TAG STATUS LED** on the Display Console is allocated to the new Tag and illuminates solid green.

### Reconfigure a Tag to the Correct Network ID

Reconfiguration of a Tag to the correct Network ID can be performed using the Display Console, or a configured Tag, i.e. one that has connected to the network previously.


#### Reconfiguration using a Display Console

This is the simplest way to reconfigure a Tag to the existing network.

1. Press the Display Console **POWER**  button to turn the Crewsafe Wireless system on.
2. Press the **POWER**  and **ALARM**  buttons simultaneously for 5 seconds.
  - This places the Display Console into configuration mode and the unused **TAG STATUS LEDs** on the router cycle green.
  - The Display Console remains in configuration mode for 60 seconds.




3. While the Display Console is in configuration mode:
  - The Tag **STROBE** flashes twice and the **TAG LED** flashes red until it has acquired the Network ID.
4. Press the Tag **BUTTON** within 20 seconds to confirm reconfiguration of the Tag.
  - The **TAG LED** flashes green once it has been registered to the network successfully.
  - If fewer than 12 Tags are currently registered to the Display Console the new Tag is assigned to the next available **TAG STATUS LED**, which will illuminate solid green.

 **Important Note:** If a Tag is not successfully programmed with the Network ID it will continue to flash red until the Network ID acquisition process times out.

If a Tag does not connect to the network after several attempts, please see the Tag section of the [troubleshooting guide](#) to diagnose the problem.

### **Reconfiguration using a Tag in Wand Mode**

Reconfiguration of a Tag can be performed using a configured tag in wand mode. A Tag remains in wand mode for 2 minutes from wand mode activation.

1. Turn the Crewsafe Wireless system on by pressing the Display Console **POWER**  button.
2. Ensure that the configured Tag you are using as the 'wand' Tag is turned off.
3. Press and hold the button on the configured Tag for 10 seconds. This places the Tag into wand mode and its LED will flash alternately red and green.
4. While the configured Tag is in wand mode, press the **BUTTON** of the Tag to be reconfigured to turn it on. The **STROBE** on this Tag flashes twice and then its LED displays short red flashes.
5. Align the lenses of both tags so that they face each other. This enables infrared data transfer of the Network ID. The Tag being reconfigured should:
  - Flash its **STROBE** twice alternately with a green LED indication.
  - Display a sequence of fast red flashes as it is reprogrammed.
5. When the Network ID data is sent successfully the Tag will display green LED flashes.
6. Check the Display Console for a new green **TAG LED**. This confirms that the Tag has been successfully added to the network.
7. The wand Tag will automatically time-out after two minutes and turn itself off. Placing the Tag into a Power Dock will also turn wand mode off.

## **8.2 Adding a Router to the System**

Internal or External Routers can be added to a Crewsafe Wireless network to increase the footprint, reliability and redundancy of the system, or to replace an existing device.

New routers may be supplied:

- a. Pre-configured with the correct Network ID, or
- b. Pre-configured with an incorrect Network ID.

If an Internal or External Router is pre-configured with the correct Network ID then it should automatically connect to the network once it is turned on.

When an Internal or External Router that is pre-configured with an incorrect Network ID is turned on and tries to connect to the existing network, it will display as follows:


- a. The **NETWORK STATUS LED** will flash purple when turned on and then go into standby mode where no LEDs are illuminated, or

- b. The **NETWORK STATUS LED** will flash purple when turned on and then flash blue in the 'unsuccessful network connection' error state.



If an Internal or External Router is pre-configured with an incorrect Network ID it needs to be reconfigured with the correct Network ID for the existing network.

### ***Adding a Router with a Correct Network ID***

1. Install the new router and attach ship's power to it.
2. Turn the Crewsafe Wireless system on by pressing the Display Console **POWER**  button.

The router will:

- Automatically search for a network that matches its internally programmed Network ID.
- Display a flashing blue **NETWORK STATUS LED** while it is being added to the network.
- Display a solid blue **NETWORK STATUS LED** once it has connected to the network.

### ***Reconfigure a Router to the Correct Network ID using a Configured Tag in Wand Mode***

Reconfiguration of a router to the correct Network ID requires a configured Tag, i.e. one that has connected to the network previously.

1. Turn the Crewsafe Wireless system on by pressing the Display Console

**POWER**  button.

2. Ensure the configured Tag is turned off.
3. Press and hold the button on the configured Tag for 10 seconds. This places the Tag into wand mode and the **TAG LED** will flash alternately red and green.
4. While the configured Tag is in wand mode, align the Tag lens to within 150 mm (6 in) of the strobe lens on the router to be reconfigured. This enables infrared data transfer of the Network ID.
5. When the Network ID data is sent successfully then the router's **STROBE** will flash twice and the **NETWORK STATUS LED** will turn solid blue when it connects successfully to the network.
6. The Tag will automatically time-out after two minutes and turn itself off. Placing the Tag into a Power Dock will also turn wand mode off.

If a router does not connect to the network after several attempts, please see the router section of the [troubleshooting guide](#) to diagnose the problem.

### 8.3 Removing a Tag from the System

You may need to remove a Tag from the Crewsafe Wireless system if:

- A person leaves the vessel carrying an active Tag, or
- An active Tag is lost overboard and cannot be retrieved, or
- An active Tag has been damaged.

All of the preceding scenarios will result in the Tag disconnecting from the network and raising a Crewsafe alarm.

If a person leaves the vessel carrying an active Tag:

Press and hold the **DIM**  and **ALARM**  buttons simultaneously on the Display Console for 5 seconds.

This will cancel the alarm across the network, except for the Tag that has disconnected (moved out of range of the wireless network). This temporarily removes the Tag from the Display Console and effectively places it into standby mode. The next time the Tag is turned on within range of the Display Console it will rejoin the network automatically.

If an active Tag is lost overboard and cannot be retrieved, or has been damaged:

Reset the Display Console back to its factory default settings. This removes all active tags from the system and should only be done if you want to permanently remove a lost or damaged Tag.

To reset a Display Console to its factory defaults please see the section titled [Factory Reset: Reassign Tags & Routers](#).



**Note:** When a Display Console is set back to its factory default settings Tags retain their previous registration information and simply need to be reconnected to the

network to be reassigned to the Display Console.

## 8.4 Factory Reset: Reassign Tags and Routers

Each Tag is assigned to a **TAG STATUS LED** on the Display Console in the order in which they are registered to the network. It is possible to change the order that Tags are displayed on the Display Console, or to permanently remove Tags from the network by performing a Factory Reset.

The Factory Reset removes all Tags from the network. Existing Tags and any new Tags can then be reassigned to the **TAG STATUS LEDs** on the Display Console. Tags which have been removed from the network retain their existing Network ID to enable them to be easily reassigned to the network when they are turned on during the Factory Reset process.



### CAUTION:

- The Crewsafe Wireless system must be turned off but connected to power to perform a Factory Reset.
- In order for all Internal and External Routers connected to the network to rejoin the network (once the Factory Reset is complete), briefly turn off the power supply to all Internal and External Routers


### Initiating a Factory Reset

Ensure that the Crewsafe Wireless system is turned off.

1. Press and hold the **DIM** , **ALARM**  and **POWER**  buttons for 5 seconds.



- The Display Console **NETWORK STATUS LED** flashes red and all lights on the front panel flash orange 8 times.
- All lights on the Display Console go out for a second.
- All lights on the Display Console flash orange a couple of times.
- The **NETWORK STATUS LED** illuminates purple for a couple of seconds and all other lights illuminate orange for the same period.
- All lights go out.

2. Turn off ship's power to all Internal and External Routers for 30 seconds and then turn it back on.
3. Press the Display Console **POWER**  button to turn the Crewsafe Wireless system on.
4. Reassign each Tag to the Display Console.



**Important Note:** Tags are assigned to a **TAG STATUS LED** on the Display Console in the order in which they are turned on.

5. Press each Tag **BUTTON**.
  - The Tag **STROBE** light flashes twice and the **TAG LED** flashes red briefly.
  - Once the Tag successfully connects to the Crewsafe Wireless network, the **TAG LED** flashes green.
  - The new Tag is assigned to the next available **TAG STATUS LED** on the Display Console and it illuminates solid green.
  - The new Tag is displayed on the Crewsafe Management System network view screens.
  - Wait for each Tag to be assigned before turning on the next Tag.



**Note:** When a Display Console is set back to its factory default settings Tags retain their previous registration information and simply need to be reconnected to the network to be reassigned to the Display Console.

### ***Naming Tags***

If fewer than 12 Tags are in use the name of the person wearing a Tag can be written on the pre-printed stickers supplied with each system and placed next to the Display Console **TAG STATUS LED** for each Tag. The Crewsafe Management System can assign alpha-numeric names and profiles of crew to each TAG and Tag status can be viewed at all times.

## **8.5 Updating Crewsafe Firmware**

It may be necessary to upgrade firmware in order to update or expand the capability of your Crewsafe Wireless system. Upgrades to firmware can only be performed by Mobilarm or your Mobilarm dealer. Please contact your dealer if you need to upgrade your system.

## 8.6 Replacing Tag Batteries



**WARNING:** Crewsafe Wireless Tags are factory fitted with high-performance 3.6 volt CR2 Lithium-ion rechargeable batteries and these **must only be replaced by an approved Mobilarm service agent** or the warranty is voided. Non-rechargeable batteries cannot be used in Tags and if installed they may rupture, leak or explode causing personal injury.

Rechargeable batteries can be charged and discharged hundreds of times but they will eventually wear out. If a Tag's operation time appears to be significantly lower than it should be after charging, the battery most likely needs replacing. Mobilarm recommends using only high-performance 3.6 volt CR2 Lithium-ion rechargeable batteries in Crewsafe Wireless Tags. To replace a battery in a Tag please return it to an authorised Mobilarm dealer for servicing.

## 9 Maintaining System Components

Crewsafe Wireless systems are extremely robust and designed for operating in the harshest conditions encountered when at sea. Despite this, we recommend that the unit is looked after as carefully as possible when in use. Please try to avoid:

- Dropping any component;
- Leaving components like Tags exposed to the elements unnecessarily when not in use; and
- Leaving Tags or other components unnecessarily in full sun on an instrument panel or dashboard, which may expose the components to excessively high temperatures.

Carefully inspect your Crewsafe Wireless system over time for any visible cracks as a result of misuse, or system components being dropped and taking heavy knocks. Any cracking could lead to moisture being admitted to the components - rendering the system unreliable or unusable. If cracking is observed, or if you suspect that a component has been damaged in some way, please return it to your place of purchase for it to be assessed and replaced if required.

### ***Battery***

The shelf life for Tag batteries is 2 years. The battery charge state is indicated on the Display Console, or by the Crewsafe Management System. A low battery warning indication indicates that a Tag should be recharged. If a Tag's operation time appears to be lower than it should be after charging, the battery most likely needs replacing by an authorised Mobilarm dealer.

### ***Cleaning Tags & Power Dock Charger Bays***



**CAUTION:** Do not paint your Crewsafe Wireless system components, or clean them with detergents or solvents that may damage the integrity of the device. Seals may be damaged by many cleaning devices. If the components require cleaning, use warm soapy water and wipe with a damp, not wet, cloth.

## System Checks

If your system has failed a system test, or you doubt the integrity of the device for some reason, please return it to your place of purchase or an approved Mobilarm dealer. Contact Mobilarm at [support@mobilert.com](mailto:support@mobilert.com), or call +61 08 9315 3511, for the nearest approved dealer in your area.

## 10 Integrating Mobilarm Technologies

Mobilarm highly recommends the use of an integrated man overboard solution that includes the use of both Crewsafe Wireless and Crewsafe V100 VHF DSC technologies. For more information on the Crewsafe V100 please visit [http://www.mobilarm.com/page/about\\_crewsafe\\_v100.html](http://www.mobilarm.com/page/about_crewsafe_v100.html).

## 11 Upgrading Firmware

It may be necessary to upgrade firmware in order to update or expand the capability of your Crewsafe Wireless system. Upgrades to firmware can only be performed by Mobilarm or your Mobilarm dealer.

## 12 Reference

Product support for Crewsafe Wireless systems is provided in various forms. This user manual should provide all the information required to get you up and running with any installed system. If you are having problems please consult the troubleshooting and FAQ sections that follow or your place of purchase for advice.

If you require further technical information about Crewsafe Wireless or other Mobilarm products, please visit Mobilarm online at [www.mobilarm.com](http://www.mobilarm.com) and visit the support section. Here you will find the latest software, troubleshooting and FAQ updates. Other downloadable manuals and materials are also available.













**Please note:** If you cannot find the information you require in this manual, or on our web-site, please e-mail [support@mobilarm.com](mailto:support@mobilarm.com)

### **Replacing Faulty or Damaged Components**

If you suspect the system has a technical fault, please contact your place of purchase to arrange to have system components assessed and repaired, or replaced if required.

## 12.1 Troubleshooting Guide

ALARMS	
PROBLEM	SOLUTION
Someone has set off a duress alarm by mistake, how do I turn it off?	<p>There are three ways to turn <b>[OFF]</b> a false duress alarm:</p> <ol style="list-style-type: none"> <li>1. Press and hold the <b>BUTTON</b> on the Tag that the alarm originated from for three seconds. This sends a message to the network to cancel the duress alarm state. Once cancelled, the Tag and all system components return to the active monitoring state.</li> <li>2. Press and hold the <b>DIM</b>  and <b>ALARM</b>  buttons simultaneously on the Display Console for 5 seconds. This removes the Tag from being in an active monitoring state on the Display Console.</li> <li>3. Click the <b>Cancel</b> button for the alarm in the Crewsafe Management System; Click <b>Yes</b> in the confirmation dialog; Click <b>Confirm</b> in the second confirmation dialog.</li> </ol>
Someone has dropped a Tag overboard and lost it, how do I turn off the alarm?	<ol style="list-style-type: none"> <li>1. Press and hold the <b>DIM</b>  and <b>ALARM</b>  buttons simultaneously on the Display Console for 5 seconds. This removes the Tag from being in an active monitoring state on the Display Console, or</li> <li>2. Click the <b>Cancel</b> button for the alarm in the Crewsafe Management System; Click <b>Yes</b> in the confirmation dialog; Click <b>Confirm</b> in the second confirmation dialog.</li> </ol>
Someone has walked off the vessel while wearing an active Tag, the man overboard alarm is sounding so how can I turn it off?	<ol style="list-style-type: none"> <li>1. Press and hold the <b>DIM</b>  and <b>ALARM</b>  buttons simultaneously on the Display Console for 5 seconds. This removes the Tag from being in an active monitoring state on the Display Console.</li> <li>2. Click the <b>Cancel</b> button for the alarm in the Crewsafe Management System; Click <b>Yes</b> in the confirmation dialog; Click <b>Confirm</b> in the second confirmation dialog.</li> </ol>
Someone has set off a false alarm using an Internal Router, how do I cancel it?	<ol style="list-style-type: none"> <li>1. To cancel a manual alarm using the Internal Router that raised the alarm, press the <b>ALARM</b>  button on that device for 3 seconds.</li> <li>2. To cancel a manual alarm using the Display Console, press and hold the <b>DIM</b>  and <b>ALARM</b>  buttons simultaneously on that device for 5 seconds. This cancels the manual alarm and all other active general and manual alarms within the system.</li> <li>3. Reverse the switch or repress the button used to activate a warning system wired to a router's switch input.</li> <li>4. Click the <b>Cancel</b> button for the alarm in the Crewsafe Management System; Click <b>Yes</b> in the confirmation dialog; Click <b>Confirm</b> in the second confirmation dialog.</li> </ol>

<b>If someone sets off a Location Network Alarm, how can I identify where the alarm originated from?</b>	<ol style="list-style-type: none"> <li>1. The router that raises a manual alarm is identified visually when using the Crewsafe Management System. The screen displays the name of the router and where it is located, or</li> <li>2. Press the <b>ALARM</b>  button on the Display Console and the router that initiated the alarm will continue to emit loud repetitive tones and <b>STROBE</b> to enable the crew on a vessel to identify the source of the alarm.</li> </ol>
<b>Every time someone goes to one section of the vessel an man overboard alarm is activated, even though nobody has fallen overboard?</b>	If the network is not providing sufficient coverage over all areas of the boat a man overboard alarm may be activated. This occurs because the Tag loses contact with the network and the system thinks the person has fallen overboard. This can be solved by adding another router to the section or sections of the boat that are causing problems.
<b>Every time we sail past a particular spot a man overboard alarm is activated, what could be causing this?</b>	If the system is operational and becomes swamped by radio frequency signals, it may lose contact with active Tags and go into a man overboard state. This could be caused by very high-energy RF transmissions, or a device in the vicinity transmitting on the same channel as the Crewsafe Wireless system. To get around this, you could turn the system <b>[OFF]</b> and then <b>[ON]</b> again in the vicinity of the interfering transmissions. The Display Console will automatically attempt to connect the system to an interference-free channel on system power up. There is an excellent chance it will connect to a channel that is unaffected by the RF signals that previously caused problems.

<b>ROUTERS</b>	
<b>PROBLEM</b>	<b>SOLUTION</b>
<b>I have powered up the system and the buttons on my Display Console (or Internal Router) don't seem to be working</b>	Please return the router to your nearest Mobilarm service agent.
<b>My router's NETWORK STATUS LED flashes red when it is</b>	If your router flashes red when it is turned on then it has not been configured with a compatible Network ID for the system. Network IDs are usually factory or dealer configured for each network. Check the Network ID (PAN ID) displayed on any internal or external router against the one displayed on the Display Console to ensure they

turned On	match. If it doesn't match you will need to reprogram your router.
<b>My router's NETWORK STATUS LED continues with long blue flashes after power up</b>	Configured routers display long blue flashes initially on power up while all network routers join the network. The <b>NETWORK STATUS LED</b> is solid blue once a router joins the network. If your router continues to display long blue flashes then it is probably programmed with an incorrect Network ID and won't join the network until it is reconfigured.
<b>My router's NETWORK STATUS LED flashes purple on power up and then isn't illuminated</b>	If a router has been used previously and was correctly powered down before being removed from its previous network, the <b>NETWORK STATUS LED</b> will flash purple on power up and then go into standby mode where no LEDs are illuminated. The router needs to be reconfigured with a correct Network ID.
<b>After the network is powered up, the NETWORK STATUS LED on one of the routers is orange</b>	If any of the routers on the network fail a self test when power is applied to them an orange fault LED is displayed. The faulty router should be returned to your Mobilarm dealer for evaluation.
<b>When I power up the Display Console the NETWORK STATUS LED flashes blue and then turns off</b>	There could be RF interference in the vicinity. If the network experiences radio frequency interference when turned <b>[ON]</b> , the Display Console automatically searches for a new channel that is free of interference. Normally, the Display Console connects to a "quiet" channel unless it is completely "swamped" by RF in the vicinity. If it is unable to find an interference-free channel, the Display Console and the network goes into a standby state and the router <b>NETWORK STATUS LEDs</b> will be off.
<b>My router's NETWORK STATUS LED is flashing blue very quickly</b>	If a router flashes blue very quickly then it has a problem and has lost connection with the network, or has not been configured for the ship's network. Other routers on the network display long blue flashes to signify that one or more of the routers on the network have lost network connectivity. A faulty router should be returned to your Mobilarm dealer for evaluation and a non-configured router can be reprogrammed on the vessel.
<b>My Display Console is faulty and I need to replace it, can I use the same Network ID to avoid reprogramming</b>	Absolutely. In the unlikely event that an Display Console fails, simple contact your nearest Mobilarm dealer and supply the serial number and Network ID displayed on your faulty router. A new Display Console with the same settings can be supplied to avoid having to reprogram your entire network.

the network?	
I am having difficulties reprogramming the network ID into one of my routers?	<ol style="list-style-type: none"> <li>1. Check that lens of the wand Tag you are using is lined up correctly within 150mm (6 in) of the router lens during configuration.</li> <li>2. Double-check that the wand Tag you are trying to use is not an unconfigured Tag.</li> <li>3. Try to configure another router to determine if the router you are attempting to program is faulty.</li> </ol>

TAGS	
PROBLEM	SOLUTION
My Tag LED flashes red when it is turned on	If a <b>TAG LED</b> displays short red flashes on power up then it is not configured for the network. If a <b>TAG LED</b> displays long red flashes on power up then it is not configured with a correct Network ID. Network IDs are factory or dealer configured. Check the Network ID displayed on any unconfigured Tag against the one displayed on your Display Console to ensure they match.
My Tag LED is flashing orange and the Tag is vibrating intermittently, what does this mean?	The battery is getting low so it should be put on charge if possible. If the battery in the Tag is in good condition then it should last for around 10 hours from when the low battery indication commences. A man overboard alarm will occur if the battery runs flat.
My Tag has been charged but the battery is not lasting very long	All rechargeable batteries have a limited life. This will vary a little depending on the operating environment of the Tag. If a Tag's operation time is significantly lower than it should be after charging, the battery most likely needs replacing.
My Tag was charging in the Power Dock and the Tag's LED is solid red - is there a problem?	If a fault occurs during charging then the <b>TAG LED</b> turns solid red. This may occur if the Tag and battery get too hot (let it cool down and try to charge it again). It may also occur if a battery or a Tag is faulty. If this is the case, the Tag should be returned to your Crewsafe Wireless system dealer.
We lost a Tag overboard, how do I remove it from the system?	If a Tag is lost, clear any alarm from the system using the cancel alarm function on your Display Console. There is no need to reprogram the system if a Tag is lost, as long as you have enough spare <b>TAG STATUS LEDs</b> available on your Display Console.
I can't seem to reconfigure a new Tag for my existing Crewsafe	If a Tag does not successfully become registered to the system, please ensure that your Tag lens is within 150mm (6 in) of the Display Console's strobe lens.

Wireless network, what can I check?	
I accidentally walked off my vessel without turning my Tag off, how can I turn it off without returning to the vessel?	Press and hold the <b>BUTTON</b> on the Tag for 10 seconds.

POWER DOCKS	
<i>PROBLEM</i>	<i>SOLUTION</i>
When I put my Tag in the Power Dock the LED on the Tag is displaying as solid red, what does this mean?	If a fault occurs during charging, the <b>TAG LED</b> displays solid red. It is possible that the Tag is faulty and you can check this by trying to charge the Tag in another charging bay. If the LED is still red in another bay, return the Tag to your nearest Mobilarm dealer or service agent.
The green power LED on my Power Dock is not illuminated, what could cause this?	If a Power Dock bay is short-circuited by either a Tag or something placed into the bay, the Power Dock will shut down and the green LED on the dock will go out. Check the Power Dock bays are clear of materials. If the Power Dock is on a separate power circuit to other equipment on the vessel, check that the breaker hasn't accidentally been turned off.

## 12.2 FAQs



**Q: If my PC or Tablet crashes will the Crewsafe Wireless system still monitor my crew?**

The Crewsafe Wireless system will continue to operate normally if your Crewsafe Management System PC or tablet crashes. When the PC or tablet is rebooted successfully you can reopen the program and resume normal Crewsafe Management System operations.

**Q: How are crew profiles useful when using the Crewsafe Management System?**

Crew profiles are useful in a number of ways. They can be used to store important medical and personal information related to crew members and the profile can be associated with a Tag. This makes it easy to monitor crew members and identify them in an emergency.


**Q: I seem to be having trouble connecting my new Tag to the network?**

You probably need to configure your new Tag for the network. Tags need to be registered to the network before they can connect to it. Tags also need to be programmed with the Network ID for the current network in order to connect. The correct Network ID can be sent to a Tag by placing the Display Console into configuration mode (press and hold the **POWER**  and **ALARM**  buttons) and placing the non-programmed Tag in close proximity to the Display Console. Turn the Tag on, wait for it to recognise the network (LED is solid green) and then press the Tag button to confirm programming of the Tag. The Tag should appear as the next available **TAG STATUS LED** on the Display Console when successfully programmed. (The section of the Crewsafe Wireless manual titled [Adding a Tag to the System](#) explains this procedure in detail.)

**Q: My internal and external routers don't seem to be connecting to the network?**

If a router is not configured for a network, or it is pre-configured with the Network ID for a different network, it needs to be configured with the current Network ID in order to be registered. If your routers' **NETWORK STATUS LEDs** are flashing red then they haven't been configured with a Network ID. If the **NETWORK STATUS LED** on a router flashes purple on power up and subsequently doesn't illuminate or flashes blue, then it is probably programmed with an incorrect Network ID.

To configure a router please perform the following:

1. Turn the system **[ON]**, including the router to be programmed, by pressing the Display Console **POWER**  button.
2. Press and hold the button on a configured Tag (one that has connected to the network previously) while it is turned **[OFF]** for 10 seconds. When the Tag enters wand mode the LED on it alternately flashes red and green.
3. While the configured Tag is in wand mode, place the Tag in close proximity to the router being programmed and press the wand Tag's button. This initiates programming of the router with a new Network ID for the new network.
4. If the Network ID data is sent successfully then the router's **STROBE** will flash twice and the **NETWORK STATUS LED** will turn blue when it connects successfully to the network.



5. To exit wand mode, press and hold the button on the wand Tag for a few seconds until the LED stops flashing and it enters standby mode.

**Q: When I power up the Display Console the NETWORK STATUS LED flashes blue and then goes out, what's going on?**

It's possible that the network is experiencing radio frequency interference on power up. Normally the Display Console automatically searches for a new channel that is free of interference when it is turned on and it connects to a "quiet" channel - unless it is completely "swamped" by RF in the vicinity. If it is unable to find an interference-free channel, the Display Console and the network goes into a standby state and the router **NETWORK STATUS LEDs** will be [OFF]. If you are in an area with lots of RF around, try to power the system up again when you have shifted position slightly.

### ***False Alarms & Operational Issues***

**Q: If someone accidentally loses a Tag overboard or walks off the boat with a Tag, how do I cancel the alarm?**

The simplest way to cancel any false alarm is to press and hold the **DIM**  and **ALARM**  buttons simultaneously on the Display Console for 5 seconds. This removes the affected Tag from the Display Console front panel and effectively places it into standby mode.

**Q: If someone accidentally loses a Tag or damages it, how do I remove it from the system?**

If a Tag is lost, clear any alarm from the system using the cancel alarm function on your Display Console. There is no need to reprogram the system if a Tag is lost, as long as you have enough spare **TAG STATUS LEDs** available on your Display Console.

For more information on resetting an Display Console to its factory defaults please see the section titled [Factory Reset: Reassign Routers & Tags](#).

### 12.3 Glossary of Terms & Acronyms

<b>ACMA</b>	Australian Communications and Media Authority
<b>AMSA</b>	Australian Maritime Safety Authority
<b>DSC</b>	Digital Selective Calling – technology used to automate calling on terrestrial marine radio systems.
<b>EPIRB</b>	Emergency Position Indicating Radio Beacon.
<b>FCC</b>	US Federal Communications Commission
<b>GMDSS</b>	Global Maritime Distress and Safety System.
<b>GRT</b>	Gross Registered Tons – statutory measurement of a vessel's size.
<b>IEC</b>	International Electrotechnical Commission
<b>IMO</b>	International Maritime Organisation.
<b>ITU</b>	International Telecommunications Union
<b>kHz</b>	Kilo Hertz – measurement unit of radio frequency (1 thousand Hertz).
<b>MHz</b>	Mega Hertz – measurement unit of radio frequency (1 million Hertz).
<b>MAYDAY</b>	Radio pro-word indicating a voice distress priority message
<b>MID</b>	Maritime Identification Digits
<b>MMSI</b>	Maritime Mobile Service Identity (DSC identity number)
<b>MRCC</b>	Maritime Rescue Coordination Centre.
<b>MSLS</b>	Marine Survivor Locating System
<b>PAN</b>	Personal Area Network
<b>PLB</b>	Personal Locator Beacon (a small personal radio locating beacon, normally operating through the COSPAS-SARSAT system on 121.5 and/or 406 MHz)
<b>RCC</b>	Rescue Coordination Centre
<b>RTCM</b>	Radio Technical Commission for Maritime Services
<b>SAR</b>	Search and Rescue
<b>SOLAS</b>	International Convention for the Safety of Life At Sea. Applies to vessels of 300 GRT and over, engaged on an international voyage.
<b>USCG</b>	US Coast Guard
<b>VHF</b>	Very High Frequency radio band – 30 to 300 MHz.

## 13 Technical Specifications

<b>General</b>	
Personal Area Network	2.4GHz ISM band
Wireless Network Protocol	IEEE 802.15.4
System Nodes Supported	Release v.1.0: supports 32 nodes including routers, with up to 24 Tags. Release v.1.9: supports 64 nodes; up to 32 routers; up to 48 tags.
Programming Interface	Infrared serial communications for firmware upgrades & device configuration
Programming Range	500mm
Compass Safe Distance	All system components Safe when inactive at close range (500mm - tested as per IEC 60945 safe distance test); low EMF prior to unit activation
Storage Temperature	-20° to +70°C (-4° to +158°F).
<b>System Alarms</b>	
Man Overboard Alarm	10 seconds (nominal) after a Tag's signal is disconnected from the system
Duress Alarm	Within 4 seconds (nominal) of activation
General/Manual Alarm	Immediately (nominal) after activation via the Alarm button
Paging Alert	Within 4 seconds (nominal) of activation using the Crewsafe Management System
<b>Router Network Status LED States</b> (visible on a Display Console, Internal Router and External Router)	
No Illumination	The router is turned off; disconnected from the network
Long Blue Flashes	<i>On start up:</i> The router is trying to join the network <i>During operation:</i> There is a fault somewhere on the network
Short Blue Flashes	A network is being created
Solid Blue	The router has joined the network and is operating normally
Flashing Blue Fast	The router has lost connectivity with the network
Solid Red	The router has failed a self test and is not connected to the network
Long Red Flashes	The router is not configured for the network (no Network ID)
Short Red Flashes	A factory Reset is in Progress

<b>Display Console</b>	
Power Supply	11-30V DC
Typical Power Consumption	5W maximum
Operating Temperature	-15° to +70°C (5° to +158°F).
Dimensions	184 x 103.6 x 40mm (7.24 x 4.08 x 1.57in)
Weight	301 g (10.62 oz)
Case	Ingress sealed, UV stabilised, impact resistant housing
Mounting Options	Surface/flush or bracket mounting options
Environmental Resistance	IP56
Strobe Light	120 degree dispersion at 5 candela
Audible Alarm	Bracket mounted: 70dB at 30cm (1ft) with 24V supply
Relay Outputs	2 optically-isolated relay outputs for activation of additional alerting devices; supports a switching current of 1.5 A at the supplied voltage, switched to ground.
Switch Input	100mA switched to ground with a 5K input impedance.
Serial Communications	2 x 4 wire interfaces supporting NMEA 0183 specifications. System is compatible with the following NMEA sentences: RMC; RMA; GGA; GLL; DSC/DSE; WPL; BWC; BWR.
Tag LEDs	12 x bi-colour <b>TAG STATUS LEDs</b>
Router/Network Status LED	One red and one blue router/network status LED display
GPS Chart Plotter LED	1 bi-colour GPS chart plotter status LED
<b>Controls &amp; Operation</b>	
Power Button	Turns the entire system on and off; clears all alarms when turned off
Dim Button	Dims the LEDs on the router; 4 stage dimming.
Alarm Button: Mute function	Press momentarily to mute a man overboard, general, duress or manual alarm
Alarm Button: General Alarm On	Press for 3 seconds to initiate a general alarm
Alarm Button: General Alarm Off	Press for 3 seconds to cancel a general alarm
<b>TAG STATUS LED Operation States</b>	
No Illumination	Tag is <b>[OFF]</b> ; no Tag is assigned to the <b>TAG STATUS LED</b> on the Display Console; or a Tag has been deactivated by cancelling a man overboard alarm.
Solid Green	Tag is <b>[ON]</b> and is safe
Long Orange Flashes	Tag is <b>[ON]</b> and the battery is low
Solid Orange	Tag is being charged in a Power Dock
Short Fast Red Flashes	Tag has entered the man overboard warning state prior to an

	alarm and a man overboard way point is logged
Long Red Flashes	A man overboard or duress alarm has been muted
Solid Red	Tag has entered an active man overboard alarm state, or a duress alarm has been activated
<b>GPS Chart Plotter LED States</b>	
No Illumination	No GPS or chart plotter is connected
Solid Green	GPS or chart plotter data is good
Long Red Flashes	Receiving invalid chart plotter data (chart plotter is likely to be acquiring GPS data)
Solid Red	No data is being received from the GPS chart plotter (likely to be a cable/wiring issue, or GPS chart plotter is turned off)
Illuminated Red for 5 Seconds	Signifies cancelling of any active alarms
<b>Strobe/Piezo Operation States</b>	
General Alarm Initiated	Very fast flashes on the Display Console with up-ramping tones when initiated
General Alarm Active	Fast flashes accompanied by high level, repetitive tones
General Alarm cancelled	Very fast flashes with down-ramping tones when the alarm is cancelled
Duress Alarm Active	After manual activation from a Tag, fast flashes on the Display Console accompanied by high level, repetitive tones
Man Overboard Alarm Active	After man overboard activation from a Tag, fast flashes on the Display Console accompanied by high level, repetitive tones
Manual Alarm Active	After activation by an Internal Router, fast flashes on the Display Console accompanied by high level, repetitive tones
Mute Alarm	Long, infrequent flashes when any alarm is muted
<b>Relay 1 Output States</b>	(used for devices attached to the router and network mute)
Open	Open during normal operation or if Display Console mute has been activated
Closed	Closes when any alarm is activated
<b>Relay 2 Output States</b>	
Open	Open during normal operation
Closed	Closes when any alarm is activated until the system is restored to normal operation

<b>Internal Router</b>	
Power Supply	11-30V DC
Typical Power Consumption	3W maximum
Operating Temperature	-15° to +70°C (5° to +158°F).
Dimensions	184 x 103.6 x 40mm (7.24 x 4.08 x 1.57in)
Weight	247 g (8.7oz)
Case	Ingress sealed, UV stabilised, impact resistant housing
Mounting Options	Surface/flush or bracket mounting options
Environmental Resistance	IP56
Strobe Light	120 degree dispersion at 5 candela.
Audible Alarm	Bracket mounted: 70dB at 30cm (1ft) with 24V supply
Relay Outputs	2 optically-isolated relay outputs for activation of additional alerting devices; supports a switching current of 1.5 A at the supplied voltage, switched to ground.
Switch Input	100mA switched to ground with a 5K input impedance.
Router/Network Status LED	One red and one blue router/network status LED
<b>Controls &amp; Operation</b>	
Dim Button	Dims the LEDs on the router; 4 stage dimming
Alarm Button: Mute function	Press momentarily to mute a man overboard, general, duress or manual alarm
Alarm Button: Manual Alarm On	Press for 3 seconds to initiate a manual alarm
Alarm Button: Manual Alarm Off	Press for 3 seconds to cancel a manual alarm
<b>Strobe/Piezo Operation States</b>	
General Alarm Active	Fast flashes accompanied by high level, repetitive tones
Duress Alarm Active	After manual activation from a Tag, fast flashes on the Internal Router accompanied by high level, repetitive tones
Man Overboard Alarm Active	After man overboard activation from a Tag, fast flashes on the Internal Router accompanied by high level, repetitive tones
Manual Alarm Initiated	Very fast flashes on the Internal Router with up-ramping tones when initiated
Manual Alarm Active	Fast flashes on the Internal Router accompanied by high level, repetitive tones
Manual Alarm cancelled	Very fast flashes with down-ramping tones when the alarm is cancelled
Mute Alarm	Long, infrequent flashes when any alarm is muted
<b>Relay 1 Output States</b> (used for devices attached to the router)	
Open	Open during normal operation or if Internal Router or Display Console mute has been activated
Closed	Closes when any alarm is activated

<b>Relay 2 Output States</b>	
Open	Open during normal operation
Closed	Closes when any alarm is activated until the system is restored to normal operation

<b>External Router</b>	
Power Supply	11-30V DC
Typical Power Consumption	3W
Operating Temperature	-20° to +70°C (-4° to +158°F)
Dimensions	168 x 140 x 45.7mm (6.61 x 5.51 x 1.80in)
Weight	736 g (26 oz) including supplied cable
Case	Ingress sealed, UV stabilised, impact resistant housing
Mounting Options	Surface/flush, bracket, pole/railing mounting options
Environmental Resistance	IP67
Strobe Light	120 degree dispersion at 5 candela
Relay Output	1 optically-isolated relay output for activation of additional alerting devices; supports a switching current of 1.5 A at the supplied voltage, switched to ground.
Switch Input	100mA switched to ground with a 5K input impedance.
Router/Network Status LED	One red and one blue router/network status LED
<b>Strobe Operation States</b>	
General Alarm Active	Strobe flashes fast after activation
Duress Alarm Active	Strobe flashes fast after activation
Man Overboard Alarm Active	Strobe flashes fast after activation
Manual Alarm Active	Strobe flashes fast after activation
<b>Relay 1 Output States</b> (used for devices attached to the router)	
Open	Open during normal operation or if Display Console mute has been activated across the network
Closed	Closes when any alarm is activated

<b>Tag</b>	
Battery	1 x rechargeable 3.6 volt CR2 battery
Battery Shelf Life	1 year
Battery Life - full charge	up to 48 hours of normal operation
Man overboard alarm Battery Life	up to 4 hours in an alarm state when fully charged
Man overboard alarm Battery Life - low battery indicated	10 hours from low battery indication
Operating Temperature	-20° to +70°C (-4° to +158°F).

Dimensions	95.4 x 50.2 x 37.3mm (3.76 x 1.98 x 1.47in)
Weight	78 g (2.75 oz)
Environmental Resistance	IP68; 2 metres for 1 minute
Case	Impact resistant, UV stabilised polycarbonate shell with TPE overmould
Buoyancy	Positive buoyancy
Strobe Light	RTCM standard-compatible for in-water tracking
LED	One red/green Bi-LED
<b>Controls &amp; Operation</b>	
System On/Off	Press button momentarily to turn a Tag on
Duress Alarm On	Press and hold Tag button for 3 seconds
Duress Alarm Off	Press and hold Tag button for 3 seconds
Man overboard Alarm	Man overboard warning after 4 (nominal) seconds, MOB alarm after 10 seconds (nominal)
Man overboard Warning Alarm	Man overboard warning after 4 (nominal) seconds, man overboard alarm after 10 seconds (nominal)
Turn off Tag in man overboard State	Press and hold Tag button for 10 seconds (nominal)

<b>Tag LED Operation States</b>	
No Illumination	Tag is turned <b>[OFF]</b> or battery is flat
Green Flashes	Tag is <b>[ON]</b> and safe.
Orange Flashes	Tag is connected to the network and the battery is low
Short Red Flashes	Tag is not configured with a network ID
Long Red Flashes	Tag is turned <b>[ON]</b> and configured with an incorrect network ID
Short Fast Red Flashes	Tag has been turned <b>[ON]</b> and is attempting to join the network
<b>Tag LED Charge States when in Power Dock and Turned On</b>	
Solid Green	Tag is fully charged
Solid Orange	Tag is charging
Solid Red	Tag charging fault

<b>Strobe Operation States</b>	
Power On/Startup	Strobe flashes twice
Man overboard Warning	Strobe flashes fast once a man overboard warning is activated
Man overboard Device Alarm	Strobe double-flash occurs every 2 seconds when man overboard alarm is activated
Duress Alarm Initiated	Strobe flashes fast after a duress alarm is initiated
Duress Alarm Activated	Strobe flashes fast after a duress alarm is activated

Duress Alarm cancelled	Strobe flashes fast while the alarm is being cancelled
General Network Alarm Active	Strobe flashes once each half-second when activated
Duress Network Alarm Active	Strobe flashes once each half-second when activated
Man overboard Network Alarm Active	Strobe flashes once each half-second when activated
Manual Network Alarm Active	Strobe flashes once each half-second when activated
Paging	No flash in paging mode
Network Shutdown	Strobe flashes for five seconds prior to shutdown
Tag Shutdown (in charger)	Strobe flashes for three seconds prior to shutdown
<b>Tag Vibration During Operation</b>	
Man overboard Alarm: Tag Initiating Alarm	Tag vibrates for 60 seconds after a man overboard alarm is activated, or until it comes back within range of the network
Man overboard Alarm: Tags not initiating alarm	Other Tags not in man overboard alarm state vibrate initially when an alarm is activated over the network
Duress Alarm: Tag Initiating Alarm	Tag vibrates after a duress alarm is activated until the alarm is either muted on the Display Console or deactivated
Duress Alarm: Tags not initiating alarm	Other Tags not in a duress alarm state vibrate when a duress alarm is activated over the network
General Alarm	All active Tags vibrate after the alarm is activated by the Display Console
Manual Alarm	All active Tags vibrate after the alarm is activated by the Display Console
Paging	Tags vibrate when paged by the Crewsafe Management System
Low Battery Warning	A Tag vibrates for one second every 20 seconds (nominal) to indicate the battery is low
Network Shutdown	A Tag vibrates for five seconds before during network shutdown

<b>Powerdock</b>	
Power Supply	11-30V
Maximum Power Consumption	12W
Operating Temperature	-10° to +55°C (-14° to +131°F).
Charge Time	4 fully discharged Tags in 4 hours maximum
Dimensions	380 x 115 x 54mm (14.96 x 4.53 x 2.13in)
Weight	0.5 kg (17.64 oz)
Case	Impact and water resistant.
Mounting Options	Mount vertically or horizontally up to 4 Power Docks together
Environmental Resistance	IP56
LED Indication	Green power indication LED

## 13.1 Trademarks

The following names, and/or the logos and symbols associated with them, are trademarks of Mobilarm Limited in Australia and/or other countries: Always on Watch; Crewsafe; Mobilarm; Mobilert; Onix; Sitesafe

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## 14 Warranty

### ***LIMITED WARRANTY***

1. MOBILARM warrants, to the original purchaser only, each Marine Employee Safety Monitoring Product ("Product") manufactured and/or supplied by MOBILARM against defects in materials and workmanship under normal use and service, and against non-conformity to its technical specifications for a period of 24 months from the date of purchase. Software products are warranted as per the End User License Agreement applicable to that software.
2. MOBILARM warrants Software products against failure of programming instructions due to defects in materials and workmanship when properly installed and used on the hardware designated by MOBILARM. MOBILARM cannot be responsible in any way for ancillary equipment, hardware or software not furnished by MOBILARM which is attached to or used in connection with MOBILARM's Products, or for the operation of the Product with any ancillary equipment, hardware or software and all such equipment, hardware or software is expressly excluded from this warranty. Mobilarm further warrants that Mobilarm owned standard Software will substantially conform to Specifications.

In the event of a defect, malfunction or failure of the Product during the warranty period, MOBILARM's liability for any breach of contract or any breach of express or implied warranties in connection with the sale of Products shall be limited solely to repair or replacement, at its option, of the Product or part(s) therein which, upon examination by MOBILARM, appear to be defective or not up to factory specifications. MOBILARM may, at its option, repair or replace parts or subassemblies with new or reconditioned parts and subassemblies. Parts thus repaired or replaced are warranted for the balance of the original applicable warranty.

3. MOBILARM will pay all labour to repair the product and replacement parts charges incurred in providing the warranty service except where purchaser abuse or other qualifying exceptions exist. The purchaser must pay any transportation expenses incurred in returning the Product to MOBILARM for service.
4. MOBILARM disclaims liability for range, coverage, or operation of the Product and ancillary equipment as a whole under this warranty. MOBILARM reserves the right to make changes or improvements in Products, during subsequent production, without incurring the obligation to install such changes or improvements on previously manufactured Products.
5. MOBILARM will not warrant installation, maintenance or service of the Products. In all instances, MOBILARM's liability for damages shall not exceed the purchase price of the defective Product.
6. This limited warranty does not extend to any Product which has been subjected to misuse, neglect, accident, incorrect service repair or maintenance by anyone other than MOBILARM or its Authorised Service Agent(s), improper installation, unauthorised modification, loss or damage in transit, or subjected to use in violation of instructions furnished by MOBILARM, nor does this warranty extend to Products on which the serial number has been removed, defaced, or changed.
7. The implied warranties which the law imposes on the sale of this Product are expressly LIMITED, in duration, to the time period specified above. MOBILARM shall not be liable under any circumstances for consequential damages resulting from the use and operation of this Product, or from the breach of this LIMITED WARRANTY, any implied warranties, or any contract with MOBILARM.

IN CONNECTION WITH THE SALE OF ITS PRODUCTS, MOBILARM MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, EXCEPT AS EXPRESSLY SET FORTH HEREIN.

Some states and territories do not allow the exclusion or limitation of incidental or consequential damages, or limitation on how long an implied warranty lasts, so the above limitations or exclusions may not apply. This warranty gives specific legal rights, and there may be other rights which may vary from state to state, or between territories.

### ***Warranty Period***

The standard warranty on Crewsafe Wireless systems is 24 (twenty four) months.

## 14.1 Exclusions

The law implies terms, conditions and warranties ('prescribed terms') into contracts for the supply of goods and services and prohibits the exclusion, restriction or modification of certain terms, conditions and warranties. Some prescribed terms permit a supplier to limit its liability for a breach of the prescribed terms. Except as provided by prescribed terms:

- (1) the liability of the seller in respect of a breach of a prescribed term relating to the products or any part of the products is limited at the option of the seller to the replacement or repair of the products part thereof or payment of the cost of repairing or replacing the products or any part of the products;
- (2) in these conditions the buyer does not have under any circumstances any cause of action against or right to claim or recover from the seller for, or in respect of, any loss or damage of any kind whatsoever, caused directly or indirectly by:
  - (a) any defect in material or workmanship of, or any other defect whatsoever in, or unsuitability for, any purpose of the products or any part of the products; or
  - (b) by default or negligence on the part of the seller or of any employee, contractor or agent of the seller or of any person for whom the seller has legal responsibility relating to the supply of, or otherwise concerning products or any part of the products. Mobilarm Limited is not liable to the buyer in contract or in tort arising out of, or in connection with, or relating to:
    - (a) the performance of the products or any breach of these conditions; or
    - (b) any fact, matter or thing relating to the products; or
    - (c) any error (whether negligent or in breach of contract or not) in information supplied to the buyer or a user before or after the date of the purchaser's or user's use of the products.

Mobilarm Limited is not liable to the buyer in contract or in tort arising out of, or in connection with, or relating to:

- (a) the performance of the products or any breach of these conditions; or
- (b) any fact, matter or thing relating to the products; or
- (c) any error (whether negligent or in breach of contract or not) in information supplied to the buyer or a user before or after the date of the purchaser's or user's use of the products.

The total liability of Mobilarm Limited for loss or damage of every kind:

- (a) whether arising pursuant to this agreement; or
  - (b) out of or in relation to the goods, their sale, delivery or the way they behave, in tort or contract or in any other cause of action; or in any other way whatsoever, is limited to:
    - (c) the amount paid by the buyer to the seller under this agreement at the date when such liability arises; or
- The buyer indemnifies on a continuing basis on a fully indemnity basis Mobilarm Limited from and against any liability, loss, expense or demand for or arising from any false, misleading, deceptive or misdescriptive representation or statement made by the buyer in respect of the products, or their intended use to any person. This indemnity survives termination of this agreement by either party for any reason.

The failure of any party to enforce the provisions of this agreement or to exercise any

rights expressed in this agreement is not be a waiver of such provisions or rights and does not affect the enforcement of this agreement.

## 14.2 Declaration of Conformity

### *EC Declaration of Conformity*

In accordance with EU directives (and AS/NZS 4268:2008)

We, Mobilarm Limited

Of, 768 Canning Highway, APPECROSS WA 6153

Declare that:

Equipment, Crewsafe Wireless 8000 Man Overboard Monitoring Systems

Model name / number:

- Display Console MOA-0130
- Internal Router MOA-0120
- External Router MOA-0110
- Tag MOA-0140
- Power Dock MOA-0150

has been designed and manufactured the following specifications:

- **ETSI EN 300 328 v1.7.1 (2006-10)** Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operation in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive.
- **EN61000-6-2: 2007 (IEC61000-6-2: 2005)** Electromagnetic Compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments.
- **EN61000-6-4: 2007 (IEC61000-6-4: 2006)** Electromagnetic Compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments.
- **EN301 489-1: V1.8.1 (2008-04)** Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements.
- **EN301 489-17: V1.3.2 (2008-04)** Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems, 5 GHz high performance RLAN equipment and 5,8 GHz Broadband Data Transmitting Systems.

Technical documentation required by the conformity assessment procedure is kept at the aforementioned address if required.

## 14.3 Compliances & Certifications

### ***FCC Compliance Information Statement***

Crewsafe Wireless 8000 systems comply with Part 15C of the FCC Rules. Operation is subject to the following two conditions: (1) these devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15C of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Properly shielded and grounded cables and connectors must be used to meet FCC emission limits. Mobilarm is not responsible for any radio or television interference caused by using other than recommended cables or connectors.

WARNING: Any changes or modifications not expressly approved by Mobilarm Ltd., could void the user's authority to operate this equipment. No co-location with other radio transmitters is allowed. By definition, co-location is when another radio device or it's antenna is located within 20cm of your device and can transmit simultaneously with your unit.

### ***Other Compliances & Certifications***

<b>Certifications</b>	
USA	USCG; RTCM standard 11901.0
Australia	C✓
<b>Compliances</b>	
Special Purpose Life Jacket	Complies with ISO standard 12402-6:2006 relating to the safety requirements and additional test methods for special purpose lifejackets and buoyancy aids



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