



USER MANUAL

FREEDOM8 & SCUBA8

SCIENTIFICALLY TESTED ADVANCED ELECTRICAL SHARK DETERRENT

FOR DIVING – SPEARFISHING – SNORKELING – KAYAKING & SWIMMING

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1. INTRODUCTION

FREEDOM8 is for professional adventurers and is scientifically tested and designed to reduce the risk of shark interaction. FREEDOM8 products have been independently evaluated to effectively turn sharks away by the world's leading scientific experts on sharks. Independent research and testing by universities has resulted in a number of peer reviewed science journals confirming the effectiveness of the technology.

The technology and patents have a twenty-year development history, in partnership with organisations such as the world's leading experts in White Sharks, the KwaZulu-Natal Sharks Board in South Africa. As a result, FREEDOM8 is trusted by professional adventurers around the world and used by professional divers and marine personnel in various industries.

Please read all warnings and instructions carefully before using this product. No shark deterrent device can guarantee complete protection against shark interactions or shark attacks under all conditions.

This product is intended for recreational and professional marine use as a personal shark deterrent aid.

HOW IT WORKS

FREEDOM8 devices generate a protective electric field which is detected by a shark via its short-range sensory receptors called Ampullae of Lorenzini. These Ampullae of Lorenzini are found on the snouts of all sharks.



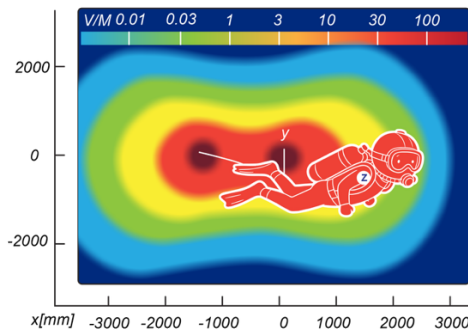
Ampullae of Lorenzini on the snout of a shark (left) and under magnification (right)

The electric field causes discomfort to a shark and this increases the closer it gets to the electric field, until it becomes intolerable. No significant harmful effects on other marine creatures have been observed during testing.

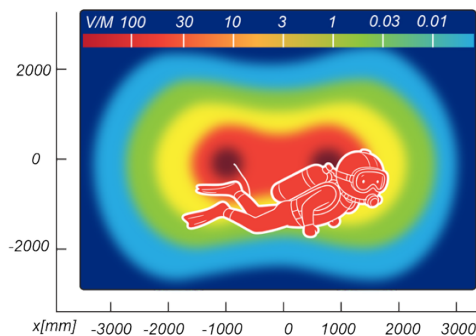
IMPORTANT: FREEDOM8 devices do **NOT** attract sharks. This is a myth and independent scientific research has shown that electrical deterrents do not attract sharks. As electrical currents can only travel very short distances through water, the FREEDOM8 creates only a very localized electrical field. Shark electroreceptors can only sense electrical currents at very short distances, typically less than half a meter. When a shark approaches a FREEDOM8, these electroreceptors are over sensitized, causing the shark to turn away.

FREEDOM8 ELECTRIC FIELDS

FREEDOM8 has been scientifically and independently tested to be effective at turning sharks away.



Estimated magnitude of the electrical field surrounding a diver wearing a FREEDOM8.



*Estimated magnitude of the electrical field surrounding a diver using a FREEDOM8 SCUBA8.
Model developed by South African National Space Agency.*

2. WARNINGS AND SAFETY INFORMATION

1. Sharks can be dangerous and often unpredictable creatures, and we encourage people to wear a FREEDOM8 when working in, or enjoying the sea, in order to minimize the risk of shark attack. While extensive testing has been performed, and great care taken to develop and manufacture the FREEDOM8 range of products, it is impossible to guarantee that all sharks will be deterred under all circumstances. Water based activities in the presence of sharks is inherently dangerous; therefore, we recommend that if a shark is sighted, the user gets to safety rather than continue with their water activity.
2. A large pulsing current is emitted from the FREEDOM8 antenna to produce the protective electric field. Anyone with any electronic medical device (EMD) such as a pacemaker, who is pregnant, or has a health condition which could be affected by the electric field, **SHOULD NOT USE THE DEVICE**. Some examples of health conditions include heart disease, a history of heart problems, peripheral vascular disease, stroke, a history of fainting or epilepsy, or lung disease. Users unintentionally being in close proximity, or in contact with the antenna, may possibly suffer muscle spasms in varying degrees; we recommend that users may need to make adjustments to limit contact in these situations.
3. Positioning of the FREEDOM8 antenna/electrodes is critical to the device's performance. Do not attempt to use the FREEDOM8 in any way other than what is described in this user manual.
4. FREEDOM8 is designed for sea water use only.
5. FREEDOM8 has been designed and tested as a personal device. Do not attempt to join multiple FREEDOM8s together or wear multiple devices.
6. Some bottom-dwelling and non-predatory sharks such as the Wobbegong, Carpet and Port Jackson sharks have limited active Ampullae of Lorenzini. Therefore, the FREEDOM8 may have limited or no effect on these sharks.
7. No shark deterrent device can guarantee complete protection against shark interactions or shark attacks. Use of the FREEDOM8 may reduce, but does not eliminate, the risk of shark interaction.
8. Use of this product does not eliminate the inherent risks associated with ocean activities, including the risk of serious injury or death.

FREEDOM8 BATTERY WARNINGS

- Do not use any charger other than that specifically provided for use with FREEDOM8 devices.
- The FREEDOM8 contains Li-ion batteries. Ensure it is not stored in high temperatures.
- Do not expose batteries to heat or fire. Avoid storage in direct sunlight.
- Do not short-circuit the FREEDOM8.
- Avoid subjecting the FREEDOM8 to mechanical shock.
- Do not store batteries longer than 1 month in a discharged state.
- Do not store batteries longer than 1 year without recharge.
- The batteries in the FREEDOM8 must be recycled or disposed of properly.
- This device includes a Lithium-ion battery, and it is the owner's responsibility to ship this device in full compliance with all of the latest applicable transportation regulations. For air transport, refer to current IATA and FAA regulations, as appropriate, and to your carrier for air transport compliance information.
- For worldwide sea transportation see the IMO-IMDG code and special provision 188.
- For European road transportation see ADR special provision 188.
- Do not ship the FREEDOM8 in the hold when flying. Lithium-ion batteries must be carried in personal carry-on luggage.

DISCLAIMER

Whilst every effort has been made to ensure the accuracy of this manual, we are not responsible for any errors or omissions within it. The product specifications and descriptions within this manual will be subject to improvements and modifications over time without notice, as changes to software and hardware are implemented. To the maximum extent permitted by law, Sentinel Ocean Systems and its affiliates shall not be liable for indirect, incidental or consequential damages arising from use of the product.

3. GETTING STARTED

This user manual is valid for:

- FREEDOM8
- SCUBA8.

The FREEDOM8 and SCUBA8 display the same LED indications.

See the section titled [FREEDOM8 and SCUBA8 LED Status Indications](#) to view LED indications for these devices. See the section titled [FREEDOM8 LED Status Indications](#) to view LED indications for this device.

How do I tell the difference between the FREEDOM8 and the SCUBA8

These products look the same so check the model number listed on the FREEDOM8 product label to verify which version you have.

CHARGING YOUR FREEDOM8

1. The charger will need to be assembled prior to the first charge. Select the correct charger mains pins for your region and then slide them onto the charger, making sure they click securely into place.
2. Ensure the FREEDOM8 device is turned **Off** by turning the red **ON/OFF KNOB** in an anti-clockwise direction until the position indicator line is on the opposite side to the line on the FREEDOM8 casing. In the **Off** position the FREEDOM8 LEDs should not be illuminated.



3. Connect the charger plug to the two charger pins on the **FREEDOM8**.
4. A **GREEN LED** will illuminate when the FREEDOM8 is charging.

5. A **GREEN LED** will turn off when the FREEDOM8 is fully charged. Note: A full charging cycle takes approximately 3 to 3.5 hours.

Important Note:

We recommend each FREEDOM8 device is stored with some charge when stored for long periods of time. When charging the FREEDOM8 directly after use, be sure to thoroughly dry the charger pin region on the unit before connecting the charger.

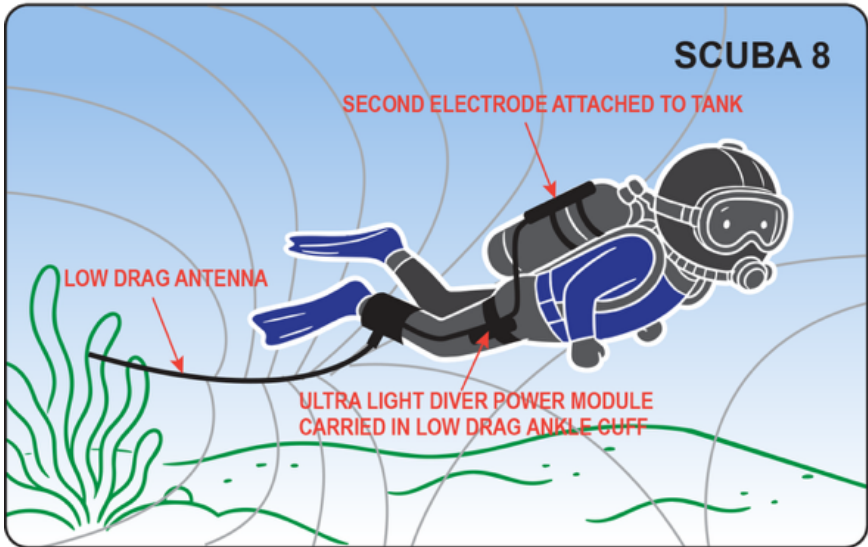
4. MOUNTING THE FREEDOM8

Attach the FREEDOM8 to the outside of your ankle using the Velcro flaps on the pouch designed for the unit.



5. MOUNTING SCUBA8

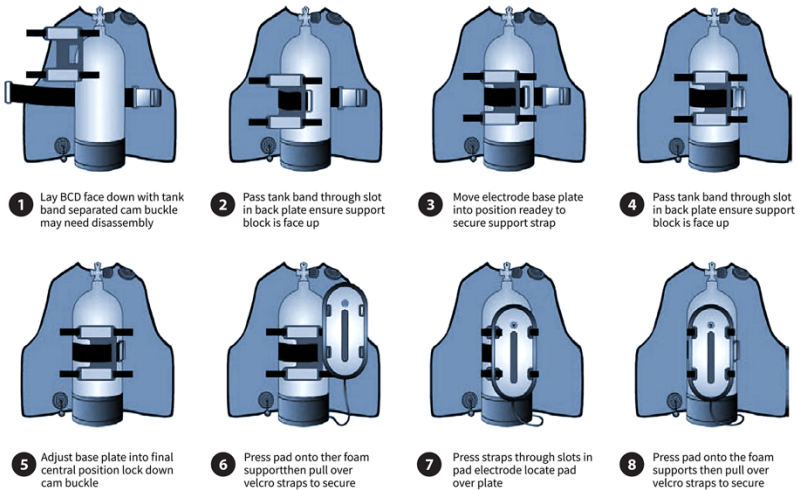
The SCUBA8 comprises three parts which are mounted to either the user or their equipment.



Important note:

The SCUBA8 produces a large current output which flows between two electrodes. Some people are more sensitive to electrical fields and therefore may experience minor muscle stimulation caused by the current output of the electrodes. If this occurs, wearing a full-length wetsuit will help insulate your body from the field and reduce the muscular stimulation.

SCUBA8 TANK ELECTRODE PAD



1. Secure the tank electrode base plate to the rear of the tank using the BCD tank strap. Make sure the foam spacers are facing away from the tank.
2. Place the tank electrode pad onto the foam spacers of the electrode base plate and then secure in place with the four Velcro straps. Make sure that the stainless steel face of the tank electrode pad is facing away from the tank.

SCUBA8 POWER MODULE & ANKLE ELECTRODE

Mount the SCUBA8 power module to your thigh using the thigh strap or fit to the BCD. Mount the SCUBA8 ankle electrode to your ankle. Make sure that the antenna is pointing towards the front of you and resting on top of your fin. This ensures the ankle electrode is kept as far away as possible from the SCUBA8 tank electrode pad.



6. TURNING THE FREEDOM8 ON

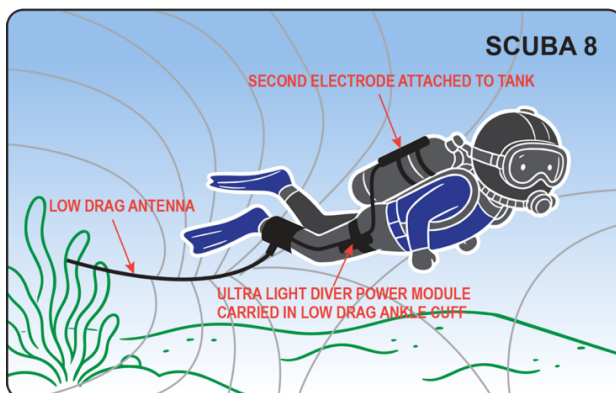
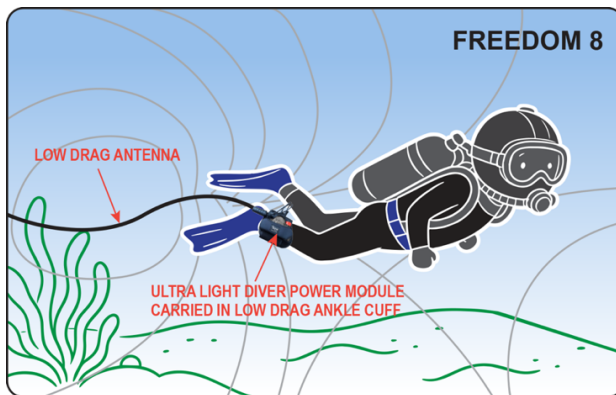
1. Turn on the FREEDOM8 device by turning the red **ON/OFF KNOB** in a clockwise direction until the line on the knob is aligned with the line on the casing.



2. Once turned **On** the FREEDOM8 will perform a short self-check procedure. During this process a **RED LED** turns on for 1 second and then flashes quickly twice. If it passes the self-check, the unit will **beep** and at the same time the **RED LED** will turn off. The device then displays up to 10 battery status LED flashes. When battery life indications are complete a **GREEN LED** flashes approximately 4 times per second to indicate that the unit is not submerged in salt water.
3. The FREEDOM8 displays a **GREEN LED** until the battery charge is low. Approximately 30 minutes before the FREEDOM8 battery power is fully drained, the solid **GREEN LED** will be interrupted approximately every 3 seconds with a **RED LED** which illuminates for approximately 1 second. This LED sequence will continue until the FREEDOM8 runs out of power.

7. ANTENNA AND ELECTRODE POSITIONING

1. Before using FREEDOM8 it is critical to understand the correct antenna and electrode positioning to ensure the device functions correctly.
2. The FREEDOM8 generates its protective electric field by emitting a large, pulsed current via different antenna and electrode assemblies. This varies depending on the model of FREEDOM8 unit purchased. For example, the FREEDOM8 uses an antenna that incorporates a stainless-steel braid electrode at the top and bottom ends, whereas the SCUBA8 uses an ankle antenna that incorporates only one stainless steel braid electrode, with a separate tank-mounted pad electrode.



3. The current emitted from the FREEDOM8 flows between the two electrodes to produce the protective electric field; therefore, the positioning of the electrodes is critical for the FREEDOM8 device to produce an effective protective field and reduce the risk of muscle contraction to the user. When using FREEDOM8 please be aware of the following.
4. The antenna/electrodes need to be fully submerged for the FREEDOM8 to function correctly.
5. The current that flows between the two electrodes uses the path of least resistance, which is the sea water rather than the user. Avoid situations where one or both electrodes come out of the water because the FREEDOM8 will no longer produce a protective electric field. In addition, the user could accidentally become the current path between the two electrodes, which may result in involuntary muscle contractions or discomfort which could affect mobility or control in the water.
6. The electrodes are a specific surface area and must not be covered with any conductive or non-conductive material.
7. Avoid using the FREEDOM8 next to any large metal objects as this could reduce the size of the protective field.

Important notes for FREEDOM8 units

When using the FREEDOM8, ensure that the antenna fully extended because reducing the distance between the electrodes will also reduce the size of the protective field. Always mount the electrode pad to the scuba tank and the antenna to your ankle when using a SCUBA8.

When mounting a FREEDOM8 to a kayak or other watercraft, position the FREEDOM8 as close to the user as possible to ensure the protective field is close to the user.

8. ESSENTIAL MAINTENANCE AND TESTING

1. FREEDOM8 devices perform a self-check each time they are turned on. To confirm the device functions effectively you can also:
 - Place your hand close to the antenna/electrodes to feel the electric field pulsing when the device is submerged under water.
 - Purchase a FREEDOM8 tester.
2. Thoroughly rinse the FREEDOM8 in fresh water after each use and store it out of direct sunlight.
3. Both charger pin connectors should be kept free of dirt and sand at all times. Ensure both connectors are clean before attaching the FREEDOM8 device.
4. Allow the FREEDOM8 unit to dry before placing it in storage. Avoid direct sunlight when drying the unit.
5. We recommend each FREEDOM8 device is stored with some charge when stored for long periods of time.
6. Please note that over time it is not uncommon for the stainless steel electrode braid and charger pins to acquire a slight brownish stain. This is called "tea staining" and is the result of electrolysis. There are no materials currently available that this will not occur with. This will have no effect on performance of the unit, but we recommend you clean the stainless steel (marine grade 316L) with bi-carbonate soda. This is a cheap, non-chemical, and commonly used domestic cleaning product. Simply create a paste and use a soft sponge to rub the electrode surface and the tea stain will be removed quite easily.



Cautions:

Thoroughly dry the charger pin area on the FREEDOM8 before connecting the charger. Be especially vigilant when charging the FREEDOM8 immediately after it has been used in water.

Under no circumstances should you attempt to repair the FREEDOM8 as this will void any warranty.

9. FREEDOM8 AND SCUBA8 LED STATUS INDICATIONS

The FREEDOM8 and SCUBA8 have a **GREEN LED** and **RED LED** to indicate various operation states and the charge level of the battery. It also provides warning tone **beeps** in various operation states.

During Operation:

State	Indication
Start Up Self Check	RED LED illuminates for 1 second and then blinks quickly twice. If it passes its self check then the unit will beep and at the same time the RED LED will turn Off . The device then displays the battery status condition LED flashes.
Battery status (after self-check)	100% battery, GREEN LED flashes 10 times 90% battery, GREEN LED flashes 9 times 80% battery, GREEN LED flashes 8 times 70% battery, GREEN LED flashes 7 times 60% battery, GREEN LED flashes 6 times 50% battery, GREEN LED flashes 5 times 40% battery, GREEN LED flashes 4 times 30% battery, GREEN LED flashes 3 times 20% battery, GREEN LED flashes 2 times with simultaneous beeps 10% battery, GREEN LED flashes 10 times with simultaneous beeps
Not Submerged	GREEN LED will flash at roughly 4 times a second
Submerged	GREEN LED is illuminated
Low Battery (30 min of battery remaining)	The standard GREEN LED indication is interrupted every 3 seconds by a RED LED which turns on for less than 1 second. A beep occurs when the RED LED turns on
Fault or Antenna Short Circuit	GREEN and RED LED will flash alternately with continuous beeps

While Charging:

State	LED Indication
Power ON	RED LED is illuminated while charger power is connected to the FREEDOM8 or SCUBA8
Charging	GREEN LED and RED LED is illuminated
Charged	RED LED is illuminated and GREEN LED turns off

10. PRODUCT SPECIFICATIONS

Technical Specification	FREEDOM8 & SCUBA8
Maximum Operating Depth	50 metres (164 feet)
Storage Temperature	0°C - 60°C (32°F – 140°F)
Battery life	Nominal 1000 charges for FREEDOM8 & SCUBA8
Operating Time (in water)	4-5 hours
Out of water detection	Yes
Battery Type	8.4V Li-ion (2 cells)
Battery Charge Storage Life (off state)	Greater than 6 months
Battery Charger	Input: 110-240 Vac 50/60Hz 0.5A Output: 12Vdc 1A
Output - Current	150A pulses (approximate)
Output - Time Between Output Pulses	0.6 seconds
Output - Short Circuit Protection	Yes
Protective Field Strength	>1v/m peak at 1m from centre of electrodes
Dimensions - main housing (without antenna)	105mm L x 146mm W x 41mm H (4.13" x 5.75" x 1.61")
Dimensions – FREEDOM8 antenna	2200mm (86")
Dimensions – SCUBA8 antenna	600mm (23")
Dimensions – SCUBA8 electrode pad	290mm L x 130mm W (11.4" x 5.1")
Weight (Dry)	1025 grams (2.26lb)
Weight (In Water)	69 grams (2.4oz)

11. WARRANTY

Congratulations on purchasing the Freedom 8.

This wearable electronic shark deterrent is designed to provide peace of mind while you enjoy the ocean. Please retain this card and your proof of purchase for your records.

PRODUCT REGISTRATION:

To ensure the best possible support and to stay updated on product news, we strongly encourage you to register your Freedom 8 immediately after purchase. Register online at:

<https://sentineloceansystems.com/warranty-registration/>

WARRANTY PERIOD:

Your FREEDOM8 and SCUBA8 come with a worldwide two (2) year warranty, from the date of purchase.

YOUR CONSUMER RIGHT:

Sentinel Ocean Systems guarantees that this product is free from defects in materials and workmanship. The warranty period commences on the original date of purchase.

During the warranty period, you are entitled to have your unit repaired or replaced free of charge if it is found to be defective due to manufacturing faults.

Repair: We will repair the defective unit using new or refurbished parts.

Replacement: If a repair is not possible, we will replace the unit with a new or equivalent model.

Nothing in this warranty is intended to exclude, restrict or modify any rights or remedies that cannot be excluded under applicable consumer protection laws. Where such laws apply, the benefits provided under this warranty are in addition to other rights and remedies available to the consumer under applicable law.

EXCLUSIONS FOR MISUSE AND MODIFICATION

This warranty does not cover damage or failure resulting from misuse, abuse, neglect, improper installation, improper storage, accidents, unauthorized repairs or modifications, failure to follow operating instructions, normal wear and tear, or use of the product outside its intended purpose or environmental conditions.

LIMITATION OF LIABILITY

To the maximum extent permitted by applicable law, Sentinel Ocean Systems Ltd and Eagle Kingdom Technologies Ltd shall not be liable for any indirect, incidental, special, punitive or consequential damages, including but not limited to loss of use, loss of profits, personal injury, property damage, business interruption, emotional distress, or any other losses arising from the use or inability to use this product, even if advised of the possibility of such damages. Use of this product does not eliminate the inherent risks associated with ocean activities, including the risk of serious injury or death. Users should understand that ocean activities involve inherent risks, including risks that cannot be eliminated through use of this product. Nothing in this manual or warranty excludes liability that cannot legally be excluded under applicable law.

IN WARRANTY REPAIR PROCESS:

In the unlikely event that your Freedom 8 fails within the warranty period, please follow these steps to obtain service:

Submit an enquiry on the website:

www.sentineloceansystems.com/contact

Please provide a description of the fault and your proof of purchase (receipt).

Receive Authorization: Our support team will troubleshoot the issue. If a return is necessary, you will be issued a Return Merchandise Authorization (RMA) number and the specific shipping address for your region.

Ship the Unit (at your cost): Pack the unit securely in its original packaging (if available). Write the RMA number clearly on the outside of the package and ship it to the address provided.

Return the unit: We will return the repaired unit to you at our cost.

OUT OF WARRANTY SERVICE

If your Freedom 8 requires service after the warranty period has expired, we are still here to help. The return process remains the same:

Submit an enquiry on the website:

www.sentineloceansystems.com/contact

Assessment: We will provide instructions on how to send the unit for assessment.

Repair/Replacement Options: You will be provided with a quote for the repair or replacement cost. No work will be performed until you have authorized the charges.