

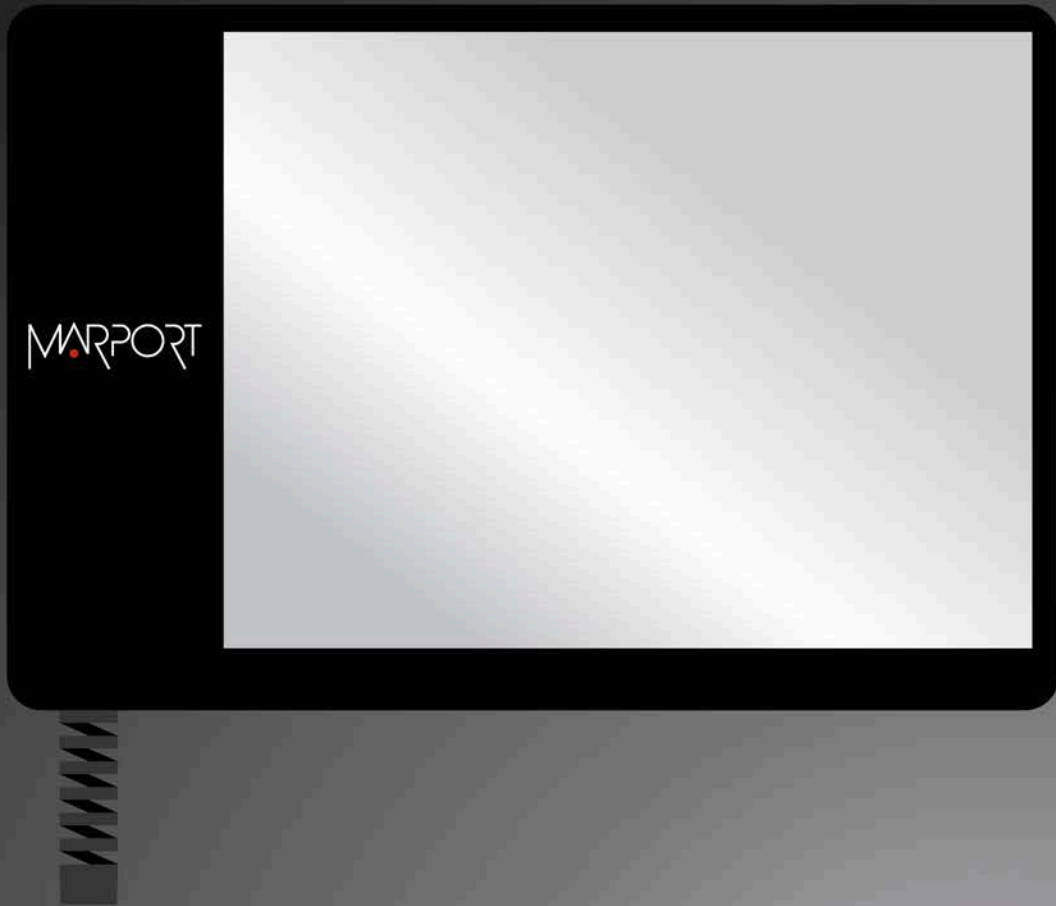
MARPORT | PRO  
DOCK

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2023

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USER MANUAL



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# Legal

## History

V1	12/10/21	First release
V2	03/01/22	<ul style="list-style-type: none"><li>• Improved document layout.</li><li>• Added details in <b>Charger Plug Status Summary (on page 20)</b> .</li></ul>
V3	08/04/22	<ul style="list-style-type: none"><li>• Now includes Mosa2 version 02.11.x.</li><li>• Added guidance on how to connect a sensor to Mosa2 using a Dock charger plug or the Configuration Cable connected to the Dock: <b>Connecting the Sensor to Mosa2 via the Dock (on page 29)</b>.</li><li>• Clarified information about the compatibilities with the different PCBA versions.</li></ul>
V4	03/23/23	<ul style="list-style-type: none"><li>• Added compatibility information with sensor firmware in <b>List of Equipment (on page 9)</b>.</li><li>• Added compatibility information with the Configuration Cable Revision 3 connected to Dock in <b>Connecting the Sensor to Mosa2 via the Dock (on page 29)</b>.</li><li>• Updated Dock serial number in note about sensors connected on a switched off charger in <b>Charging a Sensor (on page 21)</b>.</li></ul>

## Copyright

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are the trademark and property of its respective owners only. Marport is a division of Airmar Technology Corporation.

## Disclaimer

Marport endeavors to ensure that all information in this document is correct and fairly stated, but does not accept liability for any errors or omissions.

**The present user guide is applicable for the following versions:**

- Mosa2: 02.11.14
- Scala2: 02.10.x

System requirements:

- macOS: from 10.12 (Sierra) to 13.01 (Ventura)

Mosa2 is also compatible with Windows OS.

# **Introduction & Presentation**

# Introduction and Presentation



## Introduction

Marport Dock provides a new way of charging Marport sensors. It allows the user to:

- Charge up to 4 sensors simultaneously.
- Quickly see the charging status of the sensor, thanks to a visual display on the charger plugs and Dock screen.
- Have a full overview of the sensor fleet: which sensors are deployed, charging or on deck.
- Configure the sensor settings, since the Dock acts as a gateway between the sensors and Mosa2 configuring software.
- Be alerted when maintenance is needed on the sensors.

The Dock is compatible with the latest generation of Marport sensors, including the Marport Pro range. It is compatible in a limited state with the previous generations of sensors.

## Safety Guidelines

-  **Important:** To ensure proper and safe use of this equipment, carefully read and follow the instructions in this manual.
-  **CAUTION:** Dock charging plug and accessories contain magnets. Medical devices such as implanted pacemakers and defibrillators may contain sensors that respond to magnets and radios when in close contact. To avoid any potential interactions with these devices, keep your Dock charging plug and accessories a safe distance away from your device (more than 6 inches/15 cm).

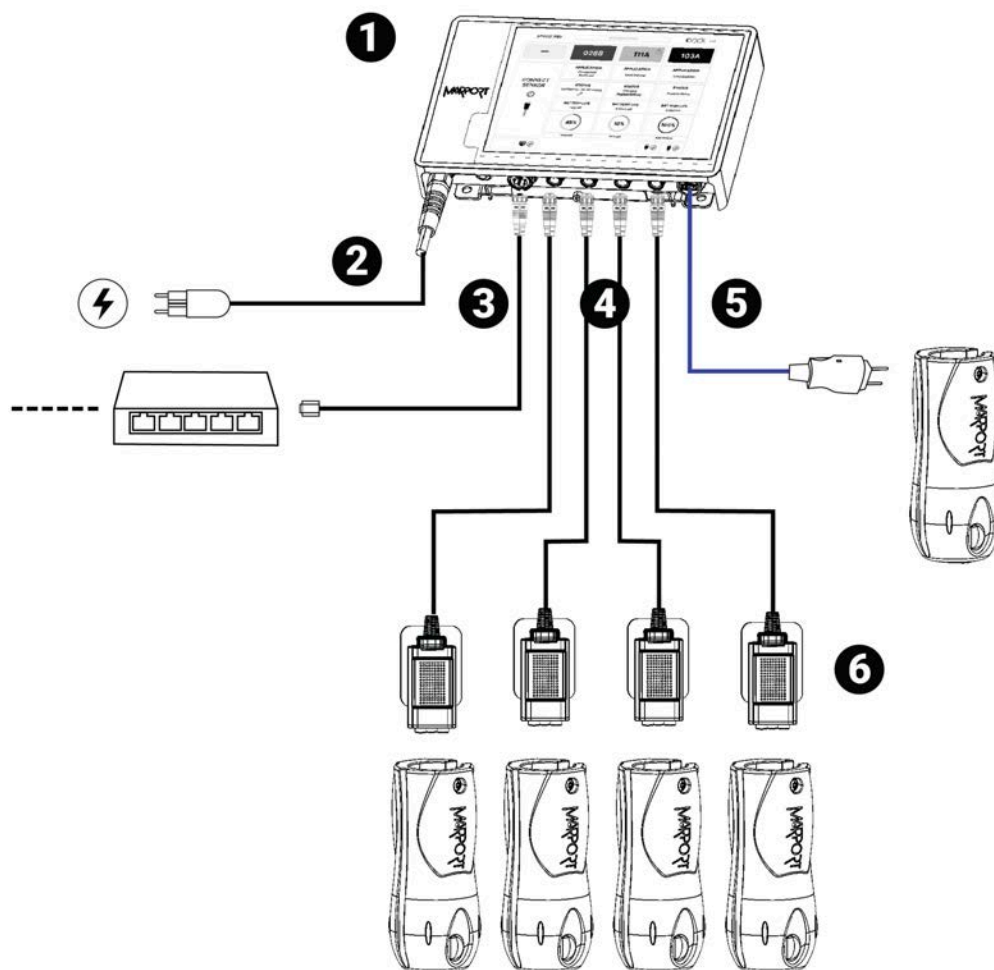
## Product installation and use

Install and use this product in accordance with this user manual. Incorrect use of the product may cause damage to the components or void the warranty.

Only qualified Marport dealers can do installation and maintenance interventions.

## Description

### System Architecture Overview

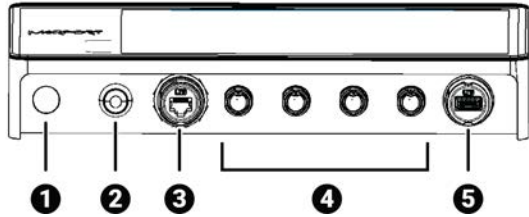


<b>1.</b> Dock	<b>4.</b> Charger ports
<b>2.</b> Power supply	<b>5.</b> USB port to connect the Configuration Cable
<b>3.</b> Ethernet connection to the vessel network	<b>6.</b> Charger plug: indicates sensor charge level and status

## Technical Specifications

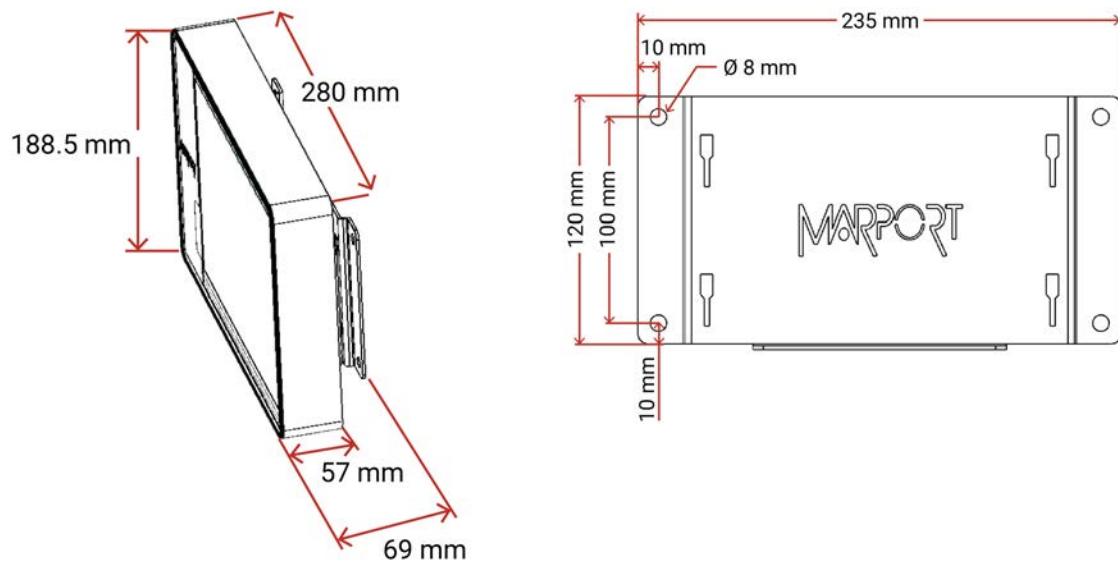
Input voltage	115-230 Vac, 50-60 Hz
Output voltage	12 Vdc
Overall dimensions	180 x 300 mm
Overall weight	6 kg
Screen diagonal size	10.3 inches
Resolution	226 dpi
Connectors	<ul style="list-style-type: none"> <li>• Ethernet (Cat 5e FTP)</li> <li>• USB 2.0</li> <li>• 4 x charger ports</li> </ul>
Operating temp. range	0 to +45°C
Storage temp. range	-25 to 70°C

### Dock connectors

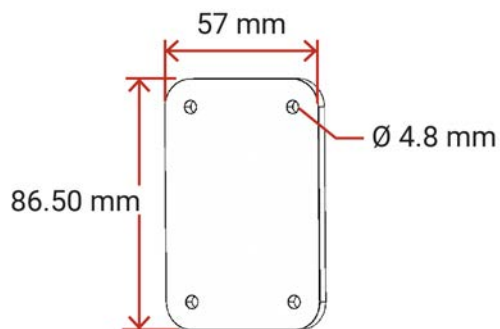
	1. Power supply
	2. ON/OFF button
	3. Ethernet
	4. Charger
	5. USB



## Dock dimensions



## Charger plug wall support



## List of Equipment

In addition to an operational Marport system (M3, M5, M6, M4) you need the following equipment to use the Dock:

### Dock package

- 1 Dock
- 1 wall bracket
- 1 to 4 charger cables (3 meters)
- 1 to 4 charger plug wall support
- 1 RJ45 Ethernet cable (5 meters)

### Other equipment (not included)

- Configuration Cable
- Power strip to power all the chargers. It can be installed above the sensors on the wall.
- Ethernet switch connected to a DHCP server, with at least 4 ports.
- Necessary hardware to attach the switch to the wall.

### System requirements

- Scala2 version 02.06 and above.
- Mosa2 version 02.09 and above.
- Sensor firmware 450-02.01.15 and above.



**Note:** In order to be compatible with Scala2 and Mosa2, the computer need to be under a macOS version from 10.12 (Sierra) to 13.01 (Ventura).

# Installation


# Installation

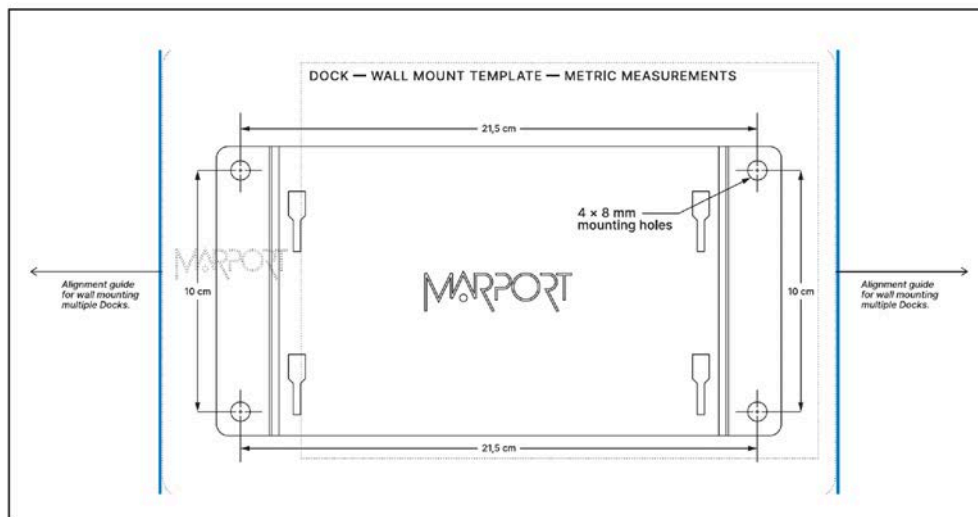
Learn how to install the Dock on a wall and connect it to the vessel network.

## Installing the Dock on a Wall

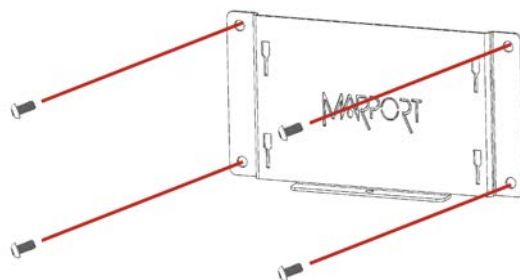
Install the Dock on a wall, using the wall bracket delivered with it.

- You need 4 M6 screws with washers, and one M5 screw.
- See **Technical Specifications (on page 8)** for bracket dimensions.

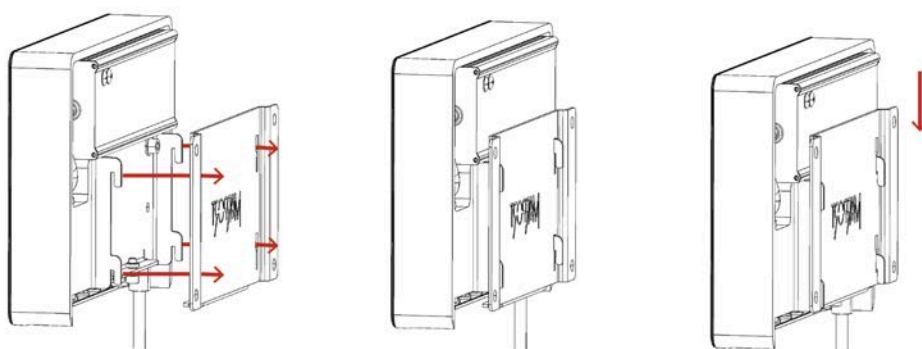
 **Tip:** A template is printed on the product packaging. It will help you to drill the holes in the wall and align multiple Dock chargers, if necessary.



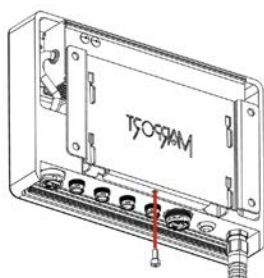
1. Mount the bracket to a wall with M6 screws.



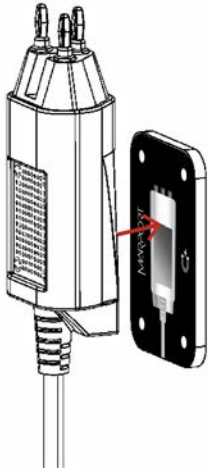
2. Slide the Dock in the bracket.



3. Insert an M5 screw at the bottom of the bracket.



4. You can use our magnetized wall support to hang the charger plug between uses. The support can be fixed to the wall using screws or using the adhesive tape on the back face.



- a. To fix the support with screws, use 4 to 4.5 mm screws.
- b. To fix with the adhesive tape: thoroughly clean and degrease the target surface with cleaning solvent, then dry it. Provide pressure for at least 30 sec. on the whole surface of the support using a hard edged plastic tool of the same size as the support. Wait for at least 6 hours before hanging the charger plug.



**Note:** Do not bond the adhesive to a wooden surface.



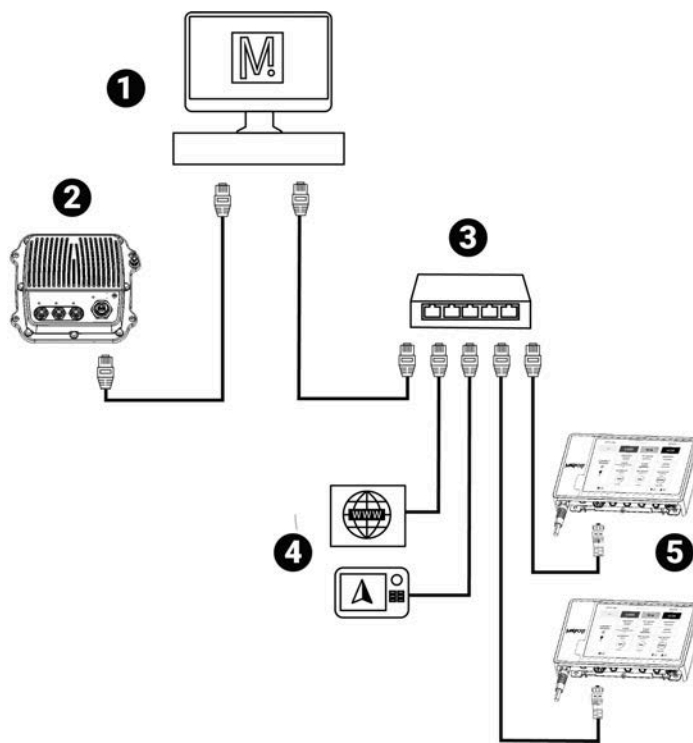
**Note:** Application is not recommended if the surface temperature is below 10°C (50°F) because the adhesive will become too firm to adhere readily. Ideal application temperature is 15.6°C (60°F) to 38°C (100°F). Heat can increase bond strength when bonding to metal parts.

- c. Place the charger plug pins facing up, as shown on the picture on the support.

# Connecting the Dock to the Vessel's Network

**!** **Important:** You need to have a DHCP server or APIPA feature enabled to automatically assign IP addresses to the Dock and computer. If the computer has a fixed IP address the Dock will not be able to communicate with it (except if the Dock is on a server with DHCP that is on the same sub-network as the computer).



1. The Dock must be connected to the vessel system according to the following setup:



1. Marport computer
2. Mx receiver (M3 in this example)
3. Ethernet switch
4. Ship equipment and network.
5. Dock products, any number.

**!** **Note:** In this example the Dock products and ship equipment are all connected to the same switch. It is also possible to connect a second switch to the computer or to the first switch, and connect other Dock products or ship equipment.

2. Connect the Dock to a power source.  
The power LED is red.

3. Check that the Ethernet icon displays a check .
4. Open Mosa2 on the computer and click **Menu**  > **Expert**. The sensor appears on the discovery page. See [for more details](#).



# **Sensor Charging & Configuration**

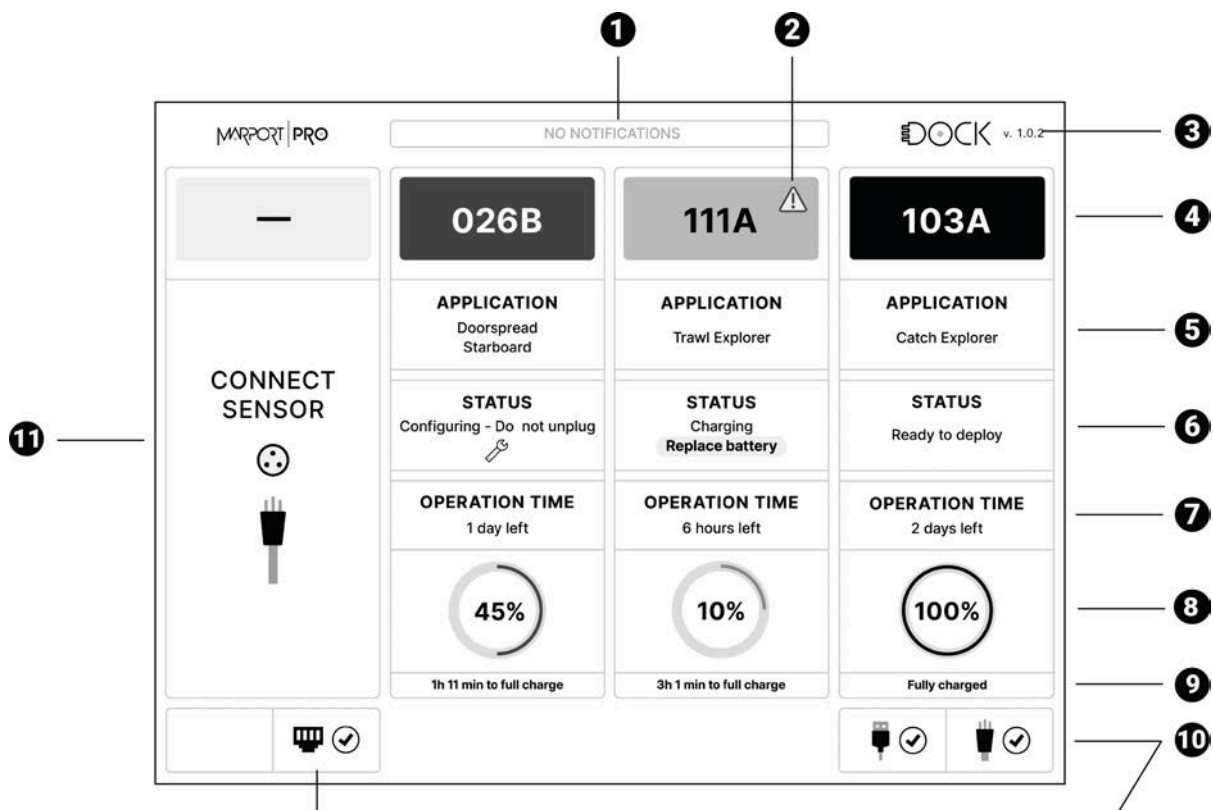
# Sensor Charging and Configuration

Learn how to use the Dock to charge and configure the sensors.




- !** **Important:** You must configure the trawl node of the sensor to be able to see information about it on the Dock screen and Virtual Charger Room. To configure the trawl node, connect the sensor to the Dock or computer and open Mosa2 on the computer.

## Overview of the Dock Screen




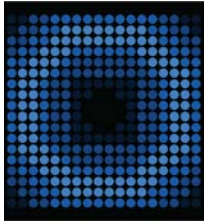


The Dock displays the following information when the latest generation of sensors are connected. If previous generation sensors are connected, the screen only displays the level of charge.





1. Notifications	7. Remaining battery life
------------------	---------------------------

<p><b>2.</b> If there is a status warning message, a warning icon appears.</p>	<p><b>8.</b> Current level of charge.</p>
<p><b>3.</b> Version number of the Dock firmware.</p>	<p><b>9.</b> Remaining time before the battery is fully charged.</p>
<p><b>4.</b> Node corresponding to the sensor location on the trawl and its spare identifier (A, B, C, D). Background color becomes darker as the level of charge increases, the same way as the circle of the level of charge (8).</p>	<p><b>10.</b> Indicates the following:</p> <ul style="list-style-type: none"> <li>•  Ethernet connector is correctly connected and get an IP address</li> <li>•  USB connector is correctly connected</li> <li>•  Configuration Cable is connected to a sensor</li> </ul>
<p><b>5.</b> Application of the sensor</p>	<p><b>11.</b> Appears if no sensor is connected on the port.</p>
<p><b>6.</b> Status of the sensor:</p> <ul style="list-style-type: none"> <li>• <b>Charging</b></li> <li>• <b>Ready to deploy</b></li> <li>• <b>Configuring</b></li> <li>• <b>Updating</b></li> </ul> <p>The status can also display warning messages. Refer to <b>Warning Messages (on page 33)</b> for details.</p>	

## Charger Plug Status Summary

Charger plug animation	Description
	<p>Green: charged at &gt; 90 %</p>
	<p>Orange: charged at 70 to 90 %</p>
	<p>Red: charged at &lt; 70 %</p>
	<p>"Pick me up": displayed when triggered from the Virtual Charger Room.</p>
	<p>Configuring: sensor is being configured from Mosa2.</p>
	<p>Updating: sensor firmware is being upgraded from Mosa2.</p>

Charger plug animation	Description
	<p>Caution: maintenance required. A message is displayed on the Dock screen. See <b>Warning Messages (on page 33)</b> for details.</p>
	<p>Warning: a message is displayed on the Dock screen. See <b>Warning Messages (on page 33)</b> for details.</p>

## LED Strip Status Summary

A LED strip located above the charger connectors lights up according to the status of the sensor when the charger is connected.

LED ribbon color	Description
Slow green flashing	> 90 % charge status
Slow orange flashing	70 to 90 % charge status
Slow red flashing	< 70 % charge status
Slow yellow flashing	Updating
Fast red flashing	Critical issue, disconnect the charger plug from the Dock.

## Charging a Sensor

Connect a sensor to one of the 4 charging connectors of the Dock to display its level of charge.

- Make sure the Dock is connected to a power supply and turned on.

**Warning:** In case of water ingress in the product, do not charge it: battery may vent or rupture, causing product or physical damage.

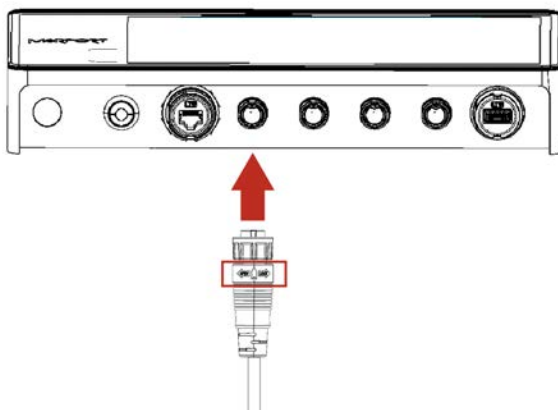
**Note:** For Dock products with serial number before DOC2204300: Do not leave the sensors connected on a charger that is switched off. If the charger is not connected to the mains voltage, the sensor switches on and this will drain the battery.

**Note:** Avoid full discharges and charge the battery whenever possible, at any battery level. Lithium-ion batteries do not have a charge memory, so they do not need full discharge cycles.

1. Before charging the sensor: wash with fresh water and dry the sensor. This prevent corrosion of the charging pins.

**Important:** Check that the charging pins are not damaged. If they are, contact you local Marport dealer for replacement.

2. Connect the charger plug to one of the 4 charging ports.





3. Connect the 3-pin charging connector to the sensor charging pins.

The Dock screen and Virtual Charger Room display the state of charge of the sensor.

# Using the Virtual Charger Room

You can configure the latest generation of sensors from Scala2 **Virtual Charger Room** when they are connected to the Dock.



 **Note:** A1 sensors displayed in the Virtual Charger Room do not have all the following features. A1 sensor tiles will only inform if the sensor is trawling or on deck (turned off).

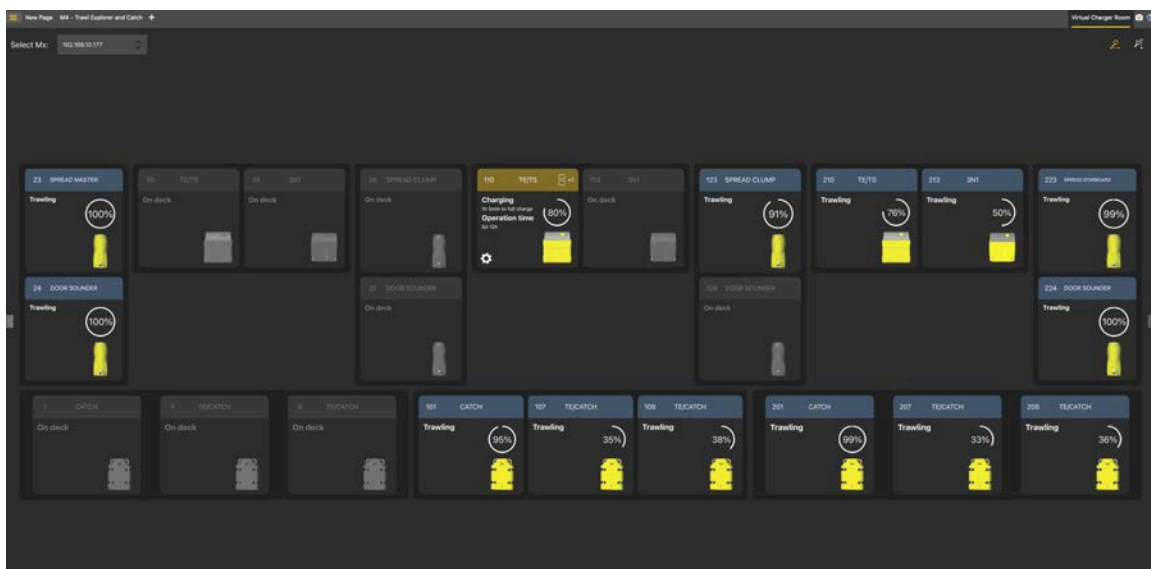
 **Note:** The Virtual Charger Room is compatible with single, twin, triple, quad and penta trawls.

## Main page


To open the Virtual Charger Room, click **Menu**  > **Virtual Charger Room** on the top left corner of the screen.

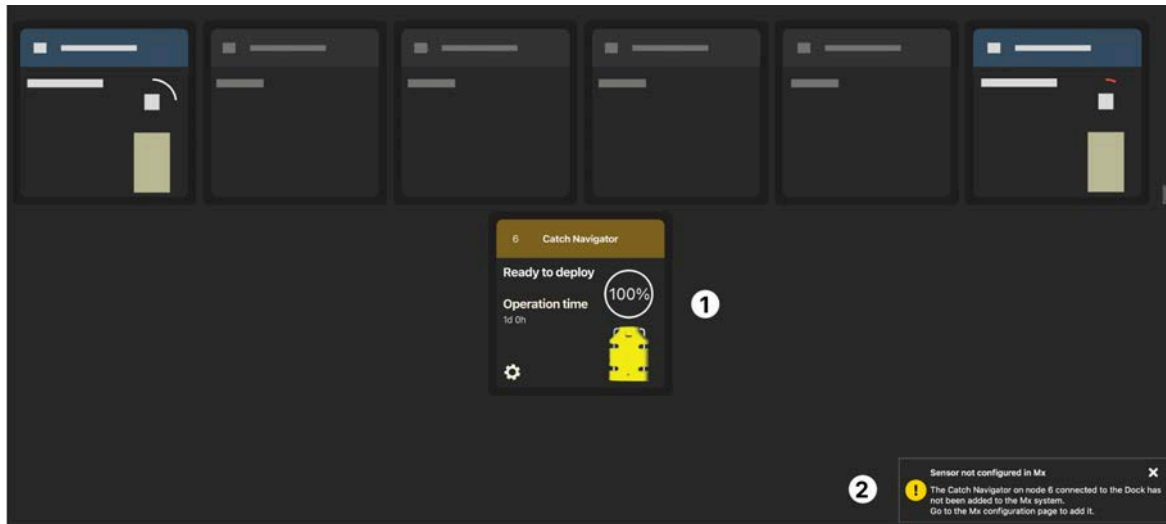
Each sensor that is part of the fleet appears on a tile. The tiles are placed according to the sensor location on the trawl, depending on the configuration that was made in the system configuration page.

To fit the view according to the width of the tiles click , or click  to fit according the height.



When a sensor that has not been added to the system is connected to the Dock, it is displayed underneath the other sensors (1). Only the charging status appears. A notification (2) also warns the user that the sensor is not part of the system configuration. When disconnected, the sensor is not displayed anymore.

 **Note:** A1 sensors will not be displayed.

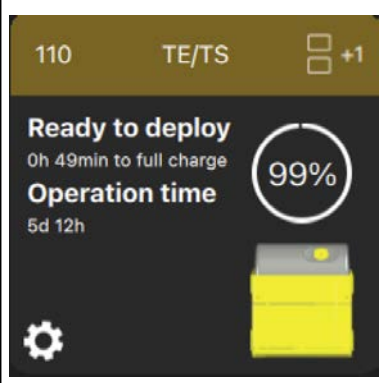
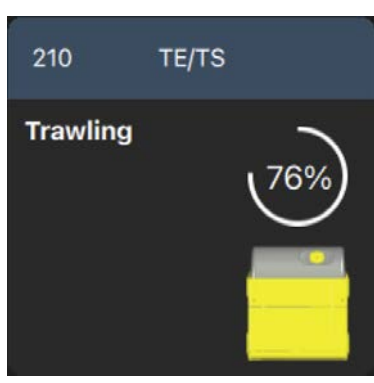
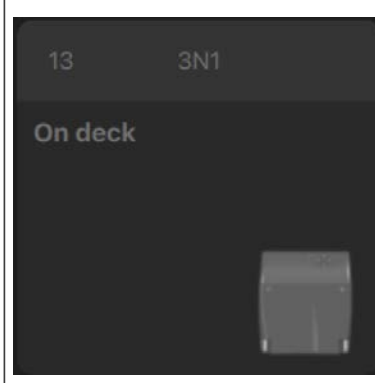




## Sensor status

Each sensor tile is composed the following way:

<p>The diagram shows a sensor tile with the following elements: 1. Node ID '110', 2. Application name 'TE/TS', 3. Spare sensors '+1', 4. Charging level '99%', 5. Settings gear icon, 6. Operation time '5d 12h', 7. Status 'Ready to deploy' with '0h 49min to full charge'.</p>	1. Node identifying the location of the sensor on the trawl.
	2. Name of the application
	3. If any, number of spare sensors. Click to show the other spare sensors.
	4. Charging level
	5. Access to the settings.
	6. Remaining lifetime at the current state of charge.
	7. Sensor status



		
<p>The sensor is connected to the Dock and charging. It displays <b>Ready to deploy</b> when fully charged.</p> <p>Click  &gt;  to display the <b>"Pick me up (on page 20)"</b> animation on the charger plug when the sensor must be deployed.</p>	<p>The sensor is operating on the trawl.</p>	<p>The sensor is out of water and is not connected to the Dock.</p>

## Notifications



When a sensor is connected to the Dock, the Virtual Charger Room is able to detect discrepancies between the system configuration and the sensor configuration. Notifications appear if the connected sensor is not part of the system configuration or if the sensor settings do not match the settings set in the system (based on the node).

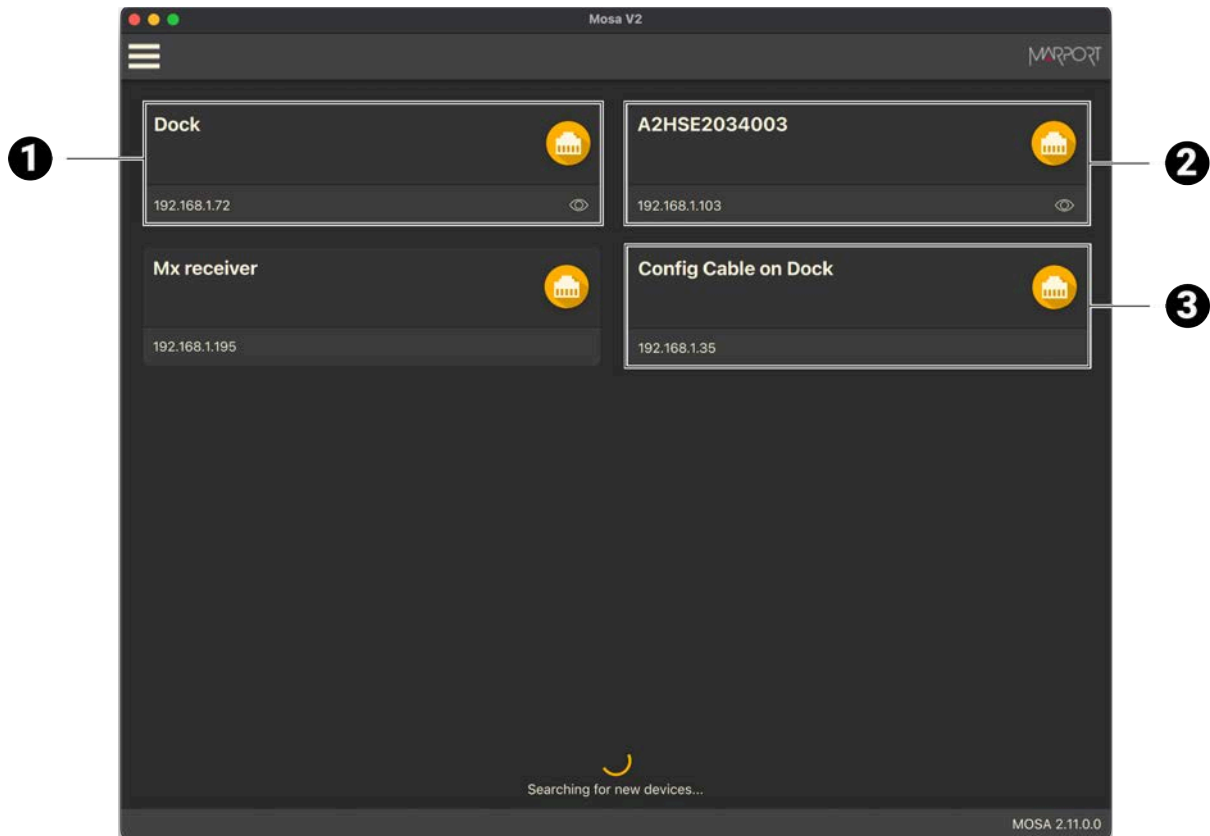
The following settings are checked:



- Uplink frequency
- Sounding mode (when available)
- Sounding range (when available)
- PRP sensors: telegram names and frequencies

# Interface with Mosa2

## Mosa2 Discovery page

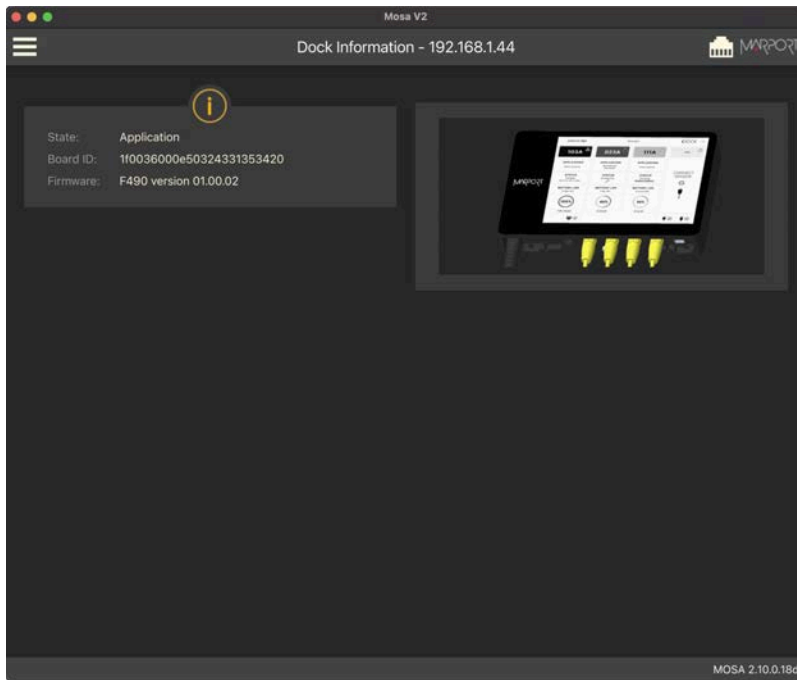
 **Note:** Click **Menu**  > **Expert** to display the Dock on the discovery page.





<b>1.</b>	Dock connected by Ethernet to the vessel's network.  : click to make the LED strip above the Ethernet connector flash blue for 30 seconds.
<b>2.</b>	Sensor connected to the Dock with a charger plug.  : click to show the deploy animation on the charger plug for 30 seconds.
<b>3</b>	Sensor connected to the Dock with a Configuration Cable.

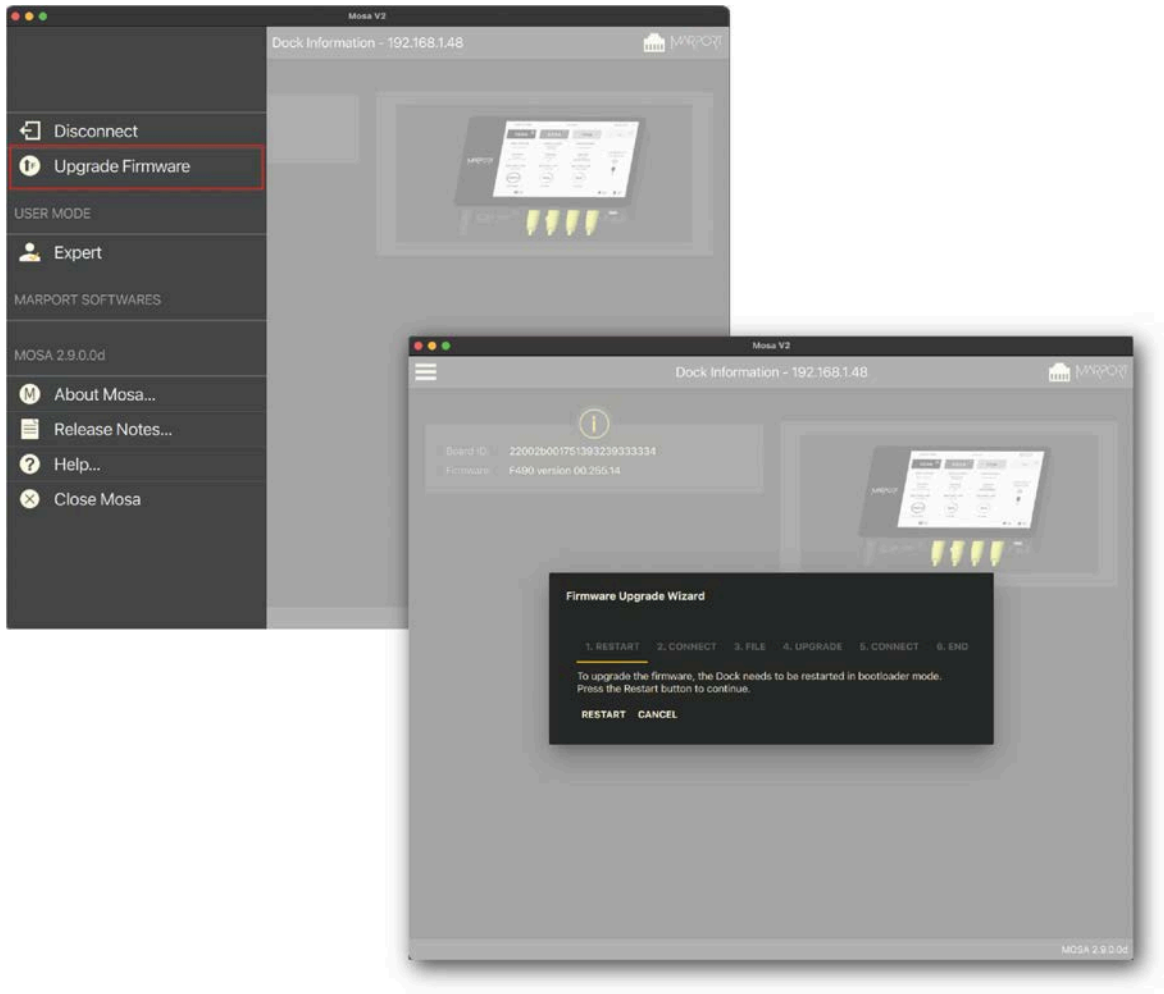
## Dock Page

This page displays the state (application, bootloader, demo), board ID and firmware version of the Dock.



You can upgrade the Dock from this page: click **Menu**  > **Upgrade Firmware** and follow the wizard instructions.

 **Note:** You need a .DCF file, available on Marport Authorized Service Provider (MASP).




## Connecting the Sensor to Mosa2 via the Dock

Connect the sensor to Mosa2 when it is charging or by connecting a Configuration Cable to the Dock.

The connection options depend on the version of the sensor hardware. To know the version of the sensor's PCBA: open MASP website, then go to the list of the sensor components and look at the **Cat. Name** and **Hard Rev.** fields of the board.

Type of connection	Compatible hardware		
	A1	A2S Gen 2	A2S Gen 3, A2S Gen 4, A2H
Configuration Cable connected to Dock	Yes	Yes	
Configuration Cable Revision 3 connected to Dock	Yes		
Dock charger plug			Yes



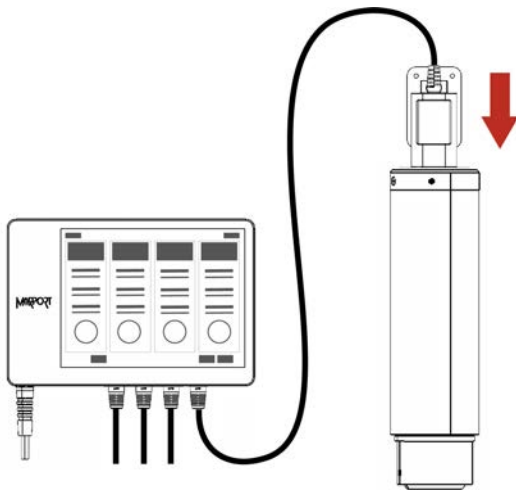
**Note:** The Configuration Cable Revision 3 is identifiable by its M logo on the plug . It is compatible only with Mosa2 version 02.11.14 and later.

### Using a Dock Charger Plug

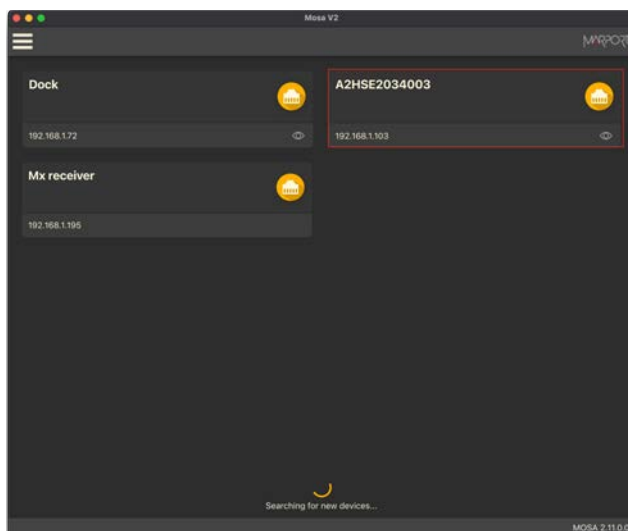




**Important:** Only Pro line of sensors with an A2S PCBA revision 03 and later, and A2H PCBA can connect to Mosa2 via the Dock using the charger plug.

1. Connect one Dock charging plug to the sensor's endcap.





2. Mosa2 discovery page opens. The sensor is displayed.



- Click  to open the sensor configuration page.
- Click  to show the deploy animation on the charger plug for 30 seconds.

### Using the Dock and a Configuration Cable

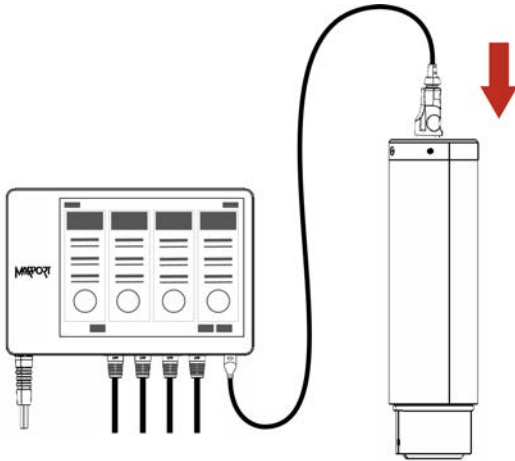
 **Note:** Compatible with Mosa2 02.11.x and above.

 **Important:** Only sensors with an A1 PCBA and A2S PCBA revision 02 can connect to Mosa2 via the Dock using the Configuration Cable. For the Pro line of sensors, use the charging plugs of the Dock.

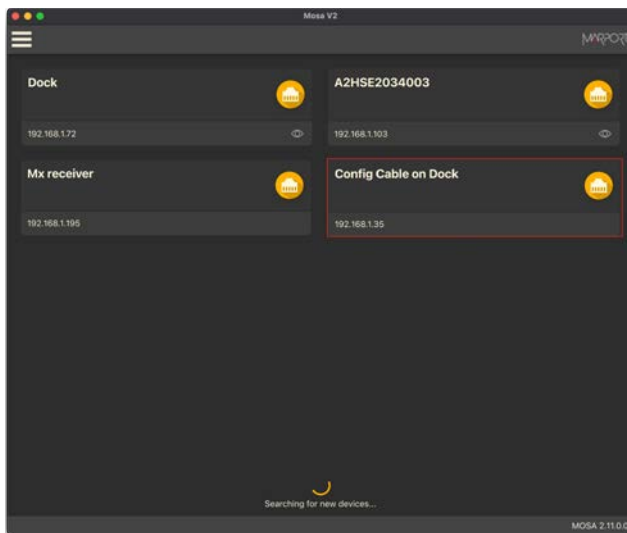



**Note:** The firmware of the sensors with A2S rev02 PCBA cannot be updated with this type of connection, use the WiFi connection instead.


1. Connect the USB connector of the Configuration Cable to the Dock and the plug to the sensor's endcap.



2. Open Mosa2. The Configuration Cable is displayed on the discovery page.



Click  to open the sensor configuration page.

3. To leave Mosa2 configuration page and come back to the discovery page, click  > **Disconnect**.

# Troubleshooting




# Troubleshooting

Learn how to solve common problems.

## Warning Messages

### Dock screen Status

When these messages are displayed, a warning icon  appears at the top of the column and on the charger plug.

Status message	Description
<b>Warning - Clean sensor endcap</b>	<p>The sensor cannot connect to the Dock because the shoulder bolts are dirty or damaged:</p> <ul style="list-style-type: none"><li>• Clean them using a swab or Q-tip with Iso-propyl alcohol.</li><li>• Fully clean the surface from debris and inspect the surface for burrs or pitting.</li></ul> <p>If not taken care of, there is a risk of short circuit.</p>
<b>Warning - Service required</b>	<p>The sensor has a critical issue. Contact your local Marport office or dealer.</p>
<b>Caution - Maintenance required</b>	<p>The sensor has an issue impacting its proper functioning. Reasons can be:</p> <ul style="list-style-type: none"><li>• The battery is worn out and the charging capacity is diminished.</li><li>• Shoulder bolts are in a bad condition, the charge is not optimal.</li></ul>
<b>Caution - Replace battery</b>	<p>The battery capacity is very low and will soon be exhausted.</p>

## The Dock screen is frozen or the contents do not update correctly

→ You need to reboot the Dock.

1. Press the ON/OFF button and hold until the LED strip above the charger connectors starts to switch off.



**Note:** This action stops the power supply. The contents on the screen remain displayed. They will disappear once the Dock is switched on.

2. Press the ON/OFF button again to switch on the Dock.

## The Dock screen does not display all the details of the Trident or Door Explorer sensor

*When connecting a Trident or Door Explorer sensor to a Dock charger plug, the Dock screen displays only the level of charge of the sensor and the sensor cannot be configured on Mosa2.*

→ The firmware version of the sensor is earlier than FIRM450-02.01.15.

Update the sensor firmware to an A2S firmware version **FIRM450-02.01.15 or above**, and bootloader version **FIRM445-02.00.06** or above, using the Configuration Cable connected to the computer.

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