

Orca Guide

2nd March 2026

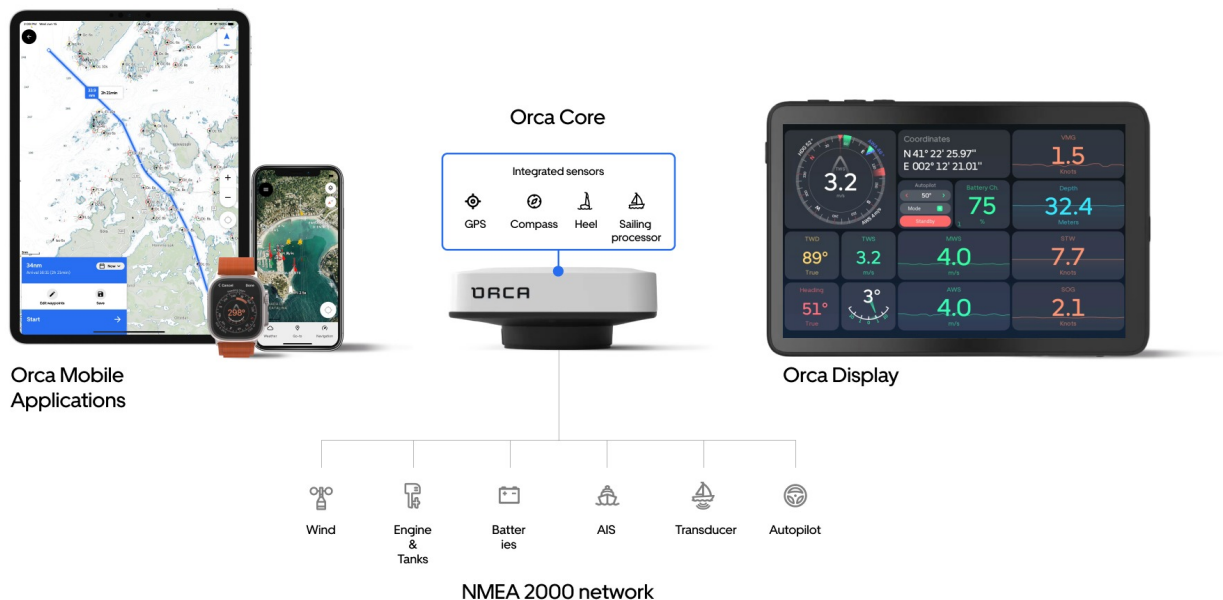
1. Introduction

1a. Overview

Orca Overview

Orca consists of three main parts:

- **The Orca App** – for iOS, WatchOS, and Android devices
- **Orca Core** – a smart navigation hub
- **Orca Display** – an ultrabright marine tablet



Orca App

The Orca App is free to use and delivers a wide range of navigation functionality. It is a great tool for boaters who are looking for a modern navigation experience but does not want sensor integration with their boats or need a marine-grade navigation device.

Orca Core

The Orca Core is a Smart Navigation Hub. It contains a built-in GPS, Compass, heel sensor, and sailing processor. The Core also connects to external devices – such as AIS receivers and autopilots via NMEA 2000 – and broadcasts sensor data wirelessly to the Orca App and the Orca Display.

The Core is a great option for those who want advanced boat and sensor integration.

Orca Display

The Orca Display is an ultrabright marine tablet that handles extreme temperatures and weather conditions. The Display also comes with an optional wireless charging mount for hands-free navigation. It is a great option for those who are looking for a modern and flexible chartplotter replacement.

Orca Display can be used with the Core, or as a fully standalone navigation device thanks to its built-in high-accuracy GPS and compass.

The seamless experience

With Orca, all of your devices run the same software. It means your Orca Display will seamlessly synchronize trips and routes with your mobile and tablet, and you have the same great user experience on the boat and at home.

If you are new to Orca, we recommend you download the Orca app from the [Apple AppStore](#) or the [Google PlayStore](#). If you are wondering which Orca setup is right for you, follow [this interactive guide](#).

1b. Who Is Orca For

Who is the Orca App for?



The Orca App delivers crisp and beautiful marine offline charts, great powerboat and sailboat routing, marine weather forecasts, and AIS via the Internet. The Orca app is great for planning and navigating that runs on your phone, tablet, and Mac.

There are many reasons why you want to use the Orca App, but here are the most common:

- You want a backup system
- You want to plan from home
- You want a weather-aware planning system

You want a backup system

If you already have a traditional navigation system that you are happy with, the Orca App is a great way to add redundancy and safety.

The Orca App will use the GPS in your phone or tablet, giving you access to marine charts, even offline. The Orca App operates fully independently of your chartplotter, and should you have

technical issues with your chartplotter or onboard electrical system – then the Orca App is a fantastic addition.

You want to plan from home

The Orca App runs on tablets, smartphones, and Macs. It means you can plan at home or on the go – and you are not confined to your boat for viewing charts and plotting routes.

All devices are synced via the Orca Cloud, so when you plan one route on one device, it will automatically appear on all your other devices.

A typical Orca app user plans at home on a Mac and uses the Orca app on a phone or tablet while navigating to track progress along the route.

You want a weather-aware planning system

The Orca App gives you access to weather-aware route planning, which makes planning effortless.

For powerboats, Orca estimates your travel speed to show you exactly how the weather will be along the trip. For sailboats, Orca delivers advanced sail routing that accounts for the weather forecast and your boat's performance profile to find the best route to your destination.

Should you have questions? Reach out via hello@getorca.com.

If you want to download the Orca App, you can [download it](#) and get started for free.

Who is the Orca Charging Mount for?



The Orca Charging Mount allows you to use the Orca Display 2 hands-free. It also charges the Display 2 via a 25W wireless charging system.

The Orca Charging Mount is fully waterproof, and the wireless charging system allows you to use and charge your Orca Display 2 without exposing any ports or cables to rain or salt water. The Orca Charging Mount comes in two variations:

1. The Surface Charging Mount
2. The Top Charging Mount

The Surface Charging Mount

The Surface Charging Mount is designed for mounting on a flat surface. It requires a minimum flat surface area of 260x190mm. The Surface Mount also requires a cutout in the surface of at least 130x130mm. The maximum cutout supported is 220x160mm.



The mount creates a watertight seal towards the surface, allowing it to replace existing chartplotter cutouts. This option is also suited for mounting on mast mounts.

The Top Charging Mount

The Top Charging Mount is designed to minimize the mounting surface footprint. It requires a flat surface area of 70x70mm. The mount has an adjustable arm that lets you adjust its position and orientation.



The Top Charging Mount kit includes all parts of the Surface Charging Mount kit, so if you are in doubt about which option to choose, select the Top Charging Mount.

When should I get an Orca Charging Mount?

If you want to use the Orca Display 2 hands-free while charging it, and your helm is exposed to rain or saltwater, you should use an Orca Charging Mount because it is waterproof and charges the Display 2 wirelessly.

If you only go boating shorter sessions and can charge the Display 2 between sessions you may not need a charging mount. If you have a closed cockpit, can consider using a general-purpose tablet mount and charge your Display 2 via USB-C.

Got questions? Reach out to hello@getorca.com

If you are ready to buy the Orca Charging Mount, you can order it via the [Orca Web Store](#).

Who is the Orca Core for?



The Orca Core is a Smart Navigation Hub. It contains a built-in GPS, compass, heel sensor, and sailing processor.

The Orca Core also connects to external devices – such as wind sensors, AIS receivers, radars, and autopilots via NMEA 2000. It broadcasts this sensor data wirelessly to the Orca App and the Orca Display.

The Orca Core turns the Orca App and Orca Display into a fully featured chartplotter: It gives you autopilot control, instruments, radar, AIS, and much more.

There are many reasons for getting an Orca Core – here are the most common:

- You want a fully-featured backup system along with your chartplotter
- You want a complete chartplotter experience on a mobile or tablet
- You want wireless autopilot control
- You want to add a compass or external GPS to your boat's network
- You want a sailing processor
- You want to monitor your boat from home

You want a fully-featured backup system

If you already have a traditional chartplotter, the Orca Core is great for adding a fully-featured backup system to your boat.

By adding the Orca Core, you will get a chartplotter-like experience on your smartphone and tablet: Offline marine cartography, instruments, autopilot control, radar, and AIS.

Orca Core is the easiest way to add redundancy to your boat – and to add additional navigation displays to your boat.

You want a complete chartplotter experience on a mobile or tablet

More and more boaters discard traditional chartplotters in favor of mobile devices. Some do it because of ease of use, others because of the cost and effort of installing traditional chartplotters.

The Orca Core is built to give you a complete chartplotter experience on your mobile devices. It does so by connecting to your onboard sensors and wirelessly transmits sensor data to your mobile devices.

You want wireless autopilot control

The Orca Core connects to autopilots from all major autopilot manufacturers. The Core lets you control your autopilot wirelessly from your phone, tablet, and Apple Watch. See the full [list of supported autopilots](#) for details.

You want to add a GPS or compass to your NMEA 2000 network

If you are looking at adding a GPS, compass or heel sensor to your boat, the Orca Core is likely a cost-efficient option. The Orca Core comes with a built-in GPS receiver, electronic compass, and heel sensor.

1. The GPS gives you a < 3m GPS accuracy under normal conditions, which is a significant upgrade from GPS receivers inside traditional chartplotters
2. The Compass delivers < 2° heading accuracy. It also delivers rate-of-turn data to your NMEA network, allowing it to power autopilots and radars.
3. The heel sensor delivers < 2° heel accuracy for powering autopilots and sailing computers

All sensor data is broadcast to your NMEA network at 10Hz.

You want a sailing processor

The Orca Core contains a cutting-edge sailing processor that calculates true wind, currents, and back-calculated apparent wind. It also delivers polar performance targets.

Visit the [Sailing Processor](#) article for details.

You want to monitor your boat from home

Orca Core can relay NMEA 2000 data to the internet via WiFi. If you have a WiFi access point in your boat, you can use the Orca Core as a remote monitoring tool – and check your boat's location, battery status, fuel levels and more while you are away.

Visit the [Remote Access](#) article for details.

Should you have questions the Orca Core, don't hesitate to reach out via hello@getorca.com.

If you want to buy the Orca Core, you can order it from the [Orca Web Shop](#).

Who is the Orca Display for?



The Orca Display 2 is a navigation tablet designed for boating. It delivers the ease of use and flexibility of a modern tablet, with the reliability and ruggedness of a traditional chartplotter.

If you are using the Orca App on your tablet or phone already, you will feel right at home on the Orca Display 2. The software is almost identical and equally fast and easy to use.

Why should I get the Orca Display 2 instead of using Orca on my phone or tablet?

The Orca Display 2 provides 1000 nits of persistent brightness with a premium etched anti-glare surface finish, a -15 to 55°C operating temperature range, and a 9500mAh battery that offers up to 8 hours of battery-powered navigation.

Most phones and tablets deliver half the sustained brightness of the Orca Display 2 with low-quality anti-glare finishes and only support temperatures up to 40°C. As a result, they become hard to view in direct sunlight and prone to overheating.

Here are also some typical reasons for getting an Orca Display 2 instead of a traditional chartplotter:

- You want a smarter navigation experience
- You want to do more than just navigation on your marine device
- You go boating on different boats frequently, or rent boats often

You want a modern navigation experience

Orca Display 2 runs a truly modern navigation system. It is built from the ground up for the modern boater and offers many smart and truly modern experiences.

The first thing you'll notice is that the Orca Display 2 is faster and more responsive than a traditional chartplotter. It is also easier to learn than a chartplotter with no complicated menus and settings.

The Display 2 also delivers a range of functionality that no chartplotter does: It connects to the internet to give you weather-aware routing. It shows you weather forecasts, lets you monitor your boat remotely, shows you AIS data from the internet, and syncs with the Orca App on your phone and tablet.

If you feel that chartplotters are outdated and want something more modern, you'll love the Orca Display 2.

You want to do more than just navigation on your marine device

Orca Display 2 runs Android and is certified by Google. It means you can install any Android app you want on it, from weather forecasts to entertainment and productivity apps.

You go boating on different boats frequently

Orca Display 2 is portable, making it effortless to bring between boats. If you own multiple boats, work on boats or rent boats – then the Orca Display 2 is the perfect product for you.

Should you have questions about other needs, don't hesitate to reach out via hello@getorca.com.

Visit the [Orca Web Shop](#) to order your Orca Display 2.

1c. How Does Orca Connect To My Boat S Devices

How does Orca connect to B&G or Simrad equipment?

Orca supports connecting to a wide range of Simrad and B&G equipment including sensors and autopilots.

Simrad and B&G are made by Navico, so the following article will refer to those jointly as Navico equipment.

Which type of Navico equipment is supported?

Navico devices connect via two types of boat networks:

- NMEA 2000 - introduced in 2007
- SimNet - introduced in 1989

Orca supports connecting to all Navico devices that use SimNet and NMEA 2000. How you connect to Orca depends on which network you have.

How do I figure out which Navico network I have?

The easiest way to identify which boat network you have is by looking at the connectors behind your chartplotter, sensor, or instrument.

If you have black cables with bright yellow connectors, such as the one below, you have SimNet.



If your network consists of T-shaped connectors such as below, you have NMEA 2000.



How do I connect to NMEA 2000 networks?

Orca connects directly to NMEA 2000 networks. You do not need any adapters or additional cables than those provided when you order an Orca Core.

Power will be supplied to the Orca Core via the NMEA 2000 network, making it a "plug-and-play" installation.

How do I connect to SimNet networks?

Orca connects to SimNet networks via [Simrad's SimNet to NMEA 2000 adapter cable](#). The cable has Simrad Part number 24006199.

SimNet networks deliver lower power capacity than NMEA 2000 networks. Because of this, it's strongly recommended that you install the Orca Core next to the power supply of your SimNet network.

Do you have examples of specific Navico devices that Orca supports?

The list below contains only examples of devices supported by Orca as a reference. Orca supports all NMEA 2000 and SimNet devices made by Navico.

- **Autopilots:** Full control of NAC and H5000 autopilots. Full control of TP autopilots and the AC series via SimNet. See the [autopilot article for details](#).
- **Wind:** B&G WS-series, fully compatible with the Triton series
- **Depth, temperature, and speed through water:** Fully compatible with the Triton series, DST-series, etc.
- **Radar:** HALO 24, 20+, 20, 8, 6, 4, and 4G. See the [radar article](#) for details.

Contact hello@getorca.com if you have questions.

How does Orca connect to Garmin equipment?

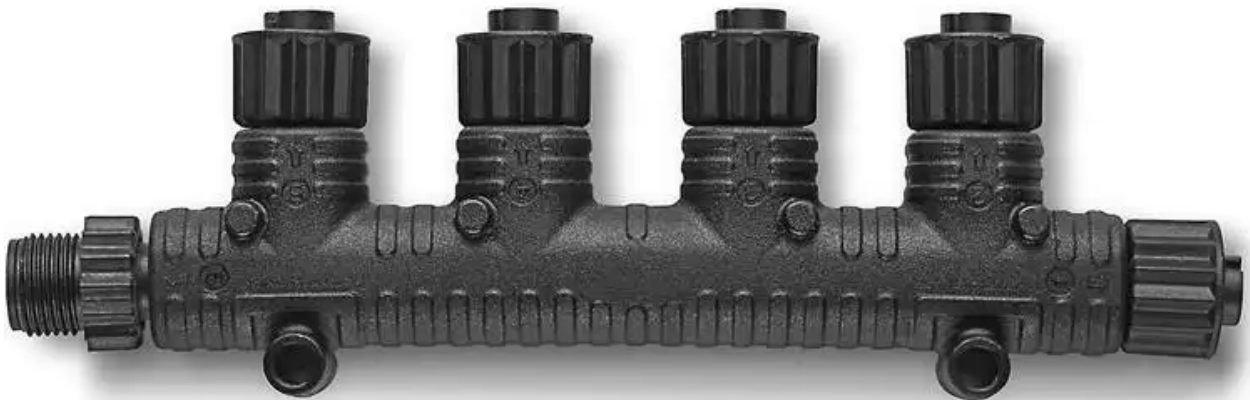
Orca supports connecting to a wide range of Garmin equipment including sensors and autopilots.

Which type of Garmin equipment is supported?

Garmin devices connect via NMEA 2000. Orca supports connecting to all Garmin that use NMEA 2000.

How do I verify that I have an NMEA 2000 network?

The easiest way to identify which boat network you have is by looking at the connectors behind your chartplotter, sensor, or instrument. If your network consists of T-shaped connectors such as below, you have NMEA 2000.



How do I connect to NMEA 2000 networks?

Orca connects directly to NMEA 2000 networks. You do not need any adapters or additional cables than those provided when you order an Orca Core.

Power will be supplied to the Orca Core via the NMEA 2000 network, making it a "plug-and-play" installation.

Do you have examples of specific Garmin devices that Orca supports?

The list below contains only examples of devices supported by Orca as a reference. Orca supports all NMEA 2000 and SimNet devices made by Navico.

- **Autopilots:** Full control of GPH and Reactor series. See the [autopilot article for details](#).
- **Wind:** GND-10, GNX-series
- **Depth, temperature, and speed through water:** GST, GNX, Smart Transducer, Intelliducer
- **Radar:** Not yet supported.

Contact hello@getorca.com if you have questions.

How does Orca connect to Raymarine equipment?

Orca supports connecting to a wide range of Raymarine equipment, sensors, autopilots, and radars via the Orca Core.

Which type of Raymarine equipment is supported?

Raymarine devices connect via two types of boat networks:

- SeataalkNG - introduced in 2007
- Seataalk - introduced in 1989

How you connect to Orca depends on which network you have.

How do I figure out which Raymarine boat network I have?

If you have an E-series Raymarine chartplotter or ST-instruments, you likely have a Seataalk boat network. This is typical if the electronics in your boat were installed before 2010.

If you have an Axiom, Element, eS chartplotter, or I-series instruments – you likely have a SeataalkNG boat network. This is typical if the electronics in your boat were installed after 2012.

If the connectors on your chartplotter and instruments have a long and partially rounded shape, you have Seataalk. The image below shows a Seataalk cable.



If the connectors on your chartplotter and instruments are round, with black and white or black and blue cable color, you have SeataalkNG. The image below shows a SeataalkNG cable.



How do I connect to SeataalkNG networks?

Orca connects directly to SeataalkNG networks with the SeataalkNG to NMEA 2000 adapter cable with Raymarine part numbers A06045 and A06075.

Power will be supplied to the Orca Core via the SeataalkNG network, making it a "plug-and-play" installation.

How do I connect to Seataalk networks?

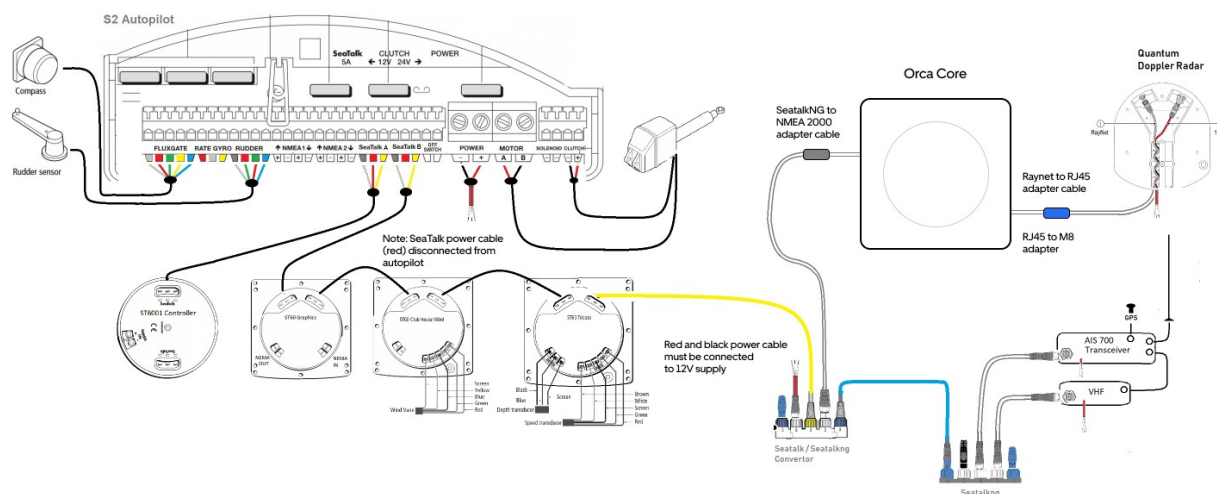
Orca connects to Seataalk networks via Raymarine's Seataalk to SeataalkNG converter. The converter's Raymarine part number is E22158.



You will also need the A06045 or A06075 adapter cable to connect the Orca Core to your SeataalkNG converter.

When using the A06045 or A06075 adapter cable – your Orca Core will connect directly to the cable. There is no need for a T-connector between the Core and the adapter cable.

Below you'll find a connection diagram of how you can connect Orca Core to a typical Seataalk and SeataalkNG network with an S-series autopilot. Click on the illustration to view it in full size.



A combined SeataalkNG and Seataalk network must only have a single source of power.

When you install a SeataalkNG converter, you must disconnect the power supply from the Seataalk side of the network. If your autopilot supplies power to the Seataalk network, remove the red power cable from the Seataalk connector while keeping the grey and yellow cables connected.

Do you have examples of specific devices that Orca supports?

The list below contains only examples of devices supported by Orca as a reference. Orca supports all Seataalk and SeataalkNG devices made by Raymarine.

- **Autopilots:** Full control of Evolution autopilots. Partial control of older Raymarine autopilots. See the [autopilot article](#) for details.
- **Wind:** ST60, RSW, E2297X, ITC-5 converter, wireless wind instruments with a MicroTalk to SeataalkNG base station
- **Depth, temperature, and speed through water:** ST900, ST950, DT800
- **Radar:** Quantum 1 and 2. See the [radar article](#) for details.

The Raymarine Wind Pod with part number **E22086** is known to have a communication issue where it does not properly broadcast its discovery data over SeaTalkNG or NMEA2000 networks. As a result, depending on your system setup, **Orca may not be able to recognize the Wind Pod as a valid wind sensor source.**

Contact hello@getorca.com if you have questions.

2. Getting Started With Orca

2a. Orca Core

Installing your Orca Core

This article describes how to install the Orca Core in your boat.



What is included in the Orca Core 2 box?

- 1x Orca Core 2 with attached:
- D-coded M12 4-pin female Ethernet cable; and
- NMEA 2000 5-pin male cable
- 1x NMEA 2000 T-connector
- 1x NMEA 2000 to power adapter cable

What are the dimensions of the Orca Core 2?

The Core's housing has a 118 x 118 mm width/length. The height of the housing is 35 mm. The mounting bracket adds an additional 15 mm height to the assembly.

Where should I install my Orca Core 2?

The Orca Core is waterproof and can be installed inside and outside. It can also be installed horizontally and vertically. When reviewing your installation location, consider the following:

1. Install the Core away from other magnetic sources, such as compasses, generators, and other electronics. For the best compass accuracy, install the Core at least 1 meter away from sources of magnetic interference.
2. For best GPS accuracy, install the Core with a free line of sight to the sky. The white side of the Core should face upwards with an unobstructed line of sight to the sky.
3. For the best possible Sailing Computer accuracy, install the Core close to the center of the roll axis in your boat. This is typically along the centerline of the boat, about 0.5-1 meter above the waterline.

When selecting an installation location, we recommend powering on the Core at your intended installation location, and verifying the following before fastening the Core:

1. You can connect to the Core with all your devices from the helm of your boat.
2. The Core's GPS can receive a good reception within 1 and 1/2 minutes after powering on.

While the Core can be installed in any position, its location and orientation will affect GPS performance. If the Core is installed vertically or does not have a clear view of the sky, GPS accuracy may be compromised. For the best results, follow the positioning guidelines outlined above.

For details about connecting a tablet, phone, or Orca Display to your Core, see the [relevant article](#).

To check the Core's GPS reception, connect the Orca App to your Core, and open Main Menu > My Boat

Certain functionality, such as Logbook, requires that the Core has either a GPS fix via its internal GPS or access to the Internet via WiFi or Ethernet plus a GPS fix via a GPS on your NMEA 2000 network.

Even if you have a GPS receiver on your NMEA 2000 network, it is recommended to install the Core in a position where it can receive GPS signals.

How does Orca Core 2 connect to my boat sensors?

Orca Core 2 has two connectors:

1. An NMEA 2000 Micro-C male connector that connects to NMEA networks or SeataalkNG networks via an adapter cable
2. A D-coded M12 4-pin Ethernet connector that connects to Ethernet networks for radar and internet connectivity

The NMEA connector has 5 pins, while the Ethernet connector has 4 pins. To learn more about different boating networks and how to connect to those, see the [Networking Guide](#).

How do I power my Core?

The Orca Core can be powered via your NMEA2000 backbone or a standalone 12/24V DC power supply.

Option A: Powering your Orca Core via NMEA 2000

1. Extend your NMEA 2000 backbone with the supplied T-connector.
2. Connect your Core to the NMEA 2000 backbone to power it on.



To the left: NMEA 2000 backbone extended with a free T-connector. To the right: The Core's NMEA 2000 connector is added to the network.

Option B: Powering your Orca Core via 12/24V DC power supply

1. Connect the included Power Adapter Cable to the NMEA 2000 connector of the Core
2. Connect the red lead to the positive terminal and the thin black lead to the negative terminal of a 12/24V DC power supply. The thick black lead should be connected to ground if available.



When connected to power, a green light will appear on the Core's lid. The light will disappear after 30 seconds.

How do I fasten the Core to my boat?

You can install the Core with the drill-through mount, or via a bonding pad. The bonding pad should not be used for fast-moving powerboats.

Installing with the bonding pad

1. Use a cleaning agent to clean the surface of the Core and the surface of your boat
2. Remove the dark plastic cover on the bonding pad and firmly place the bonding pad on the top of the Core housing
3. Remove the red plastic cover on the bonding pad and firmly place the Core with the bonding pad against the mounting surface
4. [Optional] Unscrew the three M4 torx screws from the Core drill-through mount and remove the drill-through mount for a cleaner installation



Orca Core installed with the bonding pad. The drill-through mount is removed.

Installing with drill-through mount

1. Create a Ø 26-30mm hole at your mounting location
2. Guide the Core's cables and drill mount through the hole
3. Tighten the locking nut on the back of the core



Orca Core installed with drill-through mount.

How do I install previous Core versions?

Depending on your Core model, your Core may require to be powered via a separate 12/24V power supply. Four models of Orca Core exist, and you can identify the Core based on the number of cables:

- Early Core 1 - has 3 cables: NMEA2000 Micro-C, 12/24V DC power in, and power out for Orca Display 1. This model requires separate power via the power in cable.
- Core 1 - has 1 cable: NMEA 2000 Micro-C. It is powered via NMEA 2000.
- Core 2 - has 2 cables: NMEA 2000 Micro-C and M12 4-pin D Code Ethernet. It is powered via NMEA 2000.
- Upgraded Core 2 - has 2 cables: NMEA 2000 Micro-C and M12 4-pin D Code Ethernet. It is powered via NMEA 2000. Format is equal to Core 2 but it features a full electronics redesign for a better performance, check [our blog post](#).

Core 1, Core 2 and Upgraded Core 2 share the same installation guide, check [sections above](#).

Installing your early Orca Core 1

1. [Optional] Crimp on the supplied Faston Connectors to the exposed wiring on the brown and white power cable.
2. Connect the brown/red cable to a positive power terminal and the white/black cable to a negative power terminal. The terminal must be able to supply at least 3A and must have a separate fuse.
3. Extend your NMEA 2000 backbone with the supplied T-connector.
4. Connect your Core to the NMEA 2000 backbone.



Early Orca Core 1 has three cables. The exposed power wires must be connected to a 12/24V power supply to power the Core.

Questions about installations or how Orca Core fits into your boat? Reach out to hello@getorca.com

What should I do next?

If you haven't already, read up on how to [connect to your Core](#) to get started with your Core.

If you have a WiFi or Ethernet network in the boat, you should also [connect the Core to it](#) for a better experience and cloud functionality such as Remote Access.

2b. Orca Display 2

First steps with Orca Display 2

What is the Orca Display 2?

The Orca Display 2 is a modern, ultrabright, and portable navigation display.

What is in the Orca Display 2 box?

- 1x Orca Display 2
- 1x SIM tray tool
- 1x USB-A to USB-C charging cable

What is the Orca Display 2's button layout?

- Top: Hold power on/off. Press to sleep/wake.
- Top right: Move the Chart to your current location.
- Middle right: Zoom in.
- Bottom right: Zoom out.



How do I charge the Orca Display 2?

To charge your Display via USB-C, open the waterproof cover at the bottom of the screen. You can also charge via a wireless Qi charger and the Orca Charging Mount.

Keep all waterproof covers closed while at sea or while raining to prevent water ingress and corrosion damage.

How do I insert a SIM card in the Orca Display 2?

To enable cellular connectivity on your Orca Display 2, open the waterproof cover on the bottom right side. Use the supplied SIM tray tool to eject the SIM tray by pushing the open button. Insert a Micro SIM into the slot with a notch in one corner. Insert the card tray into the Display and close the waterproof cover.



Open Button

Your Orca Display 2 will update automatically when it is connected to the internet.

The Orca Display 2 will typically receive a given update 3-5 days after the Orca Mobile app for iOS and Android.

For more information about the basic functionality of Orca, see the [overview guide](#). For learning how the Display 2 connects to your Orca Core, and the functionality it unlocks, see the [connected boat guide](#).

Installing your Surface Charging Mount



Where should I install the Surface Charging Mount?

The Orca Charging Mount is waterproof and can be installed inside and outside. When reviewing your installation location, consider the following:

1. The mount requires a flat surface of at least 27x18 cm for mounting, with an additional 5cm space for the lock/unlock pull tag
2. The Mount contains a wireless charging coil that may influence nearby magnetic compasses. Install the mount away from devices that are sensitive to magnetic disturbance.
3. For the best possible thermal performance, install the mount at a shaded location.
4. The Orca Display 2 features a compass. If you are using Display 2 without Orca Core, Display 2's internal compass will be used. For the best compass accuracy, install the Display at least 1 meter away from sources of magnetic interference.

How do I power my Surface Charging Mount?

The Orca Charging Mount is powered via a 12/24V DC power supply.

You should verify sufficient power supply before you begin the installation of your Charging Mount. To connect to power:

1. Connect the **brown cable** to a positive power terminal and the **white cable** to a negative power terminal. The terminal must be able to supply at least 5A and must have a separate fuse.
2. A light will appear on the housing of the mount when it is connected to power.

3. Insert the Orca Display 2 into the mount. Orca Display 2 will indicate that it is charging via its battery symbol in the top right corner.

Do not connect the Charging Mount to your engine's starting battery. Doing so may damage the Charging Mount and Orca Display.

Do not insert any object between the Orca Display 2 and the Charging Mount while it is charging. Doing so may damage the Charging Mount and Orca Display.

Which mounting options are available with the Surface Charging Mount?

The Surface Charging Mount contains several parts that make up the complete assembly:

- **The Charging Mount** – the frame that holds your Display 2 and provides wireless charging.
- **8x Two-sided screws** – these are found in a bio-degradable plastic bag under the cardboard floor in the Charging Mount box.

The Surface Charging Mount has two installation options:



- **Flush installation (left)** – the mount rests fully flush with the underlying surface. This requires cutting a minimum 14x15cm cutout in the underlying surface along with drilling 4 holes.
- **Floating installation (right)** – the entire mount floats on top the surface. This option requires drilling 5 holes.

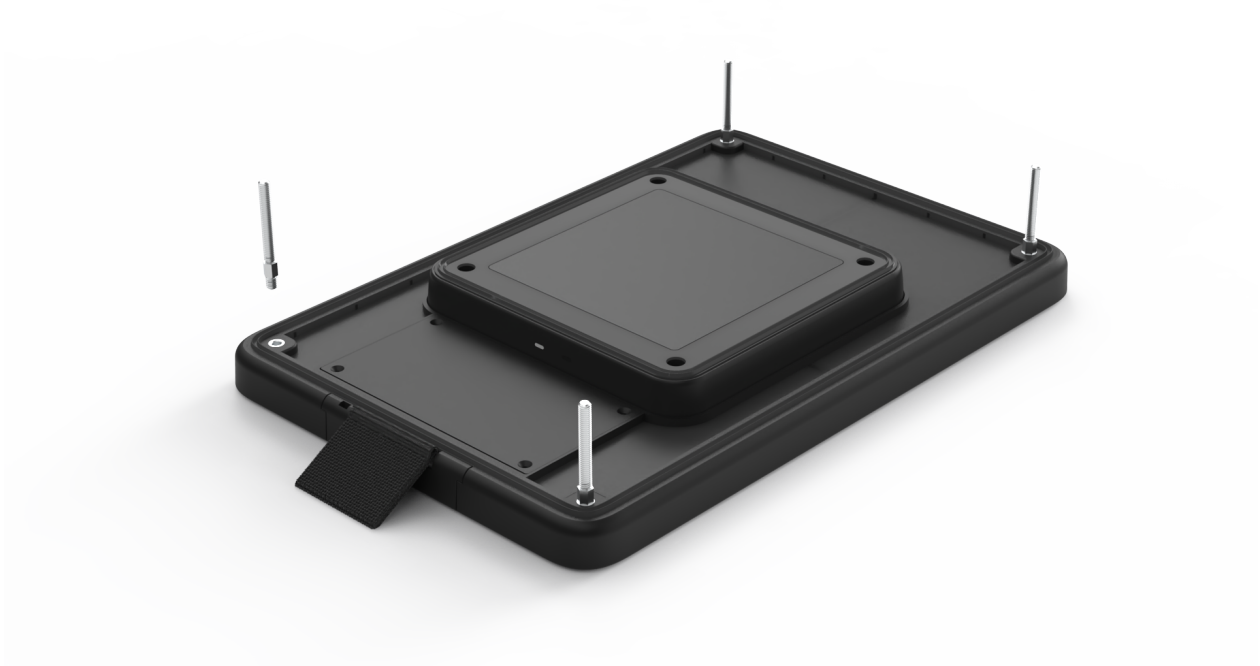
Floating installation is easier and doesn't require cutting away parts of your dashboard, but do introduce the risk of rope snagging the underside of the mount.

If you are replacing an existing flush chartplotter installation, see the [Surface Cutout Compatibility](#) guide for recommendations.

How do I flush-install the Surface Charging Mount?

Prepare the Charging Mount for installation:

1. Insert the four two-sided screws on the back side of the mount. The short threaded part of the screw is to be connected to the mount. Tighten with a wrench, slightly tighter than hand-tightening.



The Surface Charging Mount kit is also delivered with screws for top mounting. Use the four screws with the short unthreaded part (shoulder/shank) for the Surface Mount.

Cut the mounting surface:

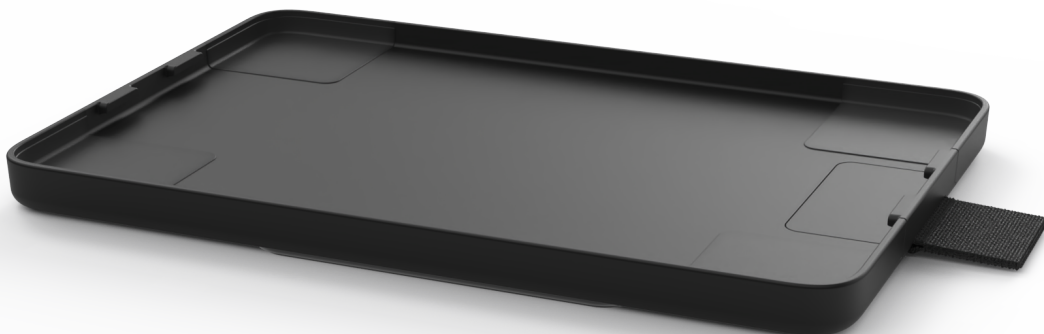
1. Fasten the drilling template with tape at your intended mounting location with the letter B facing upwards
2. Drill four 5mm (M4) holes for the fastening screws at each corner according to the drilling template
3. Drill the corners of the area marked "Remove shaded area" with a 10-15mm drill bit. Use a jigsaw to remove the material.



Add a small chamfer to your drill holes to prevent gelcoat cracking around the holes.

Fasten the Charging Mount:

1. Guide the power cable (around 100cm) through the cutaway and ensure it has sufficient spacing to not be bent sharply.
2. Put the mount in position
3. From the backside of the mount: Place a soft rubber washer on each screw and hand-tighten the locking nuts

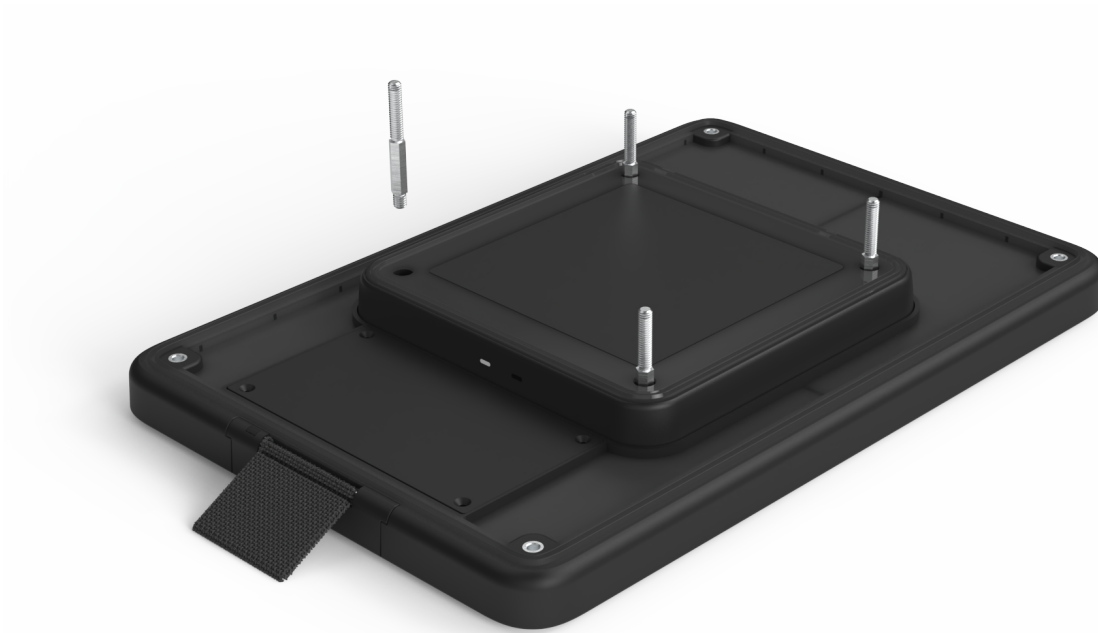


If the mounting surface is thick you may need to remove some additional material around the power cable to ensure the cable is not forced to bend sharply.

How do I float-install the Surface Charging Mount?

Prepare the Charging Mount for installation:

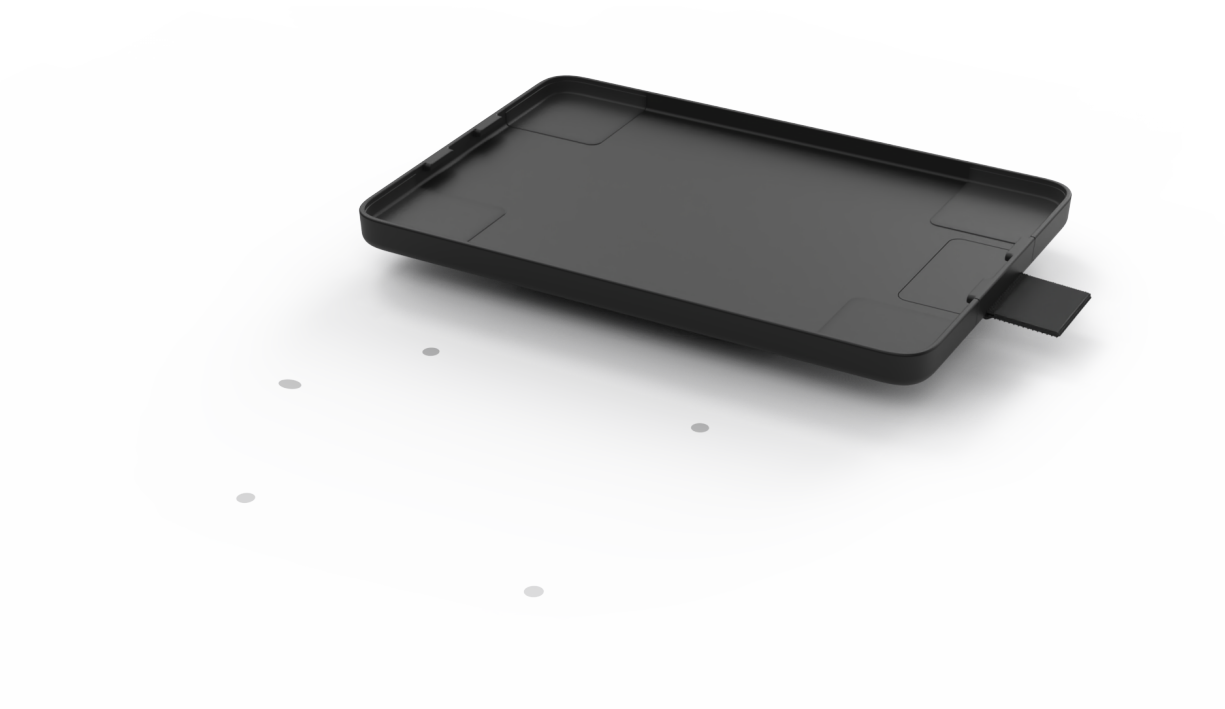
1. Insert the four two-sided screws on the back side of the mount. The short threaded part of the screw is to be connected to the mount. Tighten with a wrench, slightly tighter than hand-tightening.



Use the four screws with the long unthreaded part (shoulder/shank) for the Surface Mount's floating installation.

Drill holes in the mounting surface:

1. Fasten the drilling template with tape at your intended mounting location with the letter A facing upwards
2. Drill four 5mm (M4) holes for the fastening screws at each corner according to the drilling template
3. Drill a fifth hole for the power cable. The hole should be positioned and angled to ensure the power cable does not need to bend sharply.



The position and angle of the hole for the power cable depend on how thick the mounting surface is. The hole should also be sealed with a flexible sealant, such as Sikaflex for a waterproof installation.

Add a small chamfer to your drill holes to prevent gelcoat cracking around the holes.

Fasten the Charging Mount:

1. Guide the power cable through its dedicated hole
2. Put the mount in position
3. From the backside of the mount: Place a soft rubber washer on each screw and hand-tighten the locking nuts



Are there other surface mounting alternatives?

The screws on the back of the Charging Mount are VESA 100mm compatible, meaning you can connect the Charging Mount to any VESA adapter.

Questions about installations or how the Orca Charging Mount fits into your boat? Reach out to hello@getorca.com

Installing your Top Charging Mount



Where should I install the Top Charging Mount?

The Orca Charging Mount is waterproof and can be installed inside and outside. When reviewing your installation location, consider the following:

1. The mount requires a flat surface of at least 7x7 cm for mounting. The surface material must be sufficiently strong to support the mount in heavy sea at high speed.
2. The Mount contains a wireless charging coil that may influence nearby magnetic compasses. Install the mount away from devices that are sensitive to magnetic disturbance.
3. For the best possible thermal performance, install the mount at a shaded location
4. The Orca Display 2 features a compass. If you are using Display 2 without Orca Core, Display 2's internal compass will be used. For the best compass accuracy, install the Display at least 1 meter away from sources of magnetic interference.

How do I power my Top Charging Mount?

The Orca Charging Mount is powered via a 12/24V DC power supply. You should verify sufficient power supply before you begin the installation of your Charging Mount. To connect to power:

1. Connect the **brown cable** to a positive power terminal and the **white cable** to a negative power terminal. The terminal must be able to supply at least 5A and must have a separate fuse.
2. A light will appear on the housing of the mount when it is connected to power.
3. Insert the Orca Display 2 into the mount. Orca Display 2 will indicate that it is charging via the battery symbol in the top right corner of the screen.

Do not connect the Charging Mount to your engine's starting battery. Doing so may damage the Charging Mount and Orca Display.

Do not insert any object between the Orca Display 2 and the Charging Mount while it is charging. Doing so may damage the Charging Mount and Orca Display.

How do I install the Top Charging Mount on my boat?

The Top Charging Mount contains several parts that make up the complete assembly:

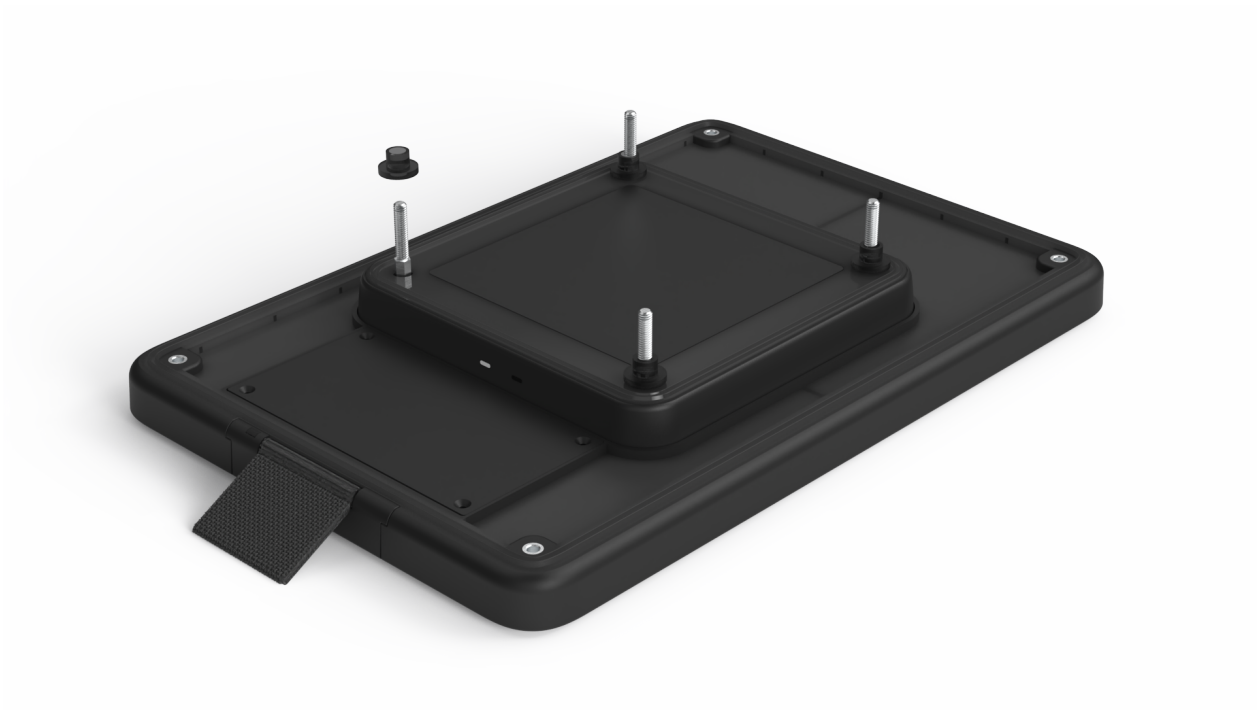
- **The Charging Mount** – the frame that holds your Display 2 and provides wireless charging.
- **The Mount Arm and VESA adapter** – manufactured by RAM Mounts and compatible with all C-size RAM mounts.
- **The Top Mount Extension** – gaskets, adapters, and screws for fastening the mount to your boat in a waterproof way.
- **8x Two-sided screws** – these are found in a bio-degradable plastic bag under the cardboard floor in the Charging Mount Box.

Prepare the Charging Mount for installation:

1. Insert the four two-sided screws on the back side of the mount housing. The short threaded part of the screw is to be connected to the mount. Tighten with a wrench, slightly tighter than hand-tightening.



1. Place the four shoulder washers on the screws, with the shoulder facing towards the mount.



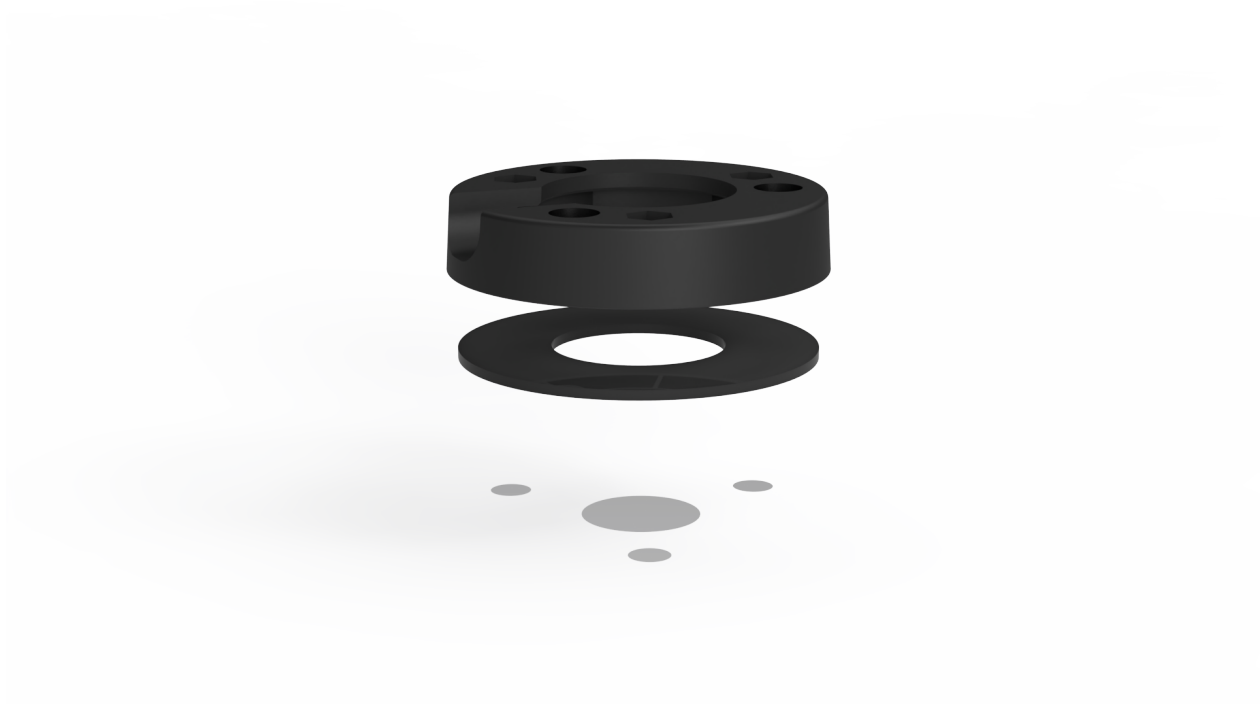
3. Place the VESA plate, followed by a soft rubber washer on each screw and hand-tighten the locking nuts.



The Top Charging Mount kit is also delivered with screws for surface mounting. Use the four screws with a long unthreaded part (shoulder/shank) for the Top Mount.

Drill holes for the Top Mount:

1. Place the Gasket of your Top Mount Extension at your mounting location and use it as a guide to mark the drill location for the four holes with a pen
2. Drill three 5mm (M4) holes for the fastening screws
3. Drill the center hole for the power cable. The center hole should be between 10 and 20mm.



Add a small chamfer to your drill holes to prevent gelcoat cracking around the holes.

Assemble the Cockpit Adapter:

1. Remove the waterproof Cable Guide from the Top Mount Extension
2. Guide the power cable (around 100cm) through the Cable Guide. Leave about 40cm of cable between the mount and the gasket to allow for adjustment of the mounting arm.



1. Place the Gasket followed by the Top Mount Extension at the installation location. Insert the Cable Guide with the charging cable into the Top Mount Extension.
2. Place the foot of the mounting arm on top of the Cockpit Adapter.
3. Guide locking screws through the assembly, add washers on the underside and tighten firmly with a wrench.



Finish the assembly:

1. Loosen the mount arm sufficiently to guide the Charging Mount's rubber ball into the mounting arm
2. Adjust the position of your mount and tighten the mounting arm



Are there other mounting alternatives?

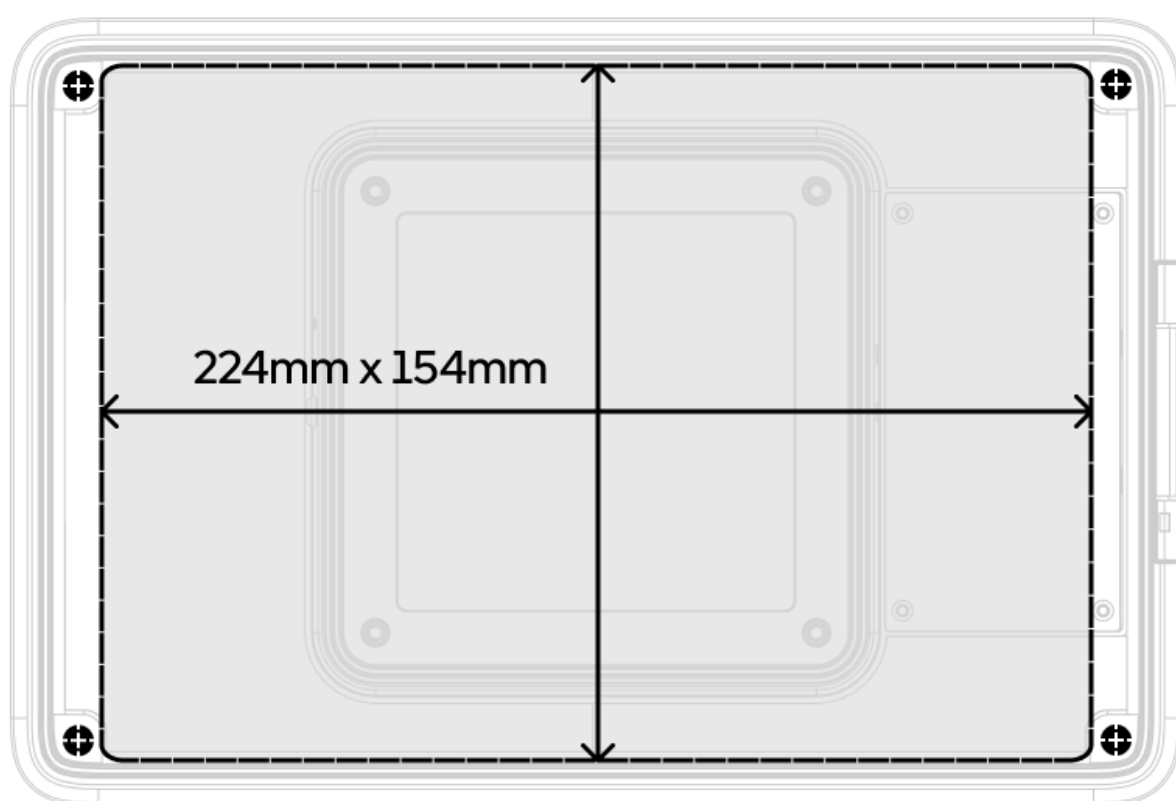
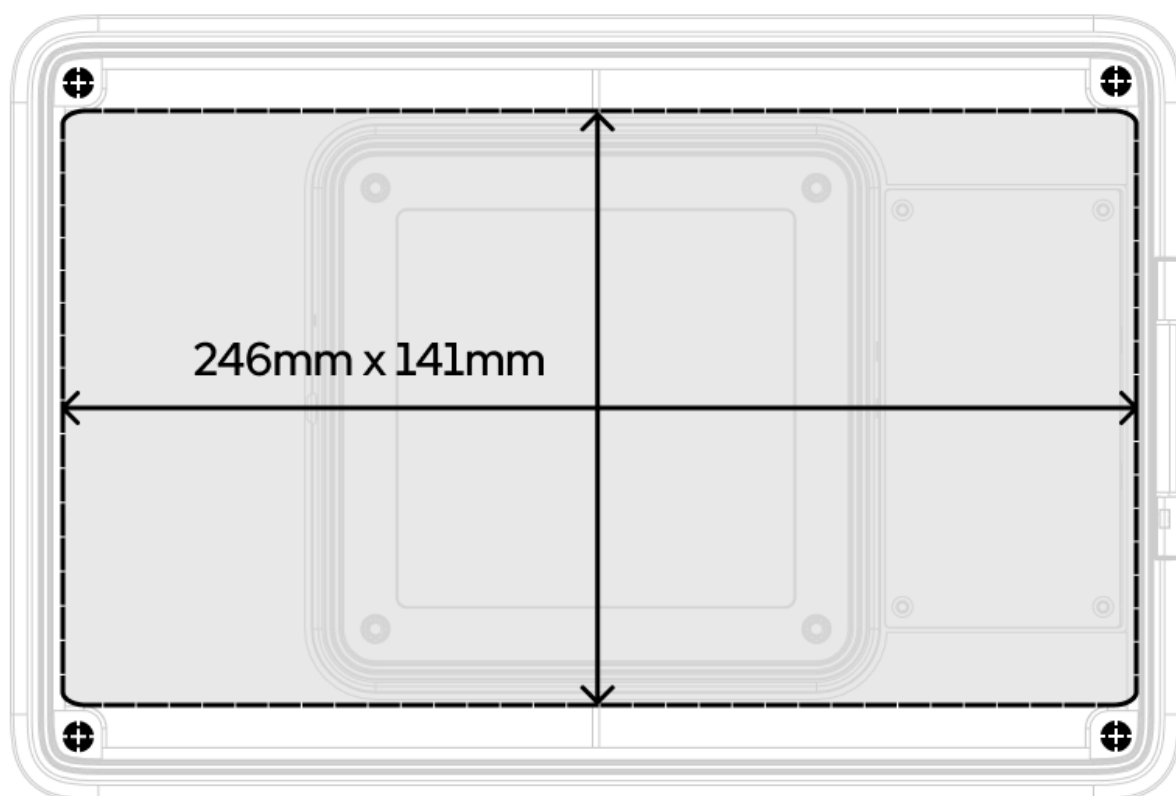
Yes, the Orca Display 2 uses the RAM C-size mounting arm. It means Orca is Compatible with all RAM C-size mounts, such as a wide range of [rail mounts](#).

The screws on the back of the Charging Mount are VESA 100mm compatible, meaning you can connect the Charging Mount to any VESA adapter.

Questions about installations or how the Orca Charging Mount fits into your boat? Reach out to hello@getorca.com

Surface Mount Cutout Compatibility

The Surface Charging Mount has a maximum cutout size of *240mm x 140mm* or *224mm x 154mm* depending on the shape of the cutout.



The cutout range gives drop-in compatibility with almost all 8-inch and smaller chartplotters and instrument displays. For 9-inch chartplotters, the following are compatible:

- Garmin Echomap 9x2 – 246x141mm
- Simrad NSX9 / B&G Zeus3 9 – 226x135mm
- Raymarine Axiom/Axiom Pro – 239x152.5mm*

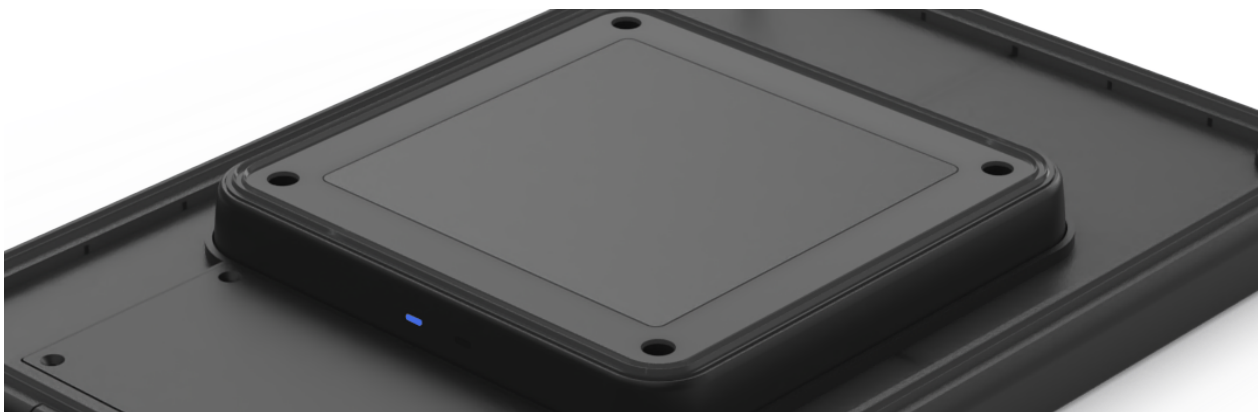
* The Raymarine Axiom/Axiom Pro cutout extends beyond Orca Surface Mount's maximum cutout area. The Raymarine cutout template has cornered edges, so if your cutout follows the Raymarine cutout template closely – the Orca Charging Mount will support the cutout.

If you have a 9" Axiom:

1. Print the attached cutout template on a A4 paper without scaling or fitting
2. Verify that the printout dimensions are correct with a ruler
3. Temporarily remove your Axiom
4. Place the Orca Cutout Template on top of the cutout and verify that the four screw holes at the edge of the template are located outside your existing cutout

What do the different light colours on the Orca Charging Mount mean?

The Orca Charging Mount has a light on the back of the charging panel, as illustrated with the blue light below.



The colour of the light will change depending on the state of your charging mount as follows:

Light Colour	Status
Blinking Blue	The Mount is ready to charge
Solid Red	The Display is charging
Green	The Display is fully charged
Blinking Red	Error while charging. Remove Display from mount, wait 5 seconds and try again.
Red	Check the power supply and contact customer support if the problem persists.

2c. Orca Display 1

First steps with your Orca Display 1

This article covers Orca Display 1 only. For Orca Display 2 owners, see the [Display 2 section](#).

The Orca Display 1 is a 10.1" full-HD outdoor viewable screen and mount with integrated charging. Co-manufactured with Samsung and RAM® Mounts, the system combines powerful hardware and cellular connectivity with a robust hands-free experience.

The Display is delivered with a matte, anti-glare screen coating. While removable, we strongly recommend that you keep the screen coating on to protect the display and improve screen legibility.

To turn on your Orca Display, press and hold the power button on the top right side.



Once powered on, you will be asked to connect to a WiFi network and log in. Log in with the same e-mail address as you used for your purchase.

If this is your first time using an Orca Display, you will be greeted with an introduction guide. This article will summarize the introduction guide.

Physical buttons

The Display has 7 physical buttons: Three on the front, and four on the side.



The three on the front, from top to bottom:

1. **The Drawer** – view saved spots & routes
2. **Home** – press once to return to the map from anywhere in the system. Press again to return the map to your current location
3. **Back** – return to the previous screen

The four on the side, from top to bottom:

1. **Power** – press to enter or exit sleep. Hold to power on and off
2. **Zoom in** – enlarge the chart scale
3. **Zoom out** – shrink the chart scale
4. **Location follow** – makes the chart follow your location

Offline Maps

Offline maps are downloaded and stored permanently on your Display, making them accessible without an internet connection. We strongly recommend that you download maps for your intended travel regions prior to departure.

To download charts, open the **Main Menu** and select **Download Offline Maps**.

Updates

Updates to your Display come in two flavours, updates to the navigation experience, and updates to the underlying Android Operating System. Updates are automatically downloaded when your Display is connected to the internet.

The navigation experience is updated bi-weekly and is presented by an updated notice at the bottom of the screen.

The Android Operating System is updated whenever major updates are made available by Google. These updates will be prompted with a full-screen notice.

We recommend that you regularly connect to the internet to get access to the latest updates.

Connectivity

Some features of the Orca system require internet connectivity. These are Weather forecasts, sync of routes and spots, and automatic routing. To use these features at sea, you may provide internet via a wireless access point or use the Display's built-in cellular capabilities.

The Display supports 3G and 4G cellular networks. To enable cellular connectivity, you'll need to insert a nano-SIM into the Display. To insert a SIM card, see the [insert SIM guide](#).

Installing your Orca Core & Charging Mount

You are now ready to install your Orca in your boat. The installation guide may be found [here](#).

Installing your Orca Display 1

This article covers Orca Display 1 only. For Orca Display 2 owners, see the [Display 2 section](#).

1. What is included in my package?

Your Orca Display 1 package contains:

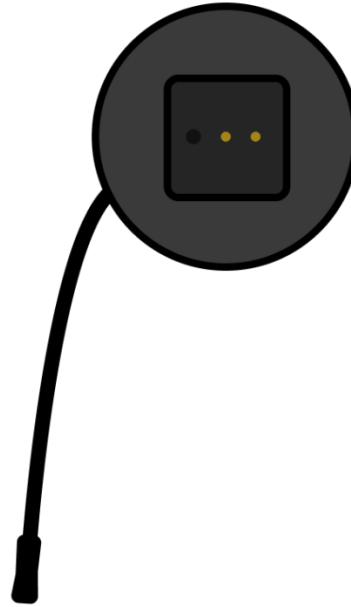
- 1x Orca Display 1 with Charging Sleeve
- 1x Orca Display 1 Charging Connector
- 1x Orca Cockpit Adapter with sealing gasket
- 1x RAM mount
- 3x 14mm M5 screws
- 3x 60mm M4 screws with locking nuts and washers

- 1x Information leaflet

1x Orca Display with Charging Sleeve



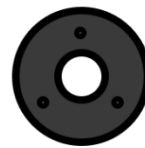
1x Orca Charging Connector



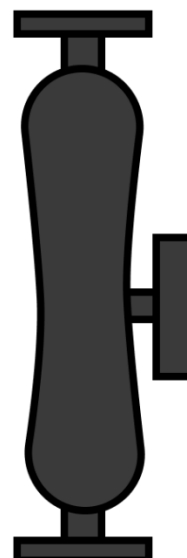
1x Information Leaflet



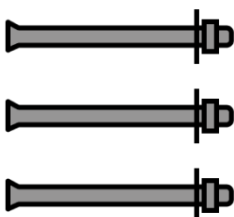
1x Orca Cockpit Adapter and sealing gasket



1x RAM Mount



3x 55mm M4 screws with locks and washers



3x 20mm M4 screws



Should you miss anything in your package, contact us at hello@getorca.com

2. Where and how should I mount my Orca Display 1?

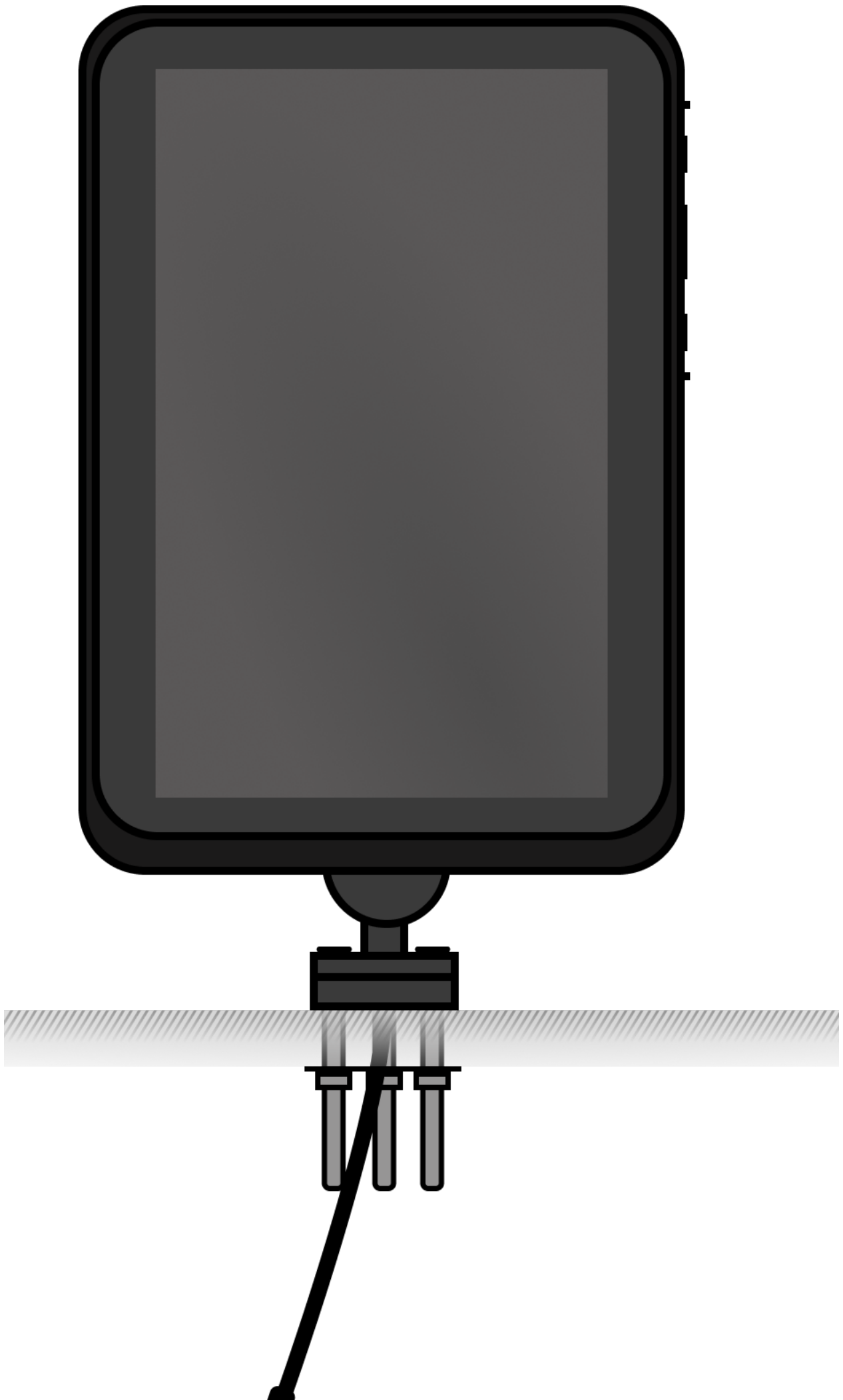
The Orca Display is designed to be top-mounted on a flat surface using the provided RAM mount and Orca Cockpit Adapter. Typically this will be done at the helm of your boat.

Since the Orca Display offers up to 8 hours of battery life during active navigation, some customers have opted to install the charging mount at alternate locations, such as near the doorway of a sailboat's cabin or below deck to save space at the helm.

The Orca Display Mount is built upon the RAM mounting system, allowing you to replace the Orca Cockpit Adapter with any other C-size RAM-compatible mounting brackets, such as tubular mounting brackets, should you want this.

Before installing your Orca Display, you should install and set up your Orca Core according to the [Orca Core installation instructions](#).

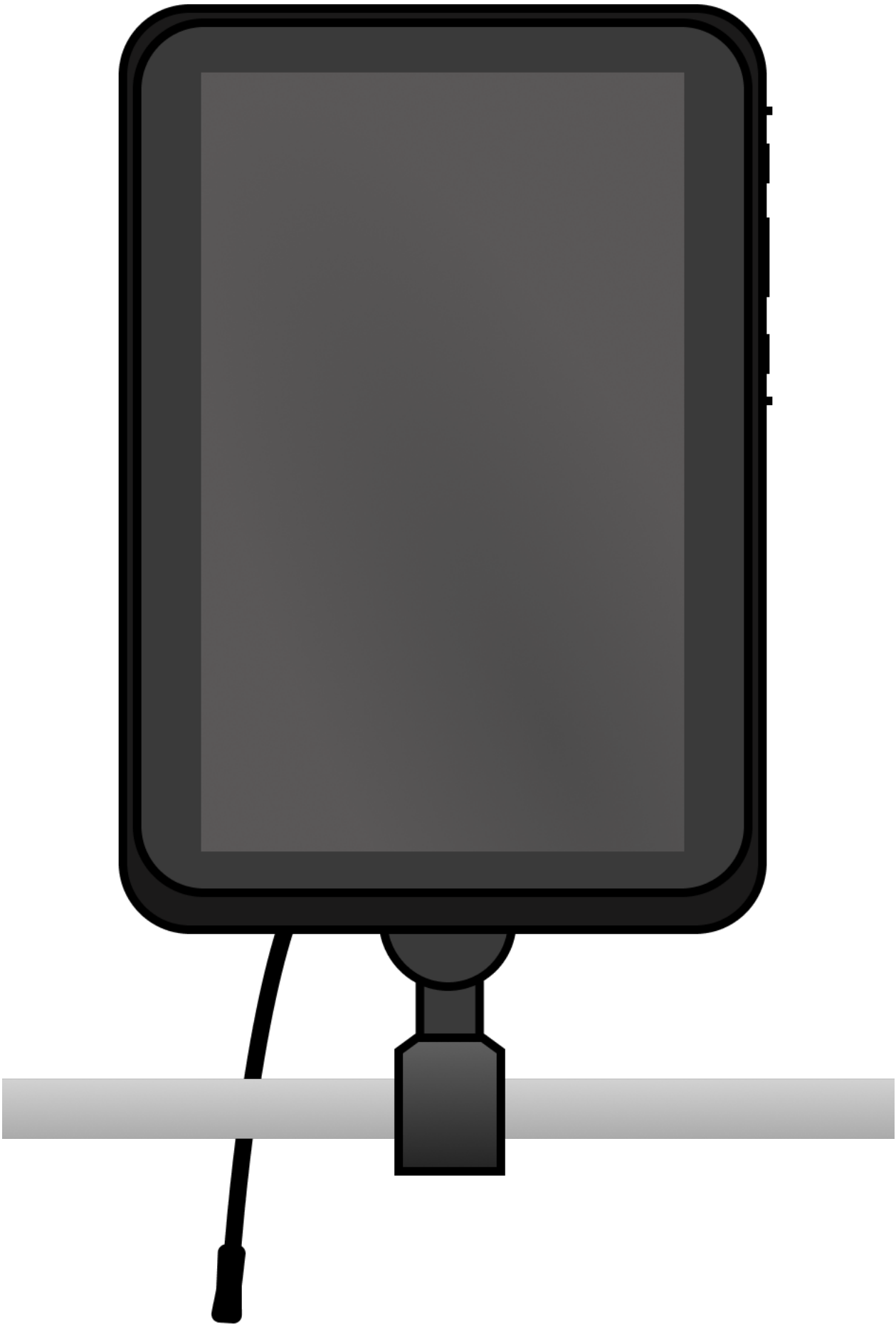
A1) Top-mounted with Orca Cockpit Adapter



This is the official Orca Display mounting option.

It requires drilling a 20mm diameter hole in a flat surface for the power cable along with three 5mm holes for fastening the mount. The Orca Display Kit contains all necessary parts for this mounting option and the Orca Cockpit Adapter will ensure a watertight seal around the power cable and drill holes.

A2) Tubular-mounted with RAM-compatible mounting bracket



This is an example of an optional mounting option using a RAM-compatible tubular mounting bracket. You can freely replace the provided RAM-mount base and Orca Cockpit Adapter with any C-size RAM-compatible base for a wide range of mounting options.

You will need to provide your own mounting base and route the power cable to the Orca Core in a secure and waterproof manner when following alternative mounting options. This guide will not cover the details of alternative mounting options. Feel free to contact us if you have any questions.

When deciding how to mount your Orca Display, review the following considerations:

1) Distance to Orca Core

The Orca Core provides charging power to the Orca Charging Mount so you'll need to position these close enough for the cable to be attached. The available cable distance is about 1.5 m from the foot of the Display Mount to the base of the Orca Core.

2) Sunlight, glare, and viewability

The Orca Display has a matte high-contrast screen and is sunlight readable, but for best results, install the unit out of direct sunlight. The chosen location should also have minimal glare from windows and bright objects.

The viewing angle influences the viewability of the Display, so ensure you can tilt the display directly towards your intended point of view at the chosen position.

3) Mounting surface and structural integrity

The Orca Cockpit Adapter has a 64 mm diameter circular footprint. This mounting surface needs to be completely flat to ensure a stable and watertight seal between the adapter and your cockpit.

Make also sure that the mounting structure is able to hold the weight of the Orca Display and Charging Mount when exerted to shocks from waves and other vibrations.

4) Compass safe distance

The Orca Display and Charging Mount contain magnets that may affect magnet sensitive equipment aboard. Your Orca Display should be mounted outside Compass Safe Distance from those devices, including that of the Orca Core. Typical compass safe distance is 1 meter for most electronics.

5) Water ingress

While the Orca Display is IP-68-rated, charging will automatically be stopped if the system detects water or moisture in the quick-connect surface of the Charging Connector.

These parts are weather-sealed with gaskets when the Orca Display is docked in the Charging Connector, but we strongly recommend mounting the system in such a way that the risk of water spray is minimal to ensure reliable charging.

3. Which tools and equipment do I need to install the Orca Display?

1) Power drill with a 20mm drill bit and a 5mm drill bit suitable for drilling in your mounting material.

Bring a pencil to mark your drill location, masking tape, and sanding paper to smooth the drill edges if you are drilling in a gelcoat surface.

2) M4 hex screwdriver and 8mm spanner/wrench for fastening screws

3) Zip ties for securing the power cable

4. Step-by-step: How do I install my Orca Display?

Step 1: Turn on your Orca Display and log in

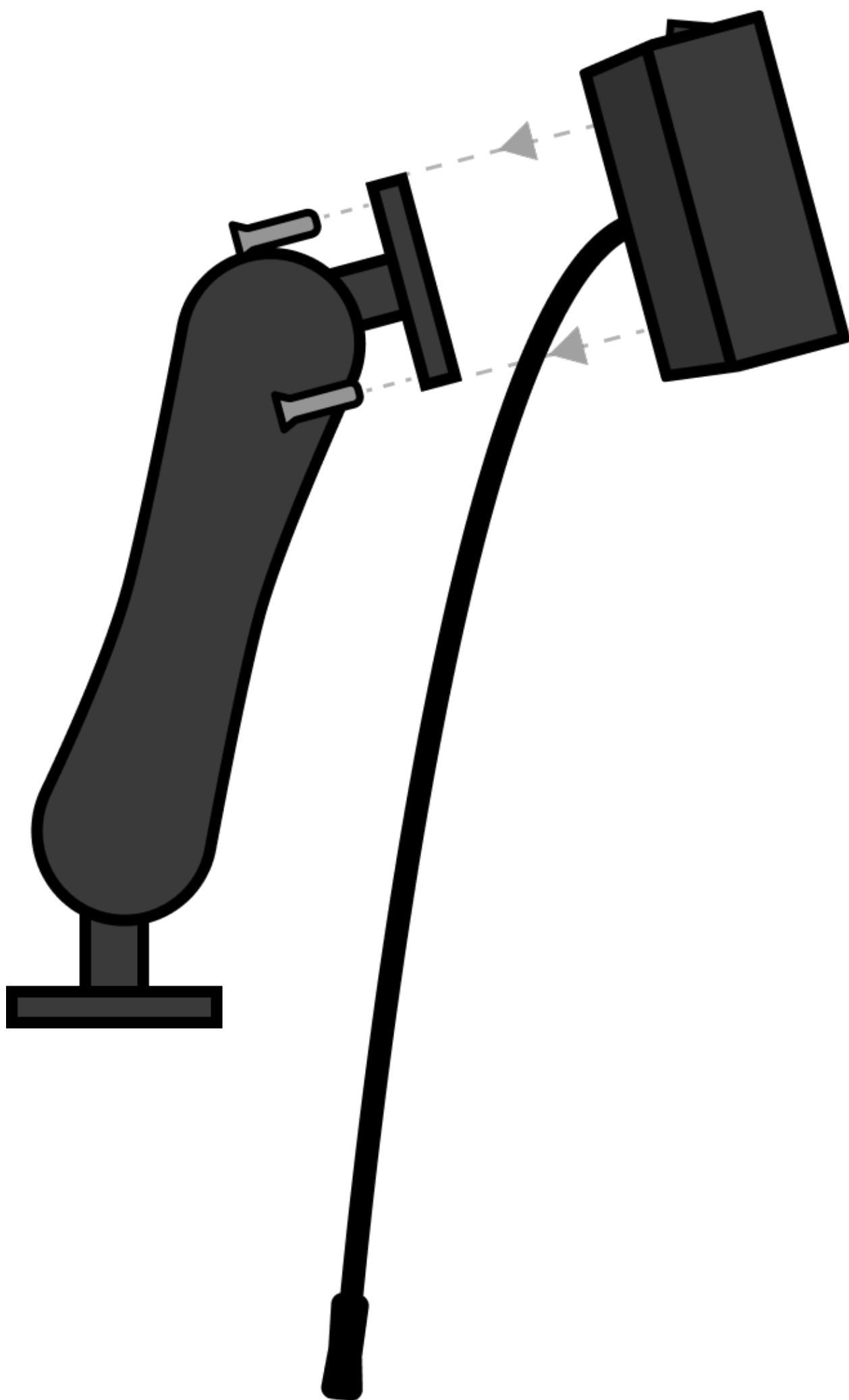
This step requires an active internet connection.

The Orca Display is charged to ~ 40% battery capacity at delivery. Turn it on and log in to your Orca Account.

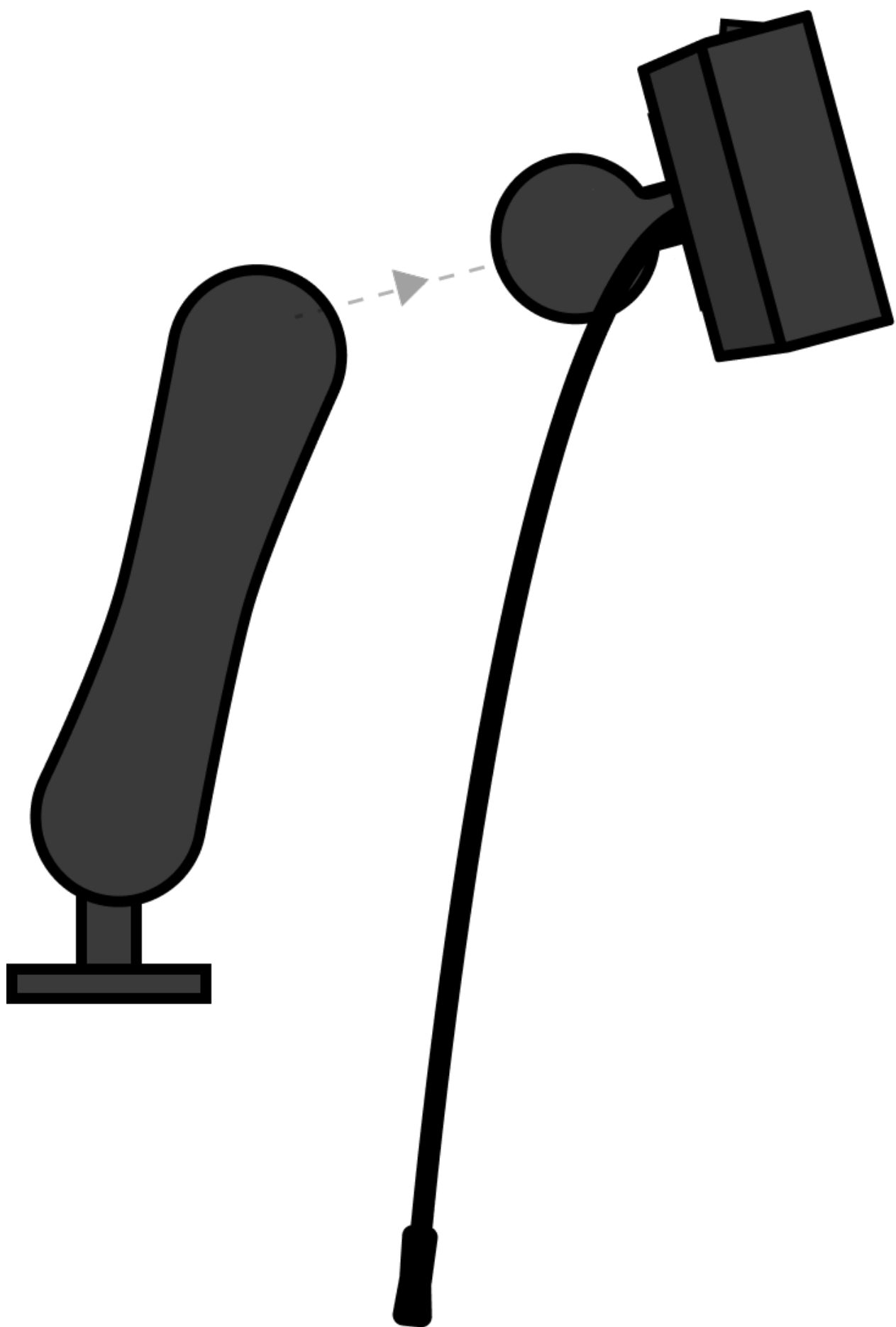
Should the display lack charge to power on, continue to Step 2, connect the Charging Connector to your Orca Core's power cable, and dock your Display in the Charging Connector. The Orca Display will power on as soon as it receives external power.

Step 2: Connect the Charging Connector to the RAM Mount Head

Fasten the Orca Charging Connector to the head of the RAM Mount using the three supplied 20mm M4 screws. The head of the RAM mount is the side at which the tension spring of the mount arm is located.



Loosen the RAM Mount arm by turning the knob on the middle and remove the Charging Connector fully from the arm for easier handling during the next steps.

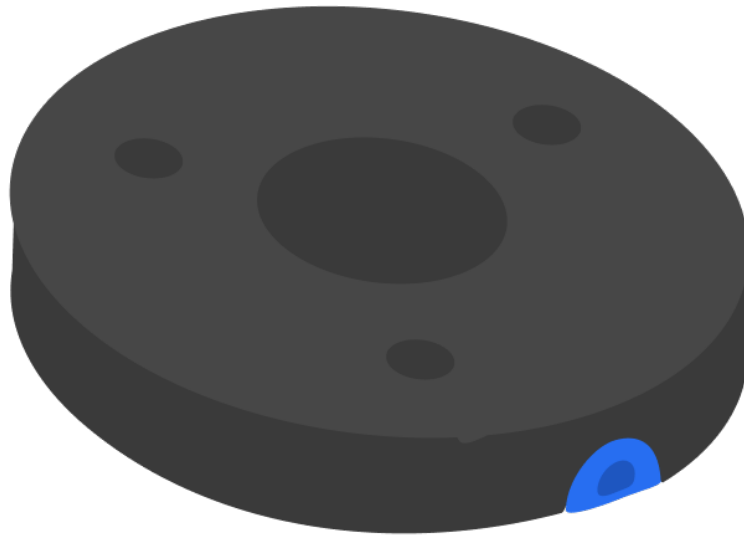


Step 3: Drill holes for the Orca Cockpit Adapter

Cover your drill area in masking tape to protect the surface.

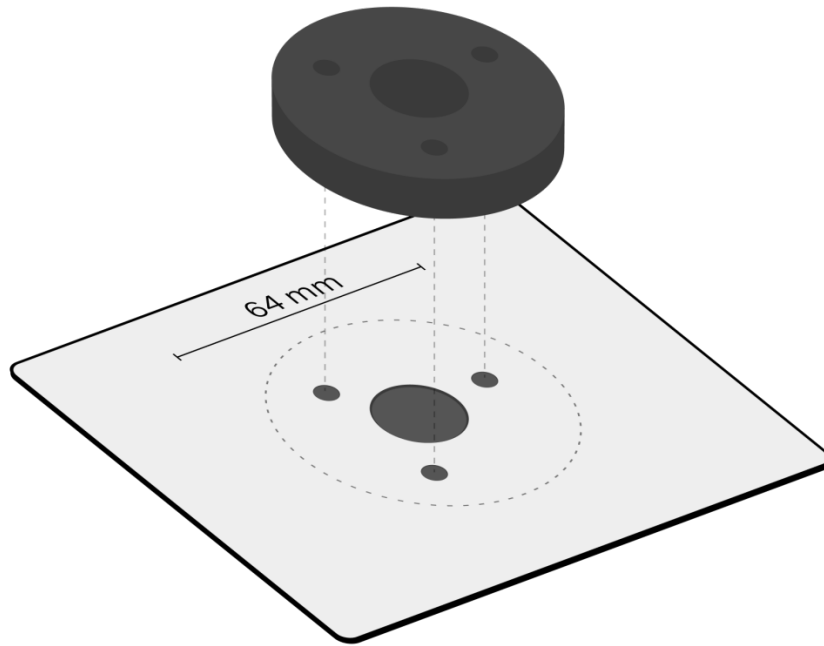
The top side of the Cockpit Adapter has a flat surface, while the underside is open.

The underside of the Cockpit Adapter houses a small removable sealing plug. It is highlighted in blue in the illustration below.



If you are mounting on a horizontal surface, orient the Cockpit Adapter so that the plug is facing towards the front of your boat. If you are mounting on a vertical surface, orient the plug so it points towards the horizon.

Use the Cockpit Adapter as a guide to mark the center of the cable hole and three fastening holes with a pen and drill the four holes.

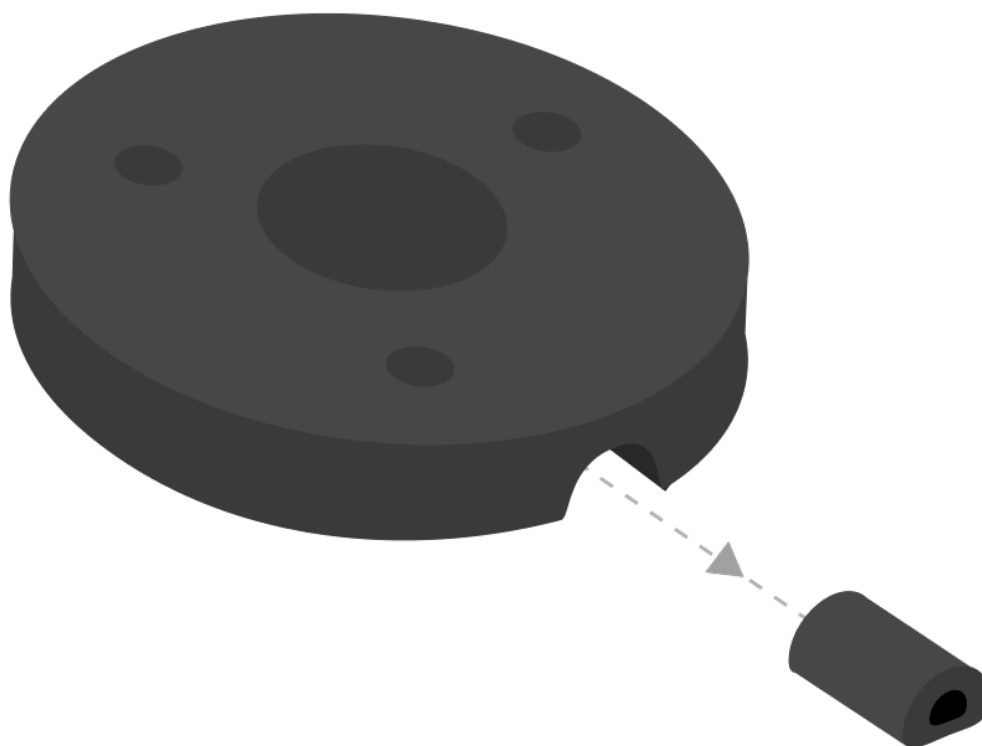


If you are drilling fiberglass covered in gelcoat, apply light pressure when drilling in the gelcoat to avoid cracking.

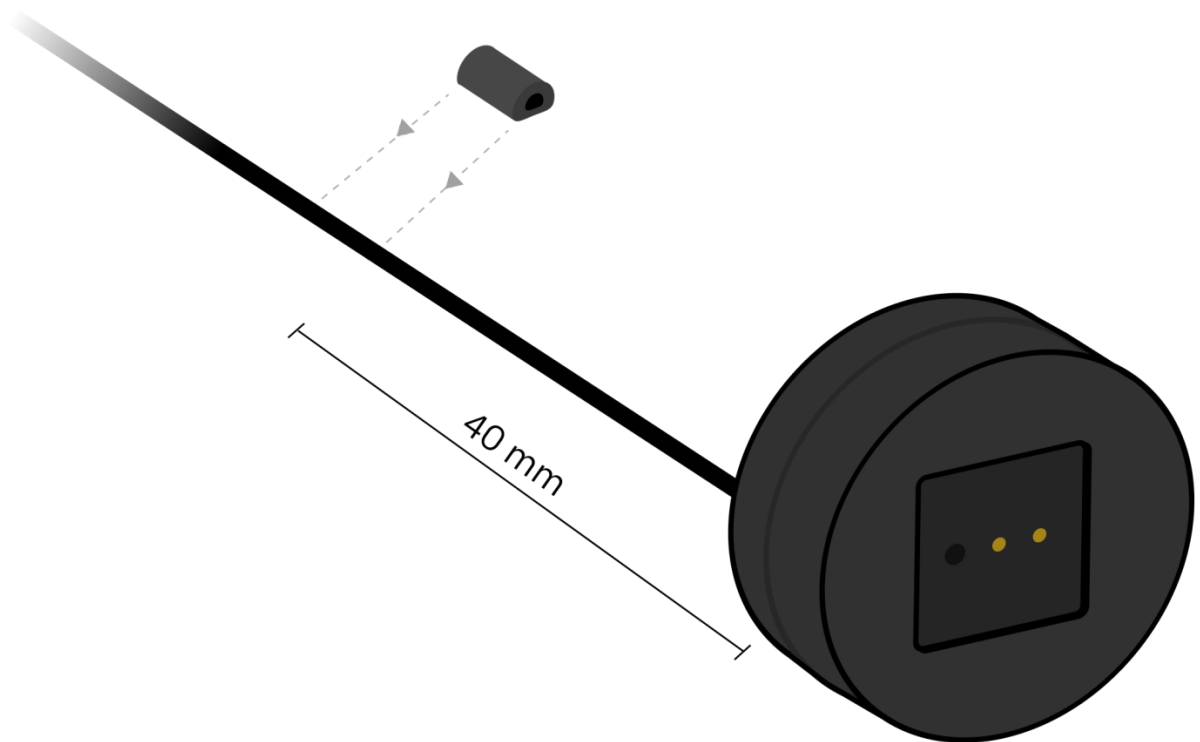
Use sandpaper to smooth the perimeter of the holes and create a small chamfer in the gelcoat to avoid gelcoat cracking from vibrations. Remove the masking tape and wash away any dust.

Step 4: Guide the power cable through the Orca Cockpit Adapter's watertight seal

Remove the Orca Cockpit Adapter's sealing plug.



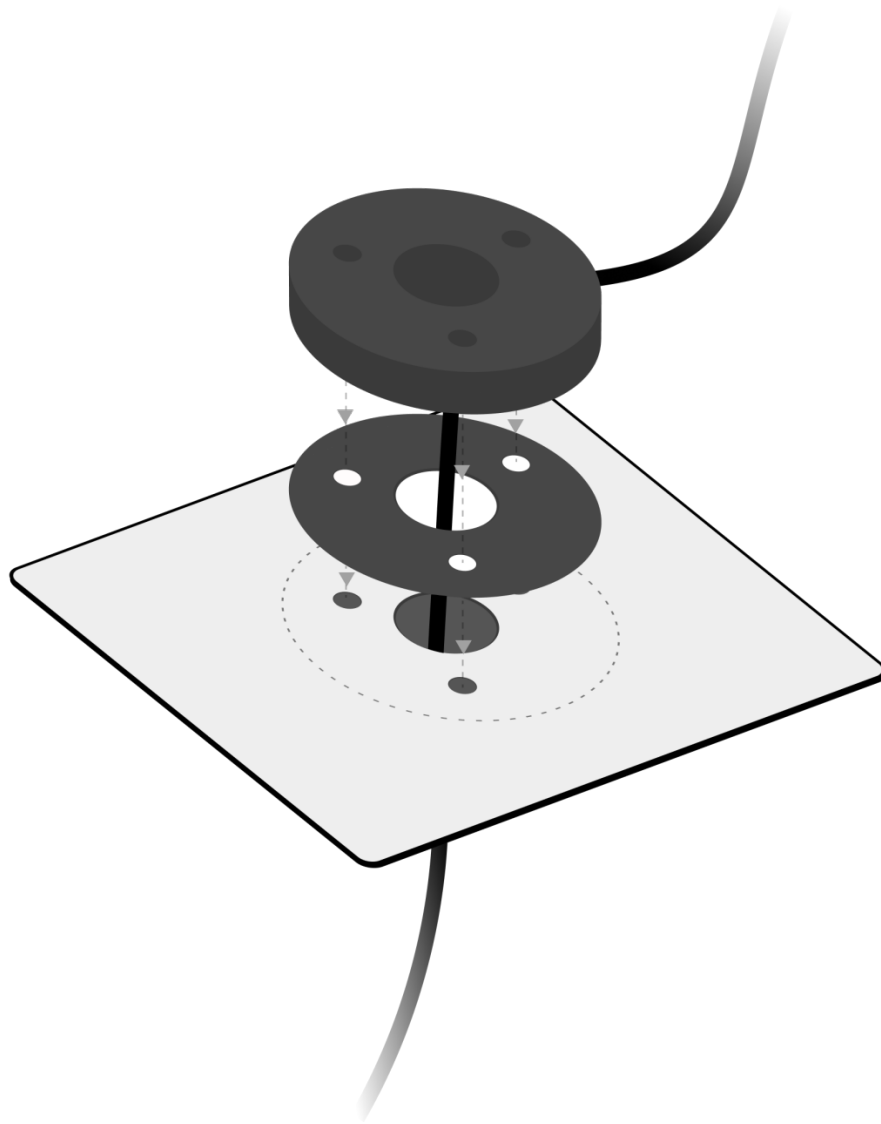
Open the sealing plug and insert the Charging Connector's cable into the groove of the sealing plug as shown below.



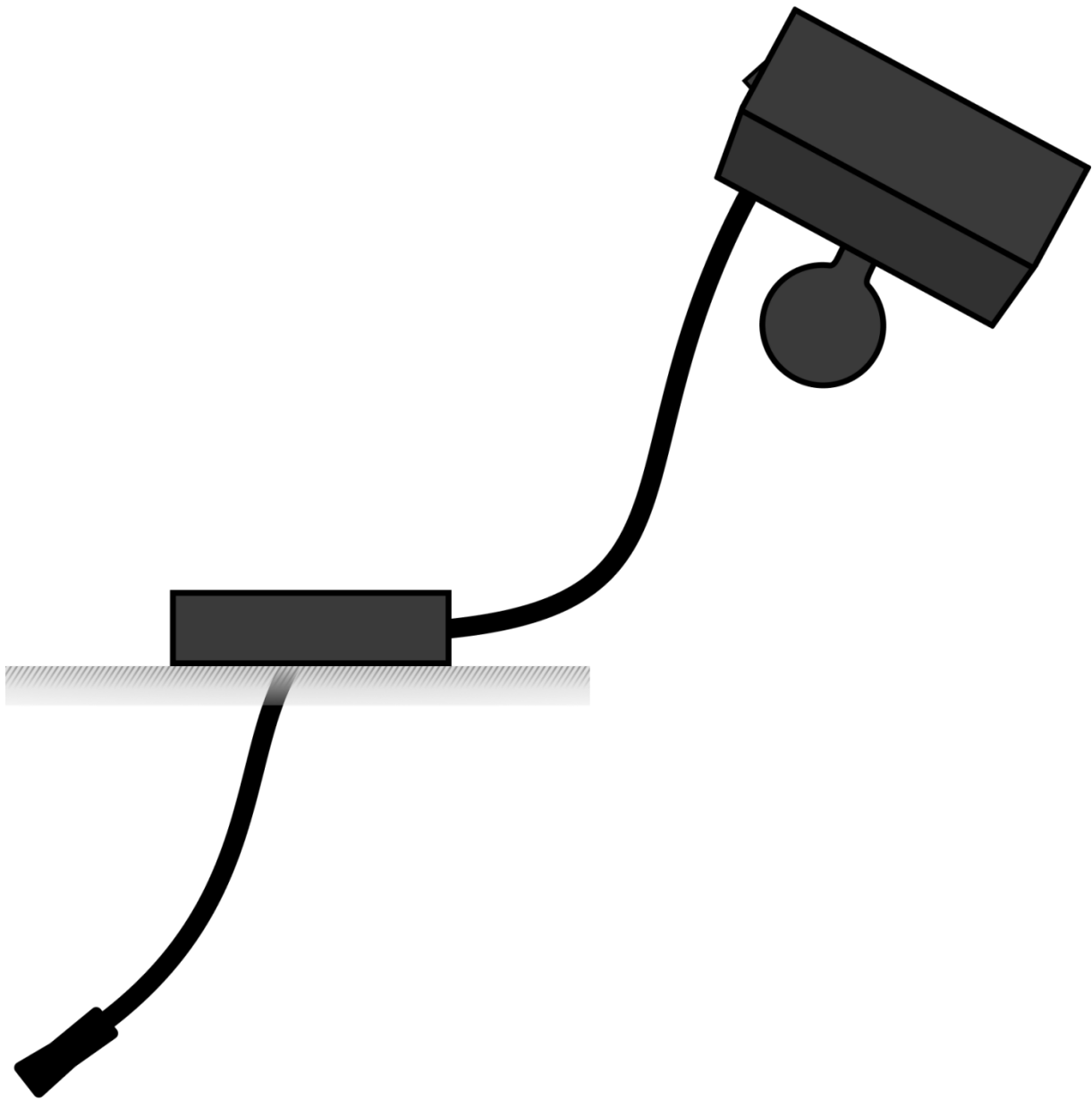
Place the sealing plug along the cable about 40 cm away from the Charging Connector.

Re-insert the sealing plug into the Orca Cockpit Adapter with the power cable attached.

Position the gasket on top of the drill hole and guide the loose end of the cable through the center hole. Align the Orca Cockpit Adapter at the mounting location.

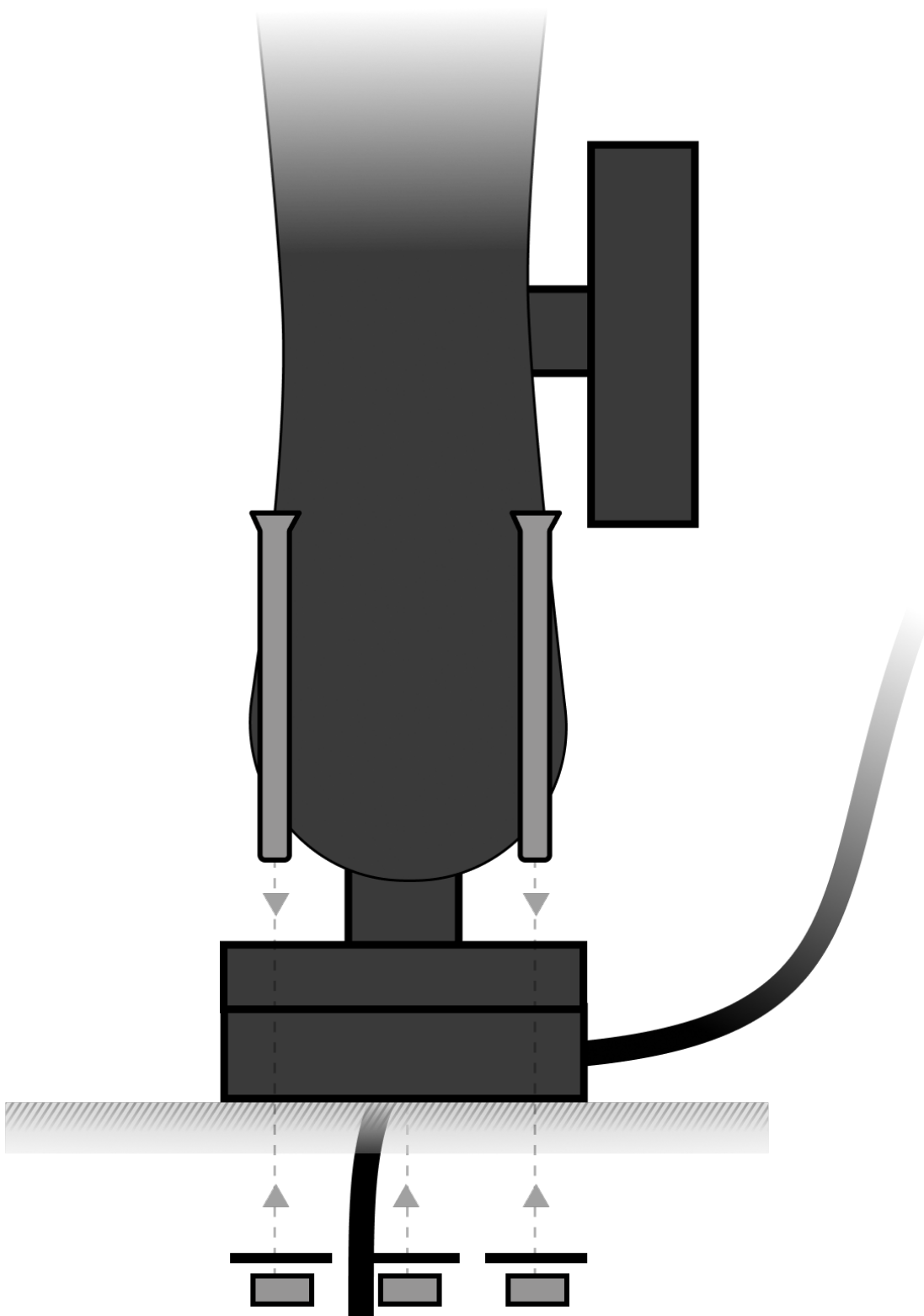


Your assembly should now look like the illustration below.



Step 5: Secure the RAM Mount

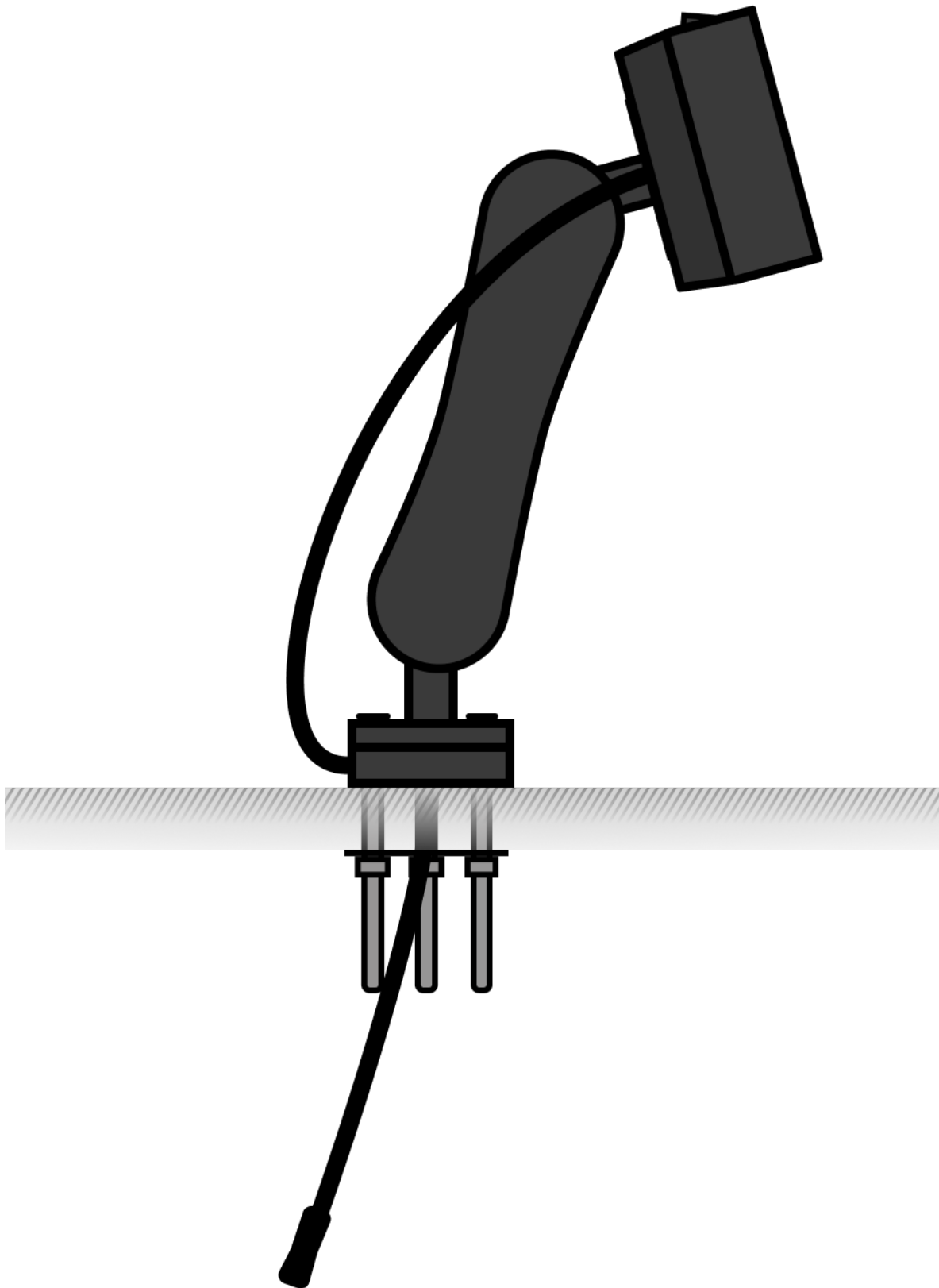
Place the RAM mount foot on top of the Orca Cockpit Adapter. Guide the three fastening bolts through the RAM mount foot and Orca Cockpit Adapter.



Thread washers and the fastening nuts from the underside of the installation and tighten the nuts loosely in case you'll need to make adjustments to the charging cable length.

Step 6: Reattach the Orca Charging Connector to the RAM Mount

Place the Orca Charging Connector with the RAM head ball into the RAM Mount and fasten loosely. The orientation of the Orca Charging Connector's unlock button should be on the top of the mount for easy access.



Check that the length of the power cable is sufficient for all combinations of tilting and angling of the mounting system that you want.

If you need to adjust the length of the power cable, carefully loosen the fastening nuts, remove the gasket from the Orca Cockpit Adapter and return to Step 4.

Once you've found the correct cable length, tightly fasten the fastening nuts on the underside of the mount.

Step 7: Attach the power cable and test the Display

Connect the power cable between the Orca Charging Mount and Orca Core.

Power on the Orca Core and verify that the Orca Display starts charging when it is attached to the mount.

To remove the Orca Display from the Charging Mount, press and hold the unlock button while you remove Orca Display from the Charging Connector.

Secure the power cable with zip ties in such a way that prevents potential water from running down into the connector along the cable.

Step 8: Connect the Orca Display to the Orca Core



Well done! You have completed the Orca Display installation. Turn your Display on, connect it to an internet connection, and log in. You will be welcomed to a quick onboarding guide that explains how you use your Display. After you have completed the Onboarding, turn on your Core and pair the Display to your Core if you haven't already.

Got any questions about this guide? Don't hesitate to reach out at hello@getorca.com

Using a SIM card with Orca Display 1

This article covers Orca Display 1 only. For Orca Display 2 owners, see the [Display 2 section](#).

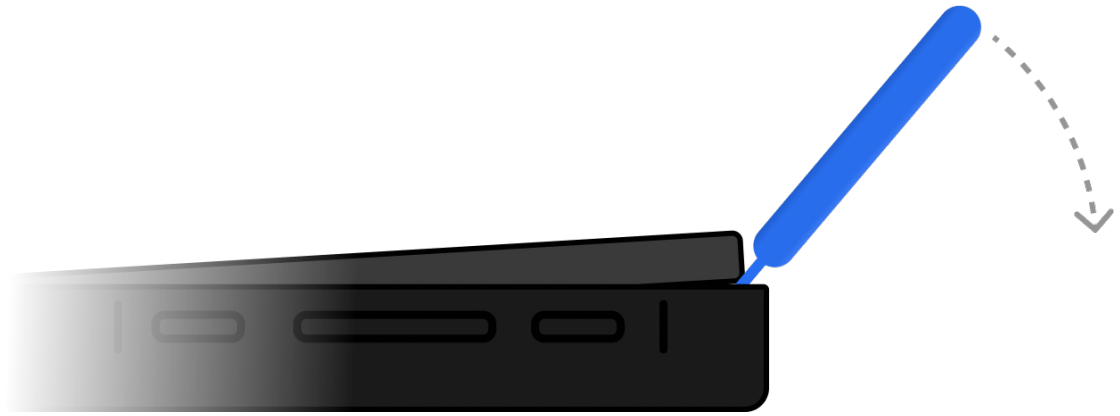
The Orca Display supports 3G and 4G nano-SIM cards. Before you begin, power your Display off by pressing the power button for 2 seconds and select **Power off**.

To insert a SIM card into your Orca Display, you'll need to (1) remove the Display from its protective Charging Sleeve, (2) remove the waterproof back-cover and (3) remove the Display's battery.

To remove the Display from its Charging Sleeve, insert a dull and flat tool, such as a butter knife, next to the top right corner between the glass screen and the soft plastic casing. Push the tool about 1 cm deep and bend the tool outwards to lift the Display's corner out of the Charging Sleeve.

Make sure you do this process from the top of the display – where the bezel is most narrow – and begin with the corner closest to the Display's power button.



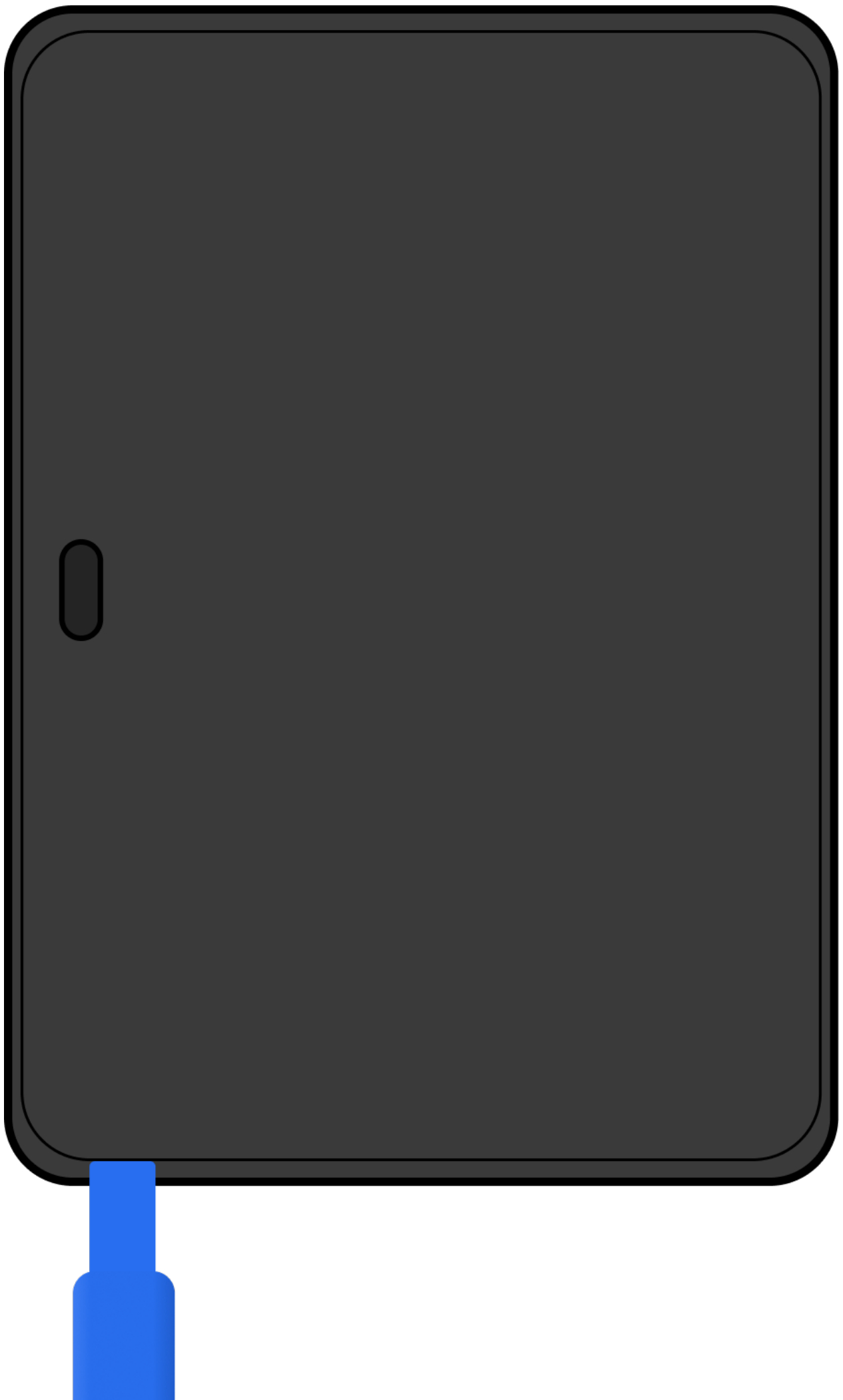


Once the Display's top right corner is fully revealed, repeat the process on the top left corner while keeping the right corner elevated. The Display's topside should pop out of its sleeve once both corners are elevated.

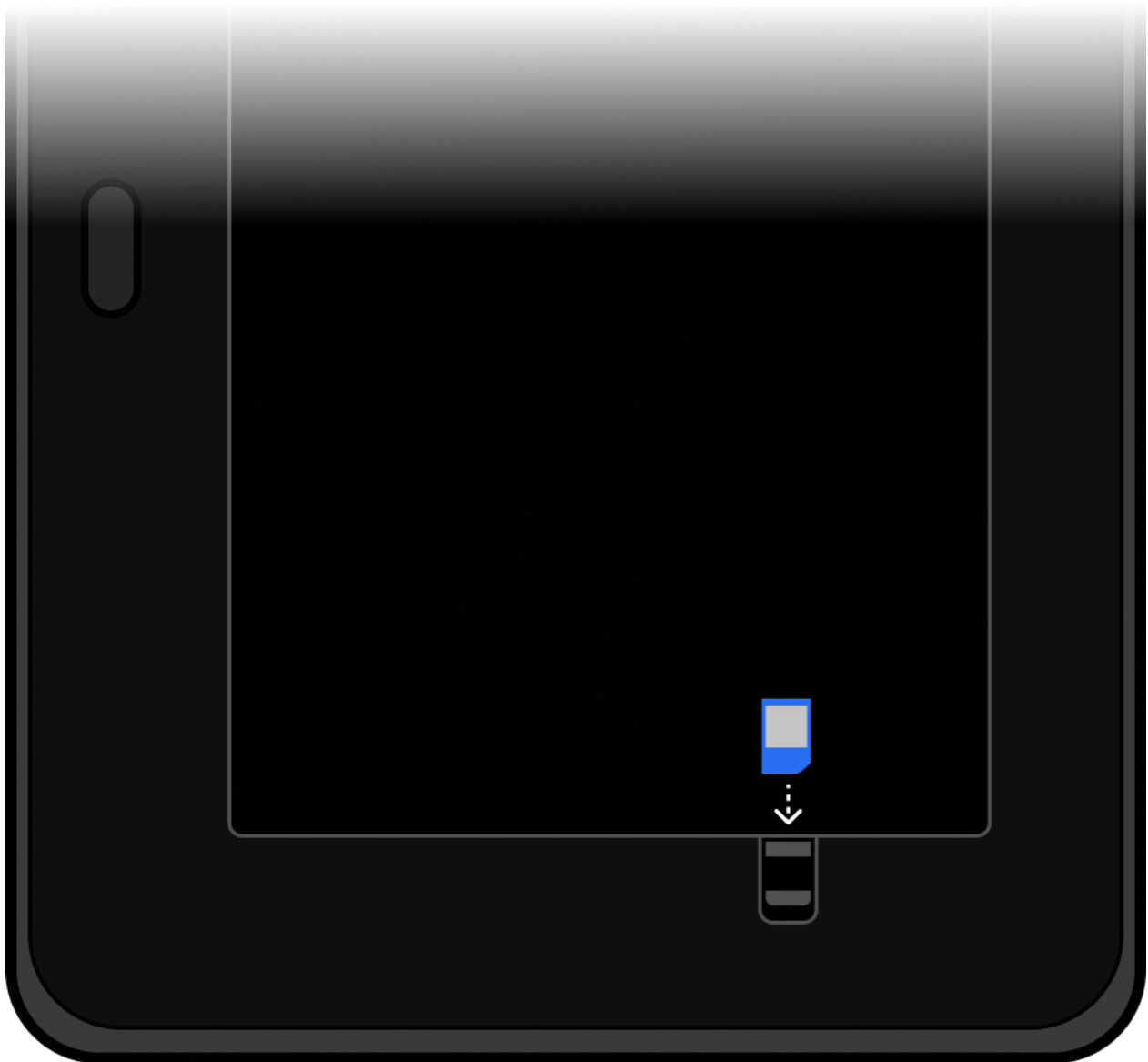
Pull the Display upwards along the direction of the sleeve until you can see the Charging Sleeve's internal power plug. Remove the plug from the Display by gently pulling it down and then remove the Display from the Sleeve.



Turn the Display on its back and use the dull flat tool to open the waterproof cover of your Display.



Remove the battery to access the SIM tray, and insert your SIM card into the tray.



Insert the battery again and attach the waterproof cover to the Display. Press down along the edges of the cover carefully to ensure you fully close it.

Insert the Display partially into the Charging Sleeve and attach the power plug. Slide the Display's bottom fully into the Charging Sleeve, and then push down the top corners to secure the Display inside the Charging Sleeve.

Power on your Display and enter the PIN code of your SIM card to enable cellular connectivity.

3. Charts Routes Weather And Other Navigation Tools

3a. Charts

How do I center the chart at my location?

The **Follow Me** button moves the chart to your current location. On smaller screens, the **Follow Me** button is positioned in the bottom right corner.



On large screens, such as tablets, the button is placed on the right side of the screen together with a pair of zoom buttons.



The **Follow Me** button can be tapped multiple times with different results:

- First tap – The charts center on your location and orientate itself course-up
- Second tap – The chart centers on your location and orientates north-up

After pressing the button, the map camera will follow you so you are always at the center of the screen.

If you interact with the chart, such as panning or zooming, the chart will stop following your location. To make the chart follow your location again, tap the **Follow Me** button again.

If you rotate the map, sometimes you may want to return the chart rotation to the North. To do so press the **Compass** button on the top right side of the screen.



How do I customize the charts?

Orca Charts can be adjusted in many ways – from their visual representation to how you move around in the charts.

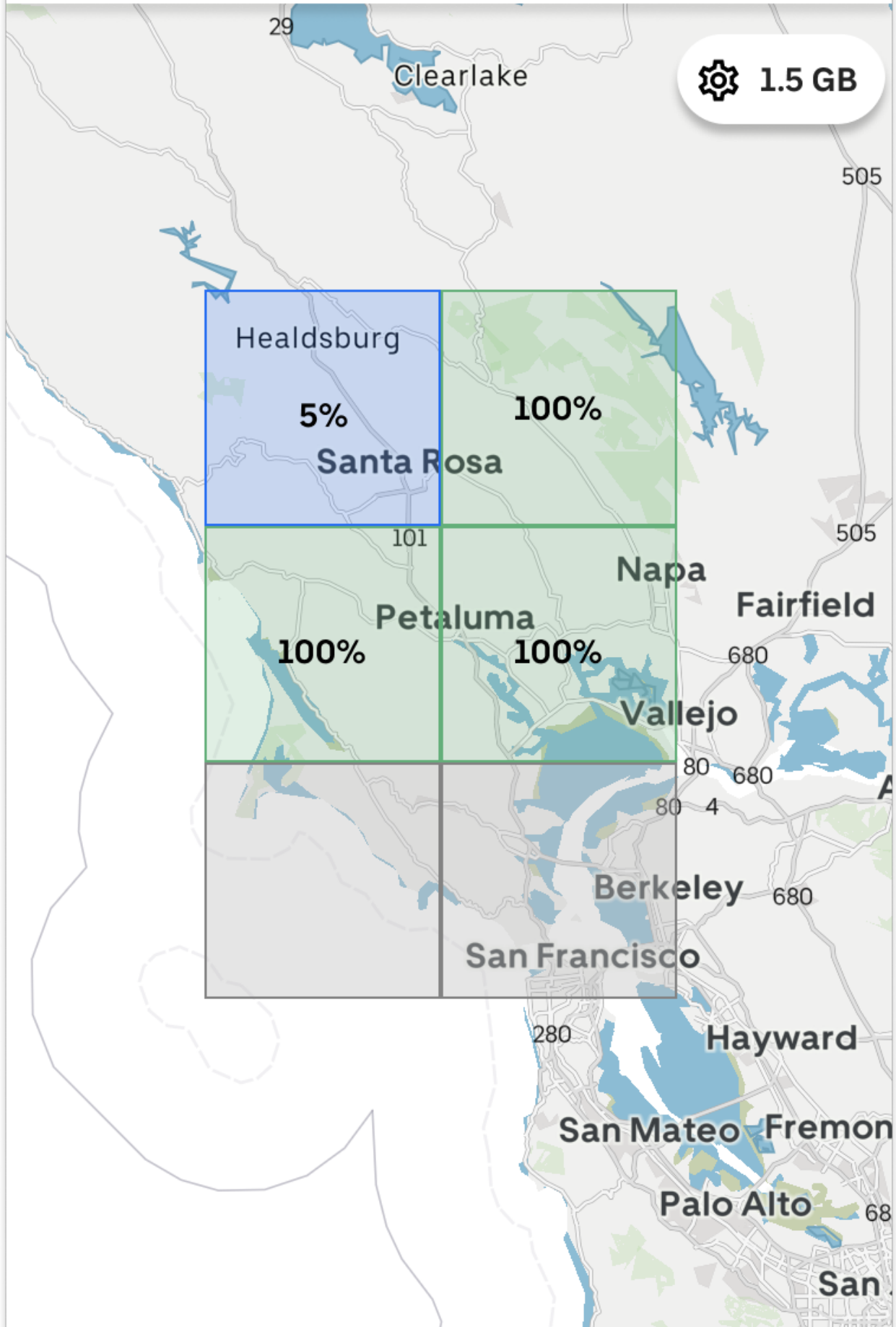
To edit your chart settings, go open the **Main Menu > Settings > Chart**.

How do I download offline charts?

To download charts, open the **Main menu > Offline Charts**. You will now see an overview map of your current location with several squares covering parts of the chart.



Offline charts



- Downloaded areas are shown as green
- Areas that are currently downloading are shown as blue
- Selected areas are shown in grey

To download new charts

1. Pan the map to your desired location, and grey areas will appear at the center of the screen
2. Press on **Download** to begin downloading the selected areas
3. The selected areas will turn blue and show a progress indicator
4. Once the download is complete, the area will turn green

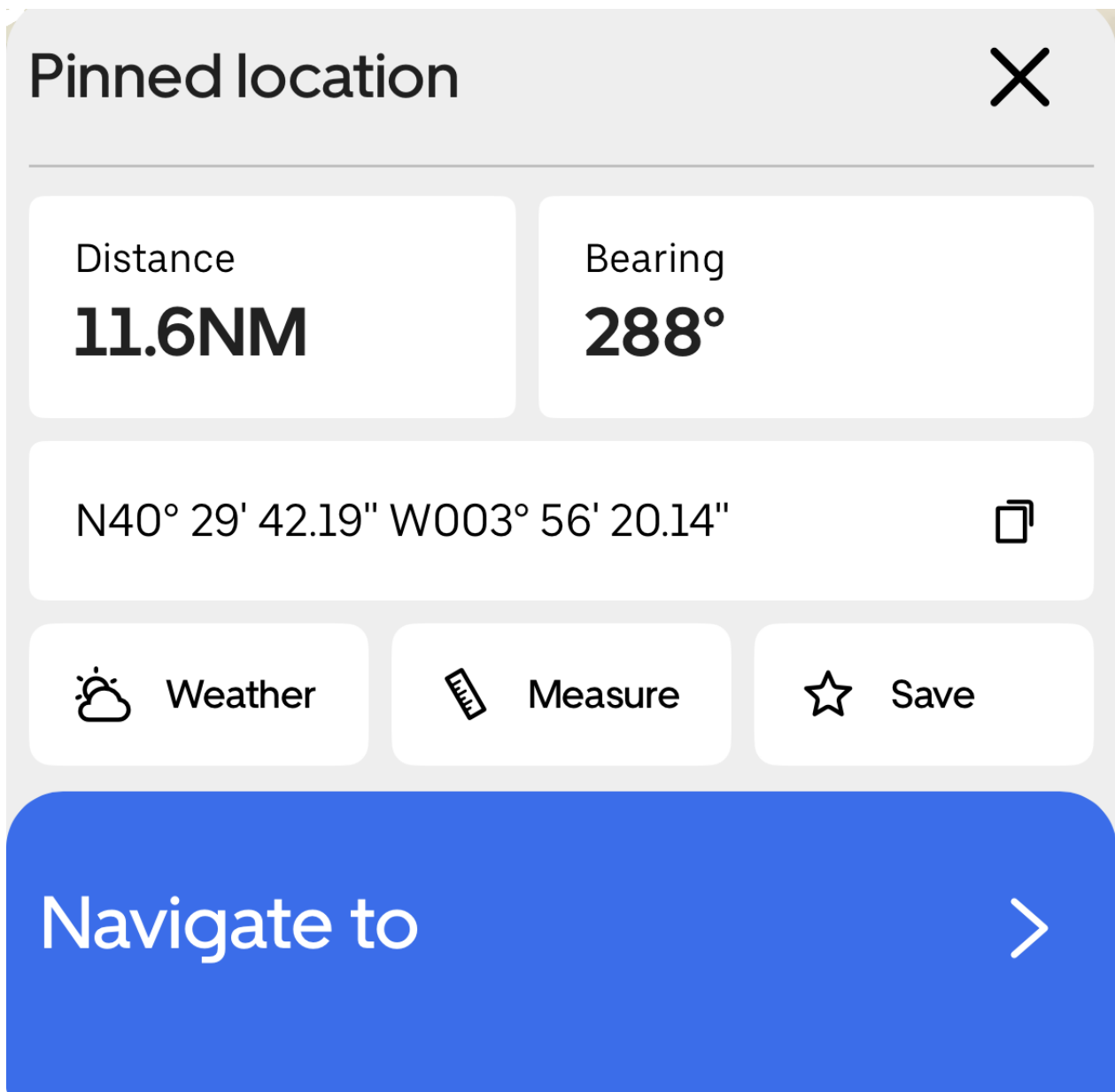
You can download more areas by panning the chart to a new area and pressing **Download** again. Orca automatically downloads areas around your current location the first time you start the system and when you travel outside your offline chart coverage.

To disable automatic downloading or delete your offline charts, go to **Main Menu > Settings > Offline Data**. Offline charts can only be deleted in bulk, and there is no way to delete individual offline areas.

Satellite images are not downloadable for offline use. Only marine charts can be downloaded for offline use.

How do I measure distances in the chart?

The distance tool lets you calculate the distance and course between two points. To measure distance, pin a location by long-pressing in the chart.



Press **Measure** and a ruler will appear on the screen with one of the points at the pinned location.

The ruler will show the distance and the bearing between the points. To adjust the ruler, hold and drag the endpoints to move them around.

How do I select a location on the chart?

Long press the map at a location to take action or get information about that specific location.

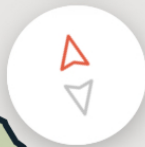
A menu will appear at the bottom of the screen with the following information:

- The distance and bearing from your current position
- The coordinates of the location



13:57

14



Iso(1) G 4s
1.3

Pinned location



Distance

1.90NM

Bearing

240°

N59.065232 E010.512038



There are several actions you can take with that location:

- Press **Save** to save the location as a Spot
- Press **Weather** to see the marine weather forecast for that location
- Press **Measure** to enter the measure distance from that location to a point
- Press **Navigate to** – and you will enter routing mode and calculate a route to that location
- Press **Info** to view detailed information about the mark or area near the pin. This option is only visible when you press at or near a mark or area with special navigation information.

How do I update or delete offline charts?

Update or delete offline charts

The offline charts are refreshed automatically every two weeks whenever you are connected to the Internet.

When significant chart updates are available, you will be prompted by an in-app notification to update your charts. Significant updates may take longer to complete.

To delete your offline data, open the **Main Menu > Settings > Offline Data**.

How do I view other vessels in the chart?

Where do vessel positions come from?

Orca displays vessels from the following sources:

1. Local AIS receiver connected to an Orca Core

If your Orca Core is connected to an onboard AIS receiver (USB, NMEA, etc.), Orca will display all AIS targets within your receiver's real-world radio range.

This is always the highest-priority and most accurate data source.

When both online and onboard AIS sources are available, Orca will only show data coming from the onboard AIS receiver within the receiver's range.

Outside your AIS range, MarineTraffic and Orca Community data fill the gaps.

2. MarineTraffic - Internet AIS

When your phone, tablet, or Orca Display has an internet connection, you will see AIS targets provided by MarineTraffic.

- You will see MarineTraffic vessels even if your own boat does not have AIS hardware.
- To appear *on* MarineTraffic yourself, you must have a real AIS transponder *or* use the MarineTraffic mobile app that “simulates” AIS.

3. Orca Community Position Sharing - Orca Core owners

Orca Core devices also participate in a private, internal network that allows Orca Core owners to share their position.

How it works

- When the Orca app is connected to an Orca Core and the internet, it uploads your boat's position to Orca's cloud.
- Your position is then visible to all other Orca users in their chart.
- The position always comes from the Core's GPS, not the phone's GPS.
This prevents boats from appearing on land.

Visibility rules

- Any Orca user (Core or App-only) can see boats shared through this network.
- Only Core owners can *broadcast* their position into the network.
- If you do not have a Core, you will see the vessels, but you will not be shown to others.

Hiding my location

As a Core owner, you can choose whether your boat's position is shared with the Orca Community.

My Boat → Traffic → Share my position with Orca Community members

- Turn on to participate in the shared network.
- Turn off to not share your location through Orca Community Position Sharing.

< Traffic

Hide own AIS



Enter your boat's MMSI or turn on your AIS transmitter and keep your vessel still for 1 minute with no other AIS targets within 50mt to detect your own MMSI.

Boat MMSI

Share my position with Orca Community members



Your position and boat name will be shared with other Orca Community members when you are at sea. Your position will not be shared when you are on land.

If you disable sharing, you won't be able to view other Orca users.

By toggling 'Hide own AIS' you hide your own MMSI in the app meaning you will not see your own boat as an AIS target. This does not affect whether other users are able to see you.

If your vessel has a real AIS transponder, Orca normally detects this and hides your own AIS target automatically. You can also configure this manually:

My Boat → Traffic → Hide own AIS

- Enter your MMSI to prevent your own boat appearing as an AIS target.
- Only one MMSI can be entered, so this function is intended for hiding *your* vessel only.

Source identification

When selecting a vessel in the chart, Orca shows the source:

< Iorana

Updated 27sec ago

 [View on MarineTraffic](#)

 Not crossing

4.2kt

SOG

6.59km

Distance

-.-

CPA

158.2°

COG

162°

Relative
bearing

-.-

TCPA



MMSI

225989384

- **Local Receiver** → data from your onboard AIS hardware
- **Internet** → MarineTraffic
- **Orca Boat** → vessel sharing its position via the Orca Core

All vessels appear with normal AIS-style symbols; only the source line differs when you click on the vessel.

What do the different vessel symbols mean?

Other vessels are shown with symbols depending on the type of vessel. The symbols are as follows:

Stationary Leisure, Sailing or Pleasure craft	High speed	Sailboat	Leisure
Passenger vessel	Pleasure craft	Cargo and tanker	Fishing vessel
Law vessel	Search and rescue	Pilot	Search and rescue aircraft

Symbols have different colors depending on their type and status:

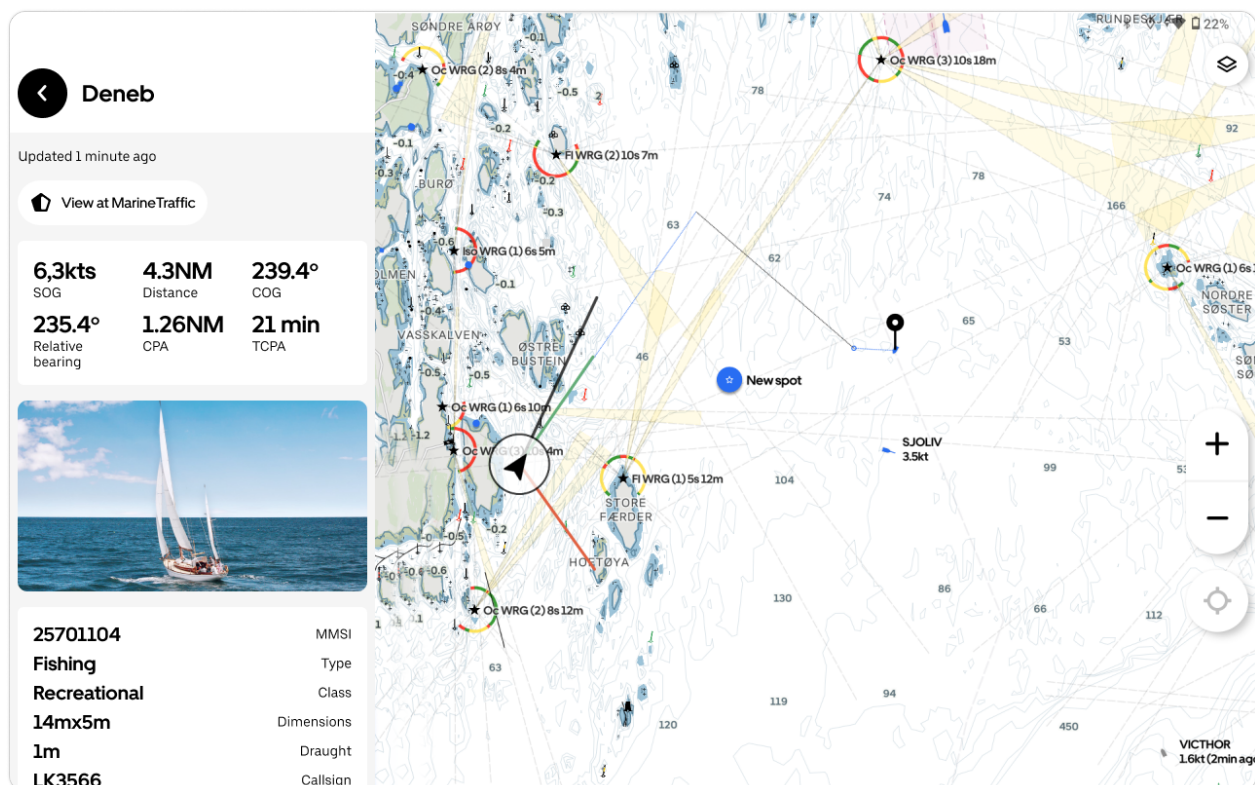
1. Most vessels are shown in blue
2. When Orca has not received a position update from a vessel within an expected time, the vessel will be shown in grey
3. SAR vessels and aircraft are shown in red
4. Pilot vessels are shown in black

How do I find more information about a vessel?

When clicking on a vessel, you'll be able to view detailed information about the vessel, including an image of it. This makes it easy to correlate what you see around you with what you see in the chart.

Orca will also show you the **Closest Point of Approach (CPA)** and **Time to Closest Point of Approach (TCPA)** when you click on a vessel.

The CPA is also shown in the chart as a circle, following an extension line from your boat and the target vessel.

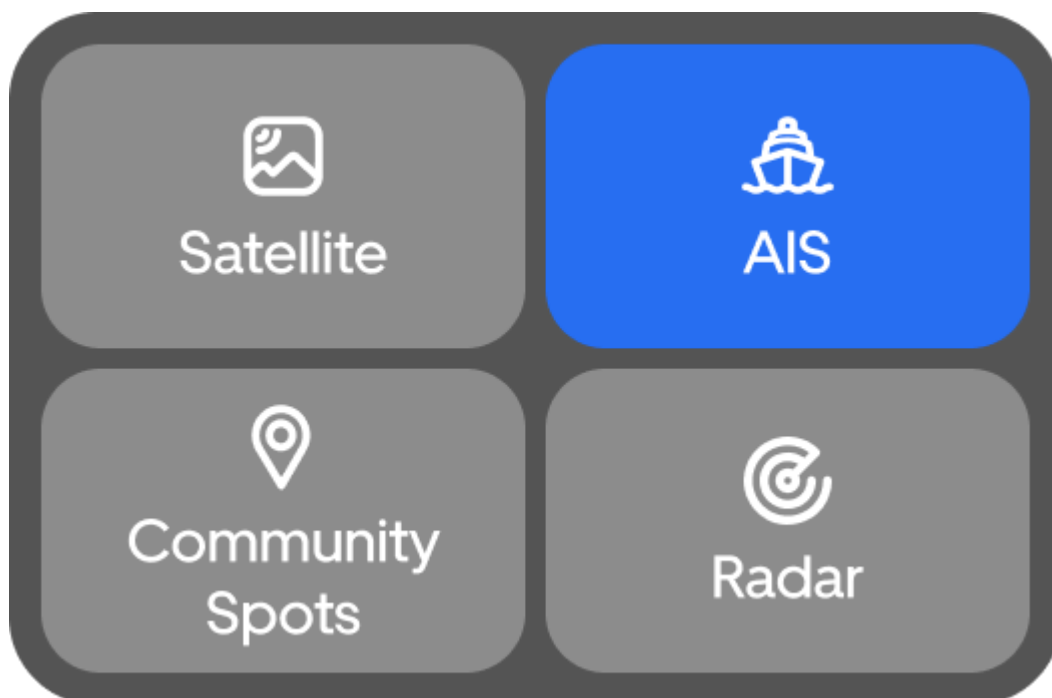


Some of the functionality above requires an active [Orca Subscription](#).

Orca currently does not have audible CPA alarms.

How do I turn off showing other AIS vessels in the app?

To turn on or off showing other vessels in the chart, open the **Control Center** by pressing the button on the top right corner of the chart and then press **AIS**.



How Orca's Charts Work - No Subscription Required

Orca works differently from many other chart providers. While other navigation apps often require a subscription or separate chart purchases before you can access chart data, the Orca App provides online chart access immediately, even on the free version of our App.

Charts Available Without a Subscription

When you download and open the Orca App, you have access to our global chart portfolio and updates without needing a subscription. Most chart areas can be viewed and explored right away using the free version of the app.

For an overview of all chart regions available in Orca, please see the following article: [What chart coverage and routing coverage is available in Orca?](#)

Exceptions in the Free Version

A small number of regions require an Orca subscription to see past the first 3 days of having the free version of the app due to licensing restrictions from their respective hydrographic offices. These regions are: Australia, Turkey, Sweden, Denmark and Germany.

You can read more about these specific restrictions here: [Why can I not view charts for Australia, Turkey, Sweden, Denmark, or Germany?](#)

Access With a Subscription

Subscribing to Orca Plus or Smart Navigation removes these restrictions and provides access to our complete chart coverage. A subscription ensures that all chart regions, including those with licensing limitations, are available.

You can read about the full advantages of the Orca Plus and Smart Navigation subscriptions, including access to offline charts, here: [Subscription prices and functionality](#)

A year of Smart Navigation is included in the purchase of an Orca Core or Orca Display. So, by purchasing one or both of these devices you will have instant access to all chart regions - both online and offline - for one year. After that year you may choose to renew your subscription or not.

Please note that for offline chart access the desired regions will need to be downloaded from the app.

3b. Spots

How do I edit a spot, give it a different name or delete it?

When a spot is created or when you tap on a spot in the chart, it will be selected.

×

Saved spot

N 41° 24' 12.2"

E 2° 14' 03.6"

32 nm away, bearing 150°

Weather

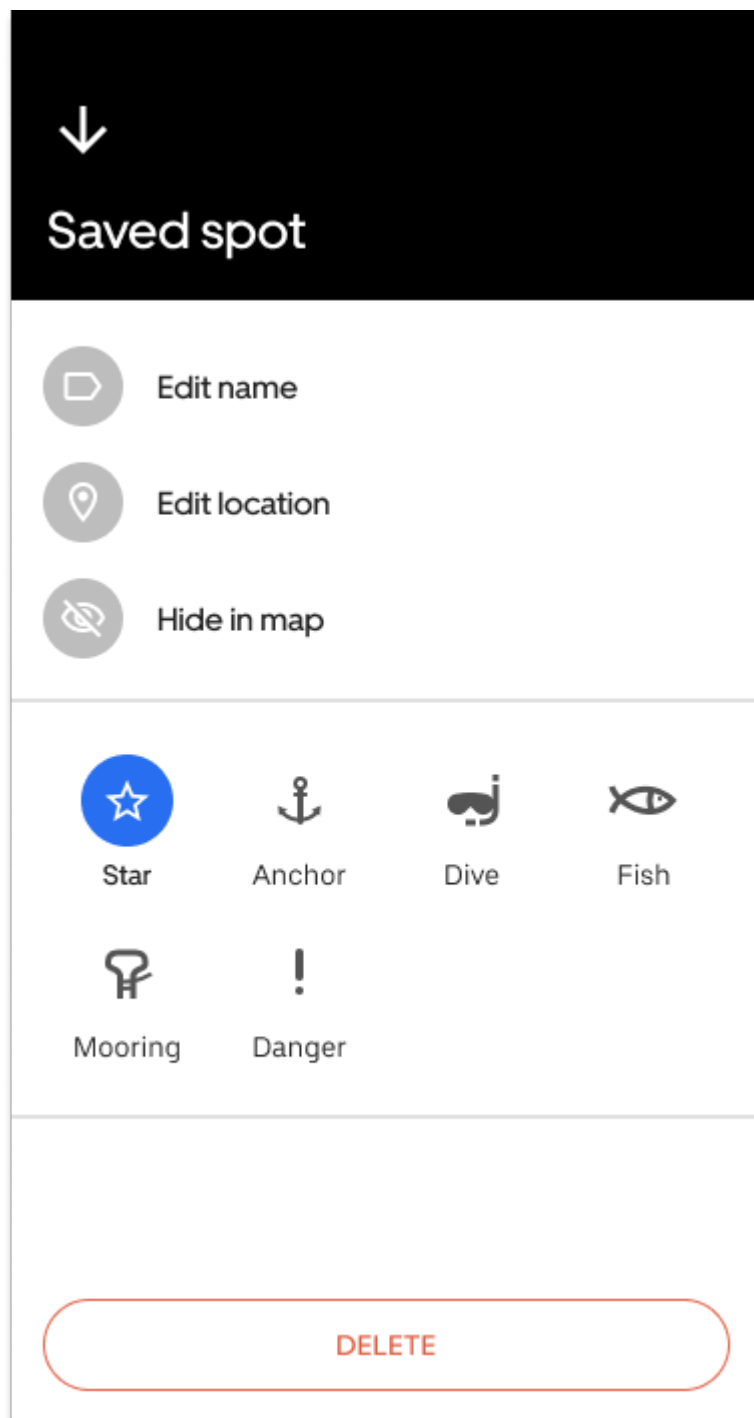
Measure

Info

✎ Edit

Navigate to

Press **Edit** to change the details of the spot or to delete it.



Spots are synched across all your devices. Editing or deleting a spot on one device will delete it on the rest of your devices.

How do I save a spot?

To save a spot, long press in the chart at the location of choice, and press **Save** in the menu that appears.

Pinned location

Distance

11.6NM

Bearing

288°

N40° 29' 42.19" W003° 56' 20.14"

 Weather

 Measure

 Save

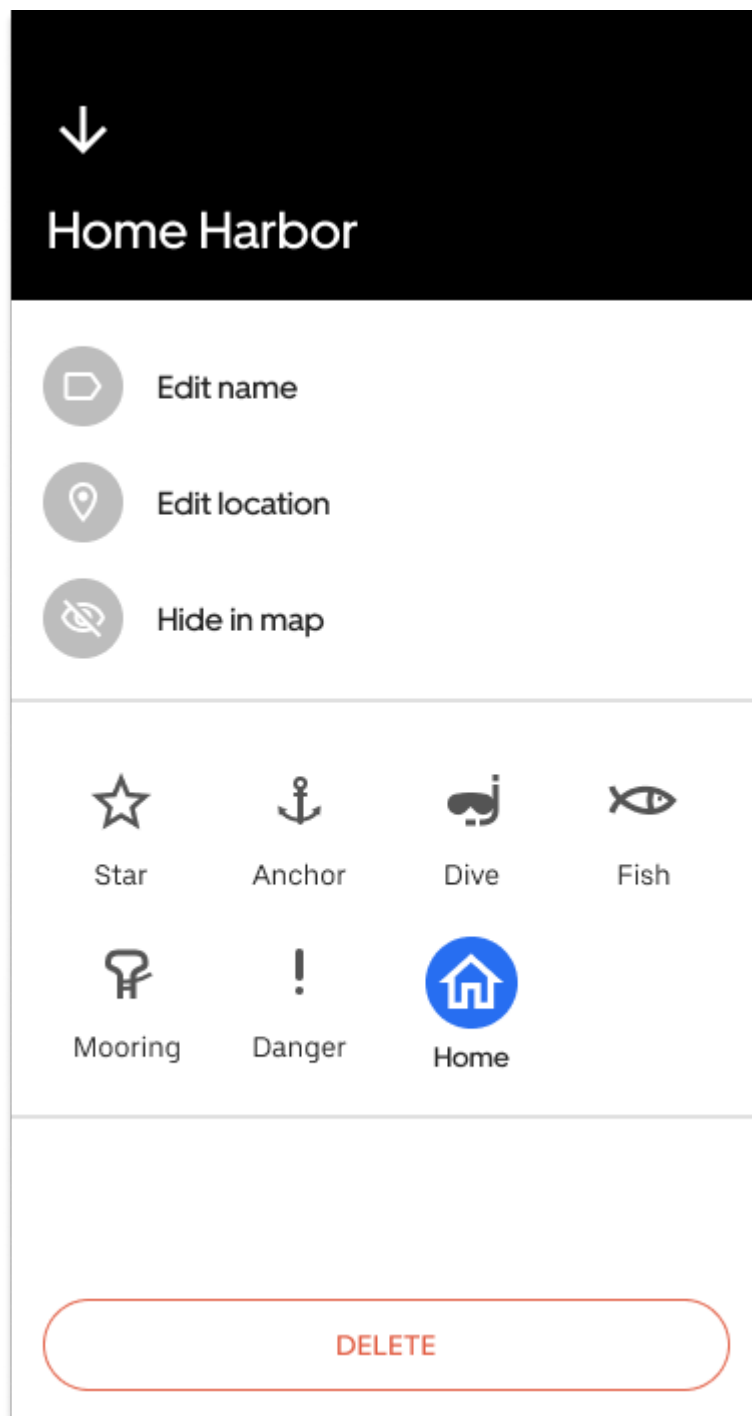
Navigate to

The spot is now saved to your list of spots. Spots are personal and visible only to you.

Spots synchronize between your devices via the internet.

How do I set my Home Harbor?

The **Home** category is a special type of spot, which marks where your home harbor is. You can set this when you [Edit a spot](#).



If you mark a spot as your Home, the Orca will use this spot as your starting point for routes when Orca detects that you are on land.

If you save multiple Home spots, Orca will use the nearest one to your current location as the starting point for new routes.

3c. Routes

GPX export failing due to characters outside of the Latin1 range

Overview

If you're unable to export a route as a GPX file in the Orca app, the issue may be caused by special (non-Latin) characters in your account name or route name.

GPX export can fail if your profile name or route name contains certain non-Latin characters (for example: ł, ø, ñ, ü, etc.).

If this is the case, you will receive an error which says:

"GPX export failed

The string to be encoded contains characters outside of the Latin1 range"

22:37

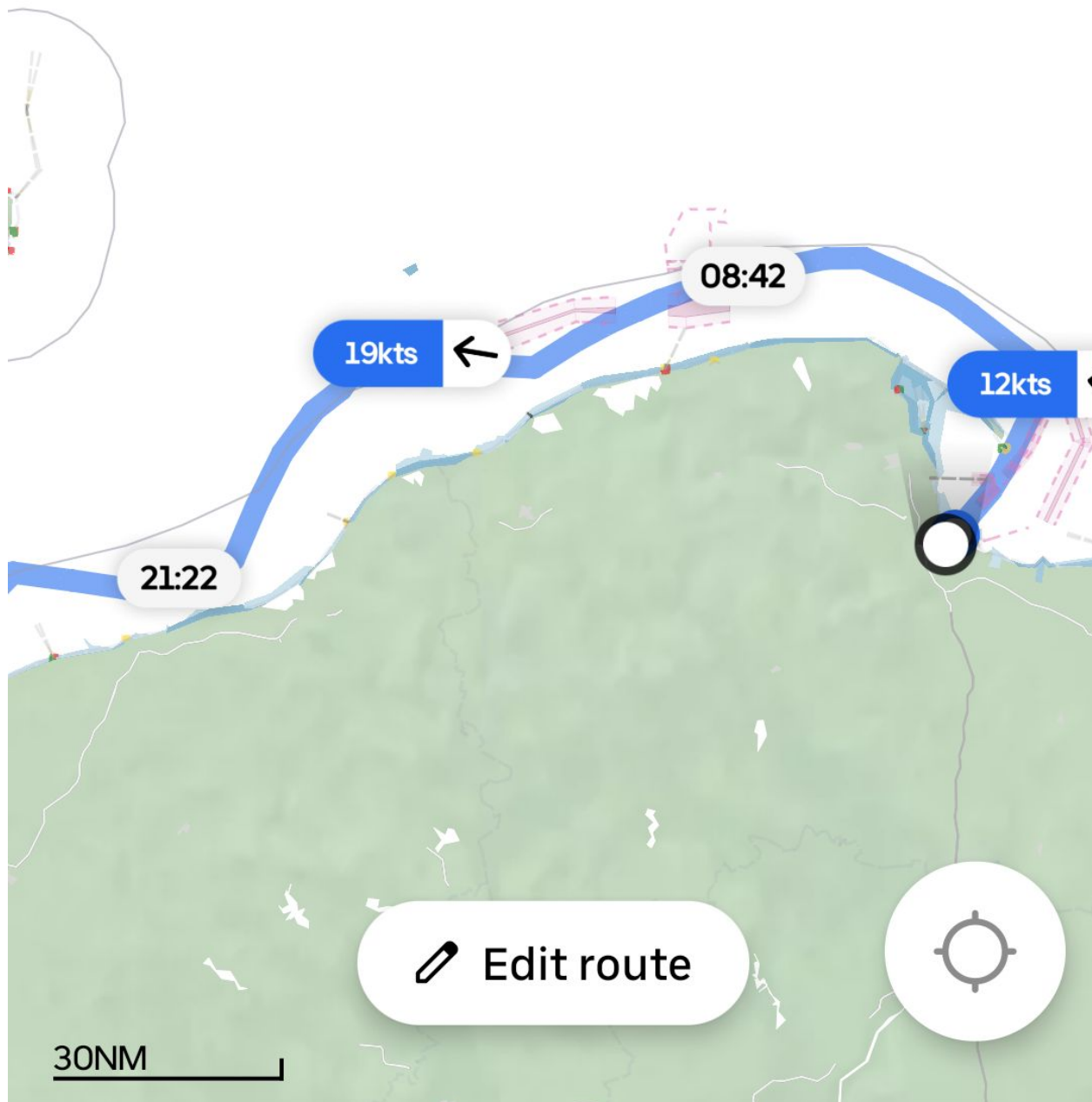
LTE 99%

GPX export failed



The string to be encoded contains characters outside of the Latin1 range

Baltijos jūra
/ Itämeri /
Läänemeri
/ Morze
Bałtyckie /
Östersjön /
Østersøen
/ Ostsee /



20h 25min

Arrival 05:13 218.0NM

Troubleshooting

You can resolve this by temporarily updating your account name or route name to use only standard Latin characters.

Change your account name:

1. Open the Orca app.
2. Go to: **Settings > Account Details > Manage Account**
(This will open your account details in a web page.)
3. Select: **Update Information**
4. Edit the **First Name** field:
5. Replace any special characters with standard Latin characters.
Example:

- Rafał → Rafal
- Søren → Soren
- José → Jose
- Click **Save Changes**.
- Close and reopen the Orca app.
- Try exporting the GPX file again.

The export should now work correctly.

Change your route name:

1. Open the Orca app.
2. Go to: **Main Menu > Spots and Routes > Routes**)
3. Click the three dots next to the saved route in question
4. Click on the pen symbol on the right hand side of the screen
5. Replace any special characters with standard Latin characters.
6. Click enter
7. Close and reopen the Orca app.
8. Try exporting the GPX file again.

The export should now work correctly.

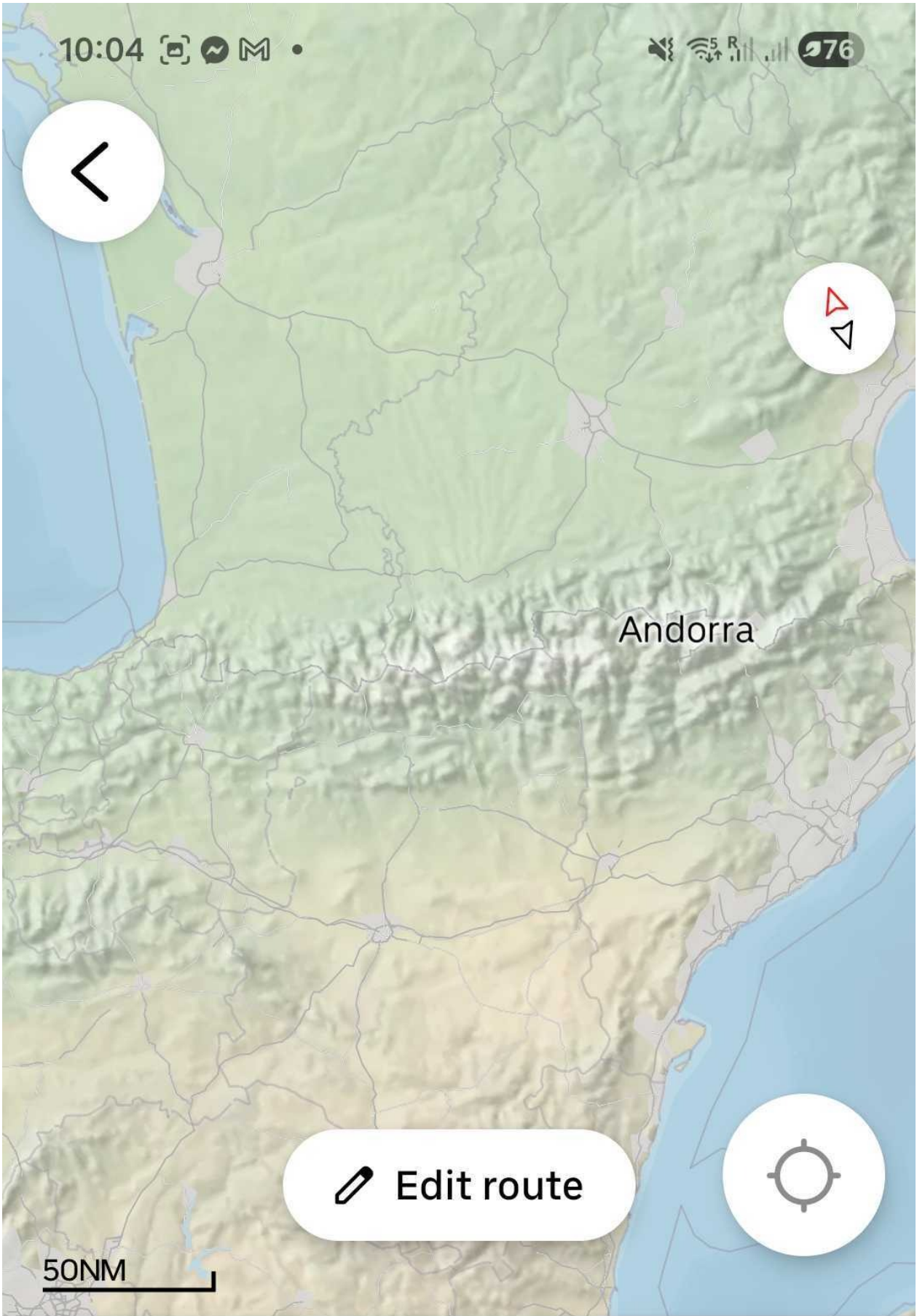
How can I resolve routing errors in the Orca app?

Routing Errors

When a routing error occurs, you will get a warning message which says '**Unable to find route**'. Under this message, there will then be an explanation as to why the Orca App was unable to construct the route. Let's look at the different errors and the reasons why:

Upgrade your subscription to plan routes up to 1300NM

Error under '**Unable to find route**' = 'Upgrade your subscription to plan routes up to 1300NM'



⌚ Now ▾

🚗 Engine ▾

This error indicates that the route exceeds certain limitations. Each subscription plan in Orca has a maximum route distance:

Free Plan

- Automatic engine routing: Max distance 50NM
- Offline engine routing: Unavailable
- Automatic sail routing: Unavailable

Orca Plus Subscription

- Automatic engine routing: Max distance 520NM
- Offline engine routing: Max distance 520NM
- Automatic sail routing: Max distance 520NM

Orca Smart Navigation Subscription

- Automatic engine routing: Max distance 1300NM
- Offline engine routing: Max distance 1300NM
- Automatic sail routing: Max distance 1300NM

If your planned route exceeds these distances, consider adjusting it or upgrading your plan.

[Subscription prices and functionality](#)

Start is outside chart coverage

Error under '**Unable to find route**' = 'Start is outside chart coverage'

10:05 6

5 R 76



 Edit route



10NM

 Now 

 Engine 



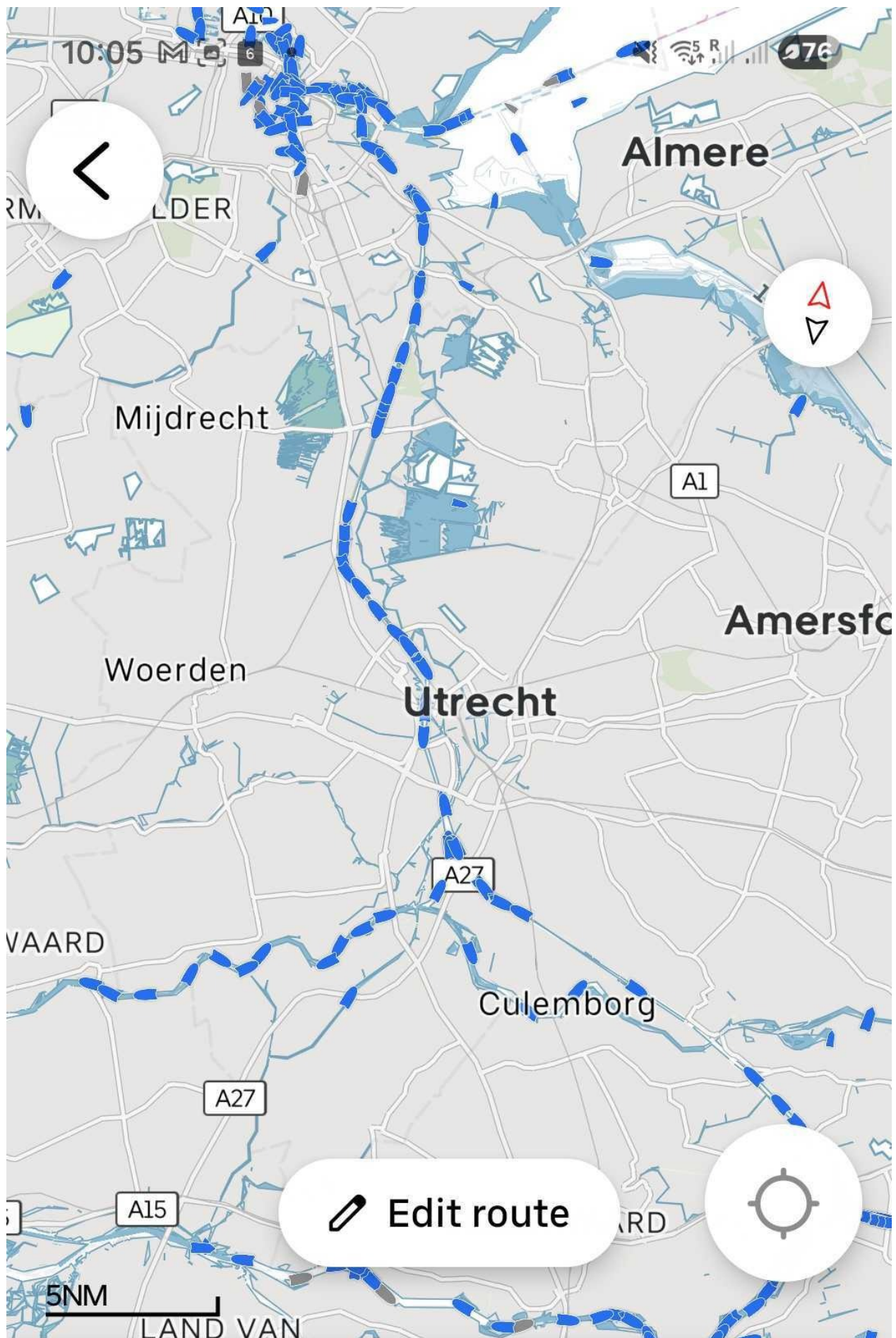
This message can occur for one of two reasons:

1. The start or end of the route is outside of our chart coverage; or
2. The route is being made in an area where we have chart coverage but have not yet developed routing capabilities. These areas include, but are not limited to: Cape Verde, Mauritius, Maldives, Azores, Seychelles, UAE, Madagascar.

You can see more information about our chart coverage here: [What chart coverage and routing coverage is available in Orca?](#)

Unable to find route.

Error under '**Unable to find route**' = 'Unable to find route.'



🕒 Now



🚗 Engine



Settings such as Depth Limit, Routing Leeway, or Height Limit can restrict the app from finding a viable path. Ensure these parameter values are appropriately set.

To adjust these configurations, navigate to **Main Menu > My Boat > Routing Settings**.

In many cases, there are bridges and / or powerlines with unidentified heights. These are particularly prevalent in inland waterways. Orca takes a conservative approach and will not route under these obstacles unless you put your height limit in routing settings to 0m.

We also try to be conservative with depth limits and routing leeway. If you put Depth limit, Routing Leeway and Height Limit to 0m, the route should be possible - **but do so at your own risk**.

Route is going beyond available 10-day weather forecast. Move destination closer to start or set an earlier departure time.

Error under '**Unable to find route**' = 'Route is going beyond available 10-day weather forecast. Move destination closer to start or set an earlier departure time.'

10:14



75



Edit route



500NM

⌚ Now



🔧 Engine



If the estimated route duration is longer than your forecast window, errors may occur. Here is the maximum duration for weather forecast permitted in your subscription:

- For **Plus** subscribers there is a 5 day forecast.
- For **Smart Navigation** subscribers there is a 10 day forecast.

To shorten your route's duration, increase the boat's **Engine Cruise Speed** under **Main Menu > My Boat > Routing Settings**.

Internet Connection Speed

There is no error in the Orca UI that pertains to this error. However, slow internet or unstable connections can cause timeouts during route generation. Run an internet speed test in any browser on the device you are using to ensure your network is adequate for processing complex routes.

General Troubleshooting Steps

1. Verify your subscription plan limits and ensure the route adheres to them.
2. Check the route is covered by our charting coverage or routing coverage
3. Check and adjust **Routing Settings**, such as **Depth Limit**, **Height Limit** and **Leeway**.
4. Increase the **Engine Cruise Speed** in **Routing Settings** for shorter route durations.
5. Test your internet speed if experiencing slow route generation or timeouts.
6. Look out for app updates in our [change log](#), especially for changes aimed at improving routing coverage and speed.

How do I adjust my routing preferences?

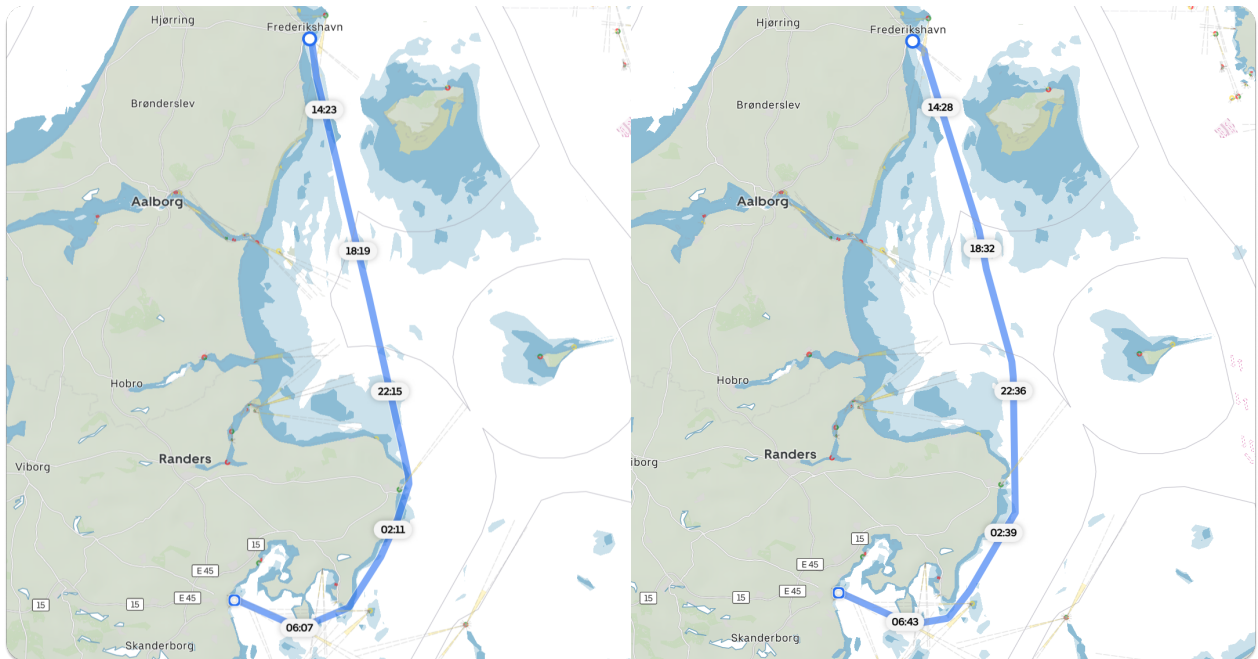
When you first sign up with Orca, you're asked a few questions about your boat – and Orca sets up its routing behavior based on these.

The default options are great for the typical boater, but as you get more experienced with Orca, you likely want to start fine-tuning Orca's routing behavior to match your style of boating.

You control all your Route preferences via **Main Menu > My Boat > Route Settings**.

How do I make routing avoid shallow depths?

The routing engine will attempt to avoid areas shallower than the **Depth Limit** you set. In cases where there's no navigable route without entering shallow waters, Orca will still find a way to your destination, but it will display the shallow route section in red as a warning.

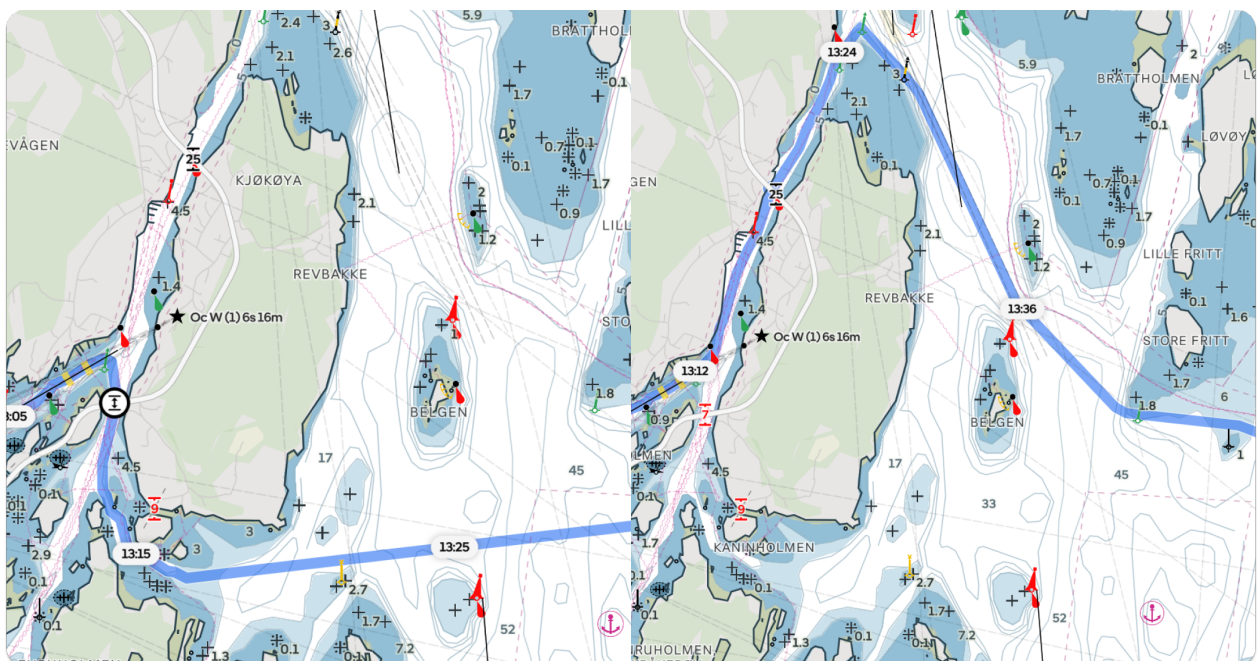


How do I make routing avoid bridges or overhead cables?

Adjust **Height Limit** and Orca will avoid bridges and overhead cables lower than the Height Limit you specify. Similar to the **Depth Limit**, it's wise to add a bit of a buffer in case of arching bridges or sagging cables.

Below is an image illustrating the effects of **Height Limit** adjustments.

To the left, a Height Limit of 2 meters allows for passing under the 7-meter bridge southwest of Kjækøya. With a higher Height Limit, the route follows the northern channel.



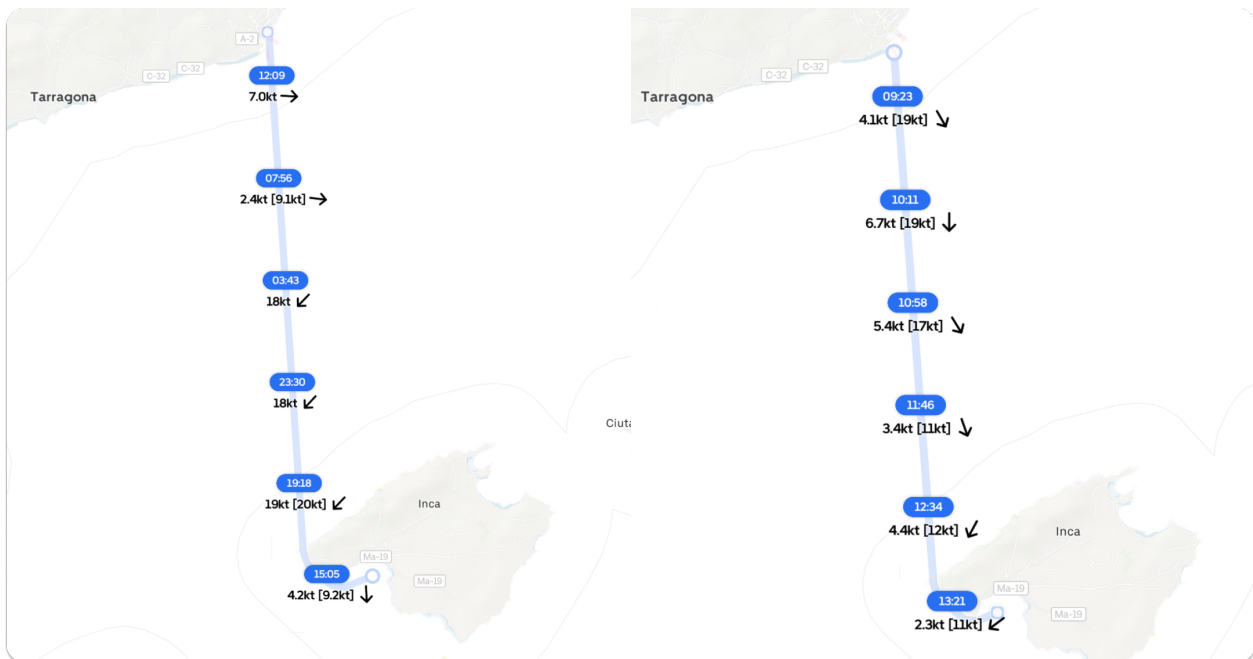
How do I change the ETAs that routing is giving me?

Adjust your **Boat Speed** to reflect your actual cruising speed when going by engine.

Getting the boat speed right is important because accurate speed estimates lead to precise ETAs, which in turn determine the relevance of weather forecasts Orca will show along your route. Powerboat owners can specify different speeds for nearshore and open-water cruising to get even more accurate ETAs.

Below is an image illustrating the effects of **Boat Speed** adjustments.

To the left, a sailboat going from Barcelona to Palma at 6 knots will have a windy trip. To the right, a fast powerboat cruising at 25 knots will outrun the bad weather.

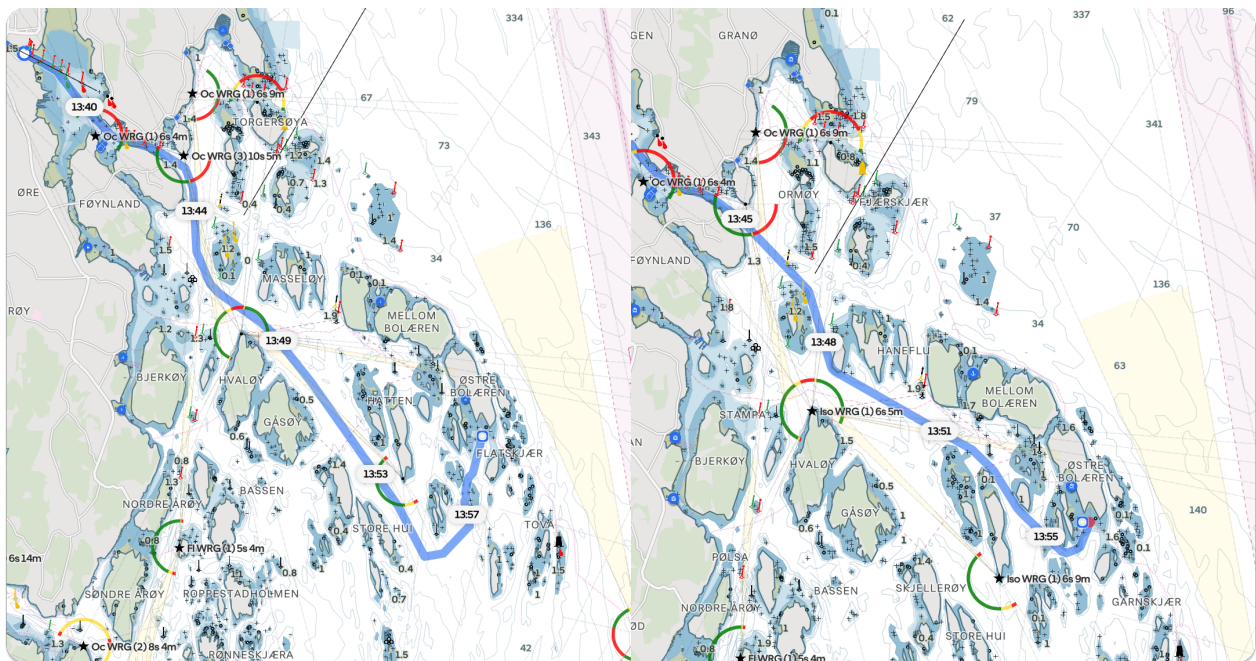


How do I change my preferred distance to shore?

Routing Leeway determines how far from shore Orca will attempt to route. Smaller boats or those traveling in sheltered waters may prefer to stay close to shore or between islands for sheltered passages, while larger vessels or boats going in open waters should increase Routing Leeway. The distance can be adjusted from zero to 500 / 1500 feet meters from shore.

Below is an image illustrating the effects of **Route Leeway** adjustments.

To the left, a high Shore Distance Preference will prefer to stay in open waters. To the right, a lower distance preference will follow closer to shore.



How do I change my route while navigating?

Orca supports Automatic Rerouting, a system that automatically updates your route as you navigate along it. Automatic Rerouting is available for Engine Routes and Sail Routes. Manual Routes do not support rerouting.

Automatic Rerouting requires an active Smart Navigation subscription.

Automatic Rerouting

How does Automatic Rerouting work?

For Sail Routes, Orca will monitor your sailing progress and update the route when it detects that you have deviated from your path, that the weather forecast has changed, or when you tack and gybe. Tack and gybe detection requires an Orca Core.

See the video below for an illustration of Automatic Rerouting.



For Engine Routes, Orca will update the route in real time to reflect your current boat's location. See the video below for an illustration.



What happens if Orca finds a significantly different new route?

Orca will prompt you to accept a new route if it differs greatly from the previous route. The notification will appear on the top of the screen and can be dismissed.



How does Automatic Rerouting affect my Autopilot?

- **For Engine Routes:** If you engage Navigation Mode on your autopilot, the autopilot will receive your initial route, and only receive route updates when you accept a significant route change from Orca. If you activate your autopilot while following an Engine Route with Automatic Rerouting, the autopilot will take you back to the initial route.
- **For Sail Routes:** Your autopilot will receive a new route whenever rerouting is activated. We strongly recommend not using Navigation Mode while sailing or when using Sail Routes with Automatic Rerouting.

How do I enable or disable Automatic Rerouting?

Automatic Rerouting is controlled via the Control Center. You can open the Control Center by pressing the round button in the top right corner of the chart.

Manually adjusting routes

How do I manually adjust my route while navigating?

To manually adjust your active route, open the Control Center by pressing the round button in the top right corner of the chart and select Edit Route.

How do I clear or delete an active route?

To clear or delete your active route, open the Control Center by pressing the round button in the top right corner of the chart and select Clear Route.

How do I reverse a route?

To reverse a route, open the Control Center by pressing the round button in the top right corner of the chart and select Reverse Route.

Troubleshooting Route Visibility Issues

Sometimes, an active route might not appear on the map, even if it exists. This usually happens if the route was created far from your current location. To resolve this issue:

- Verify that the map is centered on your current location.
- Check whether the active route is displayed outside the visible map area and adjust your view accordingly. Adjusting the zoom level or scrolling may also help to locate hidden routes and resolve visibility issues.
- Clicking 'Edit route' in the control centre will also return your map to centre on the active route

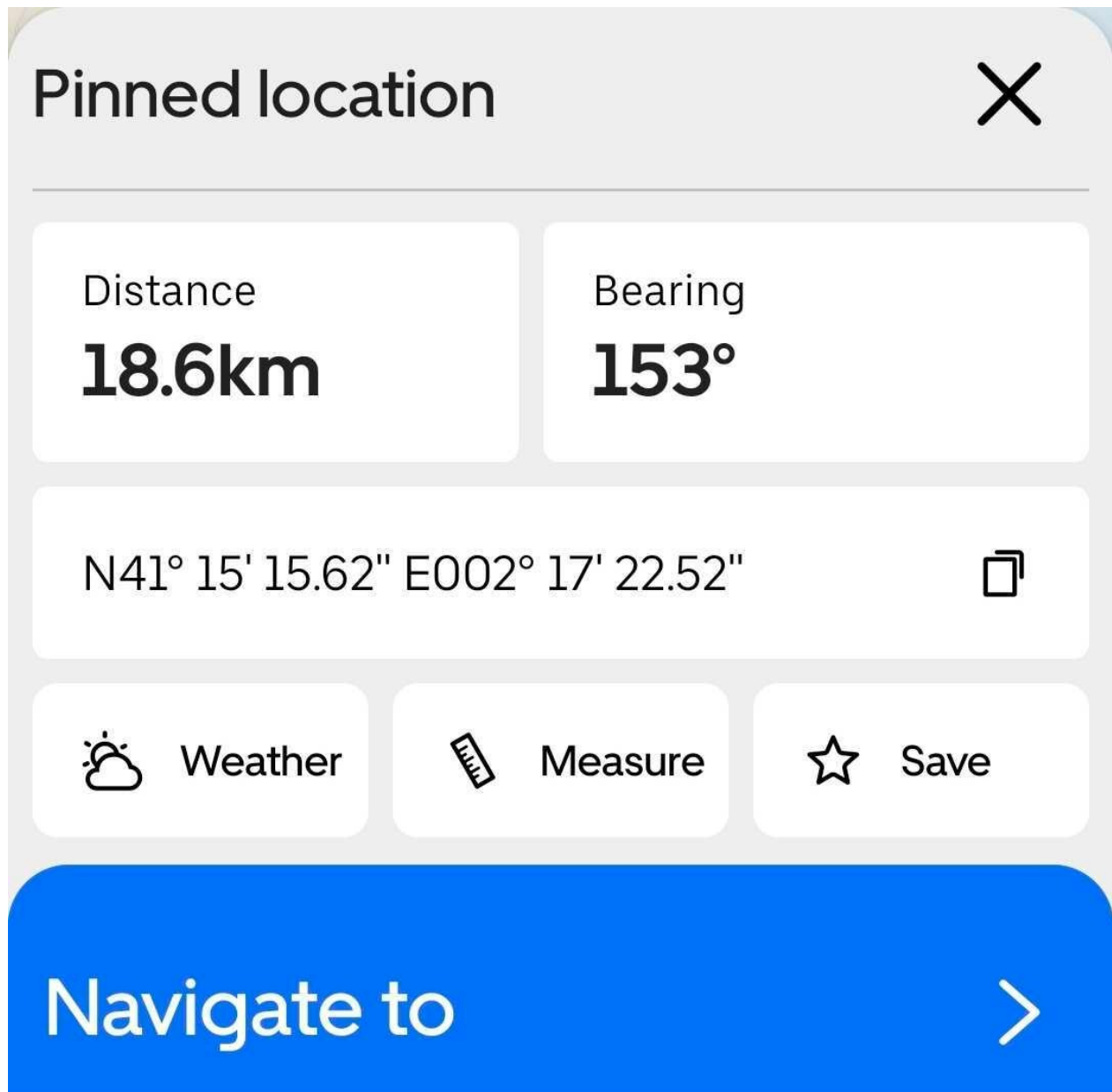
How do I create a route?

How do I create a route?

There are multiple starting points for creating routes in Orca. These are:

- Select a saved spot in the chart or from the Spots & Route list in the main menu
- Search for a destination from the Explore menu
- Long press in the chart at your destination

Once you have selected your desired destination press **Navigate to**.



After a short moment, a route preview will appear on the chart.



19h 29min

Arrival 07:34 • 94.6NM

🕒 Now



🛩️ Engine



How do I change the route type?

In Orca, there are three types of routes:

- **Engine Routes** – automatically created routes for when going by an engine.
- **Sail Routes** – automatically created routes for sailing based on your Polar Diagram and weather forecast. Requires internet.
- **Manual Routes** – routes where you create each waypoint.

What actions can I take with the route?

The buttons on the route preview allow you to:

- **Save the route**, which will store the route in your **Spots & Routes** list. Saved routes synchronize across your devices.
- **Edit waypoints** – add or edit waypoints along the route to adjust it
- **Change departure time** – The default departure time is **Now**, tap on it to change the departure time
- **Weather** – shows information about the weather along your route for the selected departure time
- **Start navigation** - press the blue button at the bottom of the screen.

How do I adjust, add, or move route waypoints?

All route types support manual editing of waypoints. For Engine and Sail Routes, the route system will find a path between your waypoints.

Press the Edit waypoints button from the route preview. You will then be able to do the following:

- **To add a waypoint** –Long press in the chart to add a waypoint at the end of your route. To add a waypoint between two existing waypoints, long-press and drag on the segment
- **To move a waypoint** –Long-press and drag on the waypoint
- **To delete a waypoint** –Short-press on the waypoint and press Delete.

What is the meaning of the symbols that appear along the route?

Your route may have information or warnings you should review before departure. The following symbols may appear along the route.

Red symbols indicate a warning and are accommodated by a red-colored route section.



Overhead
bridge or cable.



Overhead bridge or cable,
lower than route setting.



Sail route leg that requires
use of engine.



Wind speed and direction.



Route leg with depths
potentially more shallow
than route setting.



Significant change of
course required.

How do I view the weather forecast along a route?

Orca estimates your travel path and shows you a tailor-made weather forecast for your specific route. There are two ways of viewing weather along a route:

1. When previewing a route proposal
2. When following a route during navigation

Viewing the weather forecast when previewing a route proposal

When previewing a route and you want to know the weather forecast for an immediate departure, press **Weather**. If you are planning a future departure, change the departure time by pressing **Departure**.



19h 29min

Arrival 07:34 • 94.6NM

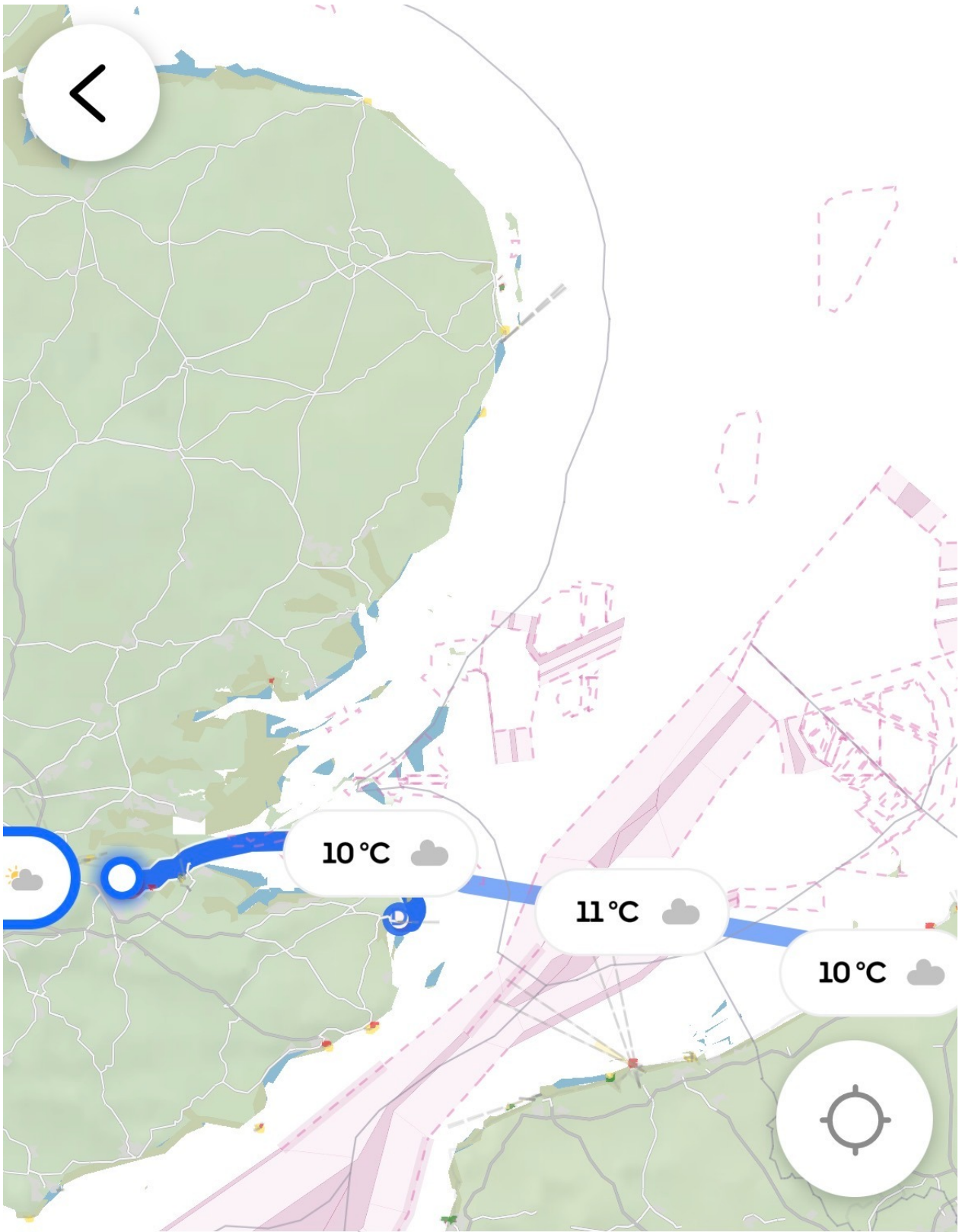
🕒 Now



🛩️ Engine



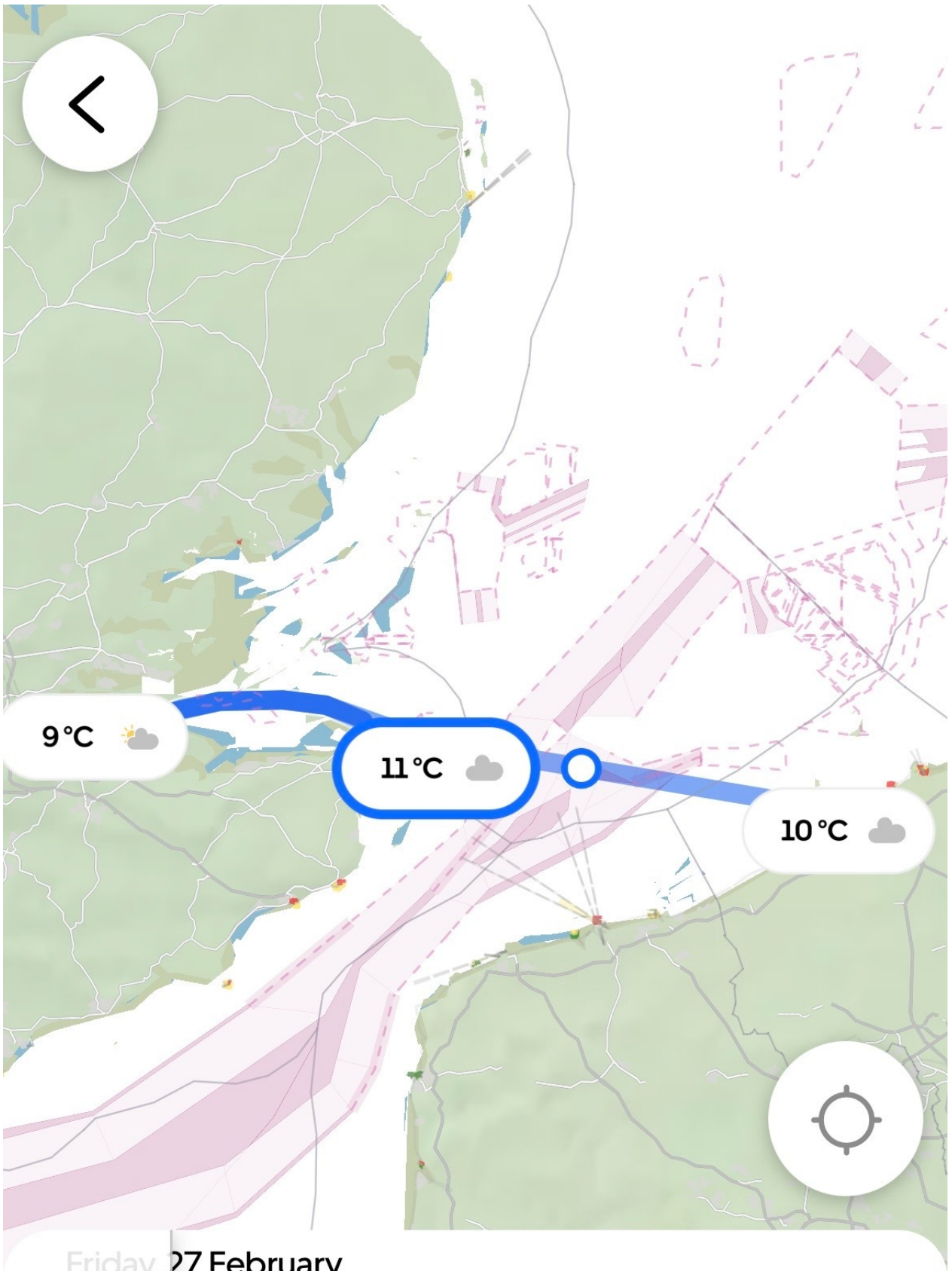
From the route weather forecast, you will be able to view different weather categories.



Today, 26 February

	12:15	13:00	14:00	15:00	1
Temperature (°C)	9	10	10	10	
Precipitation (mm)	0	0	0	0	

Scroll horizontally in the table view to view how the weather forecast will adjust along your route. For the selected time, your estimated location along the route will be presented as a white mark with a blue outline, along with a blue outline for the weather forecast at that location.



Friday, 27 February

00:00	01:00	02:00	03:00	04:00	05:00	06:00
T °C 11	11	11	10	10	10	10
P (mm)	0	0	0	0	0	0

Viewing the weather forecast while following a route

When following a route, press **Weather** in the bottom left corner of the chart – and you will be presented with the weather forecast for your upcoming route.

To view the weather forecast for the general area, clear your active route.

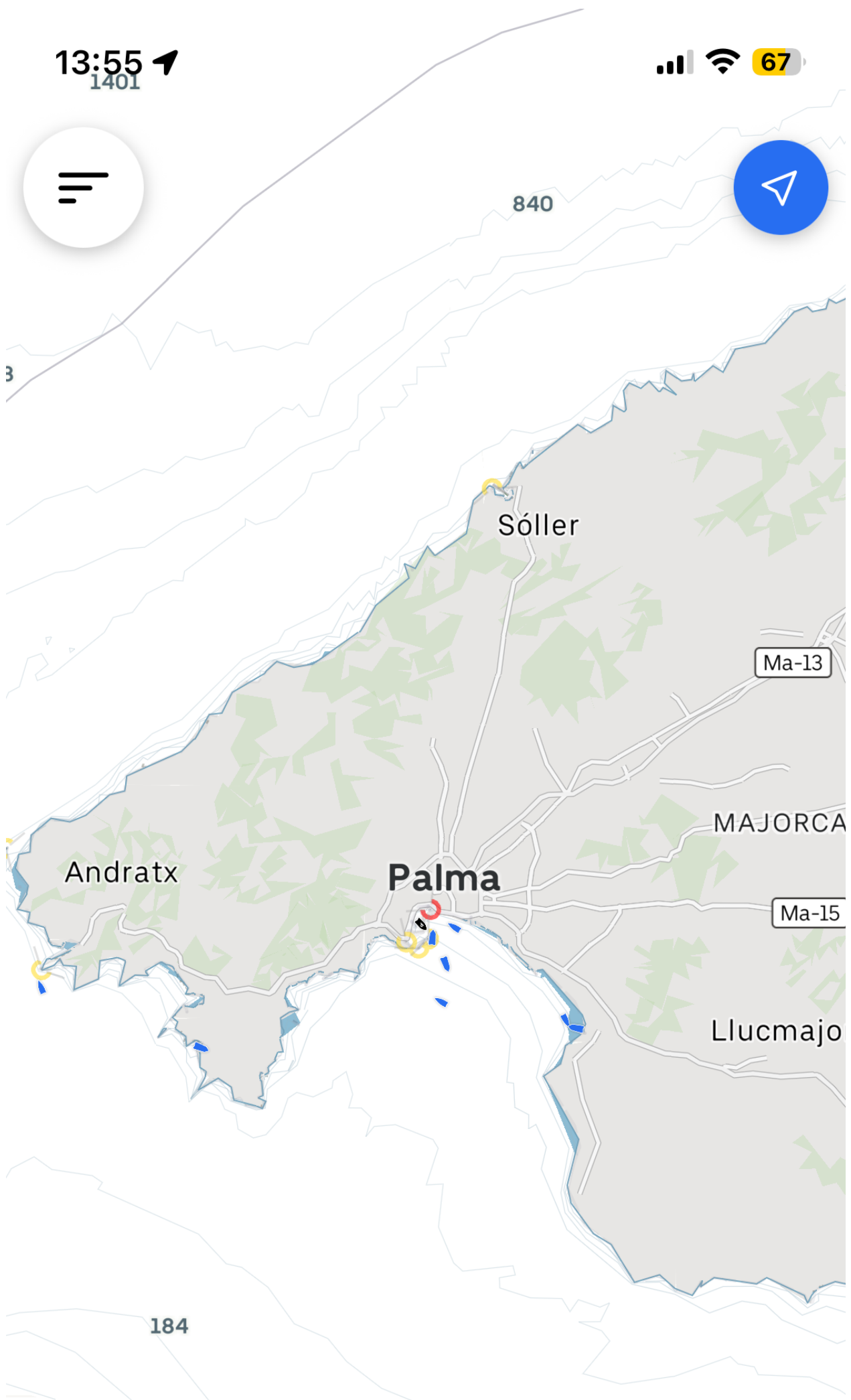
3d. Weather

How do I view the weather forecast in Orca?

To view the weather forecast in Orca, press **Weather** in the chart view.

13:55 
1401

  67 



840

Sóller

Ma-13

MAJORCA

Andratx

Palma

Ma-15

Lluçmajo

184

The weather forecast is separated into five categories.

- **Summary** – cloud coverage, temperature, and precipitation
- **Wind** – wind speed, gust and direction
- **Waves** – wave height, period and direction
- **Currents** – speed and direction
- **Tides** – tide heights, including low and high tide

To change the category, press the corresponding button.

13:56 ↗

+0.06m  66



04m 

840

Sóller

+0.04m 

04m 

Ma-13

MAJORCA

Andratx

+0.04m 

Palma

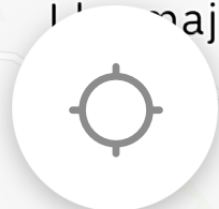
+0.04m 

04m 

Ma-15

Illes Balears

 Show Radar



February

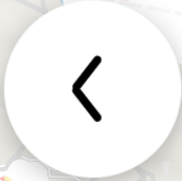
16:00 17:00 18:00 19:00 20:00 21:00 22:00



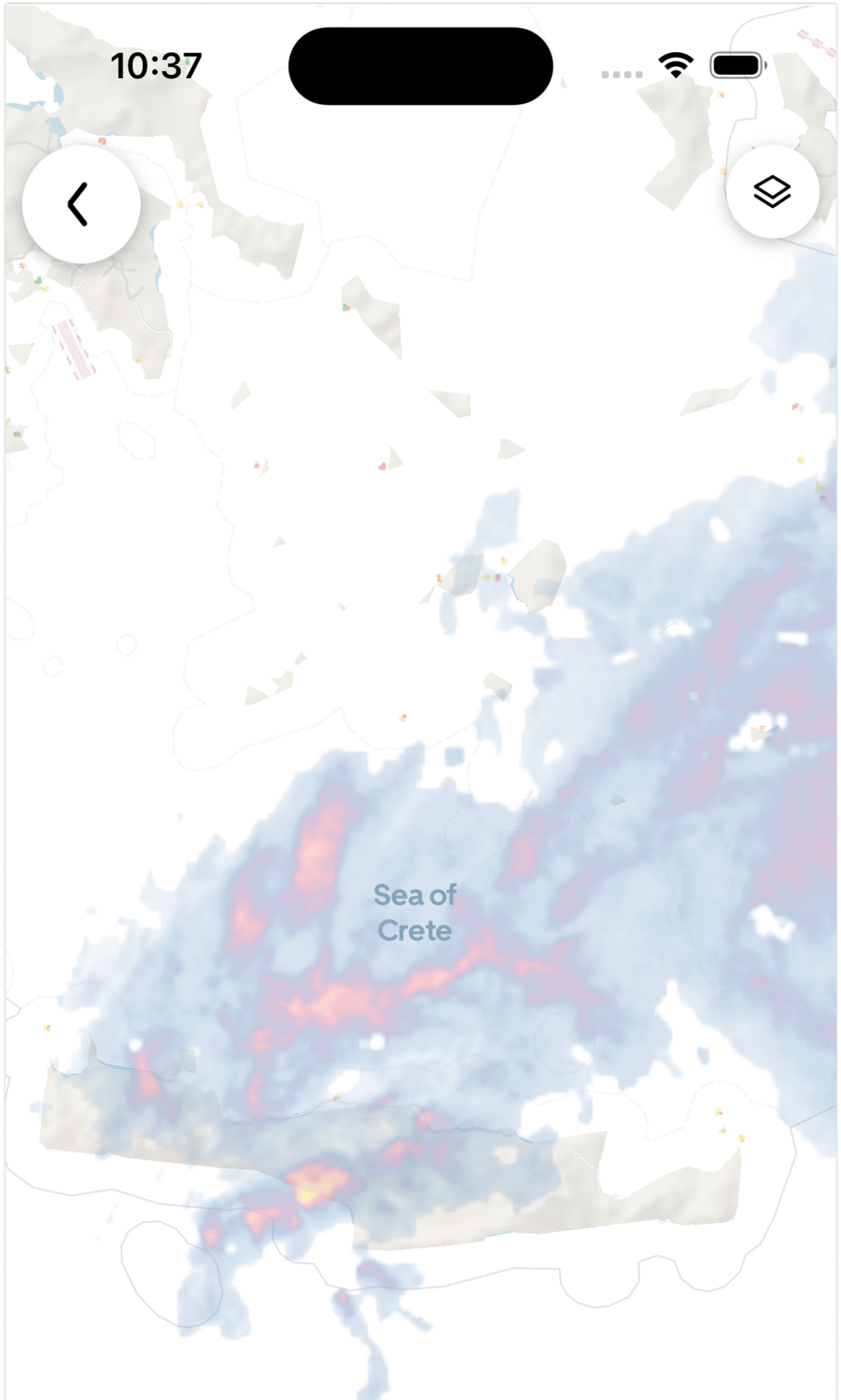
To adjust the weather forecast time, scroll horizontally in the weather graphs. Map symbols will update according to the selected time, which is represented by the grey column on the left side of the table.

Orca also tracks short-term precipitation via a global Rain Radar. Press "Show Radar" to view it.

10:37



Sea of
Crete



To view weather forecasts along a route preview or while underway along a route, see the [following article](#).

Which Weather sources are used in Orca?

For visualizing weather forecasts in the chart and graphs, Orca uses a series of hand-picked local weather sources:

- **Germany** – ICON
- **France and south of Europe** – Meteo-France
- **U.K** – MetOffice
- **Denmark** – FCOO
- **Finland** – FMI
- **Norway** – YR
- **Sweden** – SMHI
- **Rest of world** – NOAA

For routing, Orca uses the following models, and will automatically pick the best model available at any given location.

• ECMWF

- Up to 10-day forecast window
- 0.25-degree resolution
- 3-hour intervals for the first 6 days
- 6-hour intervals for the remaining 4 days
- Updated 4 times per day for the first 4 days
- Updated 2 times per day for the remaining 6 days

• ICON-EU

- 5-day forecast window
- 0.0625-degree resolution
- 1 hour intervals
- Updated 4 times per day

• ICON-D2

- 27-hour forecast window
- 0.02-degree resolution
- 1 hour intervals
- Updated 8 times per day

• Operational Mercator

- Up to 10-day forecast window

- 0.0830-degree resolution
- 1 hour intervals

3e. My Boats

How do I create multiple boat profiles?

You can create multiple boat profiles in Orca. This is useful if you use more than one boat, or want multiple setups for a single boat – for instance, a racing and a cruising profile for a sailboat.

How do I create a new boat profile?

When you create an account at Orca, your first boat profile is automatically created. To create an additional boat profile:

1. Click the Main Menu
2. Click on the card with the name of your first boat
3. Click on Add Boat on the top
4. Enter details about your new boat

How do I switch between my boat profiles?

1. Click on the Main Menu
2. Click on the card with the name of your boat
3. Click on Manage Boats
4. Select the boat you want to use



Which settings are tied to the boat profile?

Every setting inside your boat profile is tied to your boat. Those are:

- Boat type
- Route Settings
- Polar Performance settings
- Boat MMSI, name, type, and dimensions

Settings inside **Main Menu > Settings** are not affected by your boat profile. Changes here will affect all your boats.

How do I set and fine tune my Polar Diagram?

What are Polar Diagrams?

Polar diagrams help you predict how fast you'll sail for a given wind angle and wind speed.

Polar Diagrams are used for three systems in Orca: Laylines, Instruments, and Routing. Accurate polars make these systems better, so you want to use representative polars for the best experience in Orca.

For more general information about polars, see [the Polar Diagram article](#).

How do I set up my Polar Diagram in Orca?

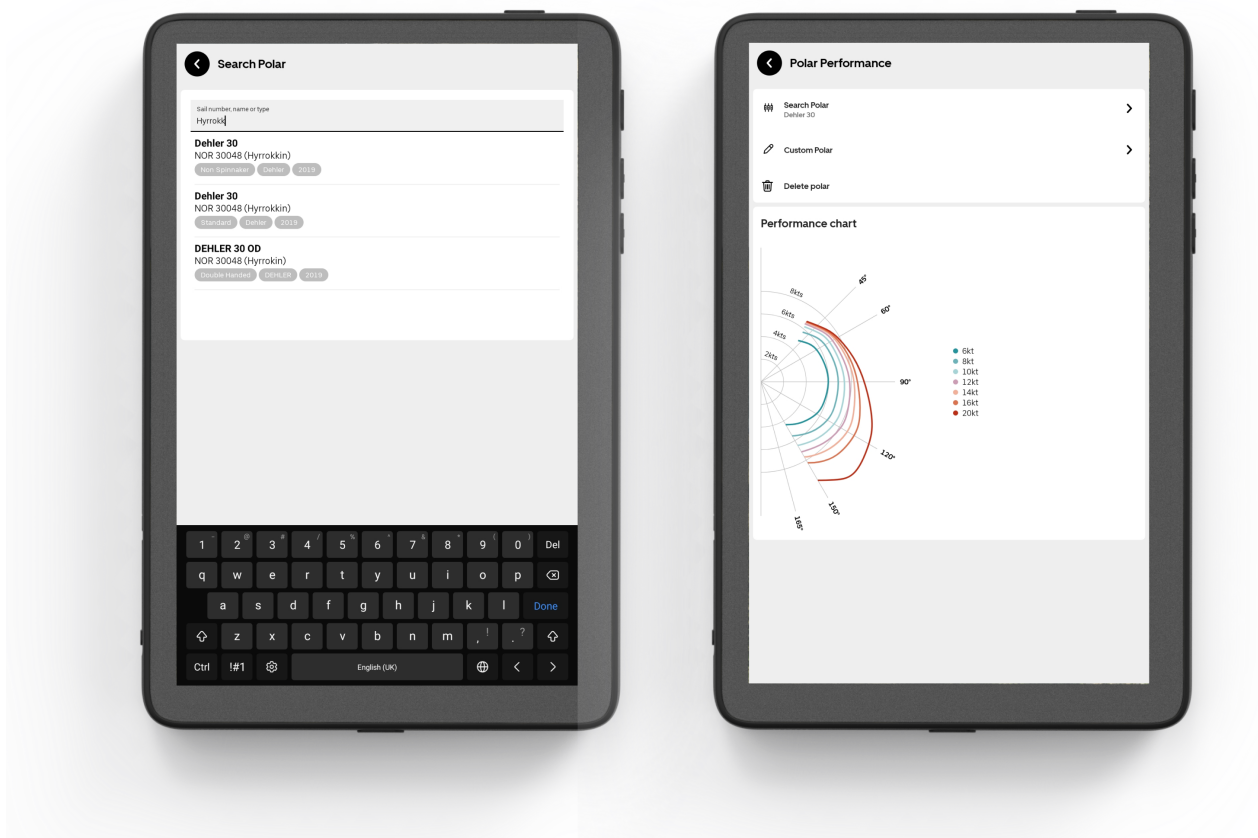
From **Main Menu > My Boat > Polar Performance**, you'll have two options:

1. Search for your boat or boat type in the ORC database
2. Create a Custom Polar Diagram

Offshore Race Congress (ORC) Polars

If you don't have an ORC polar, search for your boat type instead. The ORC database has more than 6000 sailboats and it's quite likely it contains your boat.

If you are unlucky and your boat type is not in the ORC database, search for a similar boat type that aligns with your boat's sailing performance. For instance, a Hanse owner might select a Bavaria that is similarly sized. As a last resort, try to find your boat's polar diagram online and enter it manually in Orca.



Keep in mind that your ORC polar may not represent your actual performance. After selecting your polar, we recommend that you fine-tune your polar.

Having your boat's polars included in the ORC Database

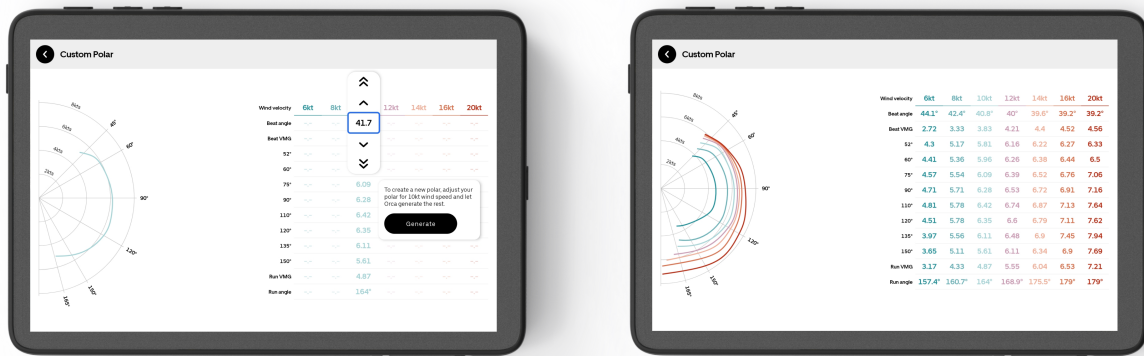
If you would like your boat's polar data to be uploaded to the ORC database - so that eventually it appears as an option to choose from in the ORCA app - you will need ORC to create a polar on your behalf based on the measurements of your boat and issue you with an ORC certificate. You can think of this polar and certificate as an official accreditation that describes how fast your boat is.

In order to obtain this ORC-measured polar and certificate, please reach out to your local ORC Rating Office. You can find contact details of your local ORC Rating Office in the following [webpage](#).

Please bear in mind, once you have obtained an ORC polar, it typically takes a month for the polar to propagate to Orca.

Custom Polars

If you are unable to find any good approximations for your polar diagram, you can create a Custom Polar.



When creating a Custom Polar Diagram, you'll first be asked to enter performance targets for 10 knots wind speed. From your 10 knots polar, Orca will extrapolate your performance targets to the remaining wind speeds from 6 to 20 knots. After this, you can edit your polar freely.

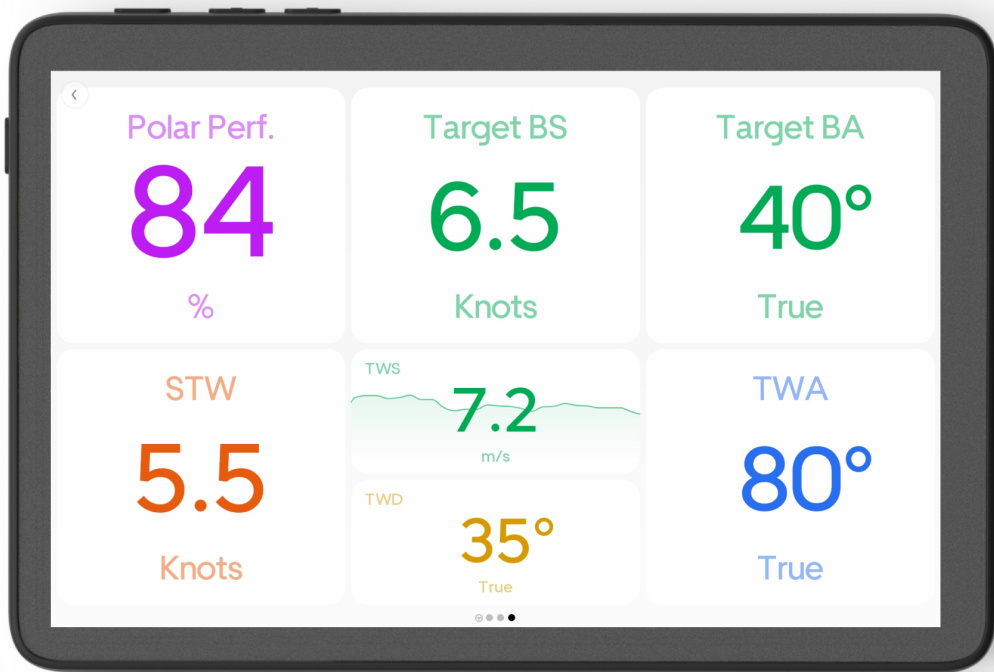
Polar Diagrams are synced between all your devices when connected to the internet.

How do I fine-tune my polar diagram for routing?

The polar diagram reflects your boat's maximum theoretical speed, which is hard to reach in practice. To make **Sail Routes** match your actual sailing pace, you want to scale the polar speeds to the sailing speed you can achieve.

The best way to track your actual sailing performance is to add a Polar Performance and Target Beat Angle instrument to your sailing instrument panel. This way, you can keep track of your typical sailing performance versus your maximum theoretical speed and beat angle.

Once you have tracked your typical performance, adjust your **Polar Scaling** and **Beat Angle Offset** accordingly in **Main Menu > My Boat > Route Settings**.



3f. Other Tools

How do I import or export GPX files in Orca?

Orca supports importing and exporting GPX files.

When importing or exporting to GPX, GPX Waypoints will be saved as Spots, while GPX tracks will be saved as Routes.

How do I import a GPX file?

To import GPX file into Orca:

- **iOS and Android:** From the application you want to share from, share the GPX via the standard share menu and select Orca as your share destination
- **MacOS:** Right-click the GPX file and select **Open With > Orca**



If an imported route has more than 50 waypoints, Orca will simplify the route with a tolerance of 0.0005 degrees or about 30-60 meters per waypoint, depending on latitude. This simplification will allow you to import past travelled tracks.

If you are importing routes with more than 50 waypoints, always validate the route after import to Orca.

How do I export a GPX file?

To export a Route or Spot as a GPX file, open your **Route and Spot list** from the Main Menu, press the three vertical dots of the item you want to export, and then select **Export GPX**.

4. Advanced Tools Powered By Orca Core

4a. Basic Functionality

How do I calibrate my Core's Compass?

The Orca Core contains a Motion Processor and a Magnetic Compass. Both sensors require calibration before they can be used.

Orca will automatically notify you if a calibration is needed when you connect to your Core.

If you have dismissed this notification or you want to recalibrate, open **Main Menu > My Boat** and press **Calibrate Compass** to begin calibration.

Calibration takes typically 3 minutes and requires:

1. Calm waters
2. Sufficient space to make a 360-degree turn at a slow turning rate

You must recalibrate your Core if you move it or if you install any electronic devices in the vicinity of the Core. You should also re-calibrate your Core at the beginning of every season.

The Core will not broadcast Heading, Attitude, and Rate of Turn data via NMEA 2000 until it has been calibrated.

How to adjust the offset?

After calibrating the compass, you might want to adjust the offset to adapt to the boat's heading.

To do so, open **Main Menu > My Boat > Calibrate Compass** and press **Click on Adjust Offset**.

It is recommended to use as a point of reference either:

- Another existing compass; or
- Point the boat at a fixed object and adjust the offset in that direction.

By pressing on the green and red arrows you can set the heading to match the existing compass or the known heading to the point of reference.

Please ensure you are using the Core whilst adjusting the offset, and please ensure that 'Orca Core' is the chosen device under 'Heading'. The chosen device will be highlighted in blue when selected.

How do I connect to my Orca Core?

How do I connect to my Orca Core for the first time?

Orca will pair your Core to your account the first time you connect. To do so:

1. Power on your Core
2. Open the Orca app on a device with internet access and keep it close to your Core.
Alternatively, start your Orca Display 2. Make sure you are logged into your Orca account.
3. A dialog will appear within 30 seconds on your app or Display, asking you to pair the Core
4. Confirm the pairing

The Orca app and Display need an internet connection when it connects to the Core for the first time. Make sure your device has internet during this time. Consecutive connections do not require an internet connection.

Additionally, ensure that the Orca app has necessary permissions enabled on your device. On iPhone/iPad, for example, verify permissions such as Local Network, Bluetooth, and Location in the device settings..

How do I connect after pairing?

Orca will automatically connect to your Core when it is within wireless range.

Once your Orca app or Display connects, a notification will appear on the top of your screen confirming the connection.

You do not need a WiFi password or any other password to connect to your Core. The Orca app and Display will automatically connect to Cores that are paired with your account.

I have several devices. How do I connect those to my Orca Core?

Once a Core is paired to your Orca account, any other device that is signed in with this account will automatically connect to the Orca Core when within wireless range.

If you have recently paired a Core to your account, connect your other devices to the internet and open **Main Menu > My Boat** to sync the pairing information to your other device.

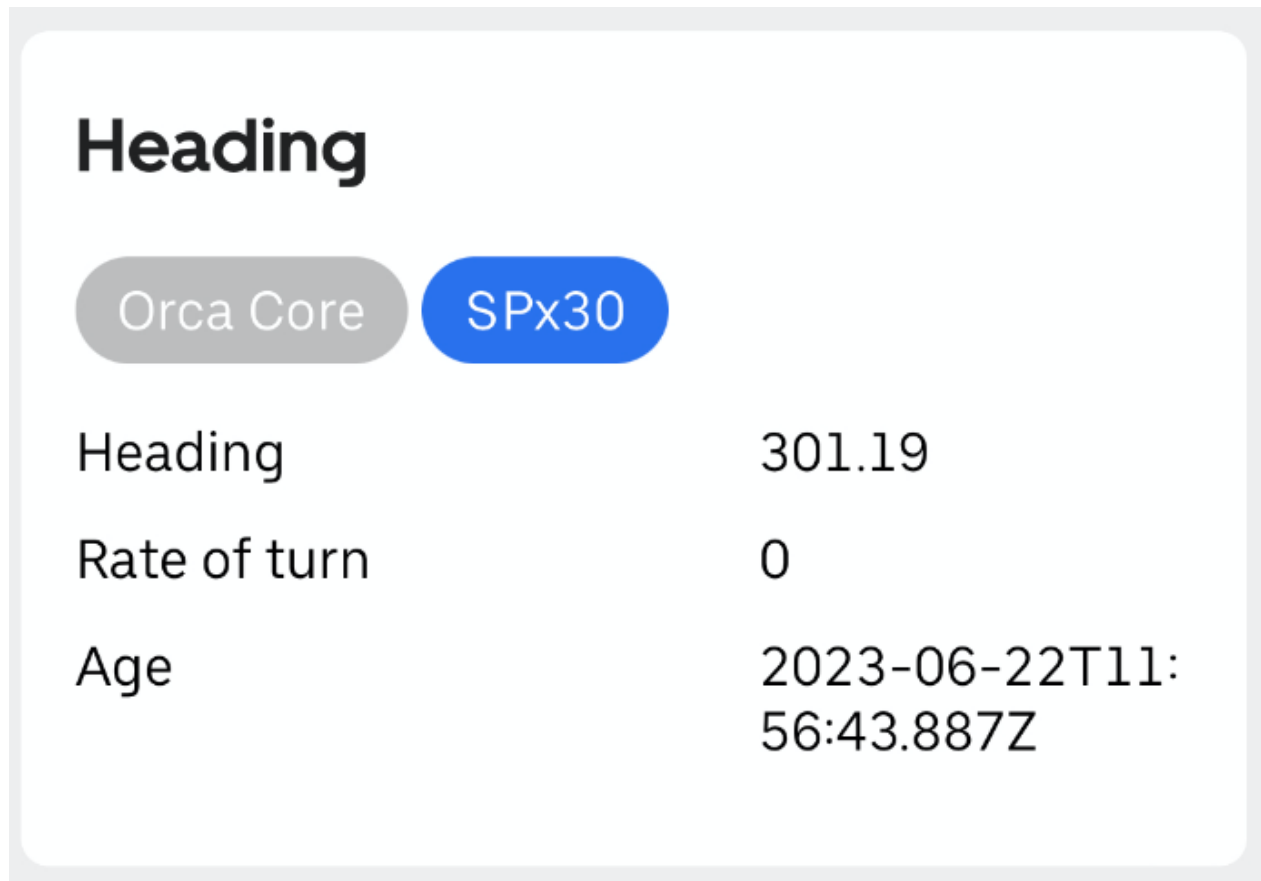
You cannot link multiple accounts to the same Orca Core. Each Orca Core can only be paired to one account at a time.

If you have connectivity problems, review the relevant [support guides](#) and contact support at hello@getorca.com if the problem persists.

How do I select sensor sources?

If you have multiple sensors reporting the same data type, such as heading or location, you can select which sensor to use inside Orca. To do so:

1. Connect to your Core
2. Open **Main Menu > My Boat > Connected Devices**
3. Tap on the name of the device that you want to use



The screenshot shows a user interface for sensor data. At the top, the word "Heading" is displayed in a large, bold font. Below it, there are two rounded rectangular buttons: "Orca Core" in a light gray button and "SPx30" in a blue button. The "SPx30" button is highlighted, indicating it is the selected source. Below the buttons, there is a table-like structure with three rows of data:

Heading	301.19
Rate of turn	0
Age	2023-06-22T11:56:43.887Z

When a device is selected, the relevant instruments will use that single device as its source.

Some sources, such as tanks and batteries are always selected.

Battery

Orca Core

YDEG-01

Voltage 1	12.35
Current 1	0
Voltage 2	13.60
Current 2	0

In this case, you can create instruments that rely upon each sensor.

Sensor selection is synchronized between your devices automatically. When changing sensor on a device, it may take up to two minutes for the change to propagate to your other devices.

What happens in my selected source goes offline?

Orca (both the Core and the App) will use whatever sensor you have selected while it's available. If that selected source stops reporting, Orca **automatically falls back** to another available source; the most appropriate one will be chosen - either Orca Core's built-in sensors or another device on the network.

When the primary source comes back online, Orca will recover and resume using that selected source.

This fallback logic applies to all sensors that require a unique selection, such as location, heading or depth.

Which PGNs does Orca Core support?

The Orca Core is NMEA 2000 certified. It supports the following PGNs:

Transmit PGNs

PGN 126992 – System Time

PGN 129025 – Position Rapid Update

PGN 129026 – COG & SOG, Rapid Update

PGN 129029 – GNSS Position Data

PGN 127257 – Attitude (roll, pitch, heel)

PGN 127250 – Vessel Heading

PGN 127251 – Rate of Turn

PGN 129283 – Cross Track Error

PGN 129284 – Navigation Data

PGN 129285 – Navigation Route/WP Information

PGN 127258 – Magnetic Variation

PGN 130306 – Wind (computed by the [Orca Sailing Processor](#))

PGN 127508 - Battery Status (voltage)

The Core must be calibrated for Wind, Attitude, Vessel Heading, and Rate of Turn PGNs to be broadcasted. Before calibration, these PGNs will be broadcasted with undefined/unknown values. See the [Calibration article](#) for more information.

Receive PGNs

PGN 127488 – Engine, Rapid Update

PGN 129025 – Position, Rapid Update

PGN 127489 – Engine, Dynamic

PGN 129026 – COG & SOG, Rapid Update

PGN 130306 – Wind

PGN 129794 – AIS Static Data

PGN 128259 – Speed, Water Referenced

PGN 129284 – Navigation Data

PGN 127493 – Transmission Parameters, Dynamic

PGN 127237 – Heading/Track Control

PGN 129029 – GNSS Position data

PGN 130310 – Environmental Parameters

PGN 130311 – Environmental Parameters

PGN 130312 – Temperature

PGN 127497 – Trip Fuel Consumption

PGN 128267 – Water Depth

PGN 130316 – Temperature

PGN 127245 – Rudder

PGN 129038 – AIS A Position Report

PGN 129039 – AIS B Position Report

PGN 126992 – System Time

PGN 129809 – AIS B Static Data

PGN 127505 – Fluid Level

PGN 127506 – DC Status

PGN 127250 – Vessel Heading

PGN 129810 – AIS B Static Data

PGN 127251 – Rate of Turn

PGN 127508 – Battery Status

PGN 127257 – Attitude (heel, pitch, roll)

PGN 127258 – Magnetic Variation

PGNs 130312 and 130316 are fully readable by the Orca Core. However, in-app instruments are only available for Sea, Outside, and Inside temperatures.

Orca Core also transmits and receives ISO and spec-required PGNs along with a range of proprietary PGNs for control of other NMEA 2000 devices.

Which sensors are inside the Orca Core?

Your Orca Core contains:

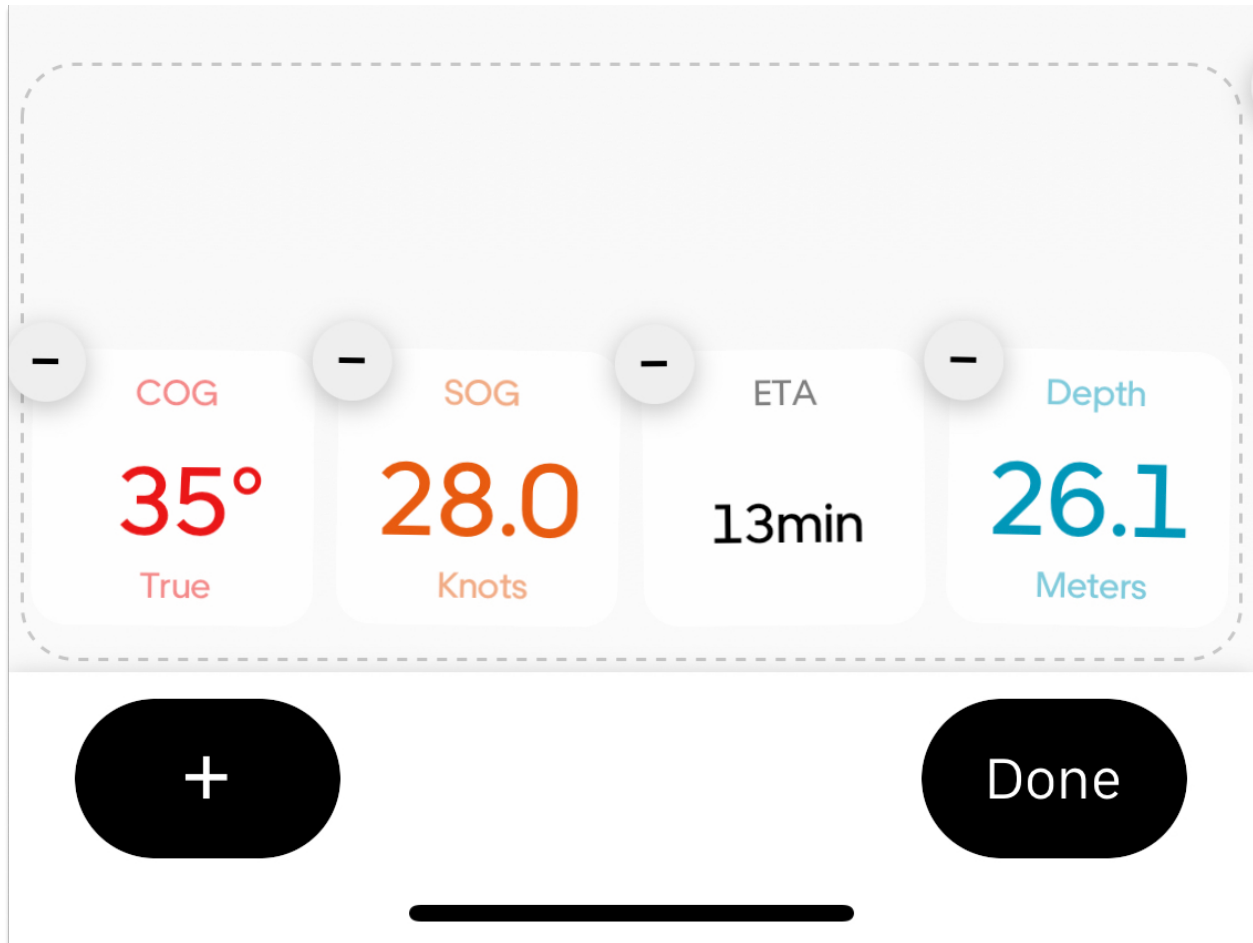
- A high-sensitivity GPS
- 9-axis IMU
- Magnetic compass

Data from the built-in sensors can be shared with your NMEA 2000 network. See the [PGN list](#) for a complete overview.

4b. Instruments

How can I edit my instruments?

To edit an instrument, or add a new instrument to an instrument panel, long press on an individual instrument.

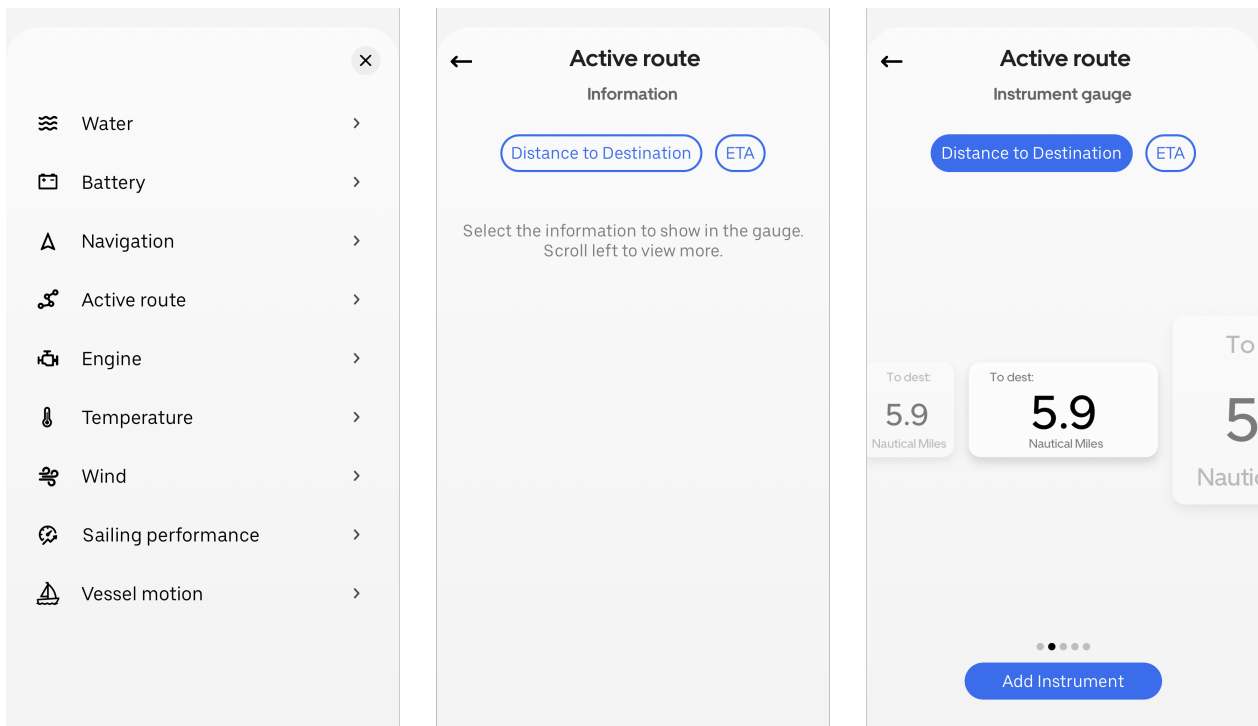


To edit your instruments:

- Delete an individual instrument by pressing the – button on the instrument
- Move an instrument by dragging it
- Add Instruments by pressing the + button

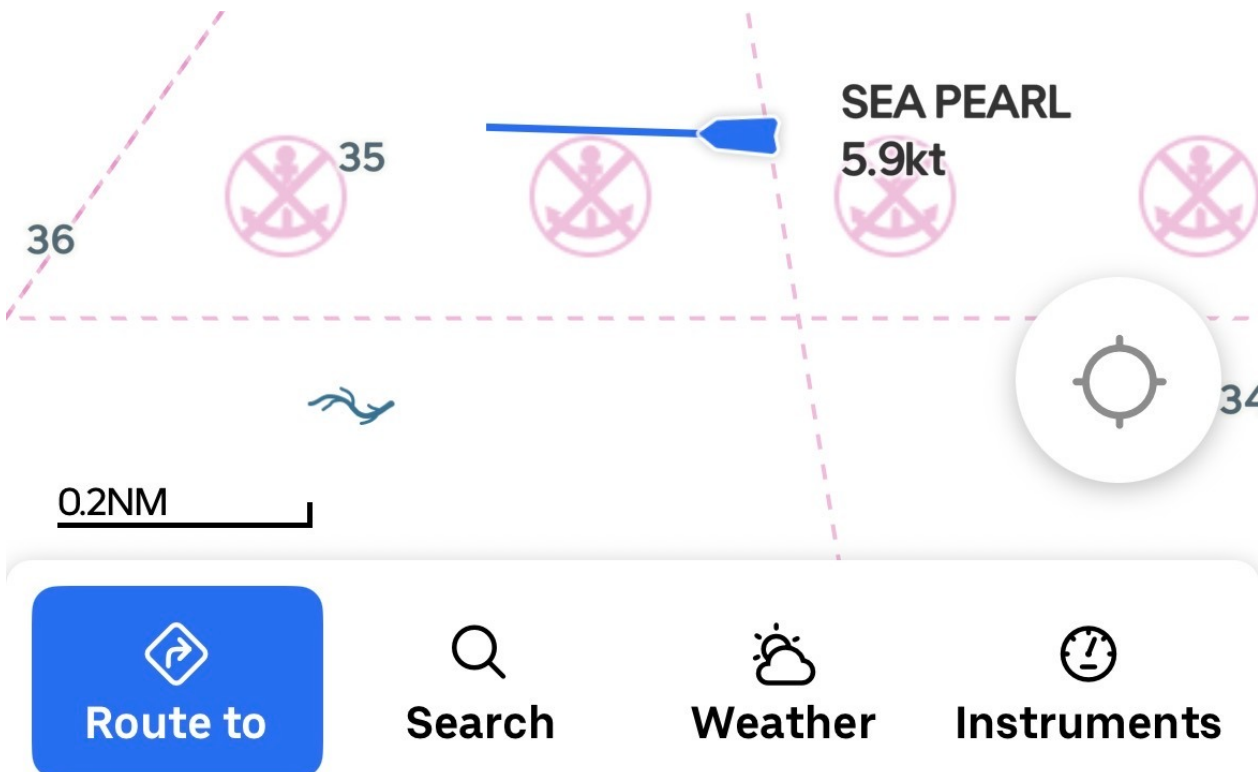
Adding an instrument:

1. Select the category of instruments you want to add
2. Select the type of instrument inside the category
3. Swipe between the different instrument options to preview different sizes
4. Press **Add Instrument** to add it to your current panel



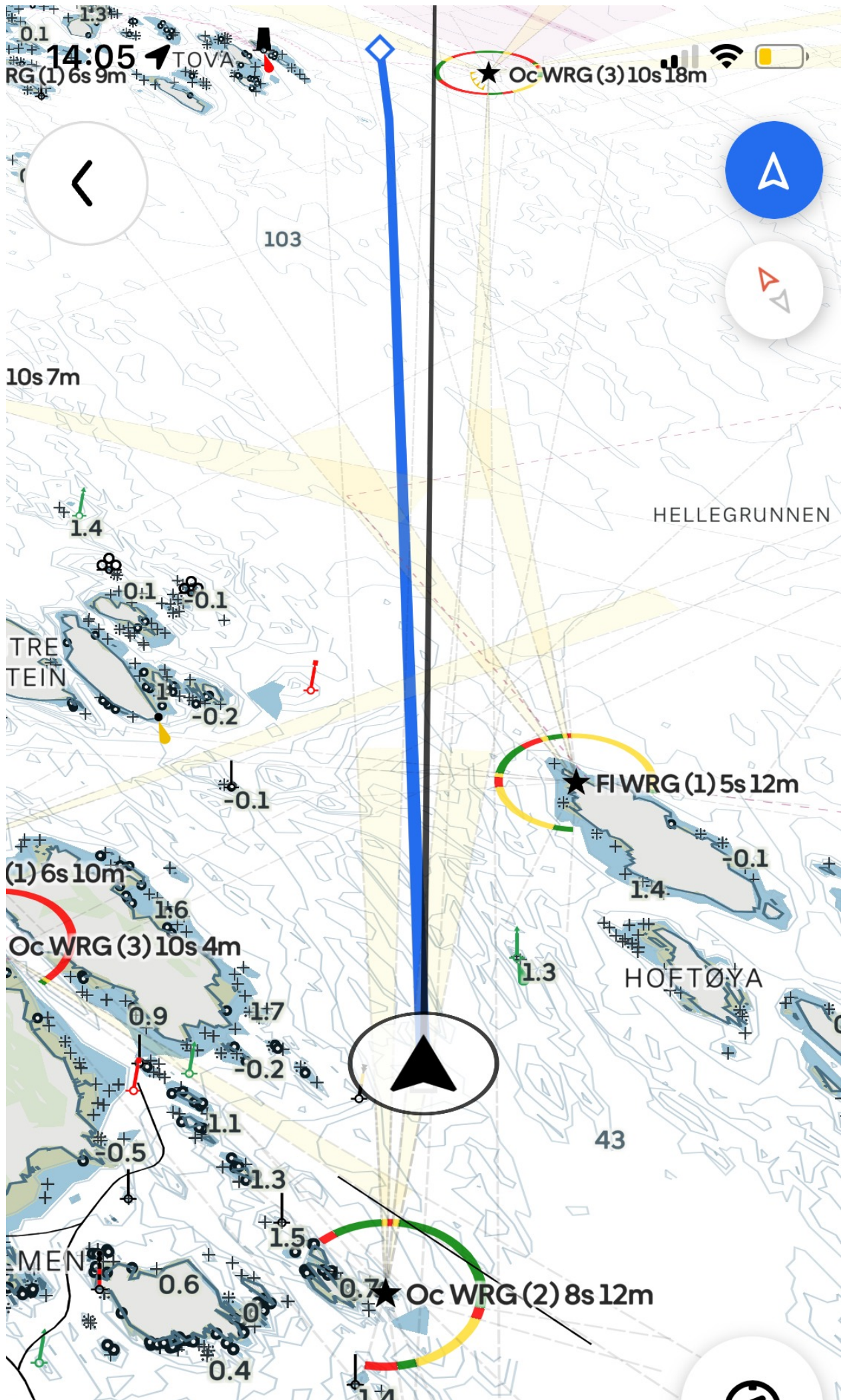
How can I view instruments?

From the main map view, press the **Instruments** button to view them.



Instruments can have multiple layouts. All devices support instruments that cover the entire screen, and instruments that are shown together with the chart. For instruments shown together with the chart:

- **Phones** – instruments located at the bottom of the screen
- **Tablets** – instruments are shown at the top or left side depending on if you have a portrait or landscape orientation



You can have multiple instrument panels, each with an individual layout. To change between layouts, swipe horizontally along your instrument panel.

Your instrument panel setups are not synced between devices. All your devices must be set up individually with their instruments.

4c. Autopilot Control

How do I Autotack or Autogybe?

Orca supports automatic tacking and automatic gybing, commonly referred to autotack and autogybe.

How do I command my autopilot to tack or gybe?

Orca can command your autopilot to perform a tack or gybe when the Wind Hold mode is engaged. Follow the steps below to ensure a successful maneuver:

Before initiating a tack or gybe, ensure the following conditions are met:

- Orca App version 2025.20 or higher.
- An Orca Core, a supported autopilot, and a functioning wind sensor.
- For a tack: Your vessel must navigate at a True Wind Angle (TWA) of less than 90°
- For a gybe: Your vessel must navigate at a TWA of more than 120°

Once the conditions above are met, the **Prepare Tack** or **Prepare Gybe** button will be shown with black text in the main autopilot controller screen.



Tap the **Prepare Tack** or **Prepare Gybe** button to start the process. After tapping, a visual representation of the maneuver will appear, showing:

- Next Heading
- Next Apparent Wind Angle (AWA) or Next True Wind Angle (TWA)

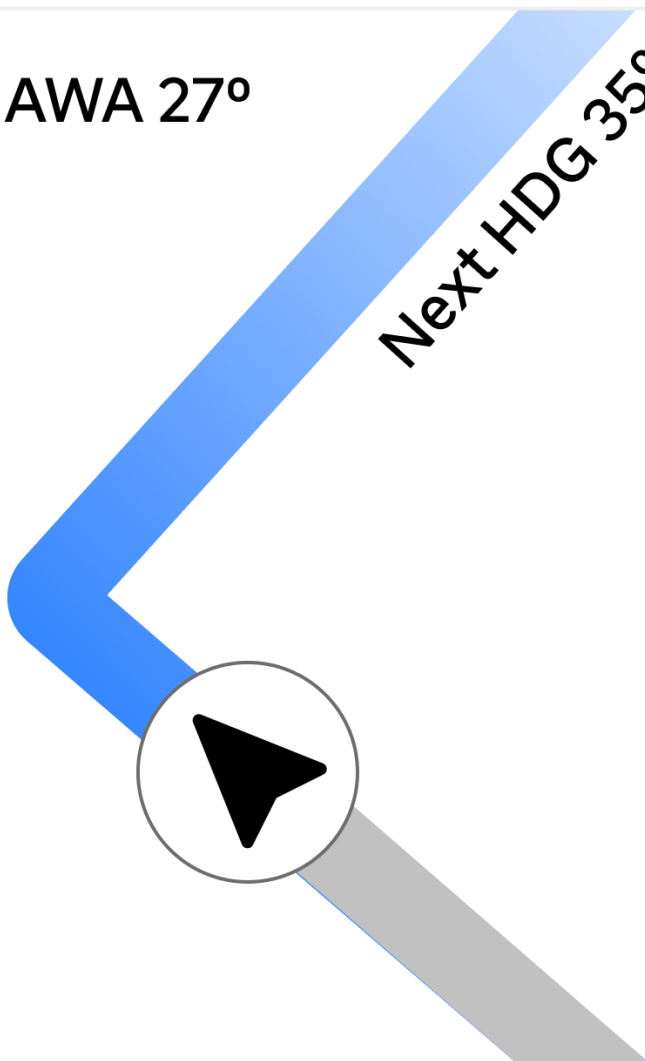
Confirm these values to ensure they align with your intended course.

12:30



Next AWA 27°

Next HDG 35°



Hold to tack to starboard

Cancel tack

Execute the maneuver

Press and hold the "Hold to tack/gybe to starboard/port" button for 2 seconds to complete the action.

Post-maneuver navigation

After the maneuver is complete, your vessel will adjust to the opposite wind angle relative to its pre-maneuver position, and the screen of the returns to main Auto Pilot screen.

What do I do if Autotack does not work?

If the autotack feature does not work after following the steps described above, it may be due to compatibility or setup issues. Read up on details for [your specific autopilot manufacturer](#) to check for compatibility and any required setup.

How do I change my automatic routing preferences?

The routes calculated by Orca are tailored to your boat and to the chart data for your area. To edit your routing preferences, open the **Main Menu > My Boat > Routing Settings**.

The available routing settings depend on which vessel type you have selected. You can change your vessel type via **Main Menu > My Boat > Type**.

Universal Route Preferences

These preferences are available to sailboats and powerboats.

- **Routing height limit** - The routing engine will prefer to avoid bridges and cables lower than this value.
- **Routing depth limit** - The routing engine will prefer to avoid areas, rocks, and obstacles shallower than this value.
- **Routing leeway** - Adjust how close to the shore the routing engine prefers to follow.

Sailboat Route Preferences

- **Engine cruise speed** - Used to estimate route arrival time. Set to your average cruising speed when near shore or inside restriction zones.
- **Minimum wind speed** - Routing will switch to engine when windspeed is below this limit.
- **Polar scaling** - Reduce your expected boat speed compared to your polar diagram.
- **Polar night scaling** - Reduce your expected boat speed while sailing at night.
- **Polar beat angle offset** - Increase your beat angle compared to your polar diagram.

Sail routing is also influenced by your Polar Diagram. You can change it via **Main Menu > My Boat > Polar Performance**.

Powerboat Route Preferences

- **Offshore cruising speed** - Used to estimate route arrival time. Set to your average cruising speed when offshore and outside restriction zones.

- **Nearshore cruising speed** - Used to estimate route arrival time. Set to your average cruising speed when near shore or inside restriction zones.

How do I control a B&G, Lowrance or Simrad Autopilot?

Orca Supports the following autopilots:

- NAC-1, NAC-2, and NAC-3
- B&G H5000
- TP22 and TP32 via SimNet adapter cable
- Simrad AC1x, AC4x and AC7x series directly via NMEA2000 or SimNet adapter cable

The following modes and actions are supported:

- Standby
- Auto / Heading Hold
- No Drift
- Wind
- Navigation
- Autotack
- Autogybe

For **Nav** mode to work on these autopilots, you'll need to set Orca as your Navigation Data source on your Autopilot's Head Unit display.

TP22 and TP32 must be set into "System mode" for control via Orca. If the TP22 or TP32 are put into another mode such as "Port Side Mounting Mode" control via Orca will not work. To activate System Mode, press and hold the **TACK**, **STBY/AUTO** and **NAV** keys while turning power on to the autopilot.

Simrad AC2x autopilots connected via AP2x or AT10 are not supported. Autopilot controls won't work as these Simrad AP2x or AT10 don't broadcast to the NMEA 2000 network

It might still be possible for these autopilots to use navigation data from Orca Core (follow Orca routes). This depends on the converter, please check the converter documentation in advance.

How do I control a Garmin Autopilot?

Orca supports the following autopilots from Garmin:

- GHP series
- Reactor series

Supported modes:

- Standby
- Auto / Heading Hold
- Wind

- Navigation

For **Nav** mode to work on these autopilots, you'll need to set Orca as your Navigation Data source on your Autopilot's Head Unit display.

Autotack and Autogybe is not supported.

How do I control a Raymarine Autopilot?

Orca supports the following autopilots:

- Evolution EV-1, EV-2, EV-100 via SeataalkNG adapter cable
- Older Seataalk/Seataalk1 autopilots via a Seataalk to SeataalkNG adapter and SeataalkNG to NMEA2000 adapter cable. Includes most ST1000, ST2000, ST3000, ST4000, ST5000, ST6000, ST7000 models. These autopilots may have been sold under the brand name Autohelm or Raytheon.
- SPX autopilots via SeataalkNG

Supported modes:

- Standby
- Auto / Heading Hold
- Wind
- Navigation
- Autotack
- Autogybe

For **Nav** mode to work on these autopilots, you'll need to set Orca as your Navigation Data source on your Autopilot's Head Unit display.

Control of Seataalk autopilots requires a Raymarine Seataalk to SeataalkNG converter kit with part number E22158. Not all Seataalk/Seataalk1 autopilots support control from SeataalkNG. Contact Raymarine support to verify that your autopilot can be controlled via SeataalkNG.

For **Nav** mode to work with newer Head Unit displays, such as P70RS, and there is no Axiom or Element connected or powered on, you'll need to set a manual magnetic variation.

On the Head Unit display: **Go to Menu > Set-up > User Preferences > Variation**. Set it to on and add variation.

You find your current variation in Orca inside **Main Menu > My Boat > Connected Devices > Magnetic Declination**

In order for Orca to communicate with an SPX autopilot via SeaTalkng, the SPX autopilot course computer must be updated with v3.05 software, and the ST70 autopilot control head must be updated with v3.04 software. ST600x/ST700x/ST800x autopilot control heads will work without any software updates.

To enable Autogybe on Raymarine autopilots, you must ensure that the **Prevent Gybe** safety feature is disabled on your autopilot system.

Please refer to Raymarine's official documentation for detailed instructions on how to locate and adjust this setting on your specific autopilot model.

Some Raymarine autopilots require engaging **Auto** mode before engaging **Nav** mode.

How do I control a YachtD Autopilot?

Orca supports the following models:

- YDAP-04

Supported modes:

- Standby
- Auto / Heading Hold
- Wind
- Navigation
- Autotack
- Autogybe

How do I control my Autopilot with Orca Core?

The Orca Core can control [most](#) autopilots. With Orca, you can control your autopilot from your phone, tablet, Orca Display 2, and the Apple Watch.

How do I control my autopilot?

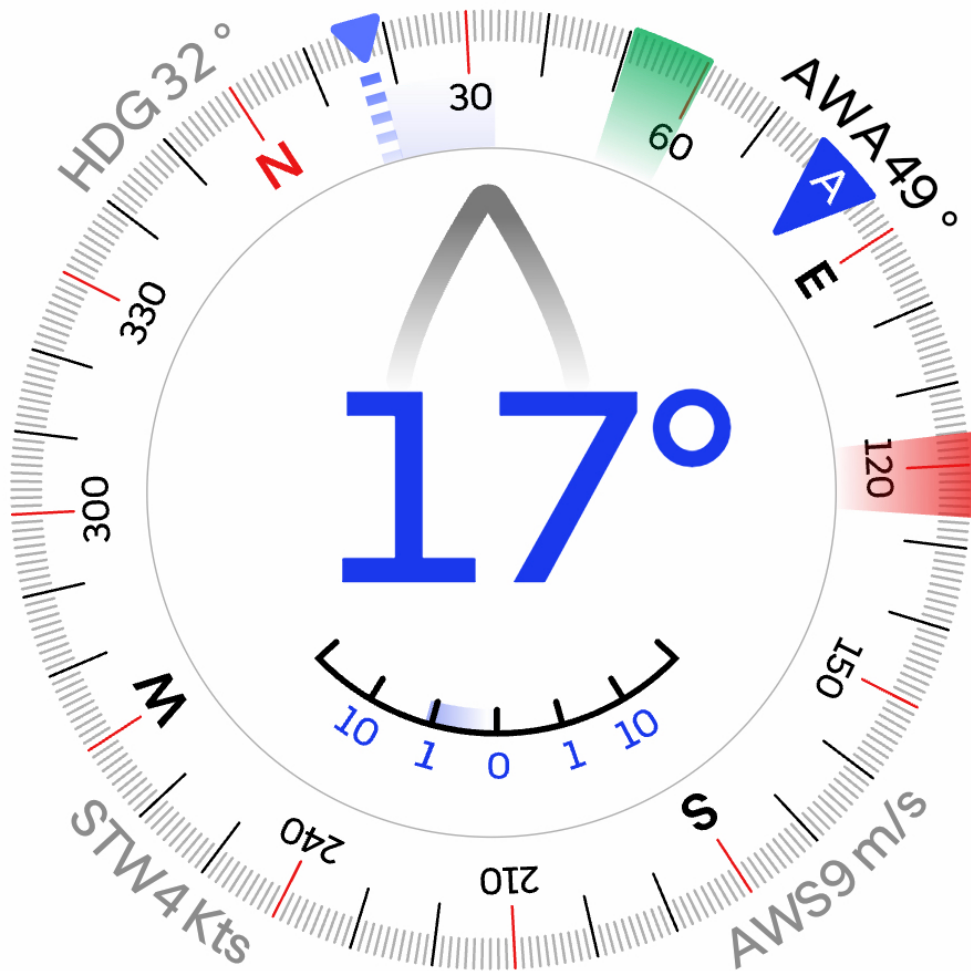
1. Power on your Autopilot
2. Connect your Orca Display or Orca Mobile Application to your Orca Core
3. Press **Instruments** at the bottom of the chart screen
4. Swipe to the left-most instrument page to find your autopilot controls

From the Autopilot Screen, you will be able to change the mode and heading of your autopilot.

12:21



Autopilot



« 10

< 1

1 >

10 »

Auto

A

No drift

ND

Nav

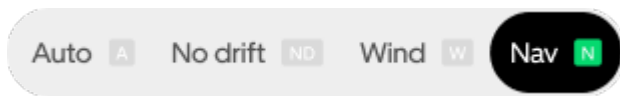
N

Wind

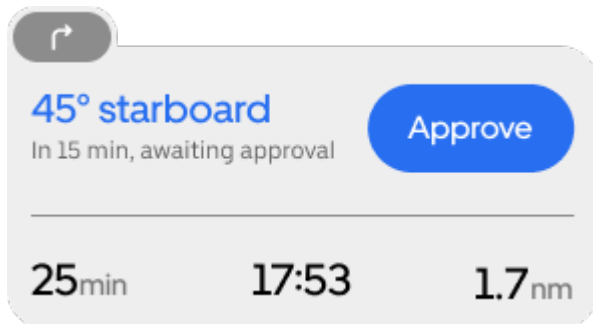
W

How do I make my autopilot follow a route?

To follow a route, [create a route](#) and select **Nav** as your navigation mode from the autopilot control.



Orca supports advancing through waypoints as traditional chartplotters. In **Nav** mode, a separate set of controls will appear that shows information about the upcoming leg.



Orca requires approval for all turns sharper than 30 degrees. Approval can be pre-granted up to 15 minutes ahead of the waypoint arrival. All other turns will be auto-approved.

What do I need to control my Autopilot?

Autopilots are systems that contain several parts:

- **Control Head** - The display where you set headings, engage the autopilot, and selects steering modes.
- **Heading Sensor** - A device that detects the boat's direction using a compass, gyroscope, and/or accelerometer.
- **Autopilot Computer (Course Computer)** - The central processor that receives sensor data, calculates steering commands, and manages overall autopilot behavior.
- **Actuator Control Unit (ACU)** - Interfaces between the autopilot computer and the drive unit, delivering power and translating steering commands into motion.
- **Drive Unit** - The mechanical or hydraulic component that physically steers the boat by moving the rudder or outdrive.
- **Chartplotter or GPS Receiver** - Supplies position, course, and waypoint data for automated navigation along predefined routes.
- **Rudder Reference Sensor (optional)** - Monitors the rudder's position and provides feedback to improve steering precision.

Orca may replace and make redundant some of those components. In particular:

- **Control Head** - With Orca, your mobile phone, tablet, Apple Watch and Orca Display 2 become Control Head unit. That said, we recommend to always have a backup Control Head on any autopilot installation

- **Heading Sensor** - The Orca Core's high precision 9-axis gyroscope and accelerometer can act as your main heading sensor.
- **Chartplotter or GPS Receiver** - The Orca Core provides navigational instructions to allow automated navigation along a predefined route.

In order to control your autopilot, you do not need an MFD as the Orca App connects directly to your Autopilot through the Orca Core.

However, controlling your autopilot is a critical operation. Orca strongly recommends having redundant controls - always keep a non-Orca backup controller on board.

To work correctly, autopilots need input from several sensors. Here's what's typically required for each mode:

Auto mode

1. Rudder angle
2. Heading sensor
3. Some autopilots also require: Course Over Ground (COG) and Speed Over ground (SOG) for leeway compensations.

Wind Mode

1. All requirements from Auto Mode
2. Magnetic variation sensor
3. Wind data sensor

Navigation mode

1. All requirements from Auto Mode
2. Navigation data from a navigation source, such as an Orca Core

The Orca Core is a **complete data source of Heading, COG/SOG, Magnetic Variation, and Navigation Data** for your autopilot.

Certain Raymarine autopilot models require Raymarine-branded sensors for input and may not accept Orca Core as a valid source.

Please consult Raymarine's official documentation for compatibility details.

How do I set up my Core for Autopilot control?

Before you attempt to control your autopilot, be aware of the following:

1. Simrad, B&G, and Lowrance autopilots only support a single navigation source. For Navigation mode to work on these autopilots, you'll need to set Orca as your Navigation Data source on your Autopilot's Head Unit display
2. Some autopilots require the Orca Core to share Compass and GPS data to function. [Calibrate your Orca Core](#) and activate sharing via **Main Menu > My Boat > Connected Devices** before you activate your Autopilot

Do not activate a route on a traditional chartplotter and in Orca at the same time if both are connected to your autopilot's NMEA network.

How to Transfer Your Orca Equipment to a New Owner

Core - Sync and Unpair

1. Ensure all data is fully synced to the Orca Cloud. To do this open the Orca app and go to **Main Menu > Logbook**, and press **Start Sync**. You must use a device with a cellular internet connection.
2. Wait until syncing reaches 100% before proceeding.
3. Once the Core is fully synced, unpair it from your account. To do this, in the Orca app go to **Main Menu > My Boat > Unpair Orca Core**. This removes the device from your account so the new owner can connect it following the steps outlined in the following article: [How do I connect to my Orca Core?](#)

The new owner will be able to obtain Logbook data from the moment they connect their Orca Account to the Core. They will not be able to see your old Logbook data.

Display - Factory Reset

1. Before handing over the Display, perform a factory reset to remove your data. To perform a factory reset, follow the instructions outlined by the following article: [How do I factory reset my Display 2?](#)
2. Once complete, the new owner can set it up as new.

Account

The new owner should create their own Orca account in the app if they do not already have one. Device ownership and access are linked to Orca accounts, not to individual devices.

Subscription

Subscriptions are linked to accounts and not devices. The new owner will need to purchase their own subscription. Any existing subscriptions will remain associated with the seller's account.

Which autopilots are supported in Orca?

Orca can control autopilots from B&G, Lowrance, Simrad, Raymarine, Garmin and YachtD.

To control your autopilot, connect the Orca Core to your autopilot's SimNet/NMEA/SeataalkNG network.

Orca's Autopilot Control is seamlessly integrated into the autopilot network – and it will mirror the controls and status of your standalone autopilot display. Any interaction you make in Orca will be shown on your standalone display and vice versa.

The following autopilot manufacturers are supported:

- [Simrad, B&G and Lowrance](#)
- [Raymarine](#)
- [Garmin](#)
- [YachtD](#)

Other autopilot manufacturers:

- Autopilots that support the standard NMEA Navigation and Cross Track PGNs work with Orca – but support can be limited and Orca offers no guarantee to work on those devices. Mode change and waypoint advancement are not supported for these autopilots.

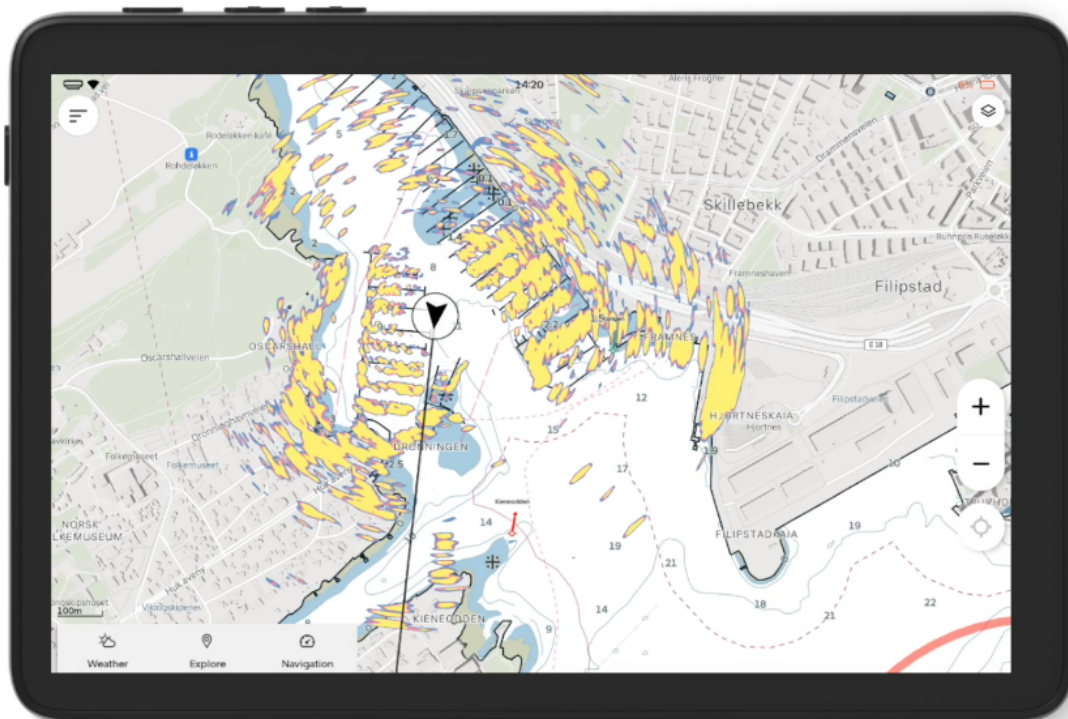
Orca does not support the commissioning of autopilots.

Pcnautic autopilots are not supported.

Should you have questions about support for your specific autopilot, don't hesitate to reach out via hello@getorca.com.

4d. Radar

How do I connect to a Raymarine radar?



Radar support is an advanced functionality of Orca Core. It allows you to view a Radar Overlay on your Orca Charts, and you can control your Raymarine radar directly via Orca.

Radar controls in Orca integrate seamlessly with your existing Raymarine chartplotter. Any change you make in Orca will also be reflected on your other systems that are connected to your Raymarine Radar.

Orca supports connecting to the following Raymarine radars:

- Quantum 1 & 2 with WiFi
- Quantum 1 & 2 without WiFi
- Please note, HD Digital Radome radar models are not compatible with Orca Core 2.

Only Orca Core 2 supports Radar connection via Ethernet.

Orca Core 1 can be connected to certain radar setups – but this connection is unofficial and Orca can not guarantee a functional experience as it relies on a 3rd party WiFi access point.

Supported functionality

All basic controls are supported, from changing modes (Harbor, Offshore, Weather, Bird, Custom) to range, sensitivity, and noise reduction. The following functionalities are not yet supported:

- Doppler color coding
- Guard zones
- Target trails
- Setup sector blanking
- Setup heading offset

Connecting to a Raymarine radar via Ethernet

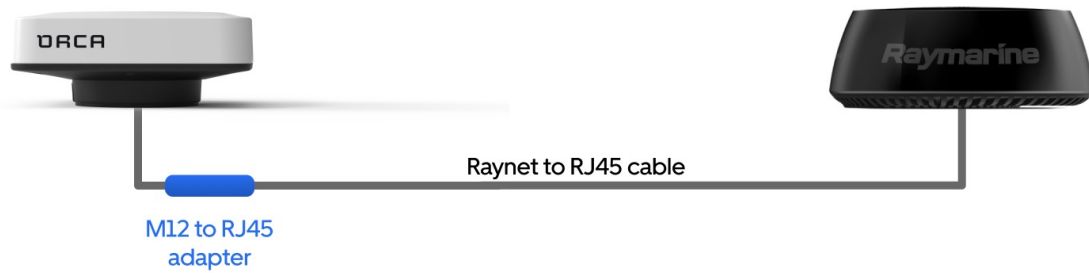
Orca supports the following connection topologies via the the Orca Core 2's 4-pin male ethernet cable:

1. **Direct connection** – an Ethernet cable between Quantum Radar and Core
2. **Connection via a Switch** – such as the Raymarine RNS/HS5 Switch or a standard Ethernet switch
3. **Connection via Axiom** – an Ethernet cable between Core and Axiom, and Ethernet or WiFi connection between Axiom and Quantum radar

Once connected, Orca will automatically detect the Radar and show Radar Controls in the Control Center. For information about controlling your Radar, see the article: [How do I control my Radar?](#)

1. Direct Connection

Direct connection is only recommended if you do not intend to access the Radar from any other devices.



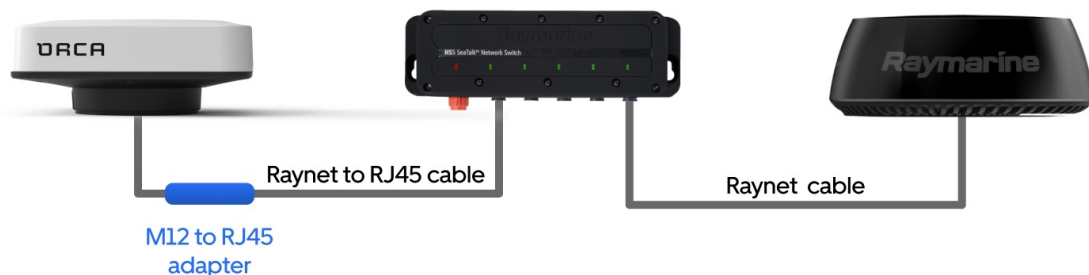
For direct connection, you will need:

- An M12 4-pin male to RJ45 female adapter¹
- A female RayNet to RJ45 male adapter cable²

2. Connection via a Switch

Connection via an Ethernet switch is recommended for when you have multiple devices controlling your Radar.

Orca Core should be connected directly to the same switch as your radar. Chaining multiple switches between the Orca Core and your radar may prevent Orca from discovering your radar.



For connection to a switch, you will need:

1. An M12 4-pin male to RJ45 female adapter¹
2. **Option A:** If you use a standard Ethernet switch, you'll need:
 3. a male-to-male RJ45 Ethernet cable
 4. a RayNet female to RJ45 male adapter cable²
5. **Option B:** If you use a Raynet Ethernet switch, you'll need:
 6. a RayNet female to RJ45 male adapter cable²
 7. a female to female Quantum data cable with RayNet connector³

3. Connection via Raymarine Axiom

Connection via a Raymarine Axiom makes for an easy installation. The Axiom must be powered on for Radar control to work in Orca.



For connection via Axiom, you will need:

1. An M12 4-pin male to RJ45 female adapter¹
2. A RayNet to RJ45 male adapter cable²

Axiom Pro has two Ethernet connections, allowing a cabled connection to both the Radar and Core without an external switch.

Recommended connection equipment

1. M12 4-pin male to RJ45 female adapter:

We recommend the following high-quality and cost-effective adapter: [Amphenol RJS-12D04FM-RS8001](#) (Mouser webshop) 2. **Raymarine RayNet female to RJ45 male cable:**

Raymarine part number A62360 / A80151 / A80159. See the [Raymarine website](#) for more options and cable lengths. 3. **Female to female RayNet cable:**

This cable should come in the box with the radar. It is usually long and white. See the [Raymarine website](#) for more options and cable lengths

Connecting Orca Core 1 to a Raymarine Radar

Cores without an Ethernet cable can also connect to Quantum Radars via a WiFi access point. The WiFi access point must in turn be connected to the Quantum Radar directly via Ethernet or via an Axiom.



For a WiFi access point connection, you will need to:

1. Contact Orca Customer Support via hello@getorca.com to verify if your access point is supported and set up a specific configuration on your WiFi access point
2. Connect your Radar or an Axiom with Radar access to your WiFi access point via an Ethernet cable
3. Connect the Core to the WiFi access point via WiFi Link

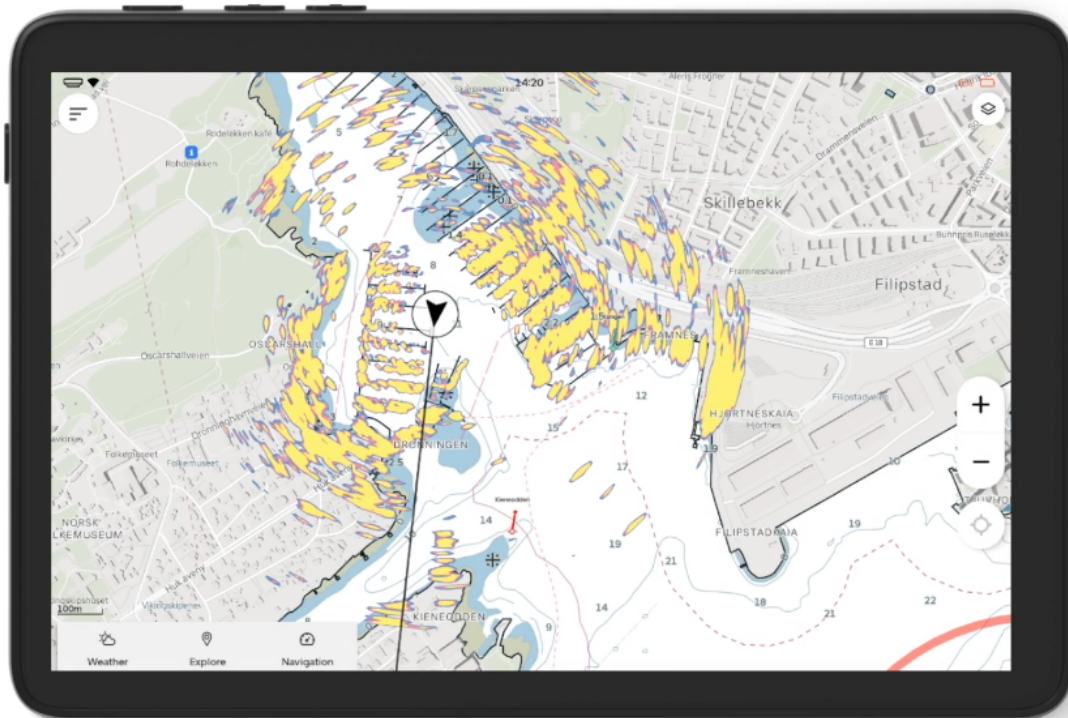
This connection option is not official and Orca can not guarantee functional support.

Do I need a Raymarine MFD for the initial setup of the radar?

Orca Core does not yet support Radar commissioning (the process of bringing a radar system from installation into fully operational status). Commissioning, which is essential for initialising and configuring radar systems, must be conducted through a compatible Multi-Function Display (MFD).

Once commissioning is completed through the MFD, the radar can be connected to Orca Core 2 for integration and usage and the MFD is then no longer required.

How do I connect to a Simrad or B&G radar?



Radar support is an advanced functionality of Orca Core. It allows you to view a Radar Overlay on your Orca Charts and control your Simrad or B&G radar directly via Orca. Simrad and B&G radars are brands made by Navico, so this article will refer to Navico radars.

Radar controls in Orca integrate seamlessly with your existing Navico chartplotter. Any change you make in Orca will also be reflected on your other systems that are connected to your Navico radar.

Orca supports connecting to the following Navico radars:

- HALO 24, 20+, 20, 8, 6, 4
- 4G

Only Orca Core 2 supports connecting to Navico radars.

Supported functionality

All basic controls are supported, from changing modes (Harbor, Offshore, Weather, Bird, Custom) to range, sensitivity, and noise reduction. The following functionalities are not yet supported:

- Doppler / VelocityTrack color coding
- Guard zones
- Target trails

- Setup sector blanking
- Setup heading offset

For dual-range radar setups, Orca will connect to the primary radar (typically called "Radar A").

Connecting to a Navico radar

Orca supports the following connection topologies via the the Orca Core 2's 4-pin male ethernet cable:

1. **Direct connection** – an Ethernet cable between the radar and Core
2. **Connection via a Switch:**
3. Connection via a Standard Ethernet Switch
4. Connection via a Navico Ethernet Switch – such as the Navico [NEP Switch](#)

Once connected, Orca will automatically detect the Radar and show Radar Controls in the Control Center. For information about controlling your Radar, see the article: [How do I control my Radar?](#)

1. Direct Connection

Direct connection is only recommended if you do not intend to access the Radar from any other devices.



For direct connection, you will need:

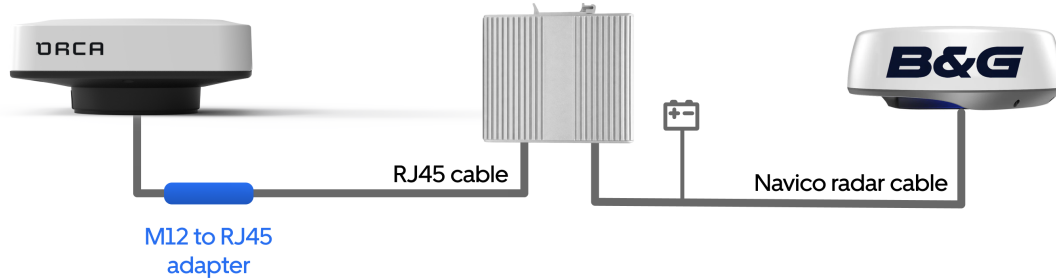
- An M12 4-pin male to RJ45 female adapter¹
- The Navico radar interconnector cable²

2. Connection via a Switch

Connection via an Ethernet switch is recommended for when you have multiple devices controlling your Radar.

Orca Core should be connected directly to the same switch as your radar. Chaining multiple switches between the Orca Core and your radar may prevent Orca from discovering your radar.

2a) Connection via a Standard Ethernet Switch



For connection to a Standard Ethernet Switch, you will need:

1. An M12 4-pin male to RJ45 female adapter¹
2. A male to male RJ45 cable
3. The Navico radar interconnector cable²

2b) Connection via a Navico Ethernet Switch



For connection to a Standard Ethernet Switch, you will need:

1. An M12 4-pin male to RJ45 male adapter³
2. The Navico 5-pin male to RJ45 female adapter cable (x2)⁴
3. The Navico radar interconnector cable²

Recommended connection equipment

1. **M12 4-pin male to RJ45 female adapter:**

We recommend the following high-quality and cost-effective adapter: [Amphenol RJS-12D04FM-RS8001](#) (Mouser webshop)

2. **Navico radar interconnector cable**

This cable should come in the box with the radar. It is usually long (up to 30m) and white. Here is an example: [Broadband 3G/4G Scanner connection Cable](#)

Please ensure that your interconnector cable fits your radar 3. **M12 4-pin male to RJ45 male adapter**

We recommend the following high-quality and cost-effective adapter: [L-COM M12RJ454D-0.5](#) (Digikey webshop) 4. **Navico 5-pin male to RJ45 female adapter cable (x2)**

One of these cables should come in the box with the radar: [SKU: 000-0127-56](#)

Please note that you will need two of these cables to complete the setup. One should go between the M12 4-pin male to RJ45 male adapter and the other between the Navico switch and the Navico radar cable.

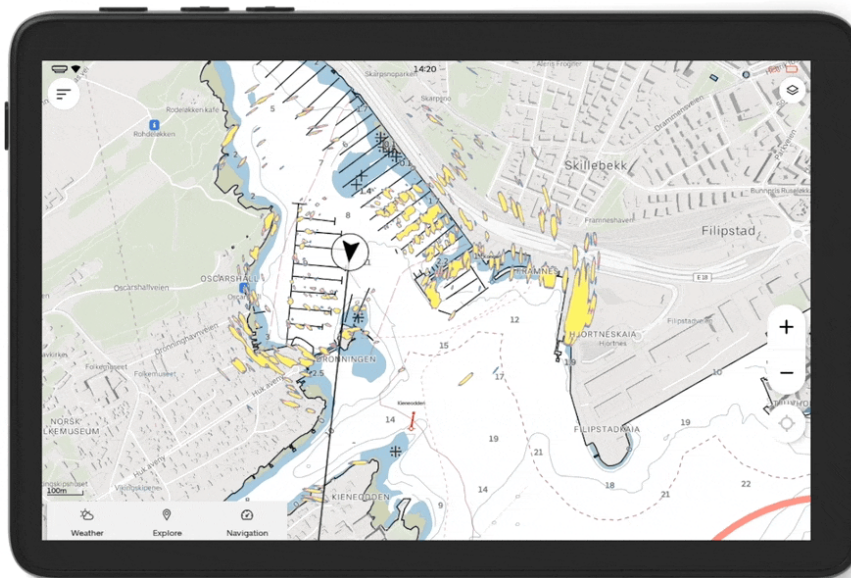
Do I need a Navico MFD for the initial setup of the radar?

Orca Core does not yet support Radar commissioning (the process of bringing a radar system from installation into fully operational status). Commissioning, which is essential for initialising and configuring radar systems, must be conducted through a compatible Multi-Function Display (MFD).

Once commissioning is completed through the MFD, the radar can be connected to Orca Core 2 for integration and usage and the MFD is then no longer required.

How do I control my Radar?

Orca gives you advanced radar control on iOS, Android, and Orca Displays.



Which radars are supported?

Orca supports radars from several manufacturers. See the following articles for each manufacturer for how to connect Orca to your radar:

1. [Raymarine](#)
2. [Simrad and B&G \(Navico\)](#)

Before you control your Radar

For Radar control to be available, you must:

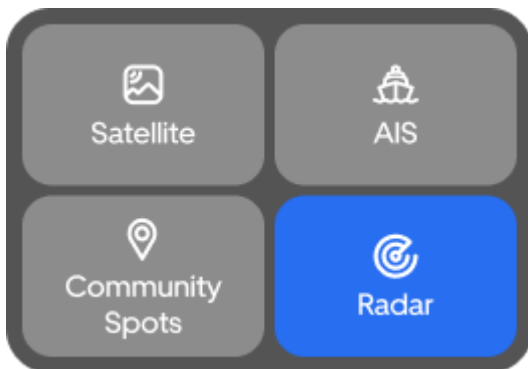
1. Connect the Core to your radar
2. Power on the Radar
3. If you have connected the Radar via a chartplotter, power on the chartplotter
4. If you don't have an external heading source on your boat network, [calibrate your Core's compass](#)

If your Radar Overlay does not align properly with your charts, it means your heading source is not calibrated properly. In this case, verify that your heading source is properly calibrated.

Showing and hiding the Radar Overlay

Radar is shown as a layer on top of your chart. To show the Radar Overlay:

1. Open your **Control Panel**. The **Control Panel Button** is found in the top right corner of your chart.
2. Press on **Radar** in the layer group. The blue color indicates that the radar layer is turned on.



Turning on the Radar layer in Orca will also set your Radar to Transmit mode. Hiding the Radar layer will not stop Radar transmission.

Reading the Radar Overlay

The Radar Overlay shows the intensity of a radar return as different colors, using this color map:



Weak

Strong

Controlling your Radar

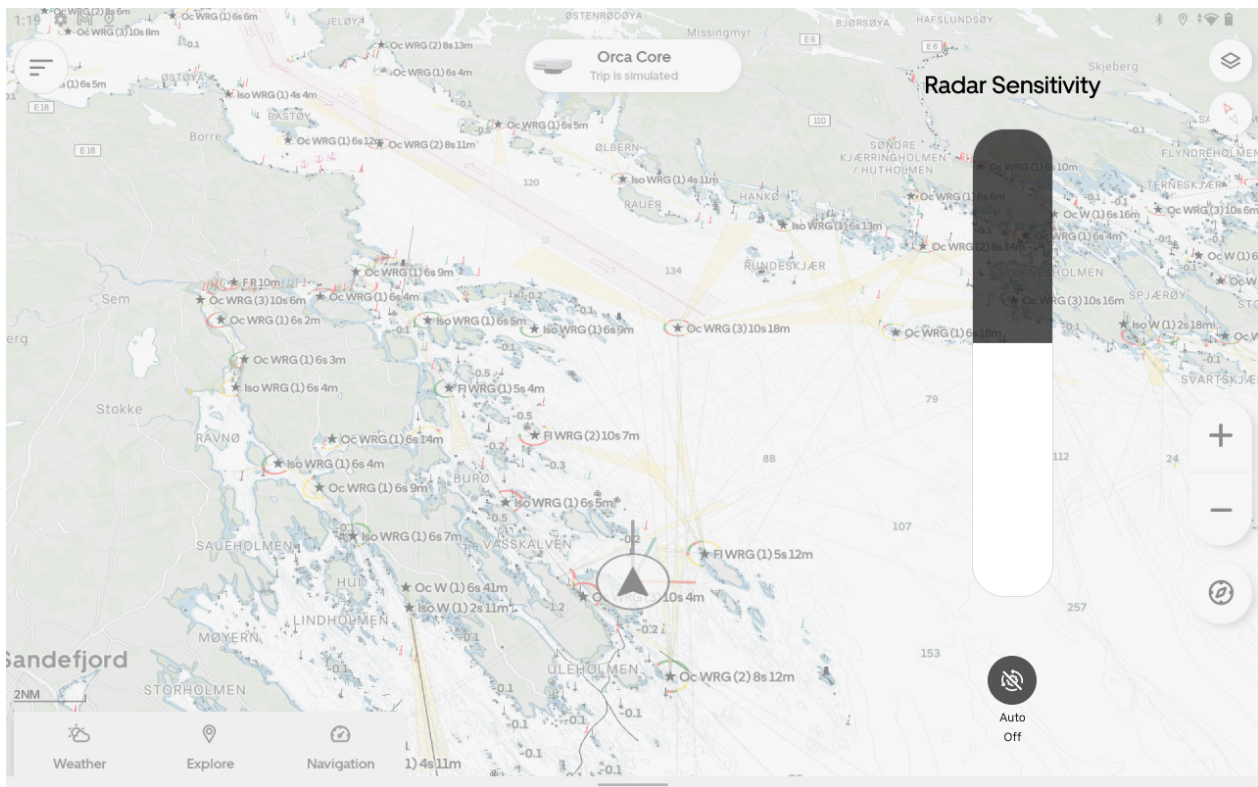
From the Control Panel, you will be able to adjust your Radar. Press **Radar Status** to change between **Transmit** and **Standby**.

Radar mode lets you select between modes that are predefined by your radar manufacturer.



Sensitivity, **Wave noise reduction**, and **Rain noise reduction** can be adjusted by dragging the sliders.

Pressing the vertical three dots next to each slider will show a larger slider control for more accurate controls along with the option to set **Auto mode** for the given option.



All changes to radar controls in Orca will also affect your other radar-capable devices.

4e. Logbook

How do I view my past trips?

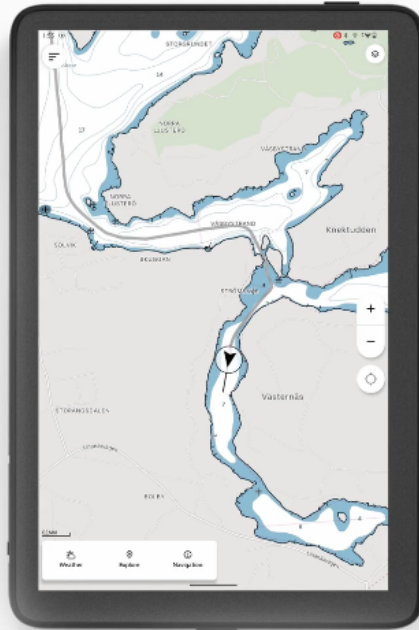
Orca gives you two ways of viewing your past trips:

1. **Historical Line** – shows you up to the last 48 hours of navigation in the map.
2. **Logbook** – A complete log of your past trips, including data from your boat network.
Logbook is viewed via **Main Menu > Logbook**

Historical Line is designed as an in-the-moment navigation aid, while Logbook is designed as a long-term log of your trips at sea.

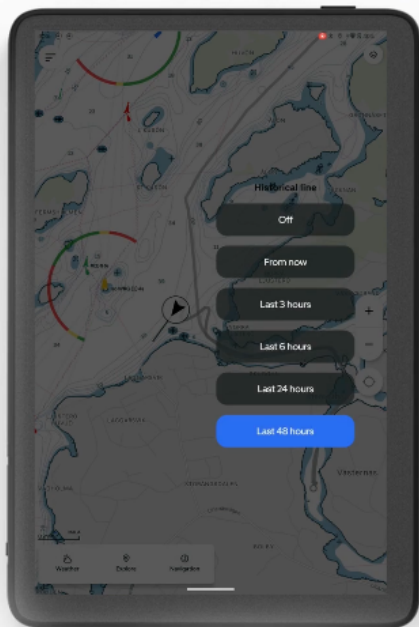
What is Historical Line?

Historical Line shows you exactly where your boat has been. It runs on your Orca Core and leverages the Core's high-accuracy GPS and advanced motion detection to create a precise track of your boat's movement.



Historical Line will show your past track as a grey line on the map. If you stop, it will create a circle to indicate the stop.

You control your Historical Line via **Control Center > Historical Line**. Historical line gives you the option to select between 3, 6, 24, and 48 hours of track. You can also reset it to show the line "from now".



Historical Line synchronizes between all your devices via the Core or via the Orca Cloud.

What is Logbook?

Logbook collects data about your boat and devices connected to your Core via your NMEA network.

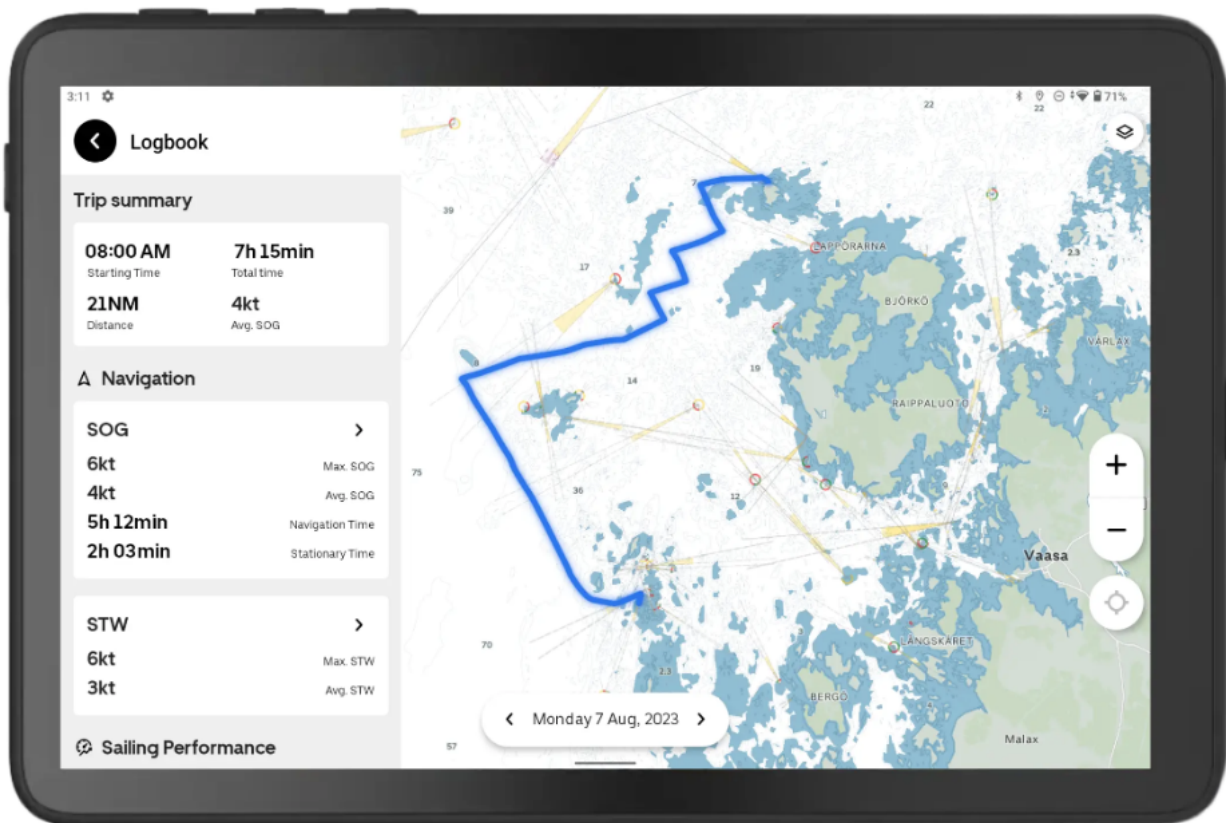
The data is uploaded to the Orca cloud when your phone, tablet, Orca Core, or Orca Display has an internet connection – where the data gets processed to give you detailed insights into your boating trips.

When does Logbook record a trip?

Your Core will collect trip information automatically. The Core will begin when it has moved approximately 50 meters. The Core will continue to record until it becomes stationary. A trip must be more than 0.6 Nautical Miles before it will be shown in the logbook.

How do I view Logbook?

Orca Core owners can access the Logbook via the Main Menu. From here, you get an overview of your most recent trip.



To view older trips, tap one of the arrows in the time selector at the bottom of the screen. You can also tap on the date at the center of the time selector to view all your past trips and select the one you want to view.

Logbook will show you detailed data about your navigation, sailing performance, wind, and tides depending on which sensors are available on your boat. To view more details about a topic, tap on it.



The details will show a graph of the topic along with average and max values – letting you understand the development of a particular metric throughout your trip.

How do I download my trips?

Orca Core owners can export their recorded trips in GPX format. To download trips, open **Main Menu > Logbook** and select the day of the trip you want to export. Click on the three dots and select **Export GPX**. The Orca App will generate a GPX file that you can save or share with other apps.

21:24

46

Sabadell

Mollet del Vallès

B-30

C-58

Santa Coloma de Gramenet

l'Hospitalet de Llobregat

Captain Spider

FI W (2) 15s 108m

B-10

C-31

FI W (1) 5s 32m

C-31

1.3

2NM

Weather

Explore

Navigation

I am missing trips in the Logbook, what do I do?

There are several reasons why your trip may not appear in your Logbook.

1. For your Orca Core to record Logbook data, it must either have a GPS fix from its own receiver or access to the Internet via WiFi or Ethernet in addition to a GPS fix via NMEA 2000. You can validate that your Core has a GPS fix or internet access via **Main Menu > My Boat**.
2. Past trips must be Synced from the Orca Core to the Orca Cloud to appear in your Orca App and Orca Display. To transfer the trips, use a device with a cellular internet connection, open **Main Menu > Logbook**, and press **Start Sync**.
3. To view Logbook data older than 7 days, you need a Smart Navigation subscription. Read more about the differences between subscriptions in [this article](#).

Both Historical Line and Logbook features require an Orca Core

What information is available in the Orca Logbook?

There are five main categories of information that the Logbook shows:

1. **Boating Track** – shows you where you travelled on the chosen day in the Logbook.
2. **Trip Summary**- provides an overview of key information from your trip.
3. **Navigation**- shows Speed Over Ground and Speed Through Water
4. **Environment**- shows information regarding wind and currents
5. **Consumption**- shows battery voltage and fuel consumption
6. **Fuel tanks**- shows the difference in fuel between the end and start of the trip

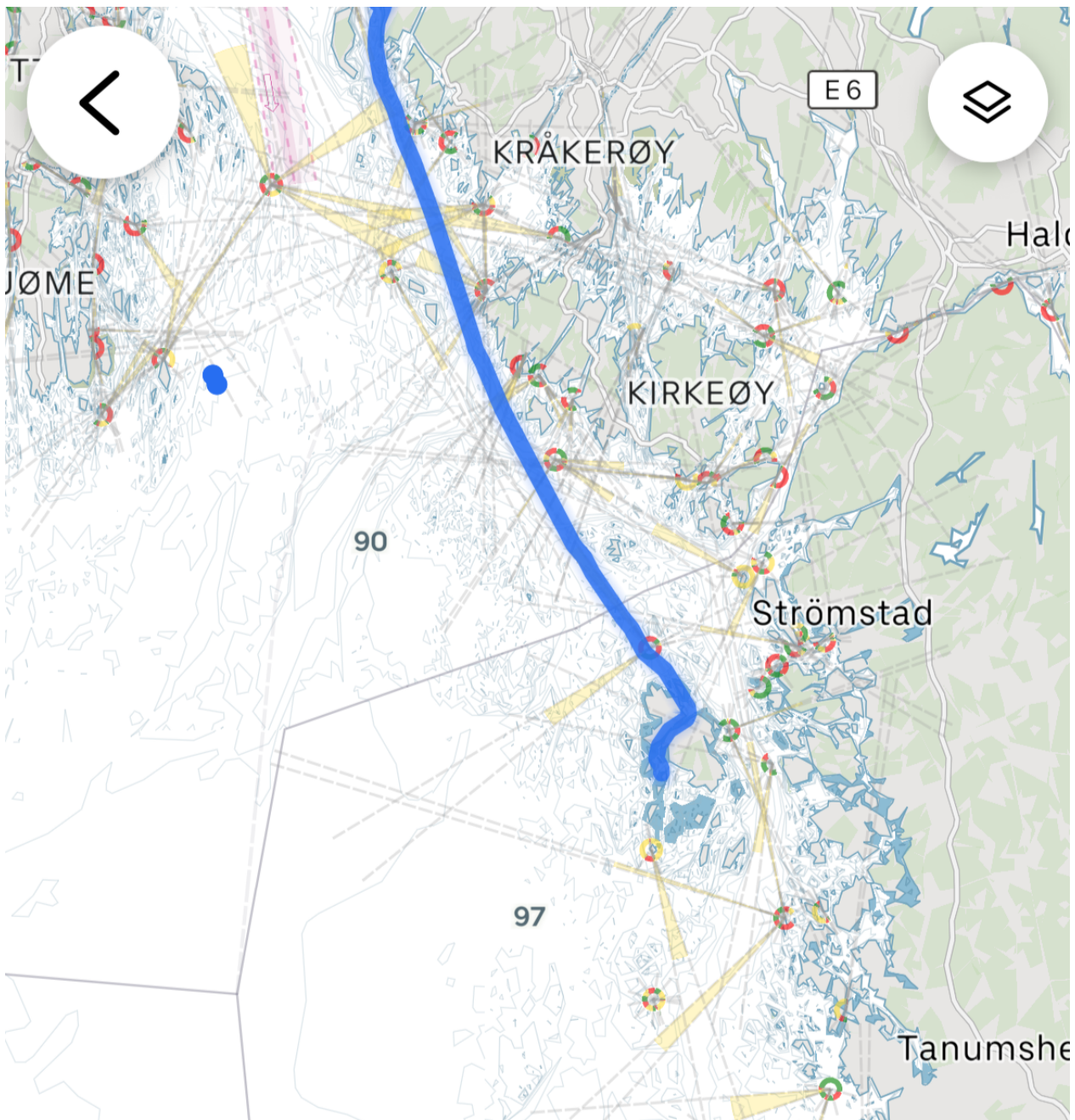
Logbook data is divided into calendar days, so the data from a trip that starts and ends on different days will be divided accordingly

The Logbook requires an Orca Core

How does the Boating Track appear in the Logbook?

When you enter the Logbook, the Boating Track for your most recent day recorded appears, with the rest of the logbook appearing below.

You can hide the Boating Track and map view by scrolling up.



Logbook



Trip summary



Starting Time

10:49

Travel time

2h 15min

Distance

29.8NM

Avg. SOG

17kt

What appears in the Trip Summary?

Four types of information appear.

1. **Starting Time**
2. **Travel time**
3. **Distance**
4. **Average Speed Over Ground**

This information can be exported as a GPX file, by clicking the three horizontal dots in the right-hand corner.

Trip summary

Starting Time
10:49

Travel time
2h 15min

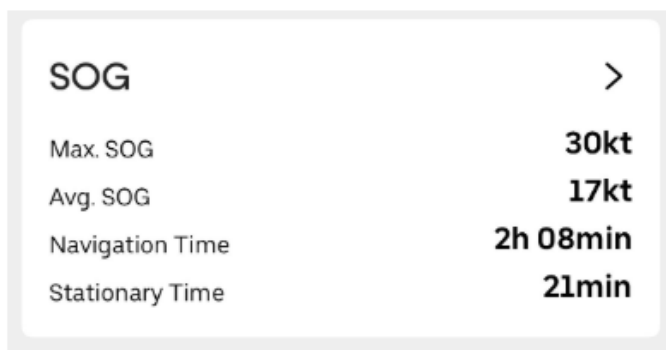
Distance
29.8NM

Avg. SOG
17kt

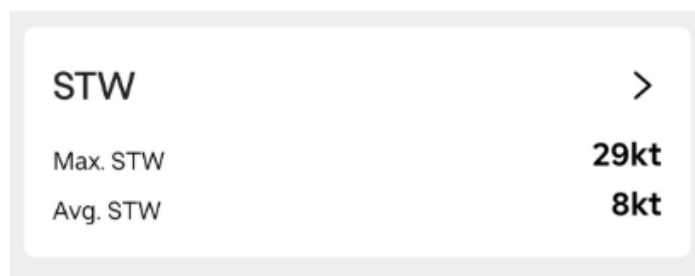
What appears under Navigation?

Two types of information appear:

- **Speed Over Ground (SOG)** - Both maximum and average SOG are shown, as well as how much time is spent moving. A graph showing how speed differs through time is also included.



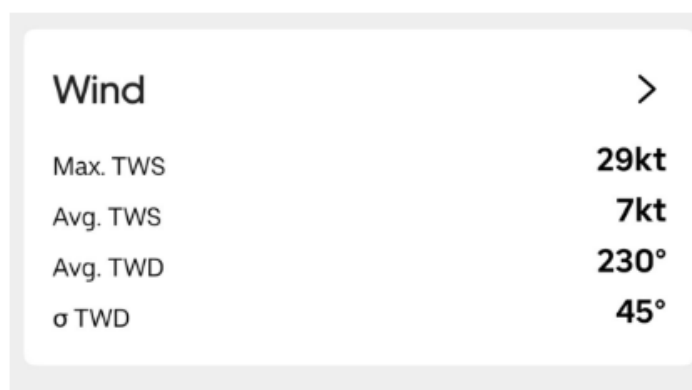
- **Speed Through Water (STW)** - Maximum and average STW are shown. Like SOG, a graph is also included.



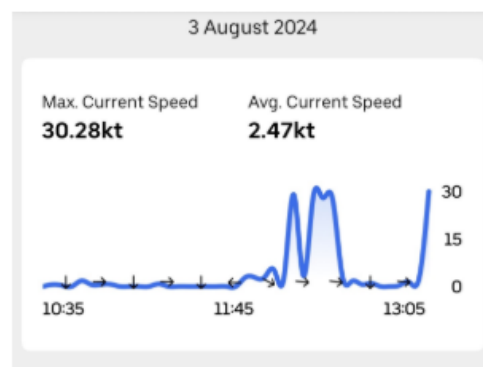
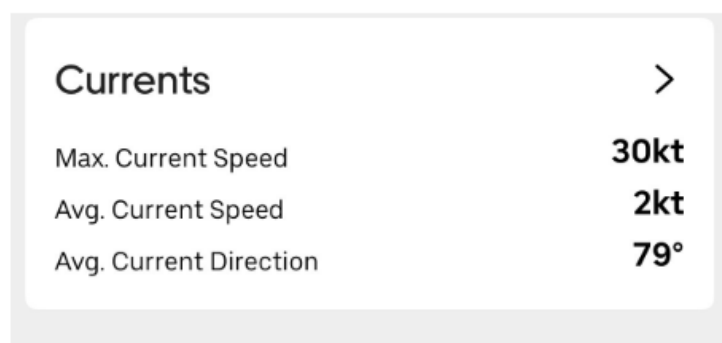
What appears under Environment?

Two types of information appear:

- **Wind** - Maximum and average True Wind Speed (TWS) are shown, as well as average and minimum True Wind direction (TWD). The TWS data is shown on a graph.



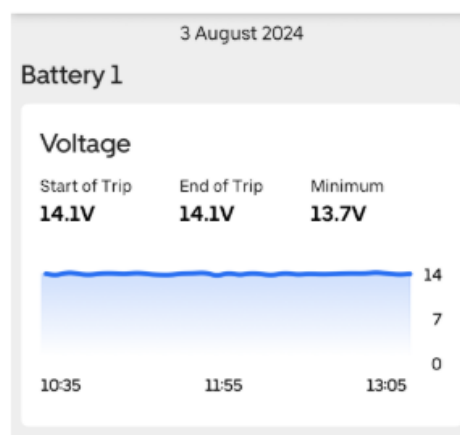
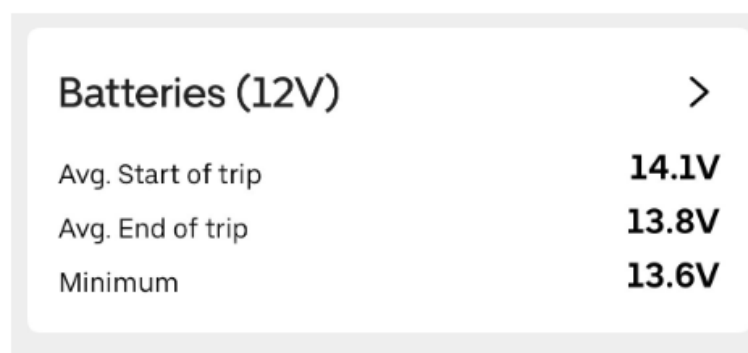
- **Currents** - Maximum and average Current Speed are shown, as well as average Current Direction. The Current Speed data is shown on a graph.



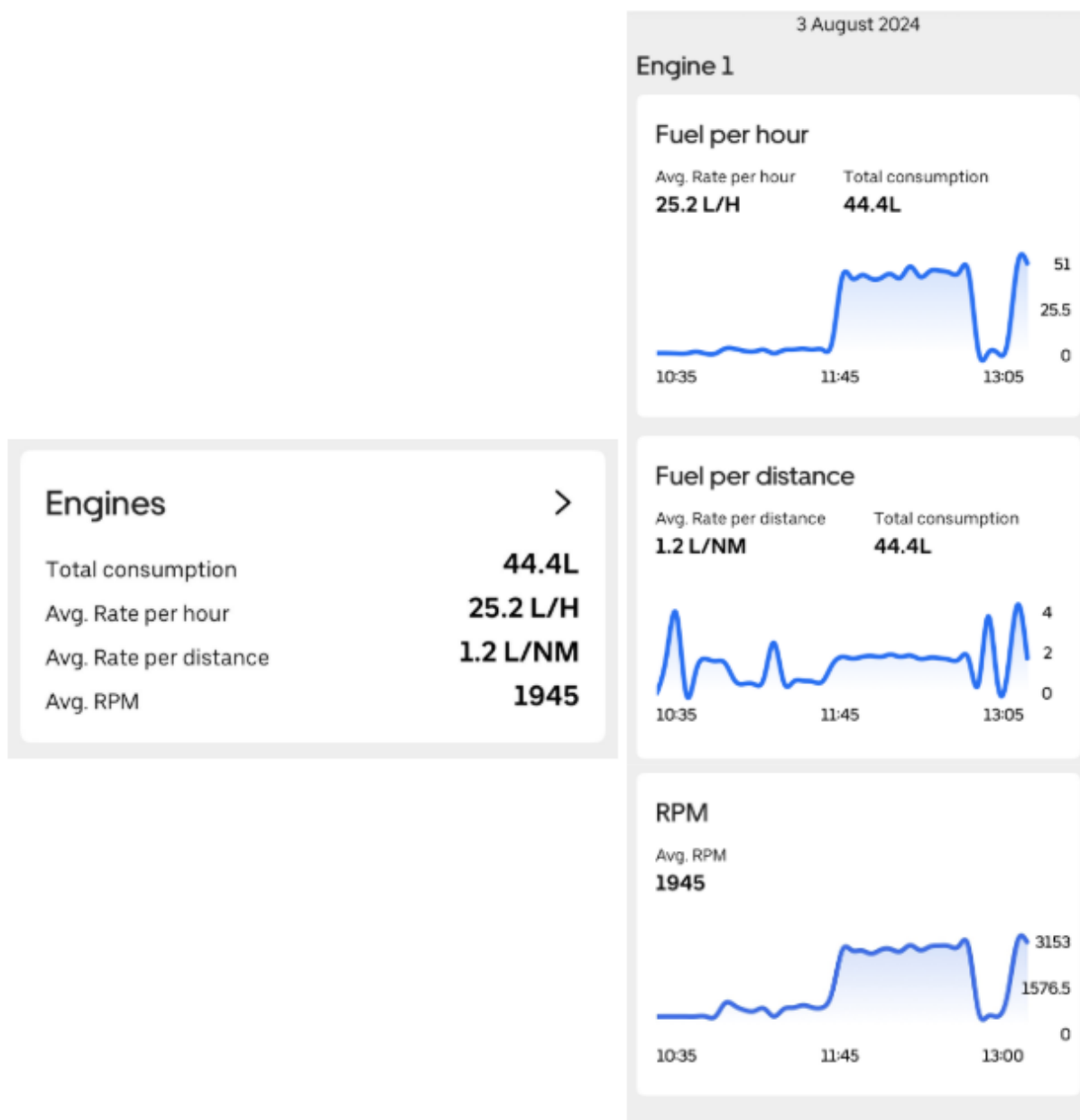
What appears under Consumption?

Three types of information appear:

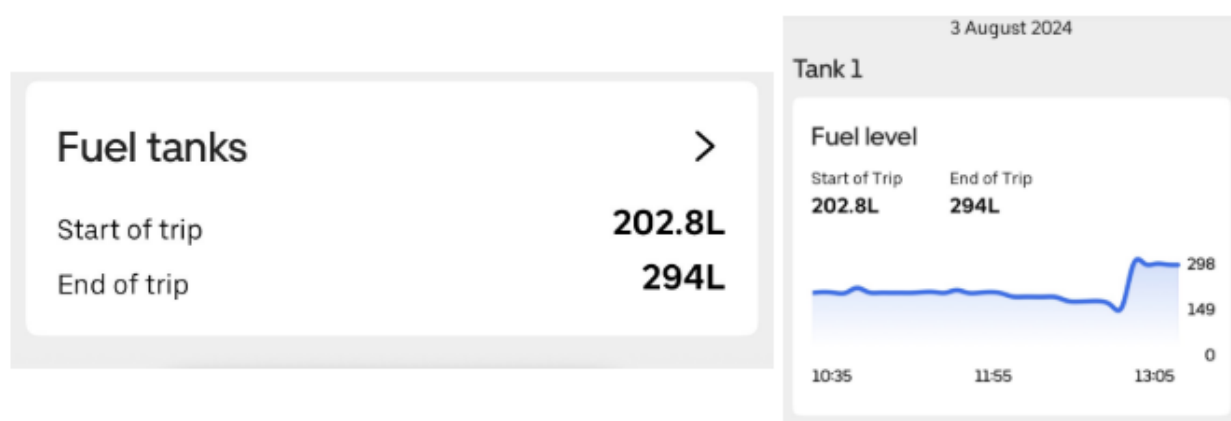
- **Batteries (12V)** - The average voltage of the batteries at both the start and end of the trip is shown, as well as the lowest voltage recorded during the trip. A graph is available for each battery.



- **Engines** - Total fuel consumption, the average consumption rates per hour and distance, as well as the average RPM are shown. Graphs showing all this data are available for each engine.



- **Fuel tanks** - The fuel levels at the start and end of the trip are shown. A graph is available for each individual tank.

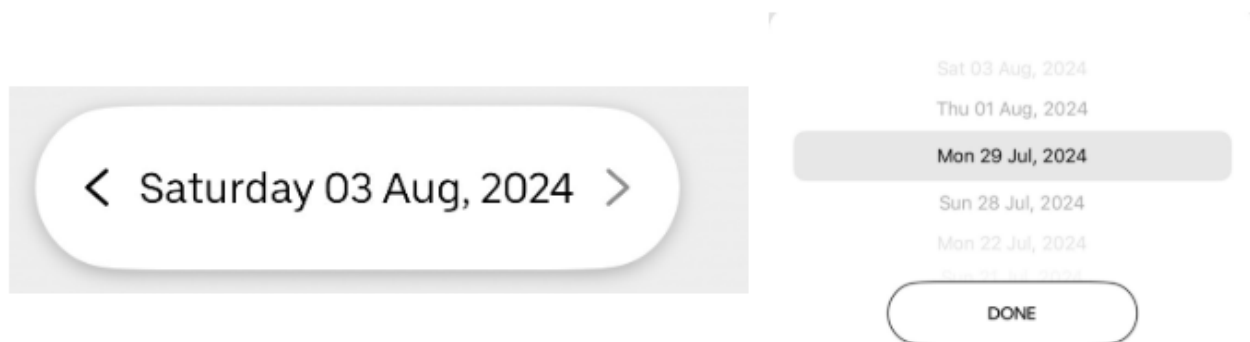


How can I view another trip in my Logbook?

Although the logbook automatically shows the most recent trip, it is easy to view other dates.

There are two options to do this:

- **White button at the bottom of the screen** - The bottom of the screen displays the data currently being shown. Click the arrows to the left or right of the date to go to the trips directly before and after the current one. You can also press directly on the date to scroll through all trips



- **Calendar icon** - This icon is next to 'Logbook' at the top of the page. It is also available when you click on every sub-category, so you can skip through dates and go to a particular date category. After clicking on this icon, you scroll through the dates until you find your chosen trip.

< Logbook



When the app is not connected to the Core or to the internet, the logbook may not be complete. A notice will appear on the app (see screenshot below)



The App is not connected to the Core or to the Internet. Your logbook may not be complete.

4f. Guardian Mode

How do I activate Guard Mode?

What is Guard Mode?

Guard Mode is a suite of safety features designed to provide peace of mind while your boat is at anchor. In its initial implementation, Guard Mode acts as an "Anchor Watch," enabling you to monitor your boat's position and receive alerts if it drifts outside a designated safety area.

Whether you're relaxing onboard or exploring ashore, Guard Mode ensures you can keep track of your boat's location with precision and ease.

19:05



Boat is outside safety zone

My Boat has exited the safety zone



Boat is outside safety zone

Who is Guard Mode useful for?

Guard Mode is ideal for anyone seeking peace of mind while anchored or moored. Common scenarios include:

- **For safety:** When you're onboard—whether sleeping overnight or relaxing during the day—and want to be notified if your boat moves a certain distance from its anchor point.
- **For security:** When you're away from your boat and want to ensure it stays secure and in the same location where you left it.

How does Guard Mode work?

Guard Mode monitors your boat's location relative to a designated Safety Area. If your boat exits this area, Guard Mode sends alerts to your connected Orca devices.

There are three scenarios for using Guard Mode:

1. Full Remote - Connected Core

The Orca Core is connected to the Internet via Wi-Fi or a mobile hotspot. The Orca Core monitors the boat and broadcasts its position to the Orca Cloud.

All devices with the Orca App installed and Internet access will receive Guard Zone notifications if an event occurs.

19:15



< Guard mode

Monitoring

Guard Mode will use Orca Core to monitor your boat and broadcast its status via internet.

 **Internet access via** Orca-Tech

 **Last broadcast** a few seconds ago

Notifications

You will receive notifications on all your devices when your boat leaves the safety zone. Devices running Orca with the screen unlocked will sound an alarm.

2. Partially Remote - Orca App as a Proxy

If your Orca Core lacks Internet access, you can use your mobile device or tablet as a proxy to send the Core's data to the Cloud.

Open the Orca App on your device, connect it to the Orca Core, and keep the app running with the screen unlocked.

The Orca Core will monitor the boat's location and send data to the Orca Cloud via the Orca App. All devices with the Orca App installed and Internet access will receive notifications if an event occurs.

3. Local Connection - No Internet Access

If neither the Orca Core nor your mobile device has Internet access, you can still activate Guard Mode locally.

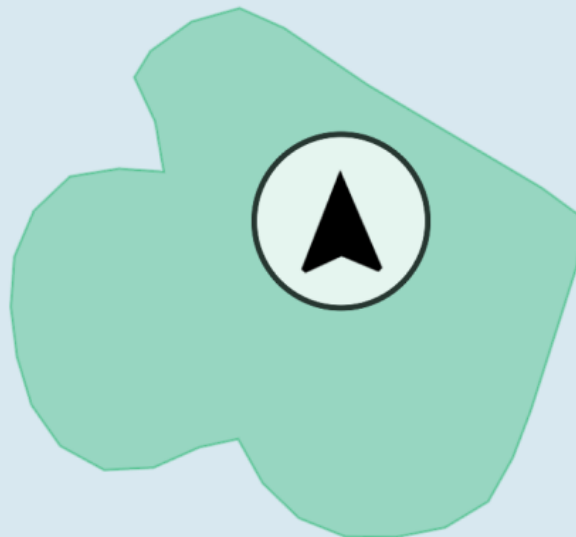
The Orca Core will monitor the boat's location and send data directly to the Orca App. Only the device where Guard Mode was activated will receive notifications if an event occurs.

How do I activate Guard Mode?

To activate Guard Mode:

1. Navigate to the **"My Boat"** section in the Orca App and select **"Set Guard Mode"**.
2. A map centered on your boat's location will appear, along with two widgets:
3. **Wind Widget:** Displays the maximum wind speed and direction for the next 12 hours. Tap the widget for more weather details.
4. **Depth Widget:** Shows the current depth at your boat's location.
5. Pan the map to your desired location and press **"Draw Safety Area"**.
6. Use your finger to draw the safety area by tapping and holding while outlining the zone. Clear and redraw if needed.
7. Press **"Activate Guard Mode"** to start monitoring. The safety zone will sync across all your devices.

19:05



Draw your safety zone on the map

Activate Guard Mode

What type of alerts do I get?

Once activated, Guard Mode monitors your boat's position and triggers alerts if it exits the safety zone:

- **Visual and Audio Alerts:** The safety zone boundary turns red, a warning sound plays, and a local notification appears in the app.
- **Escalated Alert:** If the boat remains outside the safety zone for more than 30 seconds, a louder alert will sound.
- **Push Notifications:** All registered devices receive push notifications if the boat exits the safety zone or if the Cloud does not receive location data from the boat for more than 15 minutes.

19:05



Boat is outside safety zone

My Boat has exited the safety zone



Boat is outside safety zone

What do I need to use Guard Mode?

To activate Guard Mode, you'll need an Orca Core. For remote use while off board, ensure the Orca Core remains powered and connected to the Internet.

Guard Mode is free for now, but in the future it will have different availability through two subscription tiers:

- **Free:** Local Guard Mode functionality.
- **Smart Navigation:** Full Guard Mode experience with partial and full remote support.

4g. Remote Access

How do I connect remotely to my boat?

Orca supports Remote Access, allowing you to connect remotely to your boat via the internet.

Remote Access allows you to check your boat's position, fuel levels, battery status, and other vital parameters – so you can know that all is well and ready for your next trip.

When is Remote Access useful?

Remote Access is for those who want peace of mind when they are not aboard their boat. Typical situations to use Remote Access are:

- You are at anchor and want to view your boat's position and wind information when you are away from the boat
- You want to ensure your boat is ready before your next journey, and that battery status and fuel levels are as expected.

What do I need to be able to use Remote Access?

To use Remote Access you need an Orca Core with a version 0.22.0 or higher. Remote Access is active when the Core is powered on and one of the two conditions is met:

1. The Core is connected to the Internet via WiFi Link or Ethernet
2. The Core is connected to a phone, tablet, or Orca Display 2 with internet access, and the Orca app is actively running on that device

How do I verify that Remote Access is active?

Remote Access is active when your Core has internet access. You can verify this via **Main Menu > My Boat**.

16:34

92%



My Boat

Manage Boats



Anchor watch



Core orca-7e85c6 status

Supply voltage

12.12V

Connection type

Bluetooth

GPS reception

No signal

Core internet access

Not connected

Core network link



Wi-Fi

Not connected



Ethernet

Not connected



Update



Calibrate compass



Calibrate TWD



Connected devices



How often are Remote Access instruments and location updated?

The update frequency of the data depends on the data type. Most data is updated minutely.

Remote access is currently available to all Orca Core owners. In the future, Remote Access will be added to an active subscription.

4h. Sailing Processor

How do I get accurate wind and currents information?

To make better sailing decisions, you want to understand the True Wind Speed, True Wind Direction, and the currents that affect your boat.

Knowing True Wind, you can keep track of wind shifts, derive laylines, and measure your sailing performance against your Polar Diagram. It may sound trivial to calculate True Wind accurately, but it is a complex process that involves a lot of math and fine-tuned calculations.

Orca's Sailing Processor handles these complex calculations, giving you accurate wind and current information to sail better.

What do I need for the Sailing Processor to work?



The Sailing Processor runs on your Orca Core. For it to work, you need:

- An Orca Core with GPS reception and a [calibrated compass](#)
- An NMEA 2000 Wind Sensor connected to your Orca Core

To get Speed and Direction of Currents, you also need a Speed Through Water sensor connected to your Orca Core.

If you do not have a Speed Through Water sensor, Orca will assume there are no currents in your area of sailing.

What environmental information will the Sailing Processor provide?

The Sailing Processor will provide the following information in Orca and on your NMEA 2000 network, which will also be available for other displays to show:

- True Wind Speed
- True Wind Direction
- True Wind Angle
- Back-calculated Apparent Wind Speed
- Back-calculated Apparent Wind Angle

The Sailing Processor will also provide the following information in Orca (only available in Orca due to limitations in the NMEA 2000 standard):

- Speed of Currents
- Direction of Currents

What polar information will the Sailing Processor provide?

When you [set a Polar Diagram](#), the Sailing Processor will use the True Wind information to calculate your Polar Performance targets. This information is only available in Orca due to limitations in the NMEA 2000 standard. The following information is available in Orca:

- Polar Performance Percentage
- Target Boat Speed
- Target Run Angle
- Target Beat Angle

Which calibrations are available in the Sailing Processor?

True Wind Direction Tacking can be calibrated via **Main Menu > My Boat > Calibrate TWD**.

Orca guides you through the calibration, which involves sailing upwind on starboard and port tack to measure the effect of True Wind Direction Tacking on your boat.

A TWD calibration run takes typically 5 minutes and should be done in an area with as small waves and currents as possible.

What other factors does the Sailing Processor compensate for?

The Sailing Processor automatically compensates for the following factors:

- Heeling and mast motion is compensated for via the Orca Core's Motion Processor

- A Wind Gradient formula is applied to scale True Wind Speed to 10 meters height for Polar Performance targets
- Downwind Acceleration is compensated
- Leeway is compensated

The Sailing Processor also applies dynamic filtering that delivers a balance between responsiveness and smoothness for all information.

For further details, see the [Sailing Processor Blog Post](#).

4i. Connectivity

How do I connect my Orca Core to a WiFi or Ethernet network?

Orca Core can be connected to an existing WiFi or Ethernet network.

Why should I connect the Core to a WiFi or Ethernet network?

If you have a WiFi and/or ethernet network onboard, we recommend connecting your Core to the network for the following reasons:

1. **To simplify your onboard connection setup.** It will allow your phone, tablet, and Orca Display to connect to your onboard WiFi network, receive internet, and stay connected to the Core via high-speed WiFi
2. **To connect the Core to the internet.** This is required for some of the Core's functionality and other cloud functionality.
3. **To connect the Core to radar.** An ethernet connection will give the most stable and reliable radar experience.

There are two ways to connect the Core to a network: via WiFi Link and via an ethernet cable. If both options are available to you, connect via an ethernet cable for the most reliable setup.

How do I connect the Core to an onboard WiFi?



To connect your Core to a WiFi network, open **Main Menu > My Boat > Wi-Fi**. From here, find your WiFi network and enter the WiFi password for the network.

16:34

92%



My Boat

Manage Boats



Anchor watch



Core orca-7e85c6 status

Supply voltage

12.12V

Connection type

Bluetooth

GPS reception

No signal

Core internet access

Not connected

Core network link



Wi-Fi

Not connected



Ethernet

Not connected



Update



Calibrate compass



Calibrate TWD



Connected devices



We recommend you set up a fixed WiFi channel on your WiFi network when using WiFi Link. This can give a more stable experience with certain WiFi routers.

How do I connect the Core to an ethernet network?

The Orca Core comes with a M12 4-pin D-coded female ethernet connector. To connect the Orca Core to a standard ethernet switch, you'll need an M12 4-pin male to RJ45 adapter. We recommend the following high-quality and cost-effective alternatives:

1. [Amphenol RJS-12D04FM-RS8001](#) (Mouser webshop)
2. [L-COM M12RJ454D-0.5](#) (Digikey webshop)

Once the Core is physically connected via ethernet, all devices connected to that network, either directly via ethernet or via a connected WiFi network will be able to access the Orca Core.

If you are connecting to a Raymarine, Simrad or B&G network, follow these guides:

- [How do I connect to a Raymarine radar?](#)
- [How do I connect to a Simrad or B&G radar?](#)

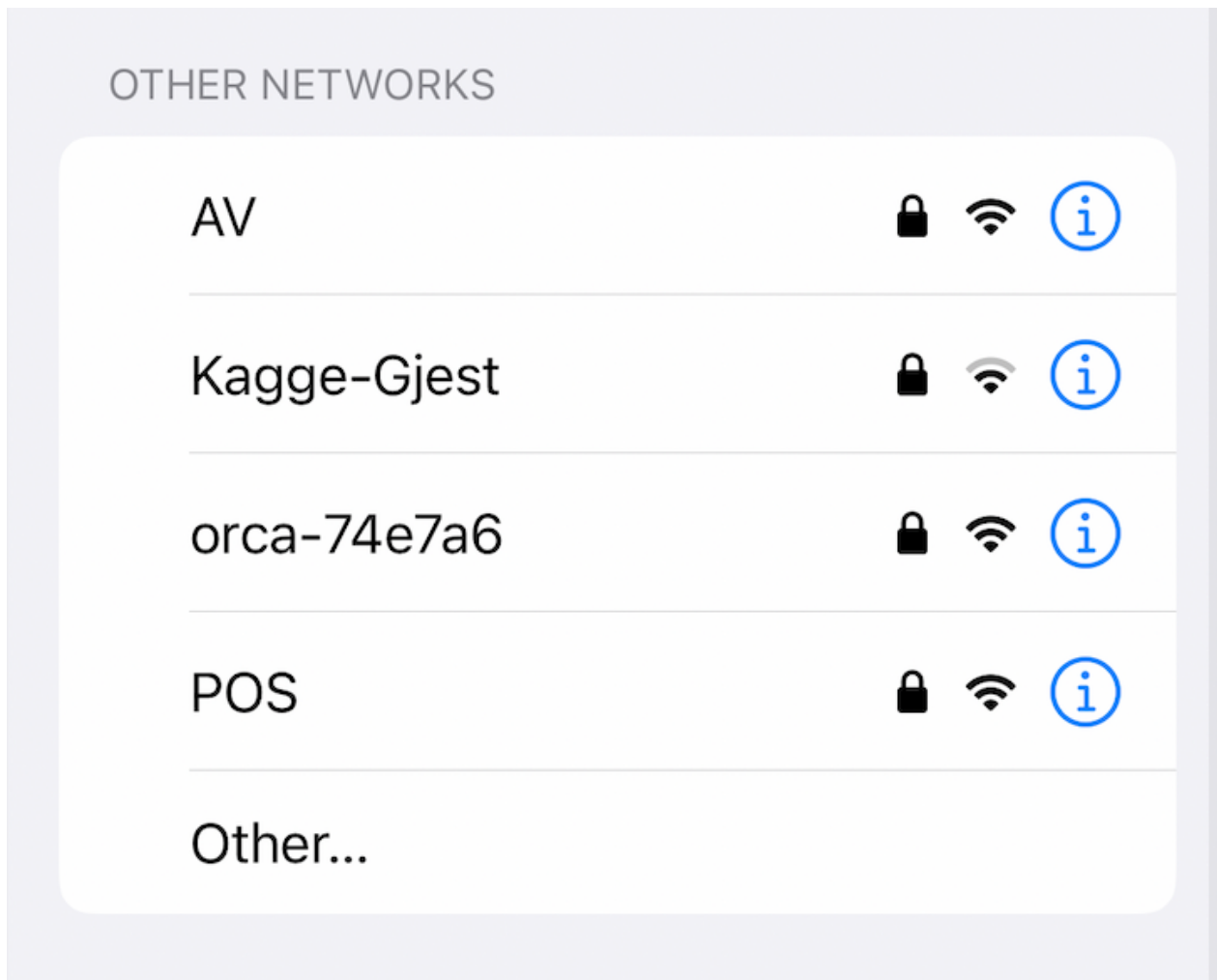
4j. Connectivity Problems

I have problems connecting to my Orca Core

This article covers several solutions for connection problems with the Orca Core. If you have followed these and still have connectivity problems, send an e-mail to hello@getorca.com and we will help you out.

Verify that the Orca Core is powered on and has sufficient power:

1. When powered on, a green light will blink on top of the Core. This light will stop blinking after 30 seconds.
2. Verify that you can see the Orca's WiFi access point via your phone/tablet's WiFi settings. The WiFi is named orca-XXXXXX. Do not attempt to connect manually via WiFi. The Orca app will connect by itself.



An orange light on top of the Orca Core indicates low supply voltage. In this situation, review your power supply.

A red light on top of the Orca Core indicates a critical error. Contact Orca support if this occurs. This indicates that Orca Core can not boot properly, typically due to power supply issues or instabilities in the network.

Verify that the Orca Core is paired to your active account:

1. Go to **Main Menu > My Boat**
2. Verify that your boat has a paired Orca Core
3. **For iOS devices, verify that you have given Orca permission to discover local networks:**
4. Open your iPhone/iPad settings
5. Scroll to Orca
6. Verify all permissions are granted

ALLOW ORCA TO ACCESS

 Location While Using >

 Bluetooth ☒

 Local Network ☒

 Siri & Search >

 Notifications >
Immediate

 Background App Refresh ☐

 Mobile Data ☒

When in Low Power Mode, background app refresh is disabled.

Disable all VPNs, Ad blockers and WiFi security apps:

1. For Android: [Read the official guide.](#)
2. For iOS: Open your device settings and disable VPN

If you are still unable to connect after reviewing this article, contact support on hello@getorca.com

I have problems staying connected to my Orca Core

If you are able to connect to the Core, but the connection resets or fails often – follow the recommendations of this article. If you still have issues, contact us at hello@getorca.com.

The first part of this article is relevant for all connection types. For connection issues specifically via WiFi Link, see the bottom part of the article.

I have problems staying connected to my Core, what do I do?

Verify that you have sufficient supply power:

1. Open the Orca app
2. Connect to the Core
3. Go to **Main Menu > My Boat**
4. Review that supply voltage is at least 12V

16:34

92%



My Boat

Manage Boats



Anchor watch



Core orca-7e85c6 status

Supply voltage

12.12V

Connection type

Bluetooth

GPS reception

No signal

Core internet access

Not connected

Core network link



Wi-Fi

Not connected



Ethernet

Not connected



Update



Calibrate compass



Calibrate TWD



Connected devices



If your supply voltage is lower than 12V, connect the Orca Core closer to your NMEA2000 power cable and use a shorter drop cable for the Orca Core.

For large vessels with many NMEA devices: You may need to split your NMEA2000 network into multiple separately powered networks.

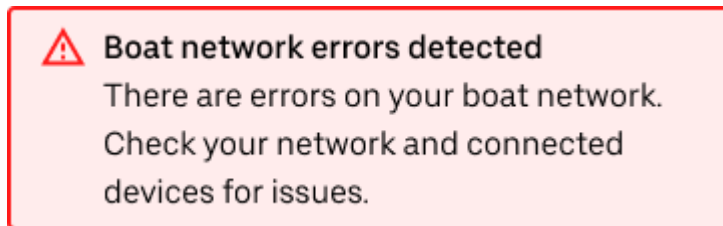
If you have power supply issues, contact Orca support for recommendations.

SimNet networks have a higher rate of power supply issues than NMEA2000 and SeataKNG. If you have a SimNet network with more than 10 connected sensors or displays, contact Orca support for recommendations.

Verify that you have a stable boat network

1. Open the Orca App
2. Connect to the Core
3. Go to **Main Menu > My Boat**

Look for any error messages at the top of the screen, such as the following:



If you have boat network errors, you may have:

- a) A broken device on the network
- b) Termination issues
- c) Congestion on the NMEA 2000 network

We recommend you read up on this issue and contact support at hello@getorca.com for more details.

I have problems staying connected via my onboard WiFi network

WiFi network stability depends on your WiFi router. Due to the wide range of WiFi routers available, Orca is unable to provide guaranteed support for your particular router.

If you have challenges connecting via WiFi Link, we recommend the following actions:

- **Disable Access Point channel hopping** – make sure your access point is locked to a single WiFi channel. Select a channel with little traffic
- **Install Core close to WiFi router** – make sure the signal strength between Core and WiFi router is good

When setting a fixed WiFi channel, do not use channels 12, 13, or 14. The Core is FCC certified, and because of this, will not connect to those channels.

4k. Integrations Raymarine

How do I send Orca routes to my Raymarine Axiom?

Raymarine has partnered with Orca to allow sending Routes wirelessly from Orca to your Axiom chartplotter. This allows Axiom owners to plan routes with the Orca App and send those to the Axiom.

What do I need to send Routes to my Axiom?

Update your Axiom or Axiom II and Orca to the following version:

- **Orca App:** Version 2025.18.2 or newer
- **Axiom I:** Version v4.9.330 or newer
- **Axiom II:** Version v4.9.330 or newer

How do I connect Orca to my Axiom MFD?

On the Orca App:

1. Open **Main Menu > My Boat > Boat Settings > Integrations > Raymarine > Connect Axiom**
2. Follow the instructions on the screen to connect to the Axiom's Wi-Fi/YachtSense Link.



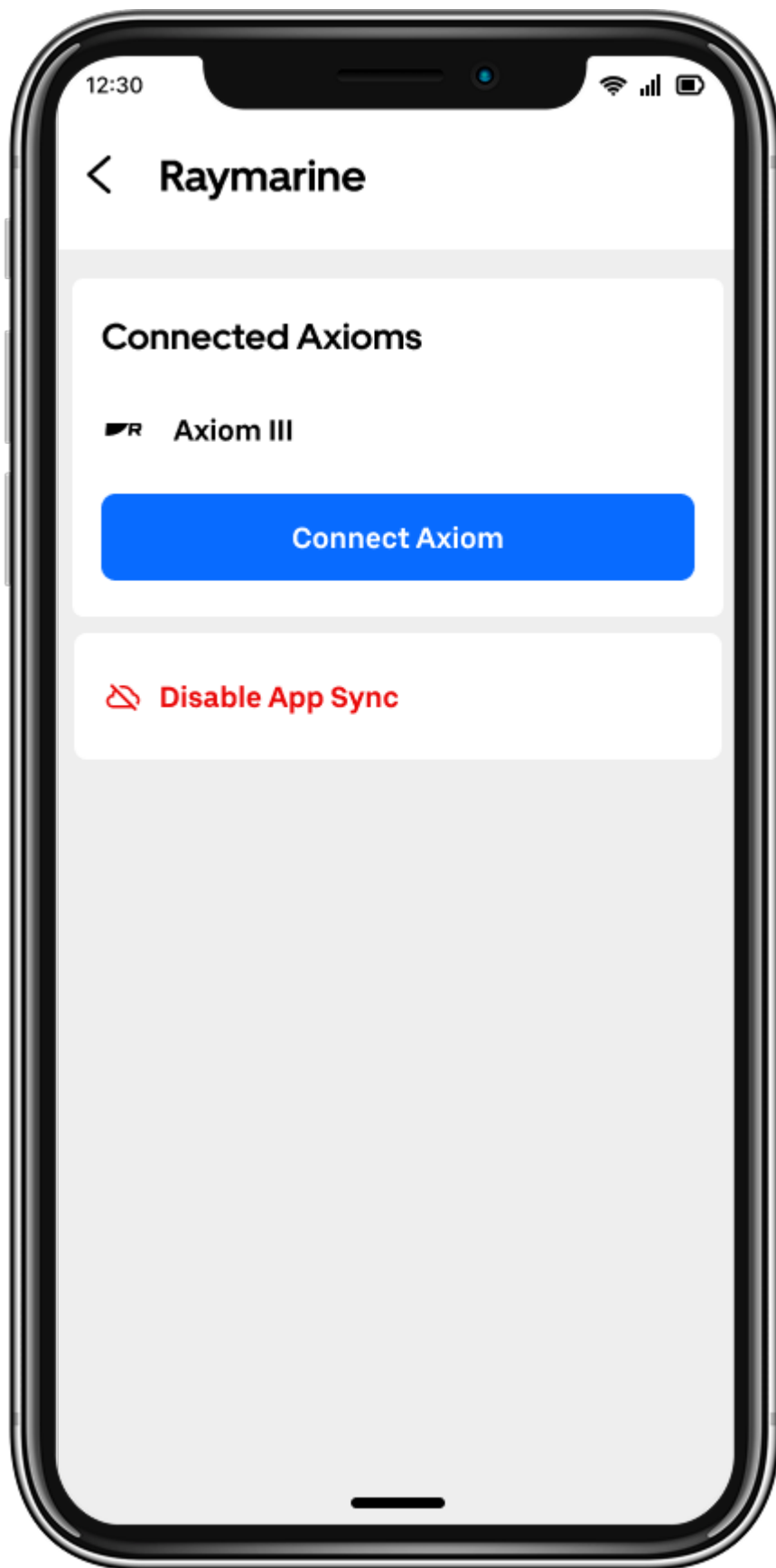
On your Axiom. If your mobile device has a camera:

1. To display the QR Code on your Axiom unit, please follow the instructions on the Orca App.

On your axiom. If your mobile device does not have a camera:

1. Open **Settings > This Display > Wi-Fi Sharing** on your Axiom
2. Enable **Allow devices to connect via Wi-Fi**.
3. Press **Configure** to find the QR code and Wi-Fi credentials and enter these into your Orca app

Once the connection has been established, the linked Axiom will be listed in **Boat Settings > Integrations > Raymarine**.



Your Orca account will be connected to the Axiom. If you use Orca with multiple devices, you only need to do this process once.

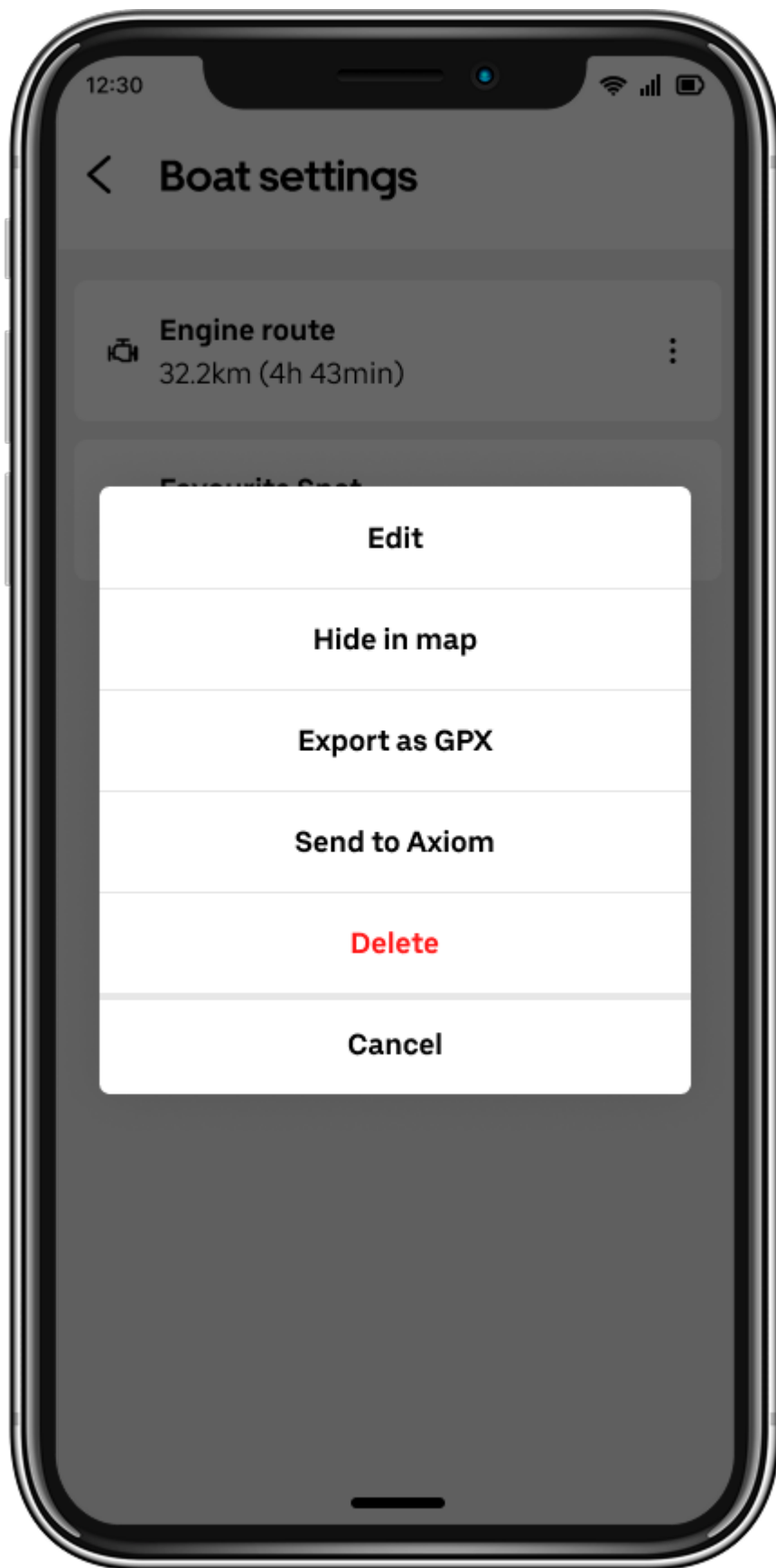
You can only have one user account per Axiom. If you wish to connect with a different account, you need to unpair it first. See **Disable App Sync** at the bottom of this article for details.

How do I send Routes to my Axiom?

Once the connection has been established, you will see the Axiom in your list of connected devices in **Main Menu > My Boat > Boat Settings > Integrations > Raymarine**.

To send routes to your Axiom:

1. Open **Main Menu > Spots and Routes**.
2. Select the route you want to send.
3. Press the **three dots** on the right side of your route and select **Send to Axiom**.



A notification will confirm that the route has been received on your Axiom.

Only a single route can be stored at a time in your Axiom unit. If you send a new route to the Axiom from Orca, it will override the past route.

How do I remove the connection between my Orca account and my Axiom?

On the Orca App:

- Open **Main Menu > Boat Settings > Integrations > Raymarine > Disable App Sync.**
- This will disconnect your Axiom devices from the boat.

Follow up on the Raymarine Axiom unit to fully remove the connection:

- Open **My Data > Mobile Sync > Disable Orca App Sync.**
- This will remove all Axiom devices from the previously paired user.

I have problems connecting. What do I do?

For "Failed Wi-Fi Connection" and "Axiom Not Found" errors:

- Ensure you are **within range** of the Axiom device.
- Verify that **Allow devices to connect via Wi-Fi** is enabled in **Settings > This Display > Wi-Fi Sharing** on your Axiom.
- If the issue persists, reconnect your Axiom following the steps in **How do I connect Orca to my Axiom MFD?**

For "Axiom Already Connected to an Orca Account" and "Not Authorized to Connect" errors.

- These errors indicate that the Axiom is linked to a different Orca account. To resolve this:
- On your Axiom, navigate to **My Data > Mobile Sync > Disable Orca App Sync.**
- After disabling, you can reconnect the Axiom to the desired Orca account.

Other Troubleshooting steps for connection problems:

- Ensure WiFi name only contains latin characters (*abc/ABC/123*) and not other special characters like accents (*ü/á/è/ç*).
- Simplify the Wifi name and password to ensure no typing errors
- If you had your Axiom WiFi saved on your device Android settings, press on "forget this network"
- Ensure you are connecting to the Axiom WiFi exclusively from the Orca app via **My Boat > Integrations > Raymarine**

5. Cartography

5a. Coverage

How can I use Orca for navigation in areas where its chart coverage is unavailable?

How can I use Orca for navigation in areas where its chart coverage is unavailable?

Orca users may occasionally encounter regions where chart coverage is incomplete or unavailable. Below are guidelines and solutions you can use to navigate effectively in such situations:

1. Understanding Orca's Chart Coverage Limitations

Orca provides marine charts for many regions globally, but some areas, such as South America, may not be fully supported. You can see an overview of our chart coverage in the article below:

[What chart coverage and routing coverage is available in Orca?](#)

Note that the Orca app displays only charts specifically designed for its platform and does not support other sources like OpenSeaMap.

2. Utilising Orca's Standalone Features With The Orca Core

Even without chart coverage, the [Orca Core](#) remains highly functional. You can use it to view and process your boat's NMEA 2000 data, including:

- AIS (Automatic Identification System) information
- Instrumentation readings
- Autopilot and Radar integration

This ensures that critical onboard data is accessible even when charting services are unavailable.

3. Making The Most of Satellite View With An Orca Subscription

With an Orca Plus or Ora Smart Navigation subscription, you have access to Satellite charts.

[Subscription prices and functionality](#)

To turn on Satellite view, simply click on the control panel button in the top right hand corner of the app, and then click on the **Satellite** overlay button.

You will notice that in this control panel, you also have access to the **AIS** and **Community Spots** overlays. Unlike the **Satellite** view overlay, these overlays are switched on by default. With internet connection, this information can also be very useful to see, even when chart coverage is not available.

4. Using Alternative Navigation Apps Alongside Orca

If you are navigating in regions where Orca's charts are unavailable, such as around the coast of South America, here are some solutions:

1. **Install an alternative navigation app on your [Orca Display 2](#)** which has chart coverage for your desired region. If your chosen app is available to download from the Google Play Store, you will be able to download and use it on your Orca Display 2. Thus, you will be able to continue reaping the benefits of the Orca hardware such as the extra luminous and waterproof screen in the process.
2. **Run the alternative app in parallel with Orca** to supplement missing chart information. Use the Orca app in covered areas, and switch to the alternative app when Orca's coverage is unavailable.

By combining Orca's features with an additional navigation app, you can ensure smooth navigation even in under-supported regions.

5. Region-Specific Notes

For users operating in non-covered areas, pre-planning becomes essential. Consider downloading necessary charts from third-party sources and familiarising yourself with their functionalities before heading into these regions. We would also recommend carrying official paper nautical charts in all regions, something which is mandatory in some countries.

Again, the flexibility to run a supplementary app alongside Orca ensures you retain access to critical navigation features.

By understanding these limitations and leveraging the solutions outlined above, you can optimise your Orca experience and maintain reliable navigation.

What chart coverage and routing coverage is available in Orca?

Our Chart Coverage

Orca charts are built on top of data from official hydrographic offices, private entities, and our own data collections.

You can explore where Orca has chart coverage in a map [here](#).

We also strongly recommend downloading the free version of our app from the [App Store](#) or [Play Store](#) so you can verify the quality of the chart coverage in the region that specifically interests you.

Our chart coverage by country, and their respective external data suppliers, is as follows:

Australia

- Coastal: Australian Hydrographic Office (Australian Hydrographic Service)

Belgium

- Coastal: Flemish Hydrography
- Inland waterways: VisuRIS

Canada

- Coastal and inland: Canadian Hydrographic Service

Cook Islands

- Coastal: Cook Islands Hydrographic Service – Managed by the Ministry of Marine Resources

Croatia

- Coastal: Hydrographic Institute of the Republic of Croatia (HHI)
- Inland: CRUP – Inland Navigation Development Centre Ltd.

Denmark

- Coastal: Geodatastyrelsen (DGA)

Estonia

- Estonian Transport Administration (ETA)

Finland

- Coastal: Traficom
- Inland: Various custom lake data and navigation ways

France

- Coastal: Service hydrographique et océanographique de la Marine (SHOM)
- Inland: Voies navigables de France (VNF)

Germany

- Coastal: Bundesamt für Seeschifffahrt und Hydrographie (BSH)
- Inland: Wasserstraßen- und Schifffahrtsverwaltung des Bundes

Great Britain

- Coastal: U.K. Hydrographic Office (UKHO)

Greece

- Coastal: Hellenic Navy Hydrographic Service

Ireland

- Coastal: Geological Survey Ireland (GSI)

Italy

- Coastal: Hydrographic Institute - Marina Militare - Ministero della Difesa

Latvia

- Coastal: The Hydrographic Service, Maritime Administration of Latvia

Netherlands

- Coastal: Hydrographic Service of the Royal Netherlands Navy
- Inland: Rijkswaterstaat

New Zealand

- Coastal: New Zealand Hydrographic Office at LINZ

Niue

- Coastal: Niue Hydrographic Services

Norway

- Coastal: Sjøkartverket

Papua New Guinea

- Coastal: Papua New Guinea Hydrographic Office

Poland

- Coastal: Hydrographic Office of the Polish Navy

Portugal

- Coastal: Instituto Hidrográfico

Samoa

- Coastal: Samoa Hydrographic Office

Solomon Islands

- Coastal: Hydrographic Branch of the Solomon Islands Maritime Safety Authority

Spain

- Coastal: Instituto Hidrográfico de la Marina

Sweden

- Coastal and main inland waterways: Sjöfartsverket

Tonga

- Coastal: Tonga Hydrographic Department

Turkey

- Coastal: Turkish Navy Hydrographic Service (Deniz Harp Okulu)

UAE

- Coastal: U.K. Hydrographic Office (UKHO)

United States

- NOAA: National Oceanic and Atmospheric Administration
- USACE: U.S. Army Corps of Engineers

Our Routing Coverage

You are able to create automatic routes in most of the regions where we have at least partial chart coverage. However, there are a few exceptions, which include but are not limited to:

- Ascension Island
- Azores
- Cape Verde
- Crozet Islands
- Falkland Islands
- French Southern and Antarctic Lands
- Gough Island
- Heard Island and McDonald Islands
- Lake Constance
- Madagascar
- Maldives
- Mauritius
- Saint Helena
- Saint Paul and Amsterdam Islands
- Senegal
- Seychelles

- South Georgia and South Sandwich Islands
- Sudan
- The Gambia
- Tristan da Cunha
- UAE

We once again strongly recommend downloading the free version of our app from the [App Store](#) or [Play Store](#) so you can verify the availability of automatic routing capabilities in the regions that specifically interest you.

Automatic routing is not possible in areas of the map where we do not have chart coverage.

Manual routes are not limited by geography and you can create a manual route anywhere in the world. To do so, create a route as usual and then change route type to *Manual*.

Boating outside our area of coverage?

To request chart or routing coverage for a region where we don't currently have charts or routing capabilities, use our in-app customer support by following these steps:

1. Go to **Main Menu > Guides and Support > Send us a message**
2. Click **I'd like to report an issue > Charts > No chart coverage in specific area**
3. Let us know the specific area you'd like us to provide charts for

We'll log your feedback, and if we develop charts for that area in the future, you'll be notified.

Important notes:

- Submit separate messages for multiple countries or regions
- There are currently no plans to expand chart coverage or routing capabilities to new areas
- our focus is on improving existing coverage

5b. Symbols

Chart Symbols Guide

Orca is designed to make boating effortless, whether you're a seasoned boater or a new owner. A key part of that experience is Orca's visual chart interface, which uses standardised colours and symbols that closely mimic official paper charts. This article walks you through what those symbols and colours mean, so you can navigate with confidence.

Viewing and Understanding Chart Symbols Using Orca

To get more information about a chart feature whilst using the app, follow these steps:

1. **Long-press** the feature icon on the map.
2. Tap "**View Info**" in the menu that pops up.

This will display detailed information about the selected feature, including its type, and key identifiers such as colours or flashes.

Chart Colours, Markers & Symbols

Below is an overview of the different symbols you can find in the app:

Chart Colours

- **Grey** – Land: Avoid unless you're on foot.
- **Blue (Dark to Light)** – Water: Darker shades indicate deeper waters. Affected by your Depth Threshold setting.
- **Green** – Intertidal Zones: Dry at low tide, submerged at high tide.
- **Magenta** – Warnings, Notices, Restrictions.

Markers & Buoys

-  **Red** – Port-hand: Keep to your left when entering from sea. (IALA A: Applies to most of the world)
-  **Green** – Starboard-hand: Keep to your right when entering from sea. (IALA A: Applies to most of the world)
-  **Yellow** – Special Areas: Scientific zones, caution areas, etc.
-  **Orange** – Local Zones: Often no-wake or regulation-specific areas.
-  **Blue** – Facilities: Moorings, marina services.
-  **Red** – Starboard-hand: Keep to your right when entering from sea. (IALA B: America, Japan, Korea, and the Philippines)
-  **Green** – Port-hand: Keep to your left when entering from sea. (IALA B: America, Japan, Korea, and the Philippines)

Orca icons

							
Test	Cardinal North	Cardinal East	Cardinal South	Cardinal West	Square	Pyramid	General
							
Round	Danger	Mooring	Anchor	Fog signal	Pole	Pylon	Tower
							
Cairn	Sea plane	Wind Kelp	Wind Motor	Marine Culture	Sector Centre	Ferry	Flood Light

							
Light	Red light	Green light	Blue light	Yellow light	Grey light	Brown light	Amber Light
							
Violet light	Orange light	Magenta light	Pink light	Rock Submerged	Rock Awash	Rock	Wreck - Nondangerous
							
Wreck - dangerous	Wreck mast	Beacon	Beacon - Cardinal North	Beacon - Cardinal East	Beacon - Cardinal South	Beacon - Cardinal West	Beacon - Lateral Port

 Beacon – Lateral Starboard	 Beacon – Lateral Channel Port	 Beacon – Lateral Channel Starboard	 Beacon – Lateral Port iala b	 Beacon – Lateral Starboard iala b	 Beacon – Lateral Channel Port iala b	 Beacon – Lateral Channel Starboard iala b	 Beacon – General Tower (yellow)
 Beacon – General Pole (yellow)	 Beacon – Safe Water Area	 Beacon – Isolated Danger	 Buoy Pillar	 Buoy Pillar – Cardinal North	 Buoy Pillar – Cardinal East	 Buoy Pillar – Cardinal South	 Buoy Pillar – Cardinal West
 Buoy Pillar – Lateral Port	 Buoy Pillar – Lateral Starboard	 Buoy Pillar – Lateral Channel Port	 Buoy Pillar – Lateral Channel Starboard	 Buoy Pillar – Lateral Port iala b	 Buoy Pillar – Lateral Starboard iala b	 Buoy Pillar – Lateral Channel Port iala b	 Buoy Pillar – Lateral Channel Starboard iala b

 Buoy Pillar General	 Buoy Pillar – Safe Water Area	 Buoy Pillar – Isolated Danger	 Buoy Spar	 Buoy Spar – Cardinal North	 Buoy Spar – Cardinal East	 Buoy Spar – Cardinal South	 Buoy Spar– Cardinal West
 Buoy Spar – Lateral Port	 Buoy Spar – Lateral Starboard	 Buoy Spar – Lateral Channel Port	 Buoy Spar – Lateral Channel Starboard	 Buoy Spar – Lateral Port iala b	 Buoy Spar – Lateral Starboard iala b	 Buoy Spar – Lateral Channel Port iala b	 Buoy Spar – Lateral Channel Starboard iala b
 Buoy Spar - General	 Buoy Spar – Isolated Danger	 Buoy	 Buoy – Lateral Port	 Buoy – Lateral Starboard	 Buoy – Lateral Channel Starboard	 Buoy – Lateral Port iala b	 Buoy – Lateral Starboard iala b

 Buoy – Lateral Channel Port iala b	 Buoy – Lateral Channel Starboard iala b	 Buoy General	 Buoy – Safe Water Area	 Buoy – Isolated Danger	 Buoy – can	 Buoy - sphere	 Buoy - Cone
 Mooring Facility Dolphin	 Mooring Facility Pile	 Mooring Facility Buoy	 Traffic Separation Arrow	 Vertical Clearance Warning	 Vertical Clearance Pass		

The icons above are used in Orca. For reference of their meaning:

Chart Symbols

- **Anchorage** – Safe place to anchor
- **Marina / Docks** – Harbors and docking facilities
- **Tidal / Current Flow** – Arrows show direction and flow.
- **Lighthouse / Beacon** – A light source for nighttime navigation.
- **Ferry Lanes / Traffic Zones** – Areas with vessel traffic separation.
- **Rock / Submerged Danger** – Exercise caution.

Beacons & Buoys

- **Cardinal (N, E, S, W)** – Mark dangers and indicate safe water direction.
- **Lateral (Port, Starboard, Channel)** – Show navigational routes and limits.
- **Safe Water & Isolated Danger** – Special buoys for open water or hazards.
- **Shapes: Can, Cone, Sphere, Spar, Pillar** – Indicate buoy type and meaning.

Structures

- **Towers, Pylons, Cairns, Poles** – Man-made aids to navigation.
- **Dolphins, Piles, Mooring Buoys** – Indicate mooring or hazard structures.

Special Features

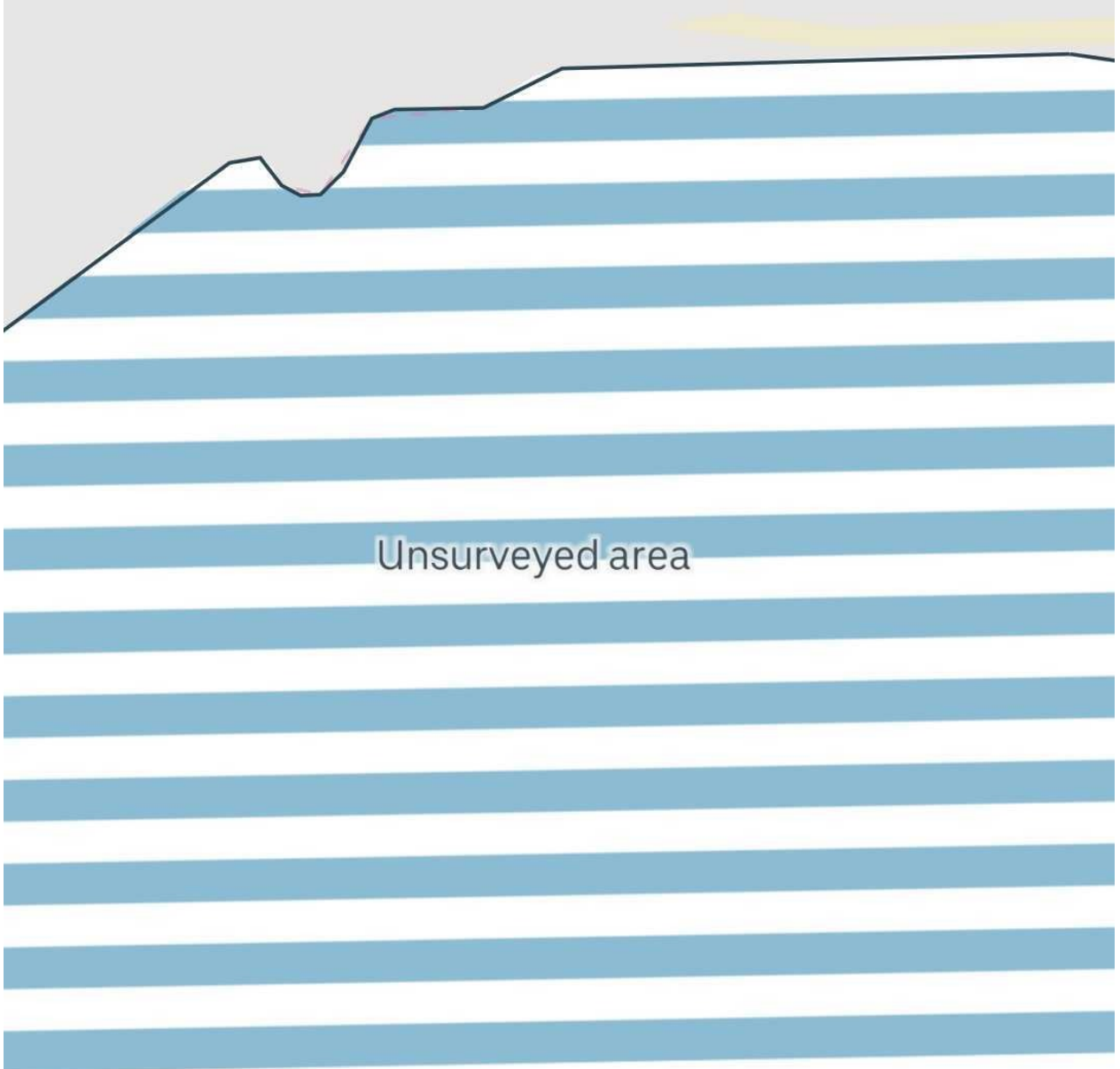
- **Seaplane Areas, Marine Farms, Wind Turbines** – Marked for safety and avoidance.
- **Fog Signals, Floodlights, Vertical Clearance Warnings** – Alert mariners to key risks or limits.

Unsurveyed Areas

- Unsurveyed areas within areas where we have chart coverage are shown with blue and white stripes (see screenshot below)

16:21

46



6. Subscriptions

6a. Pricing And Functionality

Subscription prices and functionality

Orca gives you two subscription plans:

- **Orca Plus (€49 / year):** Orca Plus gives access to offline charts and offline routing for powerboats, satellite hybrid charts, and sail routing.
- **Orca Smart Navigation (€149 / year):** This gives you access to everything in Orca Plus, along with Automatic Rerouting, AIS with images, 5 years of Logbook history and collision avoidance.

You may also use Orca without an active subscription. A year of Smart Navigation is included in the purchase of an Orca Core or Orca Display. See the table below for features in Orca.

Features by plan	Free	Plus	Smart Navigation
Charts			
Online charts ¹	✓	✓	✓
Satellite Hybrid Charts		✓	✓
Offline Charts ²		✓	✓
Traffic			
AIS via Internet ³	✓	✓	✓
CPA / TCPA visualization			✓
Images of AIS targets			✓
Planning assistance			
Weather Forecasts	✓	✓	✓
Community Points of Interest	✓	✓	✓
Navigation assistance			
Instruments	✓	✓	✓
Radar Overlay ⁴	✓	✓	✓
Autopilot Controls ⁴	✓	✓	✓
Rerouting			✓
Routing			
Automatic engine routing ⁴	Max distance 50NM	Max distance 520NM	Max distance 1300NM
Offline engine routing		Max distance 520NM	Max distance 1300NM
Automatic sail routes ⁴		5 day forecast. Max distance 520NM.	10 day forecast. Max dist. 1300NM.
Route weather model	ECMWF	ECMWF	ECMWF, ICON-D2, ICON-EU
Data			
Logbook ⁵	7 days of history	7 days of history	5 years of history

¹ Australia, Sweden, Denmark, Germany and Turkey have restricted access.

² Charts downloaded while subscribed are also available past subscription expiry, but will no longer update.

³ Terrestrial coverage courtesy of MarineTraffic.

⁴ Cloud-based routing limited to max 1 minute search duration

⁵ Requires Orca Core.

Functionality pending to be added to a subscription tier

Some functionality in Orca is available for free during an initial introduction or development phase. The following functionality is available for free, but will be added to a subscription tier in the future:

- Remote Access

Will I still be able to use Orca for navigation if I don't subscribe?

Yes, you will. All standard navigation features, including instruments, radar, autopilot control, and basic chart features remain fully functional.

How do I manage my subscription?

You can manage your subscription via the [Orca account website](#) or the Orca app from the **Main Menu > Settings > Account Details**. You will be connected to the original provider of your subscription, whether your purchase was through Orca, Google Play or the App Store.

Which chart regions are included in the subscription?

Paid Orca subscriptions gives you access to the complete Orca chart portfolio. See the [coverage article](#) for details.

What happens with my charts if I stop subscribing?

You will retain access to your charts, and the chart regions included in the free version of the app will continue to update. However, without an active subscription, you will not receive chart updates to your offline charts, and you will not be able to add new areas to your offline charts.

What happens to other subscription functionality?

The paid features listed in the subscription table above will also cease to function.

I have Orca Premium. What happens to it?

Orca Premium subscribers retain access to functionality equal to Orca Smart Navigation – at the original subscription price of €119 / year.

How do I get full access to charts and routing in Australia, Sweden, Denmark, Germany and Turkey?

Charts for Australia, Sweden, Denmark, Germany and Turkey are not available for free after an initial trial. Navigation functionality is limited in Germany for free users. These restrictions are imposed due to data licensing restrictions. To get full access to functionality in these regions, you must get a subscription.

If you have any questions about the subscription or chart updates in Orca, don't hesitate to reach out at hello@getorca.com

6b. Activating Cancelling And Transferring Subscriptions

How is the free year of subscription from a device applied to my Orca account?

If you purchase an Orca device and have an existing Orca subscription, the included 1-year subscription from the device purchase will be added as an extension to your existing subscription cycle.

As an example, if you purchase Orca Plus on the 1st of May 2024 and purchase an Orca Core 1st of July 2024, your next subscription billing date will be the 1st of May 2026 after you've activated your 1-year subscription.

To activate your included year of subscription, you can go to **Main Menu > Settings > Account Details** and follow the steps presented.

You will need to verify your credit card details upon activation, but you will not be charged upon activation of the free year of subscription.

If you have subscribed via Google Play or Apple AppStore, you must cancel your subscription from those stores before activating the free year.

Can I get more than one year of free subscription access when buying devices?

The subscription access included in a device purchase, such as an Orca Core or Orca Display, is limited to one year. Here is a scenario that illustrates the system:

1. You ordered an Orca Display 2 on January 1st, 2025, which gave you a free year of subscription.
2. You later bought an Orca Core on April 1st, 2025
3. Your subscription would then renew April 1st 2026, a year after your Core order

Are there any time limitations for when I activate my subscription?

If your account does not have an ongoing free year of subscription, there is no time limit for when you can activate your inclusive subscription. It means you can order Orca, fit Orca to your boat, and activate the free year once you are ready to hit the water. If your account does have an ongoing free year of subscription, you must wait until the end of this year before activating the new free year.

How to cancel your Orca Plus three-day free trial

How to Cancel Your Subscription

Follow these steps to cancel your **Orca Plus** subscription before the free trial ends:

1. **Open the Orca App:** Tap the menu icon (three horizontal lines) in the top-left corner.

2. **Go to Settings:** Select **Settings** from the side menu.
3. **Access Account Details:** Tap on **Account details**.
4. **Manage Your Plan:** Under the **My plans** section, find the subscription you wish to cancel and tap **Manage**.
5. **Redirect to App Store:** You will be automatically redirected to the subscription management page of your app store
6. **Cancel Subscription:** * Tap on your **Orca subscription**.
7. Select **Cancel subscription** at the bottom of the screen.
8. Choose a reason for cancellation and confirm.

Frequently Asked Questions

What happens after I cancel?

You will continue to have access to all Orca Plus features until the end of the free trial. After that date, your account will revert to the **Free Tier**.

Will I lose my charts?

You will still be able to use Orca for online navigation. However, you will no longer be able to download new offline chart areas or receive updates for existing ones.

Can I get a refund if I forget to cancel my subscription before the end of the three day trial?

Subscriptions are managed by Google or Apple. To request a refund, you must contact their respective support teams directly, as Orca cannot process refunds for app store purchases. Please see the following links for details of how to request a refund:

- [Apple AppStore](#)
- [Google Play Store](#)

How to Transfer a Subscription to a Different Email Address

Your Orca subscription is linked to the email that you use when logging into Orca. This email can be found at: **Main Menu > Settings > Account Details**

If you have an active subscription and want to move it to another email address, you can do this yourself by following the instructions below.

When should I use this method?

Use this method when:

- You accidentally created a second account using a different email, and your subscription is on the old one.
- You want to update the email associated with your existing subscription account.

What are the steps to transfer my subscription?

1. Delete the account that does *not* have the active subscription.
2. Log in > Main Menu > Settings > Account Details > Delete Account
3. Log in to the account that has the active subscription.
4. Change the email address to your desired one using the [email change system](#).

Once complete, your subscription will be associated with your new email address.

Example Scenario

If you want to move your subscription from old@email.com to new@email.com:

1. Delete the new@email.com account.
2. Log in to old@email.com - the account with the active subscription.
3. Use the email change feature to update your email address to new@email.com.

If you already created a new account using your desired email, you'll need to **delete that account first** before updating the email on your subscribed account.

This is because no two accounts can share the same email address.

If the account you want to transition your subscription out of uses **Sign in with Google**, email changes cannot be completed automatically.

In these cases, please contact our support team via hello@getorca.com for manual assistance, sharing your receipt number and the e-mail you want the subscription transferred to.

Subscription not available in your region?

Overview

If you're using an Android phone or tablet and experiencing issues when trying to purchase a subscription because the subscription is 'Not available in your region', there is a simple workaround.



Get smart routes and reliable charts with Plus

- ✓ Offline charts for robust access
- ✓ Beautiful Satellite Hybrid charts
- ✓ Sail and engine routing based on weather forecasts
- ✓ Plan 520 NM routes with 5-day forecast

Compare all plans



Who Is This For?

This applies if:

- You are using **Android**
- You are trying to purchase a subscription
- You are located in certain regions (usually outside of the eurozone)

If the in-app purchase fails, using the website will resolve the issue.

Workaround: Purchase via Website

Follow these steps:

1. Open a web browser (Chrome, Safari, etc.).
2. Go to: <https://getorca.com/account/sign-in/>
3. Log in using the same email address you use in the Orca app.
4. Click on **Add Subscription**

SUBSCRIPTION

Subscription Expired

Subscription expired at February 6, 2026

ADD SUBSCRIPTION

5. Purchase the subscription plan you need. 6. Once completed, open the Orca app again. 7. Make sure you are logged into the same account.

Your subscription will automatically activate and sync to your Android device.

Important Notes

- Subscriptions are linked to your Orca account, not to a specific device.

- After purchasing via the website, simply reopening the app should reflect the active subscription.
- If it doesn't appear immediately, try logging out and back in.

7. Faq

7a. General

How do I change my email, phone number, name, password or other account information?

You can change your account information, including:

- Name
- E-mail
- Phone number
- Password

Via the Orca Website at <https://getorca.com/account/sign-in/>.

You may be required to sign in on all your devices again after changing your password, phone number, or e-mail.

How do I delete my account data?

Your Orca account can be deleted by opening the Orca app and go to:

Main Menu > Settings > Account Details

Press **Delete Account** and confirm account deletion. You may be required to enter your account password, or re-authenticate via Signin with Apple or Signin with Google.

All data associated with your account will be deleted. This includes any billing information, past boat trips and all saved content.

How do I download the Orca App?

The Orca App is available for iOS, MacOS, WatchOS, and Android devices. To download or update it, see the links below.

- For iOS, WatchOS & MacOS: [The Apple AppStore](#)
- For Android: [The Google PlayStore](#)

Orca Display comes preinstalled with the Orca navigation experience.

Unsupported Devices

The Orca app does not support the following hardware:

- **Windows PCs:** There is no native application of Orca available for Windows devices.

- **Intel-based Macs:** Older Macs that do not operate on Apple Silicon processors (e.g., Intel-based Macs) are not compatible with the Orca app.
- **Devices with low display resolution:** For the best experience, Orca is optimised for displays with a minimum resolution of Full HD (1080p). Results may vary on lower resolutions.

While the Orca app runs on Apple Silicon Macs (M1 or later), it is optimised for the latest chips, such as the M3, for enhanced performance.

Minimum System Requirements

iOS: iOS 15.0

Android: Android 8.0

WatchOS: WatchOS 9.0

MacOS: Macs with Apple Silicon processors (M1, M2, M3 chips)

To connect to the Orca Core, your personal device must support BLE and Wi-Fi.

I have a steel boat. What extra considerations should I account for when installing Orca?

When installing Orca in a steel boat, there are a few extra considerations you should think about:

- Steel affects GPS, WiFi, and Bluetooth signal reception
- Steel affects Magnetic compasses

Because of the challenges above, we recommend the following deviations from our standard installation guide.

Where do I install the Orca Core on a steel boat?

An Orca Core should be installed on the outside of a steel boat, as far away from the steel superstructure as possible. Ideally 2 meters / 6 feet from the hull. An aluminum bimini, a wooden pilothouse, or an installation on a guard rail is recommended. What you should optimize for is:

1. The Core is installed sufficiently far away from the magnetic influence of the steel hull
2. The Core has a free line of sight to the sky for a split GPS reception
3. The Core has a free line of sight to the helm where the Orca Display or your personal devices will be used while navigating

If you have questions about where to install your Orca Core, please share potential installation locations via photo and we will assist you.

Where do I install the Orca Display on a steel boat?

If you are using Orca Display as a standalone navigation device without an Orca Core, you should follow the same recommendations as for the Orca Core.

If your Orca Display is used together with an Orca Core, the only consideration is that the Orca Core and Orca Display should have a free line of sight for the best wireless performance.

Using Orca on a Wi-Fi iPad (Without Built-In GPS)

Overview

If you're using a Wi-Fi only iPad, you might be wondering whether Orca will work properly - especially since these models don't include a built-in GPS chip.

Does My iPad Have GPS?

- **Wi-Fi + Cellular iPads** → Have a built-in GPS chip
- **Wi-Fi only iPads** → Do NOT have a built-in GPS chip

If you're unsure which model you have, check in:

Settings → General → About → Model Name

Can I Use an External GPS Receiver with a Wi-Fi iPad?

It depends on the GPS receiver.

If your iPad is connected via Bluetooth to an external GPS receiver, Orca may be able to use that GPS data.

How to Check If It Works

The easiest way to confirm compatibility is:

1. Download the **free version of the Orca app**
2. Connect your external GPS receiver to your iPad
3. Open Orca and check if your position is detected

If your location updates correctly on the chart, the setup is working.

Compatibility depends on the specific GPS receiver and how it transmits data.

What If I Use Orca Core?

If you are using Orca Core, you do not need to rely on the iPad's GPS or a Bluetooth GPS receiver.

The Orca Core has:

- Built-in high-precision GPS
- Direct integration with the boat network

When connected to Orca Core, your iPad will receive accurate position data automatically.

Can I Use Other External GPS Sources?

Yes - with an Orca Core.

If you have another external GPS source onboard, it can be chosen as the GPS source that the Orca App uses as long as:

- It connects to the Orca Core via a wired NMEA connection
- It outputs GPS data onto the NMEA 2000 network

In this setup, Orca Core distributes the GPS data to the app.

What are the latest software updates to Orca?

Orca Software updates and Core updates can be found in the Change Log: <https://getorca.com/changelog/>

The name of the update tends to correspond to the week in which it was released (it is not always exact). E.g.:

2025.47.1 was released around week 47 of 2025

2025.44.3 was released around week 44 of 2025

What is your refund and purchase transfer policy?

Orca offers a 30-day satisfaction guarantee on all device purchases, such as Orca Core and Orca Display, according to Orca [Terms of Service](#). Device purchases can be gifted or transferred.

If you have made a purchase and would like to transfer ownership, send an email to hello@getorca.com with your original order email, receipt number, and the email you'd like to transfer the purchase to.

Device transfers will also include any unused free subscription access that follows the device purchase.

Subscription purchases made via the Apple App Store, Google Play Store, and Orca's own subscription platform are not transferable. Refunds are only available when subscribing via the

Apple App Store and Google Play Store, according to each store's respective refund policy. See the following links for details:

- [Apple AppStore](#)
- [Google Play Store](#)

Which Orca functionality requires an internet connection to function?

Orca is a navigation system designed for the modern boater.

Contrary to traditional navigation systems, several experiences in Orca require an active internet connection to function. This article explains how Orca functions with and without an internet connection.

The design principles of Orca

Orca is built to function as a primary navigation system in a fully offline environment, with similar capabilities to that of a traditional chartplotter. In Orca, charts can be downloaded and stored on your device for offline access. Positioning, boat controls, instruments, and automatic routing for engine work fully without internet access.

Orca and internet connectivity

More and more boaters have an onboard internet connection via a phone, tablet, Orca Display, an onboard WiFi router, or Starlink. Orca uses this internet connection to deliver a more modern and capable experience than a traditional chartplotter. These experiences are listed in the table below.

Feature	Notes
Weather forecasts	Forecasts are downloaded on demand when you view weather forecasts for a location or a route. Forecasts are automatically downloaded around your location when connected to the internet. Forecasts are stored on your device for 36 hours. Weather forecasts older than 3 hours are shown as outdated.
Sail routing and rerouting	Creating and editing sail routes requires an active network connection. Automatic rerouting for sail routes requires an active network connection. Engine routing, rerouting for engine routes, and manual routing work while offline.
Satellite hybrid charts	Viewing satellite hybrid charts requires an active internet connection. Although offline charts are available with a subscription, this only includes the standard view, not the satellite version.
AIS targets and images	AIS targets supplied via MarineTraffic and images of AIS targets require an active internet connection. Up to 150 images of vessels viewed in the past are stored offline on your device. Targets supplied via an NMEA

	2000-connected receiver do not require an internet connection to be visible in the chart.
Synchronization of saved spots and routes	Cross-device synchronization of saved spots and routes requires an internet connection. Saving a spot or route does not require an internet connection.
Synchronization of Logbook	For the Logbook to update/synchronize, your device must be connected to the internet. Your device must also be connected to the Core via WiFi or WiFi Link to synchronize logs from the Core to the Orca cloud.
Synchronization of an active route	Your active route synchronizes via the internet and via the Core.
Software updates	Software updates for the Core will automatically be downloaded to your device when it has an internet connection. Installing the update to Core can be done without an internet connection. Updating your Display requires an active internet connection during the update.
Chart downloads and updates	Chart downloads and updates require an internet connection.
Location sharing	Location sharing requires an active internet connection.

Is offline functionality in Orca available to everyone?

Some offline functionality is only available with an [Orca Subscription](#).

1. If you are using a free account, you will not be able to view charts and plan routes without an internet connection.
2. If you have an expired subscription, your offline charts are retained on your device(s), but you will not be able to update them or download additional charts.

If you have questions about using Orca without an internet connection or want recommendations for how to get an internet connection onboard your boat, don't hesitate to reach out to hello@getorca.com.

Why can I not view charts for Australia, Turkey, Sweden, Denmark, or Germany?

For some countries, we are only allowed to show charts for free for a limited amount of time. As of now, free app users are only able to view charts for Australia, Turkey, Sweden, Denmark, and Germany for the first 24 to 48 hours after signup.

How do I access these charts beyond the initial trial?

For permanent access to these charts, you'll need an [Orca Subscription](#). Should your subscription expire, you'll still have access to charts for Australia, Turkey, Sweden, Denmark, and Germany – but they will no longer update.

Why is this the case with these countries in particular?

This restriction is a limitation in the chart licensing agreement with the hydrographic offices in these countries. We're negotiating with the hydrographic offices to be more forthcoming and allow people like you to test the charts better before making a purchase.

Why does Orca delay publishing release notes until after the full app update rollout?

Why does Orca delay publishing release notes until after the full app update rollout?

When using the Orca app, you might notice that updates are sometimes made available before the release notes or change log is published. This is intentional and follows Orca's update rollout strategy, which ensures a smooth and frustration-free experience for all users.

Introduction to Orca's Rollout Strategy

Orca employs a gradual rollout process for app updates. Rollouts are staged, which means that some users will receive access to updates earlier than others. This approach minimises potential disruptions by allowing Orca to address any unforeseen issues before the update reaches all users.

Timing of Release Notes

To avoid confusing users, Orca does not publish release notes at the beginning of a rollout. Publishing notes too early might frustrate users who see details about a new update but cannot immediately download it. By waiting until the rollout is complete, Orca ensures that the release notes align with app availability for everyone. This timing also helps communicate features and fixes consistently across the full user base.

Benefits for Users

This strategy provides several benefits, including:

1. **Reduction of Confusion:** Users won't encounter release notes for updates they cannot yet access.
2. **Improved Reliability:** The staging process allows Orca to identify and resolve potential issues, ensuring a smoother experience for all users.

Summary

While it might seem surprising to receive an update without accompanying release notes, Orca's approach is designed to enhance user satisfaction by matching release information with the availability of app updates. This structured and thoughtful process reduces frustration and improves the reliability of the app for everyone. For any additional questions or concerns about updates or release notes, feel free to contact Orca support.

7b. Core 2

How does DHCP work with Orca Core?

The Orca Core includes a **Smart DHCP** feature that automatically adapts to the **Ethernet network** environment.

- By default, and whenever the Orca Core detects a DHCP server on the Ethernet network, it acts as a DHCP client.
- If no DHCP server is detected on the network, the Orca Core will act as a DHCP server and provide IP addresses to other devices.

The Smart DHCP function is dynamic and can change at runtime. For example, if the Orca Core is currently acting as a DHCP server and then detects another server on the network, it will stop acting as the server.

The transitions from client to server and vice versa can take a few minutes.

The DHCP client or server configuration is persisted across reboots. However, this configuration is **not** persisted across software updates: after an update, the Orca Core may require a couple of minutes to detect and apply the appropriate DHCP configuration.

The Smart DHCP feature is only available for the Ethernet interface.

When connecting the Core to your onboard router, the Wi-Fi interface acts as a DHCP client.

Static IP addresses are not supported. The Orca Core does not permit manual configuration of a static IP for either Ethernet or Wi-Fi.

IP addressing is handled exclusively by the DHCP mechanism described above.

How many devices can be connected to the Orca Core at once?

You can login to up to five devices at the same time. The Orca Core can connect to a maximum of five devices at the same time.

I have acquired a second hand Orca Core and can't connect to it. What should I do?

If you have purchased a boat with an Orca Core that has been used by the previous owner, or you have purchased a second hand Orca Core that is still connected to the previous owner's account, you can do one of the following:

- a) Ask the previous owner to remove the Core from their account. This can be done via **Main Menu > My Boat > Unpair Orca Core**.

b) Ask the previous owner to contact Orca support at hello@getorca.com from their account email and authorize Orca to remove the Core from their account.

I need a new adhesive pad for my Core 2. Where can I purchase one?

You can purchase new Extra Strong 3M double sided adhesive pads online. We use the following model - 3M VHB 5952 Pads, 8 Pieces, Circular Pack with 32 mm Diameter, Thickness 1.1 mm - but any other similar model should work well.

You can purchase directly from Amazon using the following link: [https://www.amazon.es/-/en/CANOPUS-Extra-Strong-Adhesive-Round/dp/B08C735ZPW/ref=sr_1_4?](https://www.amazon.es/-/en/CANOPUS-Extra-Strong-Adhesive-Round/dp/B08C735ZPW/ref=sr_1_4?adgrpid=105333127330&dib=eyJ2ljojMSJ9.-b4AzR8wMUSfo_Rgo719xPv28i8qkybyLOW9_rKAWtJILYr-E0-0-wMhiYm8KrnXUsm5aZRQuYs-4xfW7JXrPPuAO2XsrVbzZ0RG5wei2WaS8p0gyn1Bo3UGfKuYNTKO6OD_TInZWBoO2JBqI3sRTfYr23h0jnwLi59k9QGVnWDKBvQoEPSfmgXXtJQ60DszANWO_OGgpZutAA.cZXtr4inPE&hvqmt=e&hvrnd=3142209655404055745&hvtargid=kwd-504553022800&hydadcr=10883_2241136&keywo)

[adgrpid=105333127330&dib=eyJ2ljojMSJ9.-](https://www.amazon.es/-/en/CANOPUS-Extra-Strong-Adhesive-Round/dp/B08C735ZPW/ref=sr_1_4?adgrpid=105333127330&dib=eyJ2ljojMSJ9.-b4AzR8wMUSfo_Rgo719xPv28i8qkybyLOW9_rKAWtJILYr-E0-0-wMhiYm8KrnXUsm5aZRQuYs-4xfW7JXrPPuAO2XsrVbzZ0RG5wei2WaS8p0gyn1Bo3UGfKuYNTKO6OD_TInZWBoO2JBqI3sRTfYr23h0jnwLi59k9QGVnWDKBvQoEPSfmgXXtJQ60DszANWO_OGgpZutAA.cZXtr4inPE&hvqmt=e&hvrnd=3142209655404055745&hvtargid=kwd-504553022800&hydadcr=10883_2241136&keywo)

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[wMhiYm8KrnXUsm5aZRQuYs-4xfW7JXrPPuAO2XsrVbzZ0RG5wei2WaS8p0gyn1Bo3UGfKuYNTKO6OD_TI](https://www.amazon.es/-/en/CANOPUS-Extra-Strong-Adhesive-Round/dp/B08C735ZPW/ref=sr_1_4?adgrpid=105333127330&dib=eyJ2ljojMSJ9.-b4AzR8wMUSfo_Rgo719xPv28i8qkybyLOW9_rKAWtJILYr-E0-0-wMhiYm8KrnXUsm5aZRQuYs-4xfW7JXrPPuAO2XsrVbzZ0RG5wei2WaS8p0gyn1Bo3UGfKuYNTKO6OD_TInZWBoO2JBqI3sRTfYr23h0jnwLi59k9QGVnWDKBvQoEPSfmgXXtJQ60DszANWO_OGgpZutAA.cZXtr4inPE&hvqmt=e&hvrnd=3142209655404055745&hvtargid=kwd-504553022800&hydadcr=10883_2241136&keywo)

[nZWBoO2JBqI3sRTfYr23h0jnwLi59k9QGVnWDKBvQoEPSfmgXXtJQ60DszANWO_OGgpZutAA.cZXtr4inPE](https://www.amazon.es/-/en/CANOPUS-Extra-Strong-Adhesive-Round/dp/B08C735ZPW/ref=sr_1_4?adgrpid=105333127330&dib=eyJ2ljojMSJ9.-b4AzR8wMUSfo_Rgo719xPv28i8qkybyLOW9_rKAWtJILYr-E0-0-wMhiYm8KrnXUsm5aZRQuYs-4xfW7JXrPPuAO2XsrVbzZ0RG5wei2WaS8p0gyn1Bo3UGfKuYNTKO6OD_TInZWBoO2JBqI3sRTfYr23h0jnwLi59k9QGVnWDKBvQoEPSfmgXXtJQ60DszANWO_OGgpZutAA.cZXtr4inPE&hvqmt=e&hvrnd=3142209655404055745&hvtargid=kwd-504553022800&hydadcr=10883_2241136&keywo)

[&hvqmt=e&hvrnd=3142209655404055745&hvtargid=kwd-504553022800&hydadcr=10883_2241136&keywo](https://www.amazon.es/-/en/CANOPUS-Extra-Strong-Adhesive-Round/dp/B08C735ZPW/ref=sr_1_4?adgrpid=105333127330&dib=eyJ2ljojMSJ9.-b4AzR8wMUSfo_Rgo719xPv28i8qkybyLOW9_rKAWtJILYr-E0-0-wMhiYm8KrnXUsm5aZRQuYs-4xfW7JXrPPuAO2XsrVbzZ0RG5wei2WaS8p0gyn1Bo3UGfKuYNTKO6OD_TInZWBoO2JBqI3sRTfYr23h0jnwLi59k9QGVnWDKBvQoEPSfmgXXtJQ60DszANWO_OGgpZutAA.cZXtr4inPE&hvqmt=e&hvrnd=3142209655404055745&hvtargid=kwd-504553022800&hydadcr=10883_2241136&keywo)

My Core is not able to see devices on my boat network. What do I do?

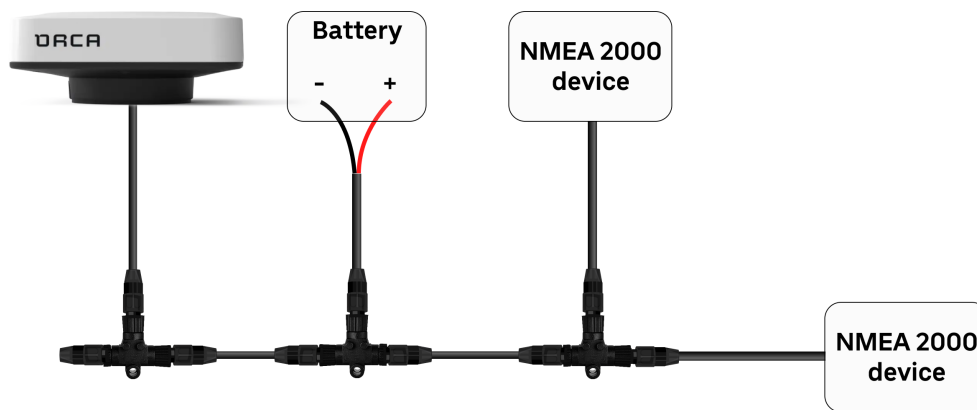
Orca's Technical Support Team assists boaters daily with questions and issues about their boat networks. If you have issues with your boat network, follow this step-by-step guide to identify the root cause.

Step 1: Validate Network Topology

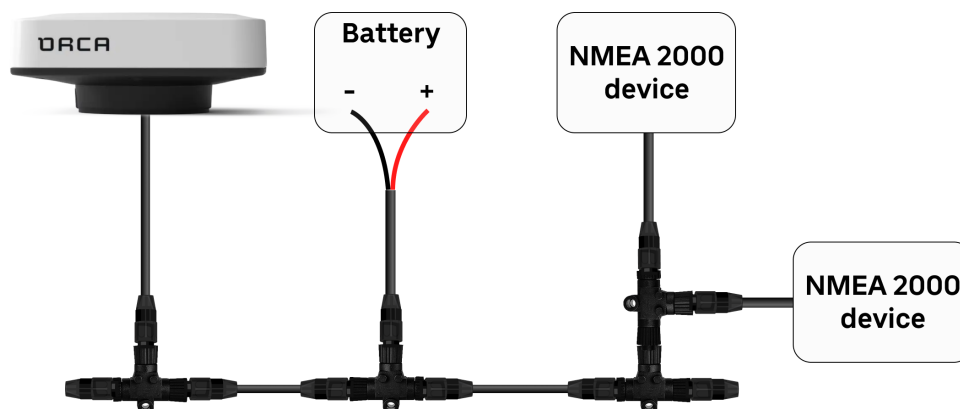
If you have issues with your boat network, the first thing you should do is review the network topology.

A common error is adding a device at the end of the backbone where a terminator should be connected. Every NMEA2000 network must have two terminators, one at each end of the backbone.

The illustration below indicates an **incorrectly** connected NMEA 2000 device at the end of the network on the right side.



Another frequent error is adding a T-connector on a backbone T-connector, connecting two devices via the same T-connector. The illustration below indicates an **incorrectly** connected NMEA 2000 device at the right-most drop cable.



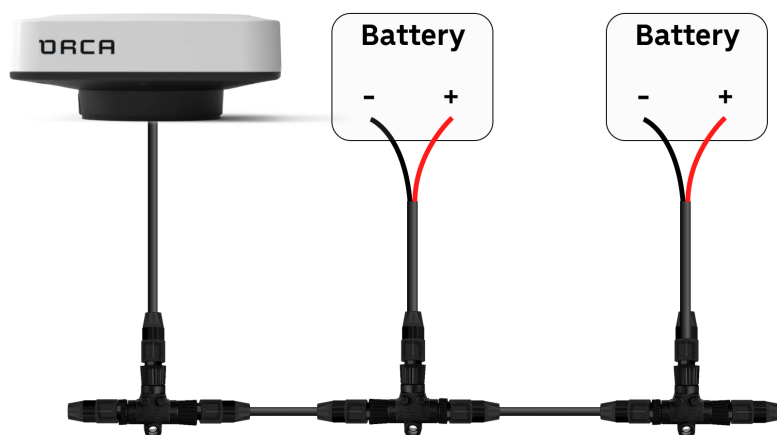
Network topology errors can cause the network to malfunction completely, sporadically lose messages, or even damage connected devices.

Step 2: Power Supply issues

If you are certain your network topology is correct, then the next step to check is your network's power supply.

Boat networks must have a single power source. If you add multiple power sources to an NMEA2000 or SetalkNG network, your network will experience potential differences between the power supplies. This potential difference can cause your network to sporadically lose messages and damage connected devices.

The illustration below shows an **incorrectly** connected boat network with two power supplies.



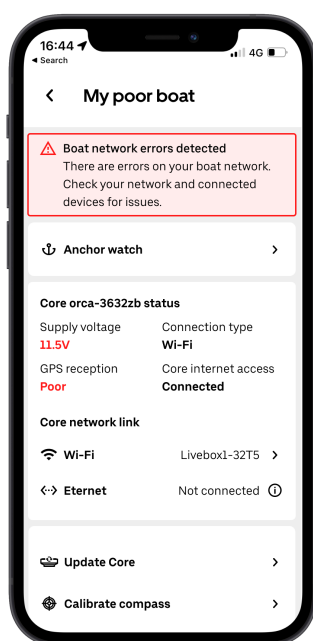
This error is particularly common on Raymarine SeataalkNG networks that have been connected to the older-generation Seataalk network with Raymarine's converter.

[Orca's network guide for SeataalkNG](#) explains how to solve this problem.

Another common issue is a poor power supply.

The boat network delivers power to its connected devices – and if you don't deliver enough voltage to the network, the connected devices may be unable to power on or become stuck in a power-on and power-off loop.

The root cause of this is typically corrosion on connectors or under-dimensioned power supply cables. This problem usually occurs sporadically at first, typically when your main battery's voltage begins to drop after a night at anchor or sailing, and then progressively becomes more prevalent.



To verify power supply issues, check the supply voltage as reported by the Orca Core via **Main Menu > My Boat**.

If the Core is unable to power on, check your NMEA 2000 network's power supply voltage with a voltmeter.

Step 3: Non-compliant or broken devices, broken cables or connectors

If your topology is correct and your power supply is sufficient, but you are still seeing issues, then the next element to check is your devices, cables, and connectors.

Then the root cause may be a non-compliant, a broken NMEA 2000 device, cable, or connector. To identify this, disconnect each of your NMEA 2000 devices until your boat network recovers.

If the network doesn't recover when all your devices are disconnected, we recommend disassembling your entire boat network and rebuilding it piece by piece, starting with the power supply, two T-connectors, and the Orca Core as the only device on the network.

After you have verified that the Core functions on itself, gradually reintroduce connectors and devices. Remember to disconnect power whenever you remove or add a T-connector or device to the network.

Step 4: Contact Orca Support for a remote network analysis

If your Orca Core is able to power on but has problems discovering some or all devices on your boat network, reach out to the Orca Technical Support Team.

The team will instruct you on how to record a network trace that the team can analyze to identify problems. You can contact the team at hello@getorca.com, via the Orca app or Orca Display.

Orca Core stopped working after updating it. How do I reset it?

Orca Core updates are thoroughly tested and designed to avoid major issues. However, if you've updated your Orca Core and it's no longer functioning properly, please reach out to the Orca support team at hello@getorca.com or use the built-in chat in the Orca app. Our team will assist you as soon as possible.

Before resetting the Orca Core, you must always make sure that your Orca Core is **[correctly installed and powered](#)** and check the following articles about **connectivity problems**:

- [I have problems connecting to my Orca Core.](#)
- [I have problems staying connected to my Orca Core.](#)

If you need to use your Orca Core urgently and can't wait for support, you can manually roll back to the previous version using the Core's button:

For urgent cases only: Rolling back a version is not recommended by Orca and should be used as a last resort.

Important: **Resetting your Orca Core means rolling back its software version**, which is different from a simple reboot or restart.

1. Locate the button, in the black hole on one of the sides of the Orca Core.
2. Find a pencil or another thin object to press the button with.
3. Press and hold the button for 30 seconds.
4. After 10 seconds, the LED will blink green—this signals the start of the rollback process. Keep holding the button.
5. After 30 seconds, the LED will blink again—this confirms the rollback is complete. The Core will restart and boot from the previous version.

Orca Core keeps two versions internally: **Version A** (current) and **Version B** (previous). Rolling back switches between them. So, if you roll back once and do it again, you'll return to the original version.

What are the technical specifications of Orca Core 2?

Orca Core 2 has the following technical specifications:

Size	118 x 118 mm footprint. 35 mm height + 15 mm with mounting bracket
Mounting options	Drill-through mounting bracket and industrial grade 3M bonding tape
Internal sensors	9-axis inertial motion unit, compass & 10Hz GNSS receiver
Wireless connectivity	WiFi 2.4GHz and BLE 4.2
Physical connectors	1x NMEA2000 Micro-C port (4 LEN) and 1x M-12 D-coded ethernet connector
Processor	800MHz single core ARM
Storage and RAM	8 GB internal storage, 512 MB SDRAM
Power	9-32.2 V DC supply voltage. Approximately 200mA peak consumption
Operating temperature	-15 to 60 °C
Waterproofing	IPX6

What colours does the Orca Core's NMEA2000 cable use?

The Orca Core features a 5-pin NMEA 2000 male connector and uses the following pinout and colour assignment for its cable:

Orca Core 1

Colour Name / Description	NMEA2000 Pin
Brown Shield	1
White Power Positive (12V)	2
Blue Power Negative (GND)	3

Black	CAN High	4
Grey	CAN Low	5

Orca Core 2

Colour	Name / Description	NMEA2000 Pin
Brown	Shield	1
White	Power Positive (12V)	2
Green	Power Negative (GND)	3
Yellow	CAN High	4
Grey	CAN Low	5

What is the black hole in the side of the Core 2?

What is it?



The small round pinhole on the side of the Orca Core 2 is the **recessed reset / recovery button**.

It is accessed through the pinhole using a thin tool (for example, a straightened paperclip).

This button is used to perform a **firmware recovery or rollback**, typically if the device becomes unresponsive - for example, after a software update.

For urgent cases only: Rolling back a version is not recommended by Orca and should be used as a last resort.

What it is not?

- This hole is **not a connector or network port**.
- Do not insert anything unless performing the reset procedure.
- If you are unsure, contact Orca Support before pressing it.

When Should I Use It?

Only use the recessed reset button:

- When following the official reset/rollback procedure in the [manual](#)
- When instructed to do so by Orca Support
- If your Core stopped working after an update

A reset or rollback can change the Core's behaviour, so it should not be used casually.

7c. Display 2

Can Orca Display 2 be used as a regular Android tablet?

Orca Display 2 runs Android, and can be used as a regular Android tablet.

Orca Display 2 is Google-certified. This means it has the Google Play Store, which you can use to install apps on the Display 2, similar to a traditional Android tablet.

By default, Orca Display 2 launches into the Orca navigation experience when you power on the Display.

You can change this behavior, and launch into the standard Android app launcher via **Main Menu > Apps > Settings > Apps > Default Apps > Home app** and select **Quickstep**, the default Android launcher made by Google.

By doing as such, you will be able to use the Display 2 as a regular Android tablet, being able to execute actions such as putting apps in a split screen.

Due to technical limitations, Display 2 only supports Android's Gesture Navigation mode and does not support the 3-button Navigation mode.

How do I charge the Display 2 quickly via USB-C?

Orca Display 2 contains a large 9500mAh battery. Regular USB chargers, and incompatible fast charging standards may charge the display slowly, at around 8-12 hours from 0% to 100%.

To charge the Display 2 quickly, you need to use a compatible PumpExpress USB-C fast charger, and a high-quality USB-C cable. We also recommend to use a short USB-C cable, ideally 1 meter or shorter. With a compatible fast-charger, the Orca Display 2 will charge from 0 to 100% in ~4 hours.

Recommended chargers

- **Marine-grade USB-charger:** SCANSTRUT ROKK SC-USB-03
- **12V Car Charger socket:** Linocell Car Charger with USB-C PD 95 W
- **Wall socket charger:** SONY UCH12W, or Baseus 65W USB-C Charger, 3-Port Power Supply

Recommended cables

- **USB-C:** UNI USB C to USB C Cable 1M/3.3ft [100W 20V/5A]

How do I factory reset my Display 2?

If you are selling your Display 2 or otherwise want to factory reset it, do the following:

1. Open **Main Menu > Apps**
2. Navigate to **Settings > System > Reset options > Erase all data (factory reset)**
3. Click **Erase all data**

If you are unable to unlock the Orca Display 2, you can factory reset via recovery mode.



1. Charge your Display 2 to at least 20% charge and then remove the charging cable
2. Turn off the device completely. Wait 1 minute.
3. Press and hold the power and volume up buttons until some small text appears on the left-hand side of the screen. This usually takes about 30 seconds and appears shortly after the Orca logo. When the text appears, release both power button and volume button at the same time.
4. Select **Recovery Mode** by scrolling with the volume up button and confirming with the volume down button. Wait a few moments
5. Select **Wipe data/factory reset**, the 6th option in the list, using the volume buttons to scroll and the power button to confirm.
6. Select **Factory data rest** using the volume buttons to scroll and the power button to confirm.
7. The progress of the factory reset is shown in the white text at the bottom left-hand side of the screen. When the bottom text says 'Data wipe complete' select **Reboot system now** using the power button to confirm.
8. Once inside, you should soon be prompted to update the Orca Display. Please do so.

How do I take a screenshot with the Display 2?

To take a screenshot you have to hold down the power button (top right hand side) and the volume down button simultaneously.

How to Winterize Your Display 2

To ensure your Orca Display 2 remains in good condition during winter or extended storage, follow these steps:

1. Charge to 60–80%

Charge the battery to around 60–80%. This helps preserve long-term battery health and prevents damage from deep discharge.

2. Fully Power Off

Completely shut down the Display 2. Do not leave it in sleep mode. Use the power button and select “Power off” until the screen turns off.

To check that the device has fully powered off, touch the screen or press any of the buttons (except the power button) and ensure that the Display 2 does not react.

3. Store Indoors

Keep your Display 2 indoors in a dry, temperature-stable location. Do not store it on your boat or in damp, cold, or hot environments.

What are the technical specifications of Orca Display 2?

Orca Display 2 has the following technical specifications.

Size and weight	262mm x 175mm x 19mm. Approximately 870g.
Mounting options	Top Mount, Surface Mount and Mast Mount.
Screen	10.1 inch 1920x1200 TFT 1000 nits. Chemically etched anti-glare surface. Wet touch support. Viewable with polarized sunglasses in all orientations.
Internal sensors	Multiband GNSS GPS L1CA+L5 / BeiDou B1I+ B2a / Glonass L1OF / Galileo E1 + E5a / QZSS L1CA+ L5 / NavIC. Internal compass, accelerometer, and front-facing camera.
Wireless connectivity	Wi-Fi 5 (a/b/g/n/ac) and BLE 5.1
Cellular connectivity	2G GSM, 3G UMTS, 4G FDD LTE, 4G TDD LTE
Physical connectors	USB-C with waterproof cover.
Processor	8 Cores. 2x 2.2GHz high-performance and 6x 2.0GHz high-efficiency cores.
RAM and Storage	4GB LPDDR4x RAM, 64 GB internal storage. Expandable up to 512 GB via MicroSD.
Power	25W wireless charging via Orca Charging Mount. USB-C fast-charging via PE+ (Pump Express).
Battery	

	Rechargeable high-temperature-grade Li-ion battery. 9500 mAh for approximately 8 hours of navigation.
Waterproofing	IP-X6
Operating system	Slate, a purpose-built operating system based on Android 12 or 14. Google Play Certified.
Operating temperature	-15 to 55 °C
Chart support	Orca Charts, tailor-made charts for the Orca Display 2
Audio	Waterproof speakers and microphone.
Physical buttons	4x buttons. Dedicated power button and 3 action buttons for core navigation interactions.
Interface language	English, French, Italian, German, Norwegian, Spanish

When will I receive updates to my Orca Display?

Orca updates the Orca iOS and Android app on a weekly basis. The updates are made available via the Google PlayStore and Apple AppStore.

The Orca Display 1 and Display 2 also receive updates frequently, but on a slightly different schedule than the apps – and because of this, your Orca Display may not always offer the same features as the Orca Apps.

Why the Display 2 Turns On When Charging

Why?

When your Display 2 is connected to power, it automatically turns on - this is by design.

This feature ensures that whenever you place the Display 2 into its Mount, it's immediately ready for use, just like a traditional chart plotter.

This automatic activation means you can start navigating without having to worry about manually turning on the device - a seamless experience for on-water use.

Charging Performance

There's no need to worry about slower charging when the Display 2 is on.

If you prefer, you can turn the screen off by pressing the top right-hand button - in this state, the charge time is practically the same as if the unit were fully off.

8. Installers Resellers Shipyards Oems

8a. Installers

How do I become an installer of Orca Products?

Orca works with select installer partners in key markets. The program is structured as follows:

1. Reach out via hello@getorca.com and let us know that you want to become an installer
2. We review your application to see if it is a good fit
3. We'll list you as a recommended installer in our installer guide and deliver Orca customers to your service

As an installer:

- You handle the installation and other after-sales services
- The end customer orders the Orca system via Orca's website. Orca delivers direct customer support for the product.

If you are interested, reach out to hello@getorca.com to apply to become an installer.