GO XSE

Installation Manual

ENGLISH

SIMRAD®

Preface

Disclaimer

As Navico is continuously improving this product, we retain the right to make changes to the product at any time which may not be reflected in this version of the manual. Please contact your nearest distributor if you require any further assistance.

It is the owner's sole responsibility to install and use the equipment in a manner that will not cause accidents, personal injury or property damage. The user of this product is solely responsible for observing safe boating practices.

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Governing Language: This statement, any instruction manuals, user guides and other information relating to the product (Documentation) may be translated to, or has been translated from, another language (Translation). In the event of any conflict between any Translation of the Documentation, the English language version of the Documentation will be the official version of the Documentation.

This manual represents the product as at the time of printing. Navico Holding AS and its subsidiaries, branches and affiliates reserve the right to make changes to specifications without notice.

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Warranty

The warranty card is supplied as a separate document.

In case of any queries, refer to the brand website of your unit or system: www.simrad-yachting.com.

Compliance statements

This equipment complies with:

- CE under 2014/53/EU Directive

- The requirements of level 2 devices of the Radio communications (Electromagnetic Compatibility) standard 2008
- Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The relevant Declaration of conformity is available in the product's section at the following website: www.simrad-yachting.com.

Industry Canada

IC RSS-GEN, Sec 7.1.3 Warning Statement- (Required for license exempt devices)

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie

Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Warning

The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that of the receiver
- Consult the dealer or an experienced technician for help

Internet usage

Some features in this product use an internet connection to perform data downloads and uploads. Internet usage via a connected mobile/cell phone internet connection or a pay-per-MB type internet connection may require large data usage. Your service provider may charge you based on the amount of data you transfer. If you are unsure, contact your service provider to confirm rates and restrictions.

Countries of intended use in the EU

AT - Austria

BE - Belgium

BG - Bulgaria

CY - Cyprus

CZ - Czech Republic

DK - Denmark

EE - Estonia

FI - Finland

FR - France

DE - Germany

GR - Greece

HU - Hungary

IS - Iceland

IE - Ireland

IT - Italy

LV - Latvia

LI - Liechtenstein

LT - Lithuania

LU - Luxembourg

MT - Malta

NL - Netherlands

NO - Norway

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PT - Portugal

RO - Romania

SK - Slovak Republic

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ES - Spain

SE - Sweden

CH - Switzerland

TR - Turkey

UK - United Kingdom

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Navico product references

This manual refers to the following Navico products:

- Broadband Sounder™ (Broadband Sounder)
- DownScan Imaging™ (DownScan)
- DownScan Overlay™ (Overlay)
- GoFree™ (GoFree)
- INSIGHT GENESIS® (Insight Genesis)
- SonicHub® (SonicHub)

About this manual

This manual is a reference guide for installing GO XSE units.

Important text that requires special attention from the reader is emphasized as follows:

→ *Note:* Used to draw the reader's attention to a comment or some important information.

⚠ Warning: Used when it is necessary to warn personnel that they should proceed carefully to prevent risk of injury and/or damage to equipment/personnel.

Contents

1

Check the contents

Check the contents of the box for your unit.

GO5 XSE box contents
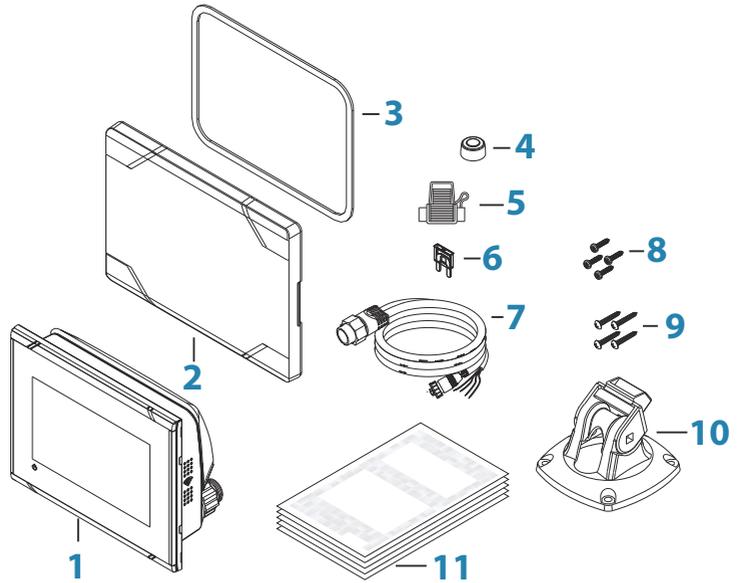
1	GO5 XSE
2	Sun cover
3	Panel mount gasket
4	Cap (2x on NMEA 2000 and Sonar connectors)
5	Fuse holder (ATC blade)
6	Fuse (3 amp)
7	Power/NMEA 2000 cable
8	Panel mount screws (4x #10 x 1/2" PN HD SS)
9	Quick Release Bracket screws (4x #10 x 3/4" PN HD SS)
10	Quick Release Bracket
11	Documentation pack

GO7 XSE and GO9 XSE box contents
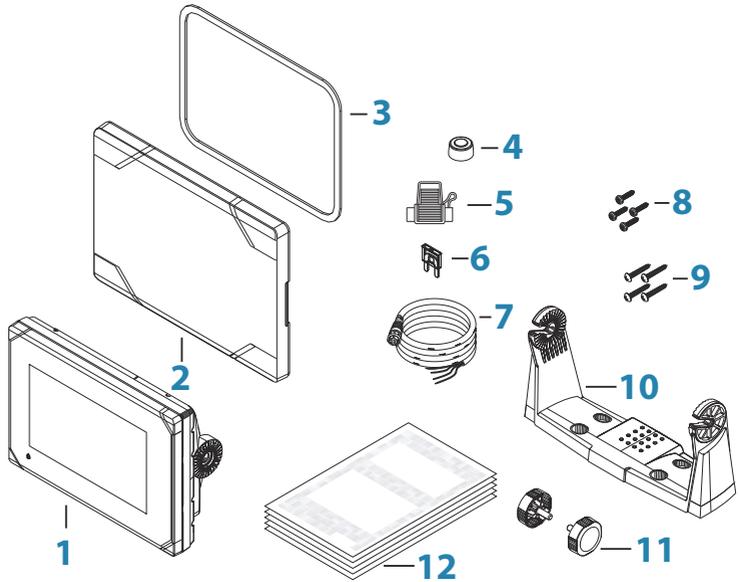
1. GO XSE
2. Sun cover
3. Panel mount gasket
4. Caps (2x, on NMEA 2000 and Sonar connectors). The GO9 XSE has an additional cap for the Radar connector.
5. Fuse holder (ATC blade)
6. Fuse (3 amp)
7. Power cable
8. Panel mount screws (4x #10 x 1/2" PN HD SS)
9. U Bracket mount screws (4x #10 x 3/4" PN HD SS)
10. U Bracket
11. Bracket knobs (2x)
12. Documentation pack

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Overview

The unit has a built-in CHIRP/Broadband and StructureScan sonar.

The unit can network over NMEA 2000, this allows access to sensor data.

The unit has built-in high speed GPS receiver (10Hz) and supports Insight charts from Navico including Insight Genesis. The system also supports charts from Navionics and C-MAP as well as content created by a variety of third party mapping providers in the AT5 format. For a full selection of available charts, visit www.gofreemarine.com, www.c-map.com or www.navionics.com.

The unit may be mounted to the vessel with the supplied mounting bracket, or panel mounted on the dash.

The unit is intended for 12 V DC operation and will accept the moderate fluctuations commonly seen in DC systems.
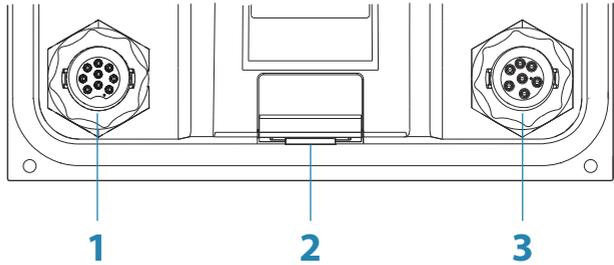
Front controls
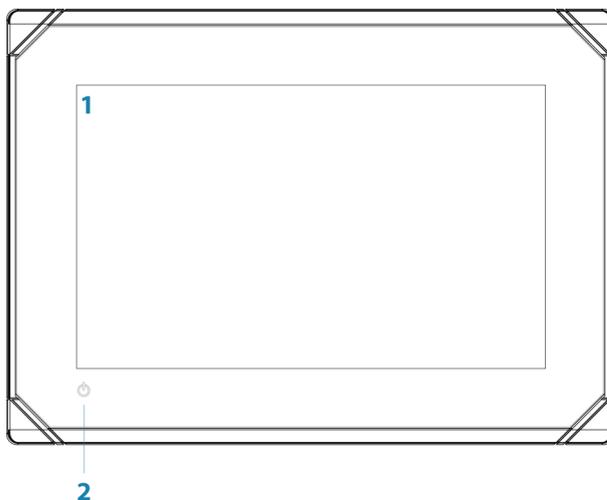
1   **Touch screen**

2   **Power button**
     Press and hold to turn the unit ON/OFF.
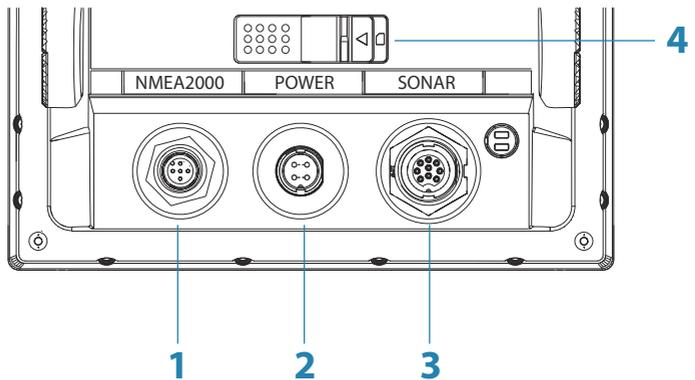   Press once to display the System Controls dialog.

Rear connections

GO5 XSE rear connections

1   **Sonar** - CHIRP, Broadband, DownScan, and SideScan imaging (dependent on the transducer)

2   **Card reader**
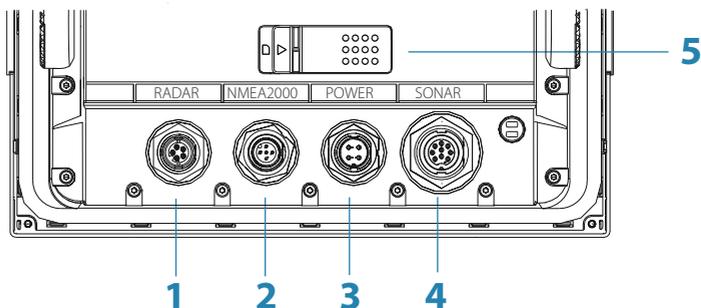
3   **Power** 12 V DC supply input and **NMEA 2000**

GO7-XSE rear connections

1   **NMEA 2000** - data input / output

2   **Power** - 12 V DC supply input

3 **Sonar** - CHIRP, Broadband, DownScan, and SideScan imaging (dependent on the transducer)

4 **Card reader**

GO9-XSE rear connections

1 **Radar** - radar (Ethernet) connection

2 **NMEA 2000** - data input / output

3 **Power** - 12 V DC supply input

4 **Sonar** - CHIRP, Broadband, DownScan, and SideScan imaging (dependent on the transducer)

5 **Card reader** - dual slot

Card reader

Used for attaching a microSD memory card. The memory card can be used for detailed chart data, software updates, transfer of user data, and system backup.

The card reader door is opened by pulling the rubber cover open.

The card reader door should always be securely shut immediately after inserting or removing a card, in order to prevent possible water ingress.
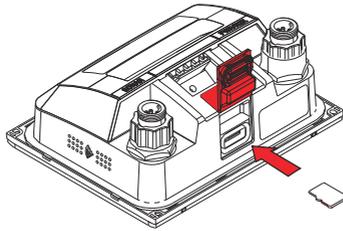
Card reader on the GO5 XSE

Card reader on the GO7 XSE and GO9 XSE

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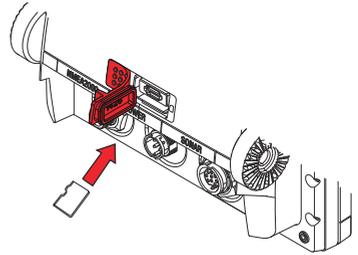# Installation

Mounting location

Choose the mounting locations carefully before you drill or cut. The unit should be mounted so that the operator can easily use the controls and clearly see the screen.

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

Ensure that any holes cut are in a safe position and will not weaken the boat's structure. If in doubt, consult a qualified boat builder, or marine electronics installer.

Before cutting a hole in a panel, make sure that there are no hidden electrical wires or other parts behind the panel.

Check that it is possible to route cables to the intended mounting location.

Consider access to the card reader which is located in the back of the unit.

Leave sufficient clearance to connect all relevant cables.

Do not mount any part where it can be used as a hand hold, where it might be submerged, or where it will interfere with the operation, launching, or retrieving of the boat.

The mounting location may affect the internal GPS receiver. Test the unit in its intended location to ensure satisfactory reception. An external GPS source can be added to overcome poor reception areas.

For overall width and height requirements, refer to *"Dimensional drawings"* on page 75.

Good ventilation is required. Choose a location that will not expose the unit to conditions that exceed the specifications - refer to *"Technical specifications"* on page 73.

> ⚠ Warning: When installing, ensure appropriate safety equipment is used. For example, ear muffs, protective glasses, gloves and a dust mask. Power tools may exceed safe noise levels, and can cast off dangerous projectiles. The dust from many materials commonly used in boat construction may cause irritation or damage to eyes, skin, and lungs.
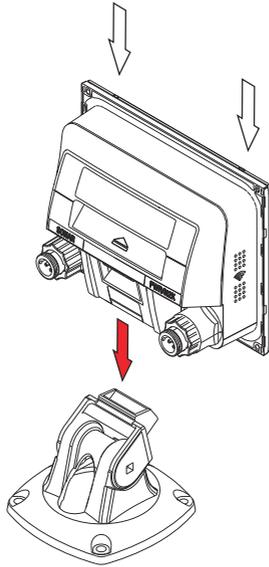
Bracket mounting

Quick release bracket mounting

The GO5 XSE can be mounted with the quick release bracket.

1. Place the bracket in the desired mounting location. Ensure that the chosen location has enough height to accommodate the unit fitted in the bracket, allows tilting of the unit and connecting cables in the back.

→ *Note:* Ensure that the chosen location has enough height to accommodate the unit fitted in the bracket, allows tilting of the unit and connecting cables in the back.

2. Mark the screw locations using the bracket as a template, and drill pilot holes.

→ *Note:* Use fasteners suited to the mounting surface material. If the material is too thin for self-tappers, reinforce it, or mount the bracket with machine screws and large washers. Use only 304 or 316 stainless steel fasteners.

3. Screw down the bracket.
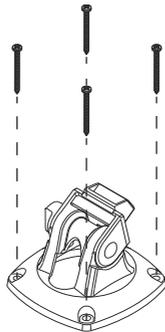
4. Snap the unit to the bracket.

5. Tilt the unit to the desired position angle.

Removing the unit from the quick release bracket
Pull and hold the release handle and then pull the unit from the bracket.
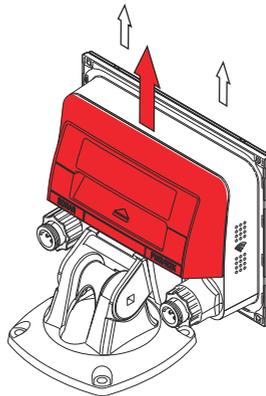
U-bracket mounting
The GO7 XSE and GO9 XSE can be mounted with the U-bracket.

1. Place the bracket in the desired mounting location. Ensure that the chosen location has enough height to accommodate the unit fitted in the bracket, and allows tilting of the unit. Also adequate space is required on both sides to allow tightening and loosening of the knobs.
2. Mark the screw locations using the bracket as a template, and drill pilot holes. Use fasteners suited to the mounting surface material. If the material is too thin for self-tappers, reinforce it, or mount the bracket with machine screws and large washers. Use only 304 or 316 stainless steel fasteners.
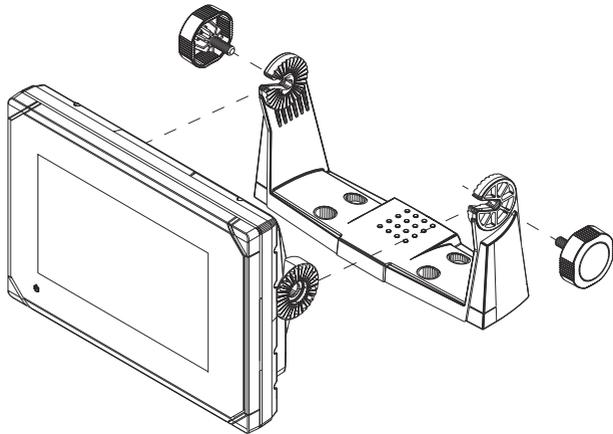3. Screw down the bracket.
4. Mount the unit to the bracket using the knobs. Hand tighten only. The ratchet teeth in the bracket and unit case ensure a positive grip and prevent the unit from changing from the desired angle.

Panel mounting

The screws and gasket used for panel mounting are included in the box. For mounting instructions, refer to the Panel mounting template.

Transducer installation

For transducer installation information, refer to separate installation instructions included with the transducer.

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Wiring

Guidelines

Don't:

- make sharp bends in the cables
- run cables in a way that allows water to flow down into the connectors
- run the data cables adjacent to radar, transmitter, or large/high current carrying cables or high frequency signal cables.
- run cables so they interfere with mechanical systems

Do this:

- make drip and service loops
- use cable-tie on all cables to keep them secure
- solder/crimp and insulate all wiring connections if extending or shortening the cables. Extending cables should be done with suitable crimp connectors or solder and heat shrink. Keep joins as high as possible to minimize possibility of water immersion.
- leave room adjacent to connectors to ease plugging and unplugging of cables

⚠ Warning: Before starting the installation, be sure to turn electrical power off. If power is left on or turned on during the installation, fire, electrical shock, or other serious injury may occur. Be sure that the voltage of the power supply is compatible with the unit.

⚠ Warning: The unit has a voltage rating of 12 V DC, it is not suited for use with 24 V DC systems.

⚠ Warning: The positive supply wire (red) should always be connected to (+) DC with the supplied fuse or a circuit breaker (closest available to fuse rating).

Power Connections

GO5 XSE Power connection

The unit is powered by 12 V DC. It is protected against reverse polarity, under voltage, and over voltage (for a limited duration).

The plug of the supplied power cable has two discrete cables exiting from it. The thickest of the two cables provides the following:

• Power into the system (Red and Black wires).
• Controlling power state of the unit (Yellow wire).

1	Power cable
2	12 V DC positive wire (red) shown with fuse holder fitted
3	12 V DC negative wire (black)
4	Power control wire (yellow)
5	Vessel's 12 V DC supply
6	NMEA 2000 cable and connector

Connect Red to (+) DC using a 3 amp fuse.

Connect Black to (-) DC.

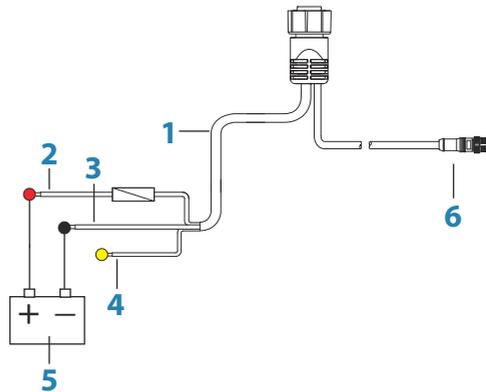The unit can be powered on and off using the power button on the front of the case.

GO7 XSE and GO9 XSE Power connection

The units are powered by 12 V DC. They are protected against reverse polarity, under voltage, and over voltage (for a limited duration).

The supplied power cable has four cores used for:

- Power into the system (Red and Black wires).
- Controlling power state of the unit (Yellow wire).
- Connecting to an external alarm (Blue wire).
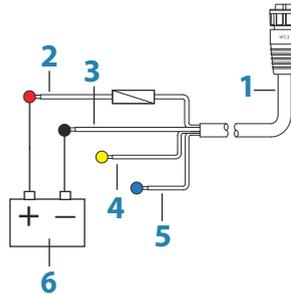
1   Power cable

2   12 V positive wire (red) shown with fuse holder fitted

3   12 V negative wire (black)

4   Power control wire (yellow)

5   Alarm wire (blue)

6   Vessel's 12 V DC supply

Connect Red to (+) DC using a 3 amp fuse.

Connect Black to (-) DC.

The units can be powered on and off using the power button on the front of the case.

Power Control connection

The yellow Power Control wire in the power cable is an input that will turn on the unit when power is applied.

Power Control unconnected

Device will turn on and off when the power button on the front of the unit is pressed. Leave the yellow Power Control wire disconnected and tape or heat-shrink the end to prevent shorting.

Power Control to supply positive (auto on)

Device will turn on immediately when power is applied. Common the yellow wire with the red wire after the fuse.

→ **Note:** The unit cannot be powered down by power button, but can be put in to standby mode. (The screen backlight turns off.)

Power Control to ignition

Device will turn on once ignition is turned on to start engines. Connect the yellow wire to the accessories output of the engine key switch.

→ **Note:** Engine start batteries and house batteries should have a common ground connection.

External alarm

→ **Note:** An external alarm cannot be connected to the GO5 XSE.

The external alarm can be a small piezo buzzer connected directly, or a horn siren connected through a relay.

Alarms are configured globally in the system. That is, they can be configured on any one networked multifunction device or instrument, and be seen, heard, and acknowledged from all devices. Individual devices can also be configured to not sound their internal buzzer, but still display the alarm information. For information about configuring alarms, refer to the Alarms section in the Operator Manual.

For sirens that draw more than 1 Amp, use a relay.

Buzzer

Siren
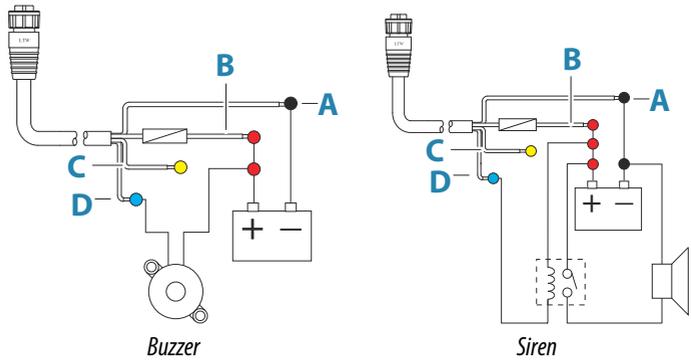
A   Negative power wire (black)

B   Positive power wire (red)

C   Power control wire (yellow)

D   Alarm wire (blue)

Connecting control devices
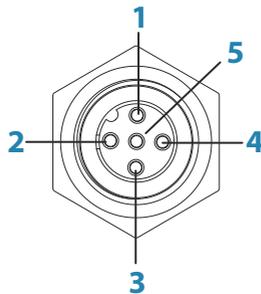
The unit can be controlled with an OP40 or OP50 Remote controller connected on the NMEA 2000 network.
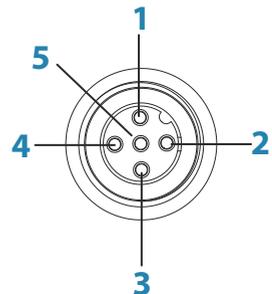
NMEA 2000 backbone

NMEA 2000 Device connection

The NMEA 2000 data port allows the receiving and sharing of a multitude of data from various sources.

Unit socket (male)

Cable plug (female)

Key	Purpose	Color
1	Shield	Drain
2	NET-S (+12 VDC)	Red
3	NET-C (- 12 VDC)	Black
4	NET-H	White
5	NET-L	Blue

Planning and installing a network backbone

The backbone needs to run between the locations of all products to be installed - typically in a bow to stern layout - and be no further than 6 m from a device to be connected.

Choose from the following components to make up the backbone:

- Micro-C cables: 0.6 m (2 ft), 1.8 m (6 ft), 4.5 m (15 ft), and 7.6 m (25 ft) cables.
- T-connector or 4-way connector. Used to connect a drop cable to the backbone.
- Micro-C power cable. Connect to the backbone at a position that is central to the network load using a T-connector or 4-way connector.

→ **Note:** When using a wind sensor, the mast cable should be connected at one end of the backbone, as the sensor is fitted with a termination resistor.

→ **Note:** Most NMEA 2000 devices can be connected directly to a SimNet backbone and SimNet devices can be connected to a NMEA 2000 network by using adapter cables.

Power the network

The network requires its own 12 V DC power supply protected by a 3 amp fuse or breaker.

Connect power at any location in the backbone for smaller systems.

For larger systems introduce power at central point in the backbone to "balance" the voltage drop of the network.

→ **Note:** If joining to an existing NMEA 2000 network that already has its own power supply, do not make another power

connection elsewhere in the network, and ensure the existing network is not powered by 24 V DC.

→ **Note:** Do not connect the NMEA 2000 power cable to the same terminals as the engine start batteries, autopilot computer, bow thruster or other high current devices.

The following drawing demonstrates a typical small network. The backbone is made up of directly interconnected T-connectors.
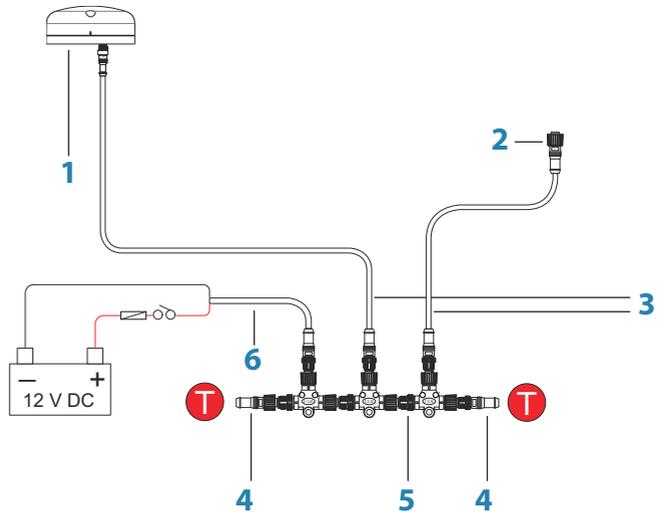
| 1 | NMEA 2000 device |
2	Connector to unit
3	Drop-cable, should not exceed 6 m (20 ft)
4	Terminators
5	Backbone
6	Power cable

CZone connection to NMEA 2000

When interfacing to CZone network it is recommended to use a BEP Network interface bridge to join the two network backbones together.

The CZone / NMEA 2000 Network interface bridge isolates the power of the two networks, but allows data to be freely shared between both sides.

The Interface Bridge can also be used for expansion of the NMEA 2000 network, when the maximum node limit (node = any device connected to network) for the network has been reached or the maximum cable length of 150 m will be exceeded. Once an Interface Bridge has been fitted, a further 40 nodes and additional cable length can be added.

The Network Interface is available from your BEP dealer. For more information please refer to the BEP web site www.bepmarine.com.
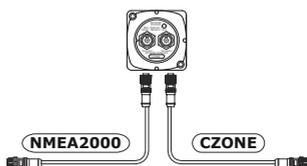
Transducer connection

The unit has internal CHIRP, Broadband, and StructureScan sonar.

Transducers fitted with a 9 pin connector can be plugged directly into the 9 pin port on the back of the unit. For connector location, refer to the embossed labeling on the back of the unit.

→ **Note:** The connector attached to the transducer cable is keyed, and can only be inserted in one orientation. Once inserted, turn locking collar to secure.

→ **Note:** Transducer installation instructions are included with the transducers.

→ **Note:** A 7-pin transducer cable can be connected to the port using a 7-pin to 9-pin adaptor cable. However, if the transducer has a paddle wheel speed sensor, the water-speed data will not be displayed on the unit.

Radar connector

The GO5 XSE and GO7 XSE do not have a Radar port.

The Radar port allows connecting the unit to your radar scanner using a 5 pin (Ethernet) connector.
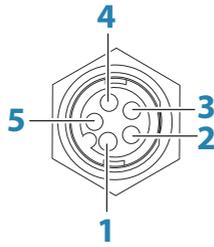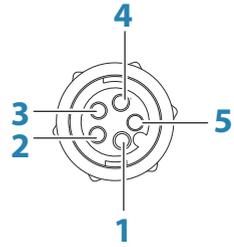
Unit socket (female)   *Cable plug (male)*

Key	Purpose	Color
1	Transmit positive TX+	Blue/White
2	Transmit negative TX-	Blue
3	Receive positive RX+	Orange/White
4	Receive negative RX-	Orange
5	Shield	Bare

5

Software Setup

This unit requires some initial configuration before use, in order to get the most out of the product. The following sections focus on settings that typically do not require change once configured. User preference settings and operation are covered in the Operator Manual. Selecting the Home button opens the Home page, which has three distinct areas. The scrollable left column of icons is the Tools panel. Select Settings in the Tools panel to open the Settings dialog to access items that require configuration.

First time startup

When the unit is started for the first time, or after a factory default, the unit displays a setup wizard. Respond to the setup wizard prompts to select some fundamental setup options.

You can perform further setup using the system settings option and later change settings made with the setup wizard.

Time and Date

System

Configure time settings to suit vessel location, along with time and date formats.

Data source selection

Network

Data sources provide live data to the system.

The data may originate from modules internal to the unit (for example internal GPS or sonar), or external modules connected to the NMEA 2000 or via NMEA 0183 if available on the unit.

When a device is connected to more than one source providing the same data, the user can choose the preferred source. Before commencing with source selection make sure all external devices and the NMEA 2000 backbone are connected and are turned on.

Auto Select

The Auto Select option looks for all sources connected to the device. If more than one source is available for each data type, selection is made from an internal priority list. This option is suitable for the majority of installations.
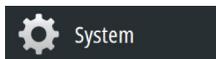
Manual source selection

Manual selection is generally only required where there is more than one source for the same data, and the automatically selected source is not the one desired.

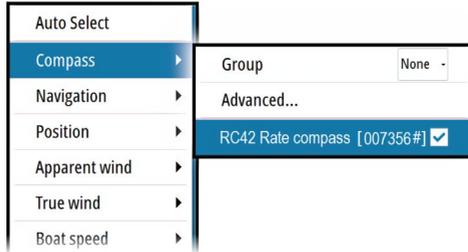

Group source selection

Multifunction displays, autopilot controllers, and instruments have the ability to:

• Use data sources (for example position, wind direction, and so on) that all other products on the network use, or alternatively use a data source independently from other units.

• Globally change all displays over to a different source from any display. (This only includes products set to Group mode.)

➔ **Note:** In order to enable group selection, the display must be set to Simrad group.

Devices with the Group set to None can be set to use different sources to those of the rest of the network devices.
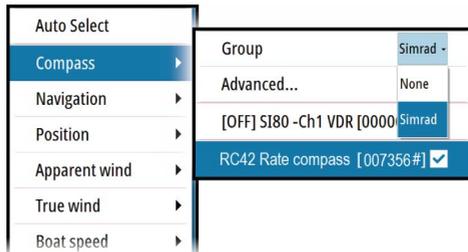
Advanced source selection

This allows the most flexible and precise manual control over which devices provide data. Some data sources, such as those for fuel level, or engine RPM, can only be changed from the Advanced menu. Occasionally Auto Select may not assign the desired source, which may be corrected using the Advanced Source Selection. An example of this is where twin installations with NMEA 2000 compliant engines are not programmed with unique instance numbers. This means that the auto select feature cannot determine which engine is fitted on the port and which is fitted on the starboard side.

→ *Note:* The **Advanced** option is visible in multiple places - the bottom of the **Sources** list, and under each source category (for example, Compass). The latter shows a filtered list that only relates to devices that output data relevant to the category.

Device list

Network

The Device list shows the devices that provide data. This may include a module inside the unit, or any external NMEA 2000 device.

Selecting a device in this list will bring up additional details and actions:

All devices allow allocation of an instance number in the configure option. Set unique instance numbers on any identical devices on the network to allow for the unit to distinguish between them. The

data option shows all data being output by the device. Some devices will show additional options specific to the device.

Some devices will show additional option(s) specific to the device - the RC42 illustrated above has a **Calibration** option, to allow easy setup of this device.

→ *Note:* Setting the instance number on a 3rd party product is typically not possible.

Sonar setup

Echo

The **Installation** page allows configuration of the internal sonar.

Depth offset

All transducers measure water depth from the transducer to the bottom. As a result, water depth readings do not account for the distance from the transducer to the lowest point of the boat (for example; bottom of the keel, rudder, or propeller) in the water or from the transducer to the water surface.

Before setting the offset, measure the distance from the transducer to the lowest point of the boat in the water or from the transducer to the water surface.
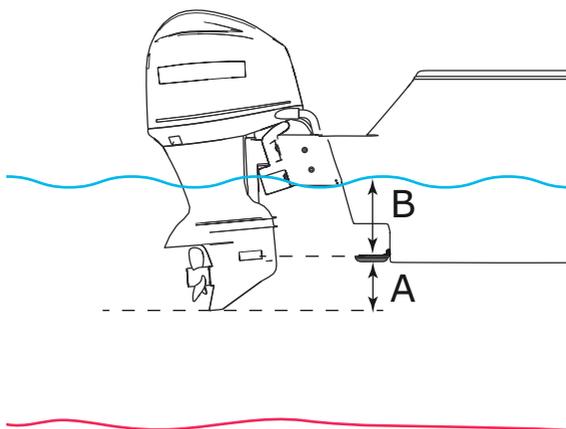
A   Lowest point of vessel offset: Set the distance from the transducer to the lowest point of the boat in the water - this should be set as a negative value. For example, - 0.3 m (-1 ft).

B Depth below surface (waterline) offset: Set the distance from the transducer to the surface - this should be set as a positive value. For example, +0.5 m (+1.77 ft).

For depth below transducer, set the offset to 0.

Water temperature calibration

Temperature calibration is used to adjust the water temperature value from the sonar transducer to match the data from another temperature sensor. It may be required to correct for localized influences to the measured temperature.

Calibration range: -9.9° - +9.9°. Default is 0°.

→ *Note:* Water temperature calibration only appears if the transducer is temperature capable. Check transducer type selection if this option should be available.

Transducer type

Transducer type is used for selecting the transducer model connected to the sonar module. The transducer selected will determine what frequencies the user can select during sonar operation. In some transducers with built-in temperature sensors, the temperature reading may be inaccurate or not available at all if the wrong transducer is selected. Transducer temperature sensors are one of two impedances - 5k or 10k. Where both options are given for the same model transducer, refer to paperwork supplied with transducer to determine impedance.

StructureScan
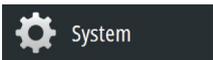
This feature is automatically enabled when a TotalScan transducer is plugged in before the unit has been powered on.

Radar setup
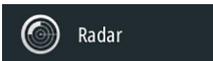
→ *Note:* The 5" and 7" units do not support radar.

Use the Radar Installation dialog to setup the radar.

→ *Note:* The installation can vary depending on the radar. Follow the installation and setup instructions supplied with the radar.
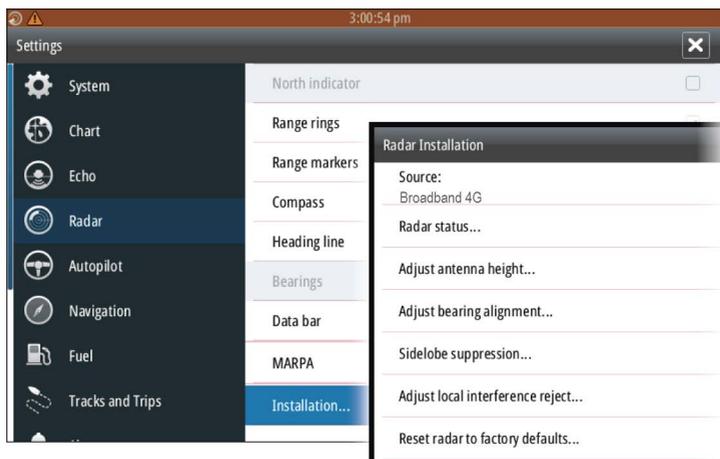
Radar source

In a system with more than one radar, the correct device to configure can be selected from this menu.

→ **Note:** Some radar like the broadband 4G support dual radar mode, and therefore are represented twice in the source list, with an A and B suffix.

Radar status

Scanner type
Identifies the model of scanner connected to the network.

Software version
Check to make sure you have the latest software. Check the latest software version available at: www.simrad-yachting.com.

Serial Number
This number should be recorded for support and insurance purposes.

MARPA status

The MARPA status can identify if a heading sensor is on the network and that the radar is receiving heading information essential for MARPA calculations.

Reset device ID

Should a radar be connected to the network that has been connected to a dual radar network in the past, it might not be detected by the system because it might have an invalid Device ID. With the radar connected and powered up, select the Reset Device ID button to resolve this problem.

→ *Note:* This procedure must be performed with only one radar on the network, and only applies where a network combines an older NSS with other MFDs.

Adjust antenna height

Set the radar scanner height relative to the water surface. The Radar uses this value to calculate the correct STC settings.

Adjust range offset

(Pulse Radar only)

The radar sweep should commence at your vessel (a radar range of zero). You may need to adjust the radar range offset to achieve this. If this is set incorrectly, a large dark circle in the center of the sweep might occur. You might notice straight objects such as straight sea walls or piers having curves or an indentation. Objects close to your vessel may appear "pulled in" or "pushed out".

Adjust the range offset as below when the vessel is about 45 to 90 m (50 to 100 yards) from a straight-walled jetty or similar feature that produces a straight line echo on the display.

• Point the boat towards the jetty
• Adjust the gain setting until a reasonably good image of the jetty echo is displayed
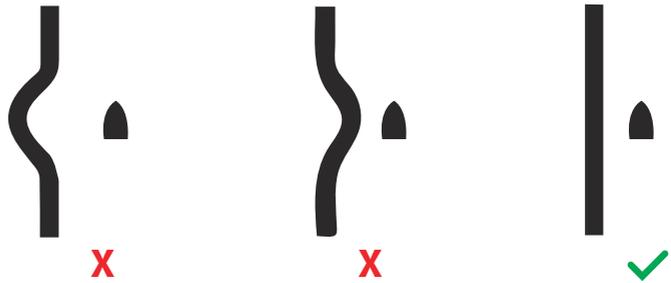
Adjust bearing alignment

This is to align the heading marker on the screen with the center line of the vessel. This will compensate for any slight misalignment of the scanner during installation. Any inaccuracy will be evident when using MARPA or chart overlay.

Point the boat to be perpendicular to the very end of a breakwater or peninsula. Adjust the bearing alignment setting, so that the heading marker and land mass intersect.

Sidelobe suppression

Occasionally false target returns can occur adjacent to strong target returns such as large ships or container ports. This occurs because not all of the transmitted radar energy can be focused into a single beam by the radar antenna, a small amount energy is transmitted in other directions. This energy is referred to as sidelobe energy and occurs in all radar systems. The returns caused by sidelobes tend to appear as arcs.

→ *Note:* This control should only be adjusted by experienced radar users. Target loss in harbor environments may occur if this control is not adjusted correctly.

When the radar is mounted where there are metallic objects near the radar, sidelobe energy increases because the beam focus is degraded. The increased sidelobe returns can be eliminated using the Sidelobe Suppression control.

By default, this control is set to Auto and normally should not need to be adjusted. However, if there is significant metallic clutter around the radar, sidelobe suppression may need to be increased. The control should be adjusted as follows:

1. Set Radar range to between 1/2 nm to 1 nm and Sidelobe Suppression to Auto
2. Take the vessel to a location where sidelobe returns are likely to be seen. Typically, this would be near a large ship, container port, or metal bridge.
3. Traverse the area until the strongest sidelobe returns are seen.
4. Change Auto sidelobe suppression to OFF then select and adjust the sidelobe suppression control until the sidelobe returns are just eliminated. You may need to monitor 5-10 radar sweeps to be sure they have been eliminated.
5. Traverse the area again and readjust if sidelobes returns still occur.
6. Exit the dialog.

Adjust local interference reject

Interference from some onboard sources can interfere with the Broadband radar. One symptom of this could be a large target on the screen that remains in the same relative bearing even if the vessel changes direction.

Choose from Local interference rejection LOW, MED or HIGH. Default is LOW.

Restore radar to factory defaults

This option can be used to revert all user adjustments.

Autopilot setup

Autopilot

→ **Note:** For set up and commissioning of NAC-2/NAC-3 autopilot computers, see the documentation included with the autopilot computer.

Verifying the autopilot connection

When a compatible autopilot computer is connected to the unit, the system automatically detects the autopilot and an Autopilot menu icon is included in the **Settings** menu.

If no Autopilot icon is available in the menu, establish the connection by running the auto select process.

If the autopilot computer is turned off independently of the unit, the Autopilot menu icon remains available, but only a few of the menu items are available.

Commissioning the autopilot

→ **Note:** A dedicated physical STBY key is required for commissioning. This can be on the autopilot control head, on an autopilot remote controller or a separate standby key.

When the autopilot installation is completed, the commissioning procedures must be performed. Failure in setting up the autopilot correctly may prohibit the autopilot from functioning properly.

The setup of the autopilot computers can be done in full from the unit or from a separate autopilot control head.

The following sections describe how you configure the autopilot from the unit. If you connect the unit to an already commissioned autopilot system, you only have to do an automatic source selection as described above before the autopilot is ready to be used.
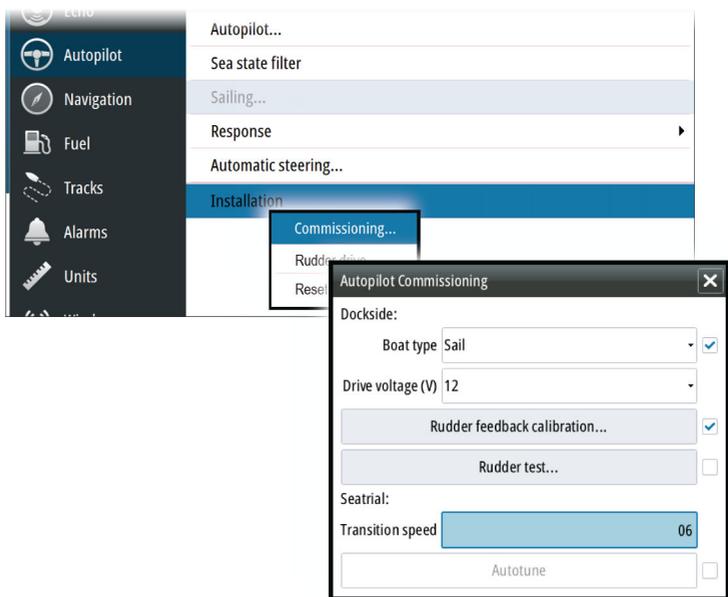
Dockside setup

Initiating the required dockside setup is done from within the Commissioning dialog. Completed procedures are labelled with a tick. When the autopilot computer is delivered from the factory AND ANY TIME AFTER AN AUTOPILOT RESET HAS BEEN PERFORMED, you will have to run a complete setup again.

All steps in all commissioning procedures are clearly described on-screen, and you are guided step by step through the process.

1. Press the **STBY** key to ensure that the autopilot is in standby mode.
2. Select the **Commissioning** option and clear the displayed dialog by pressing the **STDBY** key.
3. Select your boat type.
   - The boat type setting is used by the system to select appropriate preset steering parameters. It also affects available autopilot features.

→ **Note:** This option is not available for NAC-1 computers.

4. Perform the rudder calibration.
   - Used if you have a rudder feedback unit installed. This calibration is used to ensure that the physical rudder

movement corresponds to the rudder angle displayed on the GO XSE unit.

- The Virtual Feedback option enables your autopilot to steer without a conventional rudder feedback unit. This function is designed for vessels up to 40 ft powered by outboard or stern drives only.
- The Virtual Feedback option is only available when there is no feedback unit connected at first time turn on, or at turn on after an autopilot reset.

→ **Note:** Installing a feedback unit will enhance the performance of the autopilot and provide an accurate rudder angle indicator on the autopilot page. Unless impractical or impossible, a rudder feedback unit should be installed.

5. Set the drive voltage. Refer to your drive unit documentation for information.

6. Run the rudder test as described in the on-screen instructions.

→ **Note:** If the boat uses power assisted steering, it is important that the engine or electric motor used to enable the power assist steering is turned on prior to this test.

> ⚠ Warning: Stand CLEAR of the wheel and do not attempt to take manual control of the wheel during this test!

→ **Note:** When this test is started the autopilot computer issues a series of PORT and STBD rudder commands and automatically verifies correct rudder direction. It detects minimum power to drive the rudder and reduces the rudder speed if it exceeds the maximum preferred speed (8°/sec.) for autopilot operation. The system also detects whether the drive unit is a reversible motor or if a solenoid valve is operated.

Rudder drive setup

→ **Note:** This setting is not available for NAC-1 autopilot computers.

The rudder drive setup controls how the autopilot computer controls the steering system.

Drive voltage

Voltage specified for your drive unit. The Drive unit voltage setting does not apply when the system operates solenoids on a continuous running pump/steering gear. Hence, the output voltage to the solenoids will be the same as the input voltage.

Refer to your drive unit documentation for information.

⚠ Warning: Selection of improper voltage level for your drive unit may damage both the drive unit and the autopilot computer even if the protection circuits are activated.

Drive engage

Clutch
This is the default setting and it allows you to steer the boat with the helm or wheel when in STBY mode (FU and NFU modes) as well as in all auto steering modes.

Auto
This option is typically used to switch between two rudder speeds on a continuous running pump, used when different rudder speeds are required for automatic and Follow-up/Non-Follow-up steering.

Motor output

Shows the amount of power needed to achieve the correct rudder speed. The reading is obtained from the Rudder test.

The automatically set value may be increased or decreased.

Rudder deadband

This parameter is used to prevent the rudder from hunting. The reading is obtained from the Rudder test which optimizes the deadband to the speed of the boat and the pressure on the rudder. If the auto-setting does not perform properly due to high inertia from the wheel or a loose steering gear, it can be adjusted manually. Find the lowest possible value that will prevent the rudder from continuous hunting. A wide deadband causes inaccurate steering.

→ **Note:** The rudder deadband setting is not available when the autopilot is configured for Virtual Rudder Feedback.

Seatrials

A seatrial can only be performed if the dockside settings are completed and confirmed. The seatrial must always be performed in open waters at a safe distance from other traffic.

→ **Note:** A dedicated physical standby key should be available during the seatrial. This can be the standby key on the autopilot control head, on an autopilot remote controller or separate physical standby key. You can switch the autopilot to standby mode and take manual control of the boat at any time during the seatrial by pressing the standby key.

The following seatrial calibration should be done:

• Compass calibration; used to automatically compensate for on-board magnetic interference
• Compass offset adjustment, used to compensate for a fixed offset in the final heading readout
• Wind vane offset is to compensate for a wind vane that is not mounted facing in exactly the same direction as the bow of the vessel (dead ahead)
• Boat speed calibration
• Transition speed setting (the speed at which you want to change the set of steering parameters). This setting is not available for NAC-1 autopilot computers.
• Automatic tuning of the steering parameters. This setting is not available for NAC-1 autopilot computers.
• Setting the seastate filter. This setting is not available for NAC-1 autopilot computers.

- Sailboat Setup menu items. This setting is not available for NAC-1 autopilot computers.
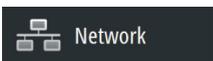
Compass calibration

`Network`

Before the compass calibration is started, make sure that there is enough open water around the vessel to make a full turn. The calibration should be done in calm sea conditions and with minimal wind to obtain good results. Follow the on-screen instruction, and use about 60-90 seconds to make a full circle. During the calibration, the compass measures the magnitude and direction of the local magnetic field.

You perform compass calibration from the Device list. Refer to *"Device list"* on page 33

- If the local magnetic field is stronger than the earth's magnetic field (the local field is reading more than 100 %), the compass calibration will fail.
- If the local field is reading more than 30 %, you should look for any interfering magnetic objects and remove them, or you should move the compass to a different location. The (local) field angle guides you to the local interfering magnetic object.

→ **Note:** Calibration must be made on the compass that is active for the autopilot. If the compass is not possible to initiate calibration from the device list on the GO XSE, refer to the compass' own instructions regarding calibration.

→ **Note:** In certain areas and at high latitudes the local magnetic interference becomes more significant and heading errors exceeding ±3° may have to be accepted.

Compass mounting offset

`Network`

After compass calibration, the difference (if any) between the compass lubber line and the boat's center line should be compensated for.

The compass offset parameter setting is made from the Device list.

1. Find the bearing from the boat position to a visible object. Use a chart or a chart plotter.
2. Steer the boat so that the center line of the boat is aligned with the bearing line pointing towards the object.

3. Select Settings, Network, Device list, and select the compass from the list.

4. Select Configure.

5. Change the offset parameter so that the bearing to the object and the compass readout becomes equal.

→ *Note:* Make sure that both the compass heading and the bearing to the object have the same unit (°M or °T).

Setting the Transition speed

→ *Note:* NAC-1 uses the **Steering response** parameter to adjust rudder activity. See description later in this section.

The transition speed is the speed at which the system automatically changes between **LO** and **HI** steering profiles.

The steering profiles are used to accommodate the boats' tendency to exhibit different steering characteristics at different speeds. You may also have different preferences about the steering performance of your boat required at low and high speeds.

On power boats it is recommended that you set a value that represents the speed where the hull begins to plane, the speed where the boat's steering characteristics change, or at the speed you want the autopilot to change behavior.

On sailboats the transition speed should be set to around 3-4 knots to give the best response in a tack.

There is a 2 knots hysteresis to prevent oscillation of HI/LO steering parameters when the vessel is travelling at the transition speed.

Example

The transition speed is set to 9 knots.

• The system changes from LO profile to HI profile when the speed increases to 10 knots (= Transition speed plus 1 knot)
• The system changes from HI profile to LO profile when the speed decreases to 8 knots (= Transition speed minus 1 knot)

The active response parameter set is shown in the autopilot popup and the following abbreviations are used:

HI-A	High response parameters set automatically
LO-A	Low response parameters set automatically
HI-M	High response parameters set manually

LO-M   Low response parameter set manually

Autotuning

→ **Note:** This setting is not available for NAC-1 autopilot computers.

The autotune feature runs the boat through several tests and then automatically sets the most important steering parameters. Autotune is not required for the autopilot to function, as it is preset with steering parameters that should steer most boats in the 30-50 foot range. All parameters that are set during autotuning can be manually adjusted.

Sea state filter

→ **Note:** This setting is not available for NAC-1 autopilot computers.

The Sea state filter is used to reduce rudder activity and autopilot sensitivity in rough weather.

OFF
Sea state filter is disabled. This is default.

AUTO
Reduces rudder activity and autopilot sensitivity in rough weather by an adaptive process. The AUTO setting is recommended if you want to use the seastate filter.

MANUAL
Linked to the steering response control settings described previously. It may be used to manually find the optimum combination of course keeping and low rudder activity in rough but steady sea conditions.

Setting sailing parameters

→ **Note:** Sailing parameter settings are only available if the boat type is set to Sail in the Autopilot Commissioning dialog. These settings are not available for NAC-1 autopilot computers.
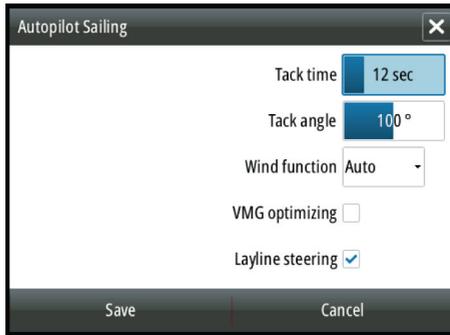
Tack time

When performing a tack in WIND mode, the rate of turn (tack time) can be adjusted. This gives single-handed sailors time to handle the boat and the sails during a tack. A turn performed without shifting wind side, is also made at a controlled turn rate.

Range: 2-50

Change per step: 1

Default: 12

Units: Seconds

Tack angle

This value is used to preset the course change used when tacking in AUTO mode. When you select the left or right arrow key on the Autopilot pop-up, the course changes as much as this value.

Range: 50-150

Change per step: 1

Default: 100

Units: Degrees

Wind function

With wind function set to Auto, the autopilot automatically selects between apparent and true wind steering. Auto is default and recommended for cruising.

When the boat is running or on a broad reach, there is a greater chance it will surf on the waves. This may lead to significant changes in boat speed, and thereby changes in apparent wind angle. True wind steering is therefore used to prevent undesired

corrections by the autopilot when heading downwind (or close to), while steering to apparent wind is used when beating or reaching.

Apparent wind steering is preferred when you want to maintain maximum boat speed without continuous trimming of the sails.

VMG optimizing
You can optimize the VMG to wind. When selected, the function will be active for 5–10 minutes after a new wind angle has been set and only when beating.

Layline steering
Layline steering is useful when navigating. Cross Track Error (XTE) from the navigator keeps the boat on the track line. If the XTE from the navigator exceeds 0.15 nm, the autopilot calculates the layline and track towards the waypoint.

Manually adjusting steering parameters

➔ **Note:** These settings are not available for NAC-1 autopilot computers.

The autotune function in the autopilot is so refined that the majority of boats need no further adjustments of the steering parameters. On some boats however, or in particular sea conditions, fine tuning of the steering parameters may improve the performance of the autopilot.

Transition speed
Refer to *"Setting the Transition speed"* on page 46.

Rudder
This parameter determines the ratio between commanded rudder and the heading error. The higher rudder value the more rudder is applied. If the value is too small it will take a long time to compensate for a heading error, and the autopilot will fail to keep a steady course. If the value is set too high the overshoot will increase and the steering will be unstable.
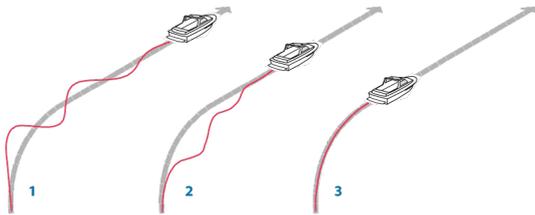
Counter rudder
Counter rudder is the amount of counteracting (opposite) rudder applied to stop the turn at the end of a major course change. The

settings depend on vessel's characteristics, loaded/ballast conditions and rate of turn.

• If the vessel has good dynamic stability, a relatively small value will be sufficient
• An unstable vessel will require high value
• The greater the vessel's inertia, the greater value will be required

Increasing counter rudder value may result in some higher rudder activity also when steering a straight course.

The best way of checking the value of the Counter rudder setting is when making turns. The following figures illustrate the effects of various Counter Rudder settings:

1   Counter rudder too low; overshoot response.

2   Counter rudder too high; sluggish and creeping response.

3   Correct setting of counter rudder; ideal response.

Perform various course changes and observe how the boat settles on the new heading. Start with small changes, 10-20 degrees, and proceed with bigger changes, 60-90 degrees. Adjust Counter rudder value to obtain best possible response as in illustration 3.

→ **Note:** As many boats turn differently to port versus starboard (for various reasons), perform the course changes in both directions. You may end up with a compromise setting of Counter rudder that gives a little overshoot to one side and a bit creeping response to the other.

Auto trim

This parameter defines how fast the autopilot shall correspond after having registered a heading error.

The standard value is 40 seconds which should work well on most boats. Rule of thumb: Set to same value (seconds) as the boat's

length in feet. On boats operating on VRF, the value should be set to 20 seconds.

Rate limit

Sets the maximum allowed rate of turn.

The value should be kept at 6.0°/second unless there is a need for more rapid response in turns.

Minimum rudder

This parameter filters small rudder commands to prevent high rudder activity.

Some boats may have a tendency to not respond to small rudder commands around the "course keeping" position because of a small rudder, a rudder deadband, whirls/disturbance of the water-stream passing the rudder, or it is a single nozzle water jet boat.

By increasing the Minimum rudder parameter you may improve the course keeping performance on some boats. However, this will increase the rudder activity.

Minimum wind angle to port and starboard

These parameters should be set identical to the minimum apparent wind angle that will keep the sails from stalling and maintain boat speed. The parameters vary from boat to boat.

The settings are used for the tack-prevent function. They also apply when the autopilot is operating in WindNAV mode.

You can select different minimum wind angles for port and starboard. The difference between port and starboard is taken into account when calculating the Distance To Turn (DTT).

Navigation change limit

This parameter defines the maximum course change that the autopilot is allowed to make when the GO XSE is following a route (NAV steering).

If the required course change to the next waypoint in a route is more than the set limit, you are prompted and must acknowledge the course change before the autopilot will turn the vessel.

Response

→ **Note:** Not available for NAC-1 autopilot computers. NAC-1 uses the Steering response settings.

By default the system switches between HI/LO parameter set based on speed (motor boats) or speed and wind (sail boats). You can however manually select which parameter set that shall be used.

HI or LO must be selected if no speed input is available.

You can manually fine tune each of the two (HI/LO) parameter sets. Level 4 is default with parameter values as set by the autotune function. If no autotune is made (not recommended) the level 4 values are the factory default values.

A low response level reduces the rudder activity and provides a more "loose" steering.

A high response level increases the rudder activity and provides a more "tight" steering. A too high response level causes the boat to start lazy-s movements.

Steering response

→ **Note:** Only available for NAC-1 autopilot computers.

Used to increase or decrease the steering sensitivity. A low response level reduces the rudder activity and provides a more *loose* steering. A high response level increases the rudder activity and provides more *tight* steering. Too high a response level will cause the boat to make "S" movements.

Fuel setup

🛢️ Fuel

The fuel utility monitors a vessel's fuel consumption. This information is totaled to indicate trip and seasonal fuel usage, and is used to calculate fuel economy for display on instrument pages and the data bar.

To use the utility, a Navico Fuel Flow sensor, or a NMEA 2000 engine adaptor cable/gateway with Navico Fuel Data Storage device must be fitted to the vessel. Neither the Navico Fuel Flow sensor, nor the Suzuki engine interface require the use of a separate Fuel Storage device. Refer to the engine manufacturer or dealer for information on whether or not your engine provides a data output, and what adaptor is available to connect to NMEA 2000.

Once the physical connection is made, ensure source selection is completed. Multiple engine installations using Fuel Flow sensors, or Fuel Data Storage devices, require setup of related engine location in the Device list. For general source selection information, refer to *"Data source selection"* on page 31.

Vessel setup

The Vessel setup dialog must be used to select the number of engines, the number of tanks and vessel's total fuel capacity across all tanks.
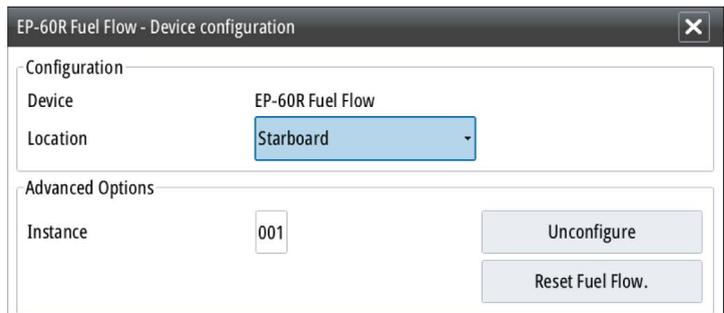
Vessel Setup	✕
Number of Engines	
2	
Number of Fuel Tanks	
1	
Vessel total fuel capacity (L)	
80	
Save	Cancel

Fuel flow configuration

After the number of engines is set, it is required to set which fuel flow sensor is connected to which engine. Under **Device list** on the Network page, view the Device Configuration dialog for each sensor, and set the **Location** to match the engine the device is connected to.

Unconfigure - defaults the device which clears all user settings.

Reset Fuel Flow - restores only the Fuel K-Value setting, if set in Calibrate. Only Navico devices can be reset.

| EP-60R Fuel Flow - Device configuration	✕
Configuration	
Device	EP-60R Fuel Flow
Location	Starboard ▾
Advanced Options	
Instance	001	Unconfigure
		Reset Fuel Flow.

Calibrate

Calibration may be required to accurately match measured flow with actual fuel flow. Access calibration from the **Refuel** dialog. Calibration is only possible on Navico's Fuel Flow sensor.
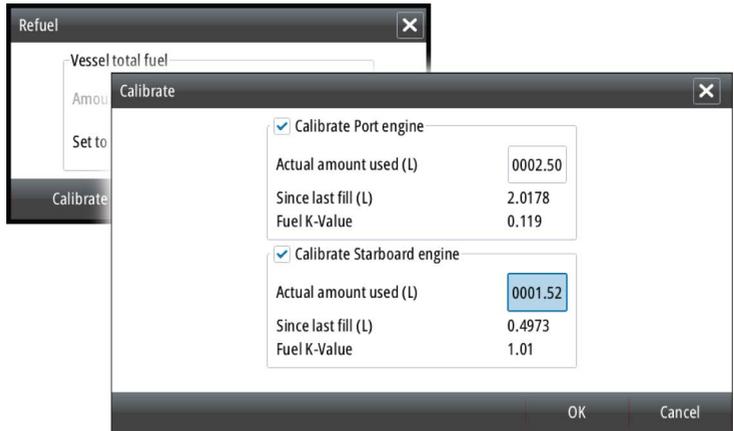
1. Start with a full tank and run the engine as it would normally be operated.
2. After at least several liters (a few gallons) have been used, the tank should be fully refilled, and the **Set to full** option selected.
3. Select the **Calibrate** option.
4. Set the **actual amount used** based on amount of fuel added to the tank.
5. Select **OK** to save settings. The **Fuel K-Value** should now show a new value.

→ **Note:** To calibrate multiple engines repeat the steps above, one engine at a time. Alternatively, run all engines simultaneously, and divide the *Actual amount used* by the number of engines. This assumes reasonably even fuel consumption on all engines.

→ **Note:** The **Calibrate** option is only available when **Set to full** is selected, and a Fuel Flow is connected and set up as a source.

→ **Note:** A maximum of 8 engines is supported using Fuel Flow sensors.
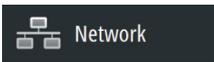
Fuel Level

With the use of a Navico Fluid Level device connected to a suitable tank level sensor, it is possible to measure the amount of fuel remaining in any equipped tank. The number of tanks must be set in Vessel Setup dialog, initiated from the Fuel setting options page, to allow discrete tank assignment of the Fluid Level devices.

Select **Device list** on the Network page, and view the Device Configuration dialog for each sensor, and set the Tank location, Fluid type, and Tank size.

```
EP-65R Fluid Level - Device configuration                    ✕
┌ Configuration ─────────────────────────────────────────────┐
│  Device                      EP-65R Fluid Level             │
│  Tank                        Center        ▾                │
│  Fluid type                  Fuel          ▾                │
│  Tank size (L)               0704.90                        │
└─────────────────────────────────────────────────────────────┘
┌ Advanced Options ──────────────────────────────────────────┐
│  Instance           000              [   Unconfigure   ]   │
└─────────────────────────────────────────────────────────────┘
```

For setting up the Instrument bar or a gauge on the Instrument page with Fluid Level device data, refer to the Operator Manual.

→ **Note:** A maximum of 5 tanks is supported using Fluid Level devices.

→ **Note:** Tank data that is output by a compatible engine gateway can also be displayed, however tank configuration for such a data source is not possible from this unit.

CZone setup

In order to communicate with the CZone modules connected to the network, the GO XSE must be assigned a unique CZone Display Dipswitch setting.
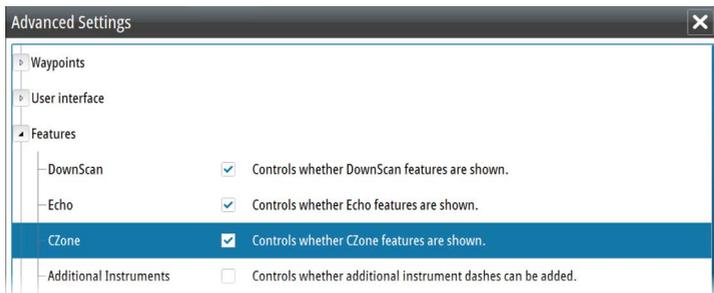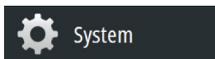
The functionality of the CZone system is determined by the CZone Config File (.zcf), which is stored on all CZone modules and the GO XSE. The file is created using the CZone Configuration Tool, a

specialized PC application available from BEP Marine Ltd, and associated CZone distributors.

The GO XSE system provides a means to load the Config file, as well as apply updates to module firmware, removing the need to take a laptop computer aboard the vessel.

Enabling CZone functionality

System

If the CZone device(s) are not automatically detected, it is possible to manually enable CZone.

Advanced Settings		✕
▷ Waypoints		
▷ User interface		
▲ Features		
DownScan	☑	Controls whether DownScan features are shown.
Echo	☑	Controls whether Echo features are shown.
CZone	☑	Controls whether CZone features are shown.
Additional Instruments	☐	Controls whether additional instrument dashes can be added.

Assigning the dipswitch setting

CZone

Every product capable of controlling and viewing CZone devices must be assigned a virtual dipswitch setting. This setting is unique for each device. Typically it is set after the configuration file already exists on the CZone system, but it may also be set in advance. To do so, access the CZone menu on the Settings page.

When the configuration is already available on the network, it will immediately commence uploading to the GO XSE once the dipswitch is set. Allow this to complete, without interruption.

Setting CZone to display at startup

With this option selected, the CZone control page is shown first, every time the GO XSE is powered up.

CZone backlight control

Enabling this causes the GO XSE to synchronize its backlight setting with that of any CZone Display Interfaces set up to share backlight settings.

→ **Note:** CZone Config also needs to have the GO XSE set as a controller.

Import and backup a configuration file

The files page may be used to import CZone configuration files, or export a copy to a memory card in the card reader. Importing overwrites the existing file on the GO XSE and all connected CZone devices.

For further information, see *"Backing up and Importing user data"* on page 63.

Upgrading module firmware

The Files page also allows the loading of NMEA 2000 devices firmware upgrades. For example, CZone firmware updates. For more information, refer to *"NMEA 2000 device upgrades"* on page 64.

Wireless setup

((•)) Wireless

The unit includes built-in wireless functionality that lets you:

- Use a wireless device to remotely view (smartphone and tablet) and control the system (tablet only). Wireless devices use the GoFree app downloaded from their relevant application store.
- Access the GoFree Shop.
- Upload your logs to create custom maps at Insight Genesis.
- Download software updates
- Connect to third party applications

Connecting a tablet

Install the GoFree App on the tablet before following this procedure.

1. Navigate to the wireless network connection page on the tablet, and find the unit or GoFree wireless *xxxx* network. If more than one is in range, review the **Wireless devices** page on the unit to confirm which wireless device is connected to the unit.
2. Select a device on the **Wireless devices** page to show its network key.
3. Enter the eight character (or longer) Network Key in the tablet to connect to the network.
4. Open the GoFree application - the unit should be automatically detected. The name displayed will be either the default, or that

assigned in the Device Name setting. If the unit does not appear, follow the on screen instructions to manually find the device.

5. Select the graphic icon of the unit. The unit displays a prompt similar to the following:

6. Select **Yes** for one-time connection, or **Always** if device is to be remembered for regular connection. This setting can be changed later if required.

→ *Note:* The internal wireless module only supports GoFree connection to itself. Other units connected on the network are not visible.

Connecting a smartphone

Install the GoFree App on the smartphone before following this procedure.

1. Navigate to the wireless network connection page on the smartphone, and find the unit or GoFree wireless *xxxx* network. If more than one is in range, review the **Wireless devices** page from the unit's Wireless settings dialog to confirm which wireless device is connected to the unit.

2. Select a device on the **Wireless devices** page to show its Network Key.

3. Enter the Network Key in the smartphone to connect to the network.

4. Open the GoFree application on the smartphone, the unit should be automatically detected. The name displayed will be either the default, or that assigned in the Device Name setting. If the unit does not appear, follow the on screen instructions to manually find the device.

The MFD's display is shown on the smartphone. To change the MFD's display on the smartphone, use the MFD to change the display on the MFD. The display change on the MFD is reflected on the smartphone.

Remote controllers

When a wireless device is connected, it should appear in the **Remote controllers** list.

Selecting **Always allow** means the device can automatically connect without needing a password each time. This menu also allows disconnection of devices that no longer require access.

Wireless devices

Shows the internal wireless module and any connected WIFI-1 devices, as well as their IP and channel number. If a WIFI-1 is connected and the system detects the software is out of date, an option to update is also displayed. WIFI-1 updates, when required, are included with the display updates.

Select a device to view additional information about it. 'Network Name' and 'Network Key' can be edited for security, and 'Channel' can be changed if the connection to your unit is compromised due to interference. 'Mode' can be changed on WIFI-1 devices only. Restore defaults returns the unit to factory settings.

Advanced

Tools are available within the software to assist in fault-finding and setting up the wireless network.
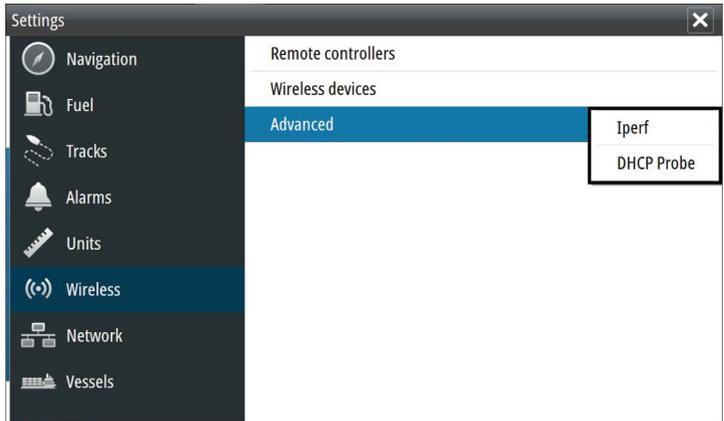
Iperf

Iperf is a commonly used network performance tool. It is provided for testing wireless network performance around the vessel so weak spots or problem areas can be identified. The application must be installed on and run from a tablet device.

The GO XSE must be running Iperf server before initiating the test from the tablet. On exiting the page, Iperf automatically stops running.

DHCP Probe

The wireless module contains a DHCP server that allocates IP addresses for all the MFDs, and Echosounder in a network. If integrating with other devices, such as a 3G modem or satellite phone, other devices in the network may also be acting as DHCP servers. To make it easy to find all DHCP servers on a network, dhcp_probe may be run from the GO XSE. Only one DHCP device may be operational on the same network at a time. If a second device is found, turn off its DHCP feature if possible. Refer to the device's own instructions for further assistance.

→ **Note:** Iperf and DHCP Probe are tools provided for diagnostic purposes by users familiar with network terminology and configuration. Navico is not the original developer of these tools, and cannot provide support related to their use.

Internal Wireless

Select this option to enable or disable the internal wireless module.

Disabling wireless when not in use reduces the unit's power consumption.

NMEA 2000 setup
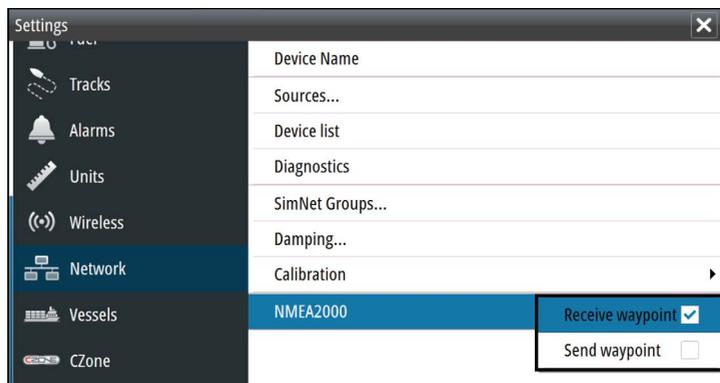
Receive waypoint

Select this option to allow another device capable of creating and exporting waypoints via NMEA 2000 to transfer directly to this unit.

Send waypoint

Select this option to allow this unit to send waypoints to another device via NMEA 2000.

Software updates and data backup

From time to time we release software updates to our existing products. Updates are created for a variety of reasons; to add or improve features, to add support for new external devices, or to fix software bugs.

Updates can be found on the website: www.simrad-yachting.com

When the unit is connected to the internet, a pop-up can appear advising that a software update is available and encourages you to download the update.

The unit may be used to apply software updates to itself, and to supported network devices, with files read off a memory card inserted in the card reader.

Before initiating an update to the unit itself, be sure to back up any potentially valuable user data.

Network analyzer and service assistant

The system has a built-in service assistant that creates a report of the devices installed on the NMEA 2000 network such as the software versions, serial numbers, and information from the settings file to assist in technical support enquiries.

To use the analyzer, open the About page of the System settings dialog and select Support. Two options are displayed:

→ *Note:* Remove any mapping cards from your unit and install a memory card with sufficient storage before downloading software updates or creating and saving reports to the memory card.

Create report

Analyzes your network and prompts you for information required for support and creates the report with information automatically gathered from the network. You can add screenshots and log files that will be attached to the report. There is a 20MB limit for the report attachments. You can save the report to a memory card and email it to support or upload it directly if you have an internet connection. If you call technical support first, you can enter an Incident number to assist with tracking.

Check system for updates

Analyzes your network and checks if updates are available for compatible devices.

→ *Note:* Connect your unit to the internet to check for the latest available software versions. The software versions will be up to date as of the last time you updated your unit or connected to the internet.

Backing up and Importing user data

There are two files that can be backed up that relate to user changes made to the system:

- Waypoints, Routes, and Tracks database.
- Settings database (includes preferences such as unit settings, custom pages, and CZone configuration files).

Insert a memory card into the unit's card reader as a storage location for backup data.

Waypoints, Routes, and Tracks database backup

You can export all Waypoints, Routes, and Tracks, or export only those contained within a specific region.

If Export Region is selected, the chart page will be displayed, centered on vessel location. Using the touch screen, adjust the red boundary box to outline the area to be exported. The export option offers different file formats to save as:

- **User data file version 5**: Use with current units (NSO evo2, NSS evo2, NSS, NSO, NSE, Zeus, Zeus Touch, HDS Gen2, HDS Gen2 Touch, HDS Gen3, GO XSE units, Vulcan units, and ELITE Ti units). Offers most detail.
- **User data file version 4**: Use with current units (NSO evo2, NSS evo2, NSS, NSO, NSE, Zeus, Zeus Touch, HDS Gen2, HDS Gen2 Touch, HDS Gen3, GO XSE units, Vulcan units, and ELITE Ti units).
- **User data file version 3 (with depth)**: Use with legacy GPS chartplotters.
- **User data file version 2 (no depth)**: Use with legacy GPS chartplotters.
- **GPX (GPS Exchange, no depth)**: Use with some other manufacturers' GPS products, and PC applications.

After you select the file type, select Export and destination memory card. The receiving GPS/PC typically needs to be set to allow import of Waypoints.

Settings database export

Select **Setting database** to export the Settings database, or export CZone configuration (CZone installation dependent). Choose the desired option and select the memory card destination.

Importing a database

Later, if the unit has been restored to factory defaults or user data is accidentally deleted, return to the files page, select the backed up file, and then **Import**. View file details for creation date.

Software upgrades

The update file must be loaded to the root directory of the memory card.

The update may be initiated at boot up: insert the memory card into the card reader before turning the unit on, boot the unit, and follow the on-screen instructions.

Alternatively, in the Files menu, locate the update file on the memory card inserted in the card reader and select **Upgrade**, followed by **This Display**. Accept the prompt to reboot the unit, and wait a few moments as the unit restarts. Do not remove the memory card or repower the unit until the process is completed (this typically takes no more than a couple of minutes).

Software upgrade of remote device

It is possible to run an update remotely from one unit and apply it to another, provided they are on the NMEA network. This is only possible for units without a card slot.

Remote updating is similar to updating a local unit; select the file on the memory card and select the **Upgrade** option, followed by **Remote Upgrade**. Follow the onscreen options.

NMEA 2000 device upgrades

The update file must be loaded to the root directory of a memory card inserted in the card reader.

1. Select the Files toolbar option and select the update file under Memory card.
2. Select the Upgrade option presented when the file is highlighted. A list should appear displaying any compatible devices the update file applies to. In most cases this will be a single device.

→ *Note:* If no device is shown, check that the device to be updated has power, and run any outstanding updates for the unit first.

3. Select the device and initiate the upgrade. Do not interrupt the upgrade process.

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Accessories

The most up-to-date accessories list is available at:
www.simrad-yachting.com.

GO5 XSE Accessories

Part number	Description
000-13168-001	Sun Cover
000-10027-001	Quick Release Bracket
000-13171-001	Power and NMEA 2000 Cable
000-13170-001	Bezel
000-13169-001	Panel Mount Kit
000-13313-001	7 to 9 Pin Transducer Adapter for Airmar transducers

GO7 XSE Accessories

Part number	Description
000-12366-001	Flush Mount Kit
000-12368-001	Flush Mount Sun Cover
000-12367-001	Bracket and Panel Mount Sun Cover
000-12371-001	Panel Mount Kit
000-12372-001	U Bracket
000-00128-001	Power Cable
000-13313-001	7 to 9 Pin Transducer Adapter for Airmar transducers

GO9 XSE Accessories

Part number	Description
000-13698-001	Sun Cover
000-13699-001	Panel Mount Kit
000-13702-001	U Bracket

Part number	Description
000-13700-001	Bezel replacement
000-00128-001	Power Cable
000-13313-001	7 to 9 Pin Transducer Adapter for Airmar transducers

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Supported data

NMEA 2000 compliant PGN List

NMEA 2000 PGN (receive)

59392	ISO Acknowledgement
59904	ISO Request
60928	ISO Address Claim
61184	Parameter Request/Command
65285	Temperature with Instance
65289	Trim Tab Insect Configuration
65291	Backlight Control
65292	Clear Fluid Level Warnings
65293	LGC-2000 Configuration
65323	Data User Group Request
65325	Reprogram Status
65341	Autopilot Mode
65480	Autopilot Mode
126208	ISO Command Group Function
126992	System Time
126996	Product Info
127237	Heading/Track Control
127245	Rudder
127250	Vessel Heading
127251	Rate of Turn
127257	Attitude
127258	Magnetic Variation
127488	Engine Parameters, Rapid Update
127489	Engine Parameters, Dynamic
127493	Transmission Parameters, Dynamic
127503	AC input status

127504	AC Output Status
127505	Fluid Level
127506	DC Detailed Status
127507	Charger Status
127508	Battery Status
127509	Inverter Status
128259	Speed, Water referenced
128267	Water Depth
128275	Distance Log
129025	Position, Rapid Update
129026	COG & SOG, Rapid Update
129029	GNSS Position Data
129033	Time & Date
129038	AIS Class A Position Report
129039	AIS Class B Position Report
129040	AIS Class B Extended Position Report
129041	AIS aids to Navigation
129283	Cross Track Error
129284	Navigation Data
129539	GNSS DOPs
129540	AIS Class B Extended Position Report
129794	AIS aids to Navigation
129801	Cross Track Error
129283	Cross Track Error
129284	Navigation Data
129539	GNSS DOPs
129540	GNSS Sats in View
129794	AIS Class A Static and Voyage Related Data
129801	AIS Addressed Safety Related Message
129802	AIS Safety Related Broadcast Message
129808	DSC Call Information
129809	AIS Class B "CS" Static Data Report, Part A

129810	AIS Class B "CS" Static Data Report, Part B
130074	Route and WP Service - WP List - WP Name & Position
130306	Wind Data
130310	Environmental Parameters
130311	Environmental Parameters
130312	Temperature
130313	Humidity
130314	Actual Pressure
130576	Small Craft Status
130577	Direction Data
130840	Data User Group Configuration
130842	SimNet DSC Message
130845	Parameter Handle
130850	Event Command
130851	Event Reply
130817	Product Info
130820	Reprogram Status
130831	Suzuki Engine and Storage Device Config
130832	Fuel Used - High Resolution
130834	Engine and Tank Configuration
130835	Set Engine And Tank Configuration
130838	Fluid Level Warn
130839	Pressure Insect Configuration
130840	Data User Group Config
130842	AIS and VHF Message Transport
130843	Sonar Status – Frequency and DSP Voltage
130845	Weather and Fish Prediction and Barometric Pressure History
130850	Evinrude Engine Warnings
130851	Parameter (RC42 Compass and IS12 Wind Calibration and Configuration)

NMEA 2000 PGN (transmit)

61184	Parameter Request/Command
65287	Configure Temperature Insects
65289	Trim Tab Insect Calibration
65290	Paddle Wheel Speed Configuration
65291	Backlight Control
65292	Clear Fluid Level Warnings
65293	LGC-2000 Configuration
65323	Data User Group Request
126208	ISO Command Group Function
126992	System Time
126996	Product Info
127237	Heading/Track Control
127250	Vessel Heading
127258	Magnetic Variation
128259	Speed, Water referenced
128267	Water Depth
128275	Distance Log
129025	Position, Rapid Update
129026	COG & SOG, Rapid Update
129029	GNSS Position Data
129283	Cross Track Error
129284	Navigation Data
129285	Route/Waypoint Data
129539	GNSS DOPs
129540	GNSS Sats in View
130074	Route and WP Service - WP List - WP Name & Position
130306	Wind Data
130310	Environmental Parameters
130311	Environmental Parameters

130312	Temperature
130577	Direction Data
130840	Data User Group Configuration
130845	Parameter Handle
130850	Event Command
130818	Reprogram Data
130819	Request Reprogram
130828	Set Serial Number
130831	Suzuki Engine and Storage Device Config
130835	Set Engine And Tank Configuration
130836	Fluid Level Insect Configuration
130837	Fuel Flow Turbine Configuration
130839	Pressure Insect Configuration
130845	Weather and Fish Prediction and Barometric Pressure History
130850	Evinrude Engine Warnings
130851	Parameter (RC42 Compass and IS12 Wind Calibration and Configuration)

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Technical specifications

→ **Note:** The most up-to-date specifications list is available at: www.simrad-yachting.com

Mechanical/Environmental

Casing	PC/ABS
Operating temp	-15°C to +55°C (+5°F to +131°F)
Water ingress	IPX6 and 7
Weight (excluding mounting hardware)	• .526 kg (1.16 lbs) - GO5 XSE • .907 kg (2 lbs) - GO7 XSE • 1.315 kg (2.9 lbs) - GO9 XSE
Screen brightness	1200 nits
Screen resolution	480 x 800 (H x W)
Viewing angle in degrees (typical value at contrast ratio = 10)	L/R: 70, top: 50, bottom: 60
Dimensions (overall)	See dimension drawings

Electrical

Operating voltage	10 - 17 V DC
Current draw at 13.6 V (sonar off, max B/L)	1 A
Low power standby mode	yes
Protection	reverse polarity and temporary over-voltage to 36 V
Alarm output current	1 A max
Processor	iMX61 single core
Conformity	CE, C-Tick

Interfaces

NMEA 2000 (compliant)	• 1 port (Micro-C male) - not available on the GO5 XSE, network load 1 LEN • 1 combined port Power and NMEA 2000 (7 pin connector) - GO5 XSE only
Sonar	1 port (9 pin connector)
Radar	1 port (5 pin Ethernet connector) - GO9 XSE only.
Card reader	• 1x microSD - GO5 XSE and GO7 XSE only • Dual microSD - GO9 XSE only

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Dimensional drawings

GO5 XSE Dimensional drawings

152.0 mm (5.98")

117.5 mm (4.62")

58.0 mm (2.28")

136.0 mm (5.35")

120 mm (4.72")

94.0 mm (3.70")

94.0 mm (3.70")

GO7 XSE Dimensional drawings

199.0 mm (7.84")

108.55 mm (4.27")

28.5 mm (1.12")

154.0 mm (6.06")

142.0 mm (5.60")

220.00 mm (8.66")

37.0 mm (1.45")

GO9 XSE Dimensional drawings

242.0 mm (9.52″)

90.0 mm (3.54″)

7.0 mm (0.27″)

184.0 mm (7.24″)

170.0 mm (6.69″)

248.0 mm (9.76″)

263.0 mm (10.35″)

24.0 mm (0.94″)

79.0 mm (3.11″)

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