



## **E-SEA FIX CAT II/III**

### **OPERATOR'S MANUAL**



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## INTRODUCTION

### E-Sea Fix CAT II/III



The E-Sea Fix CAT II and CAT III have two GPS antennas and are providing a heading. The heading is calculated from the POS antenna towards the HDG antenna. It also includes a UHF antenna, which is used for reception of DGPS corrections from the Shore station and AIS targets in case the AIS option is built in. The position and Heading data is transmitted on Wireless LAN to the portable laptop or iPad, which is presenting the data. The Wireless LAN antennas are located inside the housing.

## UNPACKING

### **E-Sea Fix II/III incl.**

1 pc. CAT II/III with position and heading antennas  
1 pc. UHF antenna  
1 pc. Charger for CAT II/III  
Backpack

### **Options**

iPad with SafePilot software

## E-SEA FIX CAT II/III SETUP

- A. Place the POS antenna at a known location on the vessel. Typically, there is a mark on the inner side of the bridge wing, indicating distance to the bow and stern. *It is important that the antennas have a clear view to the sky, and that there are no obstacles in the near vicinity. This can cause longer startup times, and even make the heading unstable.*

1.



2.



1 – 2: Perfect, since no obstacles are higher in the near vicinity. Also the antennas are placed on the railing where no reflections can come from below.

3



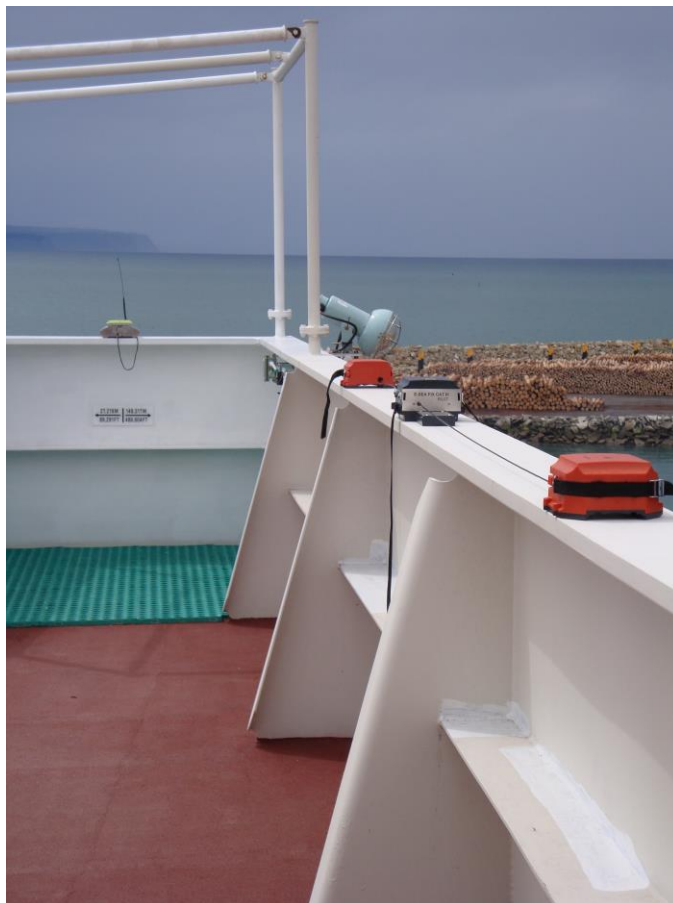
3: Very bad. The railing is above the antenna, and will cause reflections and blockage of the sky.

4



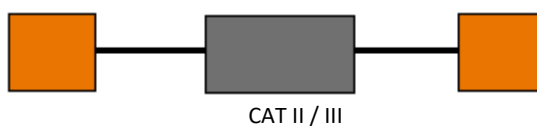
4: Very bad. Obstacles all over and it is placed on a large metal surface that will cause reflections.

- B. Place the HDG antenna along-ship or across-ship. If the HEADING antenna is placed along-ship in front of the POS antenna. You will get a heading without any offset adjustment in the software. If you install the two antennas across the direction of the vessel. An offset of (90° or 270°) must be entered into the Heading in the software.



*Note. Remember; align the bearing of the antennas with the bearing of the vessel or across-ship. Be careful with the installation, any error in the placement will involve inaccuracies in the calculated heading.*

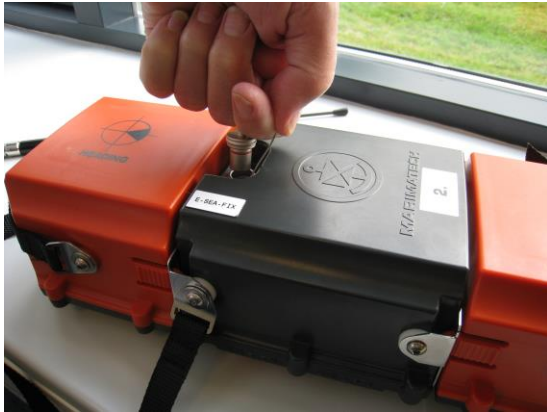
- C. The distance between the antennas is automatically calculated by the GPS receiver for both Cat II and CAT III.  
However it is recommended to give the antennas as much separation as possible (3-4m is preferred). The antennas do not have to be separated with the same distance from the center unit. However the distance between the single antenna and center unit must be minimum 1m both sides.



- D. The cables to the antennas have a maximum length of 2 metres allowing for up to 4 metres between the antennas. The cable is automatically wired up on a roller inside the antenna housing. Therefore there will be no need to insert connectors.

- E. Attach the UHF antenna.

*Remove cap*



*Insert antenna*



- F. Here you see a close-up of the control lamps.



### **Power indication:**

The diodes number 1 to 5 will indicate the battery status:

- 1 Less than 5% left
- 2 5% - 25%
- 3 25% - 50%
- 4 50% - 75%
- 5 75% - 100%

Power ON/OFF: Once the "POSITION" antenna is removed from its parking position the POWER comes on automatically. When parked it turns off the power again.

Diodes numbers 6,7,8,9 are not used in this model.

Diode 10 indicates that the unit is being charged. When the unit is fully charged the diode will switch off.



Once you have powered the system, and it has found a position, it starts transmitting wireless to the computer.

Be aware that the units transmit to the IP address indicated on the E-Sea Fix unit.

First time the unit is turned on in a new geographical area (country) it can take from 2 - 20 minutes to get the position as the unit will need to receive an "almanac" from the satellites.

After the initial start up, the position and heading will be obtained within 2 min from turning on the unit.

**UDP Network port:**

The units transmit on a UDP Network port to a fixed IP address and the software must be set-up to receive on the UDP network port named below.

The primary IP address is 192.168.3.101 and UDP port 17608

A secondary IP address is also available for a secondary device.

Secondary IUP address: 192.168.3.89 and UDP port 17610

## **GENERAL FOR E-SEA FIX CAT's**

All E-Sea Fix units are fitted with magnets fixed into the magnesium bottom section. These magnets are very strong and will ensure a secure fix to the ship railing.

As the E-Sea Fix units have those magnets integrated the safe distance to the ships compass is 1.5 meter. Use the carrying belt to ensure that the unit will not be lost should the magnets not be able to hold the unit.

The E-Sea Fix units are designed for IP65. The antenna units have two sections. In the top part housing the antenna is IP65 water tight. The bottom section with the cable wheel is open to the environment. Small holes in the bottom plate will allow that water to run out.

### **Charging the E-Sea FIX CAT's**

E-Sea Fix CAT II and CAT III have a red (+) and black (-) connector on the side opposite to the "position wing". Connect the RED and BLACK plugs to the corresponding colour on the unit. Next connect the charger to the main (90 VAC to 260 VAC).

It will take approximately 4 hours to fully charge the unit from low battery status.

A fully charged CAT II unit will operate for approximately 8-9 hours.

A fully charged CAT III unit will operate for approximately 6-7 hours.

Additional battery can be ordered separately for extended battery time.

## COMPUTER CONFIGURATIONS

The transponders are transmitting the position data on Wireless LAN, therefore the computer needs to have W-LAN. The Wireless adapter has to support IEEE 802.11b standard.  
Before the computer can receive data from the Transponder, three things have to be fulfilled, Disabling of Firewall/ or make an exemption in the firewall for the pilot software. Correct IP address of the computer and link to the SSID showed on the unit.  
See below how to setup your computer.

### Adhoc networks in Windows 8.1

Since Windows 8.1 Microsoft has decided not to show Adhoc networks but it is still possible to use it.

1. Download the folder from the link below. It contains configuration and batch files that will connect to the desired network.
2. Unzip the folder to your hard drive.
3. The folder contain batch files for connection to various SSID's, please select the one named after the SSID on your device. This example uses the SSID "Routing"
4. Create a shortcut on the desktop of the ConnectToRouting.bat file.
5. Right click on the shortcut and select Properties.
6. Select the fan Compatibility.
7. Click Run as administrator.
8. Click OK.
9. Click the start button in lower left corner and paste the shortcut to All Programs/Startup

Now the computer will automatically connect to the Routing WIFI network when starting up.  
Remember to give the WIFI adapter the appropriate IP address, Ex. 192.168.3.101

The link below explain how to access the Startup folder in Windows 8.1.  
<https://support.microsoft.com/en-us/kb/2806079>

## **TROUBLESHOOTING**

### **No GPS lock**

- Check integrity of antenna cable
- Make sure the connectors are properly connected (push and drag connector)
- Verify antennas have unobstructed view of sky and have a fair distance to bulkheads, antennas, floodlight projectors etc.

### **No Differential lock**

- Check that the UHF antenna is properly connected
- Verify antennas have unobstructed view of sky
- Move the Case to a position where it has a better view of the Shore station

### **No heading or incorrect heading values**

- Ensure that the antennas are proper orientated
- Check the software heading settings reflect the unit's orientation
- Make sure the distance between the antennas is sufficient
- Verify antennas have unobstructed view of sky

### **No data displayed in E-Sea Guide**

- Make sure you have a wireless connection enabled on the Laptop
- Make sure you are connected to the SSID "Routing"
- Check IP address on computer, to match with CAT's.