

# Quick Startup guide for CTRX Graphene and Graphene+



Rev. 1.1  
(140505)

# Get started with CTRX Graphene and CTRX Graphene+ – What is in the box? –

## Enclosed in the box to the CTRX Graphene, part# 0012-001-000, you shall find:

- 1 x AIS transponder CTRX Graphene (see picture below).
- 1 x BNC to UHF adapter (for connection of VHF antenna)
- 1 x DC/Data cable
- 1 x USB cable (mini USB to regular USB)
- 1 x CD w/installation program for MMSI number etc.

Part# 0012-001-000



## Enclosed in the box to the CTRX Graphene+, part# 0012-002-000, you shall find:

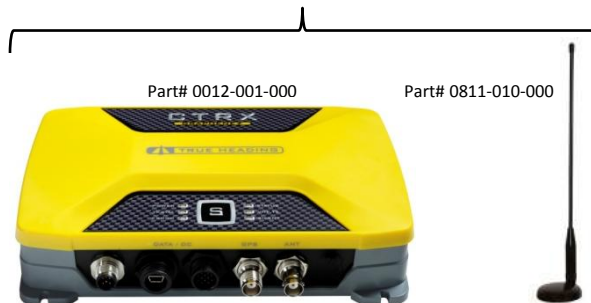
- 1 x AIS transponder CTRX Graphene+ (see picture below).
- 1 x BNF to UHF adapter (for connection of VHF antenna)
- 1 x DC/Data cable
- 1 x USB cable (mini USB to regular USB)
- 1 x CD w/installation program for MMSI number etc.
- 1 x RG-58 cable (2m) w/FME to UHF connectors  
(For connection to existing befintlig VHF radio).

Part# 0012-002-000



**In the combo package "CTRX Carbon incl. combo antenna , AU-2", part# 0012-110-000, you shall find the above items plus the combo antenna, part# 0811-010-000. The antenna might be found outside the AIS package:**

Part# 0012-110-000



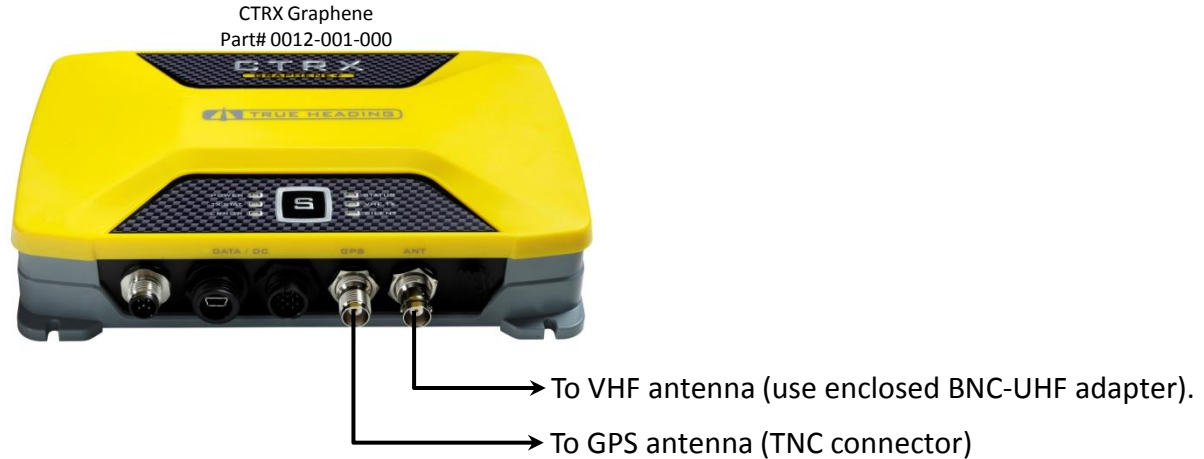
**In the combo package "CTRX Carbon+ incl. GPS antenna , RV-76", part# 0012-120-000, you shall find the above items plus the GPS antenna, part# 0810-205-000. The antenna can be found outside the AIS package:**

Part# 0012-120-000



# Get started with CTRX Graphene and CTRX Graphene+ – Connection of the antennas to **CTRX GRAPHENE** –

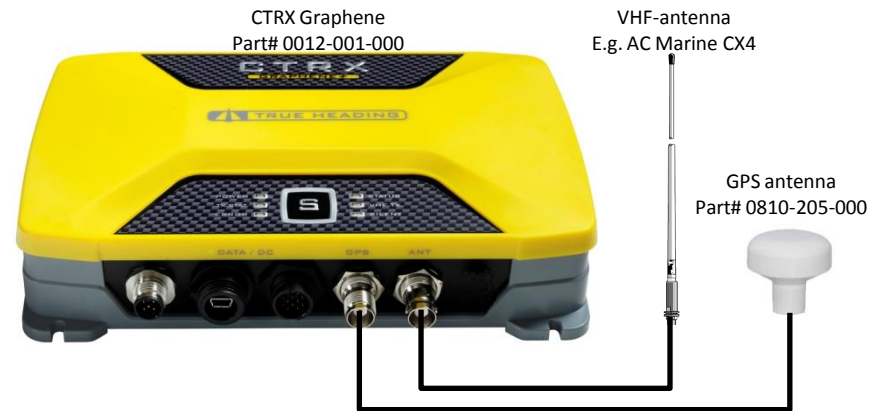
## General connections:



## Connection of combo antenna (AU-2) enclosed in combo pack, part# 0012-110-000:



## Connection of "sparate" VHF and GPS antennas:



# Get started with CTRX Graphene and CTRX Graphene+ – Connection of antennas and VHF radio to **CTRX GRAPHENE+** –

## General connections:



- To VHF radio (use enclosed 2m RG-58 cable w/connectors).
- To VHF antenna (use enclosed BNC-UHF adapter).
- To GPS antenna (TNC connector in AIS)

## Connection of units from combo pack part# 0012-120-000:



Existing VHF antenna

GPS antenna  
Part# 0810-205-000

Enclosed cable w/AIS, part# 0012-002-000  
1 x 2m RG-58 cable w/connectors FME & UHF.

Existing VHF antenna cable in your boat

Cable, 5m, RG-58, attached to the GPS antenna

# Get started with CTRX Graphene and CTRX Graphene+ – Connection of power supply and external units via NMEA0183 –

## General connection:

Picture shows CTRX Graphene+



NMEA2000\*  
USB to computer

To VHF radio (this connection **CAN ONLY** be found in the CTRX Graphene + unit)  
VHF antenna (BNC)  
GPS antenna (TNC)

\*Even if it is possible to connect the AIS units to an NMEA2000 network True Heading recommends to use NMEA0183 connection to connect to external units e.g. plotters

### **NOTE!**

To see more details about connections (NMEA0183) of the AIS units to external units e.g. plotters, please look at the specific PDF document that can be found on the True Heading website:  
[http://www.trueheading.se/files/document/products/ais/aisctrxgraphene/CTRX%20Graphene\\_rev%201.0\\_eng.pdf](http://www.trueheading.se/files/document/products/ais/aisctrxgraphene/CTRX%20Graphene_rev%201.0_eng.pdf).

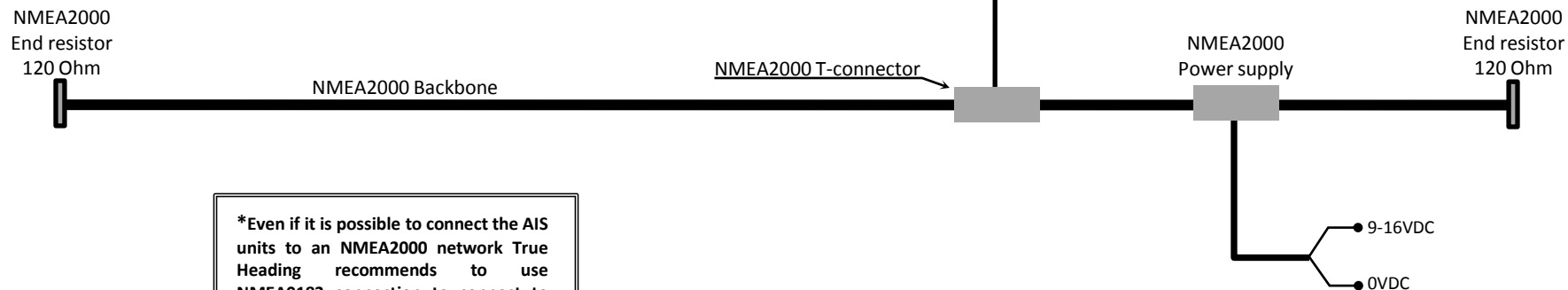
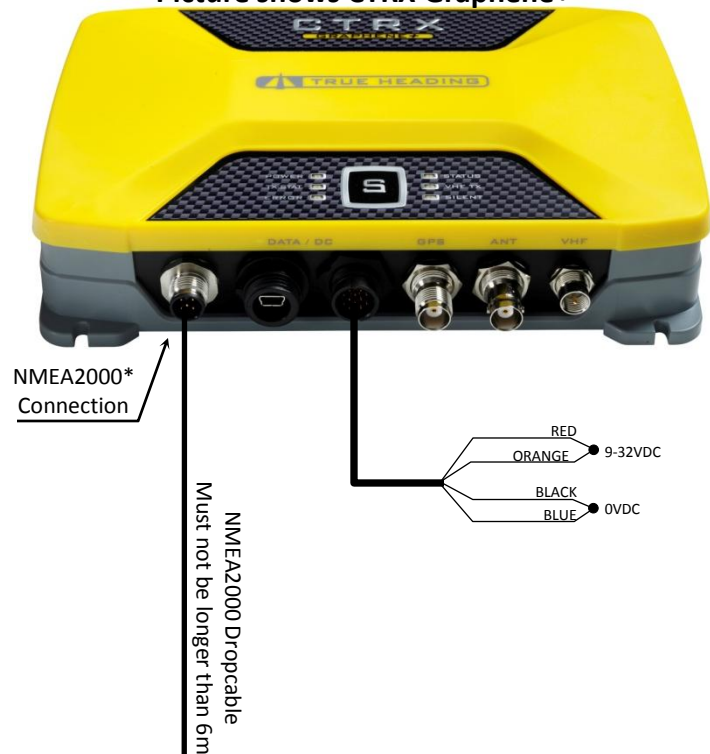


# Get started with CTRX Graphene and CTRX Graphene+ – Connection to an NMEA2000 network –

## To take under consideration when connecting to an NMEA2000 network:

- CTRX Graphene and CTRX Graphene+ shall be connected to the NMEA2000 network as so called "drop" units.
- The "Drop" cable from the AIS unit to the NMEA2000 "backbone" must not exceed 6m.
- There is no end resistor in the AIS units.
- The NMEA2000 network must be power supplied (12VDC) separately.
- The NMEA2000 "backbone" MUST have one end resistor at each end of the NMEA2000 "backbone".
- Power supply of the AIS unit is made according to previous page:  
"– Connection of power supply and external units via NMEA0183 –".
- NMEA2000 cables, T-connectors and/or end resistors are not enclosed with the AIS.
- The LEN value of the CTRX Graphene and CTRX Graphene+ is 1\*\*, respectively.  
\*\*To learn more about LEN values and NMEA2000 in general,  
please contact you local certified NMEA2000 dealer.

Picture shows CTRX Graphene+



**\*Even if it is possible to connect the AIS units to an NMEA2000 network True Heading recommends to use NMEA0183 connection to connect to external units e.g. plotters**

# Get started with CTRX Graphene and CTRX Graphene+ – Connection of external Silent button –

Picture shows CTRX Graphene+

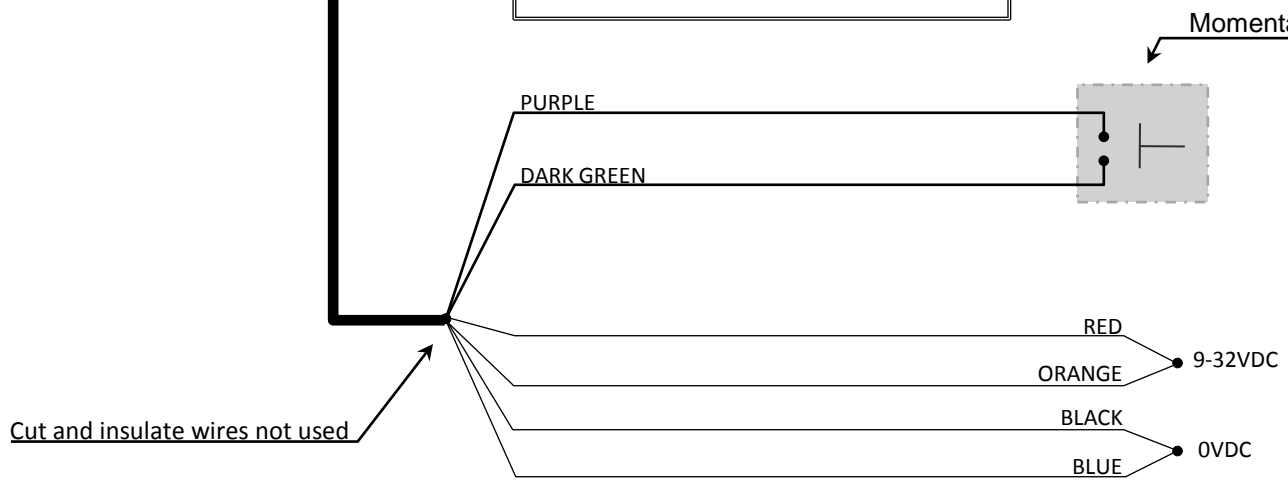


NMEA2000  
USB to computer

To VHF radio  
VHF antenna (BNC)  
GPS antenna (TNC)

**NOTE!**  
Do **NOT** connect the switch in any kind of way than the instructions below e.g. do **NOT** connect any external 12VDC supply.

Suggestion of momentary switch w/  
built in LED is ELFA part# 35-062-27.



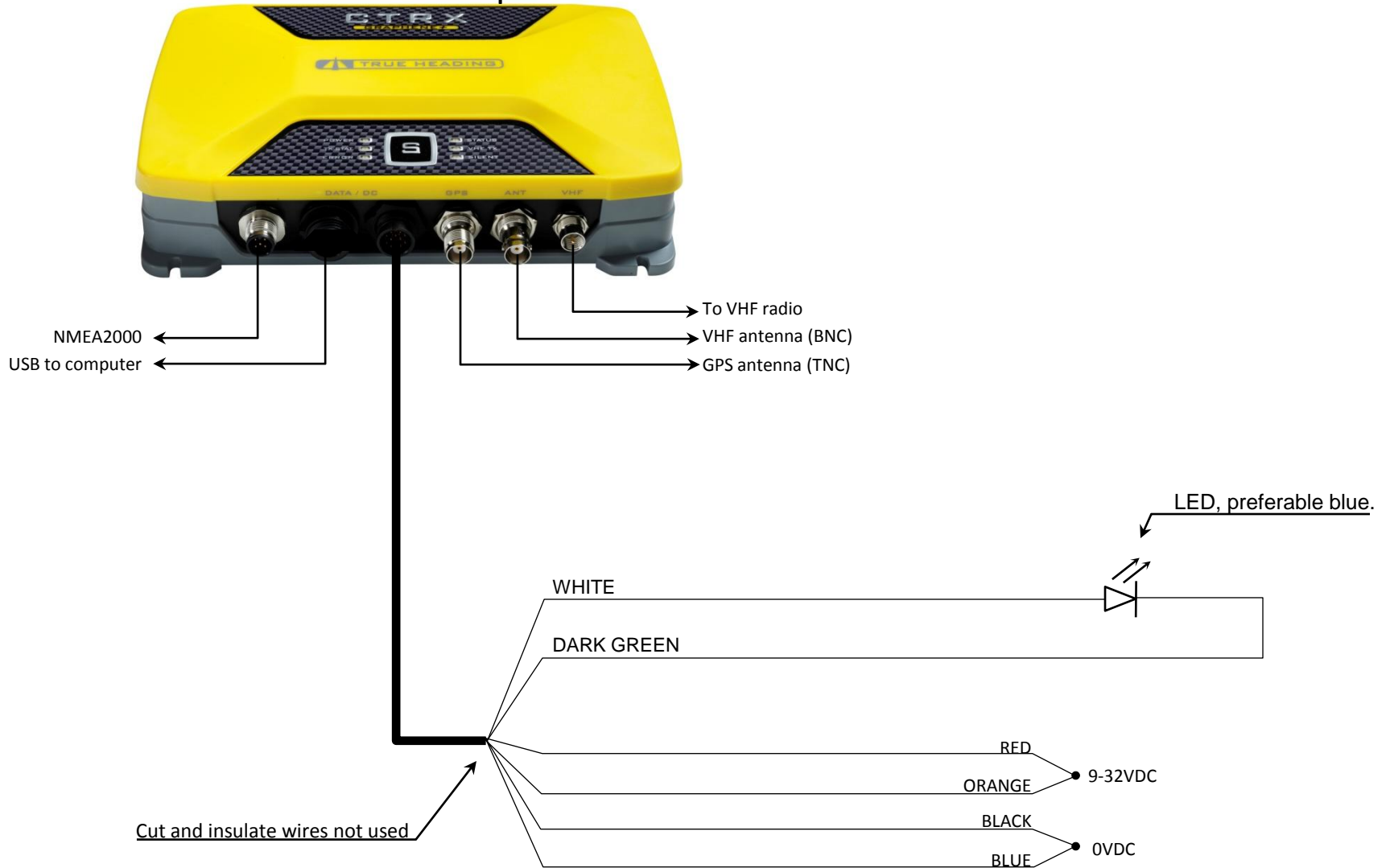
Cut and insulate wires not used

Momentary switch

RED  
ORANGE → 9-32VDC  
BLACK  
BLUE → 0VDC

# Get started with CTRX Graphene and CTRX Graphene+ – Connection of external LED to extern Silen button –

Picture shows CTRX Graphene+





# Get started with CTRX Graphene and CTRX Graphene+ – General AIS information and the software "proAIS2" –

---

## **What does the AIS require in order to be able to send AIS information out from your AIS?**

In order for the AIS transponder to be able to send its AIS information (it will always receive AIS information from other vessels as long as you have a good VHF antenna system) the AIS transponder must have:

- Enough power supply (at least 10VDC).
- A good/great VHF antenna system. I.e. your VHF antenna, the cable to the VHF antenna and the connectors MUST function in a proper way. To get an idea how good your VHF antenna system is, use the software "proAIS2" (see coming pages).
- A well functioning GPS antenna. The software "proAIS2" will give you information about how well your GPS antenna is working.
- Be programmed with the following information:
  - MMSI number
  - Call sign
  - Name of your boat/ship/vessel. You cannot use "strange signs" e.g. : "\* / -".
  - Approximate position, in meters, where the GPS antenna connected to the AIS is located on your boat (see coming pages).

### **Install the enclosed software; "proAIS2":**

1. On the enclosed CD you will find the software "proAIS2" here:  
x:\CD GRAPHENE\Other\Setup Software\ProAIS2\Windows".  
Where "x" is the CD drive unit.
2. Click on "SETUP" and follow the instructions how to install the software on your computer.

# Get started with CTRX Graphene and CTRX Graphene+ – Program your information in the AIS –

## Follow the instructions below how to program your AIS transponder:

1. Make sure that your computer is connected to the internet!!
2. Connect the AIS unit directly to your computer with the enclosed USB cable.

### **NOTE!**

- If you connect your AIS to the USB port on your computer **WITHOUT** power supplying the AIS with 10-32VDC, you will be able to program your AIS **BUT**, the AIS unit not be able to send any AIS data (it must have at least 11.2VDC).
  - An option to above, is to power supply the AIS unit with 10-32VDC **and** the USB port in the computer – at the same time. This will make the AIS be able to send its information.
3. When the USB connection is made to the computer the computer will go out on the internet and try to find the drivers for the AIS. Wait until your computer has installed the correct drives for the AIS.

4. Start the software "proAIS2".

5. The picture to the right will pop up.

6. If your AIS is not shown, click on the drop down list and select your AIS.

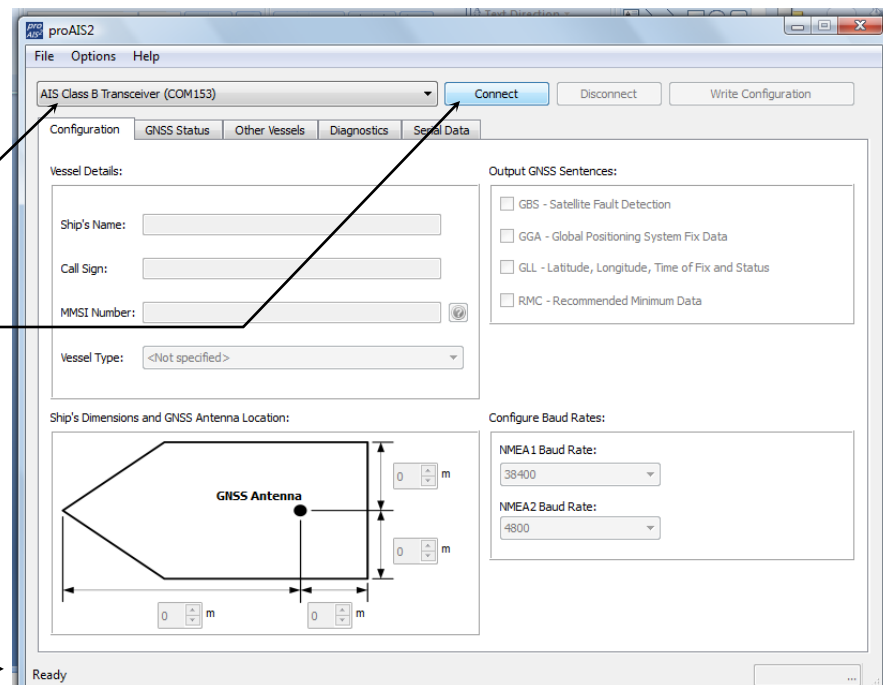
7. Click on "Connect".

8. Now, you shall be connected at 38.400 baud.

*When the connection between the AIS and the computer is done you shall have the below text at the bottom left hand side:*

Connected to Serial Port: AIS Class B Transceiver (COM\_X) ...

Where "x" is the COM port to which the AIS is connected.



# Get started with CTRX Graphene and CTRX Graphene+ – Program your information in the AIS –

## Cont. Program your AIS transponder:

9. Fill your information in:

- Ship's name
- Call Sign
- MMSI number

10. Select type of vessel under "Vessel Type:".  
Click on the drop down list to see the options.

11. Enter the approximate position of your  
GPS antenna where it is located on your boat  
(see picture):

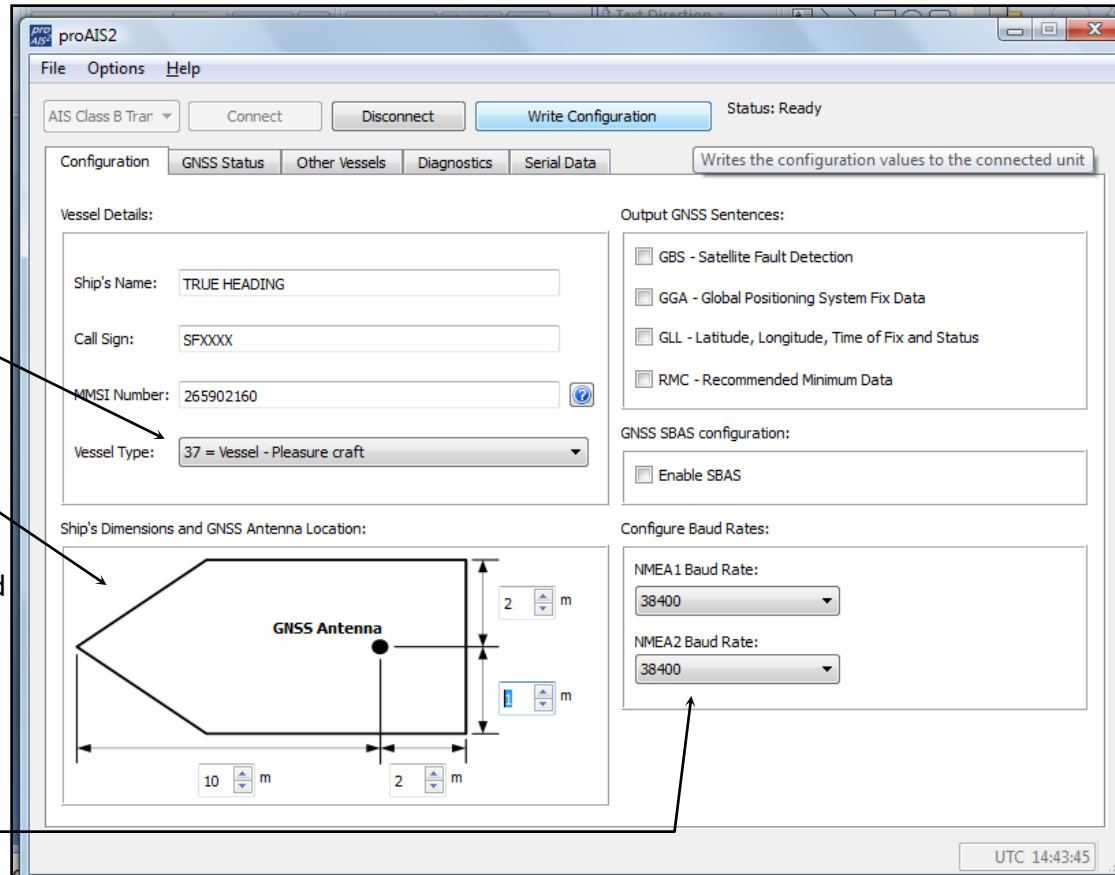
12. IF you want your AIS to send out GPS information  
e.g. POS, SOG and COG, to e.g. your computer and  
your navigational software, check the "RMC" box.

13. Our recommendation is **NOT** to check the box  
"Enable SBAS".

14. Do not change these parameters.

15. When all information is entered, click on  .

16. You will now get a warning text.   
Verify your MMSI number and then click on  if your MMSI number is correct.



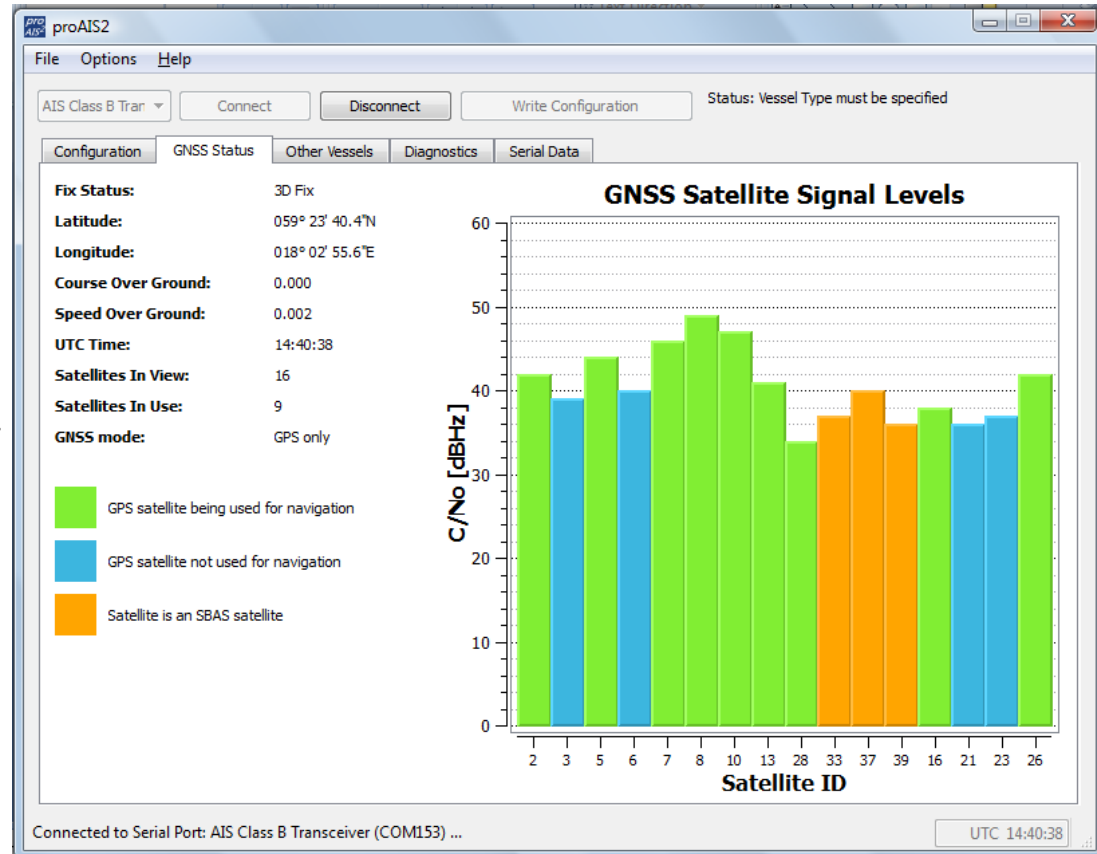
# Get started with CTRX Graphene and CTRX Graphene+ – Check your GPS reception –

## Check your GPS status:

1. Click on the "GNSS Status" tab.
2. Here you can see how good your GPS reception is. If you have good/great reception and the GPS is navigating you shall see "3D Fix" in the field "Fix Status:"

### NOTE!

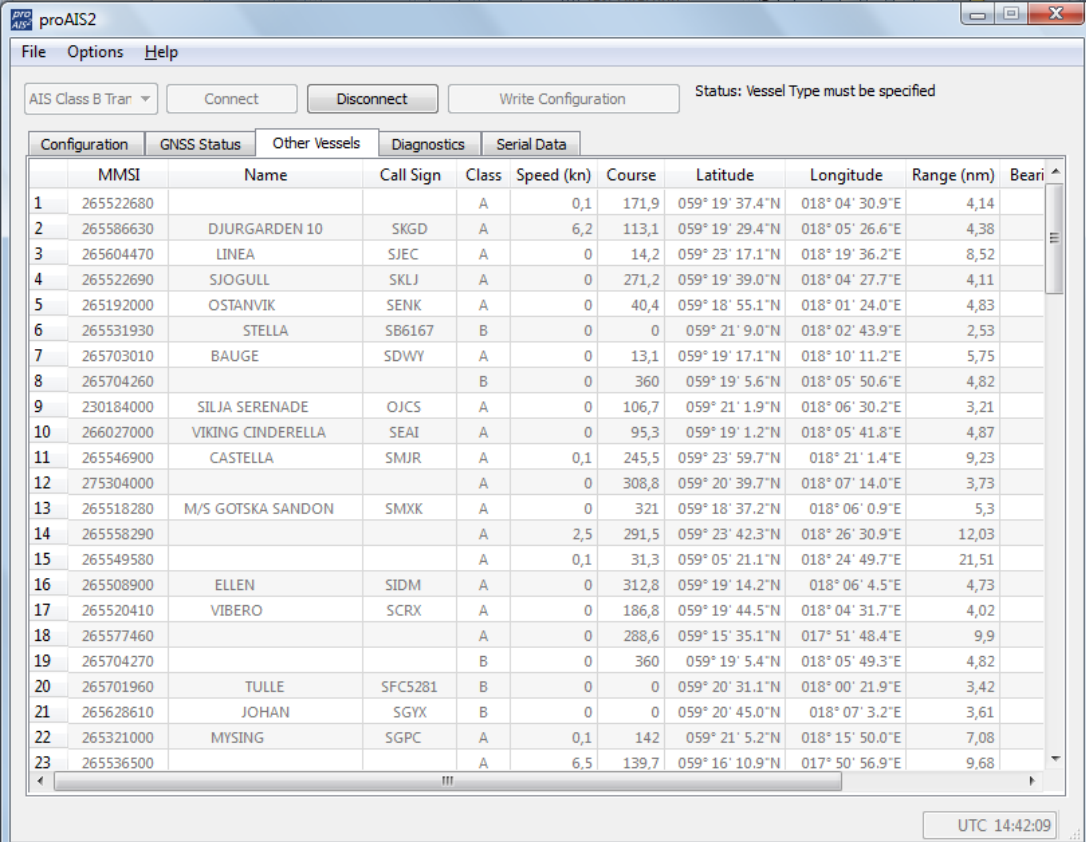
- The orange bars will only be visible if you have checked the "Enable SBAS" box under the "Configuration" tab.
- The information with the bars *might* "jump around". I.e. all the bars might disappear for a second and then come back, and do so "the whole time". This is normal. What you need to check is how many and how "good" your bars are.



# Get started with CTRX Graphene and CTRX Graphene+ – See information from other vessels –

## See what is around you:

1. Click on the "Other Vessels" tab.
2. In this picture you can see all other vessels that are around you. You will see all sending Class A and Class B transponders within your VHF antenna receiving distance.



The screenshot shows the proAIS2 software interface. The 'Other Vessels' tab is selected, displaying a table of vessel data. The table columns are: MMSI, Name, Call Sign, Class, Speed (kn), Course, Latitude, Longitude, Range (nm), and Bearing. The data is as follows:

	MMSI	Name	Call Sign	Class	Speed (kn)	Course	Latitude	Longitude	Range (nm)	Beari
1	265522680			A	0,1	171,9	059° 19' 37.4"N	018° 04' 30.9"E	4,14	
2	265586630	DJURGARDEN 10	SKGD	A	6,2	113,1	059° 19' 29.4"N	018° 05' 26.6"E	4,38	
3	265604470	LINEA	SJEC	A	0	14,2	059° 23' 17.1"N	018° 19' 36.2"E	8,52	
4	265522690	SJOGULL	SKLJ	A	0	271,2	059° 19' 39.0"N	018° 04' 27.7"E	4,11	
5	265192000	OSTANVIK	SENK	A	0	40,4	059° 18' 55.1"N	018° 01' 24.0"E	4,83	
6	265531930	STELLA	SB6167	B	0	0	059° 21' 9.0"N	018° 02' 43.9"E	2,53	
7	265703010	BAUGE	SDWY	A	0	13,1	059° 19' 17.1"N	018° 10' 11.2"E	5,75	
8	265704260			B	0	360	059° 19' 5.6"N	018° 05' 50.6"E	4,82	
9	230184000	SILJA SERENADE	OJCS	A	0	106,7	059° 21' 1.9"N	018° 06' 30.2"E	3,21	
10	266027000	VIKING CINDERELLA	SEAI	A	0	95,3	059° 19' 1.2"N	018° 05' 41.8"E	4,87	
11	265546900	CASTELLA	SMJR	A	0,1	245,5	059° 23' 59.7"N	018° 21' 1.4"E	9,23	
12	275304000			A	0	308,8	059° 20' 39.7"N	018° 07' 14.0"E	3,73	
13	265518280	M/S GOTSKA SANDON	SMXK	A	0	321	059° 18' 37.2"N	018° 06' 0.9"E	5,3	
14	265558290			A	2,5	291,5	059° 23' 42.3"N	018° 26' 30.9"E	12,03	
15	265549580			A	0,1	31,3	059° 05' 21.1"N	018° 24' 49.7"E	21,51	
16	265508900	ELLEN	SIDM	A	0	312,8	059° 19' 14.2"N	018° 06' 4.5"E	4,73	
17	265520410	VIBERO	SCRX	A	0	186,8	059° 19' 44.5"N	018° 04' 31.7"E	4,02	
18	265577460			A	0	288,6	059° 15' 35.1"N	017° 51' 48.4"E	9,9	
19	265704270			B	0	360	059° 19' 5.4"N	018° 05' 49.3"E	4,82	
20	265701960	TULLE	SFC5281	B	0	0	059° 20' 31.1"N	018° 00' 21.9"E	3,42	
21	265628610	JOHAN	SGYX	B	0	0	059° 20' 45.0"N	018° 07' 3.2"E	3,61	
22	265321000	MYSING	SGPC	A	0,1	142	059° 21' 5.2"N	018° 15' 50.0"E	7,08	
23	265536500			A	6,5	139,7	059° 16' 10.9"N	017° 50' 56.9"E	9,68	

UTC 14:42:09

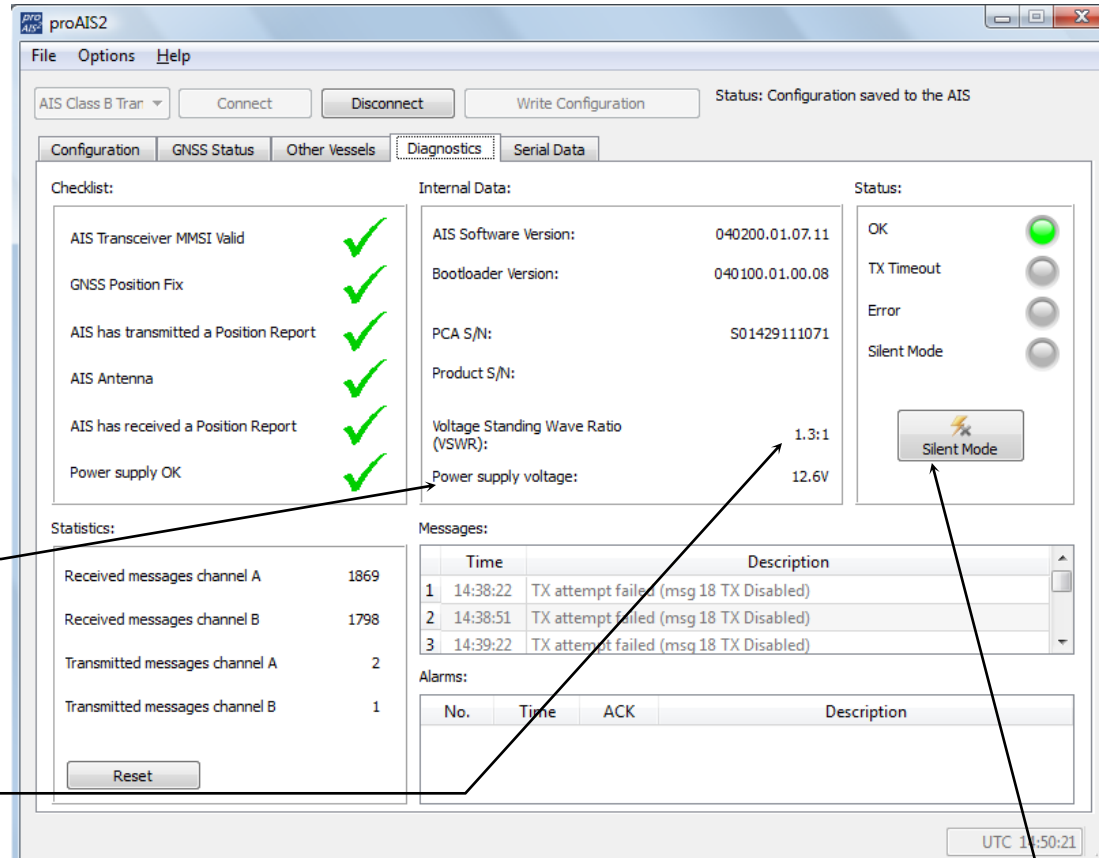
# Get started with CTRX Graphene and CTRX Graphene+ – Diagnostics of your AIS transponder –

## What is the status of your AIS & VHF antenna system:

1. Click on the "Diagnostics" tab.
2. Here you can see if your AIS is sending, or not. If it is NOT sending you can get an idea why it is not sending.

### NOTE!:

- If you are moving below 2 knots it will take up to 3 minutes before your AIS is sending the first time!
- In order for the AIS to be able to send, your power supply, "Power supply voltage", must be over 10.0VDC.
- If you have a bad VHF antenna system (cables, connectors, and/or the VHF antenna) your AIS will not send its information. The value "Voltage Standing Wave Ratio (VSWR)" **must not exceed "2.0:1"**. If this value is higher than 2.0:1 e.g. 2.6:1 you need to check your VHF antenna system.
- In this example there is no value in the "Product S/N" field. This depends on that the above picture is taken from a demo unit. In your software you should have the serial number of your AIS unit in this field.
- IF you activate "Silent Mode" by clicking on the "button" in the software you **MUST deactivate** the Silent Mode in the software. It is not possible to turn the Silent Mode off from the AIS unit if it is activated in the "proAIS2" software!



# Get started with CTRX Graphene and CTRX Graphene+ – Serial data –

## Serial data:

1. Click on the "Serial Data" tab
2. Here you can see what data (raw data) that the AIS is sending out to other vessels.

