



AIS Class B SOTDMA ME SENSE Yacht-Monitoring

User Guide

V1.1
English



1 Notes

1.1 Safety instructions

All maritime AIS devices use satellite-based systems such as the GPS (Global Positioning System) or the GLONASS network to determine their position. The accuracy of these systems is variable and influenced by various factors, such as the antenna position, the number of satellites currently being received and the time the satellite information is already available. It is therefore desirable, wherever possible, to verify the AIS-derived positions of your own vessel, as well as those of other vessels, by observation and/or radar verification.

The easyTRX3 software is to be used as an installation and configuration tool. The application is not navigation software and must not be used as such.

1.2 License (MMSI) for AIS Class B

In many countries, the operation of an AIS transmitter/receiver unit is regulated in accordance with VHF maritime radio regulations. The vessel that has an AIS Class B transmitter installed must be licensed, i.e. the call sign and MMSI number must be entered in the AIS system. Please contact the relevant authorities in your country for further information. In accordance with our corporate philosophy, our products are subject to constant further development. This means that the easyTRX3S product series and software can also be improved and updated from time to time. It is therefore possible that future versions of the easyTRX3S series may not be exactly the same in terms of operation as these operating instructions. For the necessary upgrades, the corresponding supplements to these operating instructions will be enclosed. Please take the time to read the operating instructions carefully in order to be able to use the devices of the easyTRX3S series in full depth and with all their possibilities.

1.3 Warning

When driving a vessel, it is the sole responsibility of the skipper to operate the vehicle in a safe manner and to have full control of all driving conditions at all times during the entire journey. Incorrect behaviour by the driver of a vehicle equipped with a device from the easyTRX3S series, where the driver does not pay full attention to the operation of the vehicle and the ambient conditions, can lead to an accident or collision resulting in damage to property or personal injury.

1.4 Registration Federal Network Agency (BSH)

The official form that you need to register with the Federal Network Agency for the operation of an AIS Class B transceiver in Germany can be found as a PDF file on their homepage

<https://www.bundesnetzagentur.de/DE/Fachthemen/Telekommunikation/Frequenzen/SpezielleAnwendungen/Seefunk/DL/AntragNummernzuteilungSportschiffahrt.pdf?>

1.5 Approval number BSH

BSH/4542/001/4323246/18

1.6 Revision status of the operating instructions

Stand 1.0, Autor: MK, 12/2024

Stand 1.1, Autor: VB, Connection diagram, minor corrections, 04/2025

1.7 Restrictions

At the current revision level, there are no known restrictions on the use of this AIS Class B transceiver easyTRX3S.

2 List of abbreviations:

Abbreviation

AIS{ XE „AIS“ }	Automatic Identification System
CPA	Closest Point of Approach
LAN	Local Area Network
NMEA	National Marine Electronics Association
SSID	Service Set Identifier Device
VHF	Very High Frequency
VSWR	Voltage Standing Wave Ratio
WiFi	Wireless Fidelity -connect to a network by radio
GNSS	Global Navigation Satellite system
MMSI	Maritime Mobile Service Identity
HDOP	Horizontal Dilution of Precision

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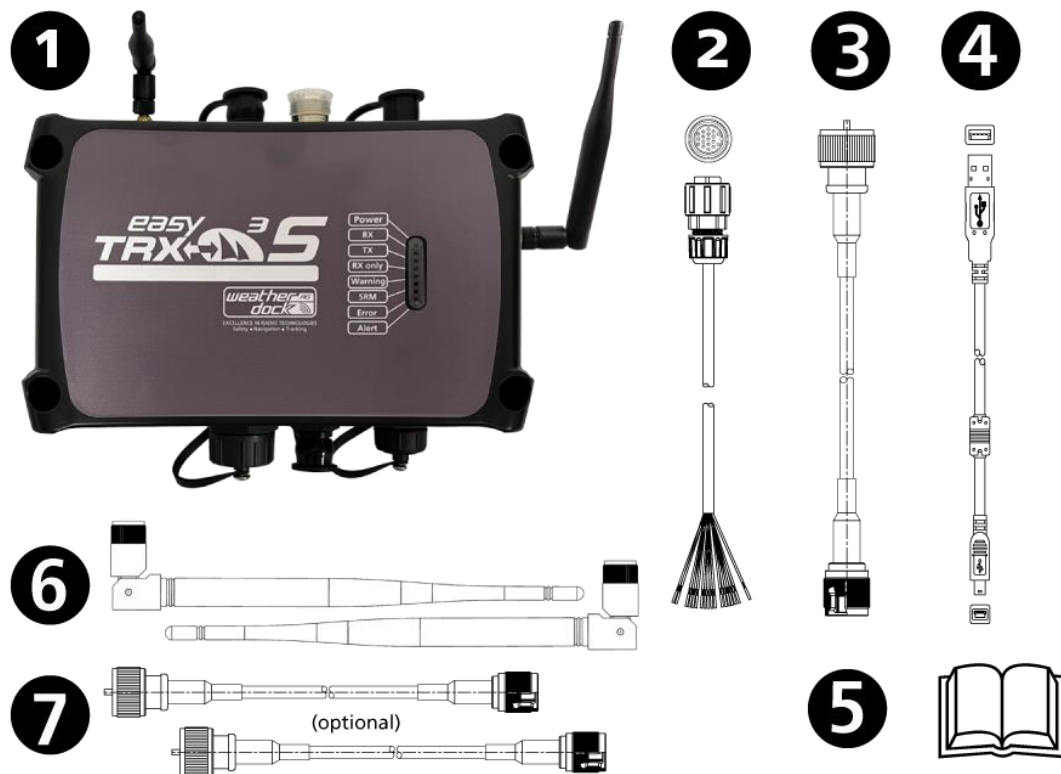
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4 Scope of Delivery



1	AIS Class B easyTRX3S (exact product designation varies depending on the options added)
2	Connection cable 10-pin (approx. 200cm)
3	Connection cable easyTRX3S to VHF radio (approx. 100cm)
4	USB connection cable (approx. 180cm, USB-A to USB-Micro)
5	Quick guide User manual online for download Programming software for Windows® PC and Apple® Mac
6	2x WiFi - Antenna
7	DVB-T2 cable set (only included with DVB-T variant #A20020)

Figure 1 Scope of Delivery

5 Short description easyTRX3S

The easyTRX3S is a BSH approved AIS Class B SOTDMA transceiver, developed and manufactured by Weatherdock AG in Germany.

The easyTRX3S offers many advantages over other devices available on the market. For example, an integrated FM antenna splitter, an integrated GPS antenna and a WiFi module are already included as standard.

The easyTRX3S also includes the ME SENSE RELAY Board, which acts as the central control unit for ME SENSE yacht monitoring and thus enables smooth connection of the ME SENSE yacht monitoring sensors.

6 Outstanding features of the easyTRX3S

- ✓ Integrated GPS antenna and processor (suitable for GRP and wooden hull boats)
- ✓ Integrated VHF antenna splitter (AIS and VHF radiotelephony via the same antenna)
- ✓ Integrated WiFi module
- ✓ Integrated ME SENSE RELAY (central control unit for ME SENSE yacht monitoring)
- ✓ USB port for programming via PC
- ✓ NMEA2000
- ✓ Status display via 8 LEDs

- ✓ CPA alarm possible independently of chart plotter
- ✓ Anchor alarm possible independently of chart plotter
- ✓ AIS MOB/SART alarm possible independently of chart plotter

7 Connection options

7.1 Standard

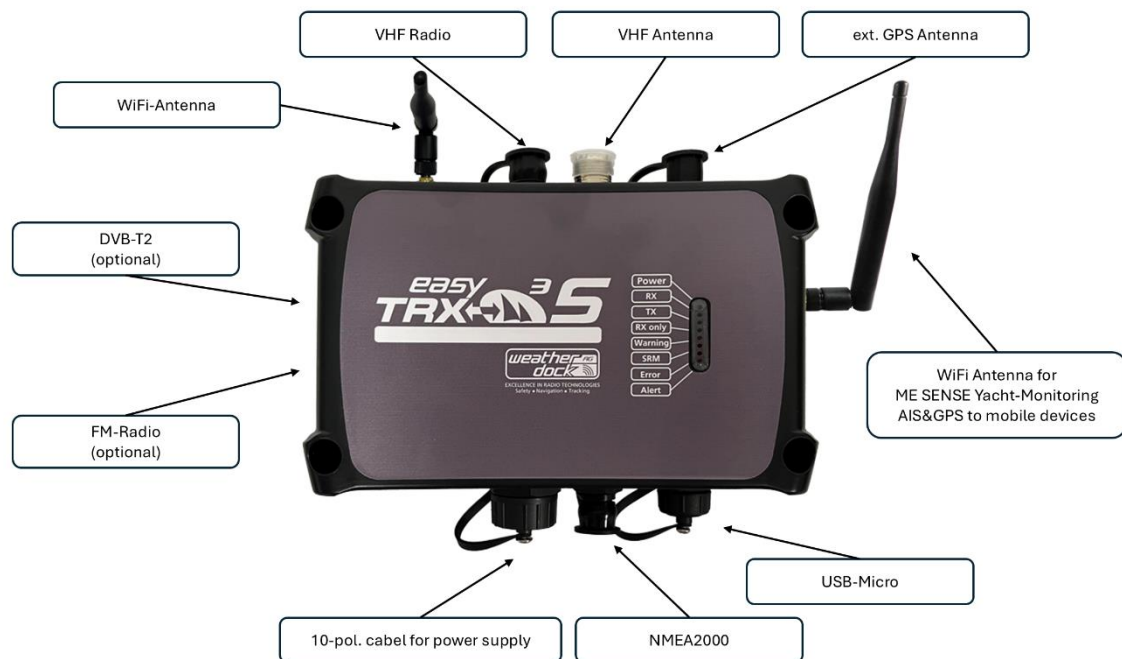


Figure 2 Connectors

- Integrated antenna splitter with connection for VHF antenna cable (SO239) including connection cable to VHF radiotelephone (TNC)
- External GPS antenna (BNC) if integrated GPS antenna cannot be used
- USB interface
- NMEA2000 output interface (MicroC)

Options

Depending on the model variant, the following are also available as options

- DVB-T2 (BNC) - FM radio (BNC)
- LAN (RJ45)

7.2 External Switches

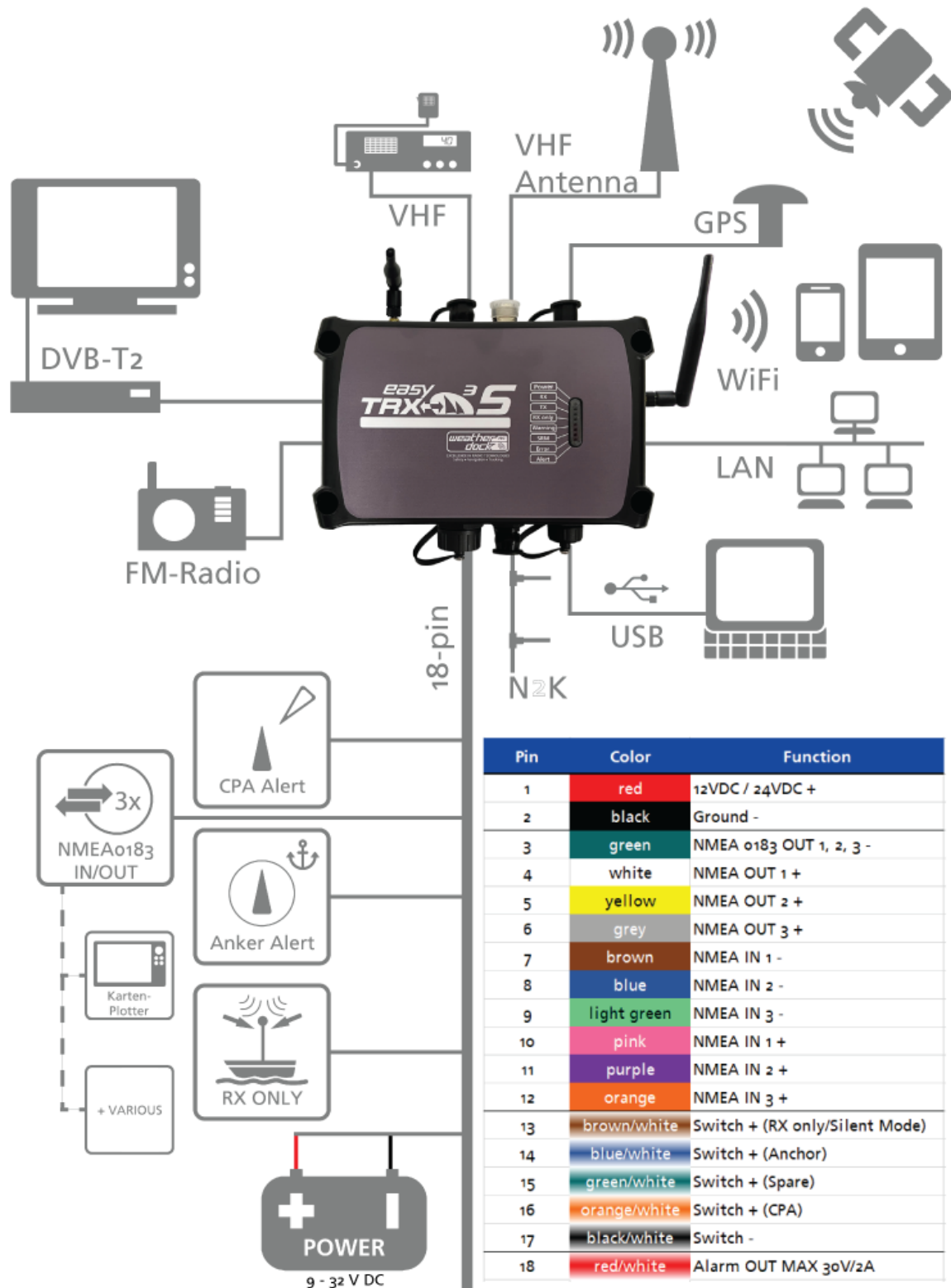


Figure 3 Connection options and cable colours

7.2.1 CPA Alert

To make daily use of this functionality easier, you can install an external rocker switch and an external signalling device (e.g. horn).

Rocker switch

From the 18-pole wiring harness, connect the cables

- "16 / Orange_White / Switch+ (CPA) and
- '17 / Black_White / Switch-'

to the corresponding poles of the switch. You can now activate or deactivate the function according to your settings in the software. The software behaves accordingly.

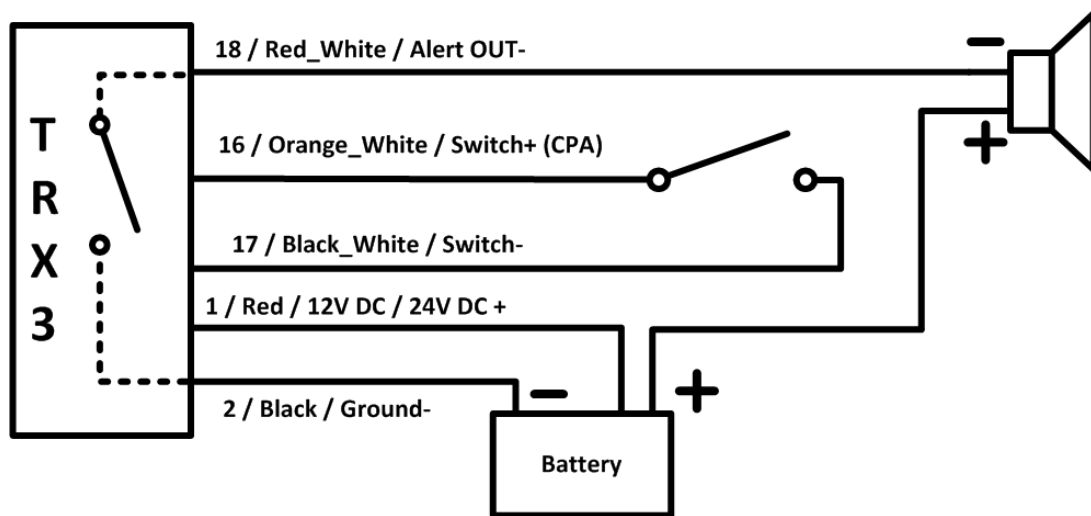


Figure 4 Connection CPA Alert

7.2.2 Anchor Alert

To make daily use of this functionality easier, you can install an external rocker switch and an external signalling device (e.g. horn).

Rocker switch

From the 18-pin wiring harness, connect the cables

- '14 / Blue_White / Switch+ (armature)' and
- '17 / Black_White / Switch-'

to the corresponding poles of the switch. You can now activate or deactivate the function according to your settings in the software. The software behaves accordingly.

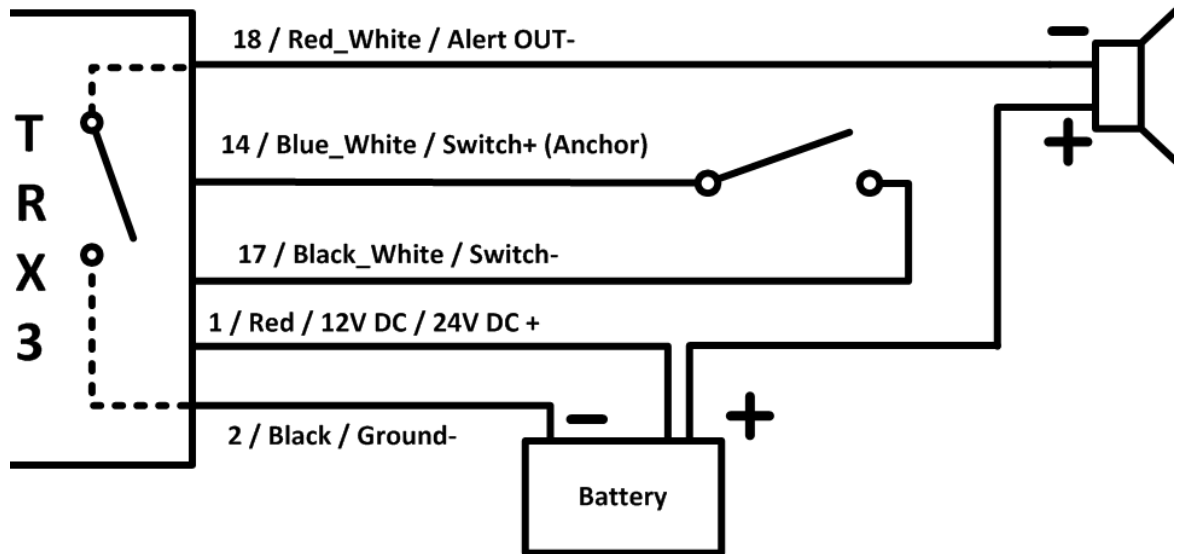


Figure 5 Connection Anchor Alert

7.2.3 RX only

Rocker switch

From the 18-pole wiring harness, connect the cables

- "13 / Brown_White / Switch+ (RXonly) and
- '17 / Black_White / Switch-'

to the corresponding poles of the switch. You can now activate or deactivate the function according to your settings in the software. The software behaves accordingly.

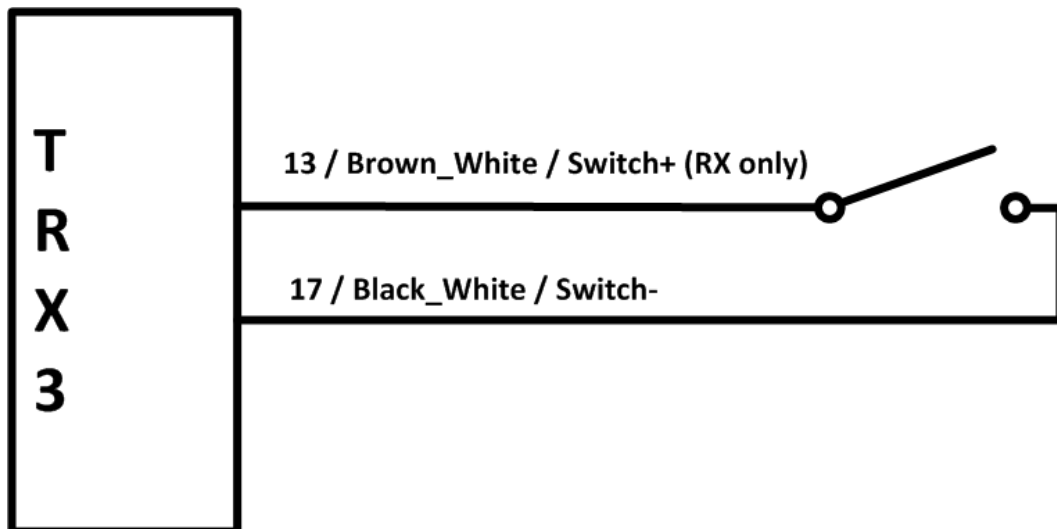


Figure 6 RX only

7.2.4 External signalling device

Connect the '18 / Red_White / Alarm OUT-' cable from the 18-pin wiring harness to the signalling device. As the easyTRX3 is already connected to the power supply '2 / Black / Ground-' and '1 / Red / 12V DC / 24V DC +', you only need to connect the '+ pole' of the signalling device to the power supply to close the circuit.

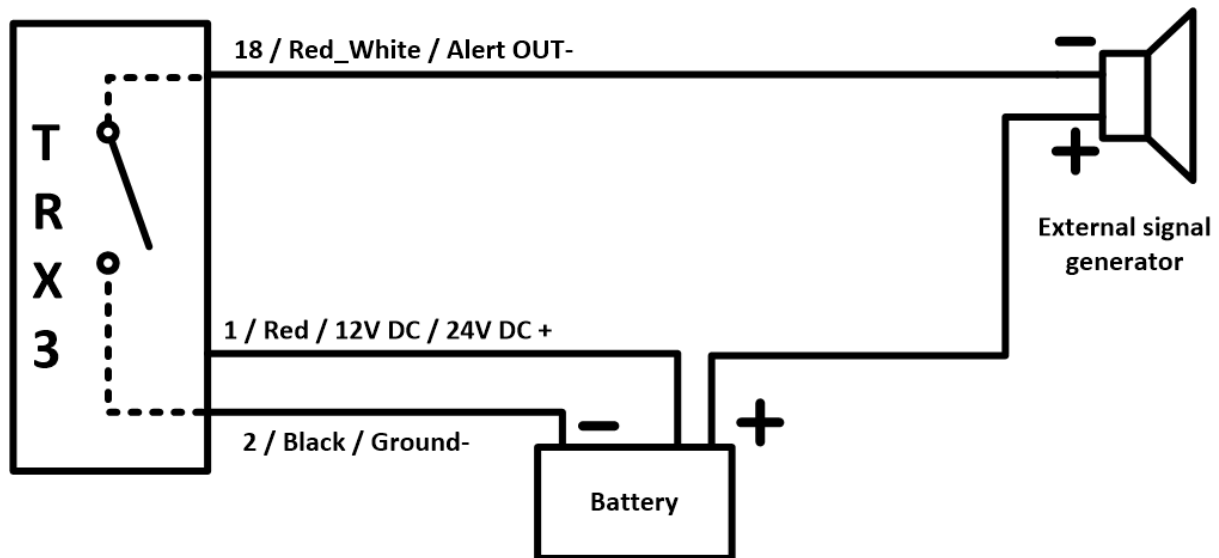


Figure 7 external signalling device

8 Preparations

The easyTRX3S can also be configured and programmed conveniently at home. All you need to do is connect the enclosed USB cable to your PC/MAC. You do not need a separate 12 Volt power supply for the easyTRX3S. Power is supplied via the USB cable.

IMPORTANT NOTE

**The easyTRX3S can neither send nor receive AIS.
GPS and WiFi do not work either!**

Functionality	5v DC USB	12/24V DC	5v DC USB + 12/24V DC
Access to PDF user manual	✓	✗	✓
Access to programming software	✓	✗	✓
Reading out the stored AIS log data	✓	✗	✓
AIS Transmission mode	✗	✓	✓
AIS Receiving mode	✗	✓	✓
N2K Functionality	✗	✓	✓
GPS	✗	✓	✓
WiFi	✗	✓	✓

Figure 8 Function overview for USB programming

IMPORTANT NOTE :

As soon as you want to use the WiFi functionality of your easyTRX3S device, you need a 12 or 24 volt power supply. It is not possible to supply WiFi with power via the USB connection.

Programming-Software for easyTRX3S

With the basic settings, you create the elementary prerequisites for participating in the AIS system with your AIS Class B device, i.e. receiving the position data of other vessels and at the same time sending your own navigation data to the system.

You can choose the following ways:

8.1 Via USB Connection to PC/MAC/Laptop

To programme your ship-specific data, please connect the easyTRX3S device to a PC/MAC or laptop via the USB cable.

Under this download link you will find the programming software for the easyTRX3S:

[Software für easyTRX3S - High quality by Weatherdock](#)

Install this programme on your computer/laptop. When you start the programme, you will see the start screen.



Figure 9 Programming Software

Click on 'Connection' to select and establish the connection with the easyTRX3S.

8.1.1 Connection

The connection via USB cable is already selected.

Now select the COM port to which the USB cable is connected.

If necessary, press the 'Refresh button' if you cannot see the appropriate COM port in the selection list.

Once the appropriate COM port has been selected, please press 'connect'.

The connection is now established.

You will see the received data in the lower field.

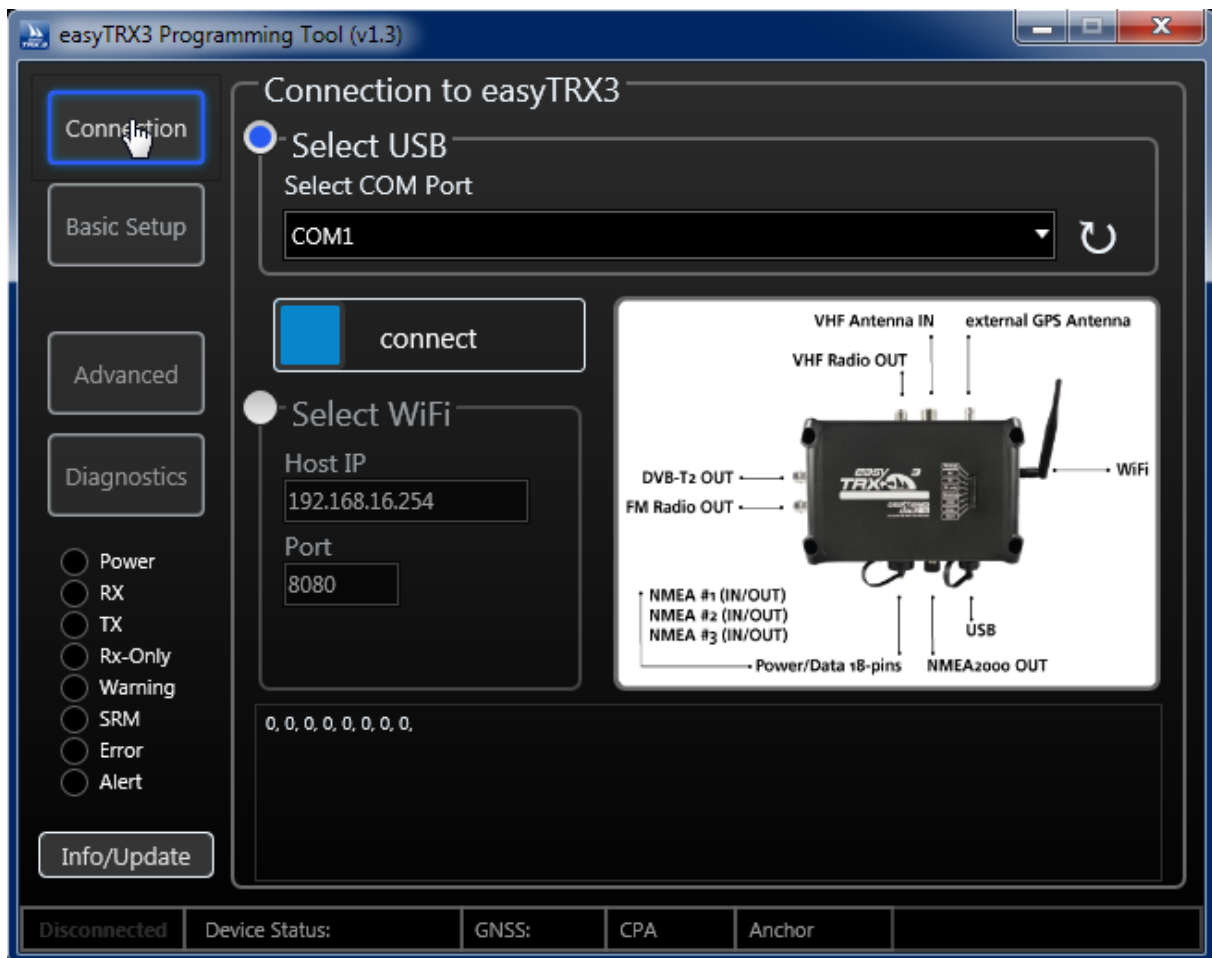


Figure 10 Input window for establishing a connection

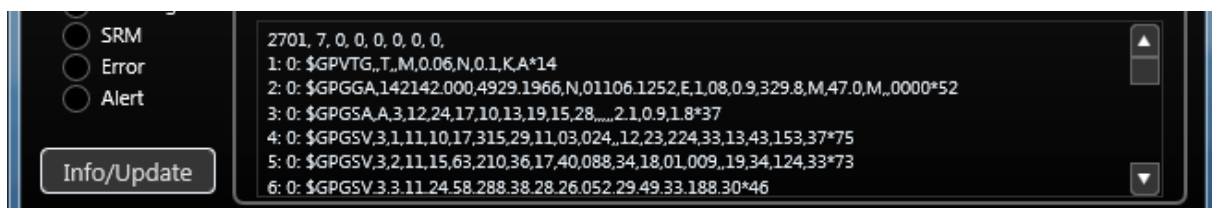


Figure 11 Data flow after connection

After a successful connection, the software automatically jumps to 'Basic Setup'.

8.1.2 Basic Setup

Here you can enter the static data of your vessel for transmission to the AIS system. (For example, enter 'WD Test' as the vessel name and '1234567' as the call sign)

easyTRX3 Programming Tool (v1.3)

Basic Setup

Ship Name (20 max)
WD-Test

Call Sign (7 max)
1234567

MMSI (9 digits)
211002010

Vessel Type
37: Pleasure craft

GPS Antenna Position

A 8 m C 2 m
B 8 m D 2 m

Save Settings

Connected Device Status: **WARNING!** GNSS: No fix CPA X Anchor X

Figure 12 Input window for basic data

- Ship name
- Call Sign
- MMSI (if you have a VHF radio MMSI, use this number. This will be used for the entire ship in future)
- Attention:
- the device can only transmit if an MMSI has been entered
- An MMSI can only be entered once
- To confirm, the MMSI must be entered once again.
- Select your boat type accordingly
- Define the position of your GPS source on board your boat with the corresponding entries in the fields A/B/C/D
- Save your entries by clicking on 'Save Settings'.
- You will immediately receive confirmation
- Press 'OK' and the information window will disappear

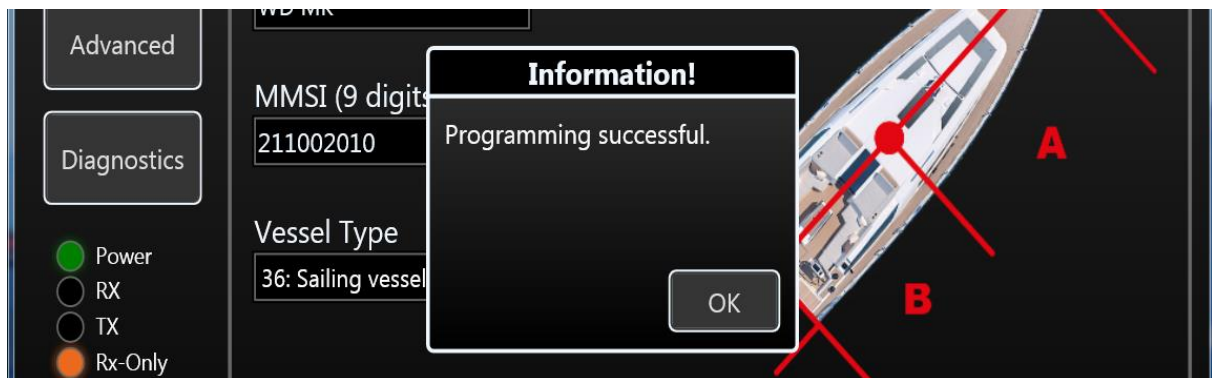


Figure 13 Confirmation basic data

With these few entries, your easyTRX3S AIS Class B device is already configured so that you can now actively participate in the AIS system (receive and transmit).

The TRX3S has an NMEA0183 'IN/OUT' connection and an NMEA0183 'OUT' connection. You can use these connections to connect a chart plotter and VHF radiotelephone to the easyTRX3S, for example.

If you want to integrate the TRX3S into the NMEA2000 on-board network, this can be done easily by connecting it with the correct plugs and cables. AIS and GPS data are output via the N2K output.

If the basic setting is correct for you, you can disconnect the connection to the TRX3 via the 'Connections' item and close the programme.

Chapter 10 contains the relevant information on 'Installing the TRX3 on board'.

If you need to customise the 'Factory configuration' for your circumstances, click on 'Advanced'.

8.1.3 Advanced Settings

In this part of the programming tool, you can access the advanced settings and customise the easyTRX3S device to your specific requirements.

Here you will find the subcategories

- Interfaces
- AIS-Transmitter
- CPA
- Anchor
- Flash Memory
- WiFi

The factory default settings for the 'Interfaces' area are shown below.

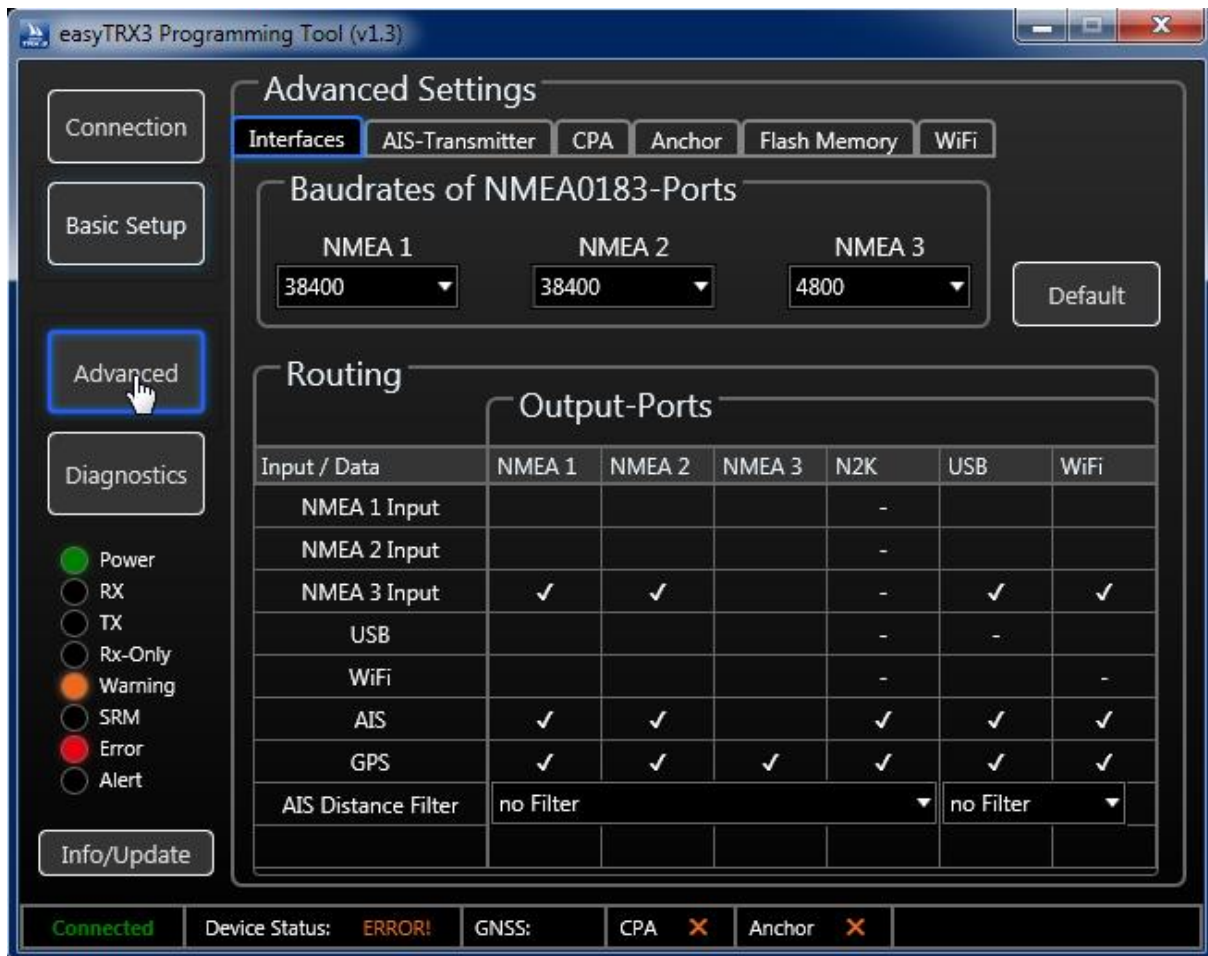


Figure 14 Input window for advanced settings

8.1.3.1 Interfaces

In this input screen, you can deviate from the factory settings and customise the configuration of the easyTRX3. You can define which devices are connected as INPUT or OUTPUT to NMEA1, NMEA2, NMEA3, WiFi, USB and N2K (NMEA2000).

8.1.3.2 Baudrates of NMEA0183 Ports

The transmission rate at which the three NMEA0183 ports should operate can be selected here. You can choose between 4800 baud, 38400 baud or 115200 baud.

You can select different transmission rates for the ports, e.g. NMEA1 IN/OUT with 4800 baud, NMEA2 and NMEA3 IN/OUT with 38400 baud.

IMPORTANT NOTE:

The transmission rate must be the same for each connection, i.e. different devices are possible as IN and OUT, but the baud rate/transmission speed of these different devices must be the same.

The matrix shown (factory setting) is used for routing the connected devices. Here you can define which data is fed into which port and to which connected devices the data is to be distributed or output.

Tick the checkboxes in the empty fields and thus map your intended configuration on board accordingly.

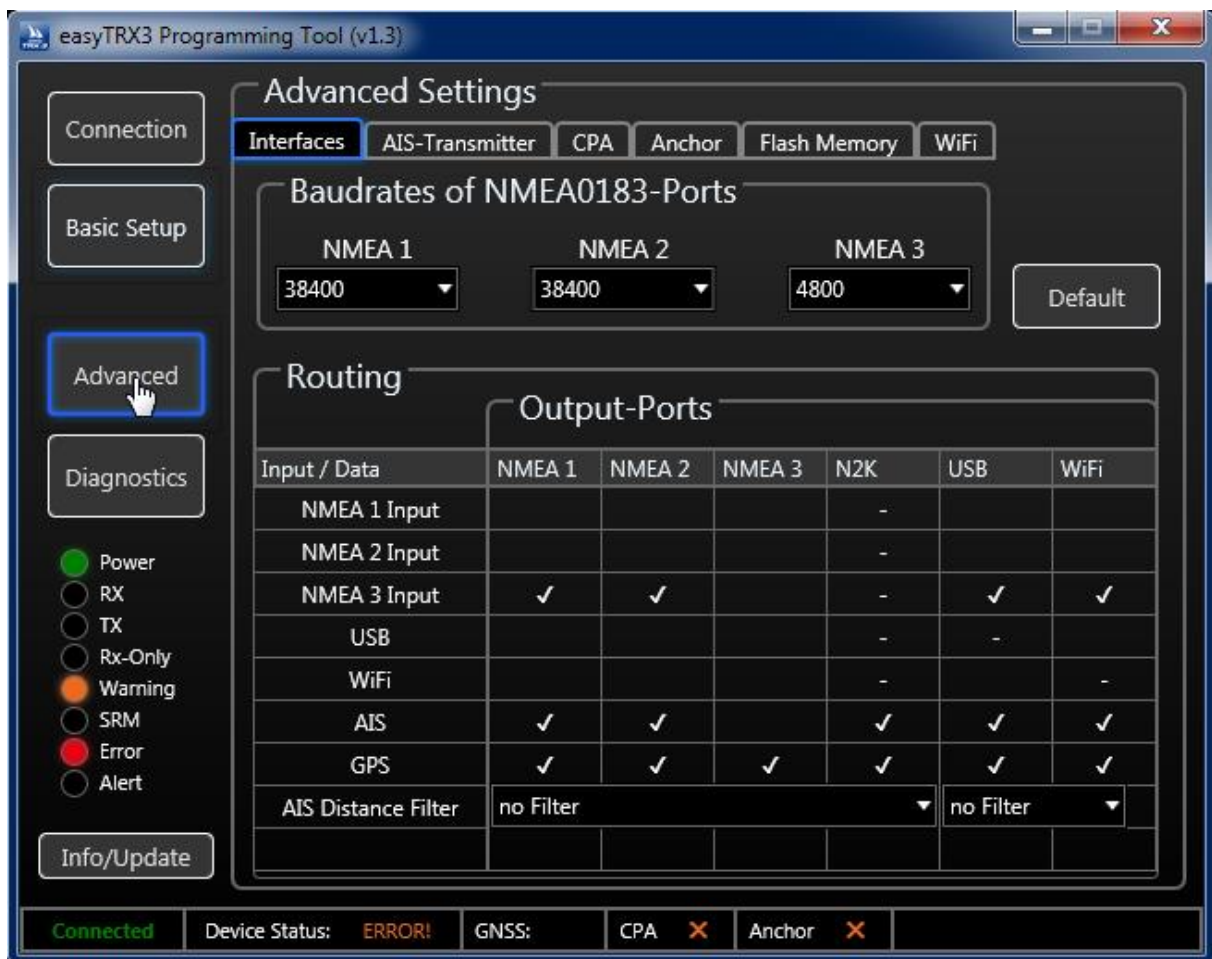


Figure 15 Input Window Data-Routing

You can also define where the AIS and GPS data received by the easyTRX3 should be distributed to.

Illustration of the factory setting as an example:

Baud rates:

- The NMEA1 connection is set to 38400 baud for IN/OUT
- The NMEA2 connection is set to 38400 baud for IN/OUT
- The NMEA3 connection is set to 4800 baud for IN/OUT

Routing

GPS Data will be forwarded to

- NMEA1 - e.g. chart plotter
- NMEA2 - e.g. chart plotter
- NMEA3 - e.g. VHF radiotelephony
- N2K - feed into on-board network
- USB - e.g. laptop or PC
- WiFi - e.g. tablet or another mobile device

AIS Data will be forwarded to

- NMEA1 - e.g. chart plotter
- NMEA2 - e.g. chart plotter
- N2K - feed into on-board network
- USB - e.g. laptop or PC
- WiFi - e.g. tablet or another mobile device

Data fed not NMEA3 (e.g. log or wind) will be forwarded to

- NMEA1 - e.g. chart plotter
- NMEA2 - e.g. chart plotter
- USB - e.g. laptop or PC
- WiFi - e.g. tablet or another mobile device

Once you have set your personal configuration appropriately, click on 'Save' to save your settings.

8.1.4 Distance Filter

A distance filter is also activated in the graphic shown.

With this setting, you can filter out AIS data that is outside the distance you have selected from your display. This may be useful in areas with high traffic volumes in order to limit the view on your chart plotter to a sensible level.

The filter can be used in two ways, i.e. different distances can be selected for USB and WiFi than for the NMEA connections. Only one of the two filters can be activated.

Once you have set everything appropriately, click on 'Save' to save.

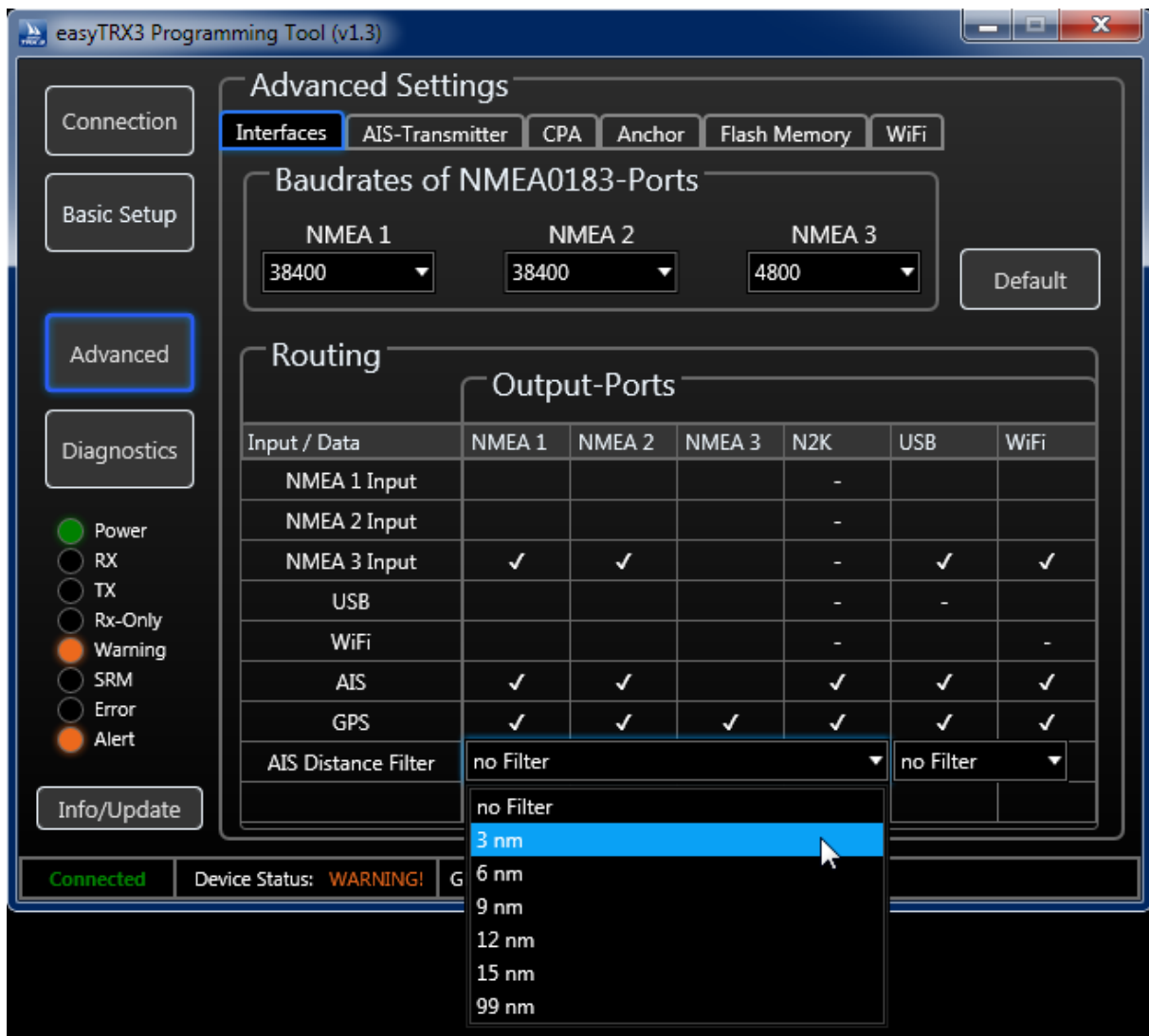


Figure 16 Input Distance-Filter

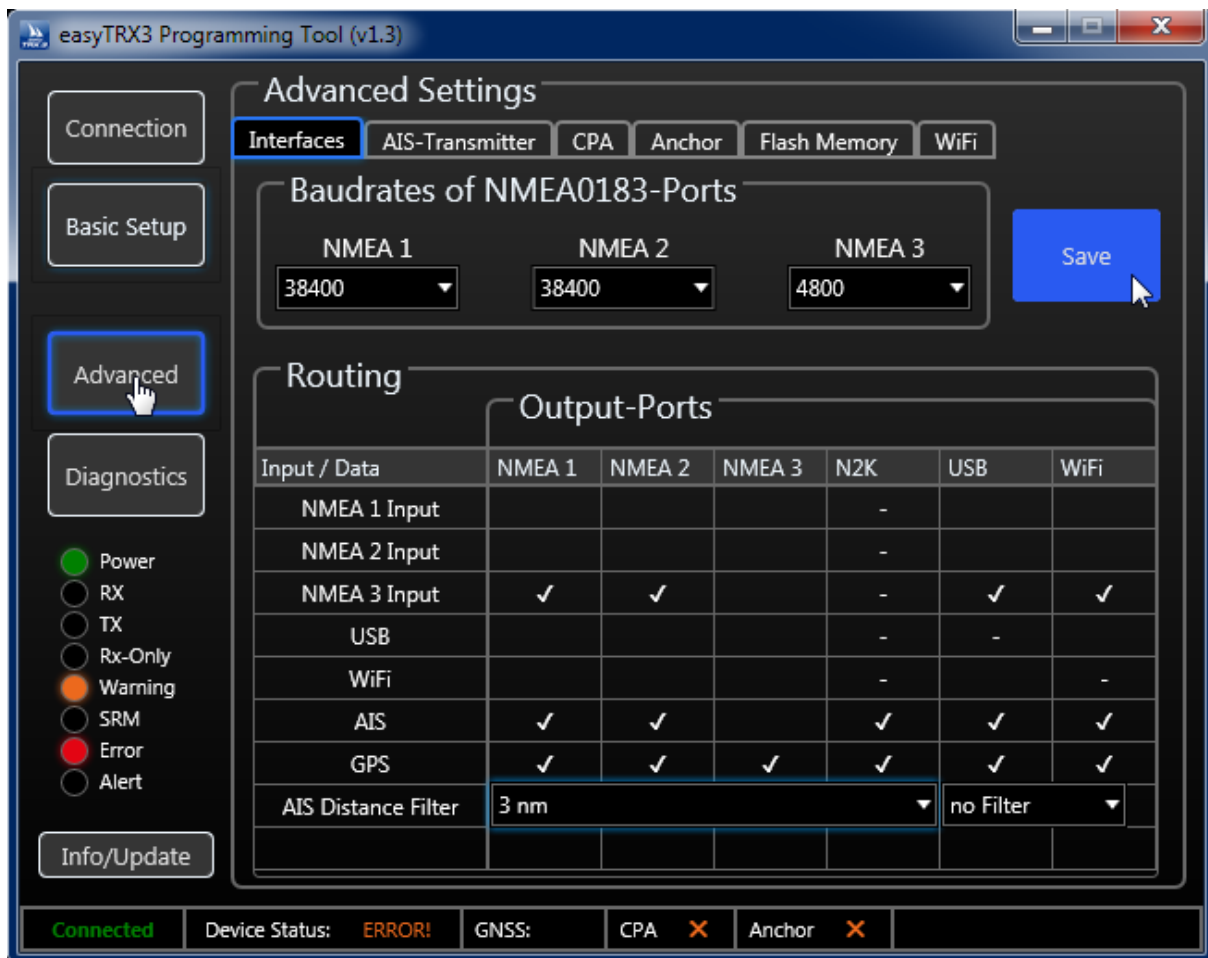


Figure 17 Save advanced settings

8.1.5 AIS-Transmitter - Silent mode

The transmission behaviour of your easyTRX3 device is controlled under this item. It is possible to switch off transmission mode and let the device run in receive-only mode.

Click on 'OFF' for AIS Transmitter to switch to receive-only mode.

You will immediately see a control LED with the message 'RX only' light up on the bottom left-hand side. The 'RX only' LED will also light up on the device itself. An information window opens for confirmation.

Click on 'OK' to close the information window.

You can then disconnect the connection via the 'Connection' menu item or make further settings.

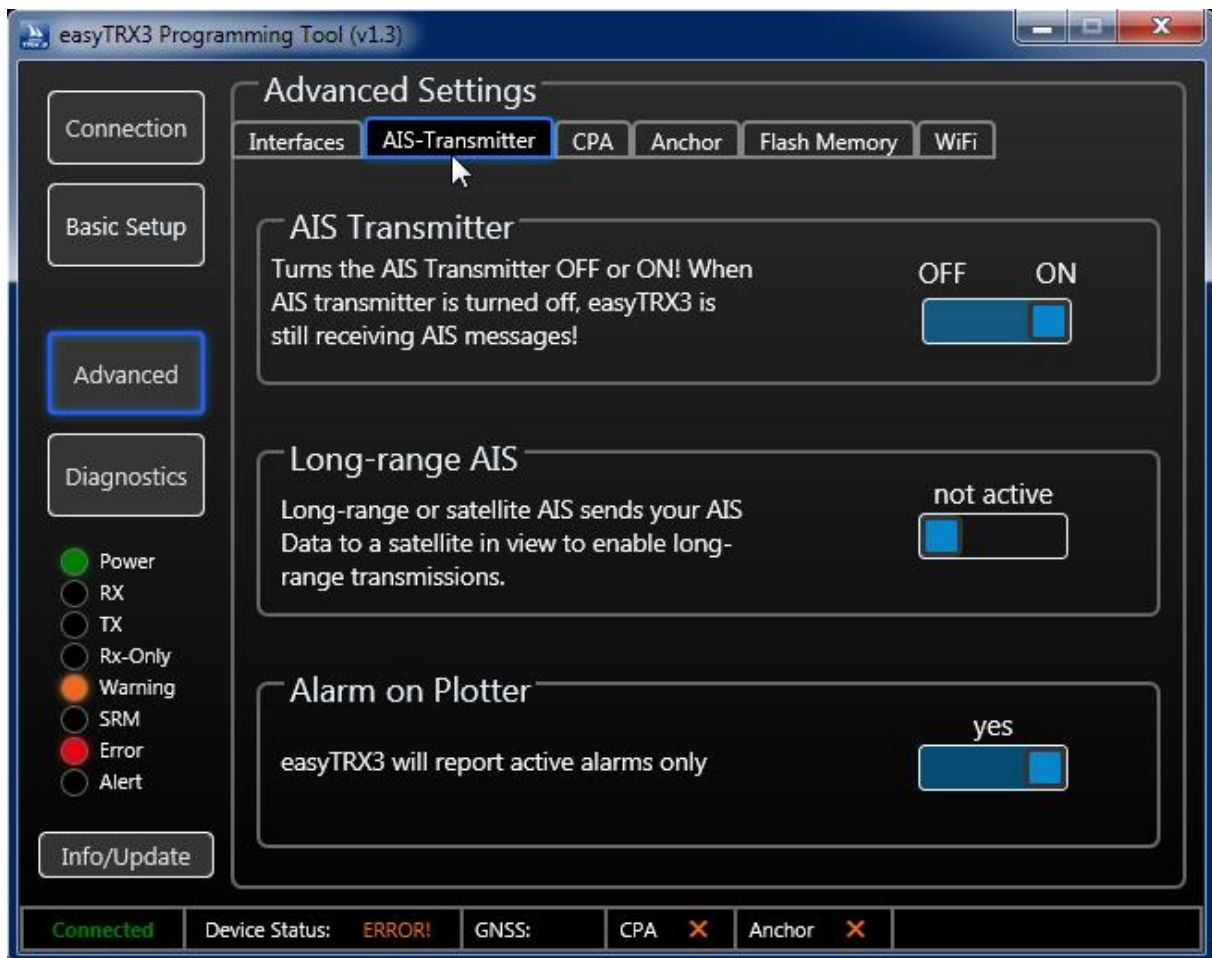


Figure 18 AIS Transmitter Settings

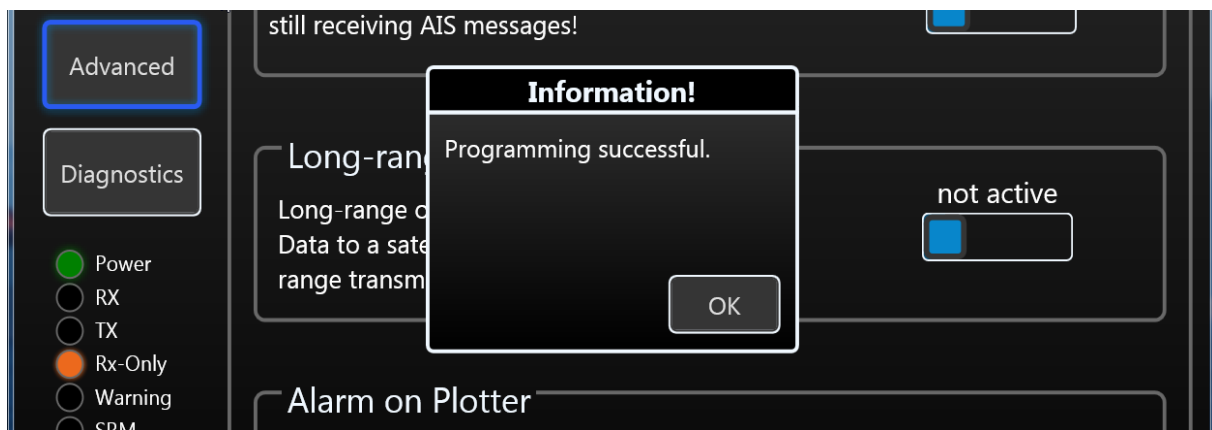


Figure 19 AIS Transmitter Settings (2)

8.1.6 Long-range AIS / Satellite AIS

On delivery, this function is deactivated in accordance with the international regulations of the IMO.

The long-range function is intended for use on the high seas, as you are outside the range of base stations.

When the long-range AIS is activated, a position report is sent every 3 minutes on special frequencies to AIS satellites, which then forward them to coastal control centres. This ensures that the ship's position is visible on land, even during a trans-Atlantic voyage, for example.

If you reach the reception area of a base station again when the long-range AIS is activated, the coastal control centre may switch off the long-range AIS, as its use may not be permitted. Please inform yourself about the respective national regulations.

If you leave the reception area of this base station again and had activated the long-range AIS before it was switched off, it will automatically reactivate itself.

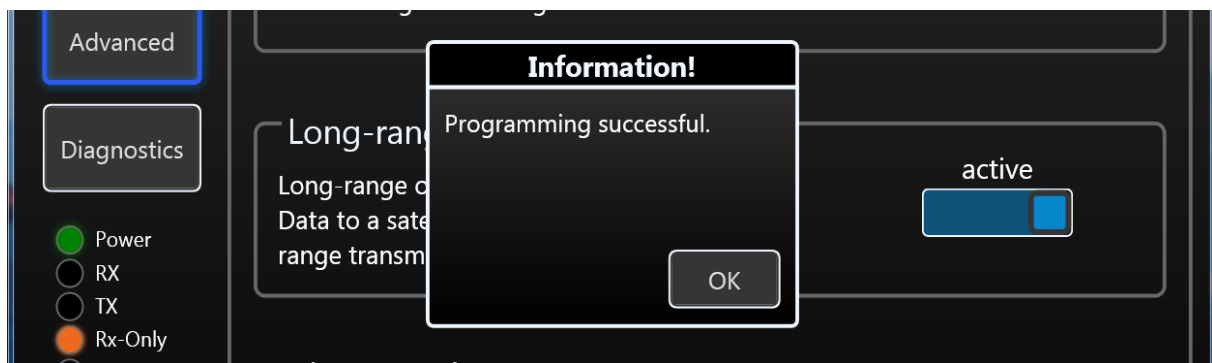


Figure 20 Settings Long-Range AIS

8.1.7 Alarm on Plotter -

By default, this function is set to 'YES', i.e. activated.

The background to this function is the self-test of the easyTRX3, which takes place every 60 seconds. Information is sent to the chart plotter for display, e.g. 'GPS antenna faulty - no reception'.

It is possible, especially with older chart plotter models, that this self-test information can lead to misunderstandings and therefore to false alarms due to incompatibility, even though there is no alarm situation. If this is the case for you, you can switch this function to 'NO', i.e. deactivate it.

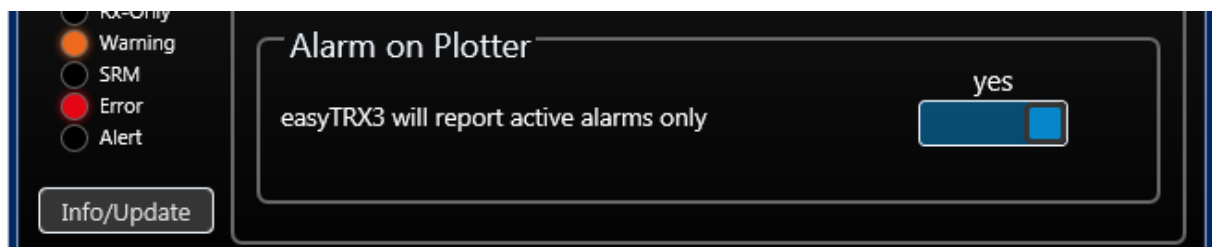


Figure 21 Settings Alarm on Plotter

8.1.8 CPA Alarm - Collision alarm

CPA Alarm is a so-called collision alarm (Closest Point of Approach). With this setting, you define an imaginary zone around your own ship using a time value and a distance value.

The CPA settings are normally made directly on the chart plotter, which must be permanently in operation in order to be able to use the CPA functionality. This can lead to power management problems if the chart plotter has a very high power consumption.

The great advantage of the easyTRX3S from Weatherdock is that the device itself has a CPA function and interprets the AIS data. If the easyTRX3S now receives and interprets AIS data that lies within your defined CPA zone and a collision could occur, the 'Alarm' LED lights up.

To improve the daily use of this functionality, you can refer to 'Chapter 7 - Connection options' to see how rocker switches and external signalling devices can be connected.

Please note that a switch connected via the 18-pin cable (hardware) always takes precedence over programming in the programming tool (software).

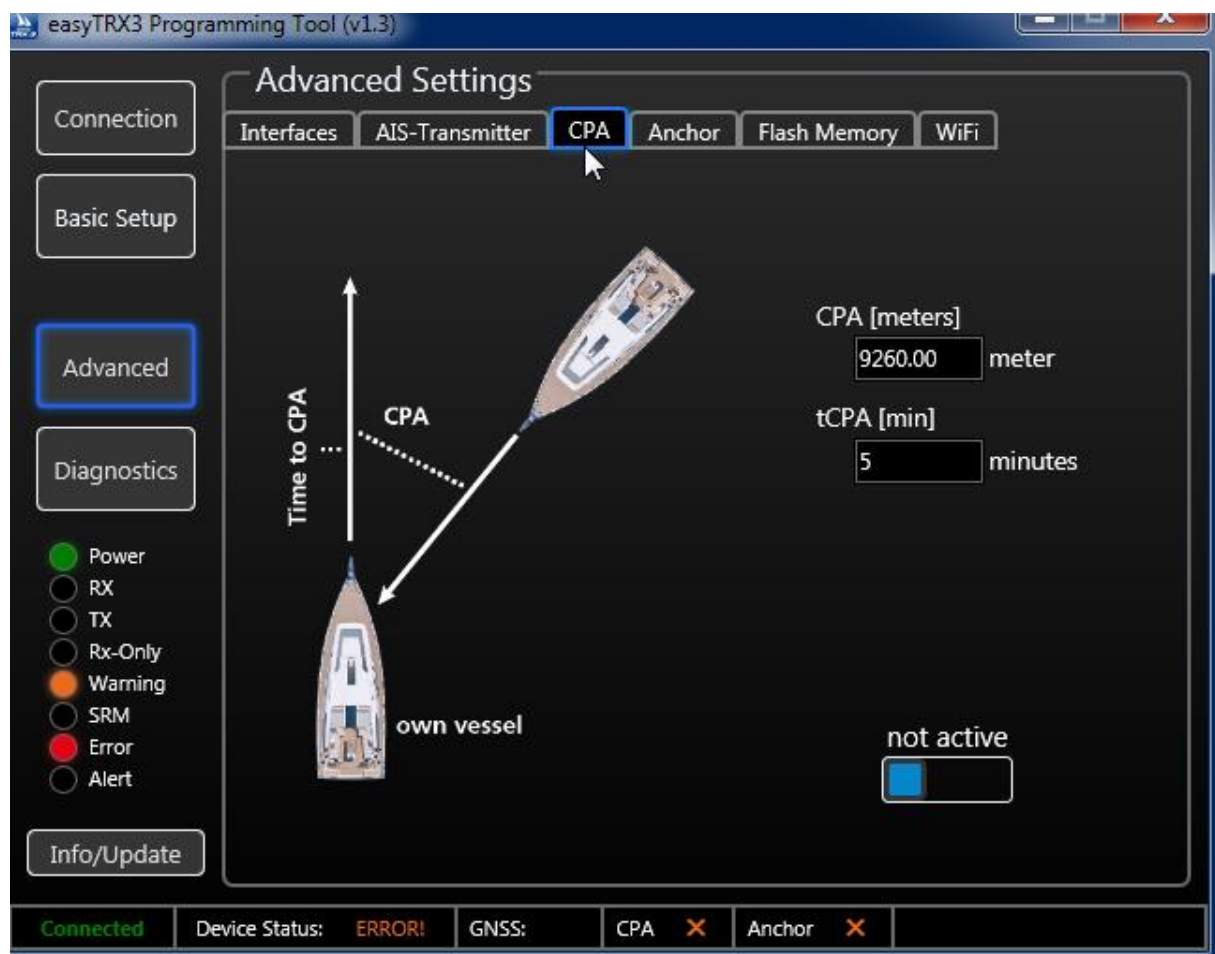


Figure 22 Input Window CPA Settings

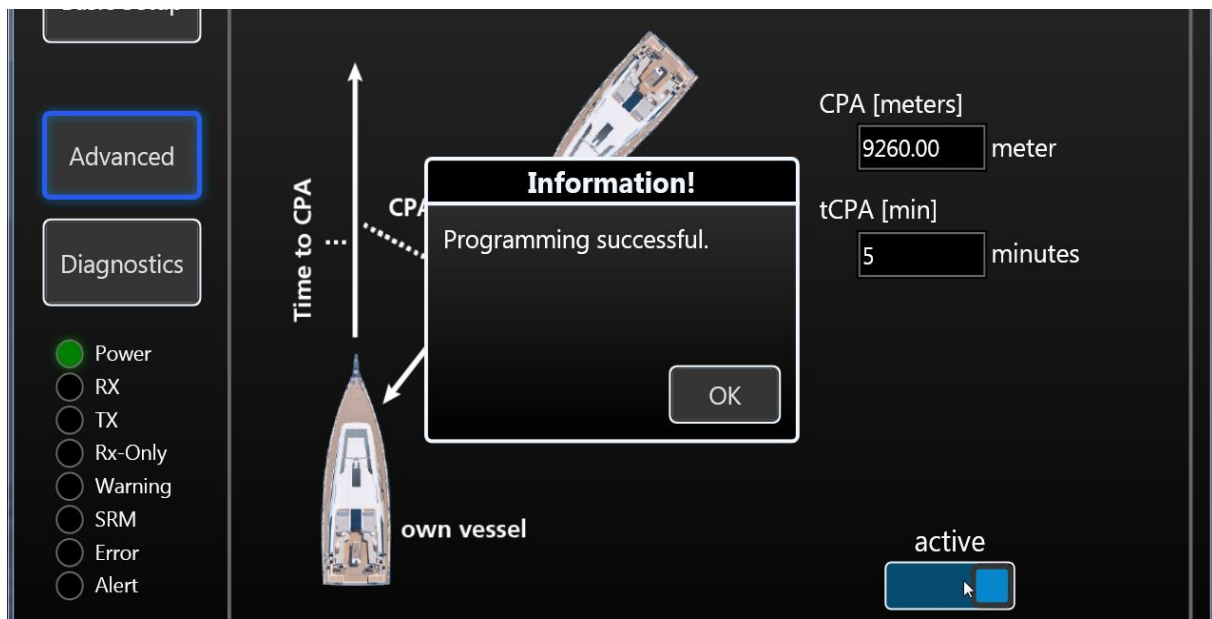


Figure 23 Input Window CPA Settings (2)

After you have entered values and activated the function, a small confirmation window opens, which you can close again by clicking 'OK'.

8.1.9 Anchor Alarm

This function is a kind of anchor guard. It is deactivated by default.

You can define a distance value as a radius around your anchor position. This value depends on the sway of your vessel in the wind and current at anchor and the length of the anchor chain or anchor line.

The natural movement of the vessel must be observed within this arc and no alarm may be triggered.

Like the CPA alarm, the anchor alarm can be used with the easyTRX3S when the chart plotter is switched off. In the event of an alarm, the alarm can be triggered via a connected signalling device (e.g. horn).

You will now see that the alarm is active and will also receive an information window for confirmation, which you can hide by clicking 'OK'.

Please note that a switch connected via the 18-pin cable (hardware) always has priority over programming in the Programming Tool (software).

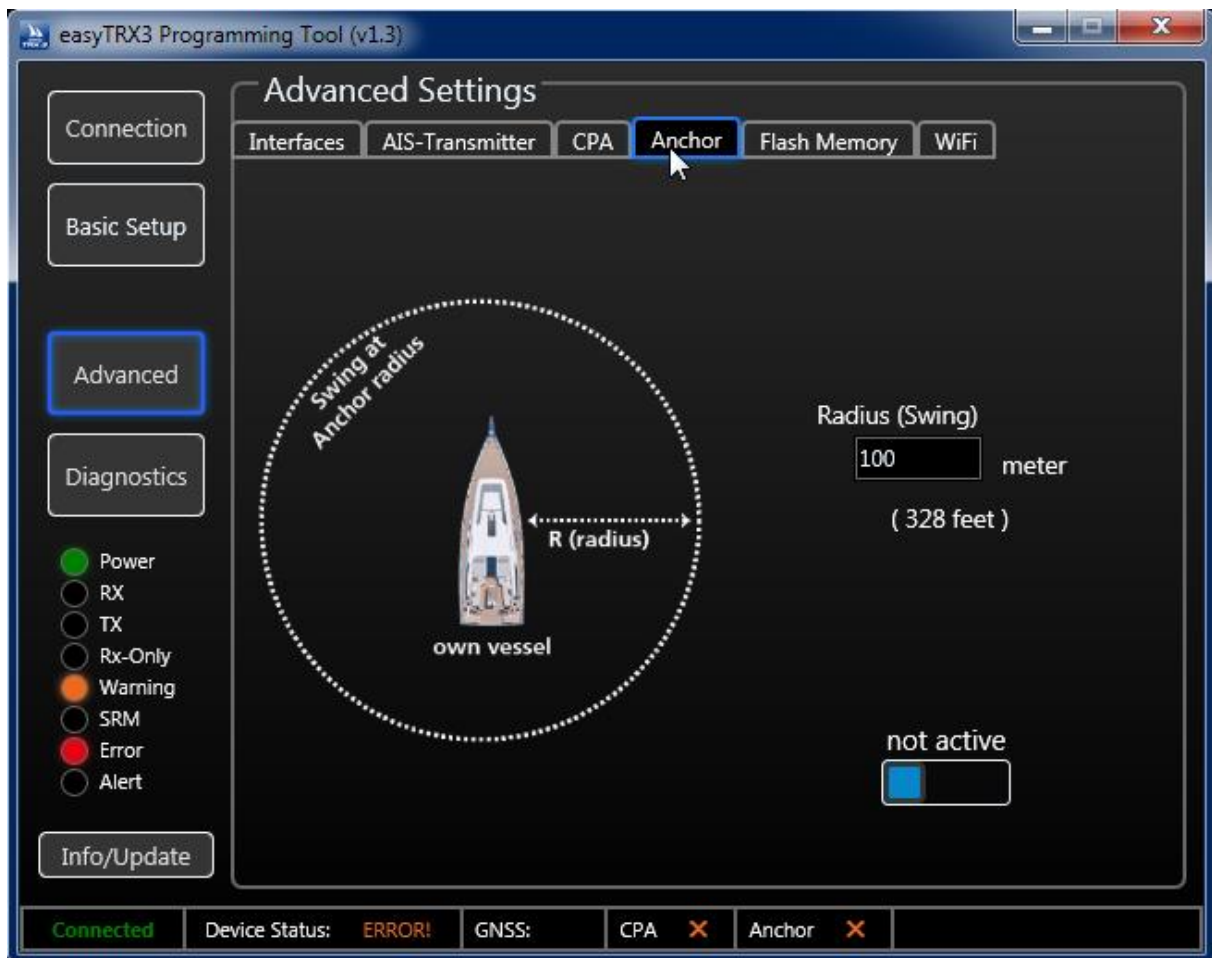


Figure 24 Input Window Anchor Alert settings

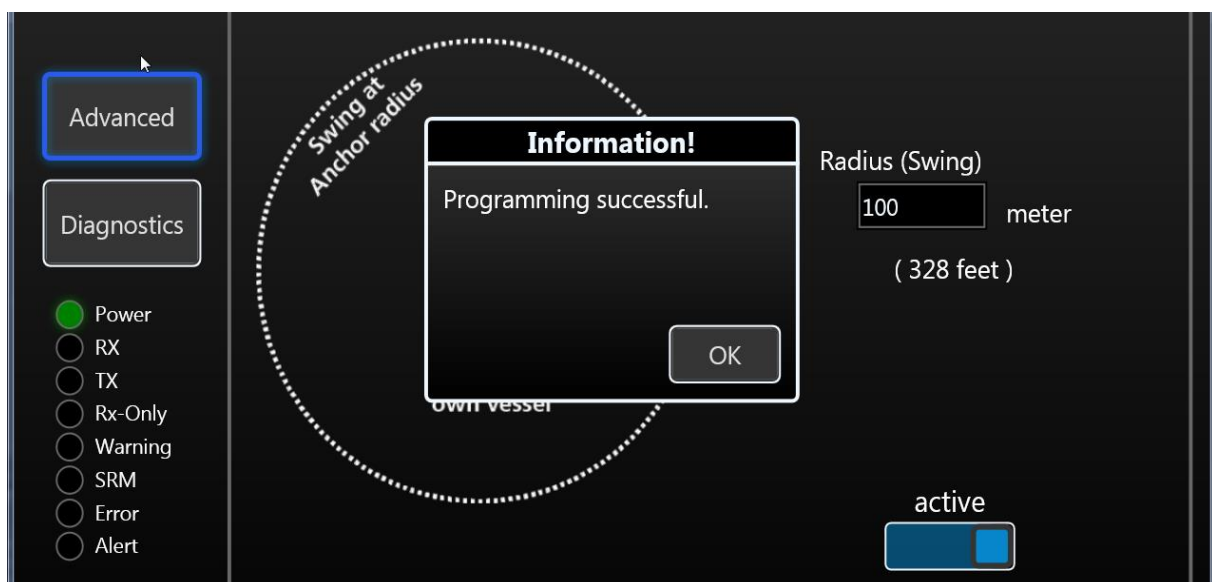


Figure 25 Input Window Anchor Alert settings (2)

After you have entered values and activated the function, a small confirmation window opens, which you can close again by clicking 'OK'.

8.1.10 WiFi Configuration

If you already have a mobile router for mobile data reception on board, you can integrate the easyTRX3S into the WLAN network of your router via a WiFi connection.

This makes it possible to supply all mobile devices that have mobile data reception via the on-board router with AIS data.

The following is a step-by-step description of how to do this.

Click on the 'WiFi' tab under 'Advanced'

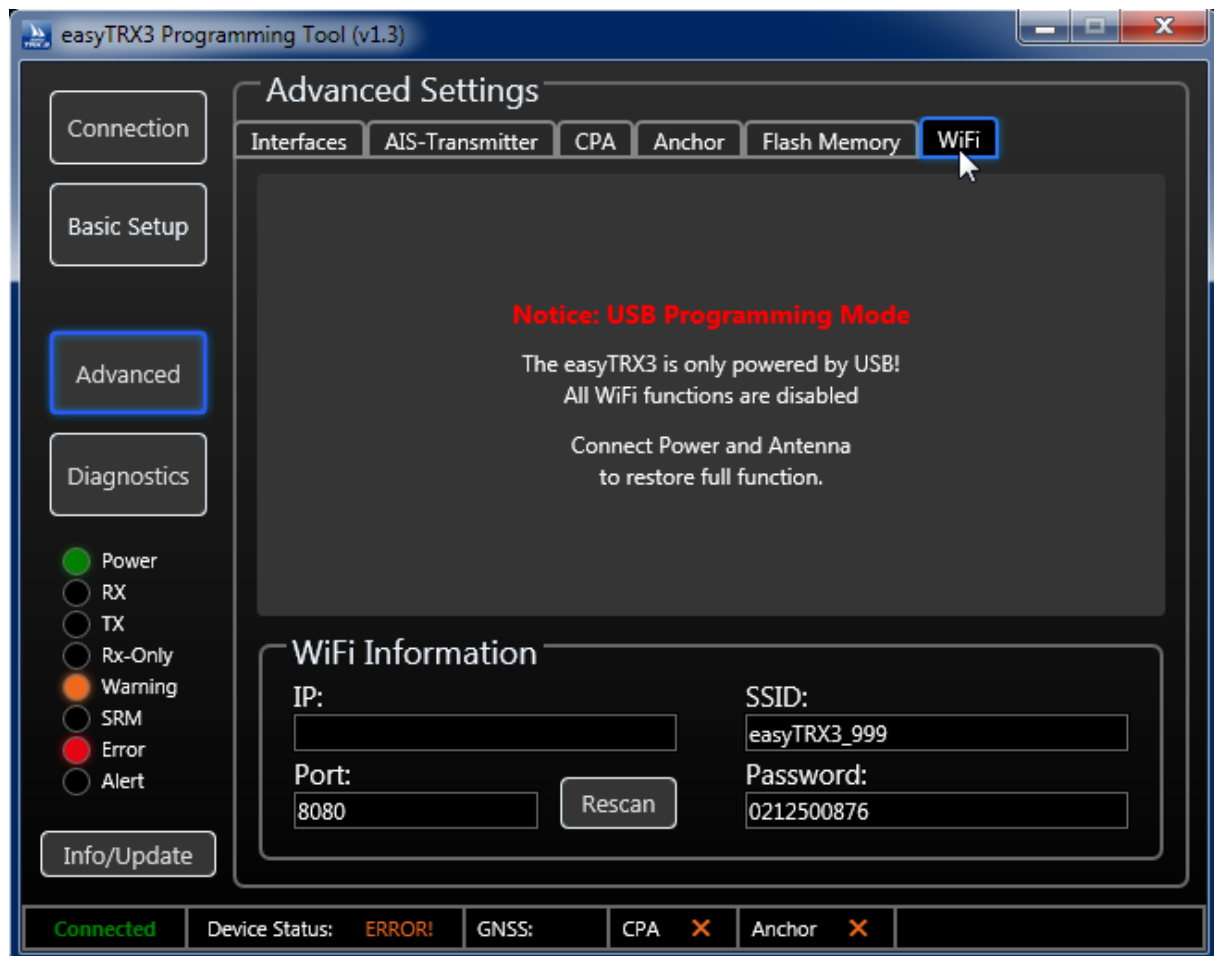


Figure 26 easyTRX3S WiFi Settings

If your easyTRX3S is only connected to the computer via USB cable, you will see this image. It shows you that the WiFi functionality of the easyTRX3S only works if the device is connected to the on-board power supply (12V-24V).

Connect the device to the on-board power supply, restart the programming tool and go back to the 'WiFi' tab.

As soon as the easyTRX3S is connected to the on-board power supply, you will see the following display:

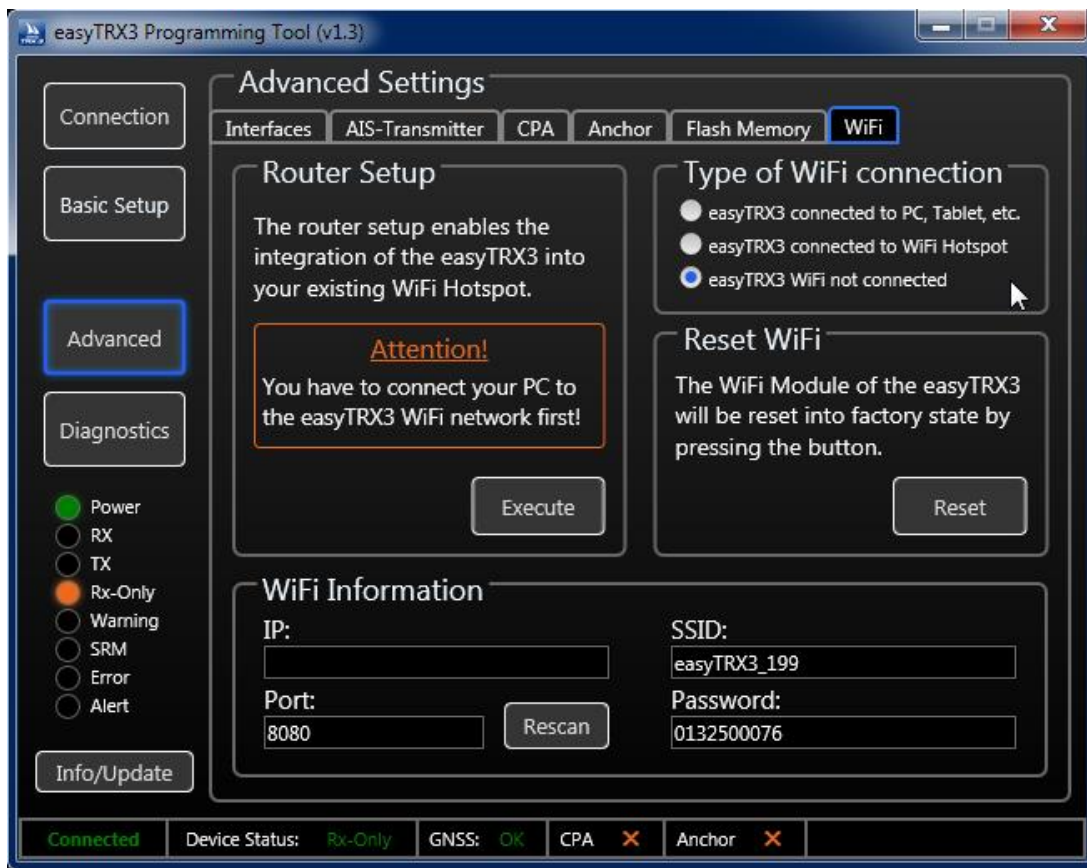


Figure 27 WiFi not connected

8.1.10.1 Router Setup

As you can see from the warning message, you must connect your computer/laptop to the easyTRX3S network via WiFi. You can find the necessary WiFi information below (e.g. SSID 'easyTRX3_199'; Password. "xxxxxxx")

First select the easyTRX3 network in your computer's WiFi menu and click on 'Connect'.



Figure 28 WiFi network

Then enter the password for the easyTRX3 network as specified in the programming tool and confirm with OK.

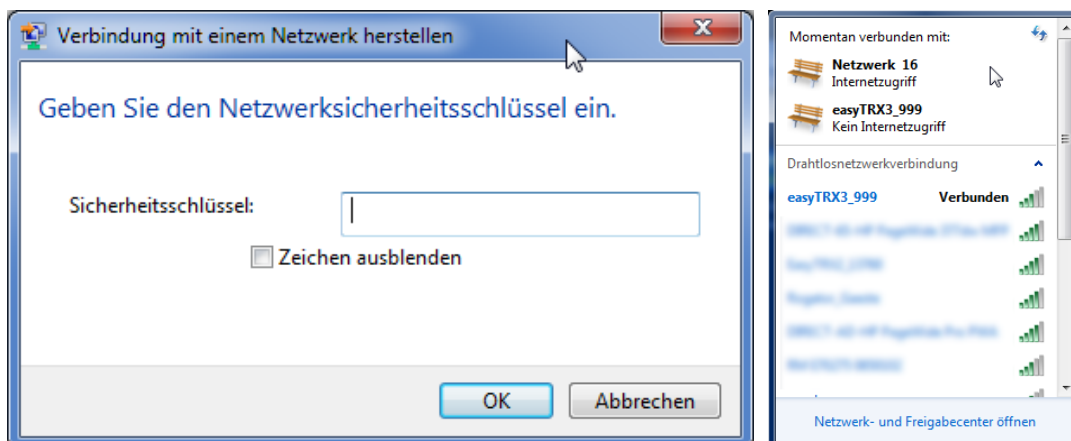


Figure 29 WiFi Network Ssecure Key

After you have connected the computer/laptop, click on the 'Rescan' button under 'WiFi Information' in the Programming Tool and after a few seconds you will see that the easyTRX3 has been assigned an IP address.

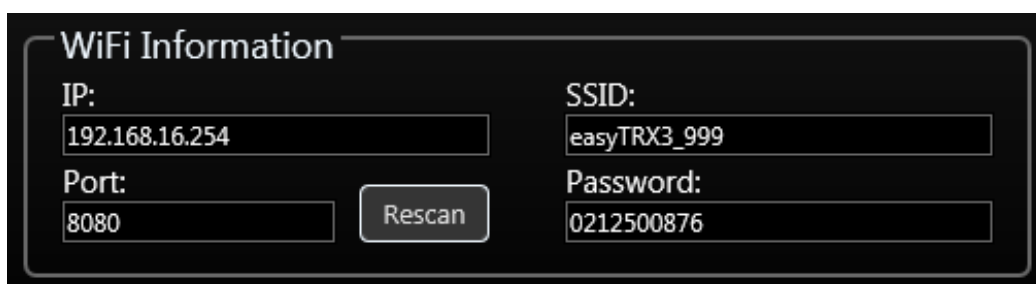


Figure 30 WiFi Network Information

Then click on 'Execute' in the 'Router Setup'.



Figure 31 WiFi connected with PC, Tablet, etc. (1)

The two windows below will open simultaneously.

These are the input window for the WiFi module and a help window with step-by-step instructions.

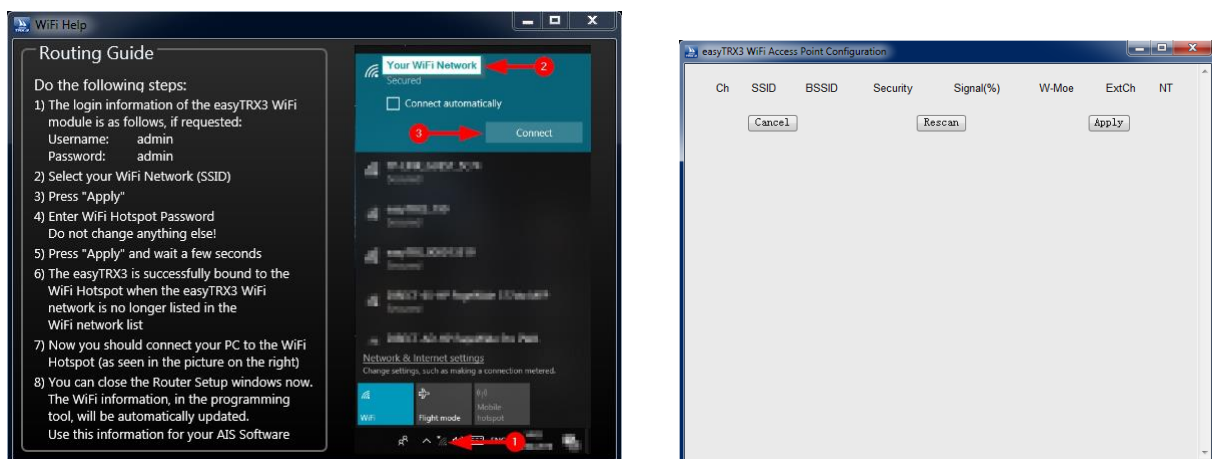


Figure 32 WiFi Configuration & Help

Click on 'Rescan' to display the WLAN network of your router.

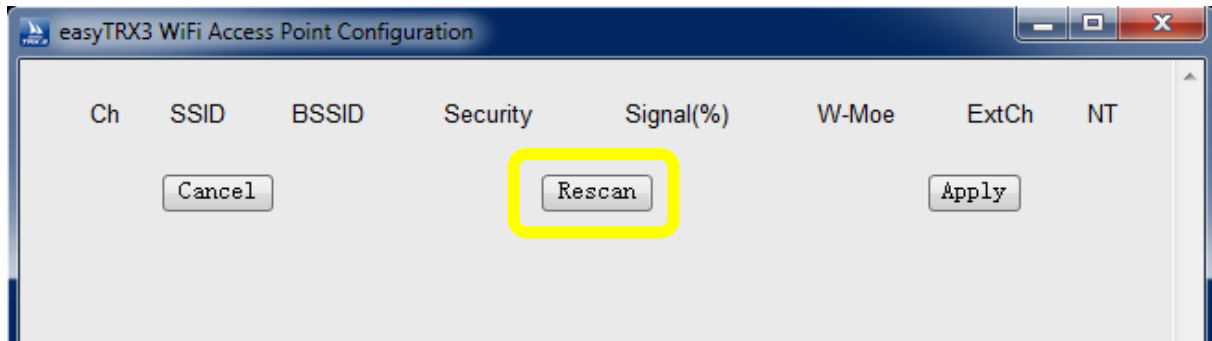


Figure 33 WiFi Access Point Configuration Rescan

Select the appropriate network by ticking the corresponding selection box and click on 'Apply'

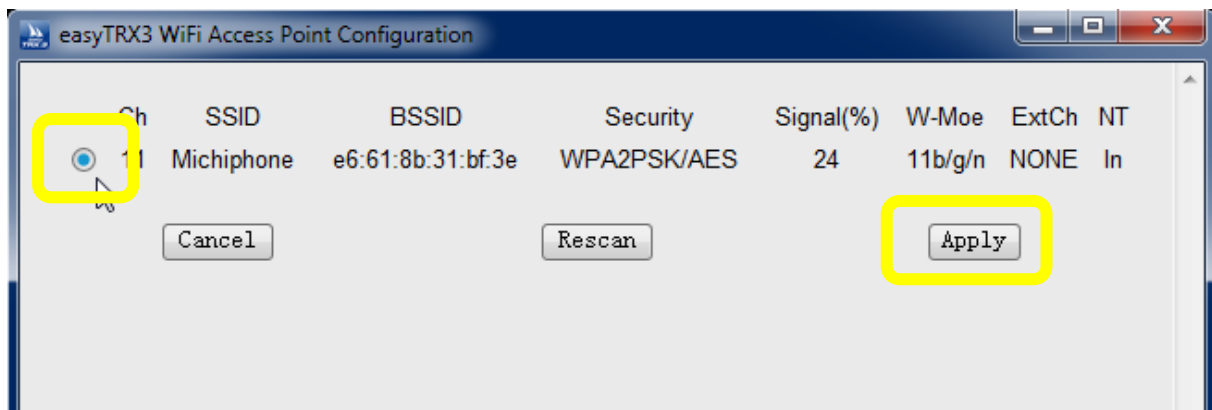


Figure 34 WiFi Access Point Configuration Apply

After you have clicked on 'Apply', the following input window appears.

easyTRX3 WiFi Access Point Configuration

HLK-RM04 Serial2Net Settings

NetMode:

SSID:

Encrypt Type:

Password:

IP Type:

	Current	Updated
Serial Configure:	38400,8,n,1	38400,8,n,1
Serial Framing Lenth:	64	64
Serial Framing Timeout:	10 milliseconds	10 milliseconds (< 256, 0 for no timeout)
Network Mode:	server	Server
Remote Server Domain/IP:	19	19
Locale/Remote Port Number:	8080	8080
Network Protocol:	tcp	TCP
Network Timeout:	0 seconds	0 seconds (< 256, 0 for no timeout)

Figure 35 WiFi Access Point Configutation Settings

Enter the login password of your router here and then click on 'Apply' to establish the integration of the easyTRX3 into the router WLAN network.

Close this window to return to the programming tool window in the background.

Click on 'Rescan' again under 'WiFi Information' so that the software can check and accept the new connection.

Done.

The easyTRX3 is now integrated into the network of your on-board router.

IMPORTANT: If you want to register a new device in the network or there were problems with the connection, first click on the 'Reset' button in the 'Reset WiFi' section of the 'WiFi' tab in the programming tool.

Here you can undo all settings that you may have previously made for the WiFi configuration and reset the WiFi module to the factory settings.

8.1.10.2 AIS on mobile devices in the router's WLAN network

- In the WiFi information, you will see the IP address that the easyTRX3 has been assigned in the router WiFi network.
- If you now want to use AIS data on a mobile device that is already in the WiFi network of the on-board router, please proceed as follows:
 - AIS-capable software / app must be installed on the mobile device
 - In this software / app, go to the connection settings
 - Enter the IP address and port number that the easyTRX3 has been assigned in the router WLAN network (e.g. IP: 192.168.xxx / port: 8080)
 - The connection established in this way enables the mobile end device to receive and process the AIS information provided by the easyTRX3 in the network.

8.1.10.3 Explanations



Figure 36 WiFi connected with PC, Tablet, etc. (2)

Router Setup

Used to integrate the easyTRX3 into the WLAN network of the on-board router

Type of WiFi Connection

- Here you can see the current status of the easyTRX3:
 - - WiFi connection with a mobile end device
 - - WiFi connection to a 3G/LTE router
 - - No WiFi connection

Reset WiFi

Here you reset the WiFi module of the easyTRX3 to the factory settings.

WiFi information

- Here you can view the data relating to the WiFi functionality of the easyTRX3 in a clearly organised format. You can use the 'Rescan' button to call up more up-to-date values if necessary.
- - IP address of the easyTRX3
- - Port number used
- - Name (SSID) of the easyTRX3 network
- - Password for the login

8.1.11 Diagnostics

The 'Diagnostics' function gives you a perfect overview of the proper functioning of the easyTRX3, or of any warning or error messages and why they occur.

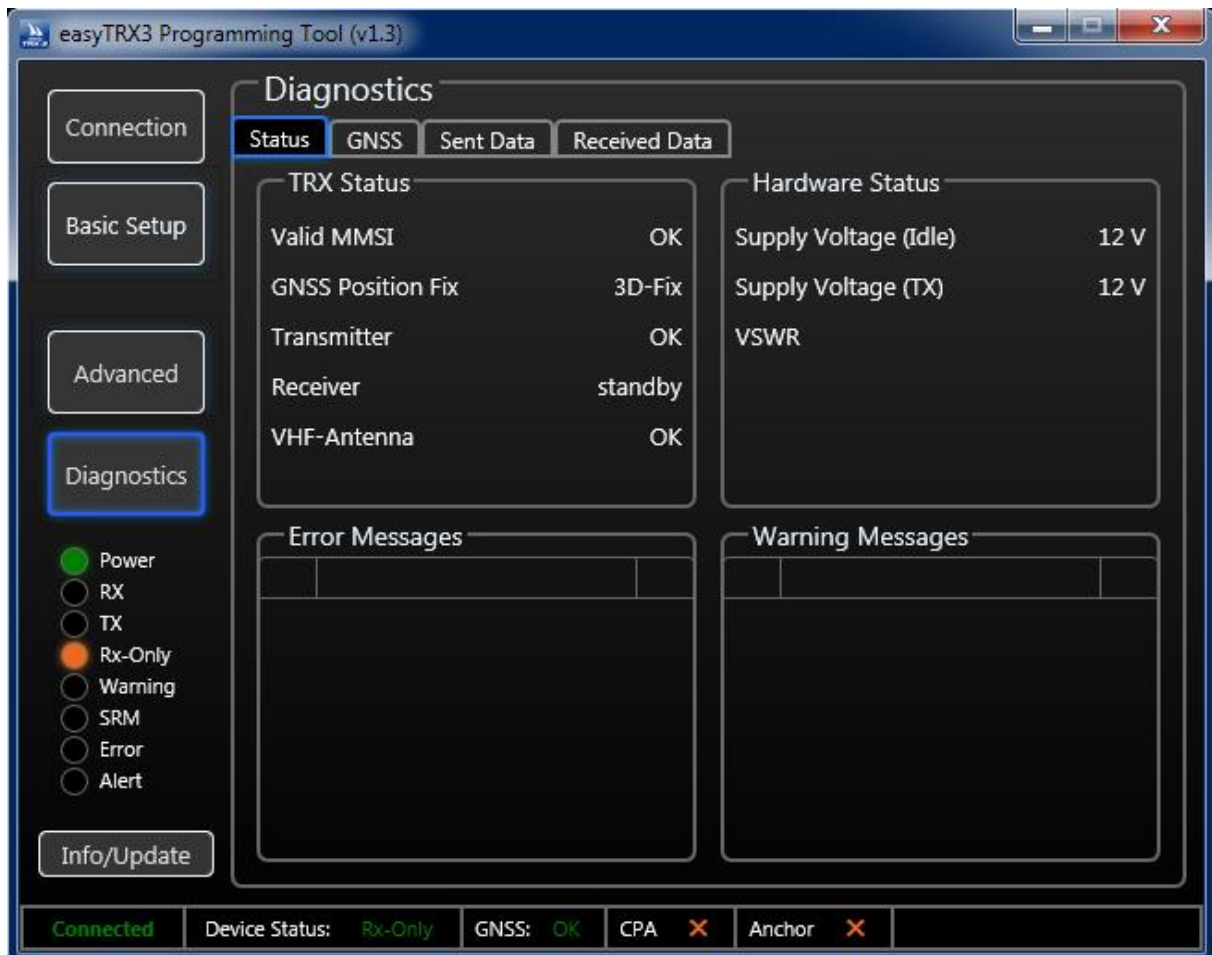


Figure 37 Diagnostics-Window

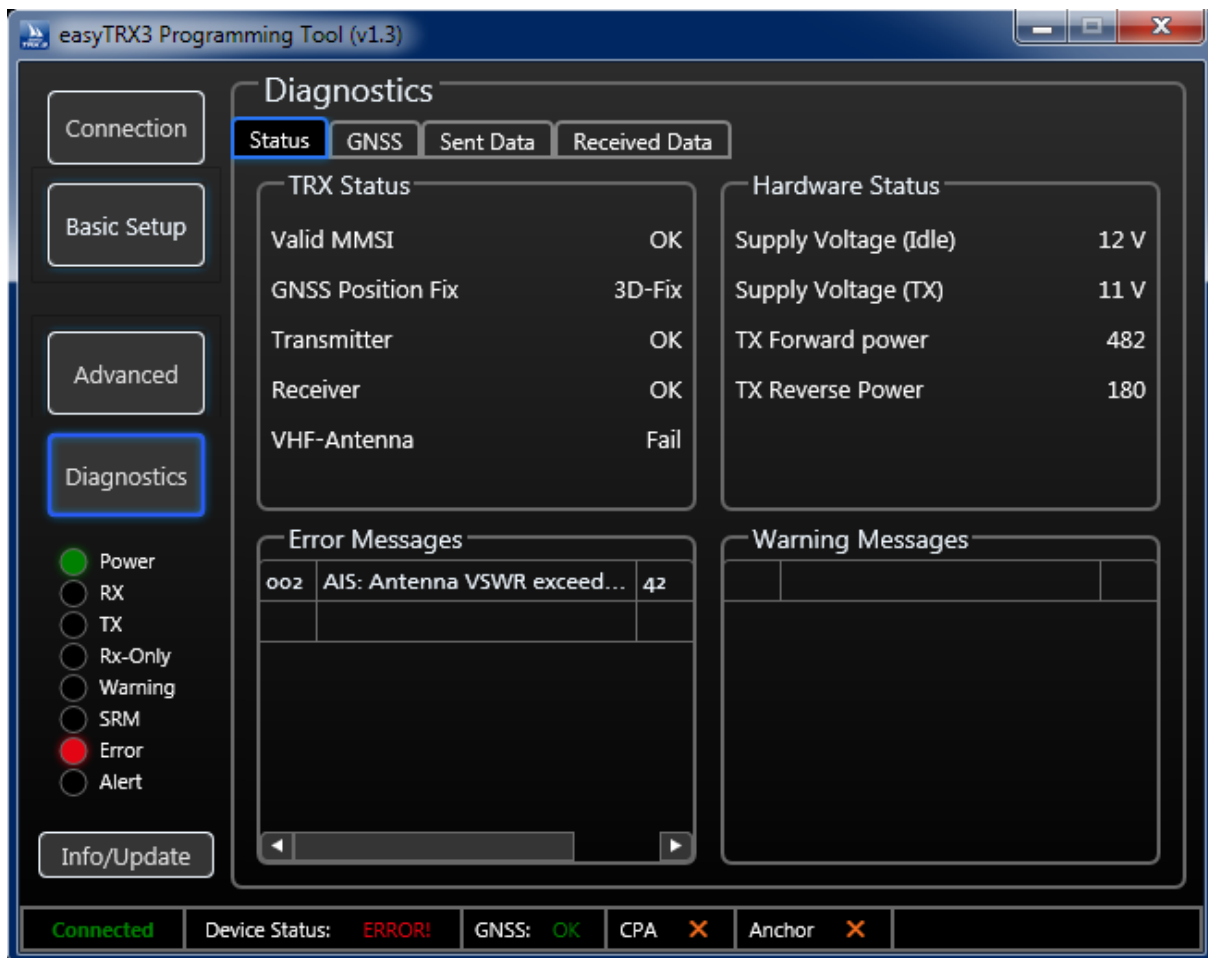


Figure 38 Diagnostics Window (2)

8.1.11.1 Status

TRX Status

- The 'TRX Status' field contains important information about the validity of the MMSI, successful position determination (GPS fix), function of the transmitter/receiver unit:
- Valid MMSI:
 - As soon as a valid MMSI has been programmed, 'OK' is displayed. Only then will the device transmit.
- GNSS position fix:
 - If 'OK' is displayed here, the GPS is working properly.
- Transmitter:
 - As soon as the transponder has transmitted for the first time, the value changes from 'Standby' to 'OK'. If there is an error in the device, 'Error' is displayed here and the device is no longer working properly. Information about an error is given in the 'Error Message' field. Please contact your service partner.
- Receiver:
 - As soon as the first AIS telegram is received after switching on, the value changes from 'Standby' to 'OK'. If there is an error in the device, 'Error' is displayed here and the device

no longer works properly. The 'Error Message' field also provides information on the type of error. Please contact your service partner.

- - VHF antenna:
- As soon as a VHF antenna is connected and the connections are faultless, the display changes from 'Fail' to 'OK'. If the 'Fail' status is displayed again at a later time, there are problems with the antenna or its connections. Corresponding error messages can be seen in the 'Error Messages' or 'Warning Messages' fields.

Hardware Status

In the 'Hardware Status' field, you can read the values for the operating voltage and the transmit/receive ratio of the FM antenna.

- Supply Voltage (TX):
This is the voltage value during transmission. Here the easyTRX3 device briefly draws approx. 2A current from the on-board power supply. If the supply wires are too thin and relatively long, the voltage can drop significantly below the 'idle' value, which can lead to reduced transmission power. You may need to select a thicker cable or check all contact connections.
- VSWR
OK: indicates that the transmission power and functioning of your antenna is OK
Fail: indicates that the transmission power of your antenna is impaired and not sufficient for successful transmission.

Please check your cables and cable connections and contact your service partner at if necessary

The LED display of your easyTRX3 device is also shown again on this 'Diagnostics' page. This is particularly helpful if you have not mounted your device in a visible position. If the self-diagnosis of the easyTRX3 device has detected an error or there is a warning, a brief description is displayed in the respective tables.

The easyTRX3 outputs the result of the self-test every 30 seconds. Each message therefore has an expiry counter of 1 minute. This means that if the error message or warning no longer appears within one minute, the message is deleted from the table. This means that the error or warning no longer exists.

Error Messages

The ERROR messages provide information on whether a cable connection is incorrect or defective.

An overview of possible error messages can be found in chapter 14.

Warning Messages

The warning message with 'no valid fix' disappears after the TRX3 has determined its own position. The green 'ALL OK' LED then also lights up.

If the self-diagnosis of the easyTRX3 device has detected an error or if there is a warning, a brief description is displayed in the respective tables. The easyTRX3 outputs the result of the self-test every 30 seconds. Each message therefore has an expiry counter of 1 minute. This means that if the error message or warning no longer appears within one minute, the message is deleted from the table. This means that the error or warning no longer exists.

All status LEDs that can be seen on the device can be found here again. This can be particularly helpful if you have installed your easyTRX3 without direct visibility.

8.1.12 GNSS

In the GNSS section you will find helpful information about the GPS data that the TRX3 receives or does not receive.

GNSS Status

Here you can see information about the course and speed over ground, you can see the exact position with longitude and latitude. You can see how many satellites are available for determining the position and how many of them have actually been used. Last but not least, you can see the current world time of the satellites (UTC time).

- **Course over Ground:**
Displays the current course of the ship over ground
- **Speed over Ground:**
Displays the current speed of the ship over ground
- **Latitude / Longitude:**
Displays the current position with longitude and latitude information
- **Satellites in view/used:**
This shows how many GPS satellites are being received and how many of them are being used to determine the position.
- **HDOP:**
The HDOP is a factor that determines the relative accuracy of a horizontal position. The smaller the DOP value, the better the geometry. The standard value is 2.5.

In the graphic below you can see a calculated HDOP value of 0.8, which is very good.

GPS Satellites

Here you can see a graphical representation of the satellites in view (grey) and those in use (blue).

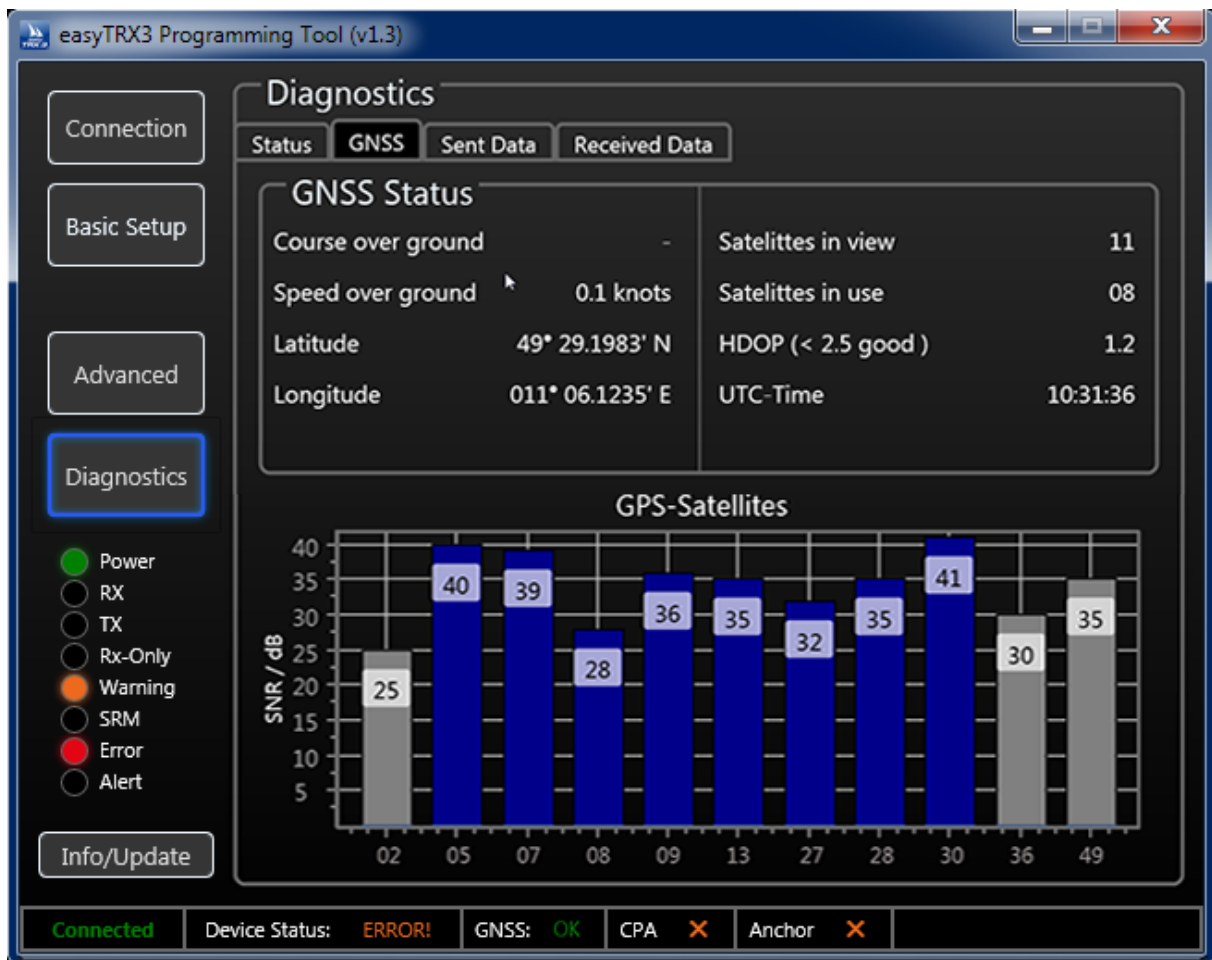


Figure 39 GPS Status

The numerical value in the bar indicates the level of the signal: the larger the number, the better the GPS signal received.

8.1.12.1 Data

Sent Data

'Sent Data' provides you with a complete overview of all the information that the easyTRX3 transmits to the AIS system for your ship's position.

You will see the AIS position report with additional information such as course and speed over ground.

You will also see the so-called 'static data' that is sent to your ship in the AIS system.

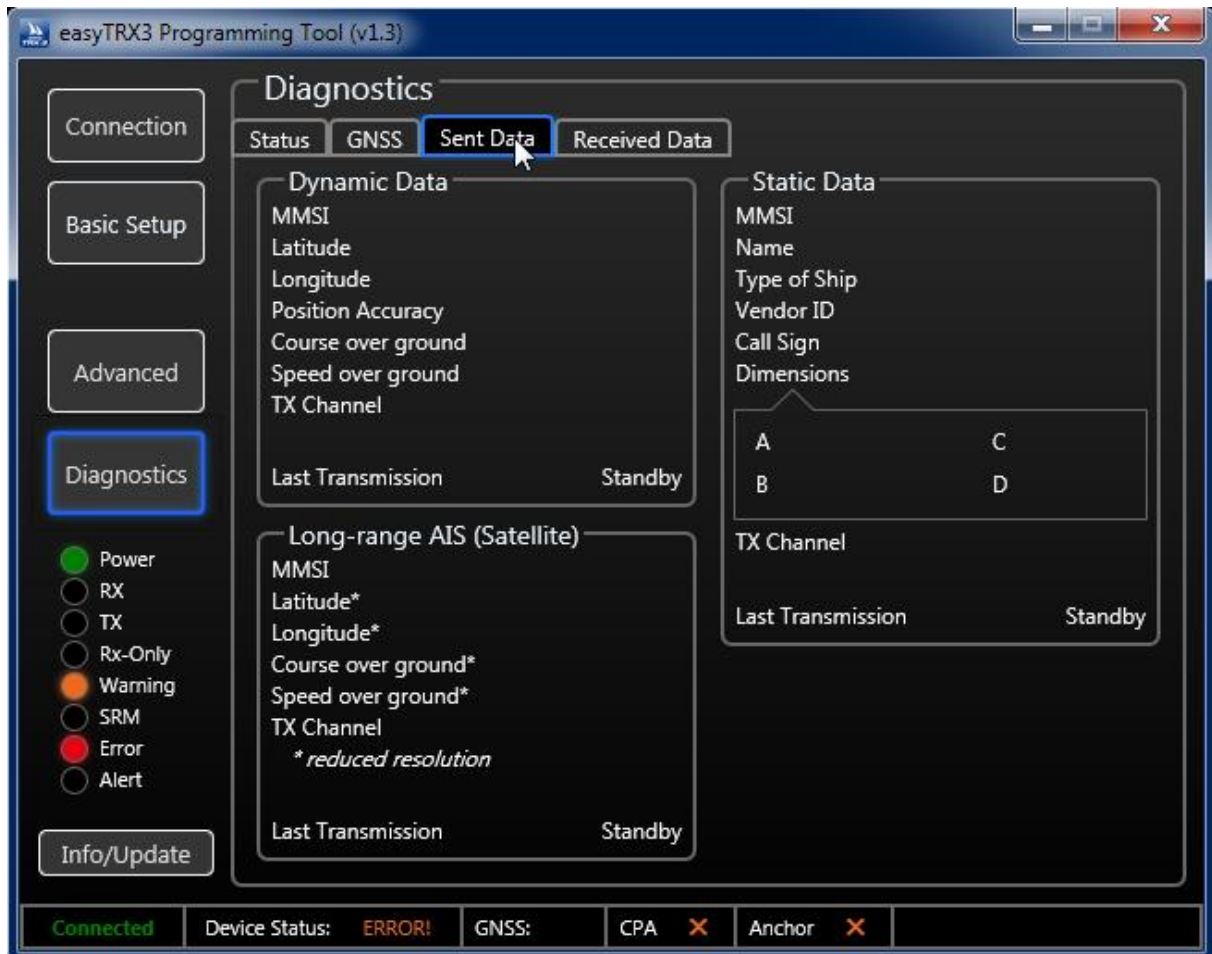


Figure 40 Send-Data Window

Received Data

Here you can view all vessels whose AIS data has been received in list form and select them with a click.

You will then receive an overview of all the data for this specific vessel.

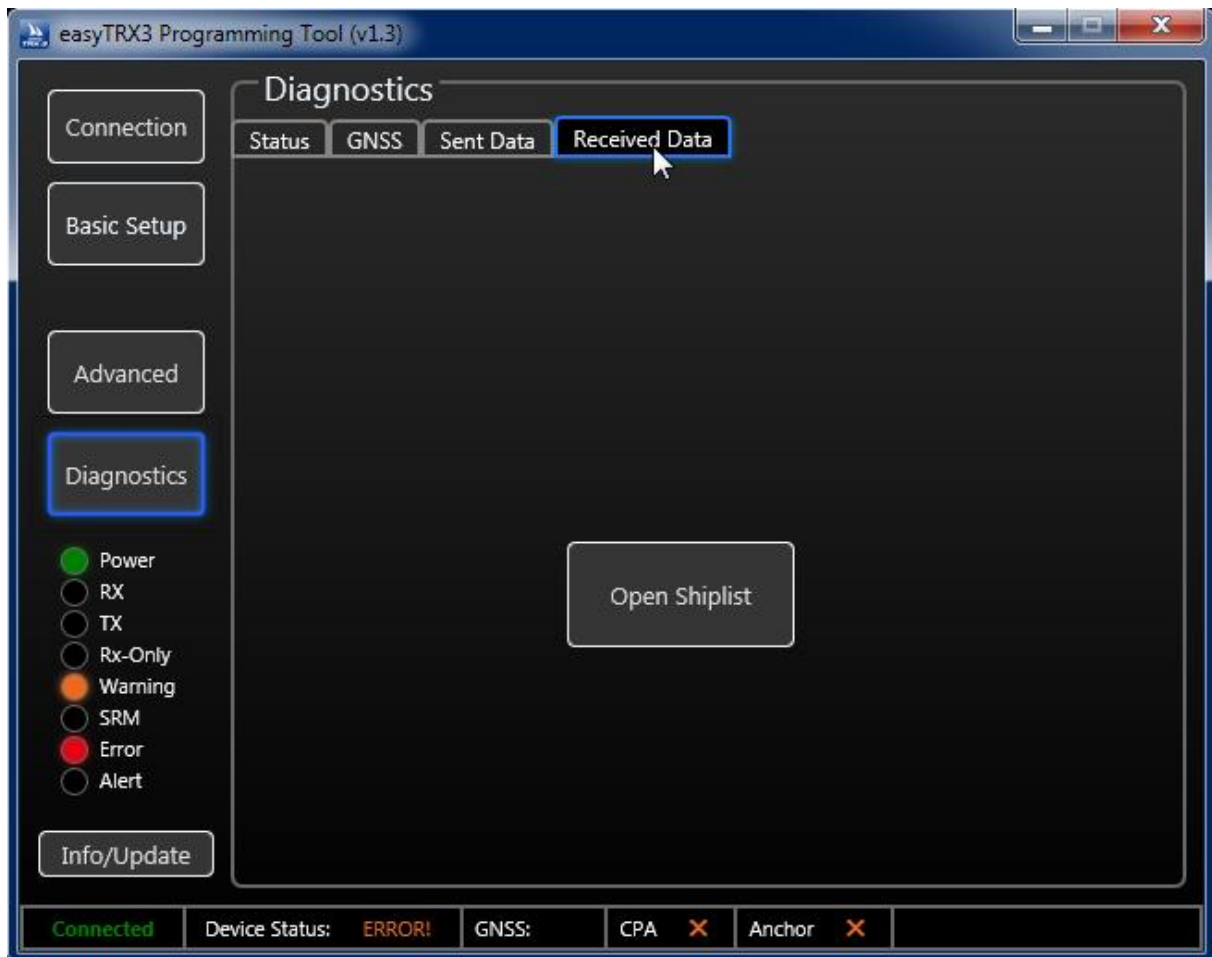


Figure 41 Received-Data Window

Info/Update

Here you can reset the device to the factory settings if this should become necessary.

In the event of a reset, the system will generate a key, which you should send by email to:

support@weatherdock.de. You will then receive a PIN by email, which is only valid for a single entry.

Enter this PIN and confirm the start of the reset.

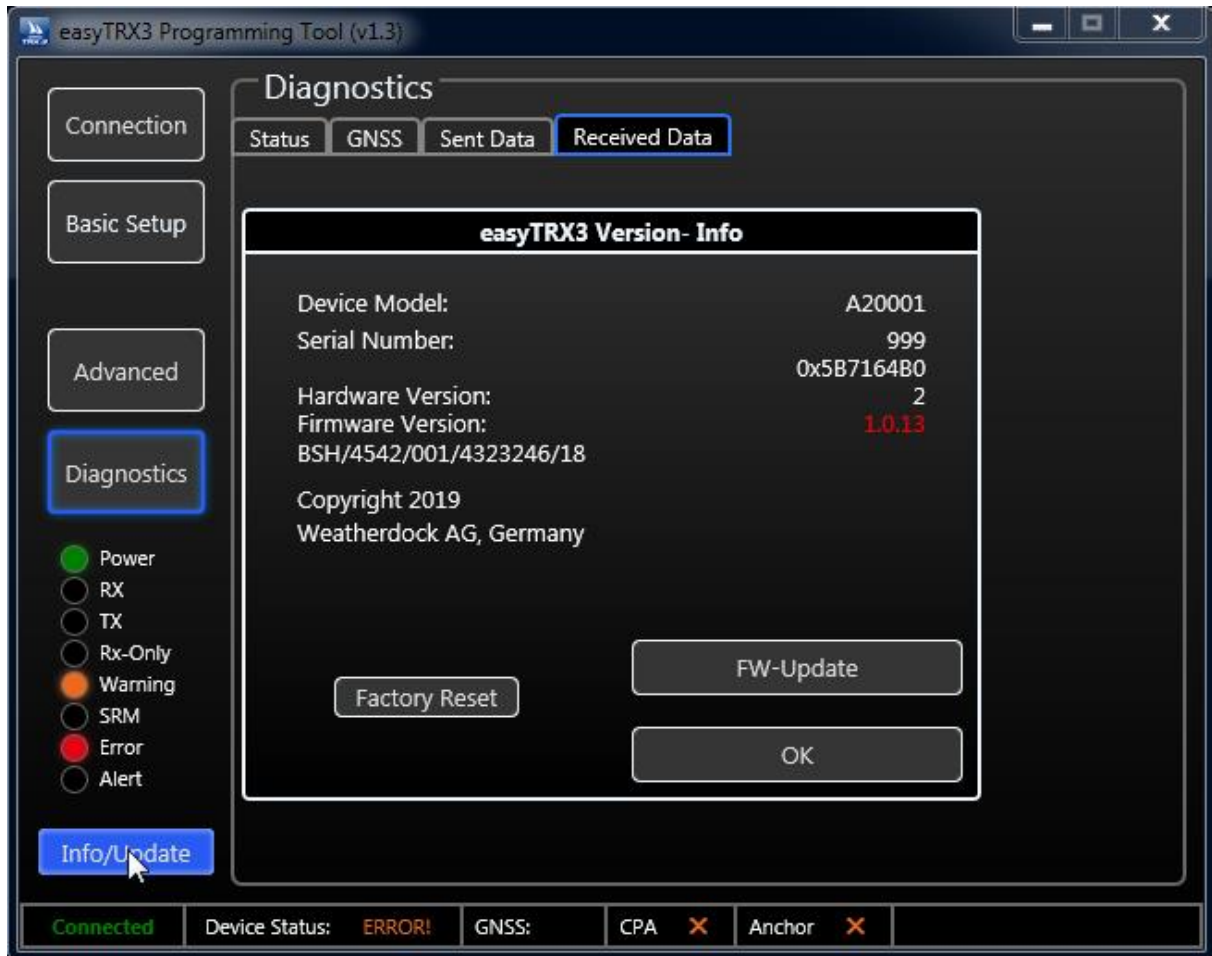


Figure 42 Input Window Update / Factory-Reset

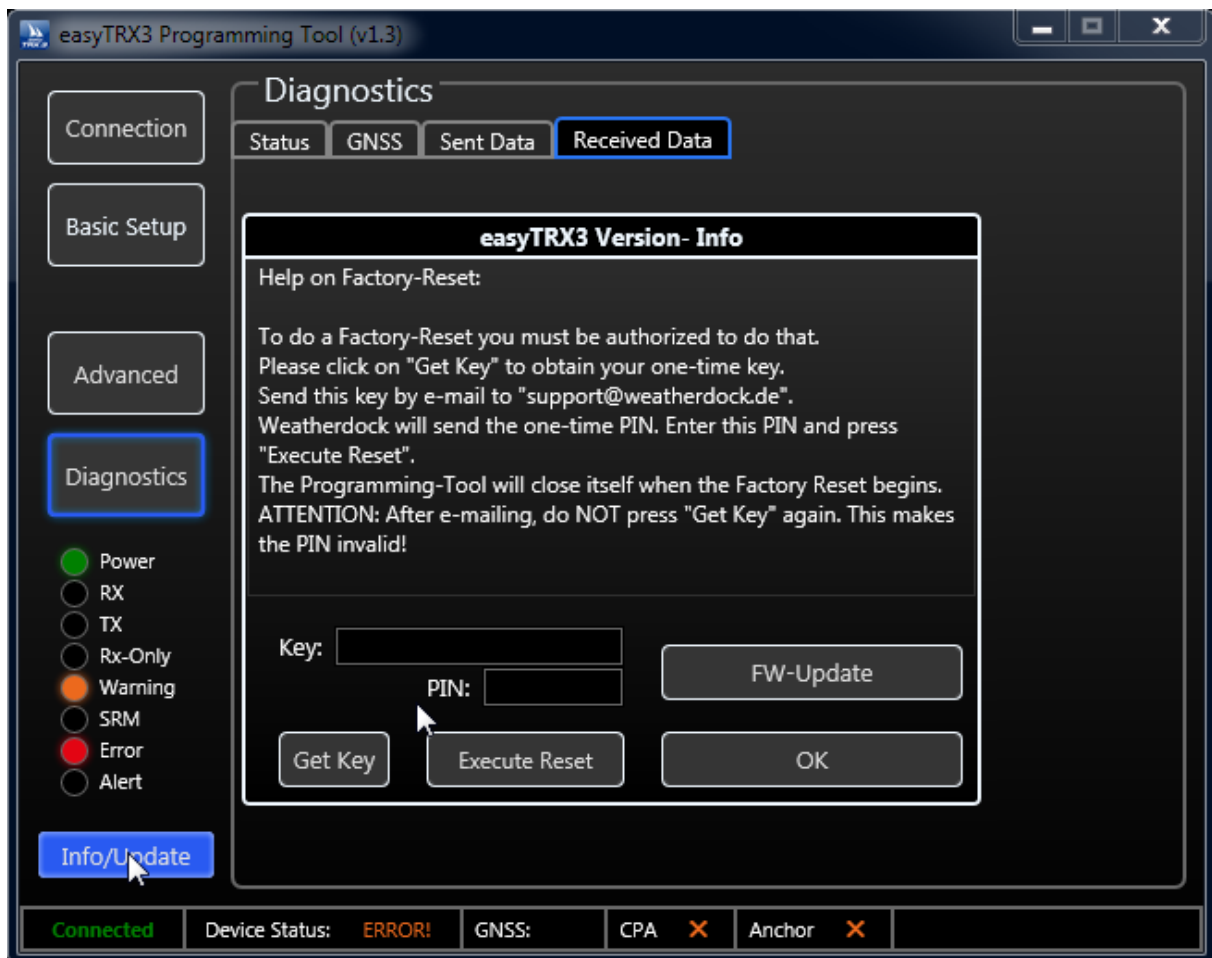


Figure 43 Input PIN-Code for Factory-Reset

Firmware-Update

If new firmware is available for the TRX3, you will find this on our homepage, where the corresponding file can also be downloaded. Save this locally on your PC/Mac.

Click on 'FW update' and the following window will open

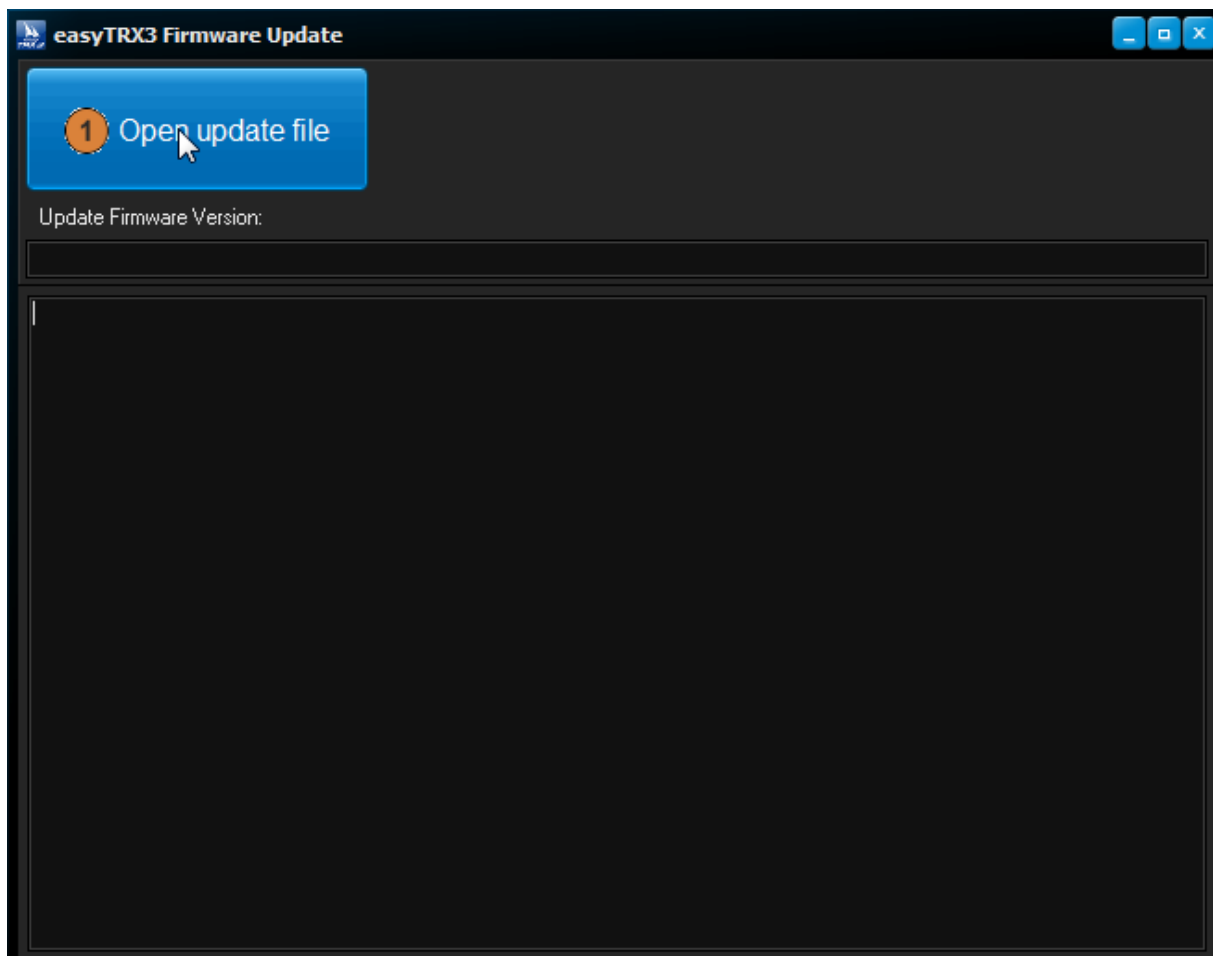


Figure 44 Input window for FW-Update

Select the location where you have saved the downloaded firmware. Follow the further instructions to install the new firmware.

8.2 WiFi Connection to a Laptop

If you have purchased an AIS Class B transceiver easyTRX3 with WiFi module, you can perform the setup and programming from your laptop.

Since you cannot access the internal memory card via WiFi connection, you must first download the programming tool from our homepage:

www.easyais.com/info/download-wd/software

- Please install the downloaded software on your laptop and open it. Then click on 'Connection' and select 'Select WiFi'.
- Activate the WiFi function on your laptop, select the easyTRX3 network and log in with the SSID and password. These can be found on the label on the back of the device or on the side of the packaging.
- Now enter the IP address and port in the software as shown on the label on the back of the device or on the packaging.

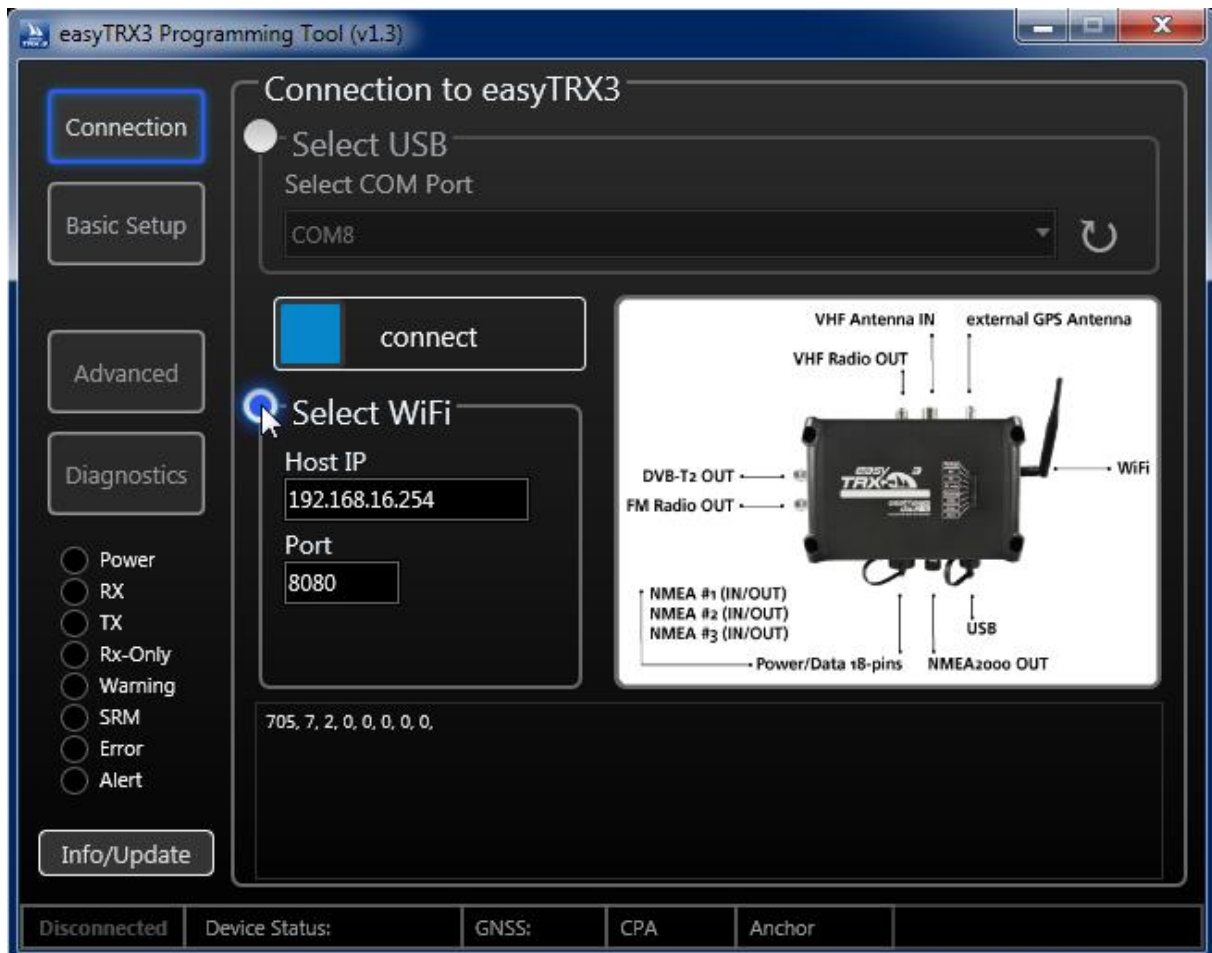


Figure 45 Input Window or WiFi Connection

- Click on the 'connect' button to connect the easyTRX3 to your laptop via WiFi.
- To confirm an existing connection, you will see the received AIS data appear in the lower window.



You can download our free app /app/TPYo Manager/ from both the Apple App Store® and the



easyTRX3-Manager 1.0

Developed by



AIS Class B - SOTDMA

Connect	Not connec...	>
Interfaces		>
Diagnostics	---	>
Get Online-Map		>
Anchor Alarm	---	>
CPA Alarm	---	>
Sent Data		>
Static Data		>

< ... WiFi-Connect

IP address or domain name

Host 192.168.16.254

Port 8080

Connect ☐

0, 0, 0, 0, 0, 0, 0, 0,

To use the 'easyTRX3 Manager' app, you must first set the Wi-Fi function of your mobile device to the easyTRX3 network.

The network name and password can be found on the label on the back of the easyTRX3.

After opening the app, you will see the start screen shown here.

In this case, the display is shown on an Apple iPhone®. The display on Android devices may vary slightly due to different operating systems. However, the basic functionality remains the same.

The start screen is the central point of contact from which you can access the individual settings.

Once you have entered the connection data or made changes to previous settings and confirmed them, you will always return to the start screen.

Tap on 'Not connected' to enter the connection data for the easyTRX3.

You will find the necessary information on the back of the device or on the side of the easyTRX3 packaging.

SSID
Password
IP-Adresse and
Port

Use this information to specify the connection to the easyTRX3 and indicate the exact path for accessing the easyTRX3 device.

After entering the data, tap the 'Connect' slider.

You can watch as the connection is established.

You will see data flowing into the lower windows.

Once the connection is established, you can return to the start screen by clicking the arrow in the top left corner.

easyTRX3-Manager 1.0

Developed by



AIS Class B - SOTDMA

Connect	Connected	>
Interfaces		>
Diagnostics	All OK	>
Received Data		>
Anchor Alarm	Not active	>
CPA Alarm	Not active	>
Sent Data		>
Static Data		>

The easyTRX3 immediately performed a self-diagnosis and displays its current status as shown opposite.

In our example, everything is OK and the anchor alarm and CPA alarm are not activated.

Next, select 'Static Data' to program your vessel data into the easyTRX3.

To do this, you will also need your MMSI number, which you may already have from your VHF radio.

If you do not yet have an MMSI, you can apply for one from the Federal Network Agency.

You can download the relevant form in chapter 1.4 'Registration with the Federal Network Agency'.

Tap on 'Static Data' to make the next entries.

< ...

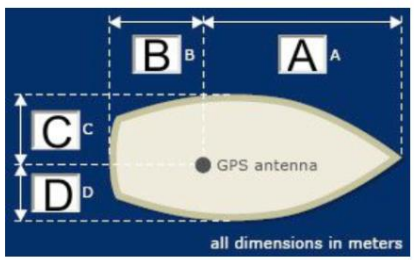
Static Data

MMSI

Name

Call Sign

Ship Type



A

B

C

D

Here you can now enter your own ship data.

MMSI
Name
Call sign)

In addition, you can select the type of vessel that corresponds to your boat.

If you do not have a valid MMSI number, the easyTRX3 device cannot transmit to the AIS system.

The device is then automatically set to receive mode only (RX only).

Without a valid, registered MMSI number, no AIS data can be written to the internal memory.

As long as no MMSI number is entered, the easyTRX3 will always display a warning message that an MMSI number is missing. In addition, the yellow warning LED will indicate this status.

With the additional entries in fields A, B, C and D, you define the dimensions of your vessel and the position of the GPS antenna on board.

If you are using the integrated GPS antenna of the easyTRX3, the information must be provided in relation to the installation location of the easyTRX3.

Use the arrow at the top left to return to the start screen.

These were the basic settings that must be made in order to actively participate in the AIS system and send your own vessel data. You can now close the app.

To make further settings, such as advanced configuration of the easyTRX3, follow the descriptions below.

easyTRX3-Manager 1.0

Developed by



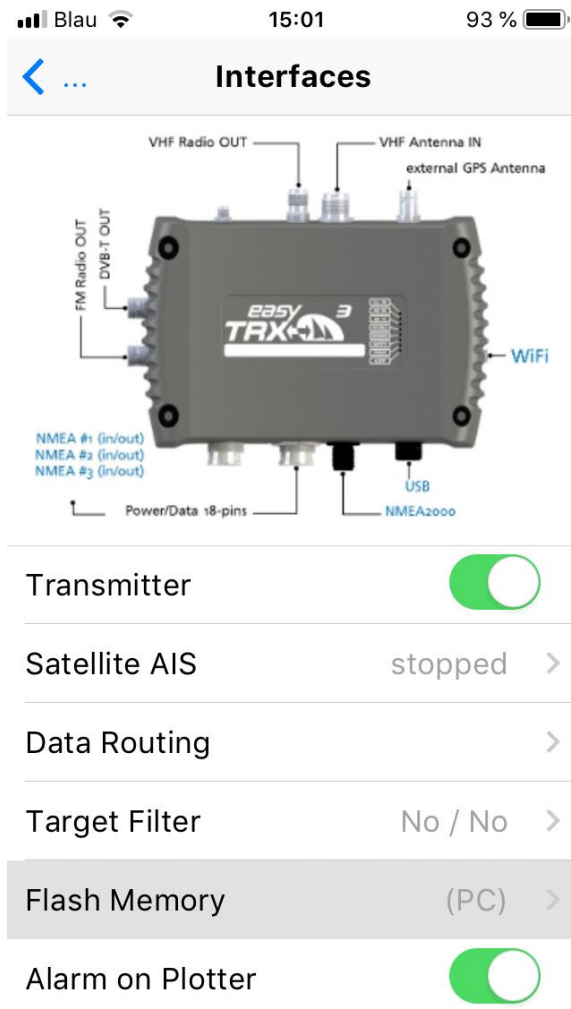
AIS Class B - SOTDMA

Connect	Connected	>
Interfaces		>
Diagnostics	All OK	>
Received Data		>
Anchor Alarm	Not active	>
CPA Alarm	Not active	>
Sent Data		>
Static Data		>

When you tap on 'Interfaces', you have the option of making further and more detailed settings to the configuration of the easyTRX3.

8.3.1 Functions via app

8.3.1.1 Transmitter



Use the slider button to set the easyTRX3 to receive-only mode (RX only). The device will now not send its own ship data to the AIS system.

A small window will open to confirm that programming was successful. You can close this window by clicking OK.

8.3.1.2 Long-Range AIS/Satellite AIS



Satellite AIS

Satellite-AIS or Long-Range AIS transmits every 3 minutes a Position Report (Message 27) on special frequencies to satellites. This happens, when the easyTRX3 is out of range of an AIS Base Station (high sea). ATTENTION: Before activating Satellite-AIS, please refer to national regulations.

Long-Range AIS



This function is deactivated in accordance with international regulations issued by the IMO when the device is delivered.

The long-range function is intended for use on the high seas, as you are outside the range of base stations.

When long-range AIS is activated, a position report is sent every 3 minutes on special frequencies to AIS satellites, which then forward it to coastal control centres. This means that the position of the ship is visible on land, even during a transatlantic voyage, for example.

If you return to the reception range of a base station while Long-Range AIS is activated, the coastal control centre may switch off Long-Range AIS. Please check the relevant national regulations.

If you leave the reception range of this base station again and had activated Long Range AIS before switching off, it will automatically reactivate itself.

This function is activated by tapping the button.

If users have not 'ordered' Long Range AIS from a satellite provider, the 'Long Range/Satellite Positions' will not be displayed on MarineTraffic, Vesseltracker or similar portals, i.e. there will be no costs incurred if the check mark is set.

A small window will open confirming that the programming was successful. You can close this window by tapping OK.

8.3.1.3 Data Routing/Data Configuration

Blau 14:05 85 %

Data Configuration

The easyTRX3 has got several data inputs and outputs (ports). Here you can configure each input and output. For each interface port you can select the data source, which shall be send out there.

NMEA-BAUDRATES

Port #1 (in/out) 38400

Port #2 (in/out) 38400

Port #3 (in/out) 4800

DATA AT NMEA#1-OUTPUT

AIS ☒

GPS ☒

NMEA-Input #1 ☒

NMEA-Input #2 ☐

NMEA-Input #3 ☒

USB-Input ☐

WIFI-Input ☐

This input mask is used to define which devices are connected as INPUT or OUTPUT to NMEA1, NMEA2, NMEA3, USB, WiFi and N2K.

NMEA-Baudrates

Here you can define the transmission rate at which the individual ports should operate.

You can choose between 4800 baud, 38400 baud or 115200 baud.

You can select different transmission speeds for the connections, e.g. NMEA1 IN/OUT with 4800 baud, NMEA2 and NMEA3 IN/OUT with 38400 baud.

Important to note:

The transmission rate must be the same for each connection, i.e. different devices can be used as IN and OUT, but the baud rate/transmission speed of these different devices must be the same.

Below, you can define for the different outputs which 'input data' is to be output to the connected devices at the respective ports. As an example:

NMEA Baudrates:

- NMEA1: 38400 Baud for IN/OUT
- NMEA2: 38400 Baud for IN/OUT
- NMEA3: 4800 Baud for IN/OUT

Routing:

GPS data were forwarded to

- NMEA1 – e.g. chart plotter
- NMEA2 – e.g. chart plotter
- NMEA3 – e.g. VHF radio
- N2K – board network
- USB – e.g. Laptop or PC
- WiFi – e.g. Tablet or other terminal device

AIS data were forwarded to

- NMEA1 – e.g. chart plotter
- NMEA2 – e.g. chart plotter
- N2K – board network
- USB – e.g. Laptop or PC
- WiFi – e.g. Tablet or other terminal device

INPUT data on NMEA3 (e.g. log or wind) were forwarded to

- NMEA1 – e.g. chart plotter
- NMEA2 – e.g. chart plotter
- USB – e.g. Laptop or PC

DATA AT NMEA#2-OUTPUT

AIS	✓
GPS	✓
NMEA-Input #1	
NMEA-Input #2	
NMEA-Input #3	✓
USB-Input	
WIFI-Input	

- WiFi – e.g. Tablet or other terminal device

Once you found the best personal setting, please press on "Save".

DATA AT NMEA#3-OUTPUT

AIS	
GPS	✓
NMEA-Input #1	
NMEA-Input #2	
NMEA-Input #3	
USB-Input	
WIFI-Input	

DATA AT USB-OUTPUT

AIS	✓
GPS	✓
NMEA-Input #1	
NMEA-Input #2	
NMEA-Input #3	✓
WIFI-Input	

DATA AT WIFI-OUTPUT	
AIS	✓
GPS	✓
NMEA-Input #1	
NMEA-Input #2	
NMEA-Input #3	✓
USB-Input	

DATA AT NMEA2000-OUTPUT	
AIS	✓
GPS	✓

8.3.1.4 Target Filtering

Transmitter	
Satellite AIS	stopped >
Data Routing	>
Target Filter	No / No >
Flash Memory	(PC) >
Alarm on Plotter	

There is also the option of defining and activating a 'target filter'.

This setting allows you to filter out AIS data that is outside your selected distance range from your display. This can be useful in areas with high traffic volumes in order to limit the view on your chartplotter to a reasonable extent.

< ... **Target Filtering**

All NMEA-Ports

Range: Y1 =

USB, WiFi

Range: Y2 =

Help on Target-Filter >

The filter can be applied separately, i.e. different distances can be selected for USB and WiFi than for the NMEA connections. Only one of the two filters can be activated. Once you have set everything appropriately, click on the arrow at the top left.

< ... **Help**

Range Filter:

The range filter has three tasks:

- Within 3 nm all targets (moving and non-moving) will be given to the selected output.
- Within the range between 3 nm and Y nm (programmable by the user) all moving targets are given to the selected output but all non-moving targets are removed.
- Outside the range of Y nm all targets (moving and non-moving) are hidden to the selected output.
- This target filter is only applied to the selected outputs. An unchecked output will deliver all targets!

8.3.1.5 Flash Memory

< ... **Interfaces**

Flash Memory (PC) >

Alarm on Plotter >

When delivered from the factory, the easyTRX3 is configured so that the recording of AIS and GPS data is deactivated. One reason for this is that the vessel does not yet have its own MMSI.

In read-out mode, you can access the internal memory of the easyTRX3 via USB, where you will find both the operating manual in PDF format and the programming software.



Flash Memory

You can use the internal Flash-Memory for logging of GPS- and AIS-Data and use it as a "Black-Box".

If you need access to the logging data, you must connect easyTRX3 to a PC using USB connection.

Then you have to activate "Flash-Drive (PC)".
ATTENTION: When mounted as flash-drive (PC), easyTRX3 has got no access to flash memory and no data will be written to flash memory!

ATTENTION: When you format the Flash-Memory, you will loose all stored data!

Status:

Flash-Drive (PC)

AIS / GPS Logging



Flash-Drive (on PC)



Format Flash-Memory

AIS and GPS data stored at a later time on this memory can be read out here.

In order to record AIS and GPS data during your journey, you must switch from read-out mode to AIS data logging mode and then activate logging by clicking on the button.

Important:

Please note that the easyTRX3 programming software and user manual must first be copied to your Windows or Apple computer before installation.

Installing directly from the easyTRX3 to your computer may cause problems.

If you want to format the internal memory of the easyTRX3, please only use the function in the software. Formatting will result in the loss of all stored data.

8.3.1.6 Diagnostics

easyTRX3-Manager 1.0

Developed by



AIS Class B - SOTDMA

Interfaces >

Diagnostics

All OK >

Received Data >

From the start screen, go to 'Diagnostics'.

The 'Diagnostics' function gives you a perfect overview of the proper functioning of the easyTRX3, or of any warning messages or error messages and why they occur.

< ...

Diagnostics

 All OK

 AIS RX

 AIS TX

 RX ONLY

 WARNING

 SAFETY

 ERROR

 ALERT

GPS Position...
OK / 09 Sat. used

Transmitter
OK

Receiver
OK

Supply Voltage Idle
14 V

Supply Voltage Tx
12 V

Tx Forward Power
412 - OK

Tx Reverse Power
123 - OK

Temperature
20°C

Error Info
none

Warning Info
none

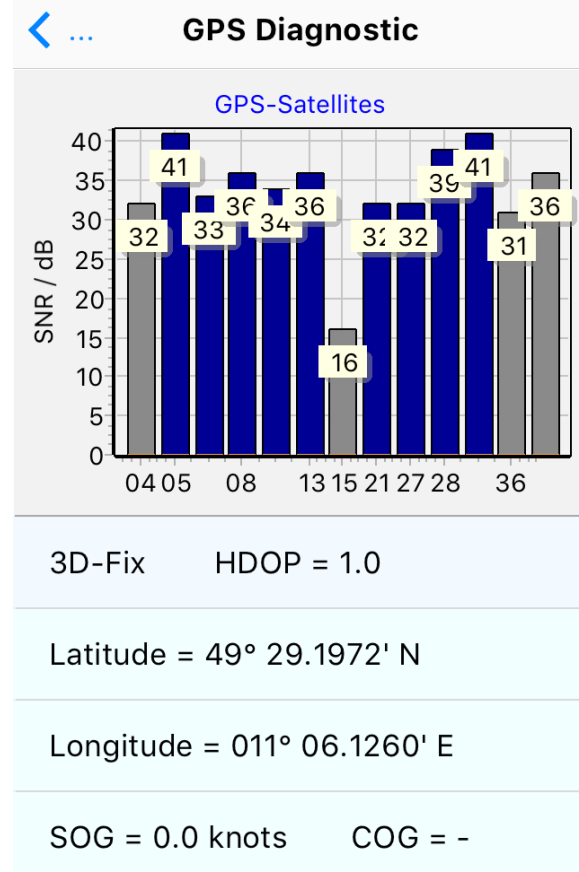
Version Info
1.0.13

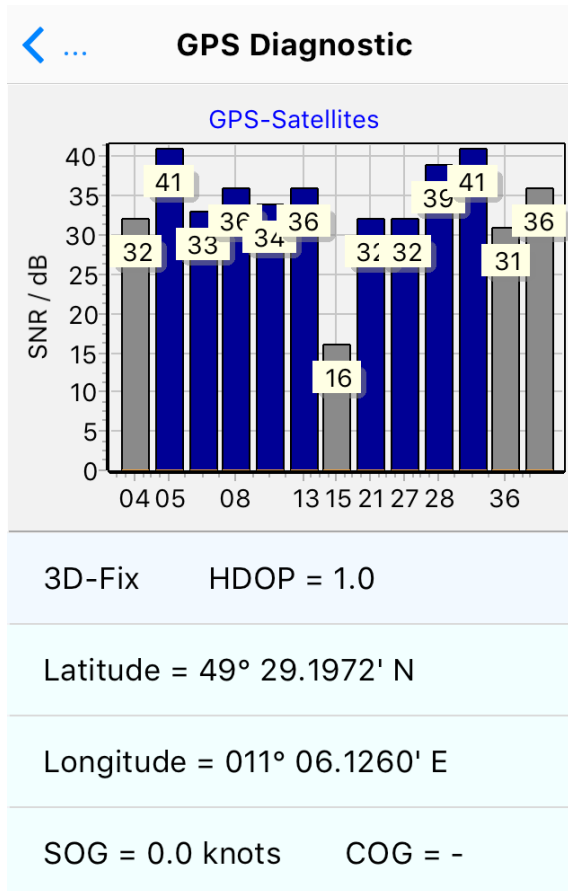
All status LEDs of the device can be found here. The column to the right contains further brief information on the individual items.

GPS position

Information about the available satellite constellation is visualised here.

Tap on this field to display the graphic below.





Here you can see information about your course and speed over ground, as well as your exact position with latitude and longitude coordinates. You can also see how many satellites are available for positioning and how many of them were actually used.

- **Course over Ground:**
Shows the current course of the ship over ground
- **Speed over Ground:**
Shows the current speed of the ship over ground
- **Latitude / Longitude:**
Displays the current position with longitude and latitude coordinates
- **Satellites in view/used:**
This indicates how many GPS satellites are being received and how many of them are being used for positioning.
- **HDOP:**
HDOP is a factor that determines the relative accuracy of a horizontal position. The smaller the DOP value, the better the geometry. The benchmark value is 2.5.
- The graph below shows a calculated HDOP value of 1.0, which is very good.

Transmitter
Indicates whether everything is OK for the transmission of your own AIS data.

Receiver
Indicates whether everything is OK for receiving general AIS data.

Supply Voltage "Idle" / Supply Voltage "TX"
This is the voltage value during transmission. Here, the easyTRX3 device briefly draws approx. 2 A of current from the on-board power supply. If the supply wires are too thin and relatively long, the voltage can drop significantly below the 'idle' value (rest value), which can lead to reduced transmission power. It may be necessary to select a thicker cable or check all contact connections.

TX Forward Power / TX Reverse Power
'TX Forward Power' and 'TX Reverse Power' are set to OK if the connected FM antenna is working properly. If the antenna has a short circuit or the antenna cable is broken, 'Error' is displayed here.

Error message{XE "Error message" } / Warning message

If there is a warning or error, this is indicated by the LED. In addition, the error is briefly defined in the list. If this happens, please use the programming tool stored in the internal memory for further analysis (see also Chapter 13).



Version Info

It is a violation of rules of national authorities to use this application to program or delete an MMSI that has not properly assigned to the end user, or to otherwise program any inaccurate data into a device. Factory reset must be carried out by a Weatherdock Dealer. Apply for a one-time PIN by e-mailing the key to "support@weatherdock.de".

Model: easyTRX3, A20000

Production Date: 2018-08-13

Hardware Version: 2

Firmware Version: 1.0.13

Vendor ID: WDC@@@

Serial: 000000000

BSH/4542/001/4323246/18

Factory-Reset (Key / PIN):

[Get new Key](#)

[Do Factory-Reset](#)

Version

Here you can find information about the current firmware version.

You can also reset the device to its factory settings here.

easyTRX3-Manager 1.0

Developed by



AIS Class B - SOTDMA

Diagnostics

All OK ✓

Received Data



Anchor Alarm

Not active ✓

Received Data

Under 'Received Data', you will find an overview list of all ships whose AIS data has been received.

By clicking on a list entry, you will see all information about this object at a glance.

Tap on Map to display the objects in their relative position to your ship. If you have a mobile data connection, Google Maps® can also be displayed as a layer.

If, for example, an activated AIS distress beacon is received, this position is not displayed as a ship symbol, but as an 'X' with a circle.


Received Data


AIS Objects found: 1 [Scroll LIST to show additional Ships]

~970236999 0.1 nm >


nm
Map

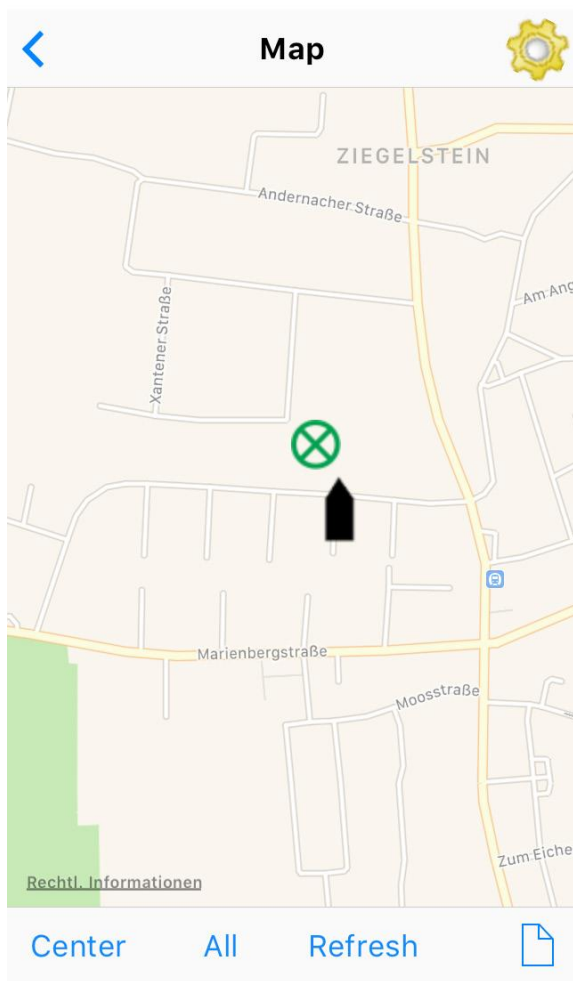

Ship-Information


~970236999
 

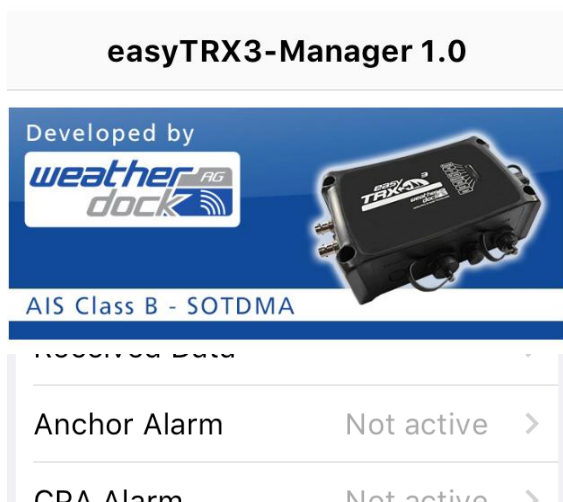
MMSI: 970236999
 Call-Sign:
 Destination:
 ETA:
 Type: Ship with no information
 Size: x m
 Draught: -
 Status: unknown

Latitude 49° 29.1977' N	SOG 0.0 knots
Longitude 011° 06.1248' E	COG -
Distance 0.1 nm	TH -
Last Report 4:10	Bearing 6°

Map



8.3.1.7 Anchor Alert



This function acts as a kind of anchor watch. It is deactivated in the factory default setting.

You can define a distance value as the radius around your anchor position. This value depends on the swaying of your ship in the wind and current at anchor and the length of the given anchor chain or anchor line.

[< ...](#)
Anchor Alarm

Swing Radius
[m]

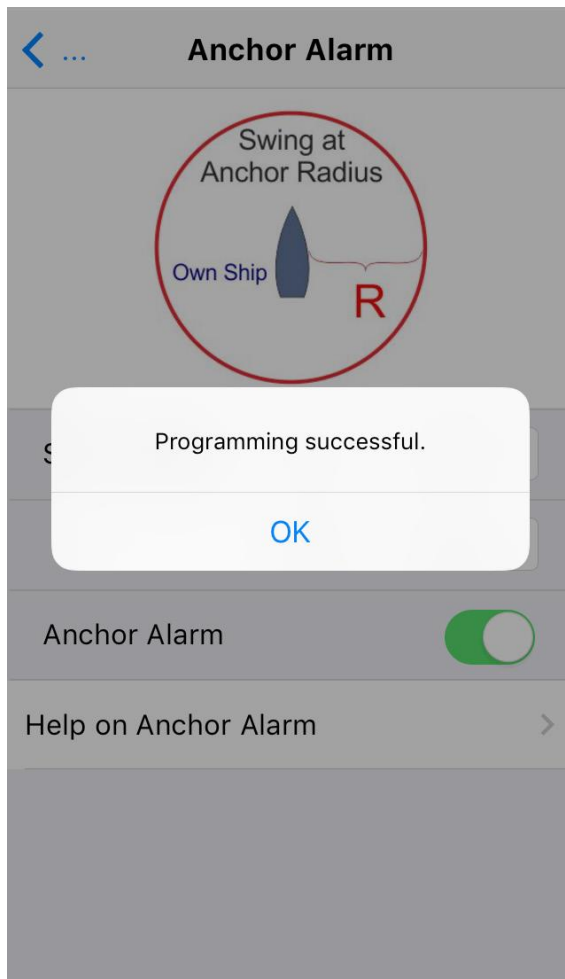
[ft]

Anchor Alarm
☐

Help on Anchor Alarm
[>](#)

Within this circular arc, the natural movement of the ship must be taken into account and no alarm may be triggered.

Like the CPA alarm, the anchor alarm can be used with the easyTRX3 when the chart plotter is switched off. In the event of an alarm, the alarm can be triggered via a connected signal device (e.g. horn).



A small window will open to confirm that the programming was successful. You can close this window by clicking OK.

Use the arrow to return to the previous overview.



Attention:

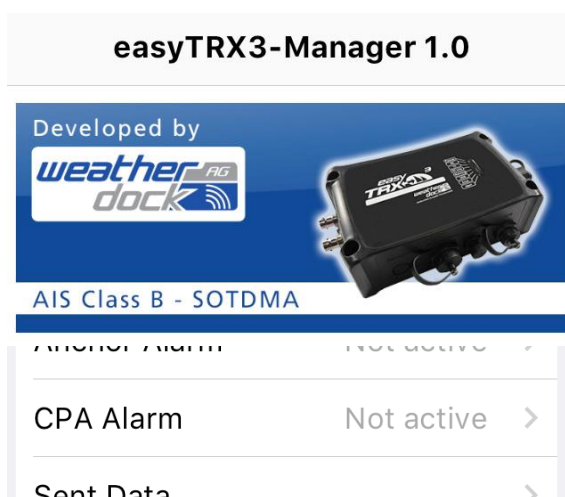
=====

Anchor-Alarm can only be turned on with valid GPS-Fix! Do not set the radius to a low value. The GPS accuracy may be more than 10-30 meters, depending on satellite constellation or weather conditions. This would cause false alarms.

In case of no GPS position fix no Alarm will occur!!

When you turn on the Anchor-Alarm (by programming or switch), the actual GPS position is used as anchor position.

8.3.1.8 CPA Alert - Collision warning



CPA alarm is a so-called collision alarm (closest point of approach). With this setting, you define an imaginary zone around your own ship using a time value and a distance value.

Except for Weatherdock AIS Class B devices, it is necessary to make these settings on the chartplotter itself. However, it is essential to keep the chartplotter, with its high power consumption, in operation at all times, as most other AIS Class B devices only receive the AIS data and simply forward it to the chartplotter for further data interpretation. On longer voyages, however, this can lead to problems with power management.

< ...

CPA Alarm

Closest Point of Approach (CPA)

Time-to-CPA [min]
5

CPA [meters]
2000,16

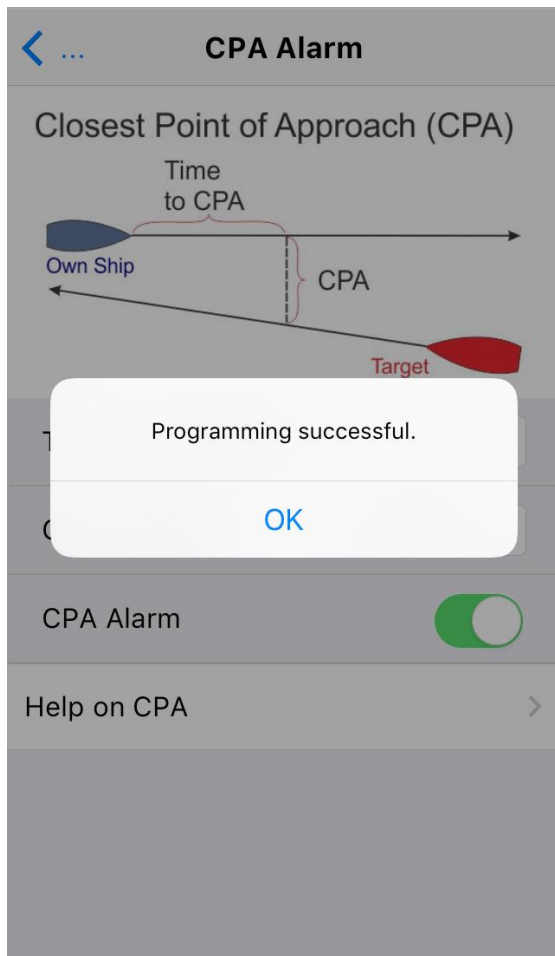
CPA Alarm
☐

Help on CPA
>

The big advantage of Weatherdock's easyTRX3 is that the device itself interprets the AIS data. If the easyTRX3 receives and interprets AIS data that is within your defined zone and a collision is imminent, an alarm can be triggered via a connected signal device (e.g. horn). You can now add the chart plotter as a display medium and switch it on. The current danger situation is shown on the screen.

Enter your desired distance and time values individually in the text fields provided and activate the CPA alarm with a click.

You will now see that the alarm is active and receive a confirmation window, which you can close by clicking 'OK'.



Help

Description:

=====

Closest Point of Approach is closest distance two vessels will come to each other based on their current course and speed calculated by AIS.

Time-to-CPA [min]:

=====

For setting the minutes how far the other ship at least should be before the CPA Alarm goes off.

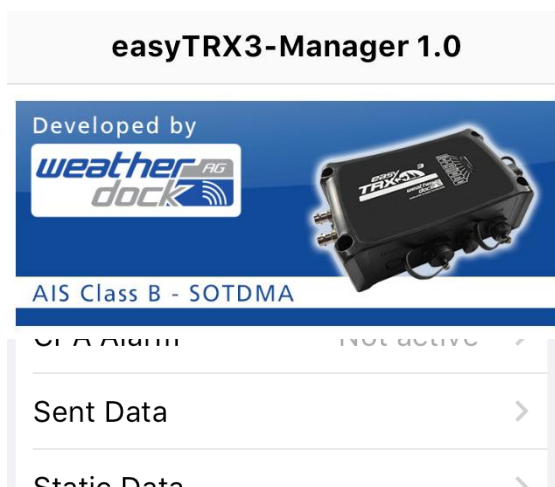
CPA [meters]:

=====

For setting the meters how far the other ship at least should be before the CPA Alarm goes off.

Resolution is 1/100 nautical mile (= 18.52 m). You can choose from 18.52 m to 2000.16 m.

8.3.1.9 Sent Data



Sent Data

Under 'Sent Data', you will find a complete overview of all information that the easyTRX3 transmits to the AIS system for your ship's position.

You will see the AIS position report with additional information such as course and speed over ground.

You will also see the so-called 'static data' that is sent to the AIS system for your ship.

Sent Data	
AIS-POSITION REPORT	
INTERVALS: 3 MIN, 30 S, 15 S, 5 S DEPENDING ON SPEED	
MMSI	211002010
Latitude	49° 29.1976' N
Longitude	011° 06.1258' E
Course over ground	360.0 deg T
Speed over ground	0.0 knots
AIS-Channel	B
Last Transmission	2:54

Sent Data	
AIS-STATIC DATA (EVERY 6 MINUTES)	
MMSI	211002010
Ship's Name	WD MK
Type of ship	Sailing Vessel
Vendor ID	WDCD
Call Sign	WD MK
Dimension A	8 m
Dimension B	8 m
Dimension C	2 m
Dimension D	2 m
AIS-Channel	B

8.4 ME SENSE

In addition to AIS, the easyTRX3S is also suitable for use with marine IoT. The device has an integrated ME SENSE RELAY board. This allows different sensor values to be received via a Bluetooth connection to the sensors and transmitted to your home via a WiFi connection to the ME SENSE app.

8.4.1 ME SENSE App

Download the free app from your preferred app store and launch it on your smartphone or tablet.



After opening your app store, enter 'weatherdock ag' as the search term. Scroll down until you see the ME SENSE app with this icon:



8.4.2 Basis-Version App

In the basic version of the app without a subscription, the battery voltage tester (the easyTRX3S connected to the vehicle electrical system) and any other sensor can be used without any time restrictions and displayed with the current values.

There are no additional fees for this configuration.

8.4.3 Abo-Version / in-app purchases

If you want to use additional sensors for monitoring and display on your smartphone, you will need the app subscription. Here, up to 20 sensors and up to 10 switches (on/off) can be used, managed and displayed simultaneously. The selection and number of sensors can be adapted to your on-board requirements.

The app recognises when you need a subscription and automatically redirects you to the purchase process.

The subscription has a term of 12 months. After the term expires, the measured values are no longer displayed in the tiles and the functionality returns to that of the basic version of the app. The subscription price is €29.99.

8.4.4 App installation ME SENSE

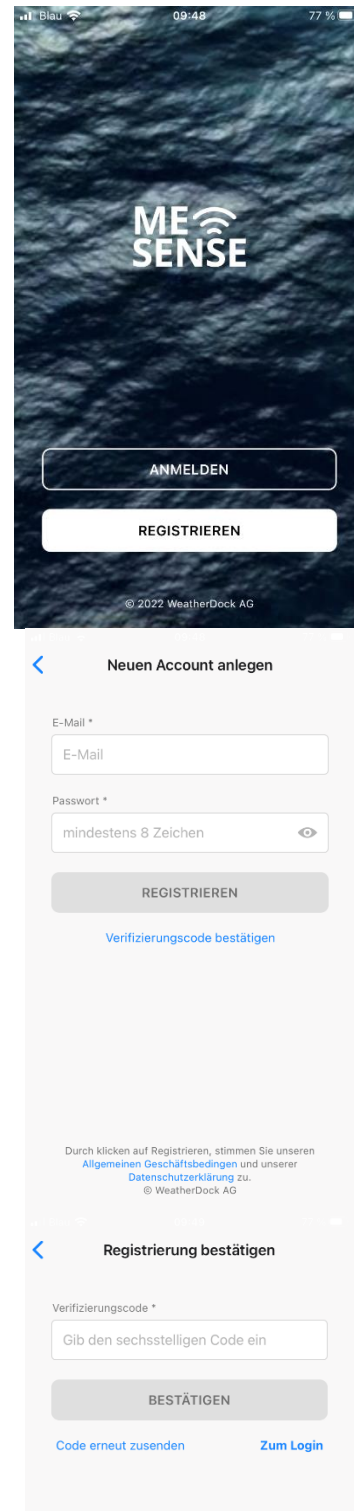
After launching the app, you will see this screen

Click on 'Register' to create your user profile.

Enter your email address and a password. Fields marked with an asterisk (*) are mandatory and must be filled in.

Once you click on 'Register', a 6-digit verification code will be sent to you by email.

Enter the verification code you received by email and click 'Register' again.

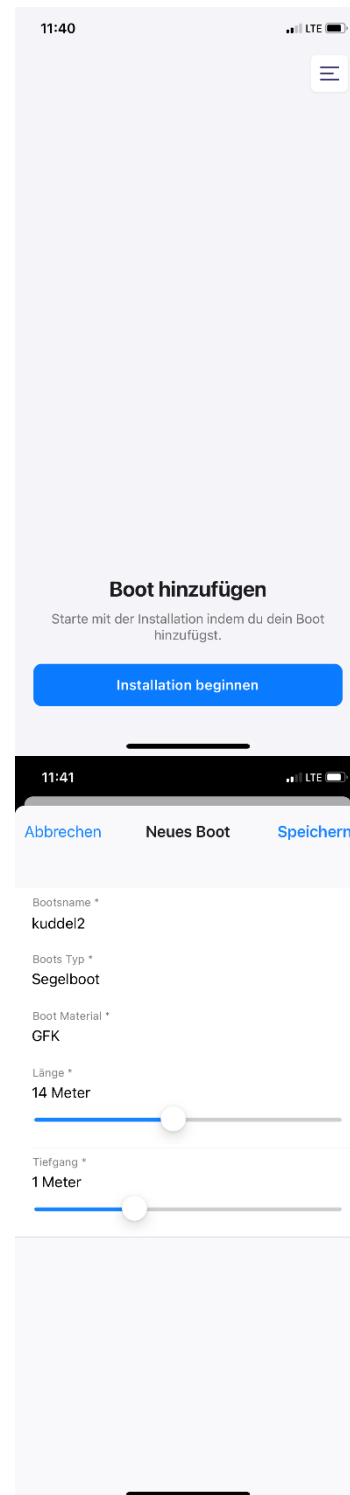


After successfully registering, you will be asked to add a boat to your profile.

Configure your boat with the relevant details regarding

- name,
- boat type,
- material,
- length
- draught

Then press 'Save' and you will be automatically redirected



The first screenshot shows the 'Boot hinzufügen' (Add Boat) screen. It has a title 'Boot hinzufügen' and a subtitle 'Starte mit der Installation indem du dein Boot hinzufügst.' Below this is a blue button labeled 'Installation beginnen'.

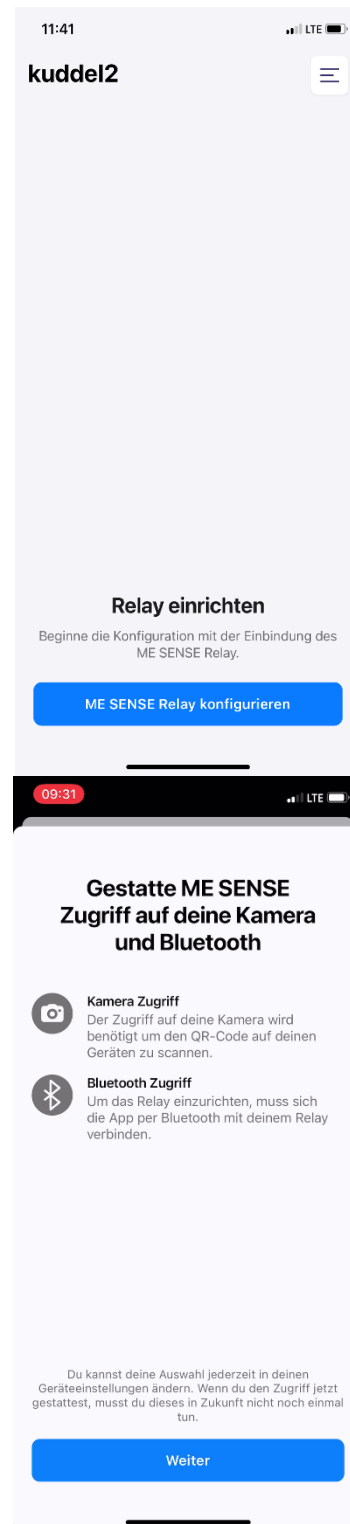
The second screenshot shows the configuration screen for a new boat. At the top, there are three tabs: 'Abbrechen', 'Neues Boot', and 'Speichern'. The form fields are as follows:

- Bootsname ***: kuddel2
- Boots Typ ***: Segelboot
- Boot Material ***: GFK
- Länge ***: 14 Meter (with a slider bar)
- Tiefgang ***: 1 Meter (with a slider bar)

In the next step, you will be asked to integrate the ME SENSE RELAY into the app

Tap on 'Configure ME SENSE RELAY'

To scan the QR code on the ME SENSE RELAY device, you must first grant access rights for the camera and Bluetooth.

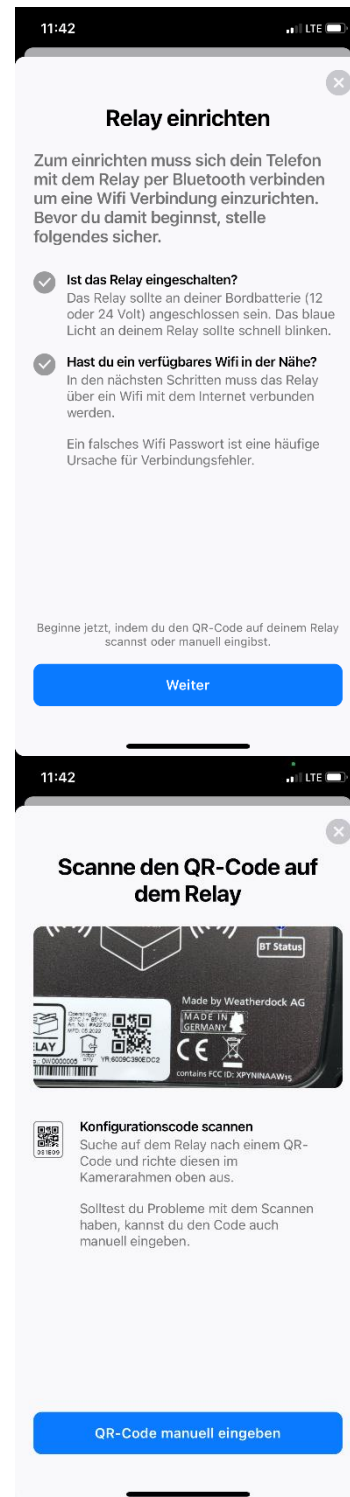


The next step is to run a query to eliminate any possible errors in advance.

Then tap on 'Continue'.

The dialogue window opens and you can conveniently scan the QR code displayed on the side of the easyTRX3S device with the camera of your mobile device.

Alternatively, you can also enter the configuration code manually. Please ensure that you enter it correctly, including upper and lower case letters. You will find this code directly below the QR code.



You will see this confirmation that the ME SENSE RELAY has been successfully read in the form of the easyTRX3S

Now add the Wi-Fi network you want to use by clicking on 'Add Wi-Fi'.

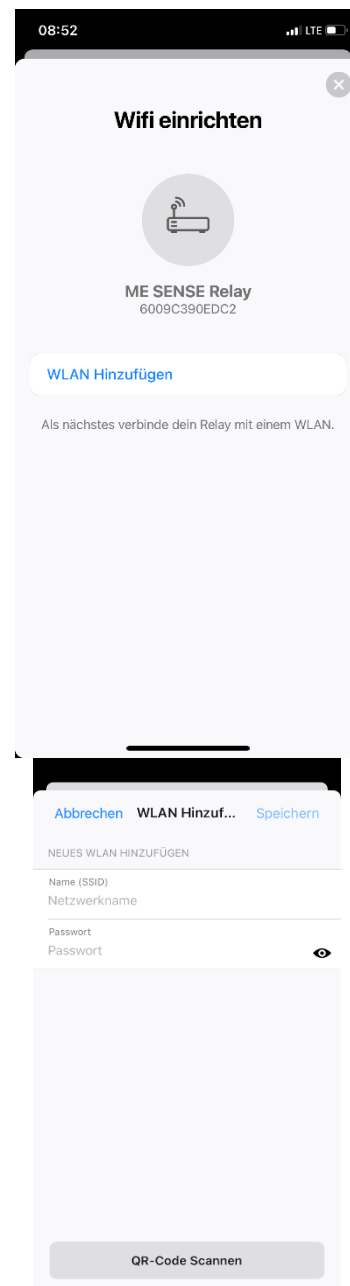
This allows you to use up to 8 different Wi-Fi networks for different marinas. The ME SENSE RELAY in the TRX3S automatically detects the network with the strongest signal and connects to it.

Depending on the form in which you have received the access data for the Wi-Fi network, you can enter the data manually or scan a QR code if necessary.

Make sure you enter the data correctly, including upper and lower case letters.

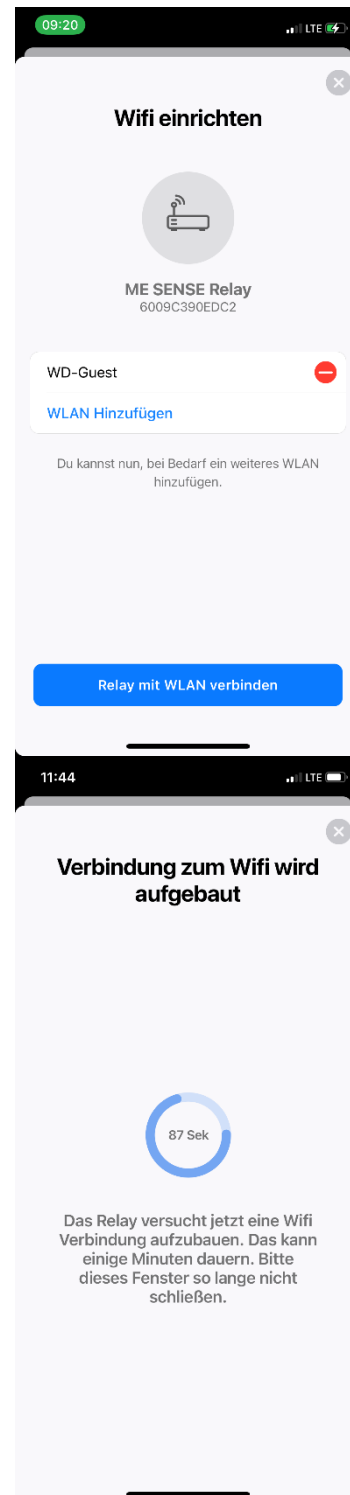
Do not use open networks without a password; only use encrypted Wi-Fi networks for which you have the network name (SSID) and password.

Alternatively, use an LTE hotspot and generate your own access to upload the ME SENSE sensor data to the data cloud.



You will see that your Wi-Fi network has been successfully found.

To complete the setup of the Wi-Fi network with the ME SENSE RELAY, please tap on 'Connect relay to Wi-Fi'.



You can follow how the connection is established and maintained.

The ME SENSE RELAY is now successfully connected to the Wi-Fi network.

To check, you can observe the blue LED on the ME SENSE RELAY.

It lights up for 1 second every 60 seconds.

Confirm with 'OK'.

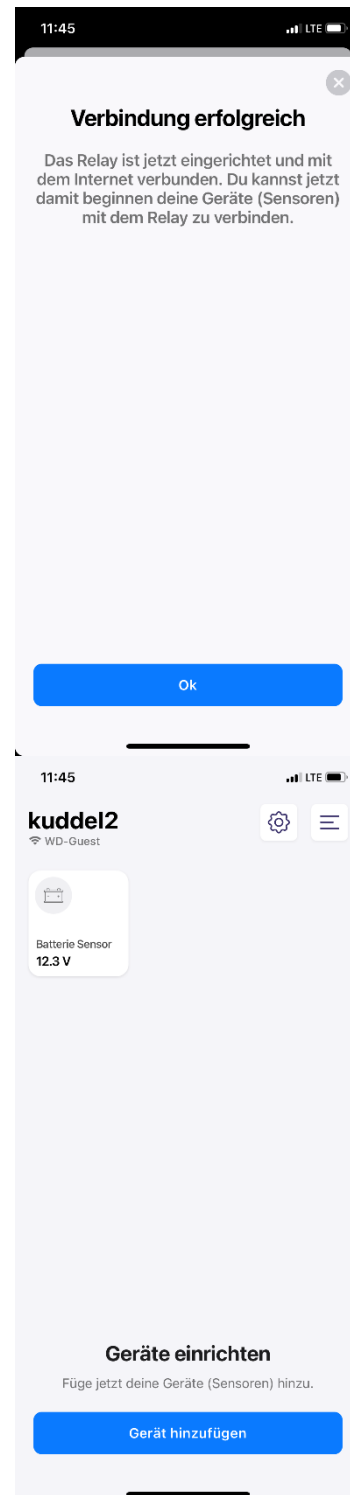
You will automatically be taken to the app's main view.

Here, the individual sensors are displayed in tile form.

Since the easyTRX3S with the integrated ME SENSE RELAY also functions as a battery voltage sensor, you will already see an initial sensor value.

Now you can begin integrating your ME SENSE sensors into the system.

Click on 'Add device'.



Before scanning the sensor's QR code, please remove the battery protector first. To do this, simply pull out the red strip.



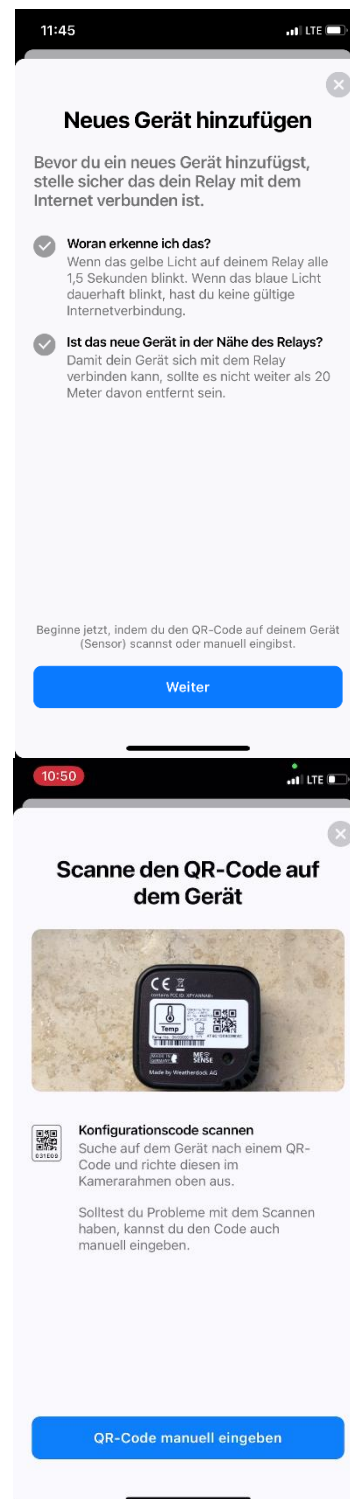
This message appears for security reasons, to double-check that everything is OK and to avoid error messages.

Please tap on 'Continue'.

The dialogue window opens and you can conveniently scan the QR code displayed on the device with the camera of your mobile device.

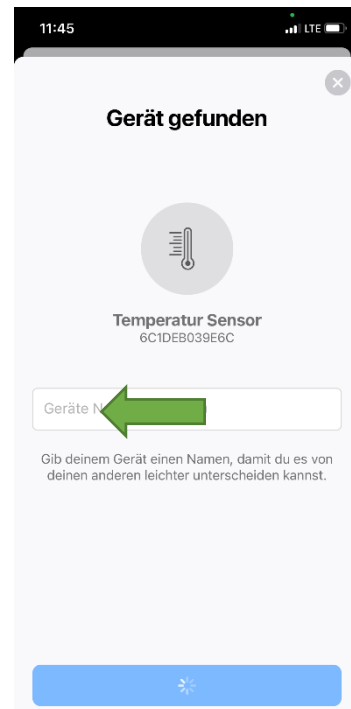
Alternatively, you can also enter the configuration code manually. Please ensure that you enter it correctly, including upper and lower case letters.

You will find this immediately below the QR code.



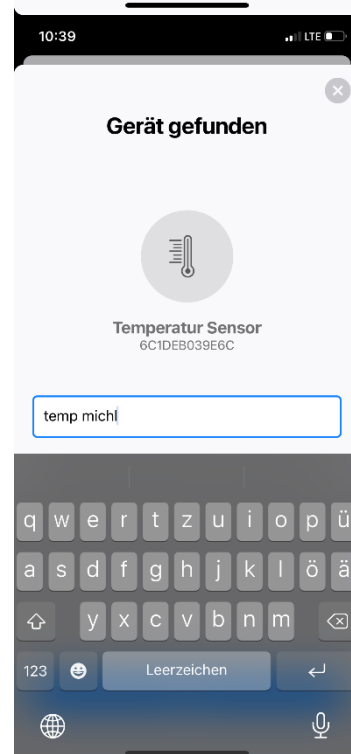
To help you distinguish between the different sensors, you can enter a unique name for each sensor, which will then be displayed in the app. These names can be changed at any time .

To do this, tap in the input field.

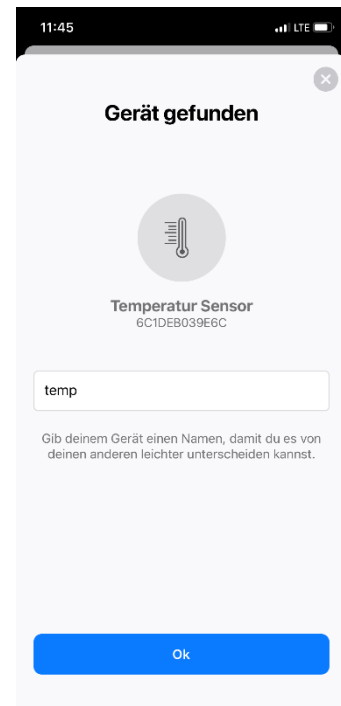


You can enter the new sensor name using the keyboard.

Finally, press the 'Enter' key on your keyboard to return to the display.



You can confirm your entry by clicking 'OK'.



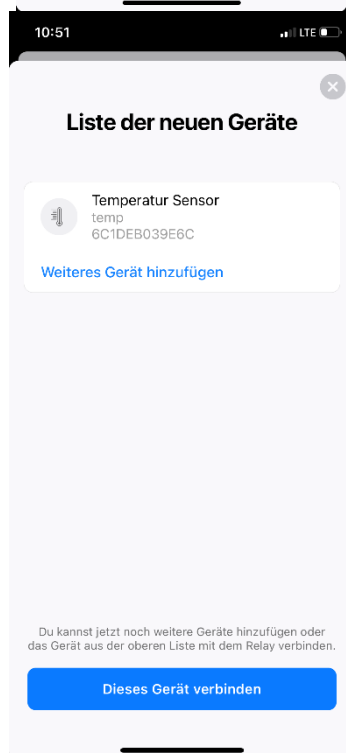
You will see a message indicating that the scanned sensor has been read correctly and is ready to connect to the ME SENSE RELAY.

The sensor tile will only appear in the overview once this connection has been established.

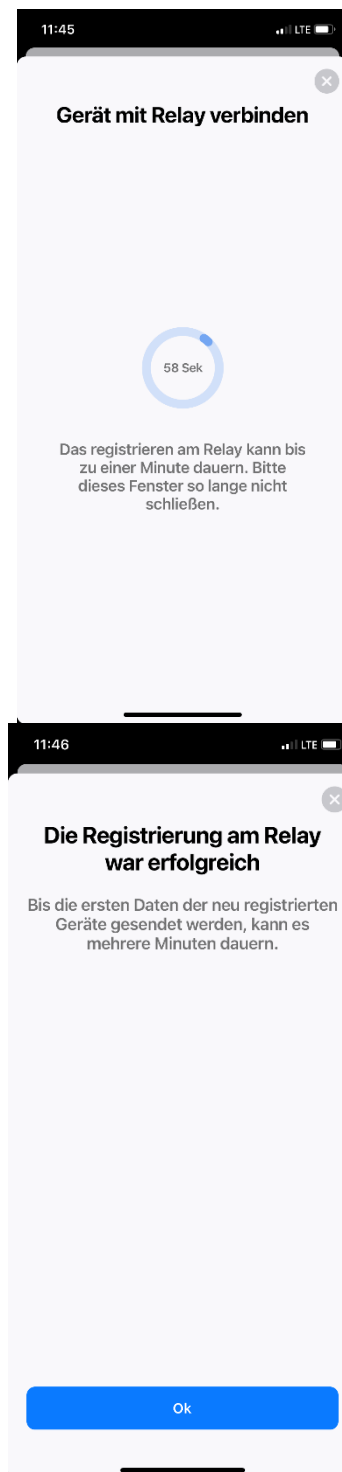
Tap on 'Connect this device'.

Here, you also have the option of scanning additional sensors directly and connecting them to the ME SENSE RELAY at the same time.

To ensure that the sensors are installed correctly, we recommend that you proceed step by step and connect each sensor separately one after the other.



You can once again witness in real time how the connection is established.



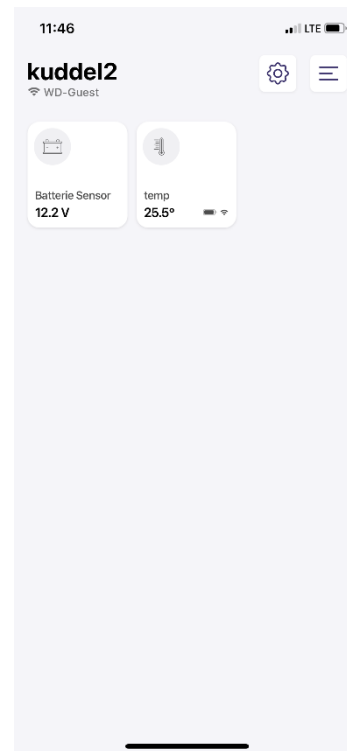
The sensor has been successfully connected to the ME SENSE RELAY.

It may take a while before the sensor data is received for the first time.

Tap 'OK'. You will be taken back to the main view of the ME SENSE app.

As soon as the sensor data is received, you will see the current value, in this case the current temperature.

The tile also shows the battery status of the sensor and the connection quality.



For each additional ME SENSE sensor that you wish to integrate into the system at a later date, simply repeat the steps described above.

9 Modular Design

9.1 IS - integrated FM antenna splitter

The standard integrated VHF antenna splitter allows you to use a VHF antenna already installed for VHF radiotelephony for AIS as well. This avoids the need for an additional new antenna installation.

The module controls the parallel operation of VHF radiotelephony and AIS (reception and transmission), with radiotelephony taking priority. The received signals are first pre-amplified to avoid a loss in signal strength due to disconnection.

9.2 IGPS - integrated GPS Antenna

The integrated GPS receiver of the TRX3S can be used on GRP and wooden hull boats, making the additional installation of a GPS antenna on deck superfluous. However, if you have a steel hull or aluminium boat, you will need to install an external GPS antenna on deck.

9.3 N2K - integrated NMEA2000 Module

The NMEA2000 interface is designed to feed the received AIS and GPS data into the NMEA2000 network on board.

Currently, only output to the on-board network is possible.

PGN	Description
059392	ISO Acknowledgement
060928	ISO Address Claim
059904	ISO Request
060160	ISO Transport Data Transfer
060416	ISO Transport Connection Management
126208	NMEA Request/Command/Acknowledge Group Function
126464	PGN List
126992	System Time
126996	Product Information
129025	Position Rapid update
129026	COG & SOG Rapid update
129038	AIS Class A Position Report
129039	AIS Class B Position Report
129040	AIS Class B Extended Position Report
129539	GNSS DOPs
129540	GNSS Sats in View
129794	AIS Class A Static and Voyage Related Data
129795	AIS Addressed Binary Message
129797	AIS Binary Broadcast Message
129798	AIS SAR Aircraft Position Report
129801	AIS Addressed Safety Related Message
129802	AIS Safety Related Broadcast Message
129809	AIS Class B "CS" Static Data Report, Part A
129810	AIS Class B "CS" Static Data Report, Part B

Figure 47 NMEA2000 Messages

9.4 WiFi - integrated WiFi Modul

All data that is fed into the easyTRX3S (AIS, GPS and NMEA0183) is transmitted 1:1 to connected mobile devices such as smartphones, tablets or laptops in the corresponding product variant via WiFi radio connection.

The WiFi module used is designed so that up to 10 mobile devices can be connected to the easyTRX3S at the same time.

9.5 DVBT - integrated antenna splitter for DVB-T2 and FM radio signals (optional)

The optional 'DVBT' product variant includes a frequency crossover (with pre-amplification), which enables you to pick up DVB-T2 and VHF radio signals - in addition to radiotelephony and AIS - via your marine band antenna.

No further settings or adjustments are necessary.

A corresponding DVB-T2 receiver must be connected to the 'DVB-T' socket; an FM radio can simply be connected to the corresponding 'FM radio' socket. Reception is also via the VHF antenna that you already use for radiotelephony and AIS.

10 On-board installation of the easyTRX3S

The easyTRX3S must be mounted above the waterline when installed below deck in order to be able to use the internal GPS antenna. If necessary, consider the inclined position of a sailing ship when travelling upwind.

On-deck mounting is also possible with the easyTRX3S due to its IP67 protection classification.

Please keep a safe distance of at least 60 cm from other technical devices and/or compass when mounting.

11 Technical Data

Description	Value
General	
Dimensions	195mm * 135mm * 60mm (L*B*H)
Weight	700 Gramm
Operating temperature range	-15°C bis 55°C
Storage temperature range	-20°C bis 75°C
Safety distance Compas	mind. 40cm
Power Specification	
On-board voltage	12V DC / 24V DC
Operating voltage range	9,6 bis 31,2V DC
Power consumption	2,9W bei 12V DC
Power input	3A (Senden), -240mA (Stand.) bei 12V DC
GNSS Specification	
GPS/GNSS Reveiver (internally)	72 Channel GNSS Receiver
	# GPS
	# Glonass
	# Gallileo
External Connections	

Interfaces	3x NMEA0183 IN
	3x NMEA0183 OUT
	NMEA2000
Connectors	USB
	18-pin plug
	NMEA2000 socket
	external GPS Antenna (BNC)
	FM antenna connection (TNC)
	VHF radio connection (SO239)
Data type NMEA output	VDM
Options	WiFi, DVB-T2, FM
AIS Specification	
Transmitter	1 Transmitter (AIS1/AIS2)
Receiver	2 Receiver (AIS1/AIS2)
	DSC (AIS Channel Management)
Frequencies	Marine Band: 156,025MHz - 162,025MHz
	AIS1: 161,975MHz
	AIS2: 162,025MHz
Transmission Power	5Watt / 1Watt (50Ohm) (switchable by coastal station)
Channel width / grid	25kHz
Modulation	GMSK (AIS, TX und RX)
Transmission rate	FSK (DSC, RX only)
	9600b/s
	1200b/s
Reception sensitivity	-114dBm 25kHz (<20% PER)
Second channel suppression	10dB
Adjacent channel suppression	70dB
Intermodulation distance	65dB
Blocking	84dB
Certifications	

AIS Standards	IEC 62287-2:2017
Environmental	IEC 60945:2002 + Corr.1:2018
GPS Performance	IEC 61108-1:2003
Product Safety	EN 60950-1:2006
	ITU-R M.1371-5
BSH Approval	BSH/4542/001/4323246/18

Figure 48 Technical Data

12 Possible connection diagram

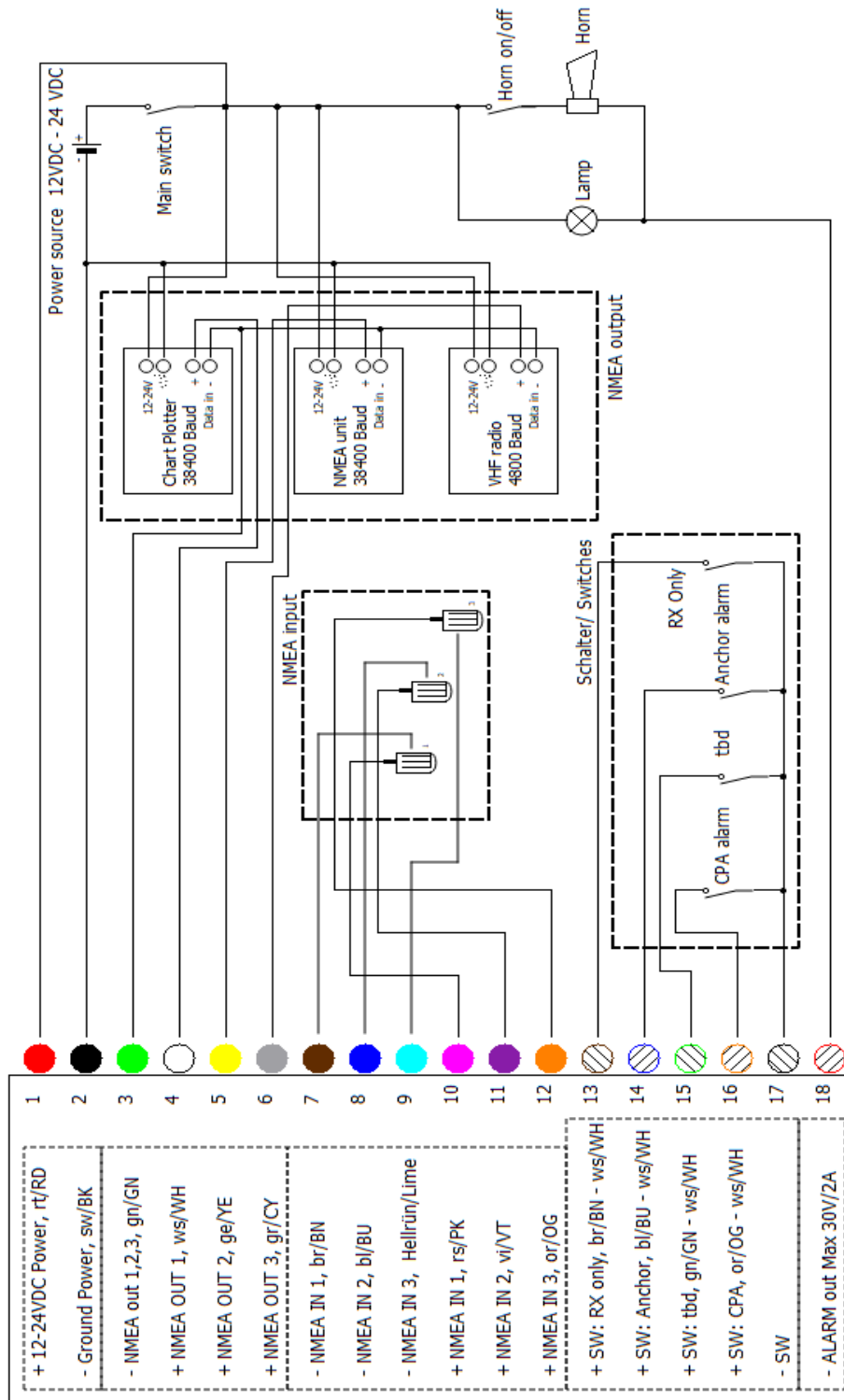


Figure 49 Connection Diagram

13 Fault diagnosis / Troubleshooting

Problem	Cause	Solution
No connection to the easyTRX3S	USB cable not plugged in correctly. USB driver was not installed correctly.	Install the Windows driver for the USB serial interface (FTDI) from the Internet.
	Device configured correctly?	Repeat configuration, contact service partner if necessary
No output of the data	Not connected	Check the connection, are the cable colours correct? Is the data output of the easyTRX3 device connected to the data input of the plotter? Is the data rate of the NMEA interface of the plotter (target: 38400 baud!)
MMSI input not possible	Programmed already?	The MMSI cannot be programmed twice. Please contact your supplier or service partner.
Red Error-LED is on	div. Errors possible	Please connect to the programming tool and read the error in the 'Diagnostics' tab. If you are unable to rectify the error, please contact your dealer.

Figure 50 Troubleshooting

14 Error Messages / Warning Messages

Code	Group	Text	Meaning
001	Error	AIS: TX malfunction	
002	Error	AIS: Antenna VSWR exceeds limit	please check coaxial cable to your antenna and also connectors, too much power is reflected and that error is generated
003	Error	AIS: RX channel 1 malfunction	no AIS reception on Channel A, 161.975MHz
004	Error	AIS: RX channel 2 malfunction	no AIS reception on Channel B, 162.025MHz
005	Error	AIS: RX channel 70 malfunction	
007	Error	AIS: UTC Sync invalid	no GPS position
026	Error	AIS: no GPS since 30min	no GPS position
029	Error	AIS: no valid SOG information	no GPS position
030	Error	AIS: no valid COG information	no GPS position
050	Warning	AIS: GPS: no valid fix	no GPS position
051	Warning	AIS: High supply voltage	supply voltage more than 31.2V in idle mode
054	Warning	AIS: Base station has stopped TX	AIS Base station stopped your AIS Transmission within an local area, will be activated after a while or when you leave that area.
055	Warning	AIS: No MMSI	Due to no programmed MMSI, there is no AIS transmission, please fill in your MMSI
072	Error	AIS: low supply voltage	supply voltage less then 9,6V in idle mode
073	Error	AIS: low supply voltage while sending	due to thin cable or bad battery, the voltage drops on AIS transmission
077	Error	AIS: Device overheated	unit is getting too warm and will shut down e.g. WiFi to reduce current and cooling down
078	Error	AIS: Baseband fail	

Figure 51 Error Messages

15 Maintenance

The devices in the easyTRX3S series have no parts that require maintenance. To clean the appliance, please use a damp cloth and do not use cleaning agents containing solvents or scouring powder.

Opening the appliance will invalidate the warranty.

16 Contact and Support

Although Weatherdock AG always endeavours to edit all publications with the utmost accuracy, these instructions may contain errors or ambiguities. In addition, changes to these instructions are the sole responsibility of Weatherdock and may be made without notice.

Frequently asked questions:

Visit our FAQ's (Frequently Asked Questions) at www.easyais.com/faqs

Contact:

Please contact your dealer first, as in most cases they will be able to help you quickly and easily.

If they are unable to help, we will be happy to help you directly:

Weatherdock AG
Emmericher Strasse 17
90411 Nürnberg
Tel: +49 911-37 66 38 30
support@weatherdock.de
www.easyais.de

Please contact your dealer first, as in most cases they will be able to help you quickly and easily.

If they are unable to help, we will be happy to help you directly.

17 Licence agreement

By using devices from the easyTRX3S series, you agree to the terms of the following warranty agreements.

Please read this agreement carefully.

Weatherdock AG grants you a limited licence to use the device in normal operation. Title, ownership rights and intellectual property rights in and to the software remain with Weatherdock AG.

18 Warranty

Weatherdock AG grants a warranty for this product of 2 years from the date of purchase for material and manufacturing defects in accordance with our terms and conditions, which you can view at www.easyAIS.de. Within this period, Weatherdock AG will, at its own discretion, repair or replace defective components in normal use. Repairs or replacements will be made without charge for parts or labour. However, the customer shall bear the shipping costs. This warranty does not apply to misuse, abuse, accidents or unauthorised modifications or repairs.

The warranties and rights contained herein are exclusive and are in lieu of all other warranties and or conditions, express or implied, including any statutory or other liability arising from any warranty of merchantability or fitness for a particular purpose. This warranty gives you specific legal rights depending on how long it lasts. In no event shall Weatherdock AG be liable for incidental, special, indirect or consequential damages arising out of the use or inability to use the product or any defect in the product. Weatherdock AG reserves the sole right to repair or replace the device or software or to refund the purchase price. This right is its sole and exclusive right in the event of a warranty claim.

Products purchased in online auctions do not entitle the buyer to discounts or to take advantage of Weatherdock AG's special offers. Purchase confirmations from online auctions are also not recognised as proof for warranty claims. An original proof of purchase from the dealer is always required to satisfy warranty claims. Weatherdock AG will not replace any missing device or accessory parts in products purchased in online auctions. In the event of a warranty claim, please contact your Weatherdock AG dealer. He will coordinate the further procedure with you. If the device is to be shipped, pack it carefully and send it with sufficient postage to the address given to you by your dealer. For warranty repairs, always enclose a copy of the original purchase receipt as proof of ownership. The Weatherdock AG easyTRX3 does not contain any user-serviceable parts.

If a problem occurs with your appliance, please contact your dealer.

Any attempt to open, change or modify the appliance will invalidate the warranty and may irreparably damage the appliance.

19 WARNING

When driving a vessel, it is the sole responsibility of the skipper to operate the vessel in a safe manner and to have full control of all driving conditions throughout the journey. Incorrect behaviour by the driver of a vessel equipped with the easyTRX3, where the driver does not pay full attention to the operation of the vessel and the surrounding conditions, can lead to an accident or collision resulting in damage to property or personal injury.

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