



AIS Receiver as coastal station

User Guide

V1.4

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 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.

1.3 Approval number BSH

1.4 Revision status of the operating instructions

Stand 1.0 , Author: Jürgen Zimmermann (CTO), Michael Knipp (Head of Marketing) , 02/2022

Stand 1.4 , Author: Jürgen Zimmermann (CTO), Michael Knipp (Head of Marketing) , 07/2026

1.5 Restrictions

No national or international restrictions on the use of this device are known at the current revision level.

2 List of abbreviations

Abbreviations

LAN

NMEA

SSID

VHF

GNSS

Local area network

National Marine Electronics Association

Service set identifier device

Very High Frequency

global navigation satellite system

3 List of illustrations

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4 Scope of Delivery - what is in the box?

1	AIS Receiver easyRX3 (A20011) or easyRX3-LAN (A20010)
2	Connection Cable 10-pins / Power (ca. 200 cm)
3	User Manual

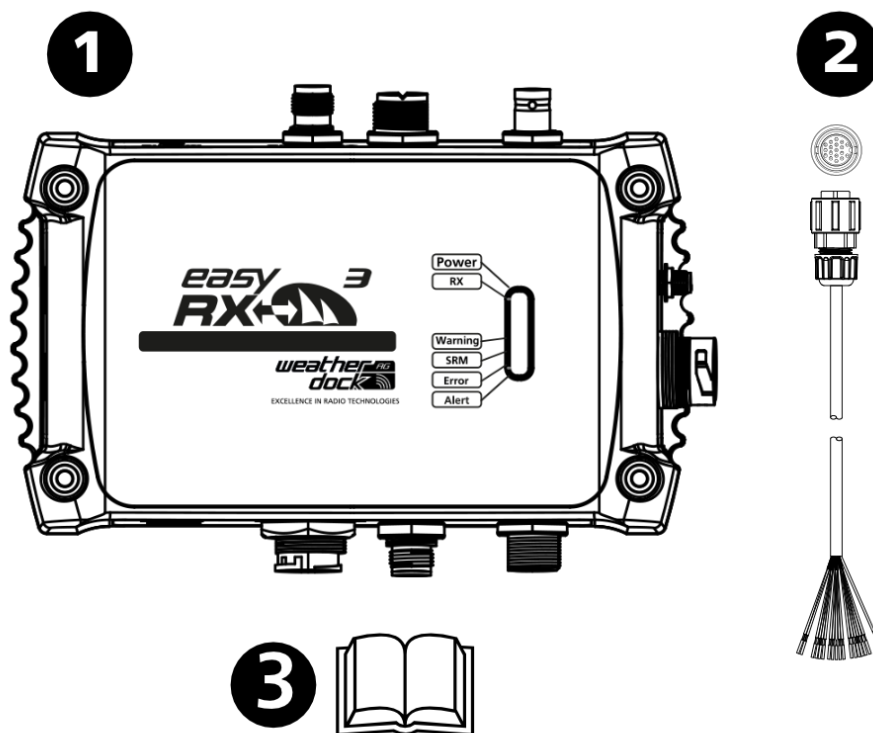


Figure 1 - box content

5 Description easyRX3S device

The easyRX3S is an AIS receiver, developed and manufactured by Weatherdock AG in Germany.

The new easyRX3 is ready to use as a Coastal Receiver Station for creating an AIS network as well as for monitoring special moving objects in a local area.

Two parallel working AIS receivers, integrated GPS antenna, integrated active VHF splitter, NMEA2000 and LAN connectivity will underline the huge functionality of the easyRX3 unit. WiFi connection to a mobile device or network will be available optional. There are two main scenarios where easyRX3 can be used for:

Coastal Receiver Station

Based on the 2 AIS receivers, the easyRX3 is able to receive simultaneously AIS traffic data on both AIS frequencies. Mounted as high as possible the reception performance will be amazing. By using the built-in LAN (RJ45 Ethernet) connectivity, all incoming AIS data can easily forwarded to a dedicated IP-server address at headquarters site. This enables to create a small, cost effective and reliable network of Coastal Receiver Stations along your coastline.

Local area „closed user group“ monitoring

The easyRX3 is also able to work on different VHF frequencies to be set by admin. On customized frequencies it is possible to monitor special moving objects like small fishing vessels, ferrys in a harbour or bay area or other object of interest. In this case the receiver has to be tuned on the same frequency the „closed user group“ objects are working with. No one else will receive these position reports except the headquarter. Again via LAN connectivity these special position report data information are passed to a dedicated IP address at headquarters site. With built-in NMEA2000 connectivity at the easyRX3 incoming data can be displayed on a connected electronic chart plotter.

6 Outstanding features of the easyRX3S

- 2 Channel AIS receiver
- VHF frequencies free programmable for proprietary „closed user group“ by special request to manufacturer
- LAN (RJ45) Output for server connectivity and WiFi connectivity (optional)
- NMEA2000, NMEA0183 and USB port connectivity
- Internal VHF splitter
- Integrated Multiplexer for further external data with different Baud rate
- Internal data logging on Flash memory
- Programming and data read-out via USB without external power supply
- Waterproof, rigid, dust resistant

7 Connection options

7.1 Standard

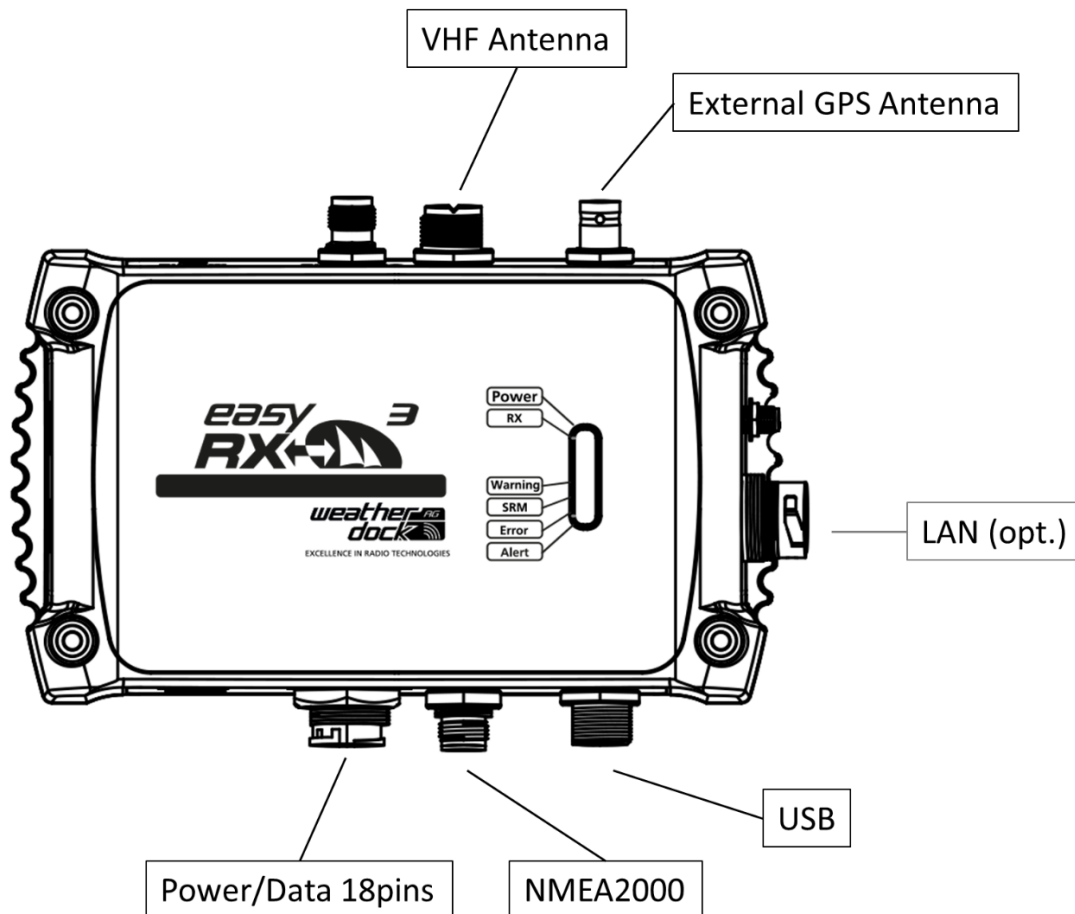


Figure 2 - connectors

- External GPS antenna (BNC)
- USB Port (Mini-B)
- NMEA2000 Output port (Micro C)
- Three equal NMEA0183 ports for IN/OUT
- LAN (RJ45) at A20010

8 Power Supply

To connect the easyRX3 with a wall socket, you have to use the 18-pin cable harness and take the red and the black cable from this harness.

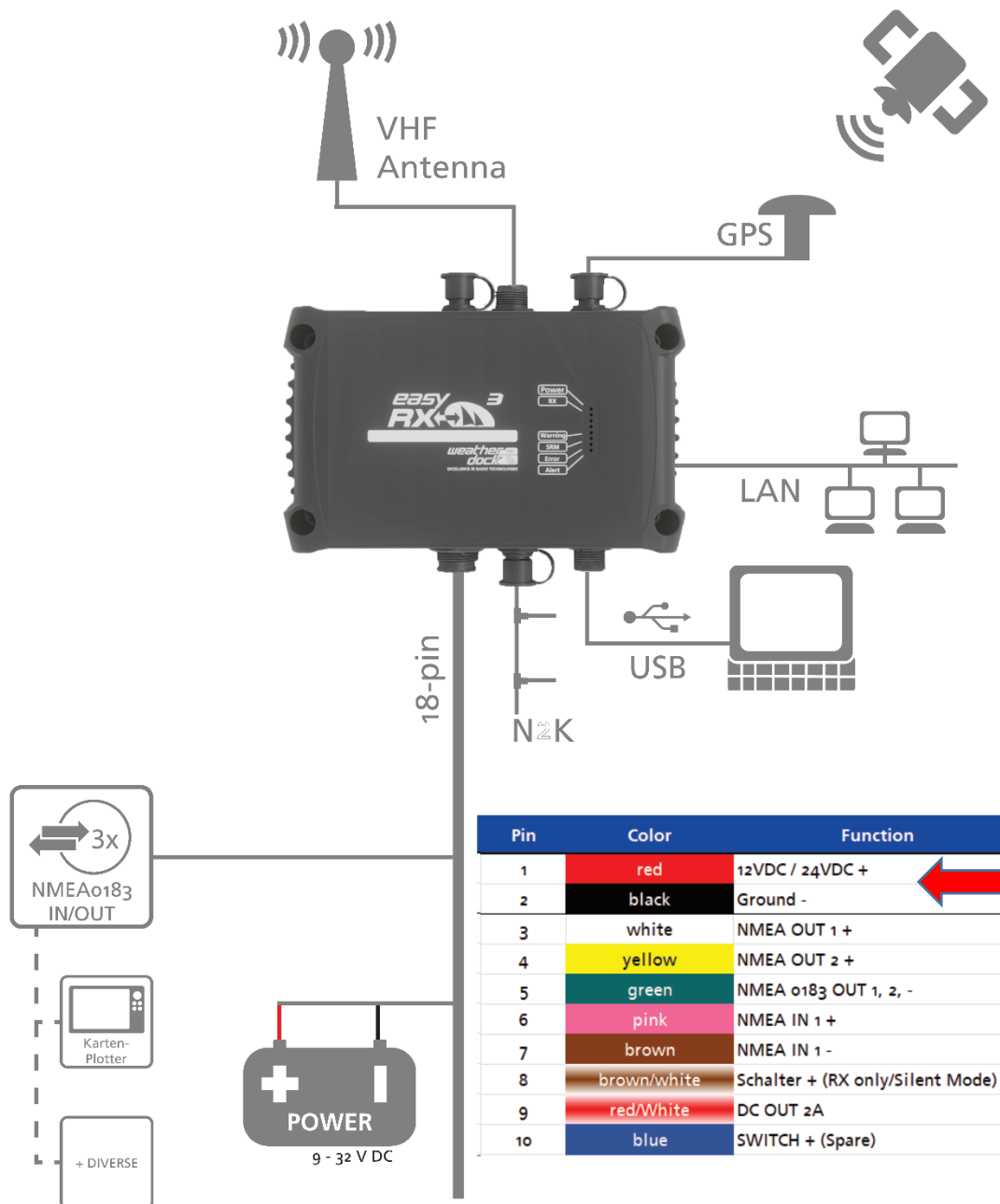


Figure 3 - power supply / cable harness

You need to have a 12-24 V DC power adapter with 1 amp voltage. Just connect the corresponding parts "+" and "-" of the cable harness and the adapter.

9 Connections

9.1 VHF Antenna for AIS data reception



Figure 4 - VHF antenna connector

The cable coming from VHF roof antenna has to be connected to the VHF antenna connector. The connector is signed with "Ant.".

9-39.2 External GPS Antenna (optional)

In case that is becomes necessary to have GNSS position data, it is possible to connect an external GPS antenna to the easyRX3.

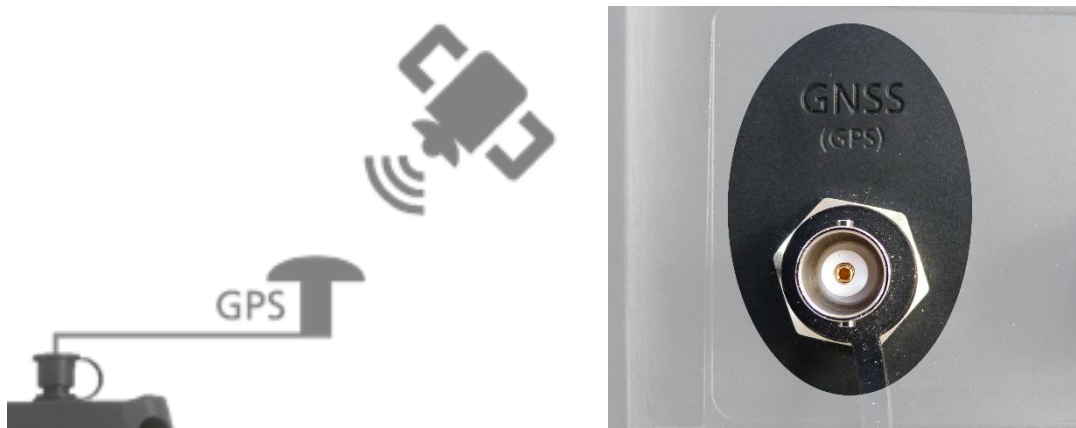


Figure 5 - GPS antenna connector

The connector for an optional external GPS antenna is signed with "GNSS".

10 Device setup

10.1 LAN RJ45 to router

10.1.1 Connection

1. Take an Ethernet cable and connect it to your router and the device
2. Connect red/black of 10pol Socket to 12/24VDC or an AC/DC adaptor with 3A at least (1A for easyRX3S is enough)
3. Wait 2-3min until the internal LAN-Module fully boots.
4. Log into your Router menu and search for the client list
 - a. Or connect by USB and start the programming-tool to get the IP
5. You may see a new device e.g. HILINK or similar
6. Note this IP
7. Now all your devices within your network will get AIS/GPS data on that IP and Port 8080

10.1.2 Forward data to another server

1. Open the IP under 6 within your browser
2. Login credentials:
 - a. Username: admin
 - b. Password: admin
3. Change this settings

Network Mode:	client	1	Client ▼
Remote Server Domain/IP:	192.168.0.242	2	192.168.0.242
Locale/Remote Port Number:	13607	3	13607
Network Protocol:	tcp	4	TCP ▼
Network Timeout:	0 seconds		0 seconds (< 256, 0 for no timeout)
		5	Apply Cancel

- a. Under 2,3 and 4 insert the right settings of your server
4. Press Apply to save everything

Note: you do not get AIS/GPS-data from IP:8080 anymore within this Client-Mode.

11 Technical Data

Description	Value
General	
Dimensions	195mm * 135mm * 60mm (L*B*H)
Weight	700 Gramm
Operating temperature	-15°C to 55°C
Storage temperature	-20°C to 75°C
Safety distance compass	min. 40 cm
Power Specification	
Board voltage	12V DC / 24V DC
Operating voltage range	9,6 to 31,2V DC
Input	2,9W at 12V DC
GNSS Specification	
GPS/GNSS Receiver (internal)	72 Channel GNSS Receiver
	# GPS
	# GLONASS
	# GALILEO
External Connections	
Interfaces	3x NMEA0183 IN
	3x NMEA0183 OUT
	NMEA2000
Connections (standard version)	USB
	10 pin plug
	NMEA2000 socket
	external GPS antenna (BNC)
	VHF antenna connection (SO239)
	VHF connection (TNC)
Data type NMEA output	VDM

AIS Specification	
Receiver	2 Receiver (AIS1/AIS2)
	DSC (AIS Channel Management)
Frequencies	Marine Band: 156,025MHz - 162,025MHz
	AIS1: 161,975MHz
	AIS2: 162,025MHz
Channel width/grid	25kHz
Modulation	GMSK (AIS, TX and RX)
	FSK (DSC, RX only)
	1200b/s (DSC)
Sensitivity	-114dBm 25kHz (<20% PER)
Co-channel rejection	10dB
Adjacent channel rejection	70dB
Intermodulation	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 6 - technical data

12 Fault diagnosis / Troubleshooting

Problem	Cause	Solution
No connection to the easyRX3S	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.
No output of the data	Device configured correctly? Not connected	Repeat configuration, contact service partner if necessary 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!)
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.

13 Maintenance

The easyRX3 product line does not contain parts that require maintenance. Avoid using chemical solvents to clean the easyRX3 as some solvents can damage the case material. Unauthorized opening of the device will invalidate the warranty.

14 Contact and support information

Although WEATHERDOCK strives for accuracy in all its publications; this material may contain errors or omissions, and is subject to change without prior notice.

Contact:

Contact your local dealer for WEATHERDOCK AIS support in most cases he can help quickly and straightforwardly.

If he cannot help you we are happy to provide help solving your problem:

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

Please do not send an apparently defective device to us without prior consultation. In most cases the problem can be solved via telephone or email.

15 License agreement

By using the easyRX3 you agree to be bound by the conditions of the following warranty. Please read this carefully.

Weatherdock AG grants you a limited license to use this device in normal operation. Titles, property rights as well as intellectual property rights contained in and of the software remaining Weatherdock AG.

16 Warranty

Weatherdock AG grants a warranty of 2 years from the date of purchase for defects in material or workmanship of this product. Within this period Weatherdock will at its sole option repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation cost. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs. The warranties and remedies contained herein are exclusive and instead of all other warranties express or implied or statutory, including any liability arising under any warranty of merchantability or fitness for a particular purpose, statutory or otherwise. In no event shall Weatherdock be liable for any incidental, special, indirect or consequential damages, whether resulting from the use, misuse or inability to use this product or from defects in the product. Weatherdock retains the exclusive right to repair or replace the unit or software or offer a full refund of the purchase price at its sole discretion. Such remedy shall be your sole and exclusive remedy for breach of warranty.

Products purchased in online-auctions do not entitle you to deductions or to the use of Weatherdock's special offers. Furthermore we do not accept purchase confirmations from online auctions as evidence for warranty claims. An original receipt is compulsory for satisfaction of warranty claims. Weatherdock does not replace missing device or accessory parts in products

which were purchased in online auctions. In a warranty case please contact your Weatherdock dealer. He will agree on the next steps with you. In the case of dispatch pack up the device properly and send it sufficiently stamped to the address stated by your dealer. For warranty repair always enclose a copy of your original sales receipt for evidence of ownership. The Weatherdock AG easyRX3 does not contain parts which have to be repaired. If you have a problem with your device, please contact your easyRX3 dealer. Any attempt to open, alter or modify the device will invalidate warranty and may damage the device irreparably.

17 Notices

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