

raspAIS

A21100

receiver - multimedia

Manual
english
Vers.: 1.2



Inhalt

1.	General safety instructions	4
2.	Product and service description	4
2.1.	Intended use	4
2.2.	Scope	5
2.3.	Important product information	5
3.	Product Overview	
	(connectors/sockets)	6
4.	Functional elements	7
4.1.	Power Supply	7
4.2.	HDMI supply	7
4.3.	BNC-socket/Antenna-socket	7
4.4.	AIS-RX LED	7
4.5.	GPS USB Stick	8
5.	Operation	8
5.1.	Basic functions	8
5.2.	Navigation with Wifi	8
5.3.	Navigation with LAN	9
5.4.	Find out the IP address	9
5.5.	Navigating with openCPN on raspAIS	10
5.6.	Connecting PC, Tablet, Laptop with VNC Viewer	10

5.7.	Installation instructions	11
6.	Set up charts to OpenCpn	11
7.	Installation of the VHF antenna	13
8.	Maintenance and service	14
9.	Trouble shooting	15
10.	License agreement	16
11.	Warranty	16
12.	Technical data	18
13.	Notes	19

Revision of the operating instructions:

Pos	Date	Version	Author	Change
1	Jan 2018	1.0	VV, NK	Build
2	09.03.2018	1.1	MSC	Rework
3	02.05.2018	1.2	NK	Rework

1. General safety instructions

WARNING

When guiding ships, it is the sole responsibility of the skipper to operate the vehicle in a safe manner, to have full control of all conditions during the entire journey. Improper behaviour of the driver of a raspAIS equipped vehicle, where the driver does not pay close attention to vehicle operation and environmental conditions, may result in an accident or collision with property damage or personal injury.

It is the sole responsibility of the user to use the raspAIS prudently. The raspAIS does not release you from your due diligence obligations!

- **Please read all instructions. Keep all safety instructions ready for the future!**
- **Please keep the device out of reach of children!**

2. Product and service description

2.1. Intended use

The raspAIS is a mobile AIS receiver.
The device has 2 channel parallel AIS receivers.

2.2. Scope

- A211 raspAIS board
- Manual
- Micro USB cable
- Antenna rod
- Magnetic antenna base

2.3. Important product information

The raspAIS is compatible with the worldwide used AIS system (Automatic Identification System).

3. Product Overview (connectors/sockets)



(1) BNC- socket, antenna connection

(2) Micro USB slot, power supply

(3) HDMI port for screen

(4) AUX audio output



(5) AIS-RX LED

(6) Micro SD-card slot

4. Functional elements

4.1. Power Supply

The power supply takes place via the Raspberry Pi®. Please use the enclosed USB cable and connect it with a power supply. The power supply, car jack/USB or 5/230V/ USB, is available as a special accessory.

If you have already a 5V USB power supply socket, you can use this if it has approx. 1A or more.

4.2. HDMI supply

You can connect a monitor via the HDMI socket.

Using the Software already installed on the SD card, you can visualize the received AIS targets.

In order to use the program, we recommend connecting a mouse / keyboard to the USB ports.

Restart the raspAIS to recognize the devices. Now you can open the "OpenCPN" icon on the desktop with your mouse.

4.3. BNC-socket/Antenna-socket

The VHF antenna is connected to the raspAIS via the BNC socket. An AIS antenna is recommended, which can be used on the frequencies 161-162 MHz.

4.4. AIS-RX LED

The AIS-RX LED flashes orange once every AIS target received.

4.5. GPS USB Stick

A GPS USB Stick can be connected to any USB slot of the raspAIS and works automatically as a startup.

5. Operation

5.1. Basic functions

In order to use the raspAIS, please connect the contained VHF- antenna and a GPS USB stick.

If you use the already pre-installed openCPN version via HDMI, it is also advisable to connect a mouse already now.

Using the AIS-RX LED (orange) on the raspAIS, you can always perform an AIS receive analysis.

As soon as you plug in the raspAIS, it starts automatically. The transmission of AIS data is only possible via Wifi and LAN. (see 5.2 / 5.3)

5.2. Navigation with Wifi

When the raspAIS is started, connect to the raspAIS:

SSID Wifi : "raspAIS"

Password: "helloais"

Now go into an AIS-enabled navigation software / app and start a new connection

IP: 10.10.10.1 Port 10110

Now the AIS and GNSS (GPS) data are transferred from the raspAIS to your mobile phone, tablet or laptop.

5.3. Navigation with LAN

Your router and computer will automatically assign the raspAIS an IP address. You can identify this IP address either via your router menu or you can also see it in the Raspberry's own network settings (5.4), if you have a monitor connected via HDMI. Finally enter the IP address in your AIS program.

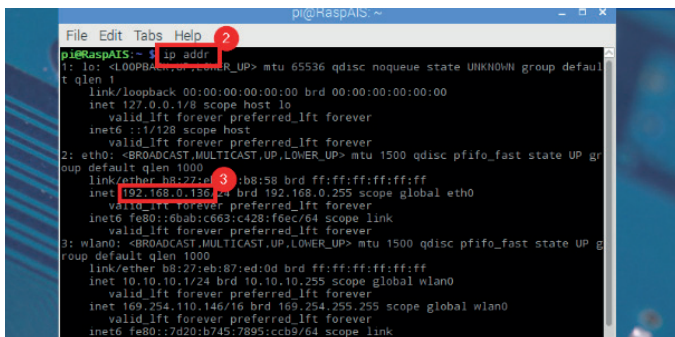
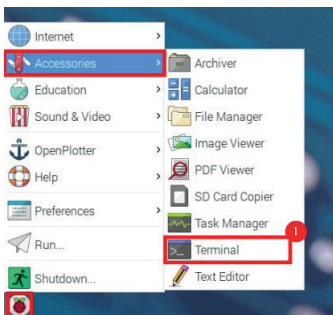
5.4. Find out the IP address

Connect the LAN cable and start the raspAIS with an attached screen, keyboard and mouse.

1: Click on "Terminal"

2: Enter "ip addr"

3: This is the IP address to use (eg.192.168.0.136)



5.5. Navigating with openCPN on raspAIS

Connect the raspAIS with VNC Viewer (see chapter 5.6) or with an HDMI cable. We recommend to connect a mouse, which simplifies the operation as far as possible (HDMI). Click "OpenCPN" on the desktop. After the program has started, you see the received AIS targets on the screen

5.6. Connecting PC, Tablet, Laptop with VNC Viewer

- Download VNC Viewer from Appstore/Play store



VNC Viewer Android



VNC Viewer iOS

- Connect to the raspAIS network „raspAIS“ by Wifi
- If you get asked again for a password, its „helloais“
- Start VNC viewer
- Now fill in 10.10.10.1 into „VNC Address “and press additional windows with ok.
 - User name: pi
 - password: helloais
- Now you should see the mirrored desktop of the raspAIS on your device.
- You can now just start OpenCPN with pre-installed

charts. (see chapter 6)

5.7. Installation instructions

To ensure a reliable AIS reception on board, please note the following:

- Use a 5V power supply > 2 amps (10 watt)
- Mount the raspAIS safely against environmental influences, it is not waterproof!
- Avoid major sources of interference in the vicinity (inverter, radio, fridge, ...)
- Pay attention to sources of interference, especially when installing the antenna.

6. Set up charts to OpenCPN

Weatherdock AG is not the Author of the charts and does not ensure its completeness, reliability or its accuracy. We just add this charts as a guidance and refer to following sources.

Step 1. Download a chart



WSV.de

Wasserstraßen- und
Schifffahrtsverwaltung
des Bundes

<http://www.wsv.de/>



OpenStreetMap

<https://www.openstreetmap.de/>

For example, on the following websites:

After downloading a chart, save it on the USB stick and plug it into the AIS receiver.

Step 2. Start your raspAIS

Insert all cables, note that the power connection is plugged in at last.

Step 3. Start OpenCPN (if not already open)

Step 4. Press "Settings"

Step 5. Press "Charts"

Step 6. Press "Add Directory" and then select the file path where you saved the chart (USB stick)

Step 7. Press "Open"

Step 8. Press on the map and then on Apply

Step 9. Press "Ok"

Now the chart would have to be loaded.

As the SD card is installed permanently, the USB stick must always remain in the same USB port otherwise the card will no longer be recognized and the process must be repeated. If you copy the chart on the raspAIS and repeat the steps you can use the charts without the USB stick is plugged.

7. Installation of the VHF antenna

- We recommend placing the antenna on a metallised surface. This serves as a counterweight and increases the reception range.
- Before use, the antenna rod must be hand-screwed onto the magnetic base. The use of tools is not necessary.
- The antenna cable should be routed straight and knot-free for the best transmission.
- The BNC socket is connected to the raspAIS.
- We recommend installing the antenna on the outside
- Do not place the antenna near sources of interferences

8. Maintenance and service

Although Weatherdock AG always endeavours to handle all publications with the utmost accuracy, this manual may contain errors or ambiguities. In addition, these instructions are the sole responsibility of Weatherdock and can be

changed without notice.

9. Trouble shooting

errors	fix
There is no AIS data	• Check if AIS targets are within reach • Is the antenna correctly mounted? • AIS RX LED: does it dash?
The raspAIS receives only very near AIS targets	• Make sure that there are no large sources of interference near the raspAIS. (Fridge, etc.) • Check your antenna system. • Is your antenna cable properly connected? • The antenna stands on a metallic ground?

The raspAIS works unreliable / crashes	• We recommend 5 VDC / 1-2 A.
--	---

10. License agreement

By using the raspAIS, you agree to the terms of the following warranty agreements. Please read this agreement carefully. Weatherdock AG grants you a limited license to use the device during normal operation of the product. Title, ownership and intellectual property rights in and to the Software remain with Weatherdock AG.

11. Warranty

Weatherdock AG warrants this product against defects in material and workmanship for a period of 2 years from the date of purchase. Within this period, Weatherdock AG will, at its discretion, repair or replace faulty components in normal use. Repairs or replacement at the expense of the company Weatherdock AG are made without calculation for parts or working hours. The customer, however, carries the shipping costs. This warranty does not cover misuse, accidents or unauthorized changes or repairs. The implied warranties and rights are exclusive and supersede any other express or implied warranty and or statute, including any statutory or other liability arising from a warranty of merchantability or fitness for a particular purpose. This warranty gives you specific legal rights, depending on the country. In no case Weatherdock AG is responsible for accidental, special, indirect or consequential damages

resulting from the use or possible disuse of the product or from errors in the product. Weatherdock AG reserves the sole right to repair or replace the device or the software or to refund the purchase price. This right is your sole and exclusive right in case of warranty. Products purchased in online auctions do not entitle to discounts or to the use of special offers Weatherdock AGs. Also, purchase confirmations from online auctions are not recognized as proof of warranty claims. To satisfy warranty claims, an original proof of purchase from the dealer is always required. Weatherdock AG does not replace missing equipment or accessories in products purchased in online auctions. In case of warranty, contact your Weatherdock AG dealer. He will coordinate the further procedure with you. In the case of a shipment, pack the device carefully and send it stamped to the address of your trader names. For warranty repairs, always include a copy of the original proof of purchase as proof of ownership. The Weatherdock AG raspAIS contains no user-repairable parts. If there is a problem with your device, contact your raspAIS dealer. Any attempt to open, modify the device will void the warranty and may irreparably damage the device.

All brands and trademarks mentioned in this document are the property of the companies named.

Copyright 2018, Weatherdock AG

Further issue and duplication of these documents,

utilization and communication is not permitted. Violations committed for damages.

12. Technical data

Description	Value
Dimension	(LxBxH) 11m x 70 x 45 mm
Weight	Ca .150 g
Frequenz	161,975 MHz and 162,025 MHz
Channel Bandwidth	25kHz
Channel Step	25kHz
RX sensivity	-107dBm
Power consumption	Approx. 500 mA
UKW socket	BNC Female
Displays	1 x LED AIS-RX / 2 x Raspberry PWR & ACT
Interface	UART TX (38400 Baud)

Operating temperature	-10°C up to +55°C
Stock temperature	-20°C up to +60°C

13. Notes

<https://www.easyais.com/en/products/a21100-raspAIS/>

Weatherdock AG
Emmericher Strasse 17
D – 90411 Nürnberg
Tel.: +49 (0) 911 – 37663830
Fax: +49 (0) 911 – 37663840
www.easyais.com
info@weatherdock.de



EXCELLENCE IN RADIO TECHNOLOGIES
Safety • Navigation • Tracking
