WEGMATT LLC

dAISy HAT AIS Receiver

Quick Start Guide

Thank you for purchasing the dAISy HAT AIS Receiver for Raspberry Pi.

Disclaimer: dAISy HAT is a reliable, dual-channel AIS Receiver. However, under no circumstances it should be solely relied on for collision avoidance or navigation. It's the user's responsibility to use the product prudently. Neither Wegmatt LLC nor its dealers accept responsibility or liability to the product user or their estate for any accident, loss, injury, or damage whatsoever arising out of the use of this product.

Installation

The dAISy HAT communicates with the Raspberry Pi through the serial port on pins 8 and 10 of the expansion header. By default, this serial port is of and must be manually enabled.

If you use the dAISy HAT with OpenPlotter, follow the instructions in the official OpenPlotter documentation. The dAISy HAT is covered in the section Serial > Connecting the dAISy HAT
https://openplotter.readthedocs.io/latest/serial/connectingdAISy.html

If you are running Raspberry Pi OS or Raspbian without OpenPlotter, the serial port that connects to the dAISy HAT needs to be manually configured, as described in the next few sections.

For more detailed and up-to-date instructions for the configuration and use of the dAISy HAT, please refer to the full user manual available on our website at https://wegmatt.com/docs.html.

Raspberry Pi OS Bookworm

If you are using the dAISy HAT on a Raspberry Pi with the latest version of Raspberry Pi OS, use the raspi-config tool to configure the serial port. Open a terminal window on your Raspberry Pi and type:

```
sudo raspi-config
```

Then enable the serial port by navigating through the following steps:

`3 Interface Options` -> `I6 Serial Port`
-> `<No>` (no login shell on serial) -> `<Yes>` (enable serial hardware) -> `<Ok>`
-> `<Finish>` -> `<Yes>` (reboot)

Raspberry Pi OS Buster or older

If you are using the dAISy HAT with an older version of Raspberry Pi OS, use the uart_control shell script by Ilker Temir to configure the serial port. Open a terminal window on your Raspberry Pi and execute the following commands:

```
wget https://github.com/itemir/rpi_boat_utils/raw/master/uart_control/uart_control
chmod +x ./uart_control
sudo ./uart_control gpio
sudo reboot now
```

Configuration

After completing the reboot, AIS data is available on the serial port using the following parameters:

Raspberry Pi	Pi 4, 3, Zero	Pi 5
Serial port	/dev/serial0	/dev/ttyAMA0
Baud rate	38400	38400
Data bits	8	8
Parity	None	None
Stop bits	1	1
Flow control	None	None

Use this information to configure OpenCPN or other programs. Keep in mind, that only one application at a time can consume serial data. dAISy immediately starts receiving AIS messages when powered up.

LED status indicator

dAISy HAT features two red/green LEDs to indicate its status of each AIS channel.

Indicator	Description
Green, short flash every 5 seconds	Channel is in reception mode
Green, ¼ second flash	Channel received a valid AIS message
Red, ¼ second flash	Channel received an invalid message
Red, permanently on or fast continuous blinking	Device error
No LED activity	Device is not in reception mode

Troubleshooting

Problem	Solution
No activity of the status LEDs	Verify that the HAT is properly seated.
Device in reception mode, but no valid AIS messages received (no ¼ second green flashes)	Verify antenna connection and location. Good AIS reception requires line-of-sight, verify your setup from a location that is certain to have traffic, e.g. near a harbor.
Device indicates valid AIS messages (¼ second green flashes), but no messages received on the Raspberry Pi.	Verify that the serial port shows up, if not verify the hardware configuration. Verify the serial configuration of your software. Verify the serial communication with a program like *screen*.
Software receives positions, but fewer than expected and/or with worse range than expected.	Verify antenna connection and location. Good AIS reception requires line-of-sight. Move the antenna away from sources of RF noise.
After some time, dAISy indicates a device error (fast blinking red LED)	This should not occur with the dAISy HAT. Power cycle the Raspberry Pi to resolve the issue.

If a problem persists or if you have any questions, don't hesitate to contact us.

Contact

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