



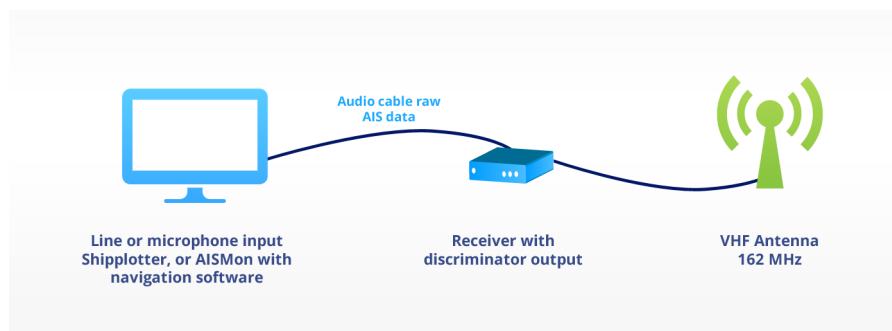
MarineTraffic

DIY VHF AIS RECEIVER

GENERAL INSTRUCTIONS ON HOW TO USE YOUR VHF TRANSCEIVER AS AN AIS RECEIVER AND SHARE DATA WITH [MARINETRAFFIC](#)

A cost-efficient alternative method to dedicated AIS receivers, is to use a cheap or readily available VHF radio transceiver and a PC equipped with a basic sound card (with line-in) to decode AIS messages. In order to do so, you must tap into the radio's discriminator output (unfiltered audio).

The equipment setup must look like below:



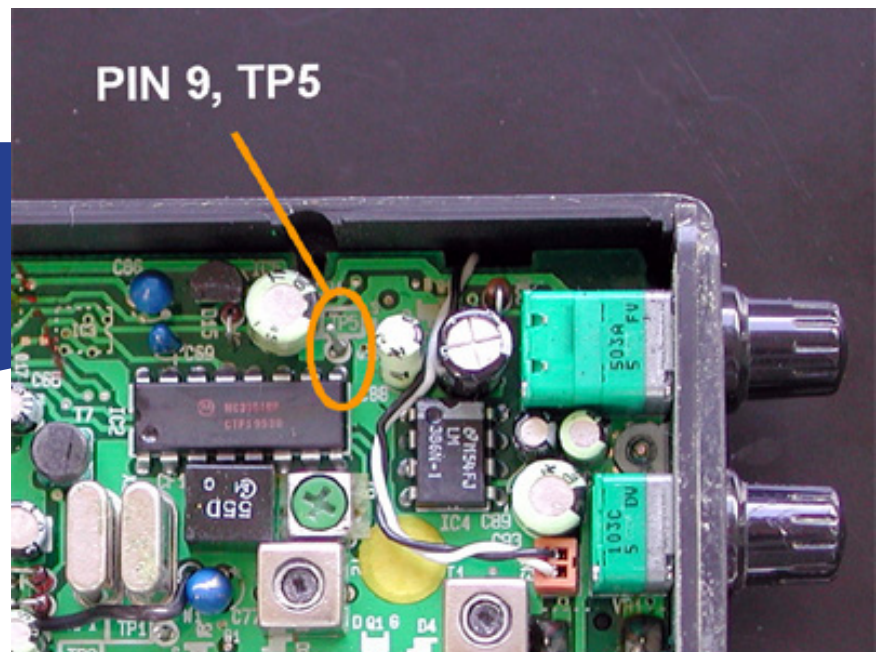
Only a few cheap VHF transceivers have a dedicated discriminator output available. In most cases, the user must modify the unit in order to gain access to the unfiltered audio feed required for AIS signal decoding. This requires basic electronics knowledge and basic to intermediate soldering skills (depending on the transceiver type).

When modification is required, the concept is to find the receiver IC in the unit's main board, identify the pin that carries the discriminator signal and solder a basic RC filter between that pin and the chassis ground. This is done in order to block/eliminate the 455KHz IF component of the FSK signal which distorts the audio feed.

The desired output resides between the filter output and the chassis ground. An example of said modification on a **COMMTEL COM103** transceiver looks like this:



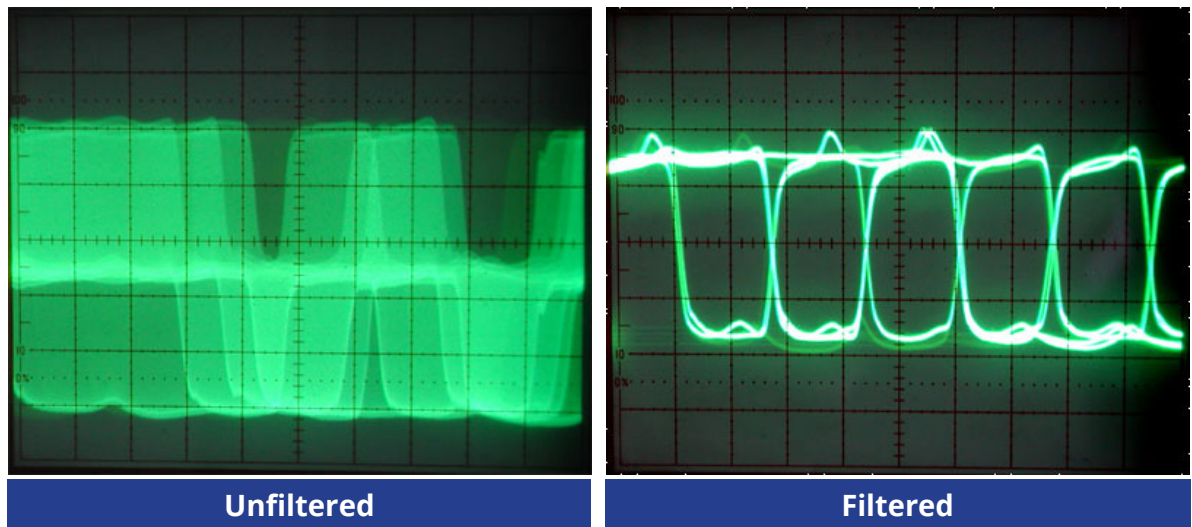
IC discriminator pin



RC filter soldered in place (10K resistor, 2.2nF capacitor)



An example of how the received signal looks like with and without the IF filtered, follows:



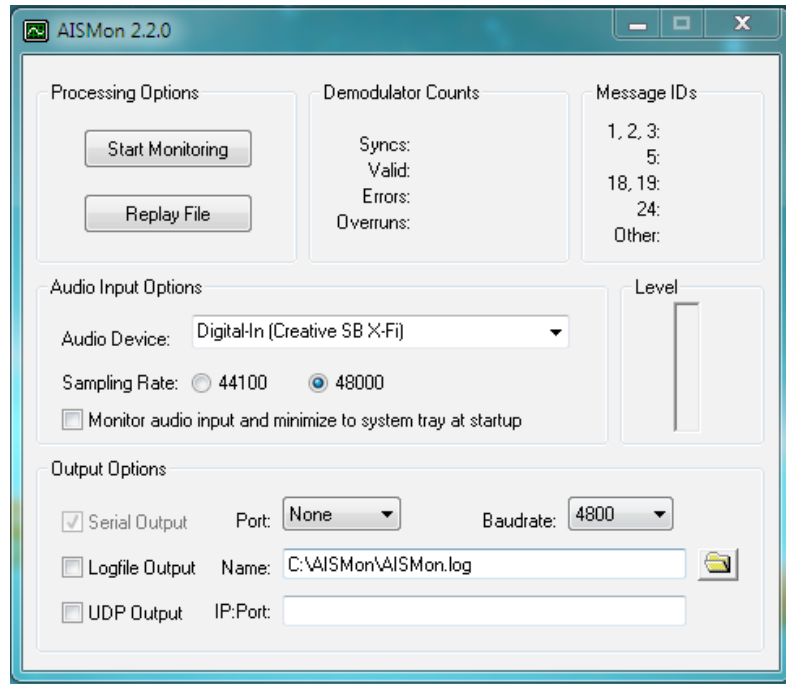
Once the discriminator output is obtained, the next step is to decode the AIS data contained in the feed. For that you will need a PC with a basic sound card (with line-in) and an ethernet port, XP or newer OS and a stable internet connection (in order to share your data with **MarineTraffic**)

You will also need an AIS audio decoding and data forwarding application. Such programs are **Ship Plotter** and **AISSon**.

Ship plotter is a more versatile and feature rich application but it's not free to use (requires registration fees after a 21-day trial period). On the other hand, **AISSon** is a more basic program but it is available for download and use free of charge.

Since using an existing VHF transceiver is a cost-efficient method for AIS message reception and decoding, it makes sense to focus only on how to setup **AISSon** for sharing data with **Marinetraffic**.

- Firstly, download AISSon from here: http://www.marinetraffic.com/files/AISSon_2.2.0.exe
- Save the file on your Desktop. When download is finished double-click on the installer file. Allow for elevated rights if asked.
- When installation is finished run the **AISSon** application by double-clicking on the icon created on your Desktop. You will see the program window:



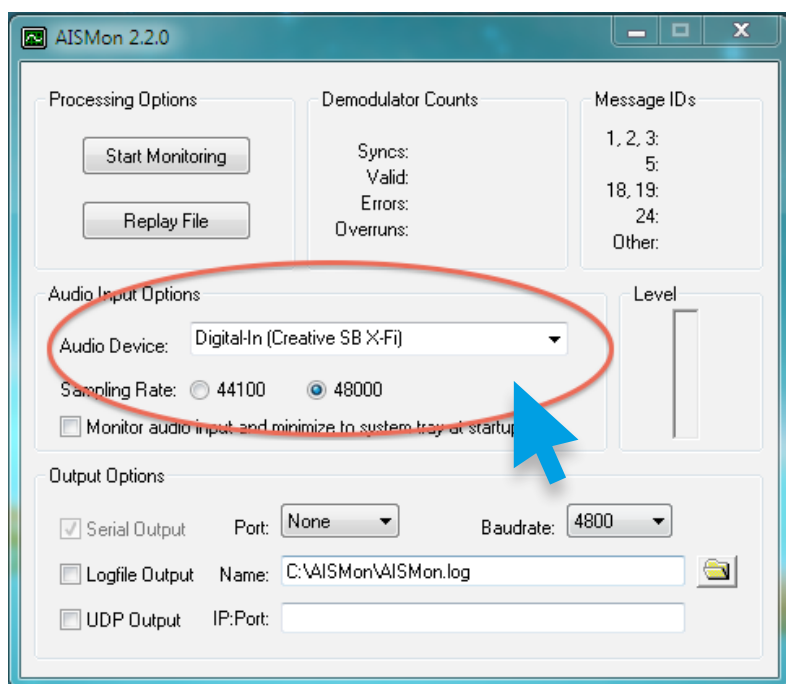
IMPORTANT

If you haven't done this already, please visit the MarineTraffic website (<http://www.marinetraffic.com>) and register yourself by creating a New Account.

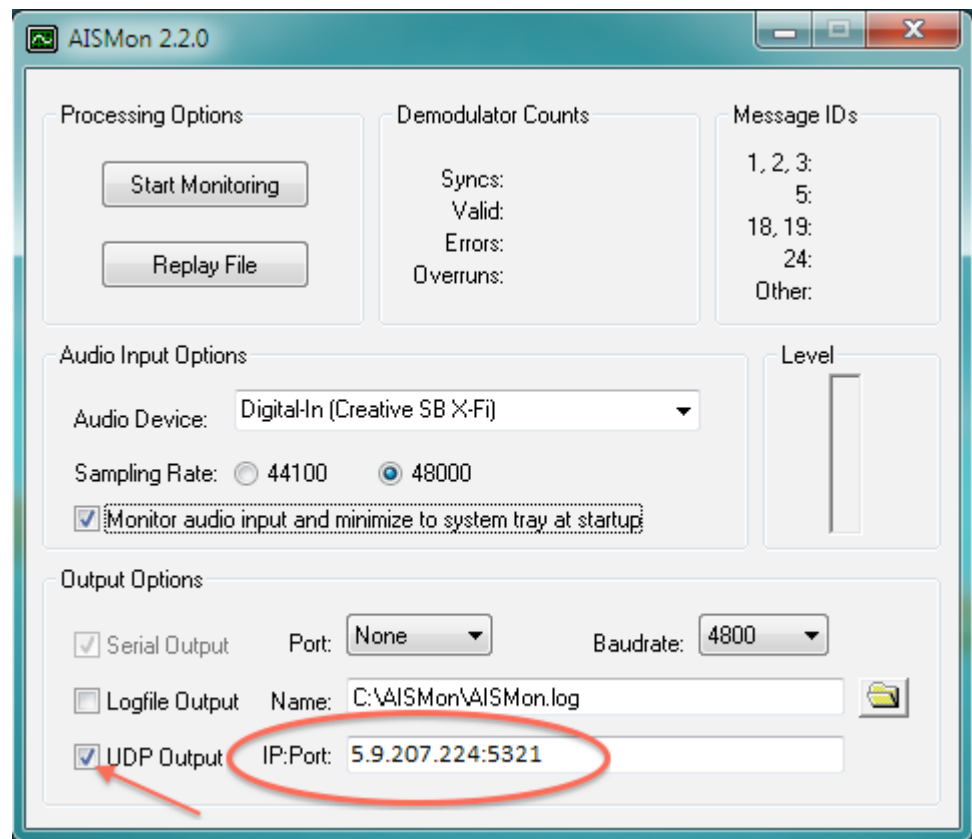
Upon registration, sign-in to your account (top right corner) and click on My Account > My Stations > Add Receiving Station to add your Station to the MarineTraffic Network.

This way, you will get a new Station ID and a unique Port Number to send your data to.

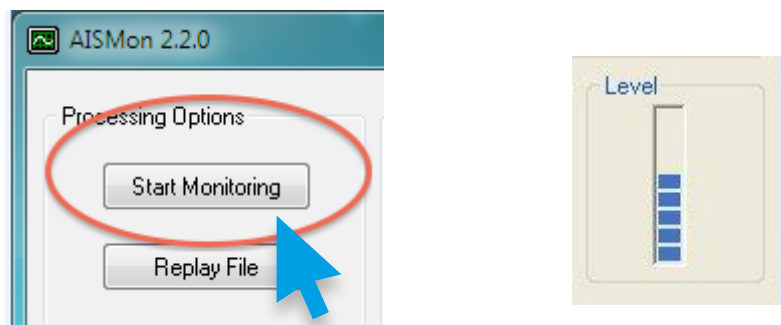
- Now, make sure you select the correct input port of your sound card (usage of line-in is preferred over mic-in). Also select 48000Hz as your sampling rate:



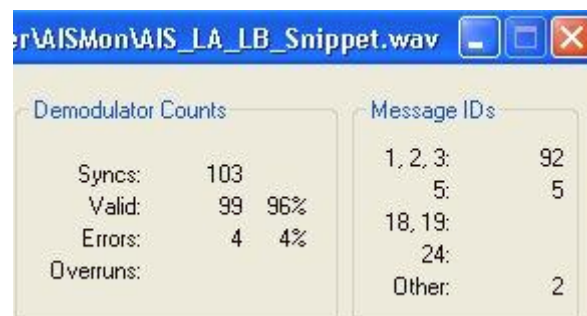
- Tick the **UDP Output** checkbox and enter MarineTraffic's IP and your unique port number colon-separated as shown below:




- Click on the **Start Monitoring** button to start listening for AIS data packets on your sound card input port. For optimal operation, make sure your VHF transceiver is tuned in either A or B AIS channel (161.975 or 162.025 Mhz) and your audio levels are preferably around the middle.



- You should be able to see AIS-data packets being received and decoded:



- Finally, visit your station's Details page and make sure your station status is **ONLINE** (it may take a few minutes for that to happen):

Current Status & Statistics	
Status	ONLINE 
Availability	100% (2159 hours online / 2161 total hours)
Reception distance in nautical miles	Average: 9.2 / Max: 32.9
Records received in 1 hour	Distinct Vessels: 219 / Positions: 1962
Area Covered	3321 km ²

That's it!

You are now sharing your data with us.

We sincerely appreciate your contribution to our site and your help to expand our services and coverage.

