

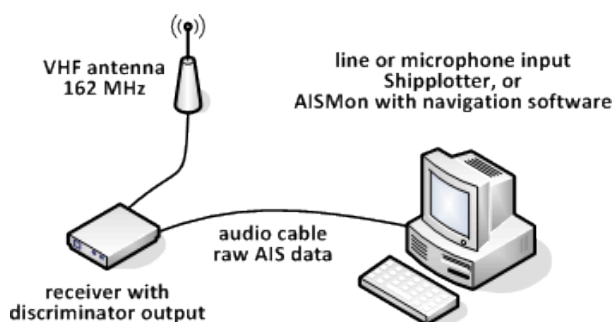


**MARINETRAFFIC.COM**

## **“DIY VHF AIS RECEIVER”**

### **GENERAL INSTRUCTIONS ON HOW TO USE YOUR VHF TRANSCEIVER AS AN AIS RECEIVER AND SHARE DATA WITH MARINETRAFFIC.COM**

A cost efficient alternative 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:



Very 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.

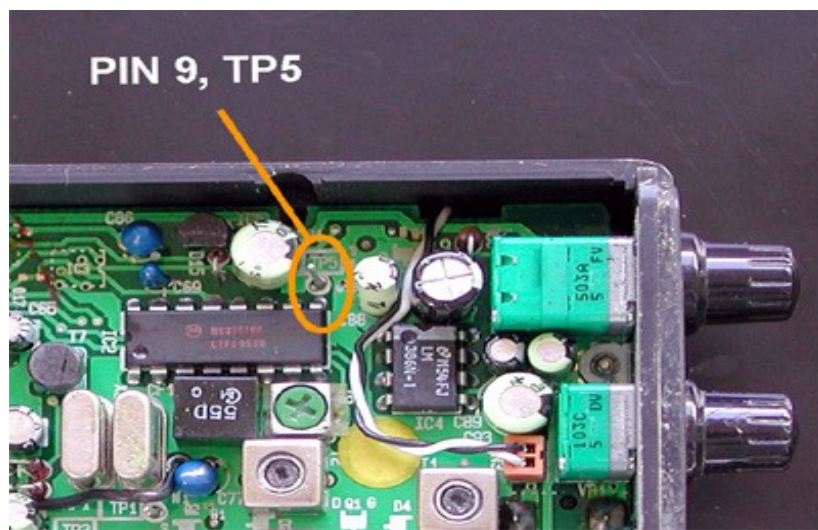
This requires basic electronics knowledge and basic to intermediate soldering skills (depending on the transceiver type).

The best source for info / guides / howto's , covering a vast array of VHF radio makers / models is:

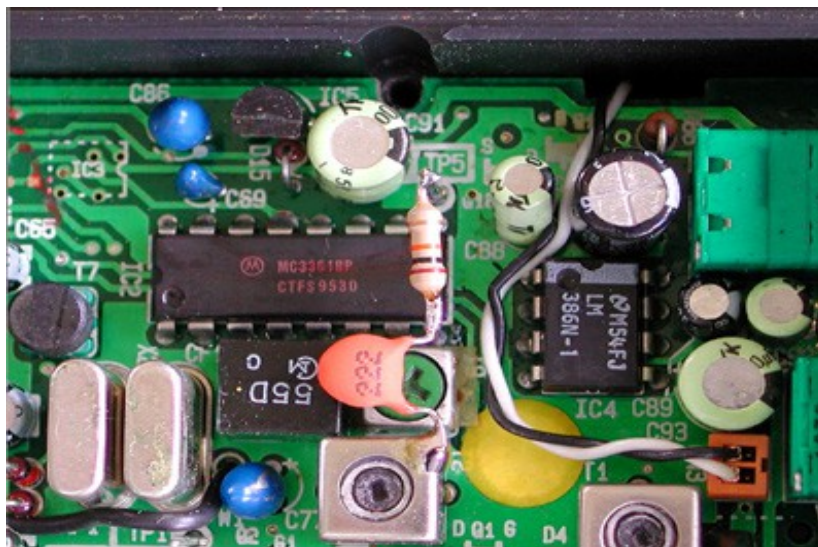
<http://www.discriminator.nl/ais/index-en.html>

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 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:

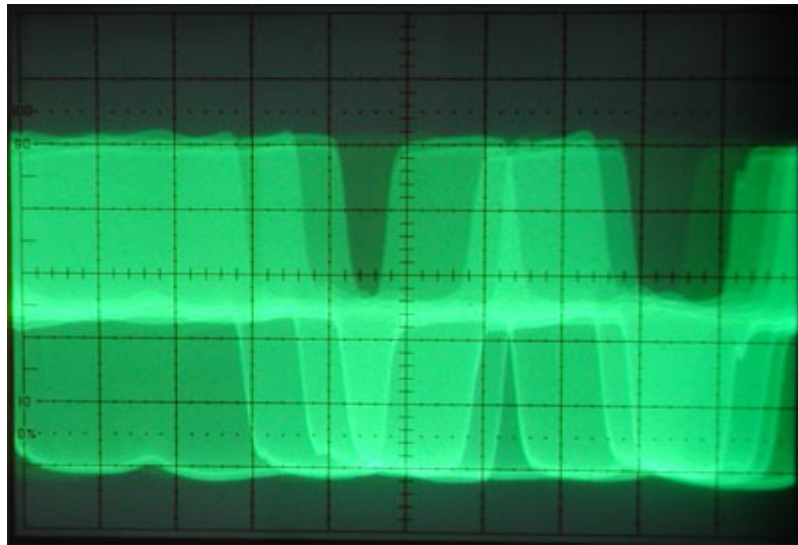


IC discriminator pin

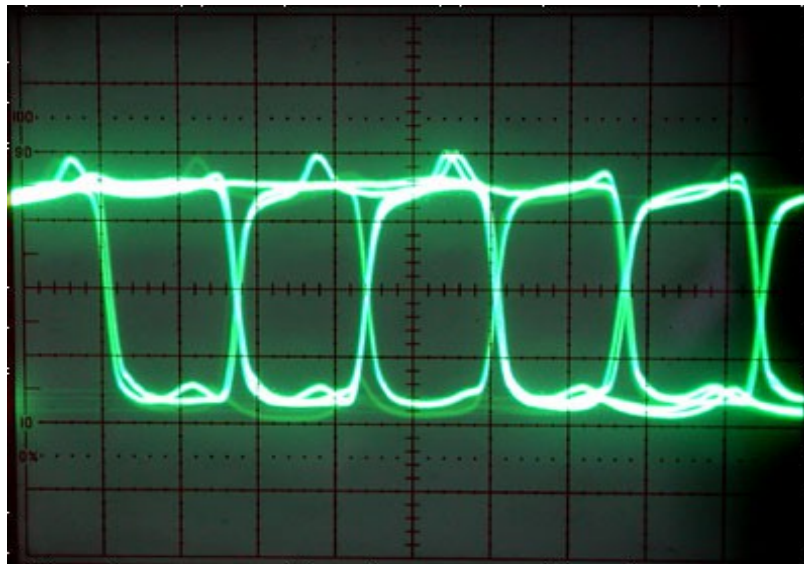


RC filter soldered in place (10K resistor, 2.2nF capacitor)

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



Unfiltered



Filtered

Once the discriminator output is obtained, the next step is to decode the AIS data contained in the feed. For that you'll 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.com](http://Marinetraffic.com))

You will also need an AIS audio decoding and data forwarding application. Such programs are “Ship plotter” and “AISMon”.

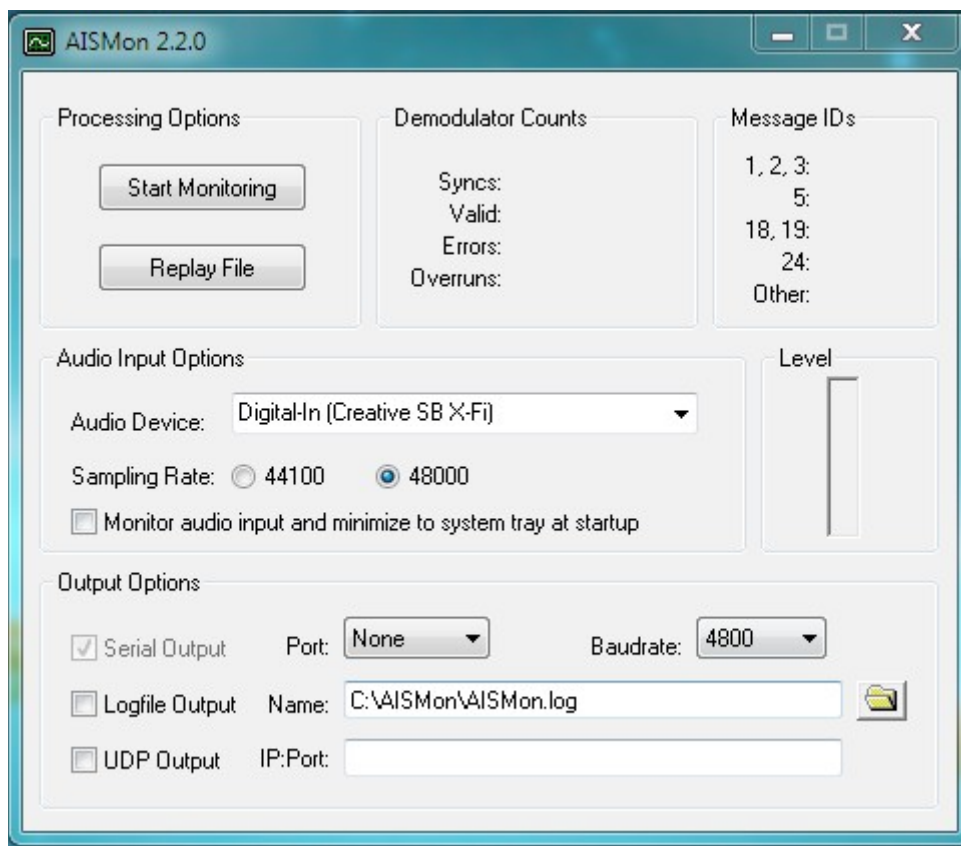
“Ship plotter” is a more versatile and feature rich application but it's not free to use. On the other hand “AISMon” is a more basic program but it is available for download and use free of charge.

Since using an existing VHF transceiver is a cost efficient method for AIS message reception and decoding, it only makes sense to focus on how to setup “AISMon” for sharing data with [Marinetraffic.com](http://Marinetraffic.com) .

- First download AISMon from here:

[http://www.marinetraffic.com/ais/downloads/AISMon\\_2.2.0.exe](http://www.marinetraffic.com/ais/downloads/AISMon_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 “AISMon” application by double clicking the icon created on your Desktop.  
You will see the program window:



 **IMPORTANT** 

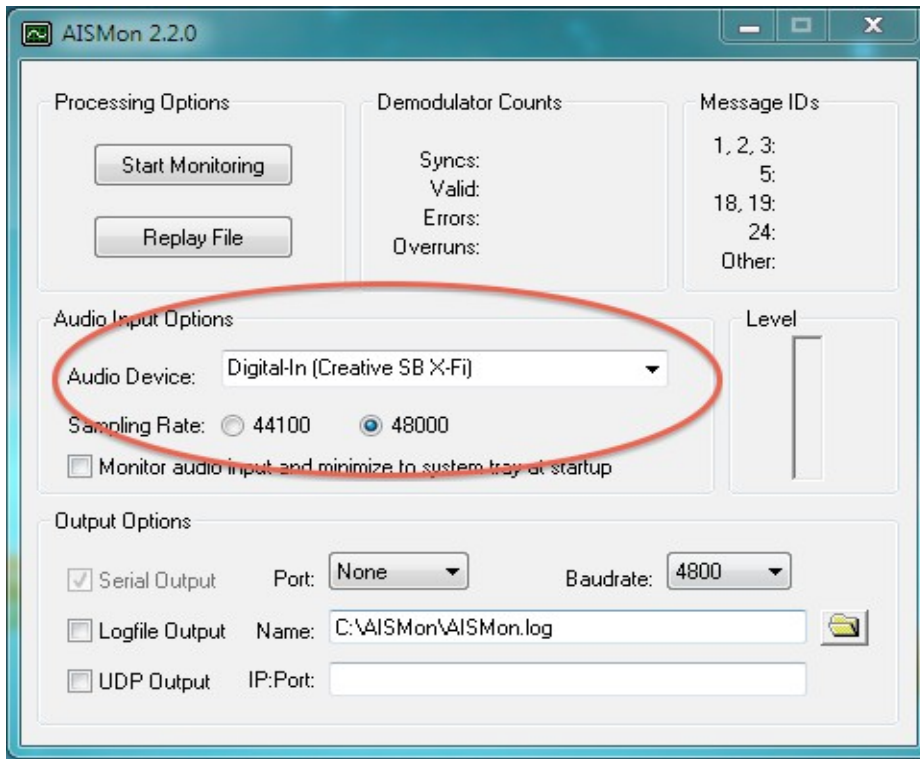
Before proceeding, make sure you visit :

[http://www.marinetraffic.com/ais/generic\\_form.aspx?mode=insert&datasource=STATIONS&aa=&referrer=%2fais%2fdatasheet.aspx%3fdatasource%3dSTATIONS](http://www.marinetraffic.com/ais/generic_form.aspx?mode=insert&datasource=STATIONS&aa=&referrer=%2fais%2fdatasheet.aspx%3fdatasource%3dSTATIONS)

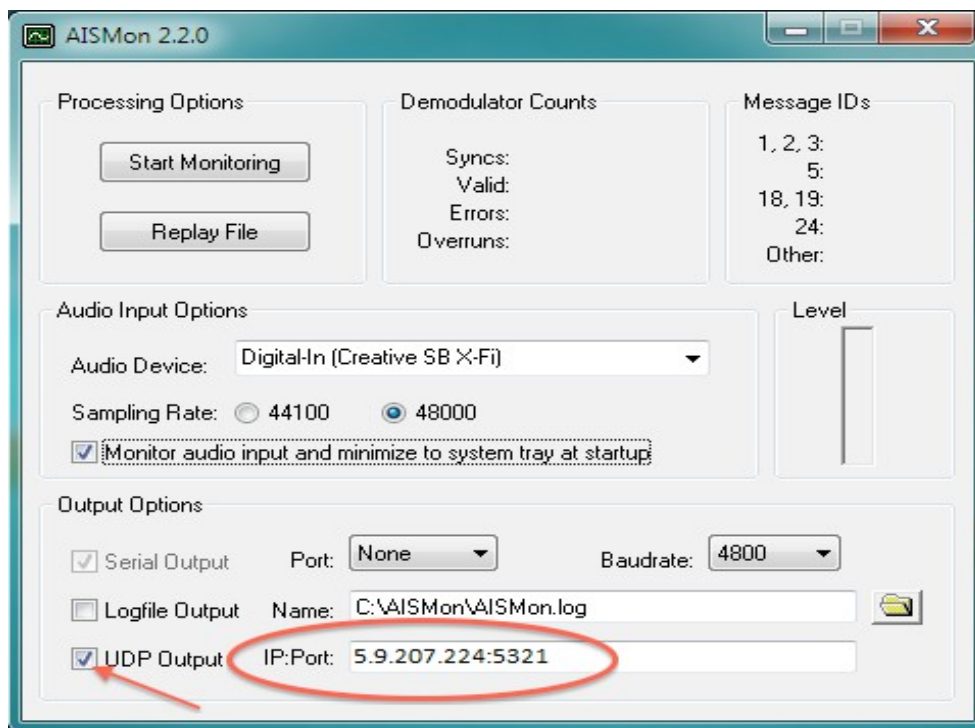


and register your station. You will receive a unique port number which will help our servers identify the data source and keep performance statistics of your station.

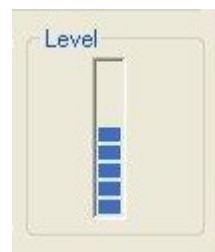
- Now make sure you select the correct input port of your sound card (usage of line-in is preferred over mic-in). Also select 48000Hz as your sampling rate:



- Check the “UDP Output” checkbox and enter Marinetransport.com 's IP and your unique port number separated by a colon as shown below:



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



- You should now see data packets being received and decoded:

 A screenshot of a software window titled 'AISMon\AIS\_LA\_LB\_Snippet.wav'. It displays two columns of data: 'Demodulator Counts' and 'Message IDs'.
 

Demodulator Counts		Message IDs	
Syncs:	103	1, 2, 3:	92
Valid:	99 96%	5:	5
Errors:	4 4%	18, 19:	
Overruns:		24:	
		Other:	2

- Finally visit your station's statistics 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 (3 months): 91.1% (1905 hours online / 2091 total hours)

Reception distance in nautical miles: Average: 5.09 / Max: 37.25

Records received in 1 hour: Distinct Vessels: 25 / Positions: 365

Area Covered: 2214 square km

[Coverage Map](#) (last 24 hours)

[Current Reception](#) (may be incomplete in case of overlapping reception by other stations)

[All Recent Receptions](#) (last 3 hours)

[Stations List...](#)

[Add your Station...](#)

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.

*Marine Traffic  
Tech Support Team*