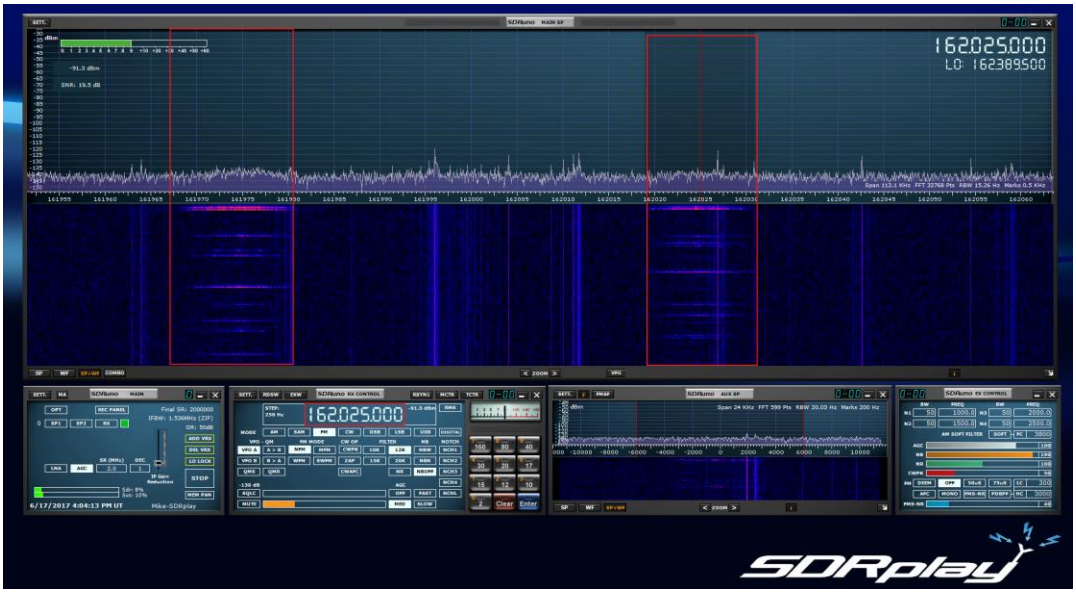
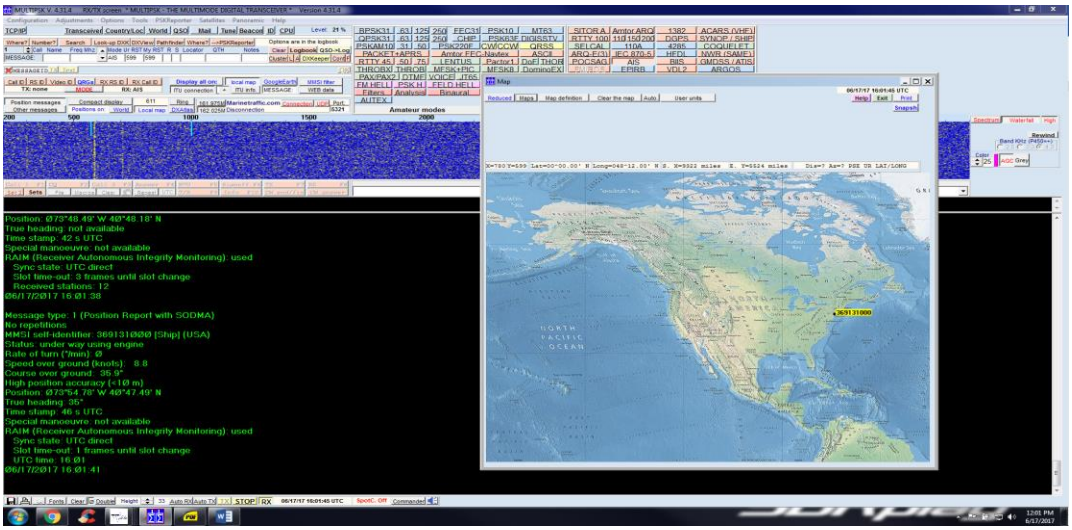
Decoding AIS Marine messages using SDRuno and MultiPSK

6/18/2017

Large ships and passenger boats are required to broadcast an identification signal containing position, course, speed, destination, and vessel dimension information to help prevent sea collisions. This system is known as the “Automatic Identification System” or AIS for short. AIS messages transmit in FM using a pair of redundant frequencies. 161.975 & 162.025 MHz

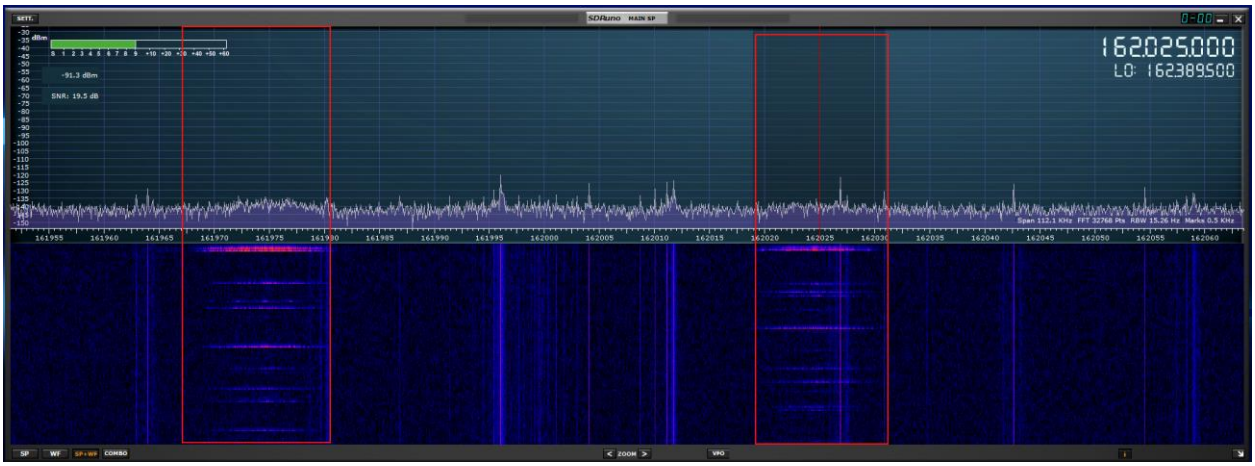




You will need either VB-Cable or VAC installed and configured. This will allow you to pipe the audio out of SDRuno into the MultiPSK decoder.

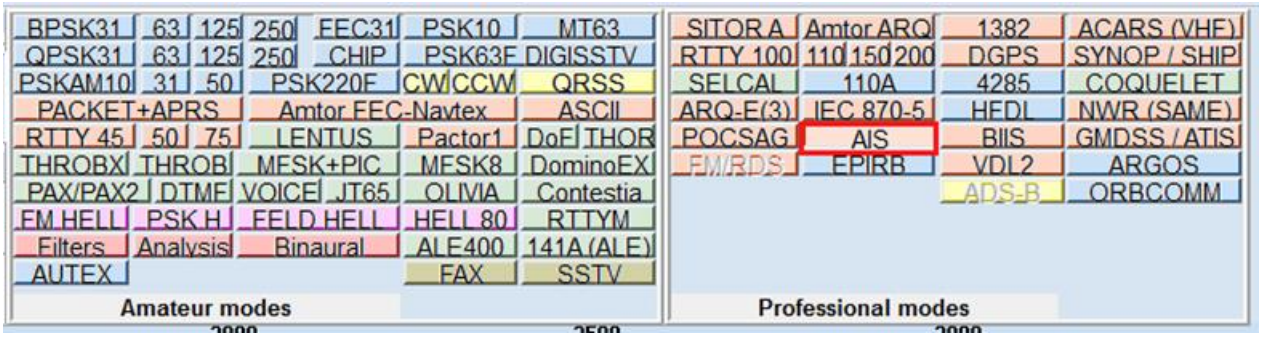
http://vb-audio.pagesperso-orange.fr/Cable/ http://software.muzychenko.net/eng/vac.htm

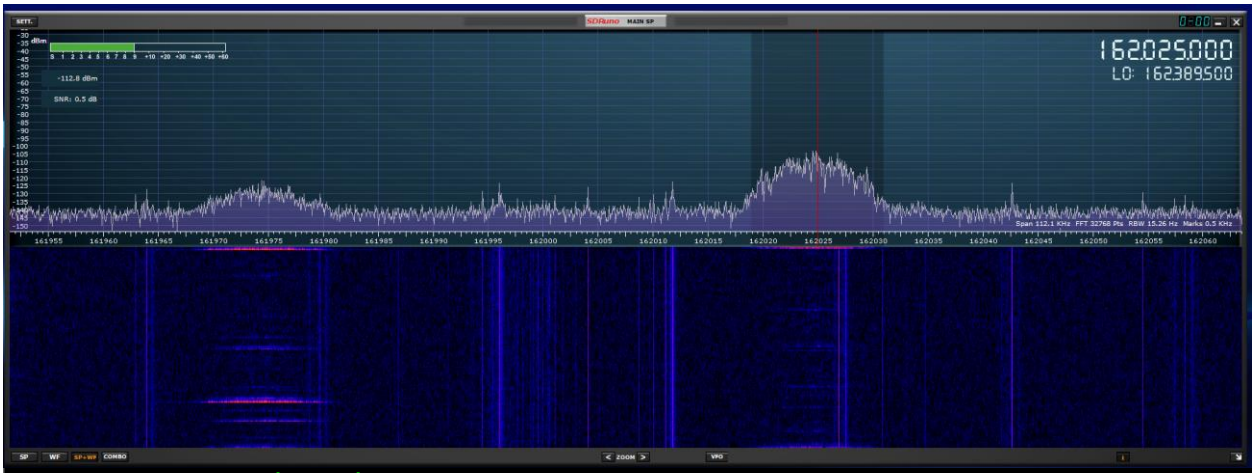
Select one of the two frequencies used for broadcasting AIS data 161.975 or 162.025 MHz



* Launch SDRuno and select the frequency of 161.975 or 162.025. The Mode in SDRuno is FM/NFM with the filter set at 12k.

Launch MultiPSK and select AIS



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High position accuracy (<1Ø m)
Position: Ø73°55.79' W 4Ø°47.34' N
Position fixing device: internal GNSS
Message 27 transmission: No
RAIM (Receiver Autonomous Integrity Monitoring): used
  Sync state: UTC direct
  Slot time-out: 3 frames until slot change
  Received stations: 321
Ø6/17/2Ø17 16:Ø7:34

Message type: 1 (Position Report with SODMA)
No repetitions
MMSI self-identifier: 3675Ø323Ø [Ship] (USA)
Status: under way using engine
Rate of turn (°/min): not available
Speed over ground (knots):  19.2
Course over ground: 274.2°
High position accuracy (<1Ø m)
Position: Ø73°51.26' W 4Ø°48.Ø1' N
True heading: not available
Time stamp: 42 s UTC
Special manoeuvre: not available
RAIM (Receiver Autonomous Integrity Monitoring): used
  Sync state: UTC direct
  Slot time-out: 2 frames until slot change
  Slot number: 1655
Ø6/17/2Ø17 16:Ø7:38
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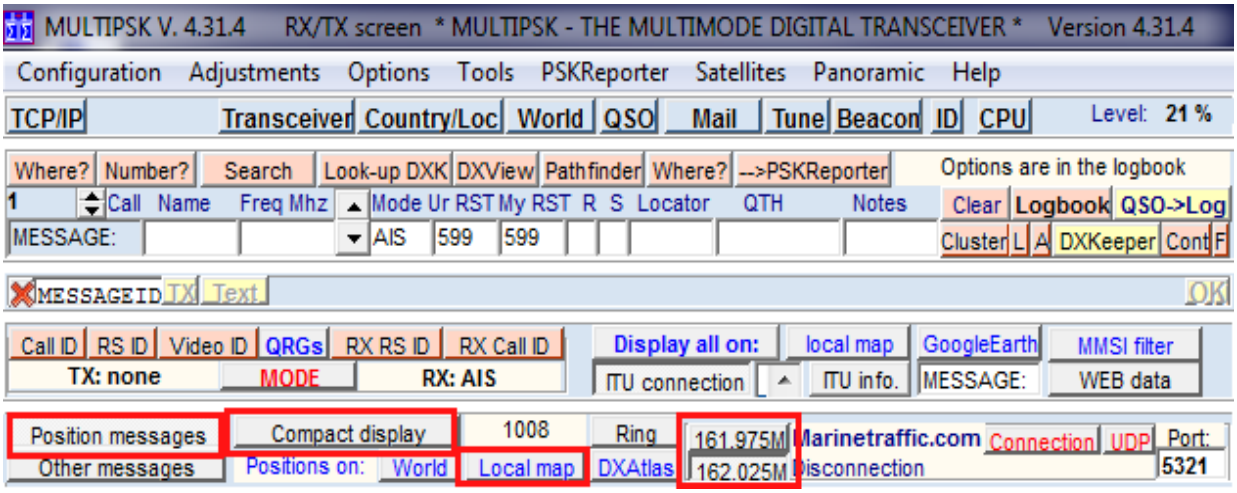
* Center the peak of the AIS burst as shown in the AUX SP Module



* Select Position messages as shown. Uncheck Compact display. Select the AIS frequency as shown.

* Click Local map to display marine vessels on the map as shown.