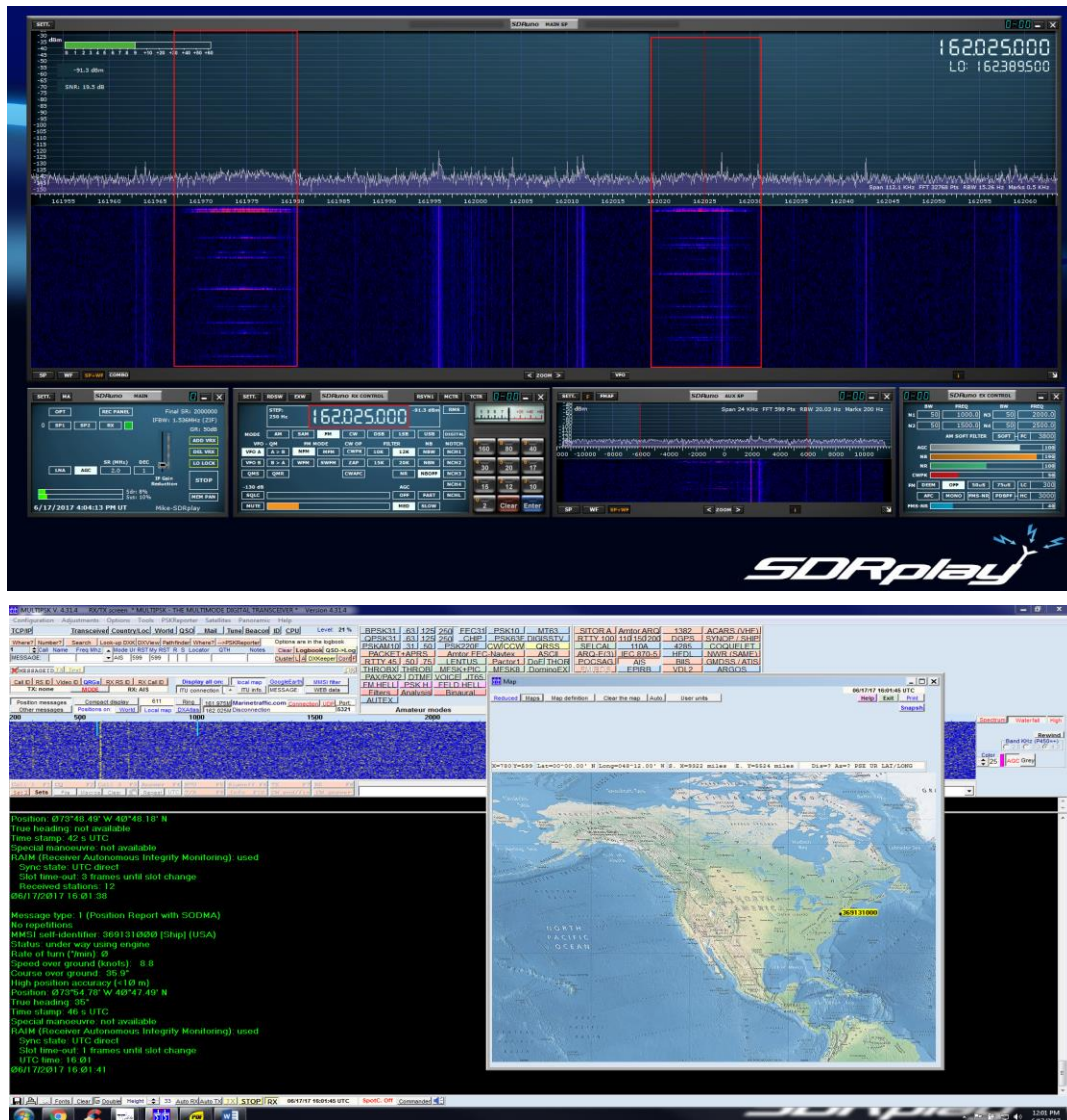




Decoding AIS Marine messages using SDRuno and MultiPSK

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

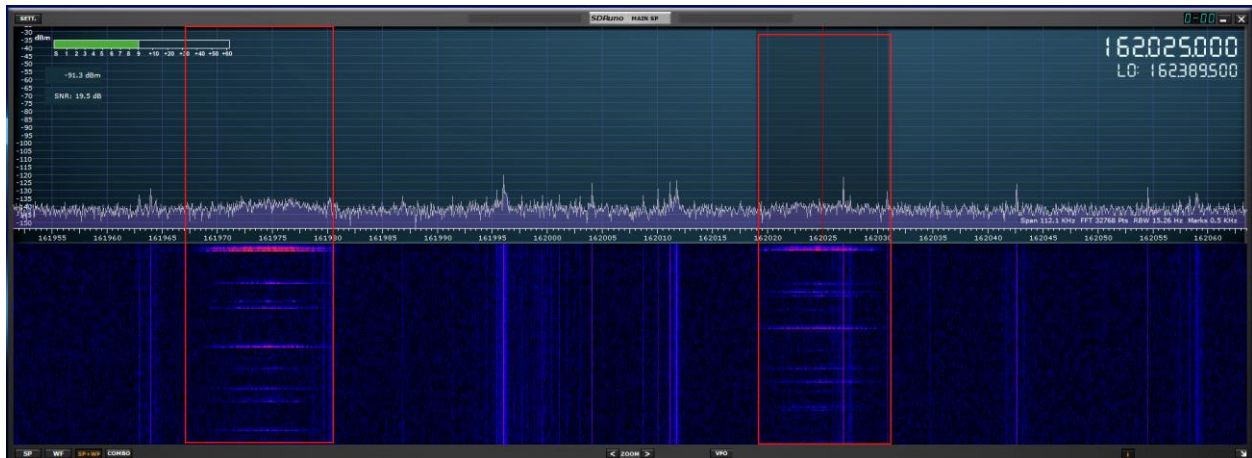


You will need either VB-Cable or VAC installed and configured. This will allow you to pipe the audio out of SDRuno into the MultiPSK decoder.

<http://vb-audio.pagesperso-orange.fr/Cable/>

<http://software.muzychenko.net/eng/vac.htm>

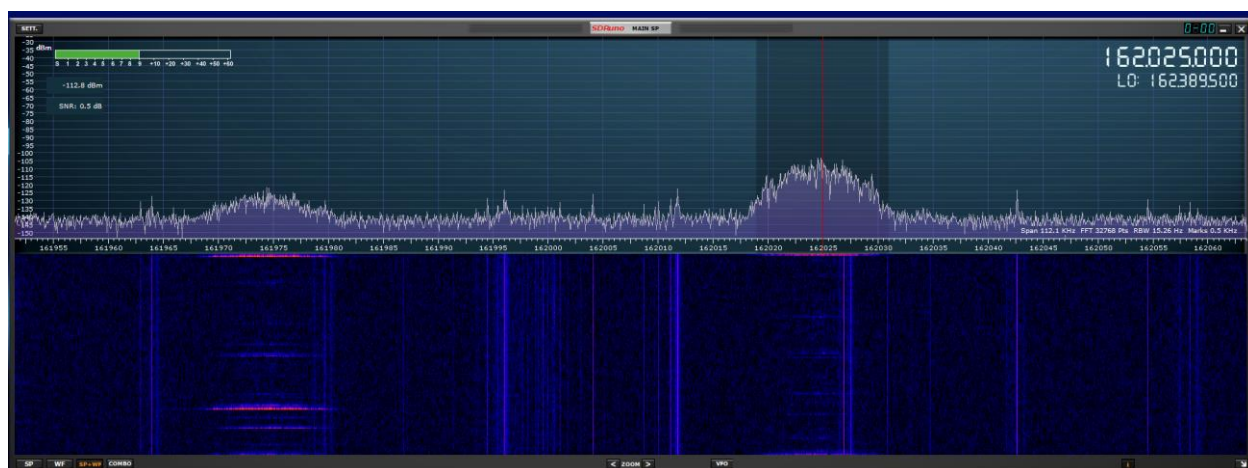
Select one of the two frequencies used for broadcasting AIS data 161.975 or 162.025 MHz



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

Launch MultiPSK and select AIS

BPSK31	63	125	250	FEC31	PSK10	MT63	SITORA	Amtor ARO	1382	ACARS (VHF)
QPSK31	63	125	250	CHIP	PSK63F	DIGISSTV	RTTY 100	110 150 200	DGPS	SYNOP / SHIP
PSKAM10	31	50	PSK220F	CW/CCW	QRSS	SELCAL	110A	4285	COQUELET	
PACKET+APRS			Amtor FEC-Navtex	ASCII		ARQ-E(3)	IEC 870-5	HEDL	NWR (SAME)	
RTTY 45	50	75	LENTUS	Pactor1	DoE THOR	POCSAG	AIS	BIIS	GMDSS / ATIS	
THROBX	THROB	MESK+PIC	MESK8	DominoEX		FMIRDS	EPIRB	VDL2	ARGOS	
PAX/PAX2	DTMF	VOICE JT65	OLIVIA	Contestia				ADS-B	ORBCOMM	
FM HELL	PSK H	FELD HELL	HELL 80	RTTYM						
Filters	Analysis	Binaural	ALF400	141A (ALF)						
AUTEX			FAX	SSTV						
Amateur modes					Professional modes					



High position accuracy (<10 m)
 Position: 073°55.79' W 40°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
 06/17/2017 16:07:34

Message type: 1 (Position Report with SODMA)
 No repetitions
 MMSI self-identifier: 367503230 [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 (<10 m)
 Position: 073°51.26' W 40°48.01' 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
 06/17/2017 16:07:38



* Center the peak of the AIS burst as shown in the AUX SP Module

MULTIPSK V. 4.31.4 RX/TX screen * MULTIPSK - THE MULTIMODE DIGITAL TRANSCEIVER * Version 4.31.4

Configuration Adjustments Options Tools PSKReporter Satellites Panoramic Help

TCP/IP Transceiver Country/Loc World QSO Mail Tune Beacon ID CPU Level: 21 %

Where? Number? Search Look-up DXK DXView Pathfinder Where? -->PSKReporter Options are in the logbook

1 Call Name Freq Mhz Mode Ur RST My RST R S Locator QTH Notes Clear Logbook QSO->Log

MESSAGE: AIS 599 599 Cluster L A DXKeeper Cont F

MESSAGEID TX Text OK

Call ID RS ID Video ID QRGs RX RS ID RX Call ID Display all on: local map GoogleEarth MMSI filter

TX: none MODE RX: AIS ITU connection ITU info. MESSAGE: WEB data

Position messages Compact display 1008 Ring 161.975M Marinetrffic.com Connection UDP Port: 5321

Other messages Positions on: World Local map DXAtlas 162.025M Disconnection

* 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.

