Rankin, Draft
31 August 2018

Sonobuoy Instructions

Sonobuoy Preparation

Have at least 4 sonobuoys prepared AT ALL TIMES.

Remove sonobuoy from the case, Set the sonobuoy up to record, and put a piece of tape on the buoy w/ the settings. You can then double-check the settings before you deploy, and use the tape (or sticky note) to record info to Pamguard.

Note: DO NOT REMOVE excess plastic, parachute, etc. Please!

Preferred Sonobuoy Settings:

53-F	53-G	Setting	Options	Description	Preferred Selection	Comments
☑	☑	RF Channel	1 - 99	2 digit option	Ch 54	
☑	☑	Life	0.5, 1, 2, 4, or 8 hrs	time until scuttle	8 hrs	
☑	☑	Depth	90 ft, 400 ft, 1000 ft	hydrophone deployment depth	90 ft	
☑	☑	Sensor	CSO	Constant Shallow Omni	-	Provides acoustic information (30 Hz - 5 kHz) at a fixed depth of 45 ft
☑	☑	Sensor	CO	Calibrated Omni	-	Provides acoustic information (5 Hz to 20 kHz) at a selectable depth
☑	☑	Sensor	DIFAR	low frequency	DIFAR	Provides acoustic information (5 Hz to 2.4 kHz) with directional information at a selectable
-	☑	Sensor	XCO	Extended Calibrated Omni	-	Supports uplink of calibrated acoustics signals from the CO hydrophone up to 40 kHz; in this mode the GPS subcarrier is center at 45 kHz.
☑	☑	AGC	on/off	automatic gain control	Off	

Folder Structure

The Sonobuoy folder should be set up on the c:\CCES Sonobuoy Cruise Folder.

Within the sonobuoy folder there should be folders for: info, recordings, data. The primary database, psfs, and other misc Pamguard files will be stored in the sonobuoy root directory.

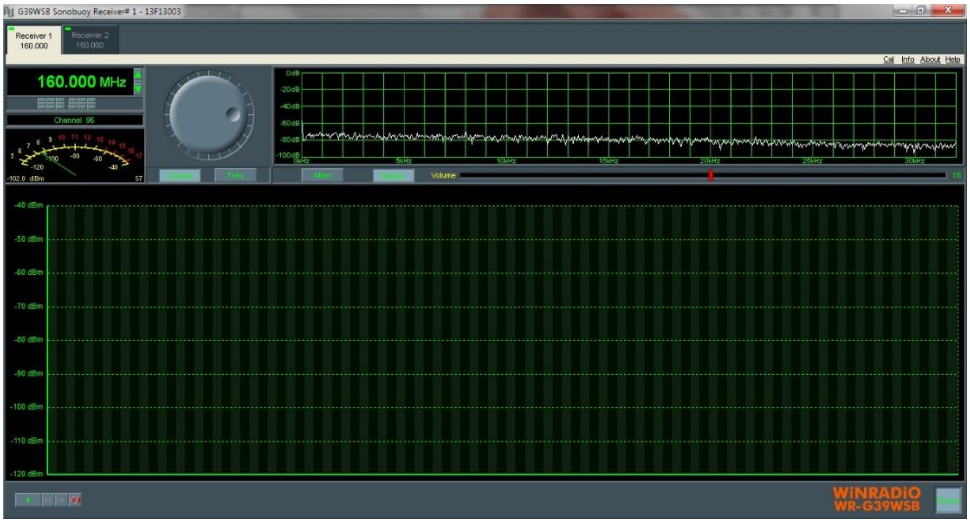
- Info: publications, documentations, etc
- Pamguard
    - Recordings: recordings should be saved to this location
    - Database: save daily backup of database here
    - Psf: save daily backup of psf here
    - Binaries: where binaries will be saved

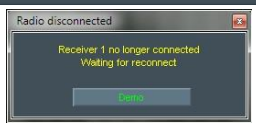
Software Setup

You will use 3 programs to run sonobuoys—Winradio (for the receivers, this is where you will set the sonobuoy channels, remember these channels must match the sonobuoy channels—typically channels 54-62.), RME TotalMix (for the Fireface soundcard, this will act take in the winradio channels and digitize/output them for Pamguard), and Pamguard—for recording and data collection/DIFAR analysis.

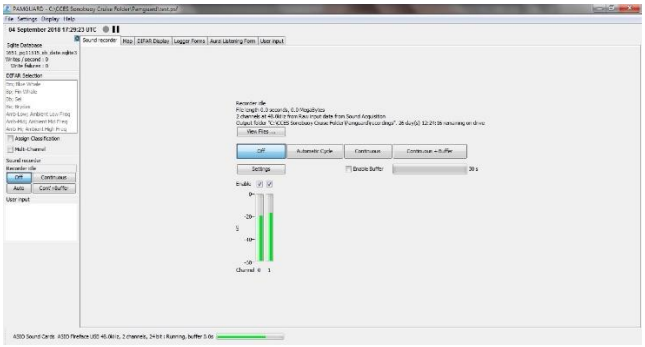
Follow these steps to collect sonobuoy recordings/metadata using the 'sonobuoy computer':

1. TURN OFF WINRADIOS- BEFORE you muck w/ the computer, turn off the WinRadios in the ARS (push the button on the front of the blueish-green WinRadios)
2. Turn on Computer- in the morning (to be ready) or before you deploy a sonobuoy
3. Open Sonobuoy Folder- shortcut on desktop.
4. FIREFACE On- *You never really need to turn it off!*
5. Open PamGuard – shortcut on desktop, everything should be ready to go!
    a. Choose the correct psf file (should be the same unless you use 53G buoys)
    b. Check that Pamguard sees the fireface (Settings -> Sound Acquisition should read "ASIO Sound Card – Fireface)
6. Turn on WinRadio 1 (in this order!!)
7. Turn on WinRadio 2 (in this order!!)
8. Open WinRadio software program- shortcut on desktop
    a. Check Channels- quickly turn off WinRadio Ch1 (push button on front of WinRadio)—confirm that Ch1 on WinRadio program goes dead. Once you confirm, turn it back on. You only need to check 1 channel.





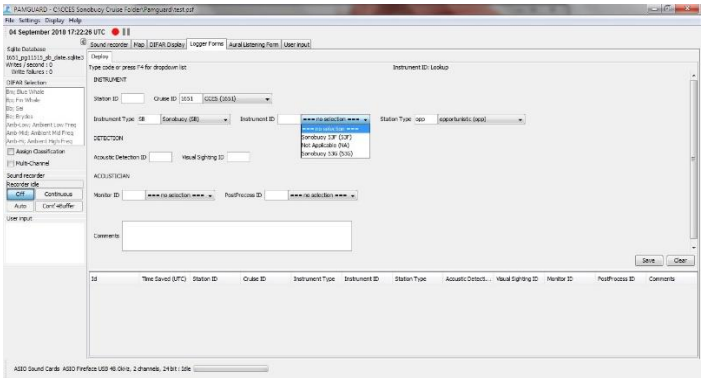
9. Check channels on Pamguard- . First, hit the red button at the top of the Pamguard screen to have it run the sounds (this does not record, only lets the sounds run through Pamguard). Quickly turn off WinRadio Ch1 (in ARS) and see that Ch0 in Pamguard stops working (either top spectrogram in DIFAR tab, or left vertical bar in Recording tab)



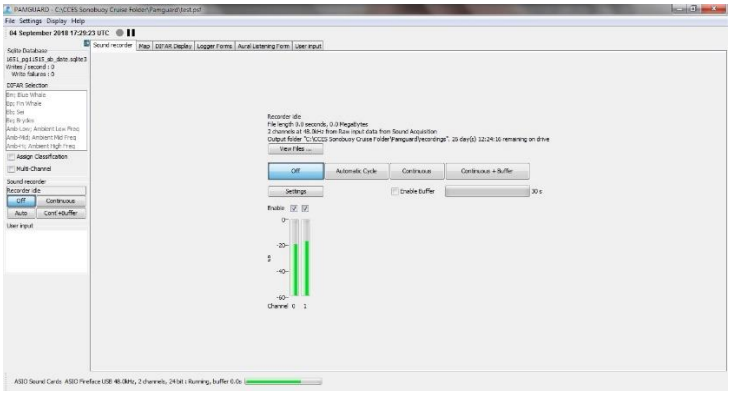
10. YOU ARE READY TO RECORD!!!

DEPLOY

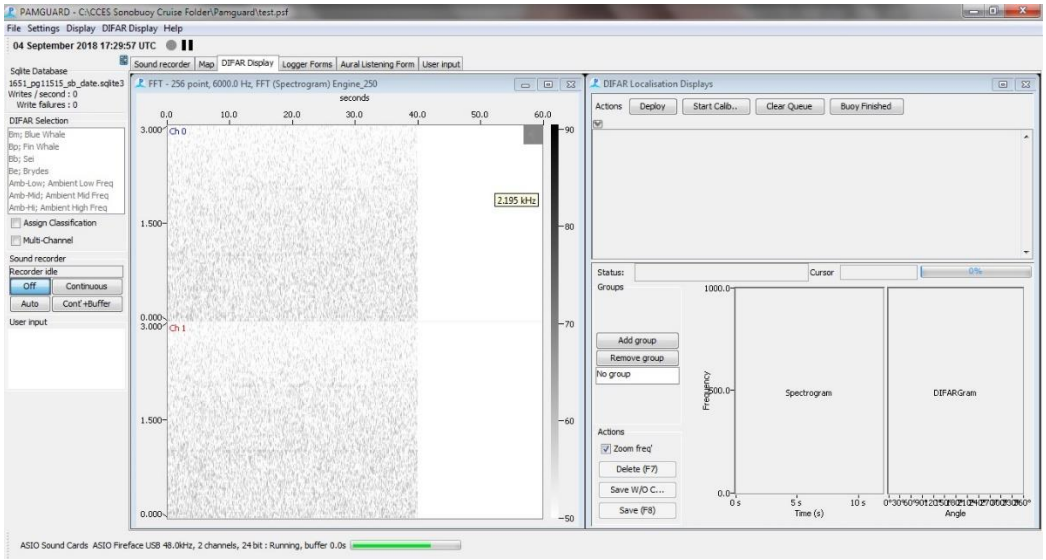
1. Pamguard Logger Forms- Enter Station ID (incremental increase), Instrument ID (will be 53F, unless you use a GPS buoy—those are 53G), Station type will always be 'opp'. Ignore Acoustic ID, but if you have a visual ID #... please put that in (or, if there are several, put them in the comments). Please put YOUR name in the 'monitor' section.



2. Record. Hit 'Continuous + Buffer' to start recording. Confirm that recordings are being saved (you will see files of increasing size saved in the recordings folder)



3. Hit Deploy Button to mark the deployment (either mark lat/long or manually enter it). This button is on the DIFARDisplay tab.



   a. If you make a mistake and accidentally hit 'deploy', PLEASE mark a comment to delete that one! Then do it again when you are ready!

4. When you are finished:
   a. Hit 'Buoy Finished' on DIFARdisplay tab.
   b. STOP Recording on Sound Recorder tab.
   c. Make any relevant comments

DATA BACKUP

1. BACKUP DATABASE (SAVE COPY OF DATABASE, ADD NAME TO END OF FILENAME, SAVE IN DATABASE FOLDER)
2. BACKUP PSF (SAVE COPY OF PSF, ADD NAME TO END OF FILENAME, SAVE IN PSF FOLDER)