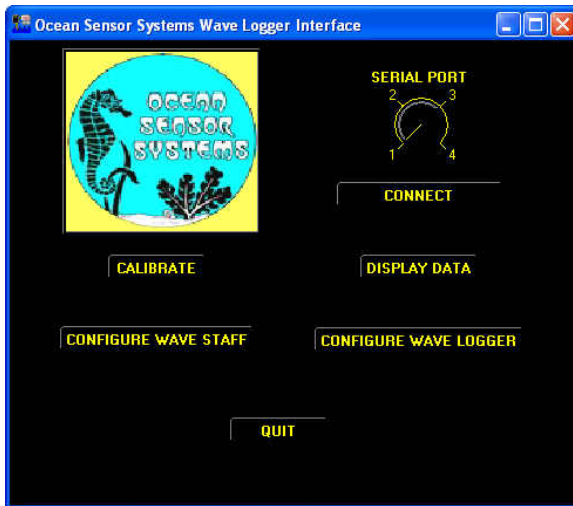


Appendix B: Wave Staff and Wave Staff III Calibration Procedure

Every Staff and Wave Staff Unit has a variance in characteristics. A calibration must be performed after the two are assembled together. If the Staff is changed, without recalibration, the accuracy of the calibration could be off as much as 10%.

To calibrate the newly assembled unit the following steps must be performed:

1. Connect the Wave Staff to a PC using a serial cable.
2. Start the Wave Staff Interface Software on the PC. An Interface Program may be downloaded from our web site www.oceansensorsystems.com.

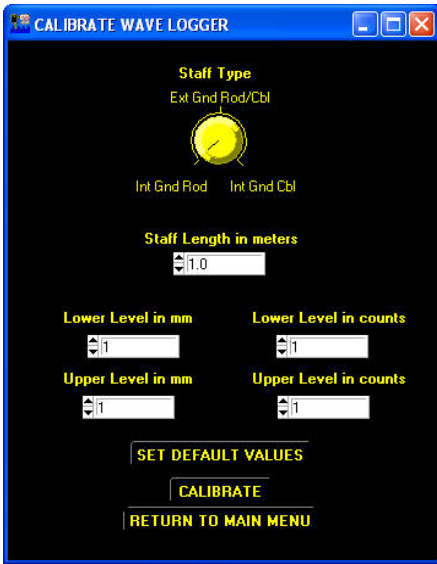


3. Select the serial port (typically #1) then click the CONNECT button. You should see a new window stating that you have successfully connected.
4. Now return to the first window and click on the CALIBRATE button. A Calibrate Wave Logger window should appear. In the new window, enter the staff length of the unit you are calibrating and the staff Type.

For Wave Staff III and Wave Logger III with Coaxial Rod Staff select Int Gnd Rod

For Wave Staff III and Wave Logger III with Coaxial Cable Staffs select Int Gnd Cbl

For Wave Staff and Wave Logger with Rod and Cable Staff select Ext Gnd Rod/Cbl



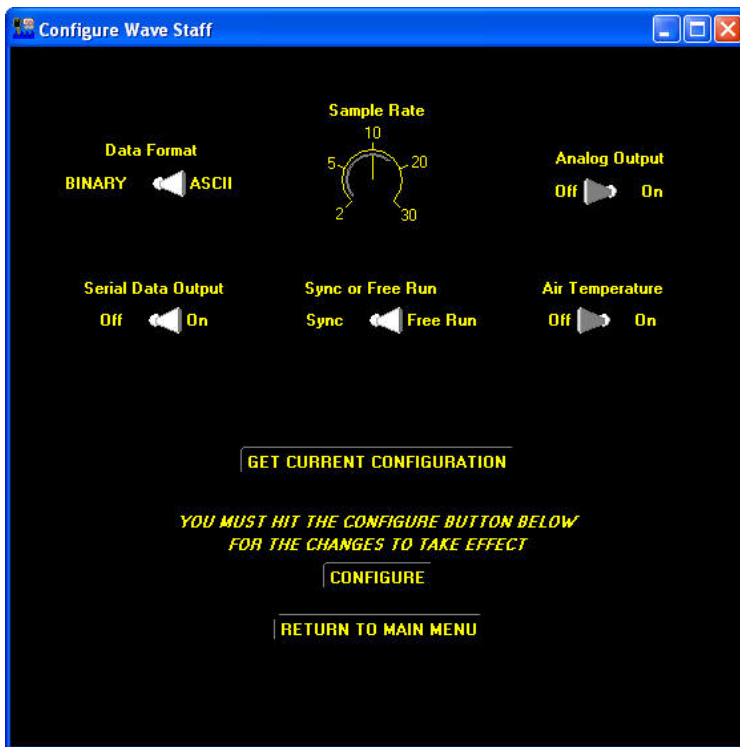
5. Then click on the SET DEFAULT VALUES button. You should see a SUCCESS window.

If the Set Default Test Results are available for the staff SET DEFAULT VALUE and skip to step 10.

These Default Test Results may be received from us when extra staffs are purchased with a unit or units and we have calibrated them for you. See paperwork that shipped with units.



6. Return to the start window and click the CONFIGURE button.
The unit will need to be configured to take two measurements for the calibration.

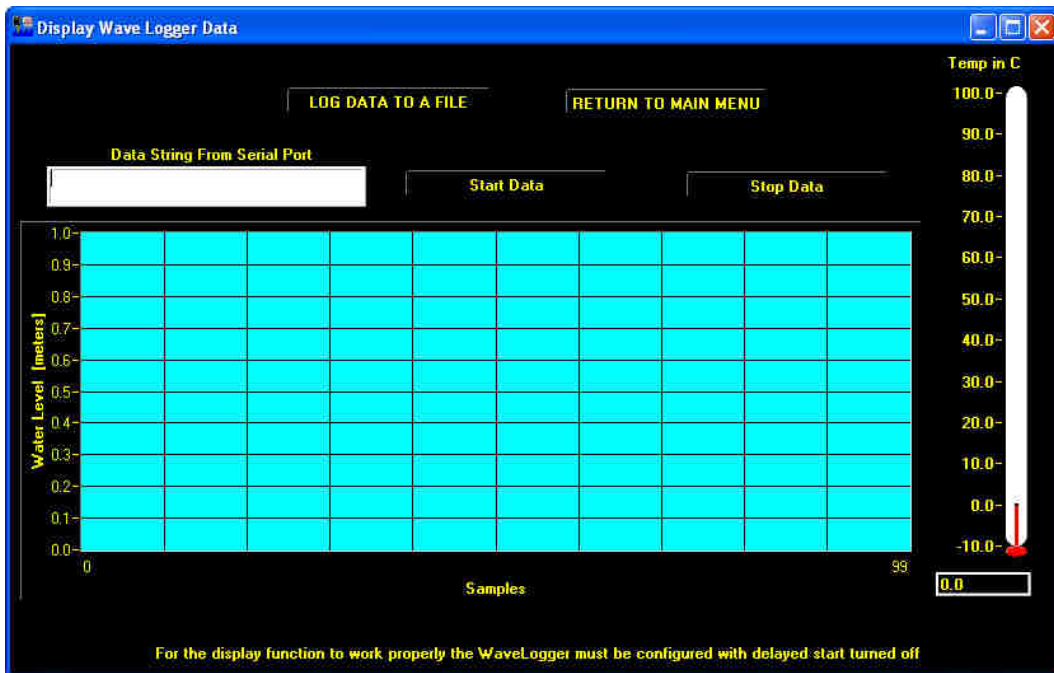


Make sure the settings are configured:

- Set Data Format to ASCII
- Set Water Temperature to off
- Set Serial Data Output to On
- Set Sync or Free Run to Free Run

Now click the CONFIGURE button. You should see a SUCCESS window.

7. Return to the start window and click Display Data to view the data.



8. With a small piece of tape mark two points on the staff; typically at 20% and at 80% of the length of the staff.
 9. Now take two readings at the marked locations in a convenient pool or pond. Be sure to have the ground stud with wire connected to the water and keep the staff at least 6 to 12 inches from other objects. The data readings are the first 4 digits in the window marked "Data String From Serial Port".
 10. Now return to the first window and click on the CALIBRATE button. A Calibrate Wave Staff window should appear. In the new window enter the staff length of the unit again and staff type.
 11. Enter Lower Level measurement point (20% typically) in mm and the Data measurement in counts.
 12. Enter the High Level measurement point (80% typically) in mm and the Data measurement in counts.
- Example: A 4 meter staff at 20% and 80 % would be 800mm / 850 counts for the lower measurement and 3200mm / 3010 counts for the higher measurement
13. Click the CALIBRATE button. You should see a SUCCESS window.
 14. Now if you take the same two measurements again the data should be correct. Typically better than 0.1% however it depends on how accurate you were in taking the measurements. The object here is to be very accurate both times.

To convert the Data measurement in counts to meters: multiply the Staff length in meters, times the reading, divided by 4095.

15. After you finish Calibrating the Unit you must remember to reconfigure the unit to your desired requirements.