



# Sound Pressure Level Analyzer & Hydrophone System 95-SPL200-00 Series



## General Product Specifications

Model Number	Product Description
95-SPLO200S00-02	SPL Analyzer w/ HBS Hydrophone Classic
95-SPLO200S01-03	SPL Analyzer w/ HBS Hydrophone Pro



For direct access to the latest copy of this manual, please scan this QR Code or refer to the *Product Manuals* section at:

[www.Hydro-Bioscience.com](http://www.Hydro-Bioscience.com)

## Table of Contents

SAFETY SYMBOLS AND TERMS .....	3
Safety Symbols .....	3
Safety Terms.....	3
GENERAL SAFETY REQUIREMENTS .....	4
Precautions While Working with Batteries.....	4
DOT Shipping Regulations.....	4
Limitations and Disclaimers .....	4
QUICK ASSEMBLY GUIDE .....	5
GETTING TO KNOW YOUR SPL .....	6
Powering the SPL.....	6
User Settings .....	7
Graphs .....	10
Data.....	13
STORAGE & MAINTENANCE .....	15
Storage .....	15
Maintenance .....	15
PRODUCT DIMENSIONS.....	15
SPECIFICATIONS .....	<b>Error! Bookmark not defined.</b>
GENERAL WARRANTY.....	16

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# SAFETY SYMBOLS AND TERMS


## Safety Symbols

The following symbols may appear on the product:

	Direct current (DC)		Caution, risk of danger
	Alternating current (AC)		Warning, risk of electric shock
	Both direct & alternating current		Risk of explosion
	Ground terminal		Recycle lithium-ion batteries
	Chassis ground		Do not incinerate
	Power on/off		Power port
	Battery/cell power connection		Battery/cell power connection
	Communication port		Solar panel port
	Repair/service		AC connection port
	Navigation light connection		MyQuattro App communication
	Conforms to European Union directives		
	Complies to the Federal Communications Commission		
	Complies with the Restriction of Hazardous Substances Directive (2002/95/EC)		
	This product complies with the WEEE Directive (2002/96/EC) marking equipment. The affixed product label indicates that you must not discard this electrical/electronic product in domestic household waste.		

## Safety Terms

Terms in this manual:

-  **Warning/Caution:** ‘BE ALERT – YOUR SAFETY IS INVOLVED’. If you do not follow these safety instructions, personal injury, loss of life, and/or property damage may occur.

Terms on the product:

**Danger:** Indicates an immediate hazard which will result in death or serious injury.

**Warning:** Indicates a hazard which may result in death or serious injury.

**Caution:** Indicates a hazard which may result in minor or moderate injury.

# GENERAL SAFETY REQUIREMENTS



**WARNING - Read this manual thoroughly before using the product.**

## Precautions While Working with Batteries

1. Risk of fire, explosion, and burns. Do not subject the battery to heat above 100°C (212°F) or incinerate.
2. Keep away from children and pets. NEVER put batteries in your mouth.
3. Swallowing may lead to serious injury or death. If ingested, immediately contact your physician or a poison control center.
4. Use only DPI or HBS branded and approved battery chargers.
5. Do not touch or connect the terminals of the battery to each other.
2. Do not subject the battery to a short circuit.
3. Do not place the battery near fire, in direct sunlight, or in high temperature locations.
4. Do not disassemble or modify the battery.
5. Do not crush, step on, or subject the battery to strong impact.
6. Do not smoke around or near the battery.
7. Immediately discontinue use of the battery if it emits an unusual smell, feels hot, expands, or appears abnormal in any way.
8. Inspect battery for any damage before using. Do not use battery if it has been damaged in any way.
9. Dispose of used batteries promptly according to local recycling or waste regulations.

## DOT Shipping Regulations

This battery ships Class 9. It cannot be carried by a passenger aircraft.

## Limitations and Disclaimers

Due to environmental and manmade conditions contributing to excessive nutrient loading and many other factors, varying degrees of product efficacy should be expected and therefore, there is no guarantee regarding the total prevention or eradication of algae or algal blooms. HBS Algae Remediation products do not treat any body of water to produce potable or drinkable water. HBS Algae Remediation Products do not treat for other bacterium, pollution, viruses, toxins, micro-organisms, or other matter which may be present, and other methods of treatment may be needed to provide prevention, remediation, or elimination of such. HBS Algae Remediation Products are not a replacement for other water treatment methods, including, but not limited to, aeration, chlorination, oxidation, skimming, or other treatments meant to prevent, reduce, or eliminate other bacterium, pollution, viruses, toxins, micro-organisms, or other matter which may be present. HBS Algae Remediation Products are not to be utilized for off-label or unintended uses. Such off-label or unintended use may void the product's warranty and/or cause damage to persons or property.

# QUICK ASSEMBLY GUIDE

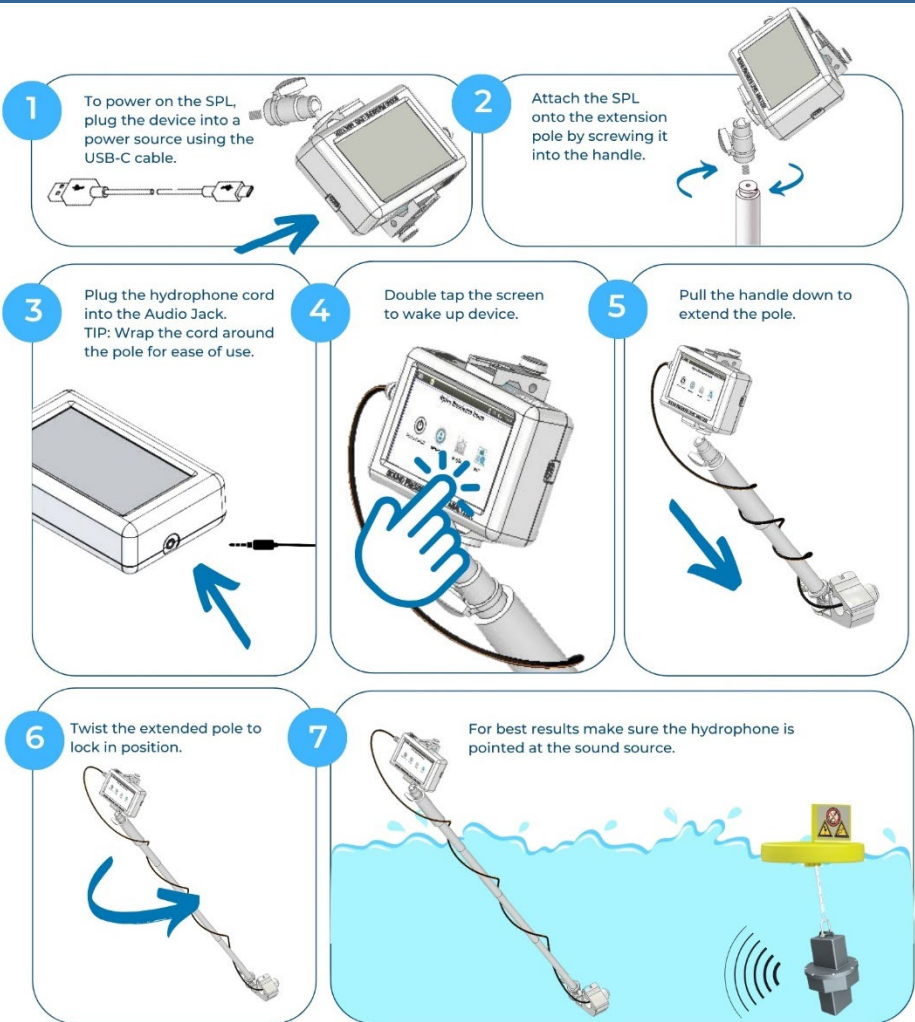


Figure 1: Quick Assembly Guide

# GETTING TO KNOW YOUR SPL

## Powering the SPL

1. The device is shipped fully powered down. To activate, the device **MUST** be connected to power from a PC, 5v battery pack or USB charger using the USB-C cable provided. This screen will appear:

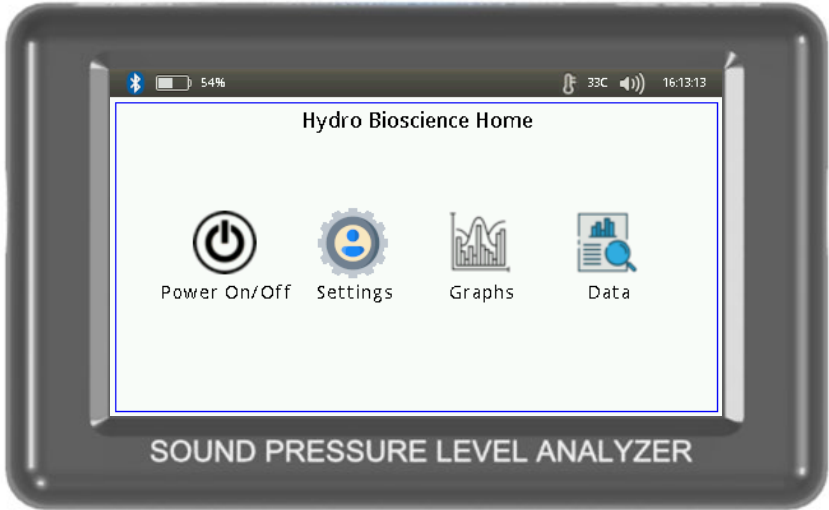


Figure 2: HBS Home Screen

2. To put the device in sleep mode, simply tap the Power On/Off icon.
3. To wake the device from sleep mode, double tap the screen.
4. To fully power off the device, tap and hold the Power On/Off icon until screen turns off. It may only be reactivated again, by connecting to Power source.

## User Settings

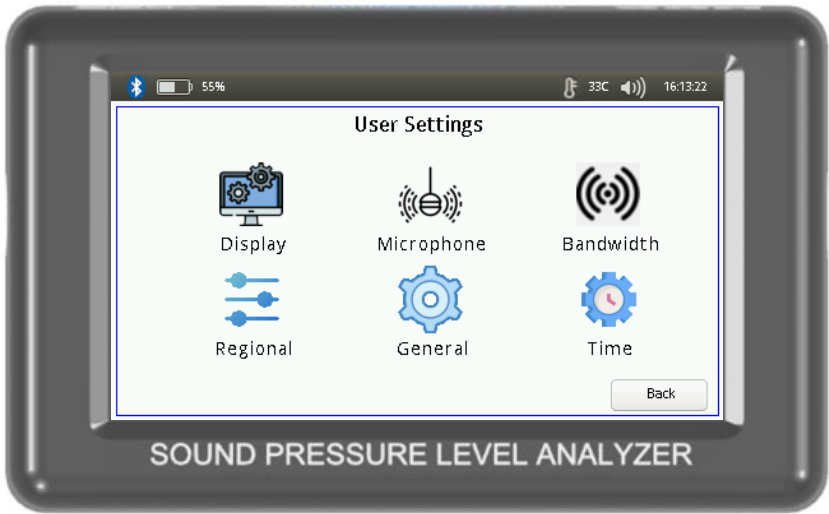


Figure 3: Settings

1. At any screen, press the Home/Back button to return to the home screen or previous screen.

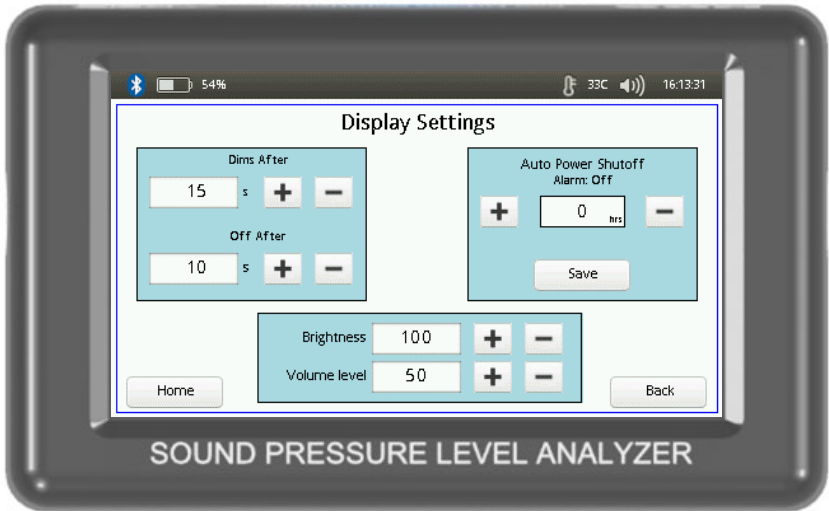


Figure 4: Display

2. Adjust the display timeout to set the amount of time the device automatically goes into sleep mode or set to 0 to have the screen always active/never time out. Note: battery power will last longer when a timer is set.

- Adjust the Auto Power Shutoff Timer to set the amount of time the device fully powers off or set to 0 to never auto power off. Note: If the Timer is on, the device will need to be connected to a power source to turn back on.

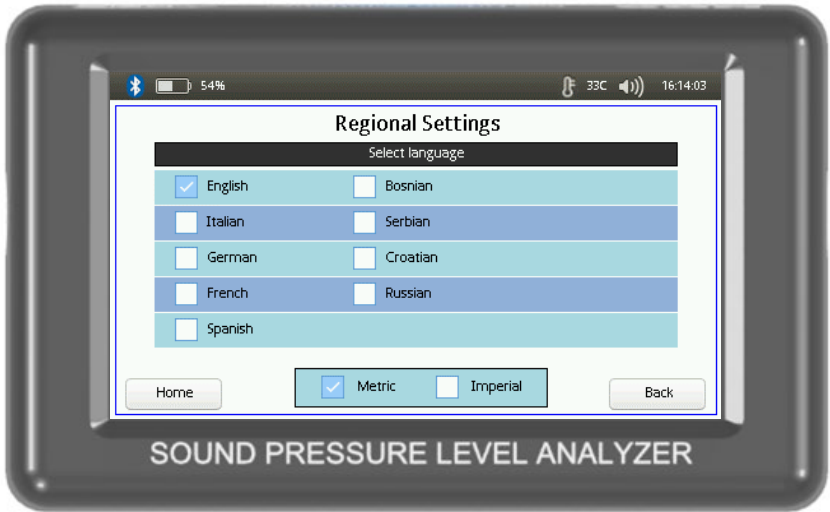


Figure 5: Regional

- Use Regional settings to select a language and measurement/unit system preference.

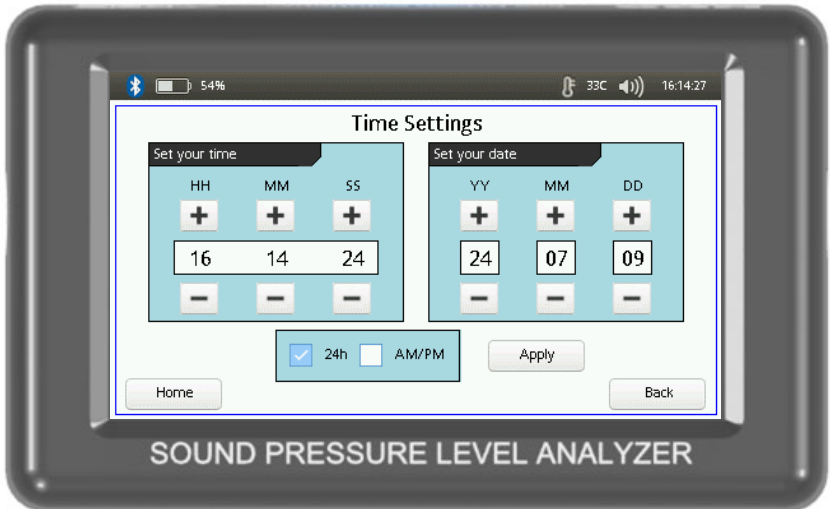


Figure 6: Time

- Adjust the time/date settings for your time zone and select your preferred clock format (24h or AM/PM). Hit apply to save changes.

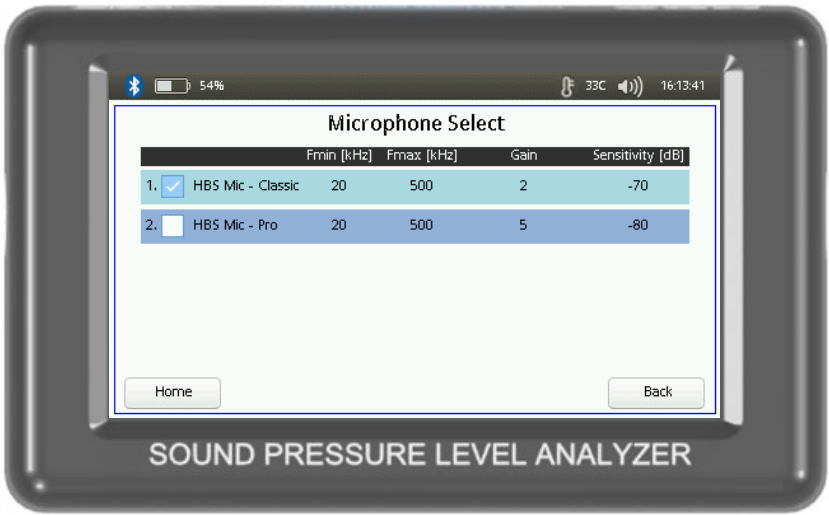


Figure 7: Microphone Select

6. Select the correct microphone to be used. Check and adjust this setting every time a new microphone is connected.

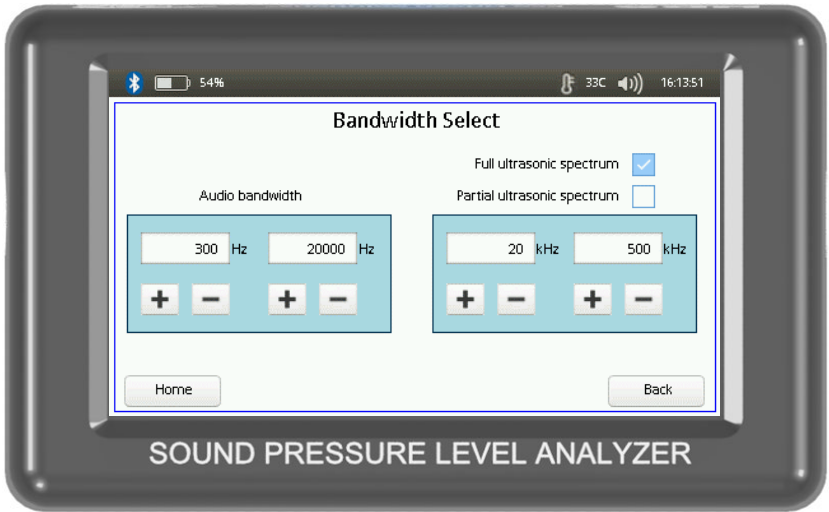


Figure 8: Bandwidth Select

7. Bandwidth settings are automatically set when a microphone is selected, but this setting allows the user to further adjust the bandwidth if needed.

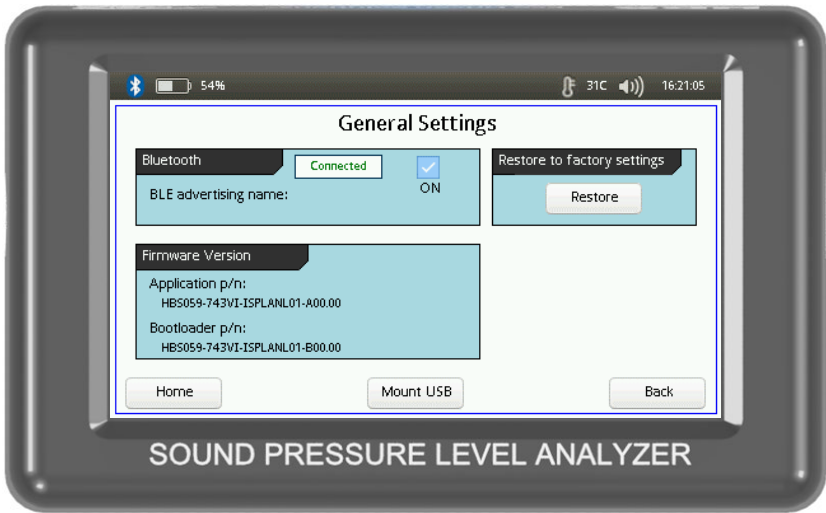


Figure 9: General Settings

8. Check the box to enable Bluetooth. Bluetooth allows users to connect to a smart device to transfer data or listen using an external speaker. Bluetooth options should comply with TSA when travelling and should be turned off when necessary.

## Graphs

1. Selections shown on graph displays:
  - a. Sens: adjusting the sensitivity level will help filter out any untargeted frequencies/noise.
  - b. Zoom\_x: Toggles between magnified graph levels
  - c. Speaker icon: mutes/unmutes the device
  - d. Graph Type: Toggles between one of four spectrograms:
    - i. The first screen is titled 'LED Bar Graph'
    - ii. The second screen is titled 'dB Bar Graph'
    - iii. The third screen is titled 'Spectrogram'
    - iv. The fourth screen is titled 'Spectrum Graph'
  - e. Start/Stop: Records or stops the recording of the frequencies captured into a file which can then be viewed under 'Data'
  - f. Playback: Plays back the last file of frequencies recorded.

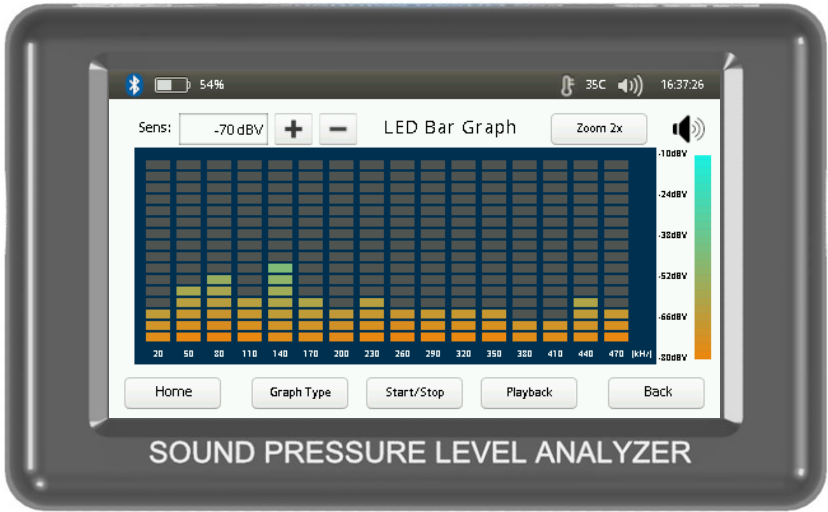


Figure 10: LED Bar Graph

1. LED Bar Graph visually displays the decibel equivalent of the noise summation over bandwidth.

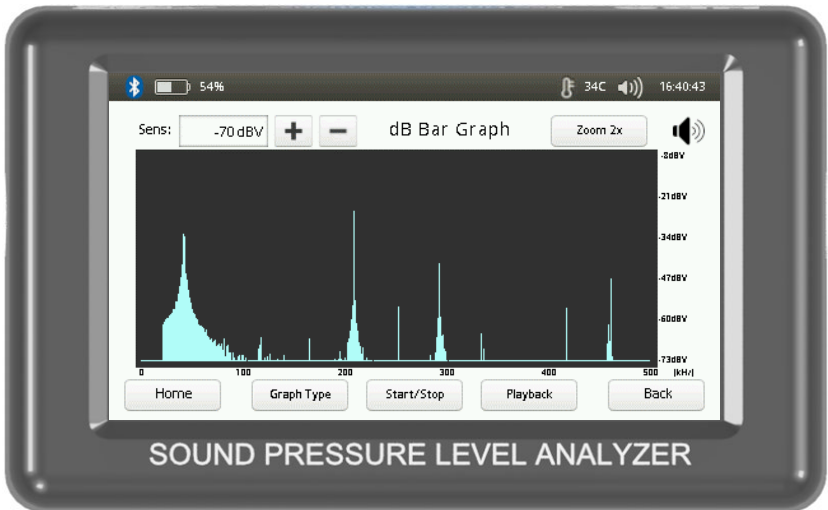


Figure 11: dB Bar Graph

2. dB Bar Graph visually displays both the frequency and the intensity (amplitude) of the frequency received.

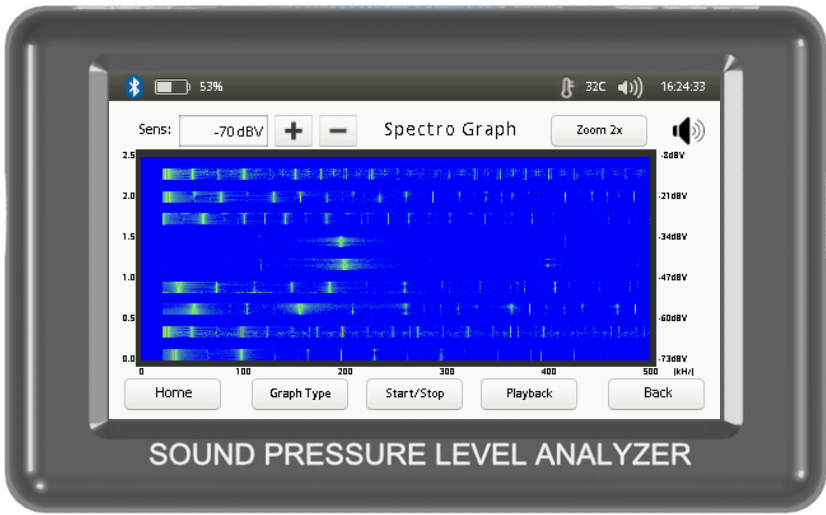


Figure 12: Spectrogram

3. Spectrogram is a visual representation of the spectrum of frequencies of a sound as it varies with time.

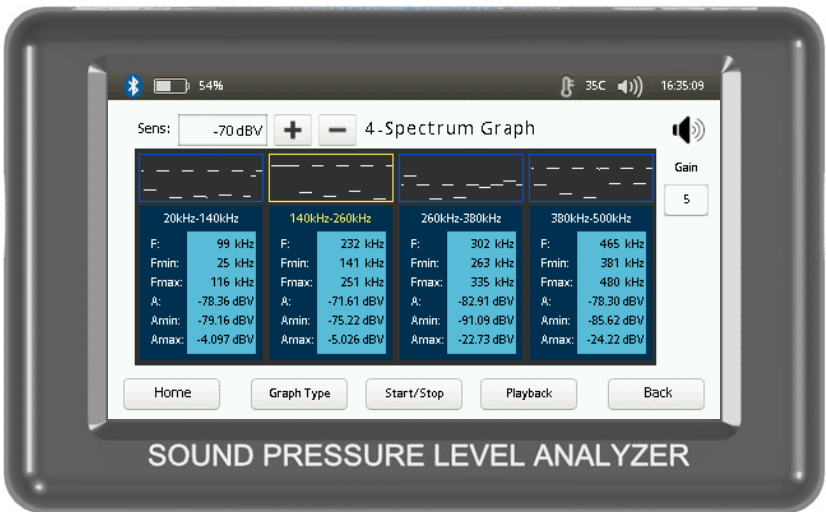


Figure 13: Spectrum Graph

4. Spectrum Graph categorizes and displays the frequency detected into narrower bandwidth fields. These narrower bandwidth fields are listed below the Viewer such as 20kHz to 140kHz.
5. As sound pressure frequencies are detected, each of the 4 bandwidth fields populates with a detected frequency that falls within that bandwidth.

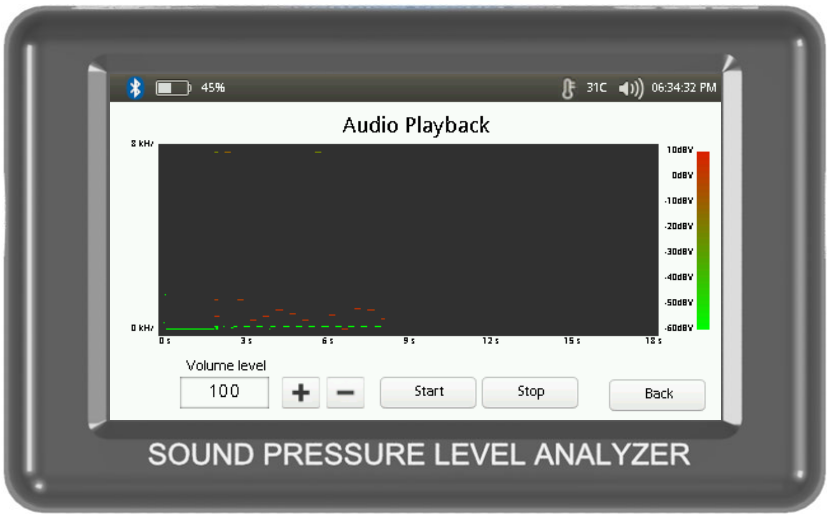


Figure 14: Audio Playback

6. On any of the graph screens tap audio playback. This allows the user to listen back to the last recording.

## Data

1. Screen Selections:
  - a. Up/down arrows: Use to scroll through saved files
  - b. Trash can: Deletes selected file
  - c. Folder/pencil: Rename selected file

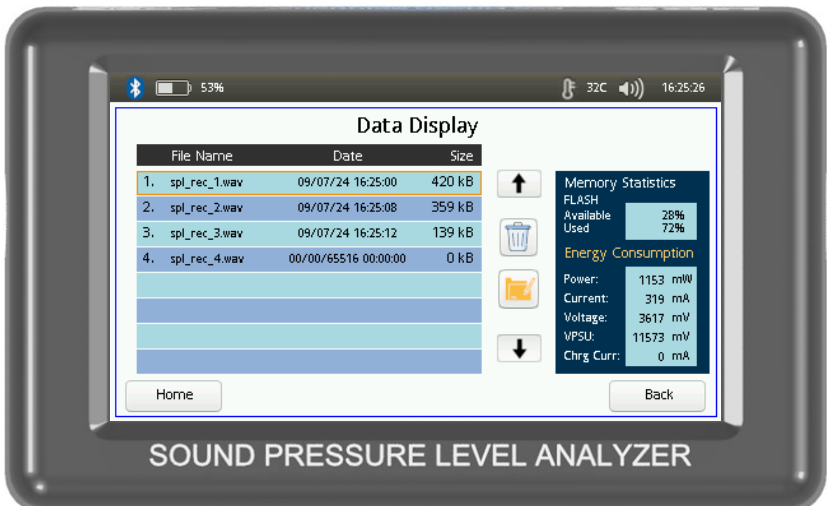


Figure 15: Data Display

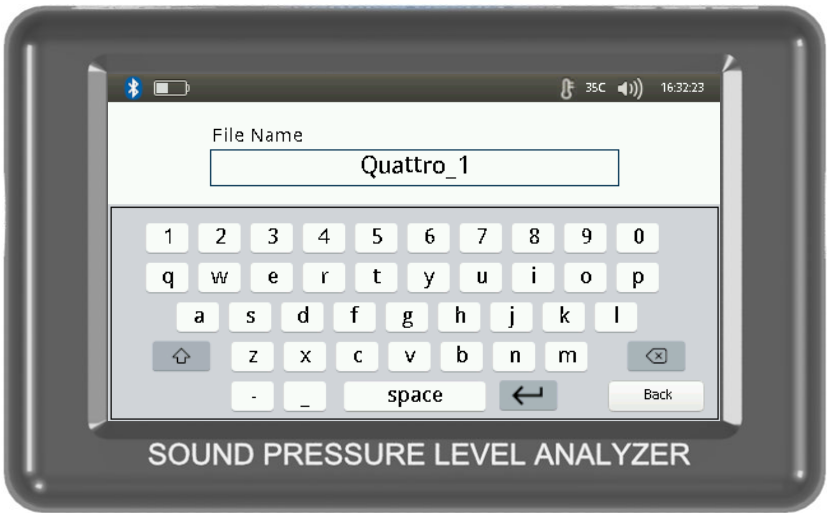


Figure 16: Keyboard – Rename selected file

## SOFTWARE UPDATES

1. Check for software updates at <https://www.hydro-bioscience.com/resources/software-updates/>.
2. Download the latest firmware to your computer.
3. Plug in the SPL to the computer with the provided USB cable.
4. The SPL will usually ask “Allow access to mass storage?” Select Yes. If the SPL does not ask, select Settings – General – Mount USB.
5. The SPL should now be mounted on the PC. Copy the firmware .bin file to the SPL.
6. Unplug the SPL. The device will ask “Install new firmware?” Select Yes.
7. The firmware upgrade process will take about one minute, then the device will automatically reboot. You will now be using the latest version of firmware.

## STORAGE & MAINTENANCE

### Storage

When not in use, store SPL, Hydrophone, and Extension stick in the SPL case. When storing the SPL analyzer for more than 1 week, make sure to turn the SPL analyzer fully off by holding the power icon until the screen turns off. Store in a safe, dry environment. Do not store in an environment that exceeds 40°C (104°F).

### Maintenance

Clean with soap water only.

**DO NOT USE HARSH CLEANING CHEMICALS SUCH AS ACETONE ON SPL.**

## PRODUCT DIMENSIONS

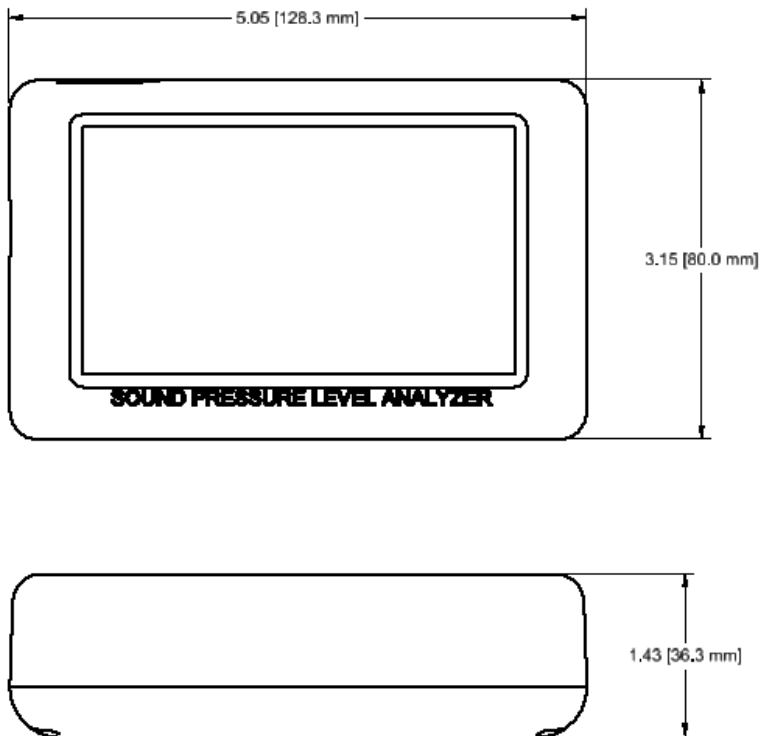


Figure 16: Product Dimensions

# GENERAL WARRANTY

Hydro BioScience, LLC (HBS) warrants that the product will be free from defects in materials and workmanship for a period of 1 year from the date of purchase of the product by the original purchaser from HBS. This warranty only applies to the original purchaser and is not transferable to a third party.

If the product proves defective during the warranty period, HBS either will repair the defective product without charge for parts and labor or will provide a replacement in exchange for the defective product. Parts, modules, and replacement products used by HBS for warranty work may be new or reconditioned like new performance. All replaced parts, modules and products become the property of HBS.

To obtain service under this warranty, customer must notify HBS of the defect before the expiration of the warranty period. Customer shall be responsible for packaging and shipping the defective product to the service center designated by HBS, and with a copy of customer proof of purchase. Customer must ensure that an RMA (Return Material Authorization) number has been received from HBS. This RMA number must be printed on outside of the return packaging.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. HBS shall not be obligated to furnish service under this warranty:

- a) to repair damage resulting from attempts by personnel other than HBS representatives to install, repair or service the product;
- b) to repair damage resulting from improper use or connection to incompatible equipment;
- c) to repair any damage or malfunction caused by the use of non-HBS supplies;
- d) to service a product that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product.

Please contact the nearest HBS's Sales and Service Offices for services. For better after-sales service, please visit [www.hydro-bioscience.com](http://www.hydro-bioscience.com) and register the purchased product online. Warranty may also be requested on-line, along with obtaining an RMA, automatically.

Excepting the after-sales services provided in this summary or the applicable warranty statements, HBS will not offer any guarantee for maintenance declared or hinted, including but not limited to the implied guarantee for marketability and special-purpose acceptability. HBS should not take any responsibility for any indirect, special, or consequent damages.

For Customer Service, and to request an RMA or obtain Return Information, please call Hydro Bioscience, LLC at 888-500-5011.

For all returns, clearly mark the RMA # on the outside of the packaging and send to:

Hydro Bioscience, LLC  
414 Century Court  
Piney Flats, TN 37686  
RMA Number: \_\_\_\_\_

