



S10P Advanced DSP Operation and Software User Manual

S10P

Small Footprint 500W Powered Subwoofer

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DOCUMENT CONVENTIONS

This document contains the Advanced DSP Operation and Programming Software Instructions for the Wisdom Audio S10P Small Imprint Subwoofer. This manual is to be used in conjunction with the Wisdom Audio S10P Owner's Manual, which contains general safety, installation, and operation instructions. It is important to read the Wisdom Audio S10P Owner's Manual before attempting to use this product. Pay particular attention to following:

WARNING: Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in injury or death.

CAUTION: Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in damage to or destruction of part of or the entire product.

Note: Calls attention to information that aids in the installation or operation of the product.

Safety

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of any polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two prongs and a third grounding point. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. **WARNING:** To reduce the risk of fire or electric shock, this apparatus should not be exposed to rain or moisture and objects filled with liquids, such as vases, should not be placed on this apparatus.
16. To completely disconnect this equipment from the mains, disconnect the power supply cord plug from the receptacle.
17. The mains plug of the power supply cord shall remain readily operable.

IMPORTANT SAFETY INSTRUCTIONS

To reduce the risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified personnel. To reduce the risk of fire and shock do not expose unit to rain or moisture. The unit should be connected to an earth grounded AC electrical socket. The unit should be operated in a well ventilated area. Minimum clearance is 2 inches from the ventilation openings.



FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

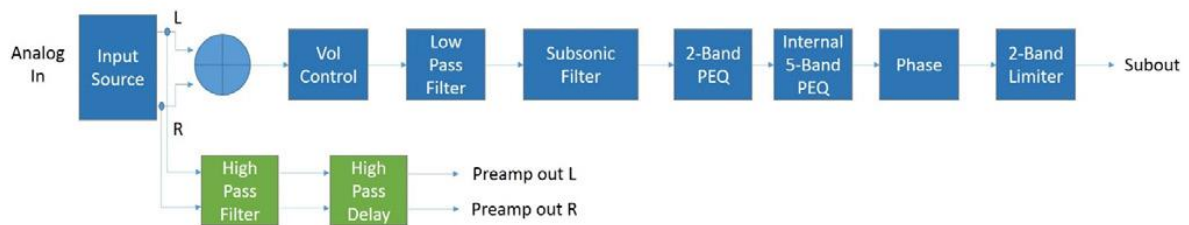
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Introduction

This manual covers the operation of the advanced DSP controls of the S10P amplifier. It describes the tools needed to access the controls, the features available, and the operation of the controls.

There are two accessible levels, User Level and Expert Level. The User Level is available from the rear panel via the Feature Control Knob. This is described in the [DSP Control Via Rear Panel \(User Level\)](#) section of this manual.

The Expert Level is only accessible by using the Wisdom Audio S10P GUI (Graphical User Interface) on a PC (Personal Computer). Details of this are described in the [DSP Control Via PC GUI \(Expert Level\)](#) section of this manual. Below is a Block Diagram of all the available controls. The 5-Band PEQ and 2-Band Limiter are not available at the User Level. A full [Flow Chart](#) showing all available DSP Features is provided at the end of this document.

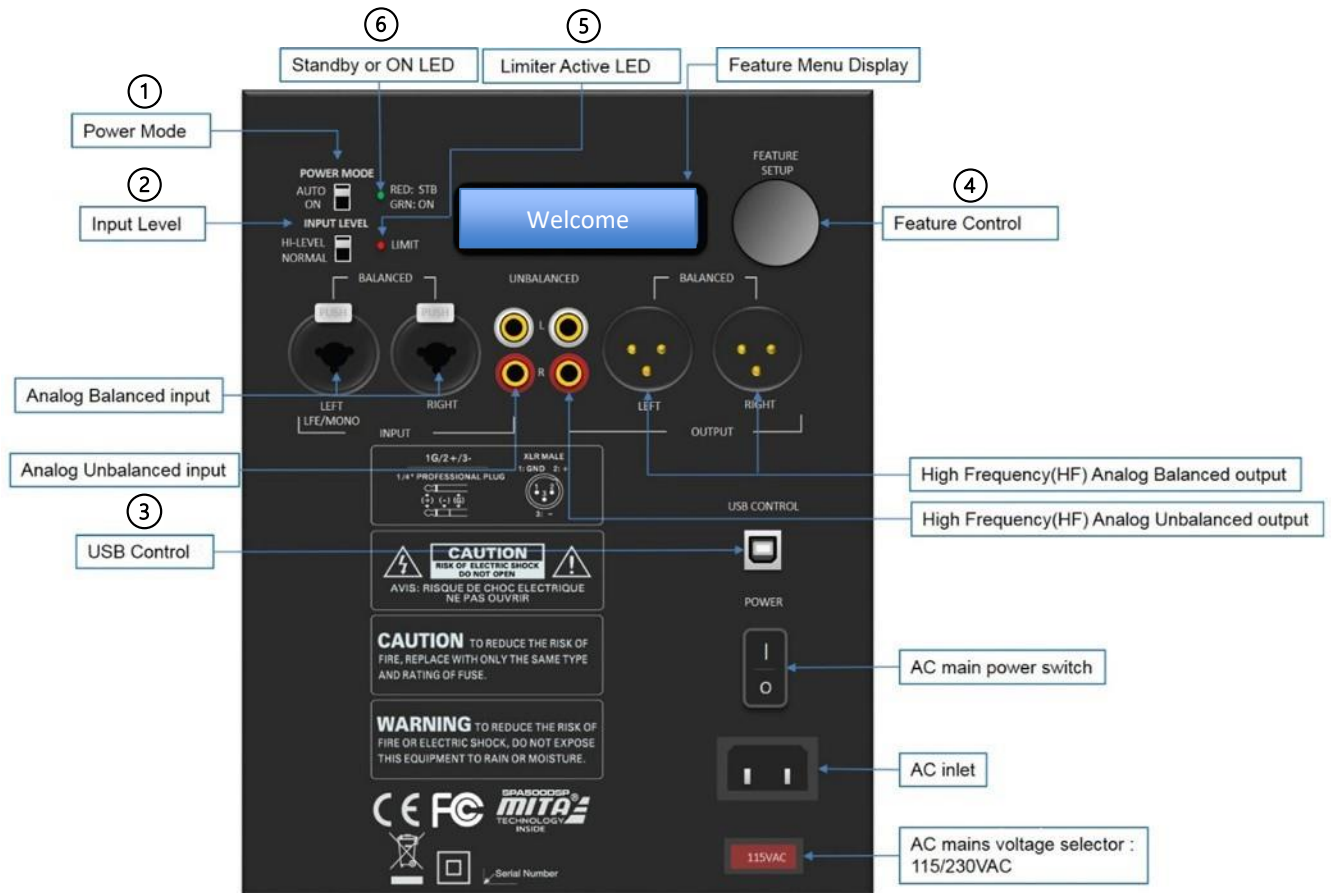


Caution: The Expert Level DSP functions of the S10P amplifier provide access to all Features of the amplifier, including those that are preset from the factory. While these controls can be used to tailor the subwoofer to a particular installation, they can also have a negative impact on the performance and even lead to product damage if not set correctly. **Only qualified individuals should use the Expert Level DSP controls.**

This manual covers only the S10P amplifier DSP functions. General information and Specifications for the subwoofer can be found in the S10P Owner's Manual on the [Wisdom Audio](#) website.

Follow all safe practices and contact Wisdom Audio if you require assistance.

Rear Panel Features



- ① Power Mode:** Select either **AUTO** or **ON** (always-on) power mode.
 - **Auto:** Amp turns on when signal is detected. It goes into standby after 20 minutes with no input signal.*
 - **On:** Amp is always on, regardless of input signal status.

* Once audio signal is detected, the amp will automatically turn on in typically one second or less.
- ② Input Level:** Affects balanced and unbalanced input level for both subwoofer and line level outputs.
 - **Hi Level:** Attenuates input signal by -6dB.
 - **Normal:** No attenuation. (Default)
- ③ USB Control:** The use of the USB input is described in the following pages of this document.
 - Used for PC-GUI communication with PC software available on the [Wisdom Audio](http://www.wisdomaudio.com) website.
- ④ Feature Control:** The use of this control is described in the following pages of this document. See [website](http://www.wisdomaudio.com) for more information on the use of this feature.
 - Rotary control with single & double-click actuation.
 - Rotate to navigate feature menu and change selection. [Volume, High Pass, Low Pass, Phase, High-pass Delay, Subsonic Filter, PEQ (Parametric Equalizer), Preset Save/Load]
 - Pressing once activates displayed function or exits the selected function.
 - Pressing twice exits operation or returns to the home position.
- ⑤ Limiter LED:** Lit when Limiter is active (Red). Activates only when input signal is too high.
- ⑥ Standby/On LED:**
 - **Red:** Amp is in energy saving "stand by" state.
 - **Green:** Amp is "ON" and operating normally.

DSP Control Via Rear Panel (User Level)

Activate the rear-panel **Feature Menu** by pressing the Feature Control knob. “**VOLUME**” is the default Feature displayed after power up. The Feature Menu will time-out after approximately 3 minutes of inactivity.



Rotate the knob to **Step** through the Features listed below. Rotation of the knob is also used to change the parameters of the selected Feature.

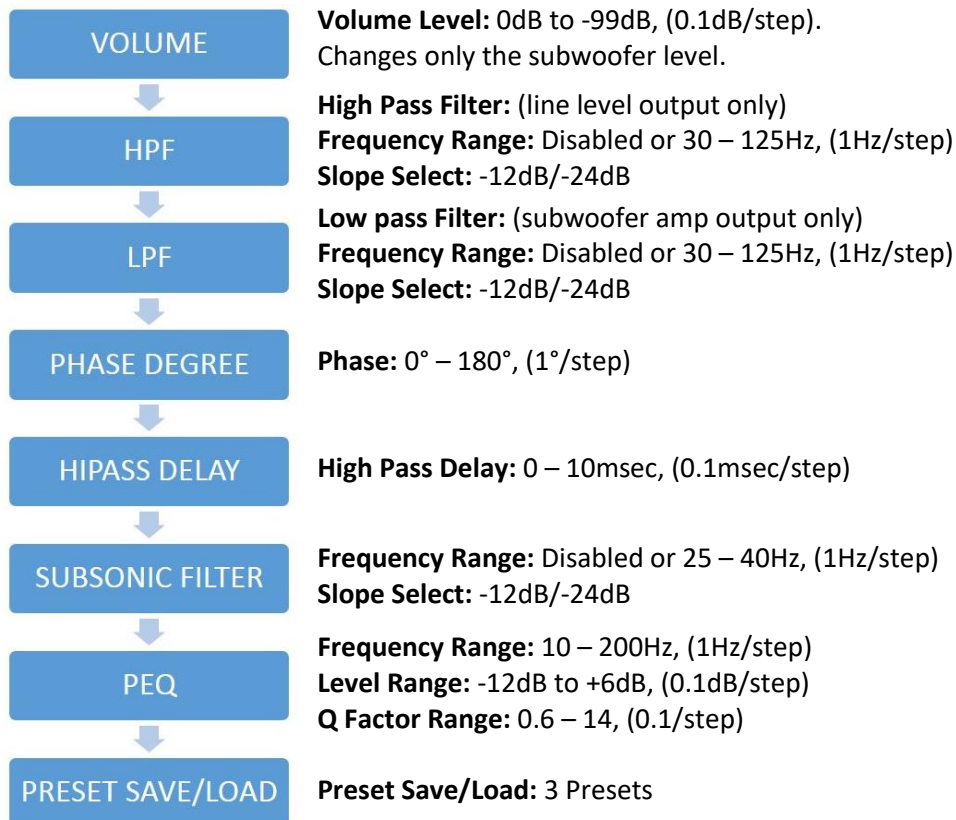


Press the control knob to **Enter** the displayed Feature. Rotation of the knob allows for the parameter changes listed below. (A complete [Feature Flow Chart](#) with their operations is listed on the last page.)



Double Press the control knob to **Exit** the Feature. A single press can also be used to exit some Features.

MENU Selections



NOTE: The rear panel control is defeated when the subwoofer is linked to a PC. Unplug the USB cable to return control to rear panel.

Restoring Factory Defaults does not erase the 3 User Presets.

Changes are applied in real-time. No confirmation or save is required except for Presets 1-3.

DSP Control Via PC GUI (Expert Level)

The Wisdom Audio S10P GUI is the tool required to access and adjust all the advanced DSP settings. The following pages describe the connection and the operation of the GUI for each of the controls. **Only qualified individuals should use the advanced DSP controls.**

Required Equipment

Access to the Expert Level Advanced DSP features requires the following:

1. PC running Windows 10 or later.
2. Wisdom Audio S10P GUI V1.0.0.0 or newer, available on the S10P page of the [Wisdom Audio](#) website.
3. Windows .Net Framework 3.5 installed. (Available [here](#) on Microsoft website or follow the instructions below to enable it within Windows.)
4. USB A to USB B cable; included with the S10P subwoofer.

Connecting the S10P to PC (Windows 10 or Newer)

1. Download the Wisdom Audio S10P GUI installer from the [Wisdom Audio](#) website and run the setup.exe to install the program
2. Ensure Windows .Net Framework 3.5 is installed and activated. To verify, see the Installation Information in the box below.
3. Ensure that the Wisdom Audio S10p GUI V1.0.0.0 or newer software is installed on your computer.
4. Connect Power to the S10P and turn on the power.
5. Connect USB cable from computer to S10P rear panel (USB A→B).
6. Open the software and check for connection. The amplifier should connect automatically.
 - a. If the amp is not detected a “Can’t detect Device” error message will appear and the software will display “USB disconnected.”
 - b. If USB is connected and communicating properly, then the software and amplifier will display “USB Linked.” NOTE: Amplifier will not connect if it is in standby mode, (LED on back of amp Red).
7. When finished, simply disconnect the USB cable. All settings will be retained.

Installing .Net 3.5

(Needed only if not previously installed or activated.)

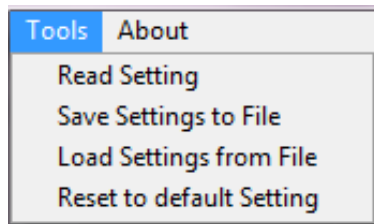
Check if .Net Framework 3.5 is already installed and activated.

1. Press the Windows key + R together. The Run box will pop up.
2. In that box, type “control” and press Enter. This will open the Control Panel.
3. Click on “Programs” and then click on “Programs and Features.”
4. On the left side, you’ll see “Turn Windows features on or off.” Click on that.
5. Now, look for .Net Framework 3.5. If you see a filled box next to it, you’re done. However, if it’s not filled, click on the box to fill it.
6. Click okay at the bottom of the window to apply the changes.

Features and Functions

*****NOTE: The S10P ships with the Factory Defaults for best subwoofer performance, including Factory EQ, Low Pass Filter, Subsonic Filter and Limiter settings. Changing these settings may result in poor performance. Proceed with care.*****

Tools Drop-down



Read Setting: Read all the settings from amp

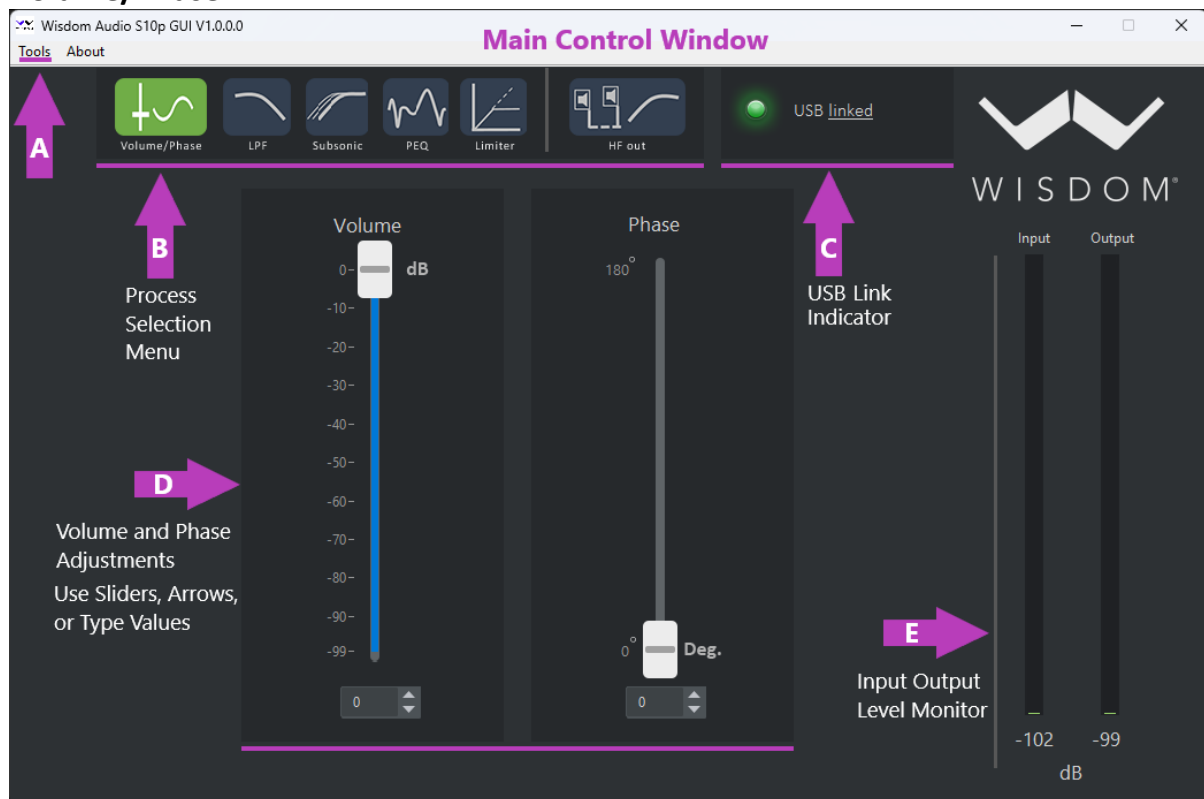
Save Settings to File: Save current settings to PC

Load Settings from File: Load settings from saved file to AMP

Reset to default setting: Reset the AMP to factory settings*



*The 3 Rear Panel presets and the 2 PEQ settings are not erased and retain the user settings.

Volume/Phase



A. Tools Drop Down Menu: Load, Read, and Save DSP settings.

B. Process Selection Menu: Select the desired DSP operation.

C. USB link indicator: When USB communication with the amp is successful, the GUI's Link LED indicator will light green.  **USB linked** Otherwise, the Link LED remains red.  **USB disconnected**

Note: The LED indicator on the rear panel of the S10P will also change accordingly.

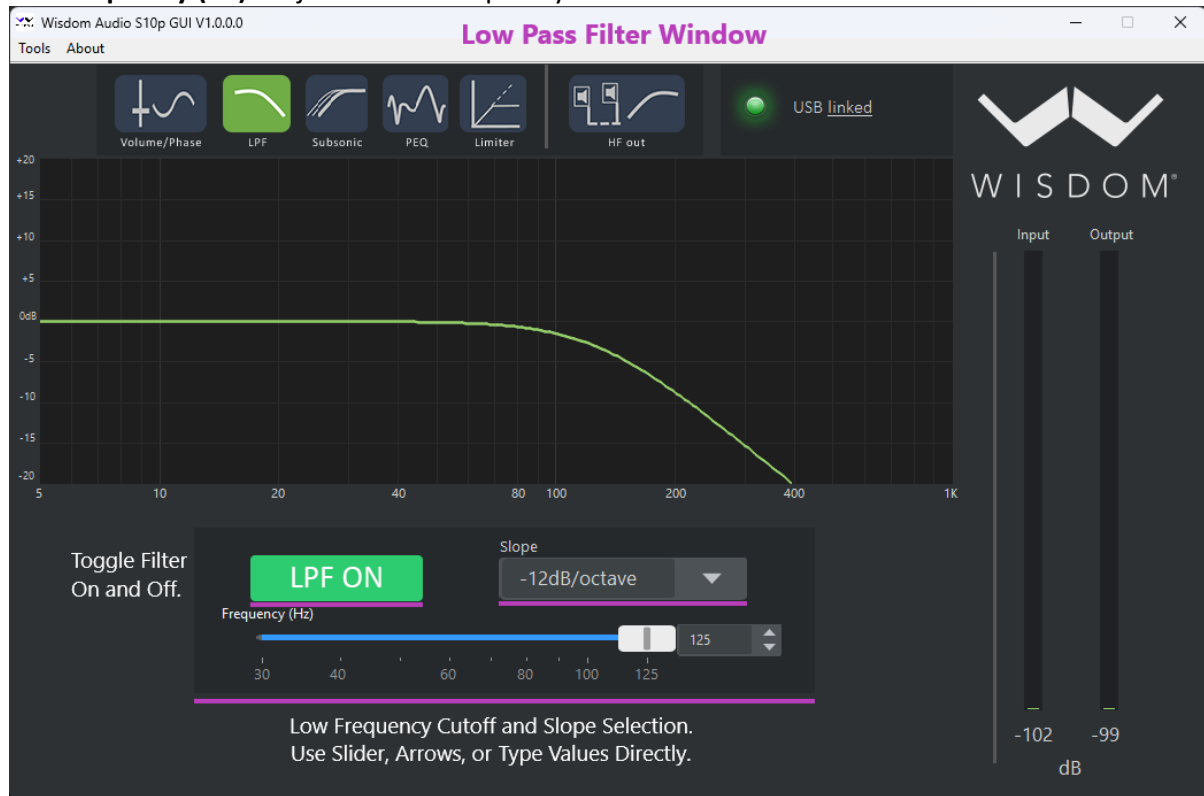
D. Volume and Phase Controls: Change output level and phase.

E. Sub in/out monitor: Displays the input signal level and amplifier's output signal level.

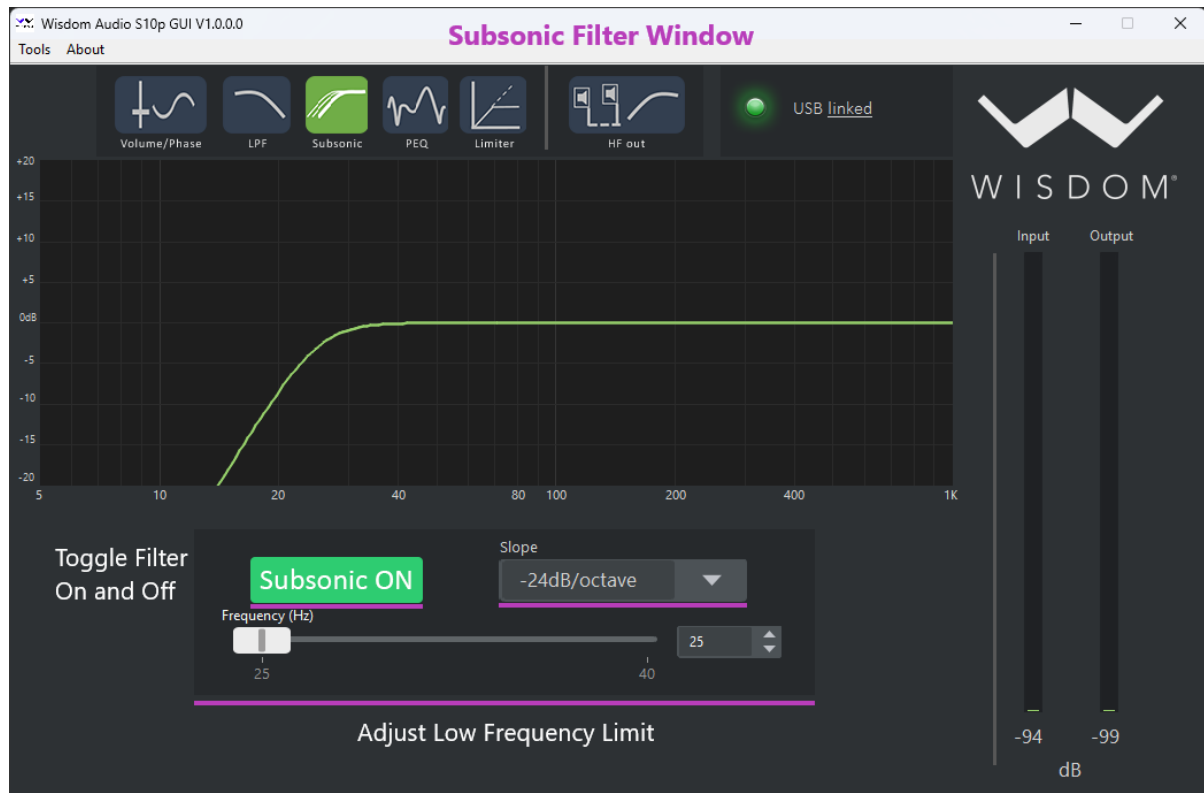
NOTE: In the following pages the graphical trace can be shaped using the Sliders, Arrows, or Typing Values directly into the available text boxes.

LPF and Subsonic

- **Filter ON/OFF Button:** Enable or Disable the selected filter.
- **Slope:** Select roll-off rate of the selected filter (-12dB or -24dB per octave).
- **Frequency (Hz):** Adjust cut-off frequency of the selected filter.



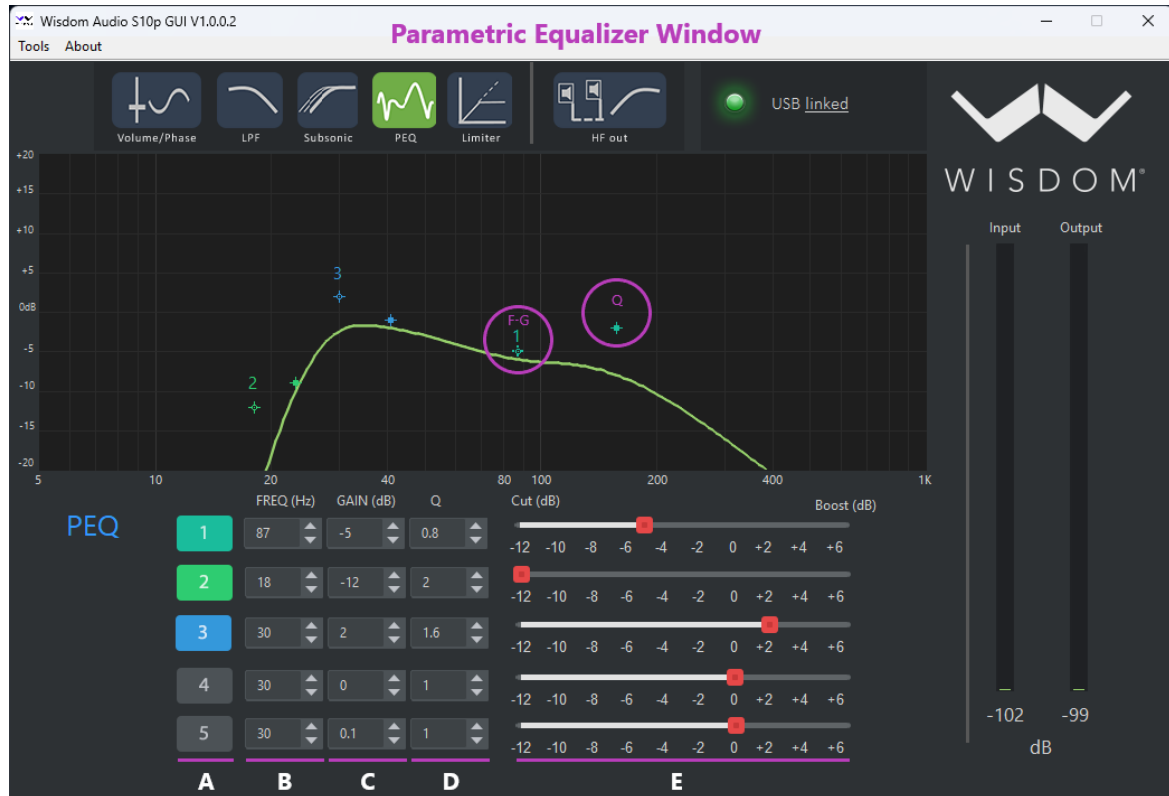
CAUTION: Subsonic Filter are factory preset and should only be changed by trained people. Changes to the Subsonic Filter can lead to poor performance or product damage.



5-Band PEQ

CAUTION: EQ bands 1-3 are factory preset and should only be changed by trained people.

Changes to the EQ settings 1-3 can lead to poor performance or product damage.



- **PEQ Window:** The PEQ window shows a graphical curve of the amplifiers transfer function. Please note: It is NOT the transfer function of the speaker system. The trace in the graphical window is directly editable by moving the colored cursors of the traces.

① Control **F**requency and **G**ain by moving this cursor left/right and up/down respectively.

② Control **Q** by moving this cursor left/right.

Additionally, the trace can be shaped using the Sliders, Arrows, or Typing Values directly.

Bands 4 and 5 are available for use in the end-user installation.

- **PEQ Functions (A – E above):**

A. Band On/Off: Select buttons 1 – 5 to Bypass or Enable PEQ band. When active, the buttons become colored with a corresponding colored-cursor appearing in the Curve Window.

B. Center Frequency (Hz): Adjust Center Frequency of each EQ band, 10 – 200Hz, 1Hz steps

C. Gain (dB): Adjust the EQ gain from -12 to +6dB, 0.1dB steps

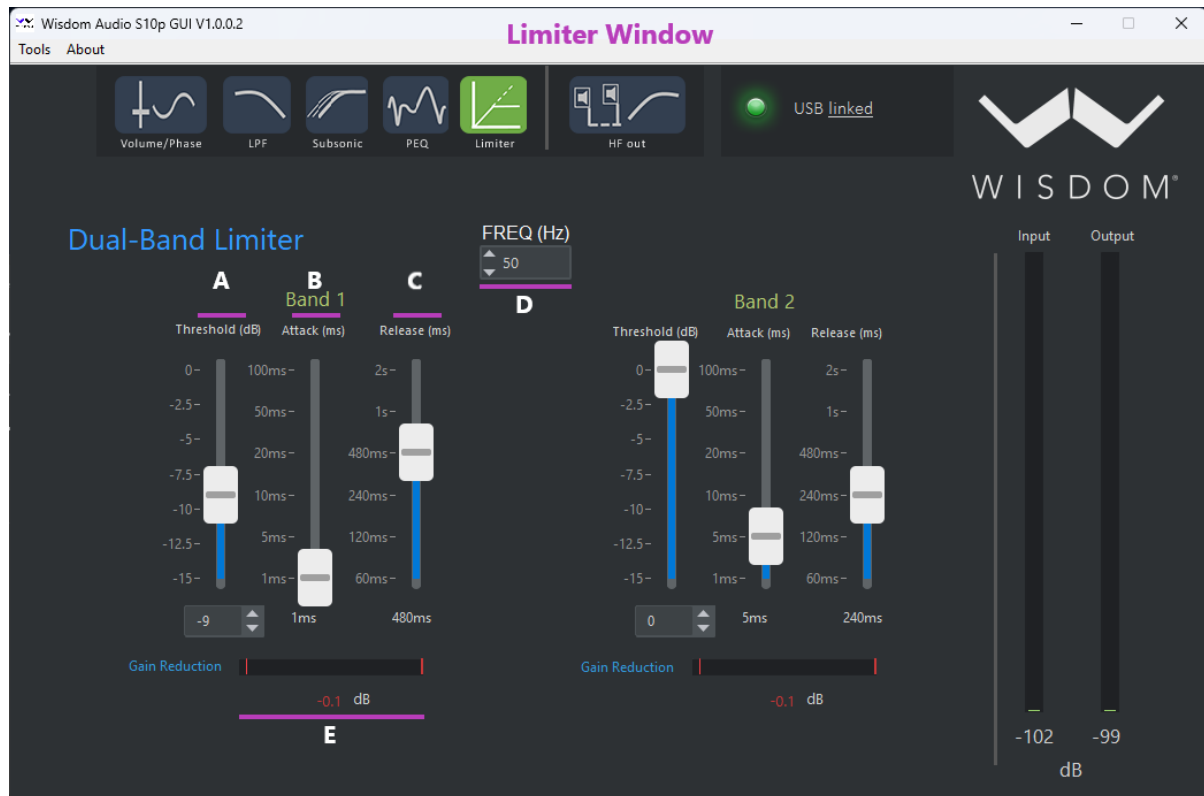
D. Q (EQ Bandwidth): Adjust “Q” value, 0.6 – 14 (Larger values = narrower band), 0.1 step

E. Gain Sliders: Move left and right to control gain.

NOTE: These 5 PEQs are in addition to the 2 PEQs that are available on the rear panel of the S10P. These 5 PEQs are not accessible from the rear panel. Also, the 2 rear-panel PEQs are not accessible using the GUI. There are 7 PEQs in total.

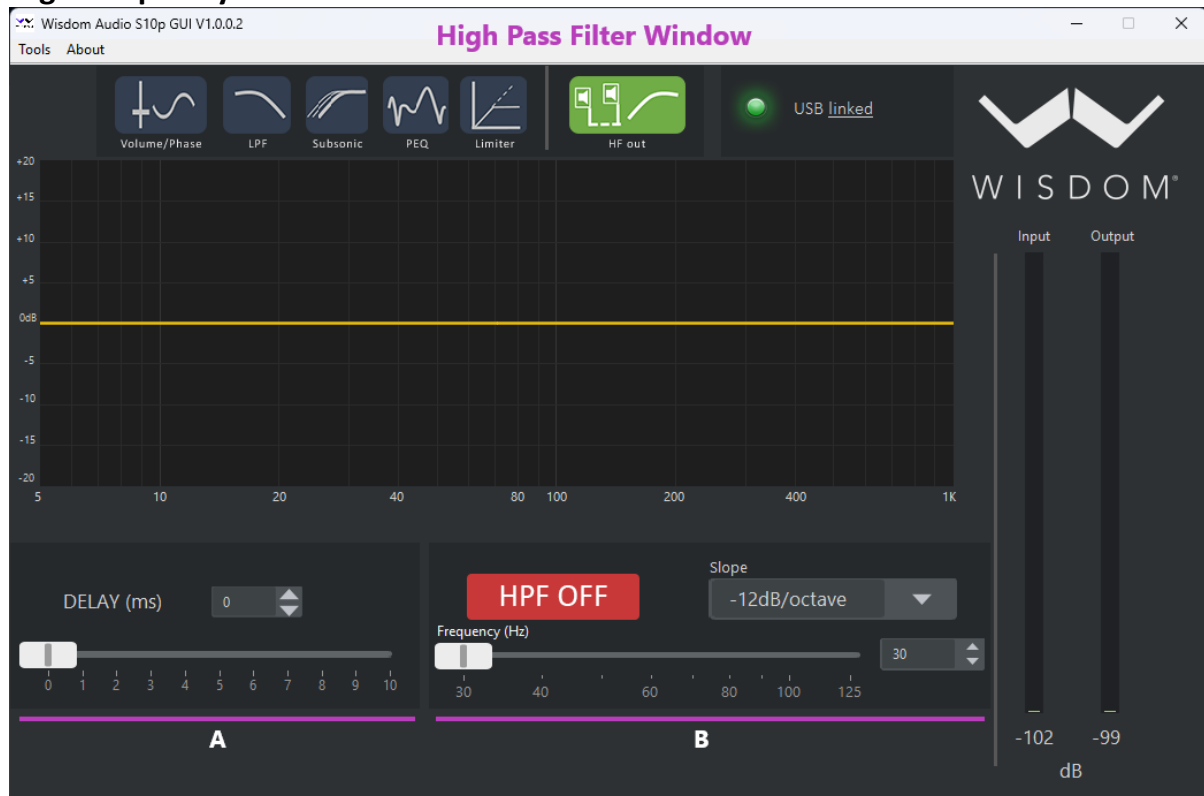
Dual-Band Limiter

CAUTION: Dual Band Limiters are factory preset and should only be changed by trained people. Changes to the settings can lead to poor performance or product damage.



- A. Threshold:** Sets the level at which limiter engages, 0 to -15dB, 0.1dB steps. The values are on a negative scale with 0 representing maximum output and no limiter.
(Example: A setting of -5 would engage the limiter 5dB below maximum output.)
- B. Attack:** Sets the time taken to attenuate signals to the threshold level, (only signals that exceed the threshold). Range: 1/5/10/20/50/100ms
- C. Release:** When the limiter has engaged, this sets the time given to restore the original level after the signal drops below the threshold level.
Range: 60/120/240/480/1000/2000ms
- D. Frequency:** Sets the crossover frequency point between the 2 bands: Band 1 (Low Frequency) & Band 2 (High Frequency = Frequencies above FREQ setting "D").
- E. Gain Reduction:** Displays the amount of gain reduction occurring in real time.

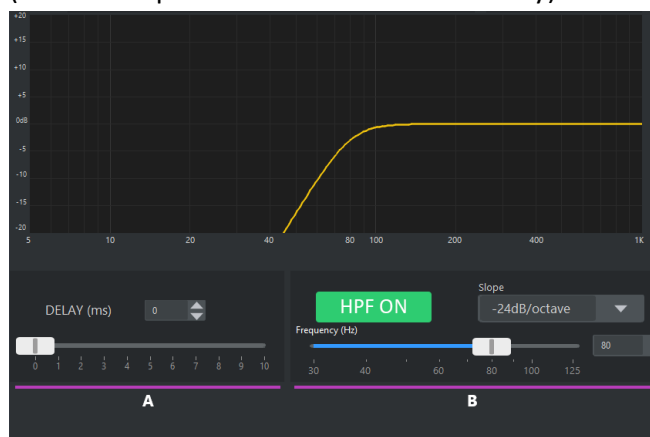
High Frequency Out



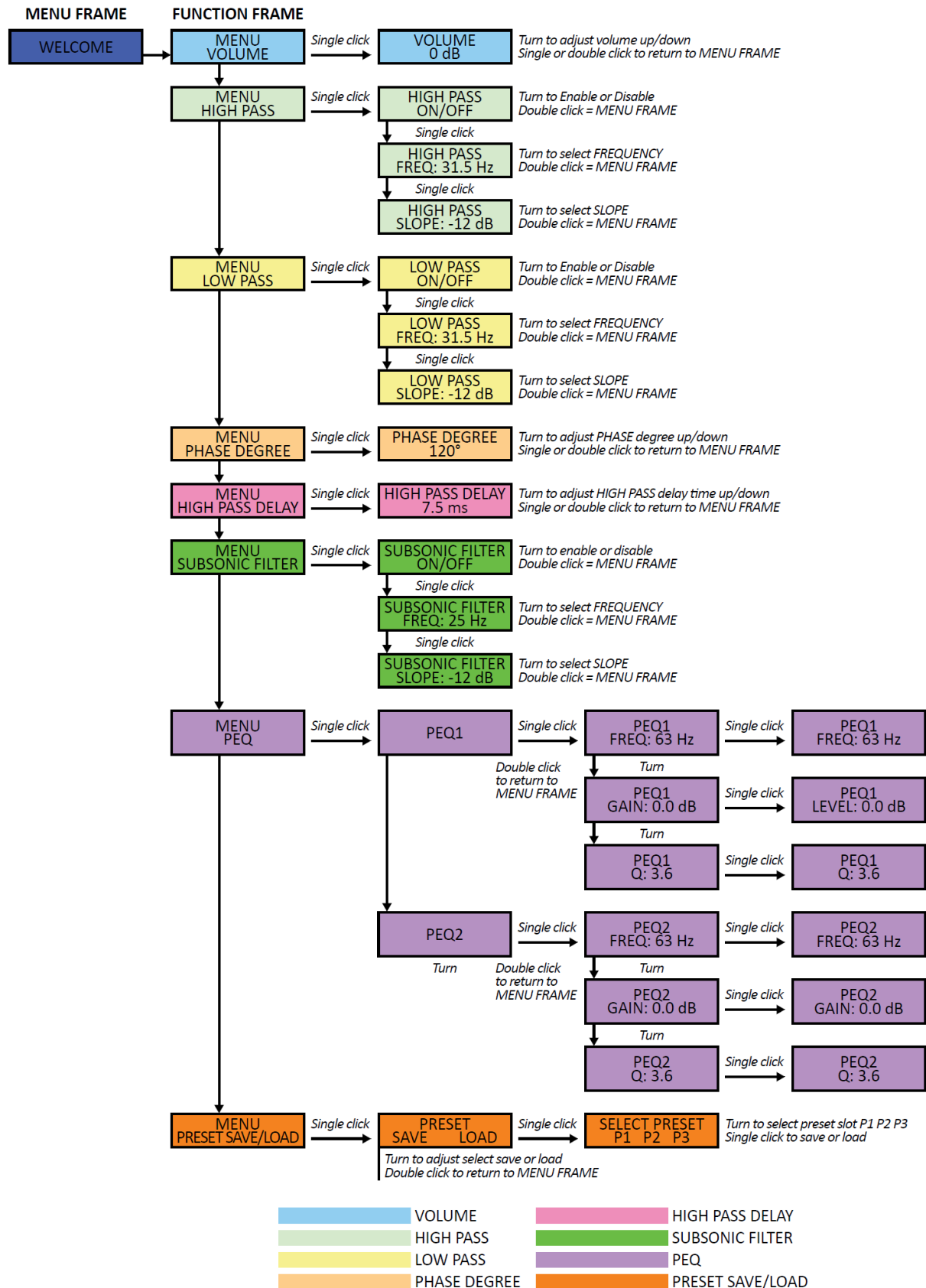
This window controls the DSP parameters for line level output only.

- A. Delay:** Use to Delay the High Frequency out relative to the Subwoofer out. This can help compensate for group delay or sub placement distance. 0 – 10ms, ~11ft (3.4m) max.
- B. HPF Control:**
 - a. Filter ON/OFF:** Bypass or Enable the High Pass Filter.
 - b. Slope:** Select roll-off rate of the selected filter: -12dB or -24dB per octave.
 - c. Frequency:** Adjust cut-off frequency of the selected filter. (-3dB point)

NOTE: The High Pass output can be used full-range (factory default) to drive another system or additional subwoofers as desired, or it can be set to drive an amplifier for a 2.1 system using the filter and delay to optimize and protect the satellite speakers.
(80Hz example shown below without delay)



Feature Flow Chart





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