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S10P Advanced DSP Software

WISDOM S10P Advanced DSP Software User Manual

Contents

WISDOM

WISDOM S10P Advanced DSP Software

Specifications

- **Model:** S10P
- **Type:** Small Footprint Powered Subwoofer
- **Power Output:** 500W
- **DSP Control:** Advanced

Product Usage Instructions

- **Rear Panel Features**
  - **The rear panel of the S10P subwoofer features various controls and indicators:**
    - Automatic Power-On: The amp turns on automatically when an audio signal is detected.
    - Limiter LED: Lights up when the limiter is active, indicating high input signal levels.
    - Standby/On LED: Indicates the power status of the subwoofer.
- **DSP Control Via Rear Panel (User Level)**
  - **To access and control features via the rear panel:**
    - Press the Feature Control knob to activate the Feature Menu.
    - Rotate the knob to navigate through different features and change parameters.
    - Press the control knob to enter a selected feature and make parameter adjustments.
    - Double-press the control knob to exit a feature. Unplug the USB cable to regain control of the PC.
- **DSP Control Via PC GUI (Expert Level)**
  - **For advanced DSP settings, use the Wisdom Audio S10P GUI:**
    - Connect the subwoofer to a PC using the required equipment.
    - Install .Net 3.5 for GUI functionality.
    - Qualified individuals should operate the advanced DSP controls on the GUI.

FAQs

- **Q: How do I reset the DSP settings to factory defaults?**
  - **A:** Restoring Factory Defaults on the subwoofer does not erase user presets. Unplug the USB cable to return control to the rear panel.

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 the 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 a dry cloth.
7. Do not block any ventilation openings. Install by 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 one wider than the other. A grounding-type plug has two prongs and a third grounding point. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for the 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.
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 the cover.
- No user-serviceable parts inside. Refer servicing to qualified personnel.
- To reduce the risk of fire and shock do not expose the 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. The minimum clearance is 2 inches from the ventilation openings.

CAUTION
RISK OF ELECTRICAL SHOCK
DO NOT OPEN
WARNING:SHOCK HAZARD-DO NOT OPEN.
AVIS:RISQUE DE CHOC ELECTRIQUE-NE PAS OUVRIR.

FCC

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.
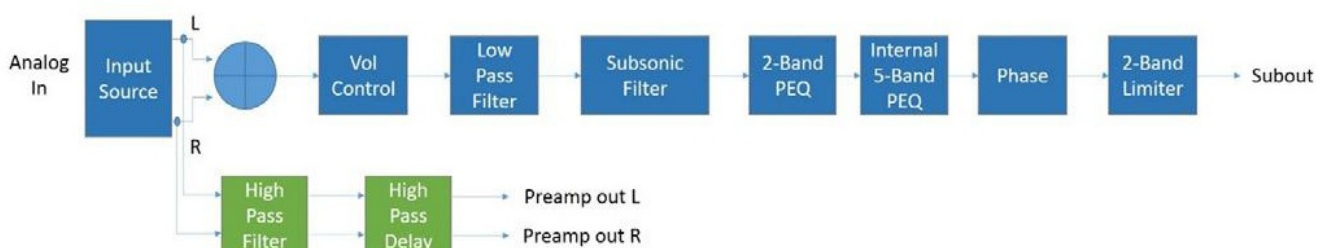
- **Caution:** The Expert Level DSP functions of the S10P amplifier provide access to all Features of the amplifier, including those that are preset from the factory. While these controls can be used to tailor the subwoofer to a particular installation, they can also harm performance and even lead to 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
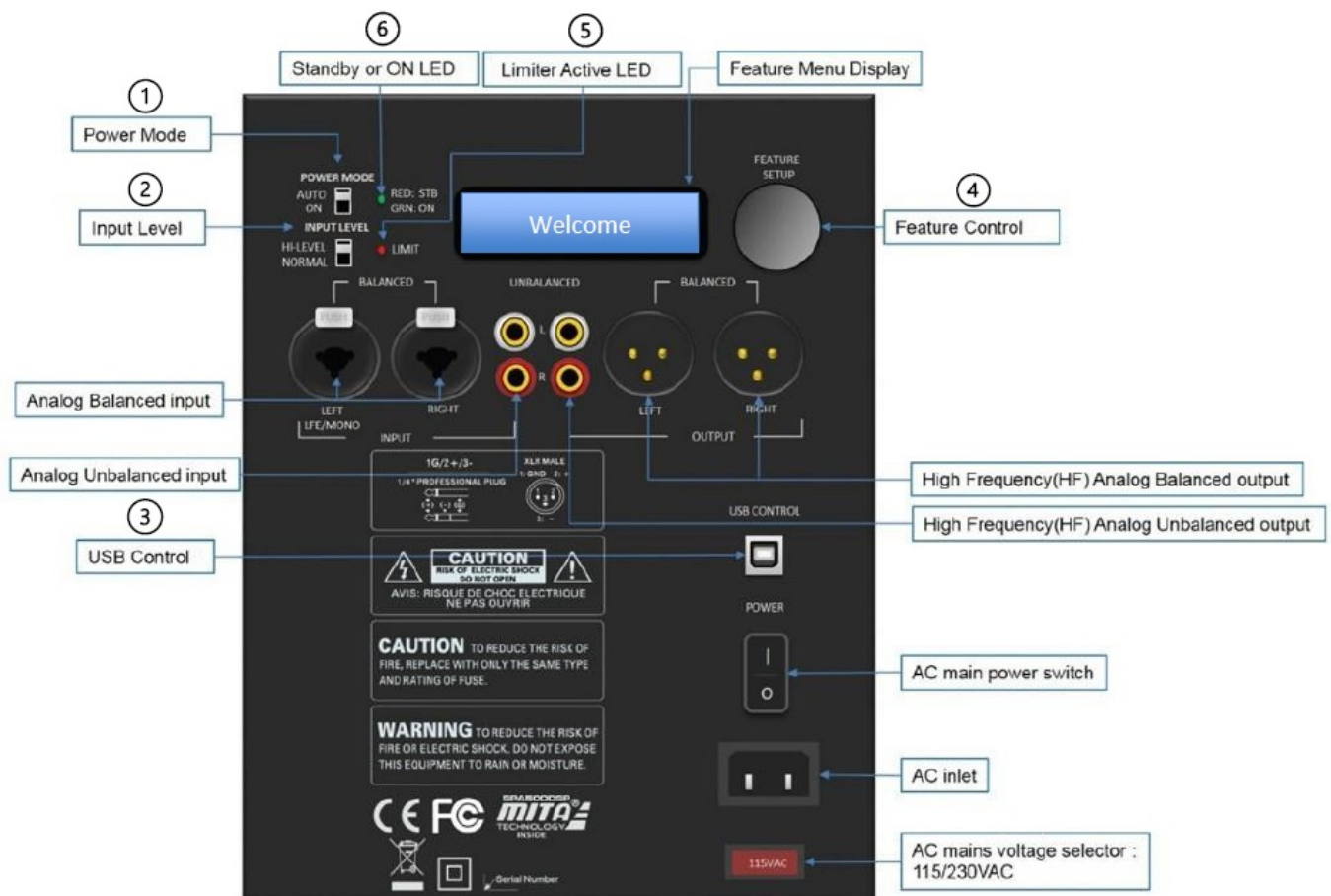
1. **Power Mode:** Select either AUTO or ON (always-on) power mode.
    - **Auto:** Amp turns on when the signal is detected. It goes into standby after 20 minutes with no input signal.*
    - **On:** Amp is always on, regardless of input signal status.
    - Once the audio signal is detected, the amp will automatically turn on in typically one second or less.
2. **Input Level:** Affects balanced and unbalanced input levels 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** website.
4. **Feature Control:** The use of this control is described in the following pages of this document. See the website for more information on the use of this feature.
    - Rotary control with single & double-click actuation.

- Rotate to navigate the feature menu and change the selection. [Volume, High Pass, Low Pass, Phase, High-pass Delay, Subsonic Filter, PEQ (Parametric Equalizer), Preset Save/Load]
- Pressing once activates the displayed function or exits the selected function.
- Pressing twice exits the operation or returns to the home position.

5. **Limiter LED:** Lit when the Limiter is active (Red). Activates only when the input signal is too high.
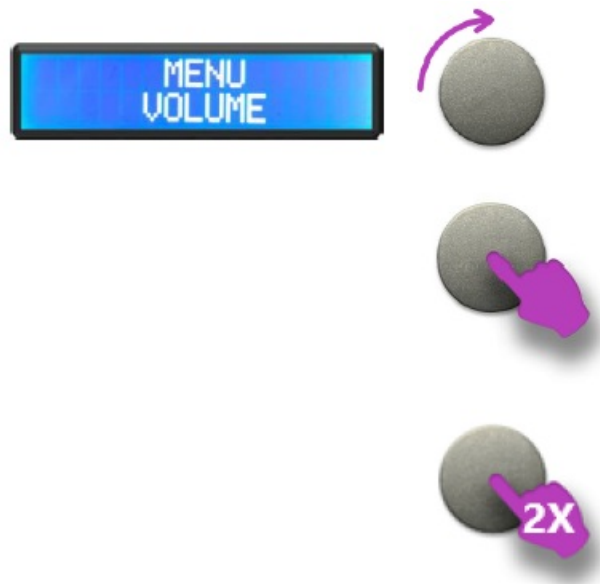
6. **Standby/On LED:**
   - **Red:** Amp is in energy saving "stand by" state.
   - **Green:** Amp is "ON" and operating normally.
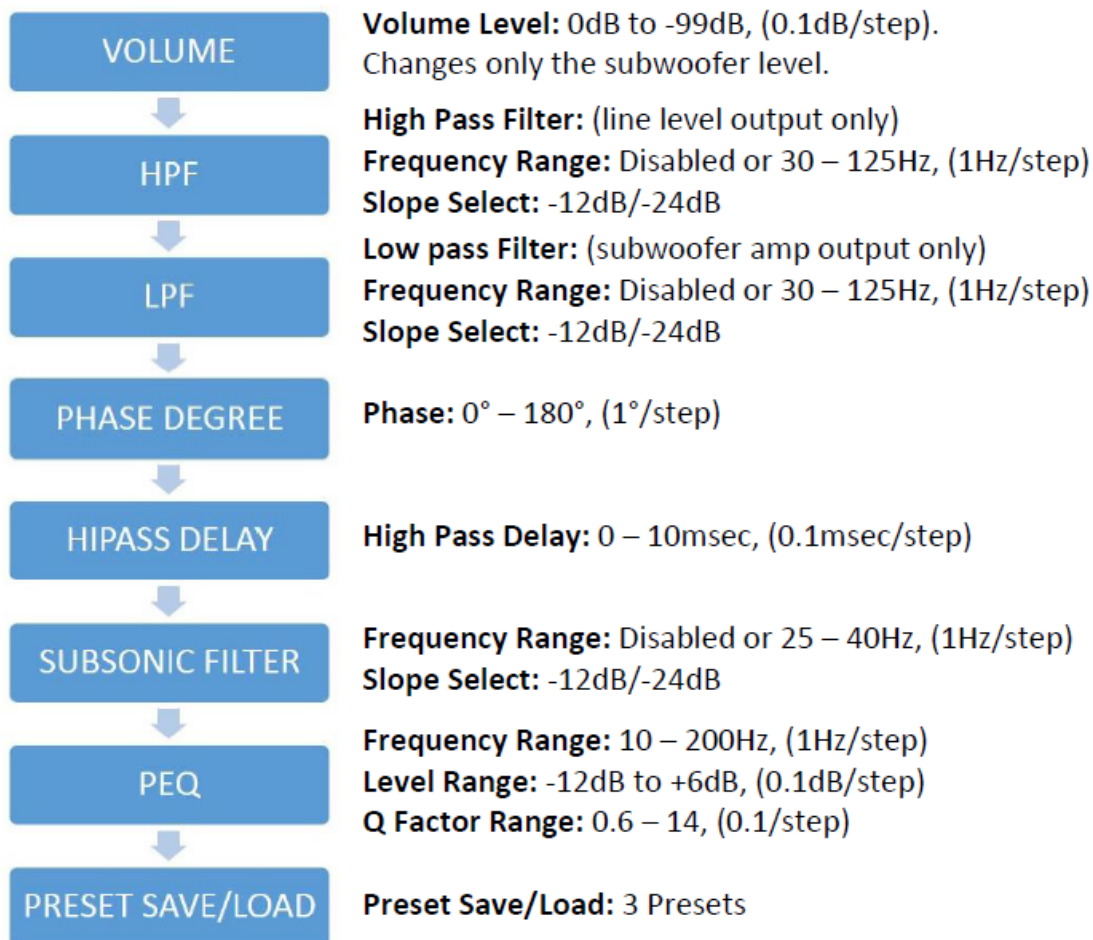
DSP Control Via Rear Panel (User Level)

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

VOLUME	Volume Level: 0dB to -99dB, (0.1dB/step). Changes only the subwoofer level.
HPF	High Pass Filter: (line level output only) Frequency Range: Disabled or 30 – 125Hz, (1Hz/step) Slope Select: -12dB/-24dB
LPF	Low pass Filter: (subwoofer amp output only) Frequency Range: Disabled or 30 – 125Hz, (1Hz/step) Slope Select: -12dB/-24dB
PHASE DEGREE	Phase: 0° – 180°, (1°/step)
HIPASS DELAY	High Pass Delay: 0 – 10msec, (0.1msec/step)
SUBSONIC FILTER	Frequency Range: Disabled or 25 – 40Hz, (1Hz/step) Slope Select: -12dB/-24dB
PEQ	Frequency Range: 10 – 200Hz, (1Hz/step) Level Range: -12dB to +6dB, (0.1dB/step) Q Factor Range: 0.6 – 14, (0.1/step)
PRESET SAVE/LOAD	Preset Save/Load: 3 Presets

NOTE: The rear panel control is defeated when the subwoofer is linked to a PC. Unplug the USB cable to return the control to the 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 the Microsoft website.)
4. USB A to USB B cable; included with the S10P subwoofer.

Connecting the S10P to a 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 the Power to the S10P and turn on the power.

5. Connect the USB cable from the computer to the 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:** The 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.
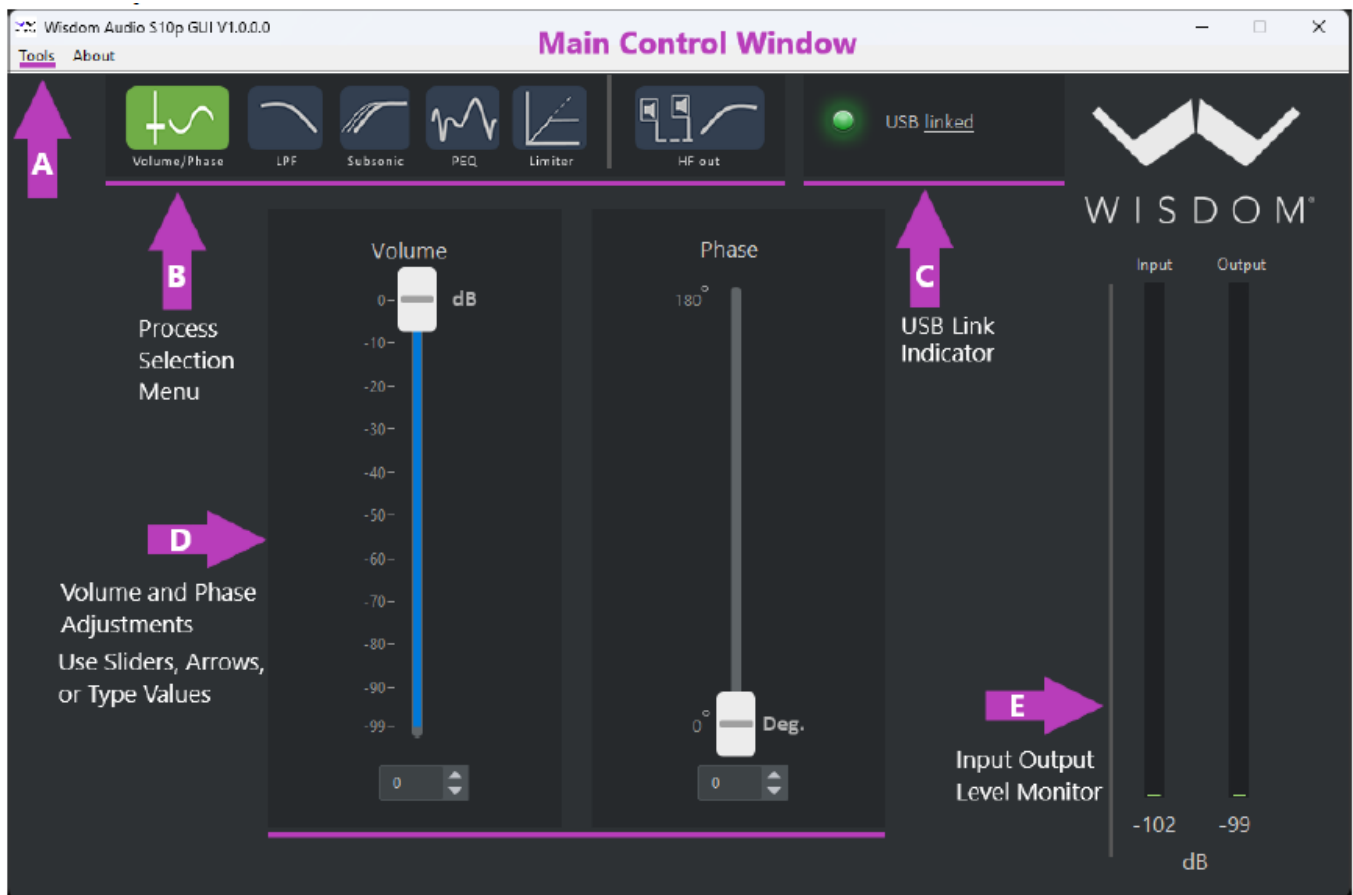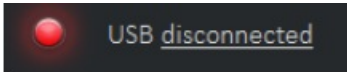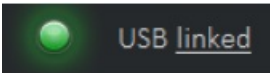
Features and Functions

Tools Drop-down

- **Read Setting:** Read all the settings from the amp
- **Save Settings to File:** Save current settings to PC
- **Load Settings from File:** Load settings from the saved file to AMP
- **Reset to default setting:** Reset the AMP to factory settings*
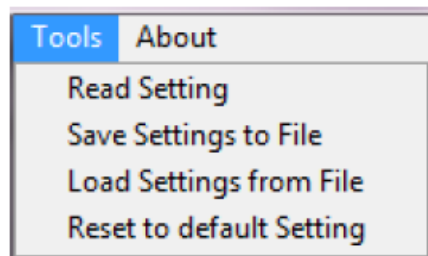
The 3 Rear Panel presets and the 2 PEQ settings are not erased and retain the user settings.

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. Otherwise, the Link LED remains red .
  - **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.
- . **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 the roll-off rate of the selected filter (-12dB or -24dB per octave).
- **Frequency (Hz):** Adjust the cut-off frequency of the selected filter.
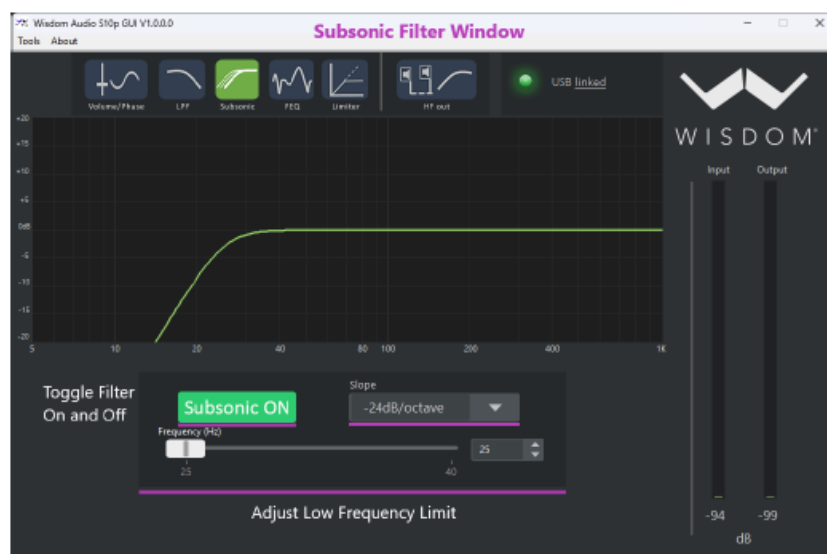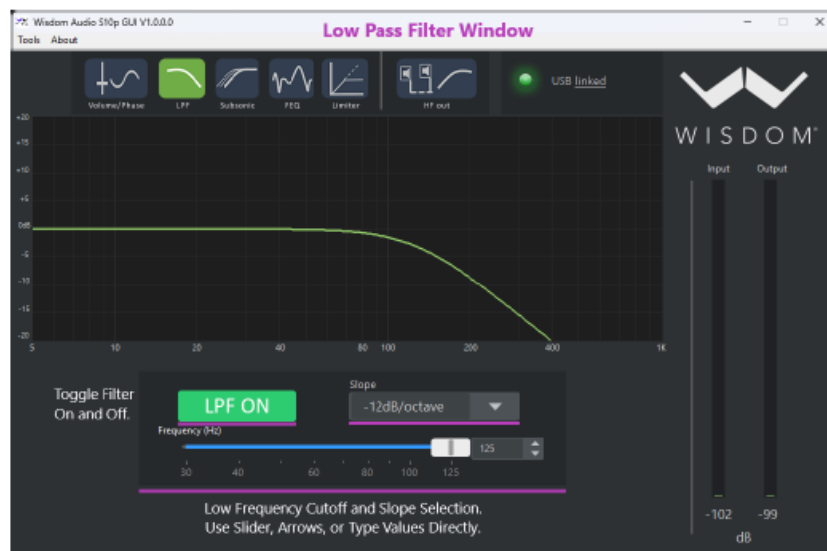
5-Band EQ
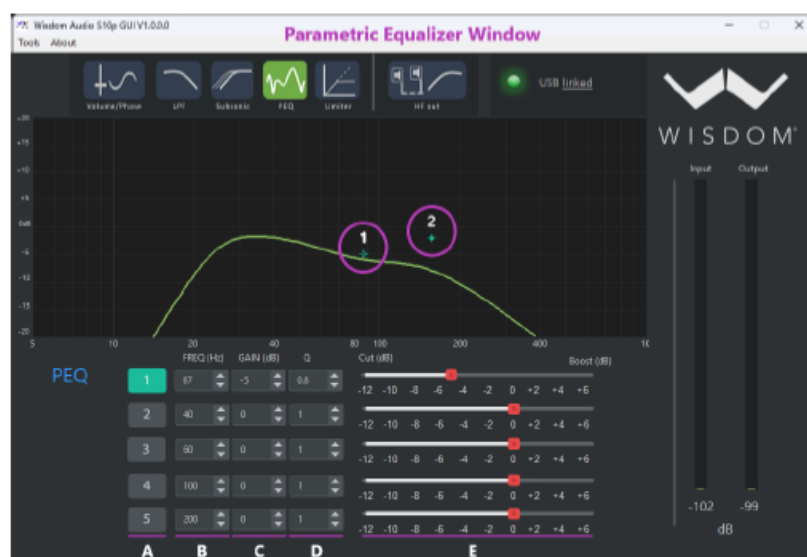
PEQ Window:

The PEQ window shows a graphical curve of the amplifier 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 trace, (1 and 2).

1. Control Frequency and Gain 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.
**PEQ Functions (A – E above):**

- **A. Band On/Off:** Select buttons 1 – 5 to Bypass or Enable the 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 size
    - **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

- **A. Threshold:** Sets the level at which the 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 the 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
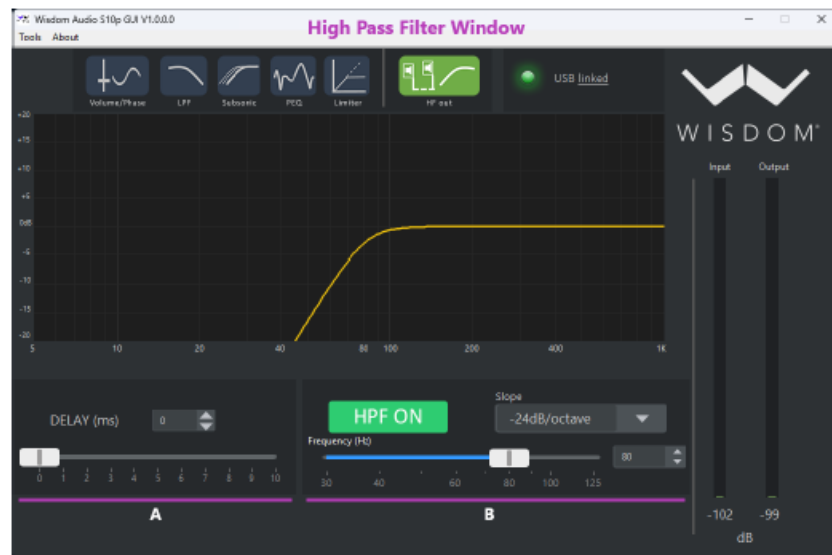
This window controls the DSP parameters for line-level output only.

- **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 – 10, ~11ft (3.4m) max
- **B. HPF Control:**
  - **a. Filter ON/OFF:** Bypass or Enable the High Pass Filter.
  - **b. Slope:** Select the roll-off rate of the selected filter: -12dB or -24dB per octave.
  - **c. Frequency:** Adjust the cut-off frequency of the selected filter. (-3dB point)

Feature Flow Chart

WELCOME

MENU VOLUME — *Single click* → **VOLUME 0 dB** — *Turn to adjust volume up/down / Single or double click to return to MENU FRAME*

MENU HIGH PASS — *Single click* → **HIGH PASS ON/OFF** — *Turn to Enable or Disable / Double click = MENU FRAME*
Single click → **HIGH PASS FREQ: 31.5 Hz** — *Turn to select FREQUENCY / Double click = MENU FRAME*
Single click → **HIGH PASS SLOPE: -12 dB** — *Turn to select SLOPE / Double click = MENU FRAME*

MENU LOW PASS — *Single click* → **LOW PASS ON/OFF** — *Turn to Enable or Disable / Double click = MENU FRAME*
Single click → **LOW PASS FREQ: 31.5 Hz** — *Turn to select FREQUENCY / Double click = MENU FRAME*
Single click → **LOW PASS SLOPE: -12 dB** — *Turn to select SLOPE / Double click = MENU FRAME*

MENU PHASE DEGREE — *Single click* → **PHASE DEGREE 120°** — *Turn to adjust PHASE degree up/down / Single or double click to return to MENU FRAME*

MENU HIGH PASS DELAY — *Single click* → **HIGH PASS DELAY 7.5 ms** — *Turn to adjust HIGH PASS delay time up/down / Single or double click to return to MENU FRAME*

MENU SUBSONIC FILTER — *Single click* → **SUBSONIC FILTER ON/OFF** — *Turn to enable or disable / Double click = MENU FRAME*
Single click → **SUBSONIC FILTER FREQ: 25 Hz** — *Turn to select FREQUENCY / Double click = MENU FRAME*
Single click → **SUBSONIC FILTER SLOPE: -12 dB** — *Turn to select SLOPE / Double click = MENU FRAME*

MENU PEQ — *Single click* → **PEQ1** — *Single click* → **PEQ1 FREQ: 63 Hz** — *Single click* → **PEQ1 FREQ: 63 Hz**
Double click to return to MENU FRAME / *Turn* → **PEQ1 GAIN: 0.0 dB** — *Single click* → **PEQ1 LEVEL: 0.0 dB**
Turn → **PEQ1 Q: 3.6** — *Single click* → **PEQ1 Q: 3.6**

PEQ2 — *Single click* → **PEQ2 FREQ: 63 Hz** — *Single click* → **PEQ2 FREQ: 63 Hz**
Turn / *Double click to return to MENU FRAME* / *Turn* → **PEQ2 GAIN: 0.0 dB** — *Single click* → **PEQ2 GAIN: 0.0 dB**
Turn → **PEQ2 Q: 3.6** — *Single click* → **PEQ2 Q: 3.6**

MENU PRESET SAVE/LOAD — *Single click* → **PRESET SAVE LOAD** — *Single click* → **SELECT PRESET P1 P2 P3** — *Turn to select preset slot P1 P2 P3 / Single click to save or load*
Turn to adjust select save or load / Double click to return to MENU FRAME

Legend:
- VOLUME
- HIGH PASS
- LOW PASS
- PHASE DEGREE
- HIGH PASS DELAY
- SUBSONIC FILTER
- PEQ
- PRESET SAVE/LOAD

CONTACT INFORMATION

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Documents / Resources

WISDOM S10P Advanced DSP Software [pdf] User Manual
S10P, S10P Advanced DSP Software, Advanced DSP Software, DSP Software, Software

References

- ⌇ **HOME - Wisdom Audio**
- ⌇ **HOME - Wisdom Audio**
- **User Manual**