DAYTON AUDIO

2-WAY PLATE AMPLIFIER 800W 2-CHANNEL with DSP with BLUETOOTH TWS

Model: PPA800DSP User Manual
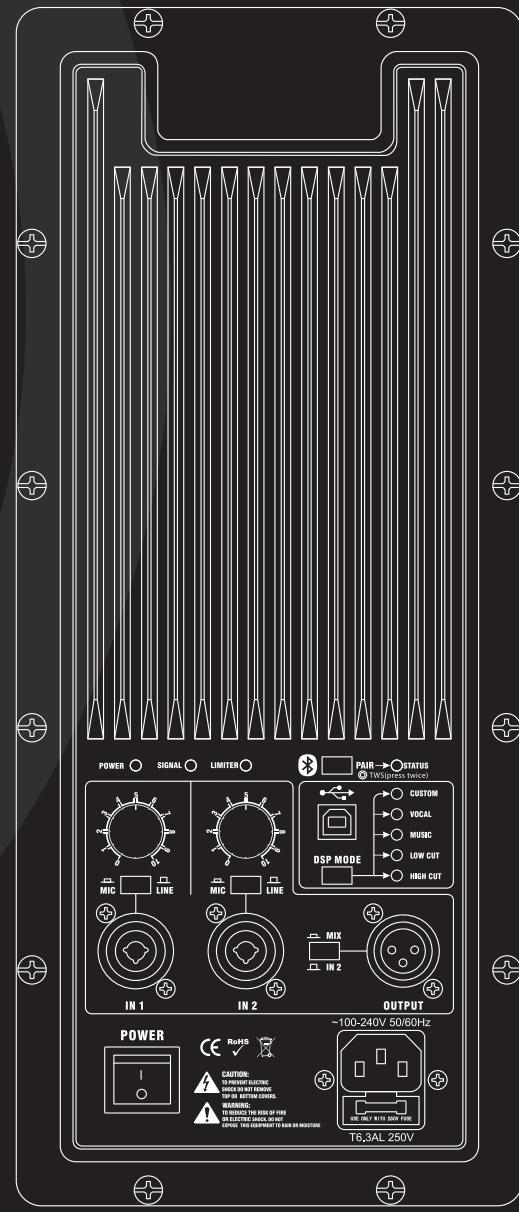
SAFETY

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.

Note: Unit is set at the factory for 120V operation. Be sure to change the fuse (4A rating) before switching to 230V operation.

CAUTION
RISK OF ELECTRICAL SHOCK
DO NOT OPEN

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

FCC STATEMENT

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

   (a) This device may not cause harmful interference.
   (b) This device must accept any interference received, including interference that may cause undesired operation.

2. FCC Radiation Exposure Statement: Mobile device.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.

Table of Contents

Product Overview

Dayton Audio's PPA800DSP plate amplifier produces 800 watts of power split between 2-channels (600W for low frequencies; 200W for highs) with simple adjustable DSP making it an excellent amplifier for building custom, high-output, active 2-way speaker designs. Thanks to the compact size, this amplifier is also a great choice for retrofitting existing passive designs. Perfect for DJs, karaoke, live sound reinforcement, performers and presenters alike, the PPA800DSP provides not only plenty of good, clean power, but an abundance of additional features including Bluetooth 5.0 to make sure your show goes off without a hitch, and with a minimum of effort or additional hardware to lug around.

Features:
- High power 2-way plate amp with DSP for creating active speaker systems
- Bluetooth 5.0 input for use with phones, tablets, or laptops. Pair 2 units together wirelessly for stereo playback using TWS.
- Customizable crossover frequencies, parametric EQ's, limiter, and delay
- Simple user interface allows easy DSP adjustment (Windows compatible)
- 5 programmable EQ presets per output for various applications
- 2-channel mixer built right in, plus line out for subs or additional speakers

Box Contents:
- 1 x PPA800DSP
- 1 x Power Connector
- 1 x USB Type B Cable
- 1 x Introduction Card
- Mounting Screws
- Mounting Foam

PPA800DSP Features and Technical Specifications

Inputs
- 2 XLR or 1/4" inputs
- 1 USB B for PC control
- 1 Female Power Connector

Outputs
- 1 XLR output
- 1 High Pass Output (Blue and Black Wire)
- 1 Low Pass Output (Red and Black Wire)
- 1 LED Output Header

Bluetooth Functionality
- Connect any Bluetooth enabled source (phone, tablet, laptop, etc...) for wireless operation. When using 2 PPA800DSP amplifiers True Wireless Stereo (TWS) pairing allows left and right stereo operation. (see page 6 for detailed guide)

USB Connection Functionality
- Real time DSP configuration using Windows PC software.

Software Features
- Volume and phase controls
- Separate filter controls for high and low pass output sections
- 6 band parametric equalizer with 5 customizable presets and separate equalizer settings per high or lowpass output section

Control Panel (I/O) Definition

1. **Power Indicator:** Illuminates when the unit is powered on.
2. **Signal Indicator:** Illuminates when signal is present
3. **Limiter Indicator:** Illuminates just prior to the amp clipping and distorting. Adjust input levels so that this LED illuminates only briefly, if at all, during the loudest peaks in your program material. Operating the system with this indicator on frequently or all the time will result in degraded sound quality and could damage and/or significantly reduce the service life of the components.
4. **Bluetooth Pairing Button:** Press this button to pair your mobile device. Once paired, press again to play. Press and hold for 2-3 seconds to cancel pairing. STATUS indicator will flash rapidly when pairing, illuminate solid when paired, and flash slowly when playing. Also used for TWS pairing.
5. **Volume Control for INPUT 1**
6. **MIC/LINE Switch for INPUT 1:** Engage when using a microphone; disengage when using a line level source such as a mixing console or other audio device.
7. **Combination Jack for INPUT 1:** Balanced or unbalanced XLR or 1/4" connector.
8. **Volume Control for INPUT 2**
9. **MIC/LINE Switch for INPUT 2:** Engage when using a microphone; disengage when using a line level source such as a mixing console or other audio device.
10. **Combination Jack for INPUT 2:** Balanced or unbalanced XLR or 1/4" connector.
11. **MIX/IN2 Selector Switch:** Engage to send your mixed signal (1&2) to another powered speaker, powered subwoofer, or other device. Disengage to send only the signal from INPUT 2.
12. **OUTPUT Jack:** XLR connector, line level output.
13. **USB B I/O Port:** Connect to Windows computer for customizing and adjusting DSP settings .
14. **DSP MODE Selector:** Press this button to cycle through the DSP equalizer presets. The adjacent LED indicators will illuminate to indicate which preset is selected as the button is pressed. DSP presets are customizable through the PC software, the presets are programed from the factory with the following curves.
15. **Main Power Switch**
16. **IEC Power Jack:** Use included AC power cable.
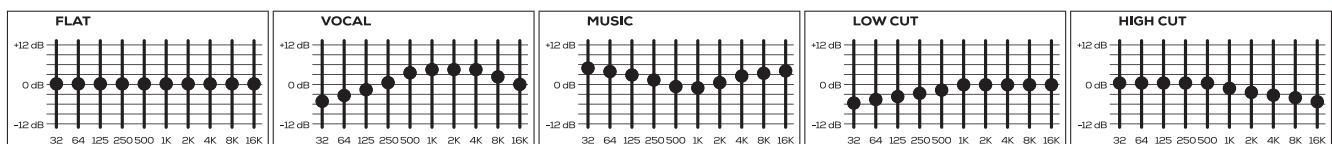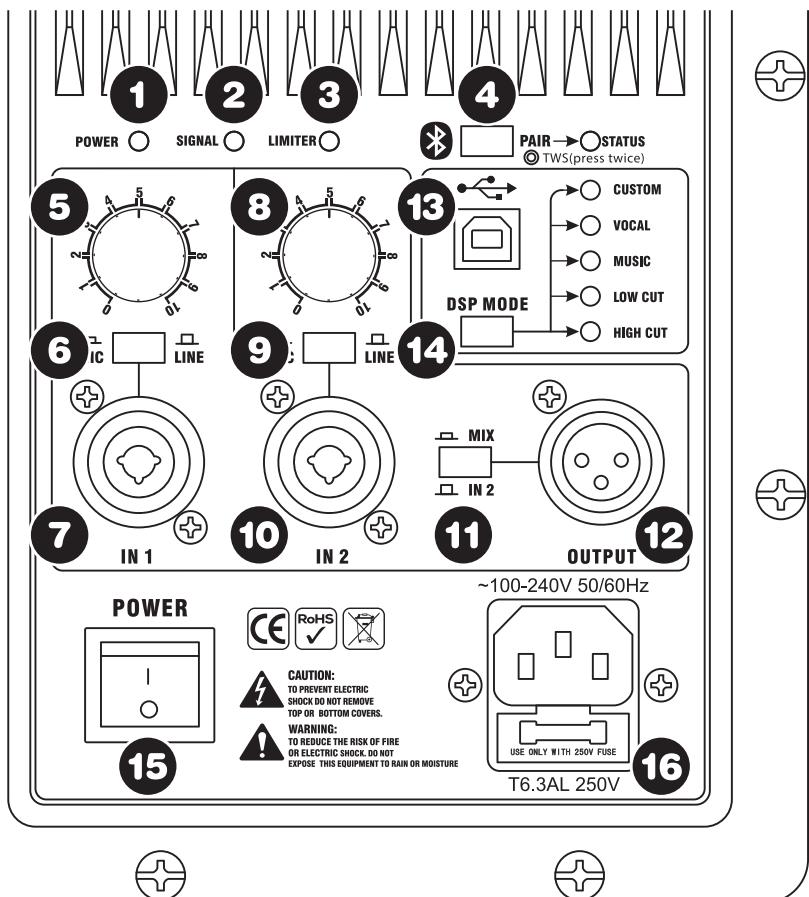
Bluetooth Operation (Mono)

The PPA800DSP features simple to use bluetooth input.

1. To enable bluetooth, hold the "Pair" button (circled below) next to the Bluetooth symbol until you see the blue LED light up and flash rapidly. If speakers are connected to the outputs, you will hear a beep when it is ready to pair.
2. Look for the device name as "PPA800DSP" and pair as you would any other device. The LED will blink blue while it is trying to pair and become solid blue when it is connected.
   Note: If the PPA800DSP is already connected to a device then it will try to connect automatically.
3. Bluetooth input can be turned off by holding down the bluetooth button again until the blue LED goes dark.

Bluetooth TWS Operation (Stereo)

The PPA800DSP also supports TWS (True Wireless Stereo) which allows you to wirelessly connect 2 units to a single Bluetooth source for left and right stereo operation.

1. For the initial pairing, place the two speakers close together (preferably within 5 feet).
2. Turn on one PPA800DSP and wait a few seconds for the amplifier to boot up.
3. Press and hold the PAIR button next to the Bluetooth symbol (see image below) for one second, the blue STATUS light will blink rapidly.
4. Open the Bluetooth settings on your source (phone, tablet, computer, etc…) and select "PPA800DSP" to pair your device. Once paired the blue STATUS light will become solid blue. Note: This speaker will become the "right" speaker once TWS pairing is complete.
5. Turn on the second PPA800DSP and wait a few seconds for the amplifier to boot up.
6. Press and hold the PAIR button next to the Bluetooth symbol (see image below) for one second, the blue STATUS light will blink rapidly.
7. Momentarily press the PAIR button twice (2 clicks within 2 seconds) and the PPA800DSP will automatically begin searching for the other unit. Once paired the STATUS lights on both units will become solid blue. Note: This speaker is now the "left" speaker.
8. After the left and right speakers are paired they can be placed up to 15' apart. The STATUS lights on both speakers will be solid blue when the source is not sending audio and they will blink in unison when audio is playing.

Power off or double press the Bluetooth button on either unit to disable TWS. The remaining connected speaker will automatically switch back to summed mono operation.

Notes:
- Bluetooth must be re-enabled by holding down the Bluetooth button every time the DSP powers on.
- The Bluetooth signal will mix with inputs from 1 and 2. If other inputs are connected and only Bluetooth is desired, the input volumes must be turned down.
- Volume must be controlled from the Bluetooth source when using Bluetooth as the input method.
- Once two PPA800DSP amplifiers are paired for TWS operation you can only connect to the "right" speaker with your Bluetooth source.
- When TWS is disabled, the primary unit will sum the two channels together for mono operation.
- If you are having connectivity issues while in TWS mode, try restarting your bluetooth device.
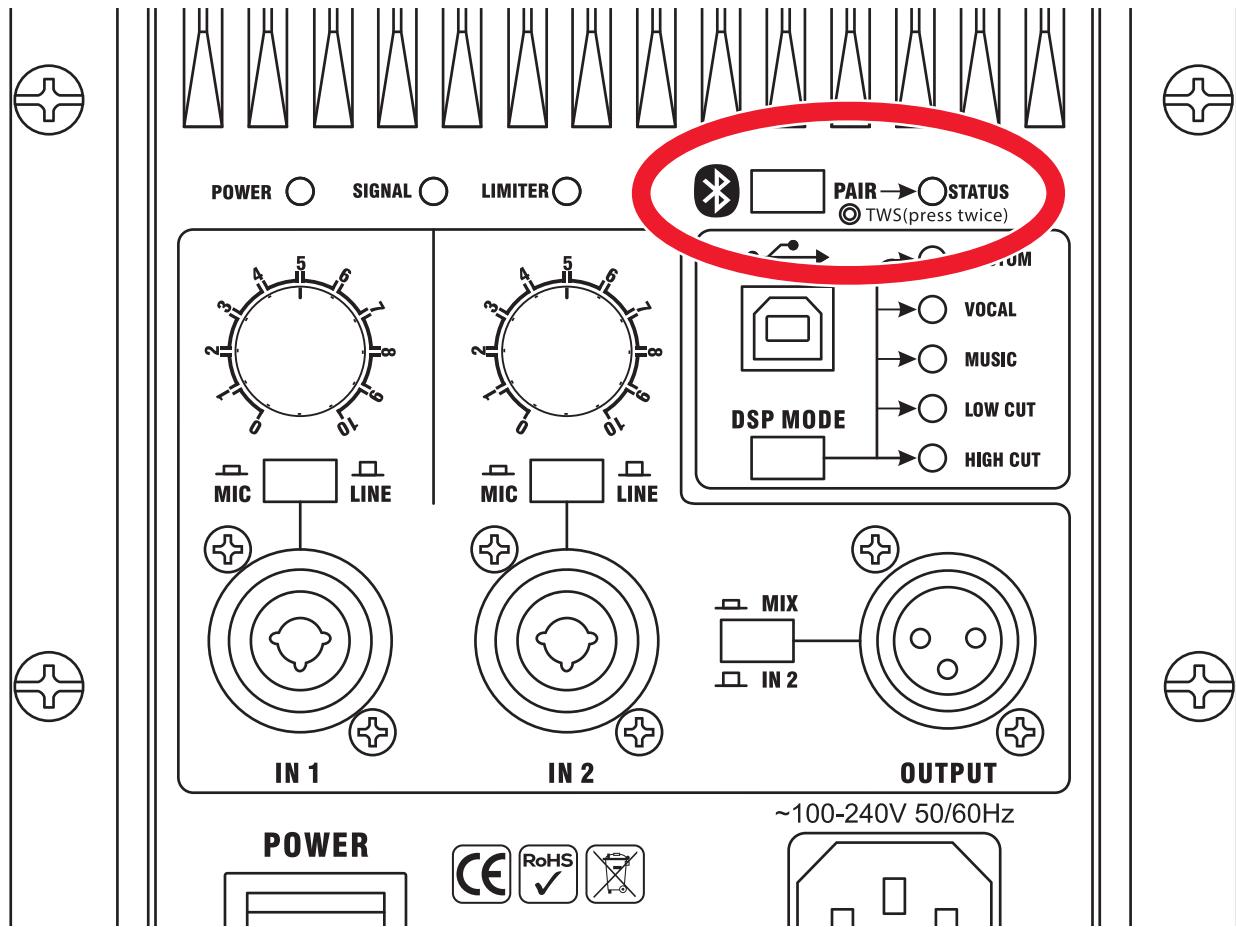
Bluetooth TWS Operation

Wired Operation

1. Ensure that all your equipment is OFF, and lower all volume, gain, and level controls before making connections.
2. You may connect a dynamic microphone, or line level audio device (mixing console, CD player, electronic keyboard, etc.) to each of the INPUT 1 and INPUT 2 jacks, using the appropriate cables.
3. Link additional powered speakers or outboard gear with the OUTPUT jack.
4. Turn on your mixer or other audio devices, then turn on this amplifier.
5. Adjust levels of INPUT 1 and INPUT 2 (and OUTPUT selector, if applicable) to suit your needs.

Specifications

- Amplifier type: ....Class D
- Low frequency power rating: .....600W RMS (4 ohms/1 kHz @ THD+N 1%)
- High frequency power rating: ....200W RMS (4 ohms/8 kHz @ THD+N 0.1%)
- Input sensitivity:........................LINE, 0 dBu; MIC, -24 dBu
- Bluetooth version: 5.0
- Power:.....................................120~240 VAC, 50/60 Hz, auto-sensing
- Dimensions: ....15" L x 6-5/16" W x 2-3/4" D
- Cutout dimensions: ....14" x 5-1/2" • Weight: 5.0 lbs.

Software Installation Guide

- Download the software from the Dayton Audio Website and double click PPA800DSP.exe using a Windows PC to open the installer. Follow the prompts as shown below.
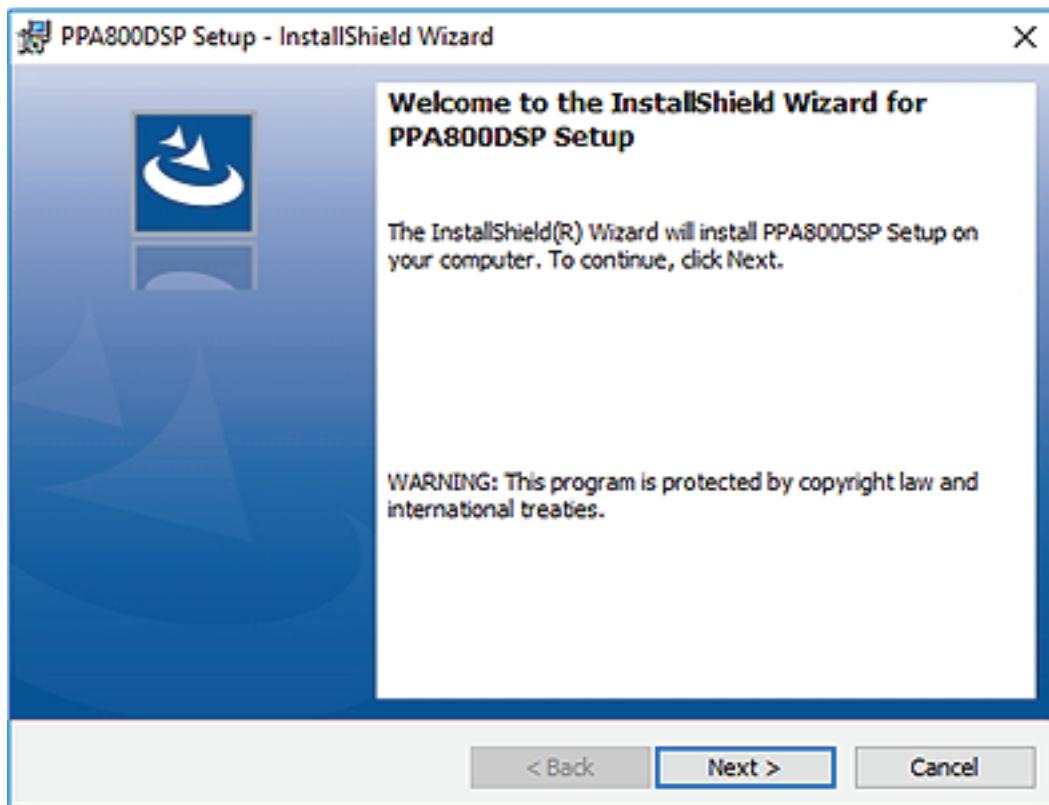

- Accept the terms in the license agreement and press "Next".
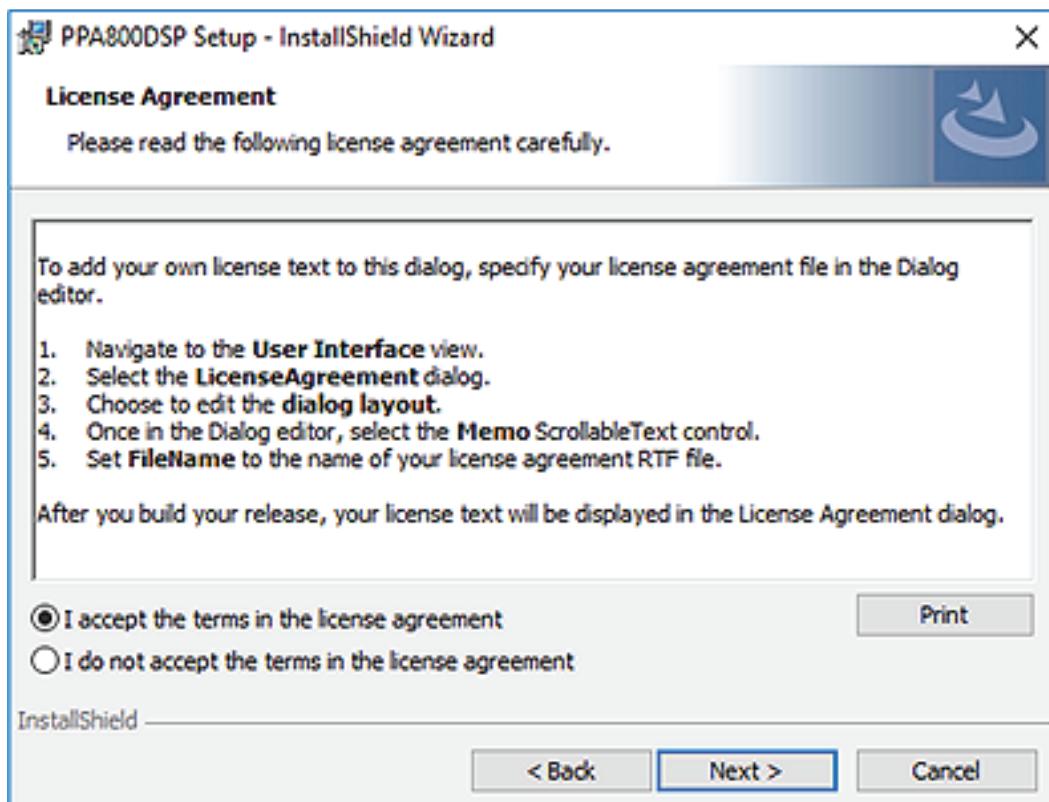
Software Installation Guide – Continued

- Fill out your desired user name and organization and press "Next".
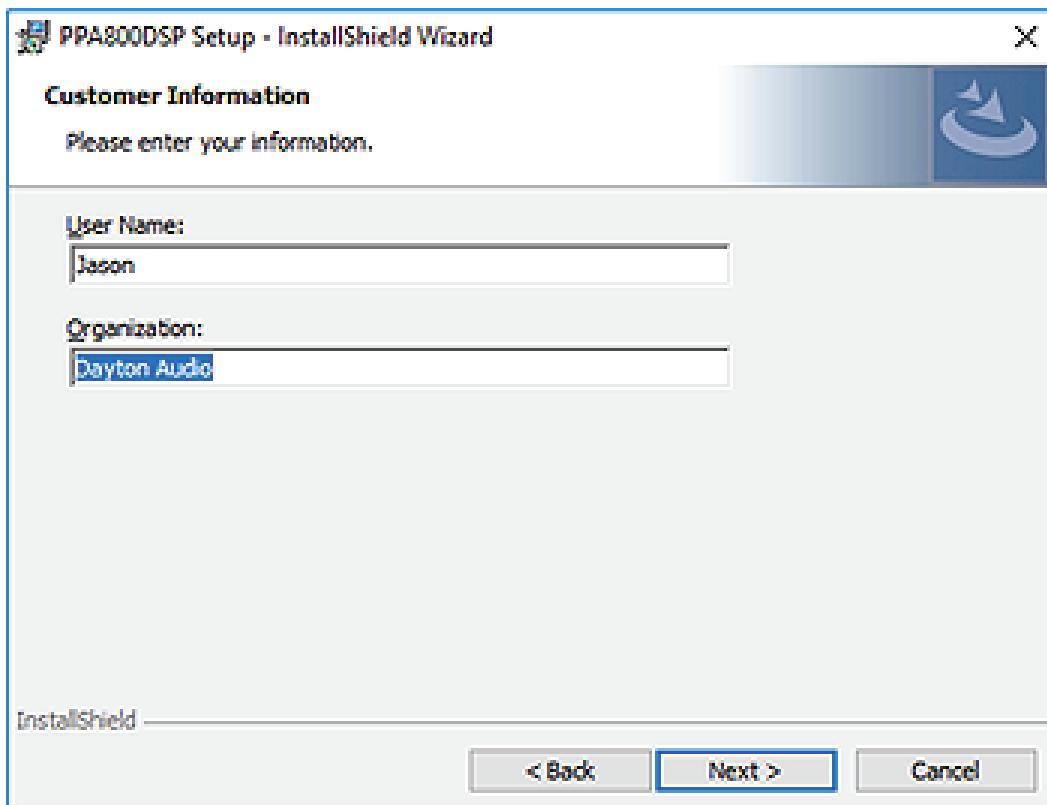
- Make sure "Launch the program" is checked in the screen below. This will open the driver setup file.
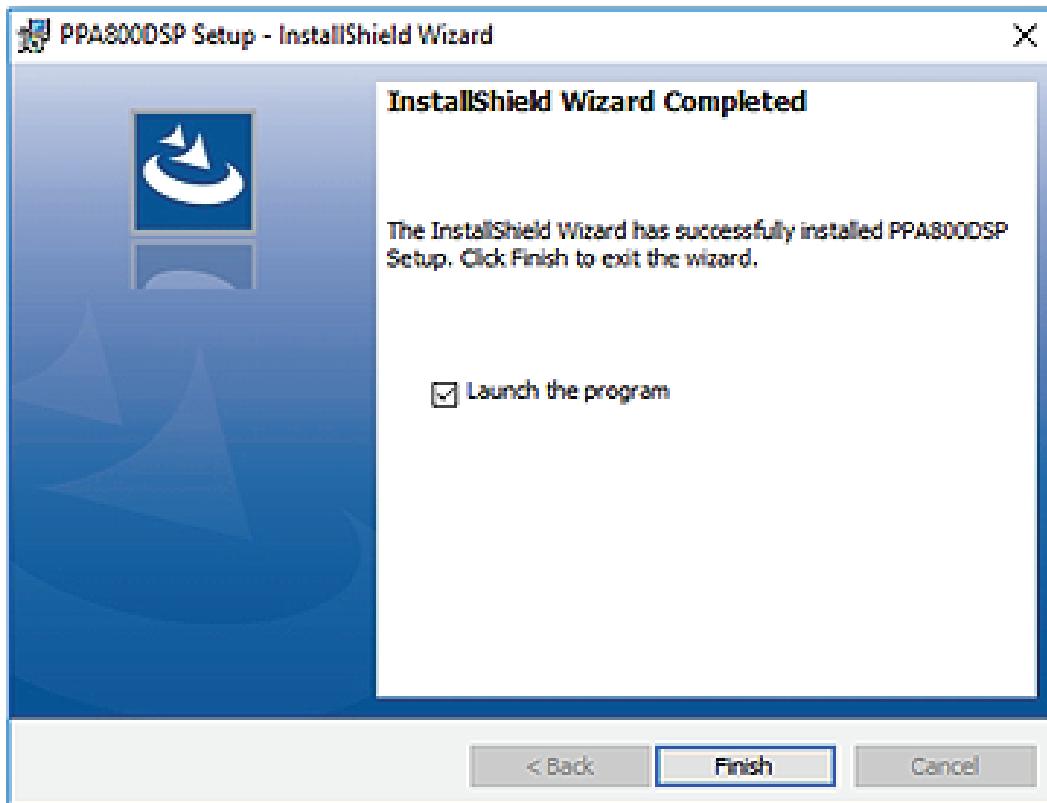
- Press "Finish" to complete the software installation.

Software Installation Guide - Driver

- If you enabled "Launch the program" in the previous Window, a driver installation window will open.
- **Note:** If "User Account Control" asks you to allow the program to make changes to the computer, allow it. Without installing the driver, the hardware is not guaranteed to connect to the software.
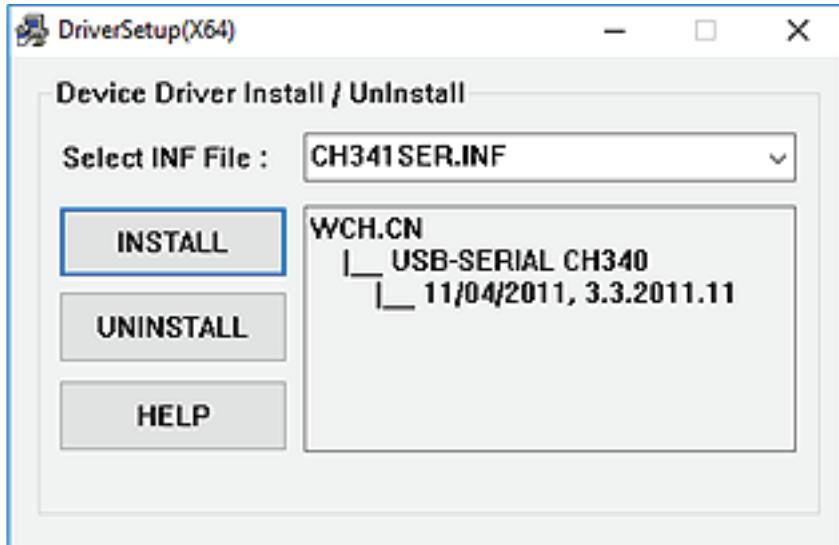
- Press "INSTALL" and wait for a message telling you that the driver has been successfully installed.
- You can now close the installer, and you are free to connect your device and open the software.

Connecting the PPA800DSP to the Windows Software

- Find the PPA800DSP shortcut in your start menu. If it cannot be found, the default installation path for the PPA800DSP software is "C:\Program Files (x86)\ Dayton Audio\PPA800DSP\PPA800DSP.exe".
- The software will automatically connect to the device if it is powered on and connected with USB.
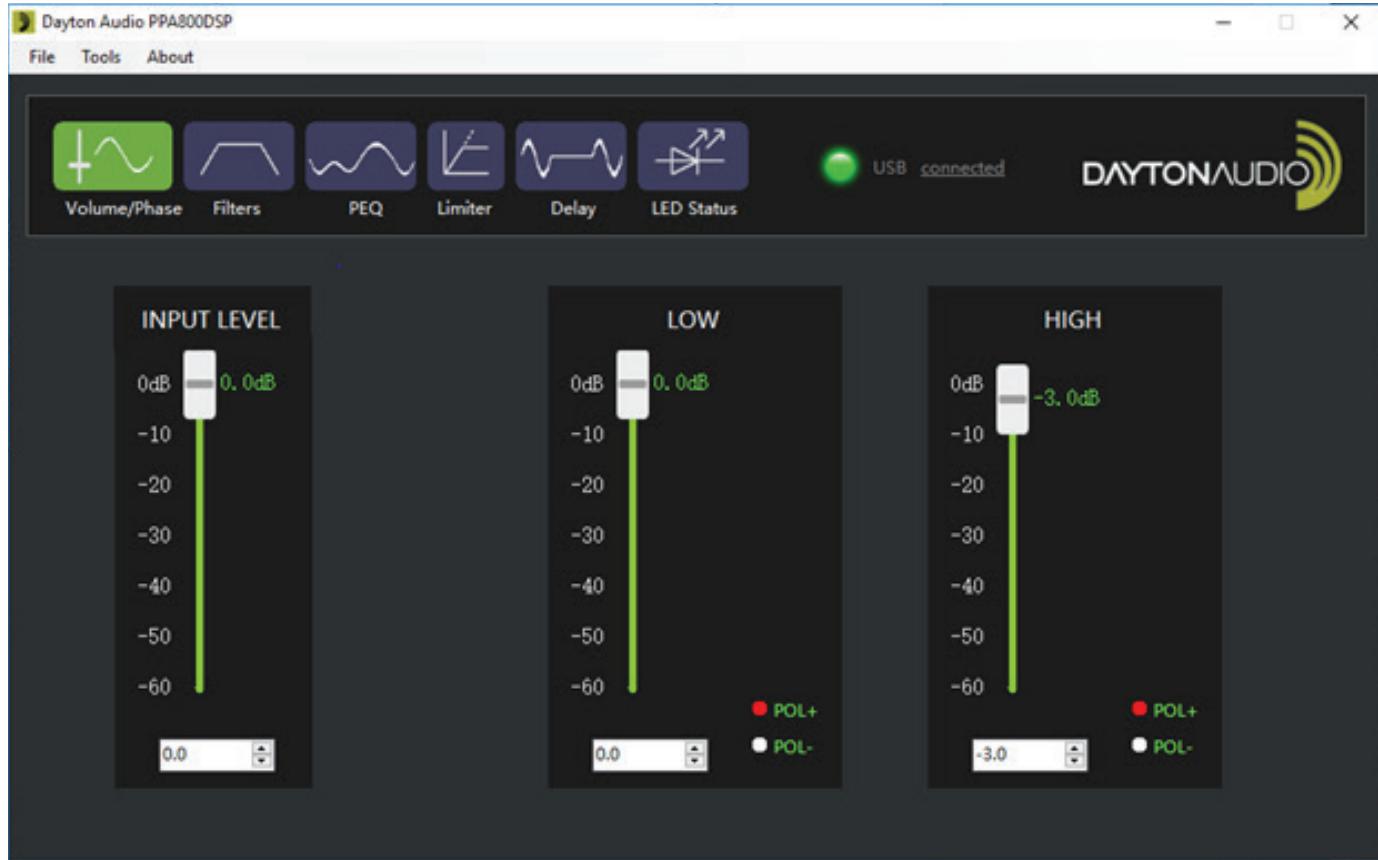
- You will see a glowing green circle in the top right corner when the software is successfully connected.

Troubleshooting steps

1. Ensure the PPA800DSP is powered on and connected to a USB port on the PC.
2. Ensure you are using the provided USB-B cable. (It's blue!)
3. Try all other USB ports on the computer, ensuring they work with other devices.
4. Restart the computer.
5. Power cycle the PPA800DSP.
6. Uninstall the software with the control panel, and then reinstall the software, ensuring the driver gets installed at the end of installation.

Software - Volume and Phase Controls

A. **Input Level:** Control the input volume of the system by moving the slider up or down, or by entering a value into the text box.
B. **Low Pass Volume:** Control the output volume sent to the low pass output of the system by moving the slider up and down, or by entering a value into the text box.
   i. The polarity of the output can be set to either "POL+" or "POL-" by clicking the circle next to the desired choice. The default setting is "POL+"
C. **High Pass Volume:** Control the output volume sent to the high pass output of the system by moving the slider up and down, or by entering a value in dB into the text box.
   i. The polarity of the output can be set to either "POL+" or "POL-" by clicking the circle next to the desired choice. The default setting is "POL+"

Software - Filter Controls

A. **Graph:** The graph shows a visual representation of the applied filters. When enabled, the LPF or HPF frequency can be changed by sliding the blue circles labeled L or H in the graph.
B. **LOW PASS or HIGH PASS Selection:** Click the LOW PASS button to edit the low pass output (red wires) settings, or the HIGH PASS button to edit the high pass output (blue wires) settings.
C. **LPF and HPF:** To enable or disable the low/high pass filter, click either the "LPF ON/OFF" or the "HPF ON/OFF" button. The label of the button will say either ON or OFF to represent the current state of the filter.
  i. **Slope:** Change the slope of the filter by picking one of the many options in the slope drop down box. This selection will be immediately represented in the graph to the left.
  ii. **Frequency:** To change the frequency of the filter, a value can be entered in the box, the arrow buttons can be used to move the value up or down, the slider can be moved back and forth, or the circular L or H button in the graph can be moved with a click and drag.
  Notes
  ● The HIGH PASS output has a passive 1 kHz high pass filter. Even if you turn HPF off in this menu, the signal is filtered out below 1 kHz. The LOW PASS output can output full-range.
  ● Filters are not affected by changing presets. Filters will never be changed by pressing the "DSP MODE" button on the amp.

Software - Parametric EQ

A. **Preset selection:** When the PPA800DSP is connected, clicking one of the preset buttons will change the device into that preset and allow for real time editing.
   i. Changes must be downloaded (saved) to the preset using the tools menu before switching to another preset or they will be lost!
   ii. Whatever preset is selected will show as selected on the amp itself.

B. **HIGH PASS and LOW PASS selection buttons:** Each preset allows for individual PEQ settings for both the high pass and low pass output sections. Click the "LOW PASS" button to edit the low pass output section (red wires) and the "HIGH PASS" button to edit the high pass output section (blue wires).

C. **Graph:** The graphic equalizer allows for a visual representation of the selected settings
   i. The green line represents the simulated response of the output signal. The numbered blue circles correspond to the numbered EQ bands.
   ii. The blue circles can be dragged up and down to adjust gain as well as left and right to adjust frequency. After clicking one of these circles, red crosses will appear. Dragging these crosses will increase or decrease the Q value.

D. **EQ Band Settings:** This section allows for values to be entered for each band of the EQ, or adjusted with the corresponding arrow buttons.
   i. By clicking the numbered buttons in the first column, the user can also enable or disable each band individually.
   ii. The FLAT button in each row will set the gain to 0 for that band.

Software - Limiter

A. Graph: This shows a simulated representation of the limiter settings that are selected. The blue handle can be dragged left or right to change the threshold of the limiter. The X axis is the input in dBu, and the Y axis is the output in dBu.

B. Limiter Settings: Press the button that says either on or off to switch the state of the limiter. This will immediately be shown in the graph.
  i. The threshold of the limiter can be adjusted by entering a value into the box, pressing the up and down arrows, or by dragging the slider.
  ii. The attack of the limiter can be adjusted by entering a value into the box, pressing the up and down arrows, or by dragging the slider.
  iii. The release of the limiter can be adjusted by entering a value into the box, pressing the up and down arrows, or by dragging the slider.

Notes
- External LED can be used to represent when the limiter is triggered. See the "External LED Status" section later in the manual for details.

Software - Adjustable Delay
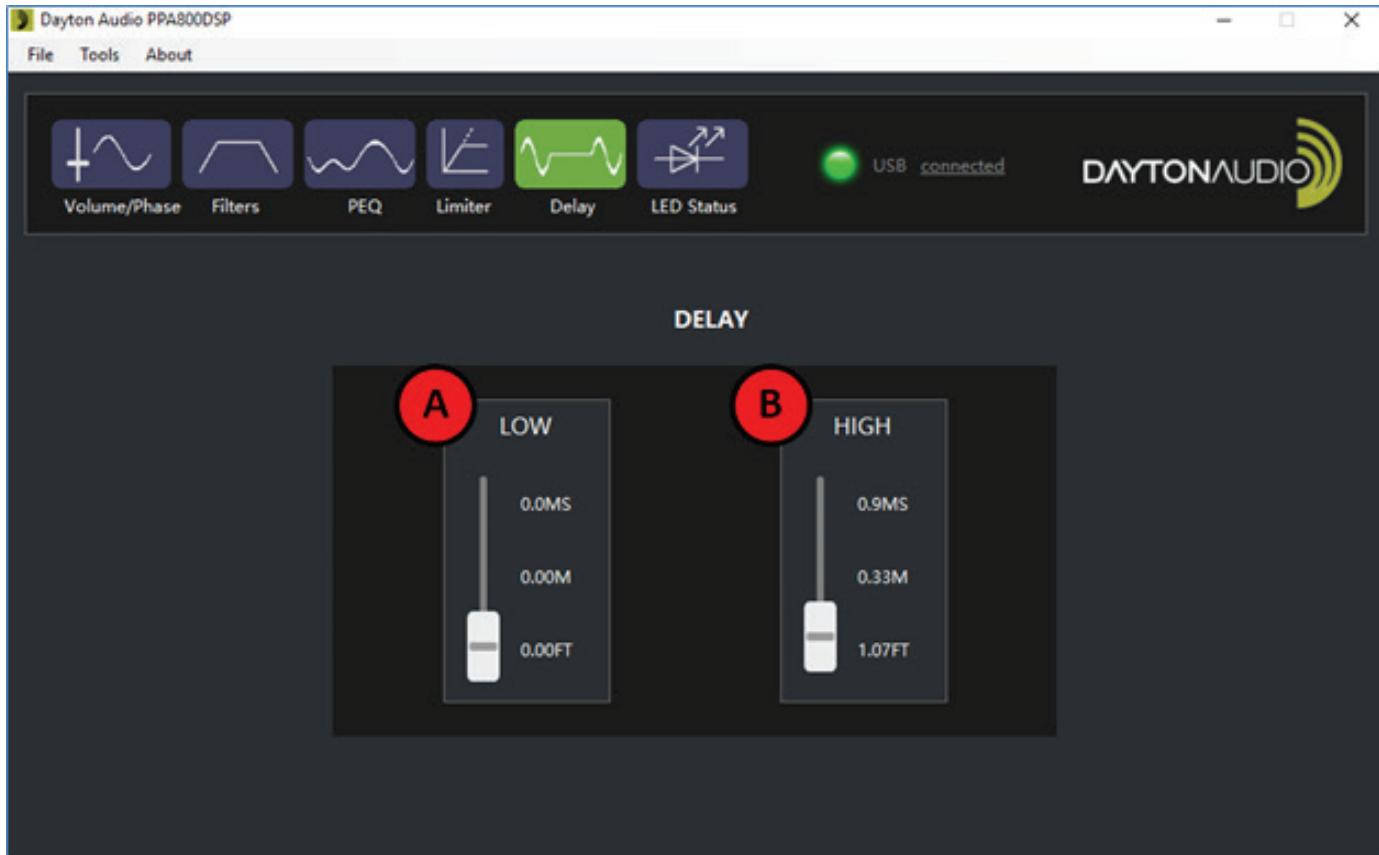
A. **Low Pass Output Delay:** Adjust the delay of the low pass output by moving the slider up or down. The value of the delay is represented on the right in milliseconds, meters and feet.

B. **High Pass Output Delay:** Adjust the delay of the high pass output by moving the slider up or down. The value of the delay is represented on the right in milliseconds, meters and feet.

Software - External LED Status
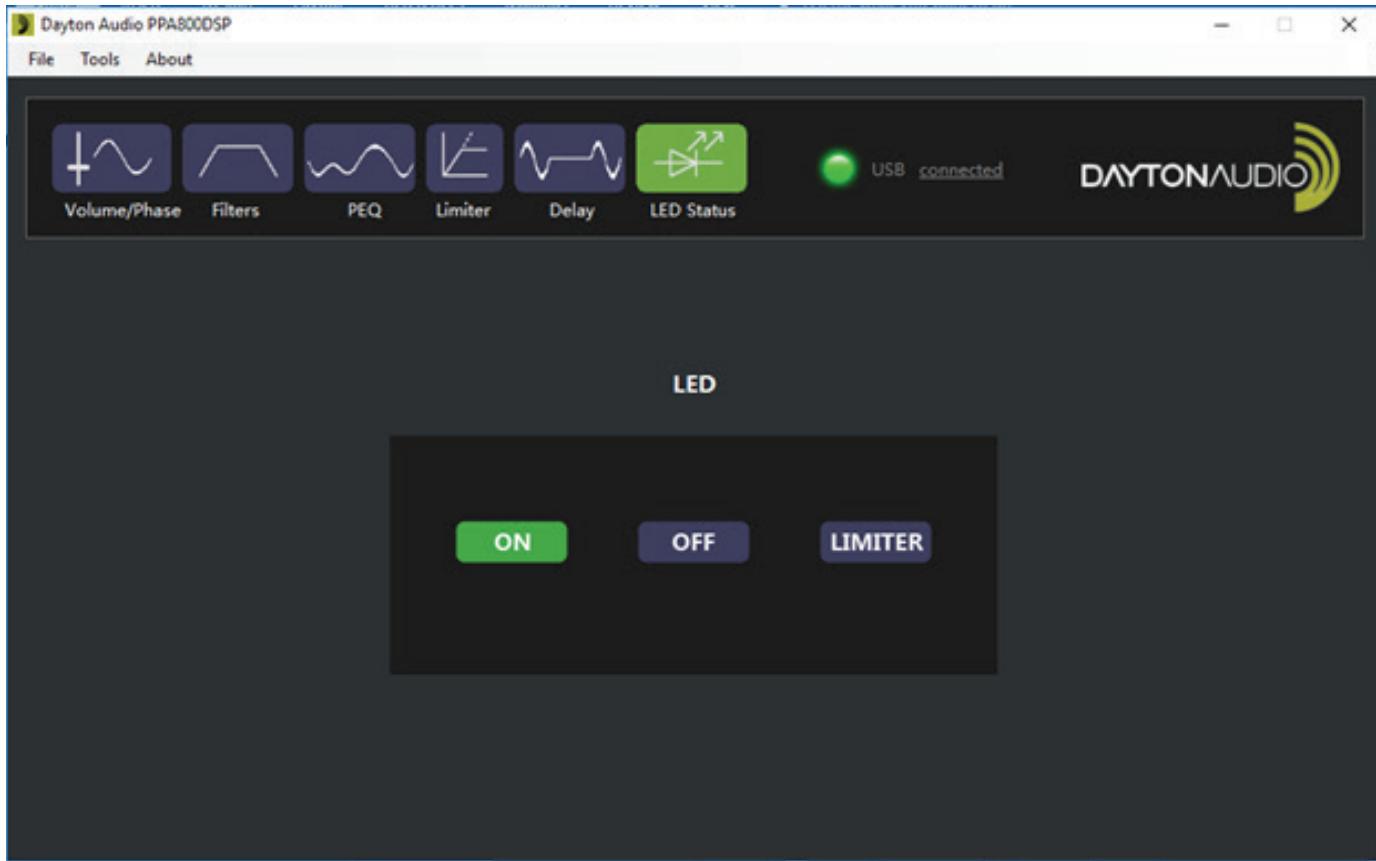
- An external LED can be attached to the back of the device through the 2 pin male header on the exposed board. It is circled in red in the image below.

- There are 3 possible settings for this LED.
    - i. **ON** – The LED stays on the whole time the device is on.
    - ii. **OFF** – The LED is always off.
    - iii. **LIMITER** – The LED status is attached to the limiter. When limiting is happening, it will be on. It will be off otherwise.
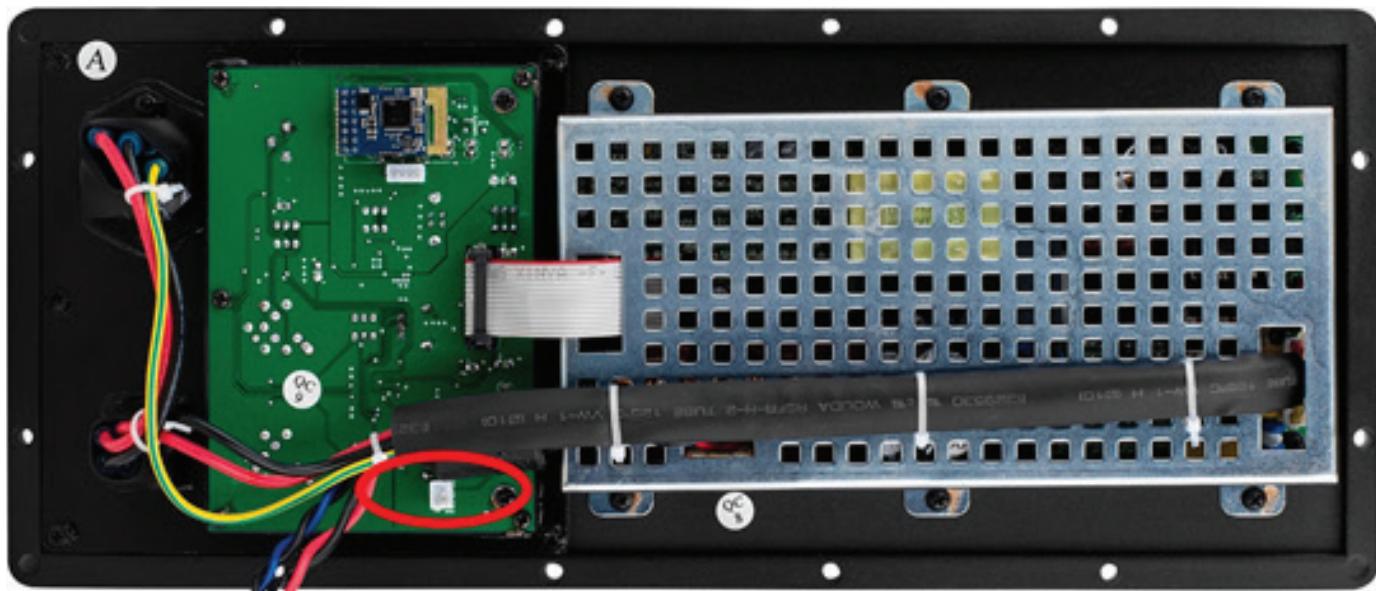
# Default Preset Settings – CUSTOM
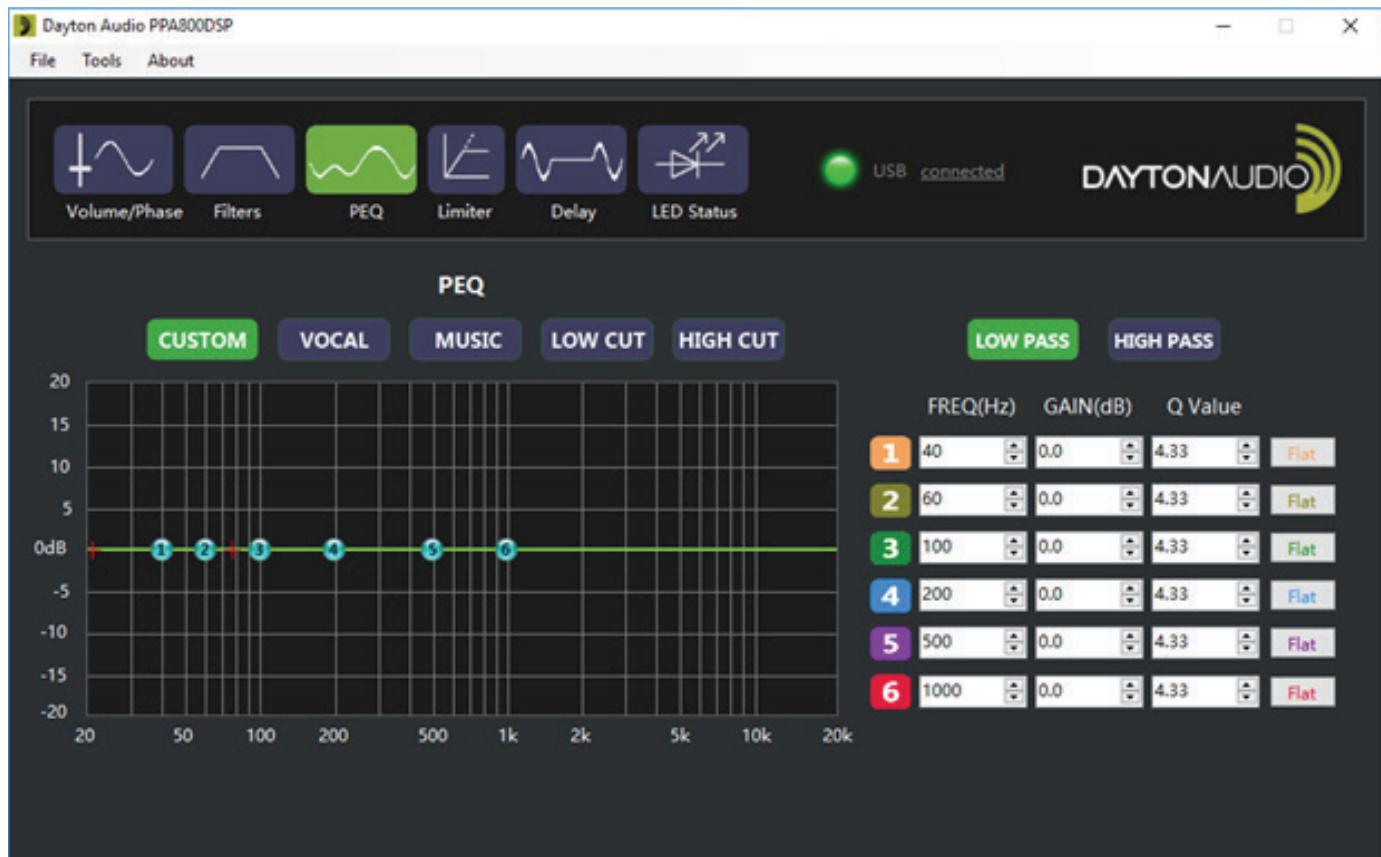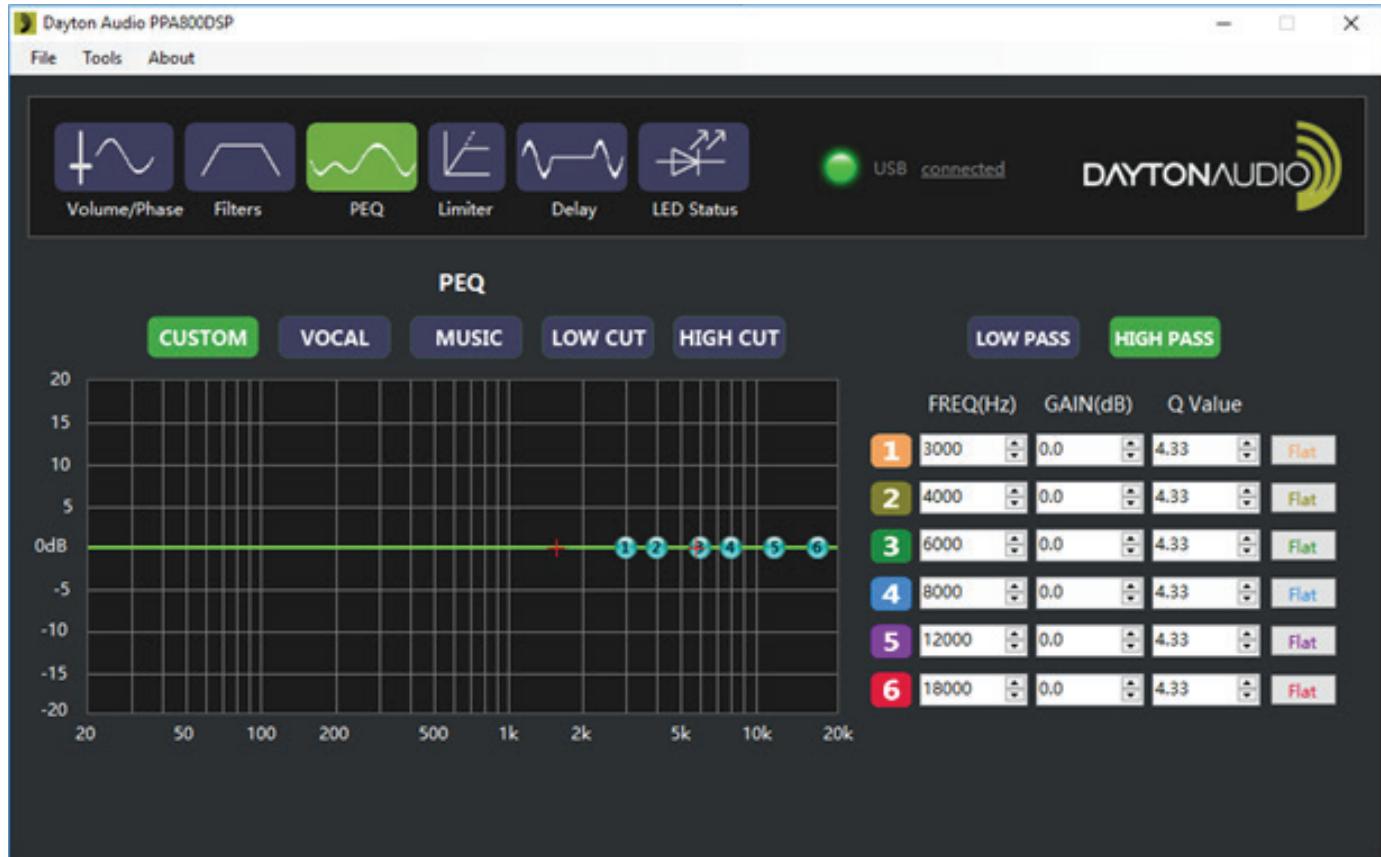
Default Preset Settings – VOCAL
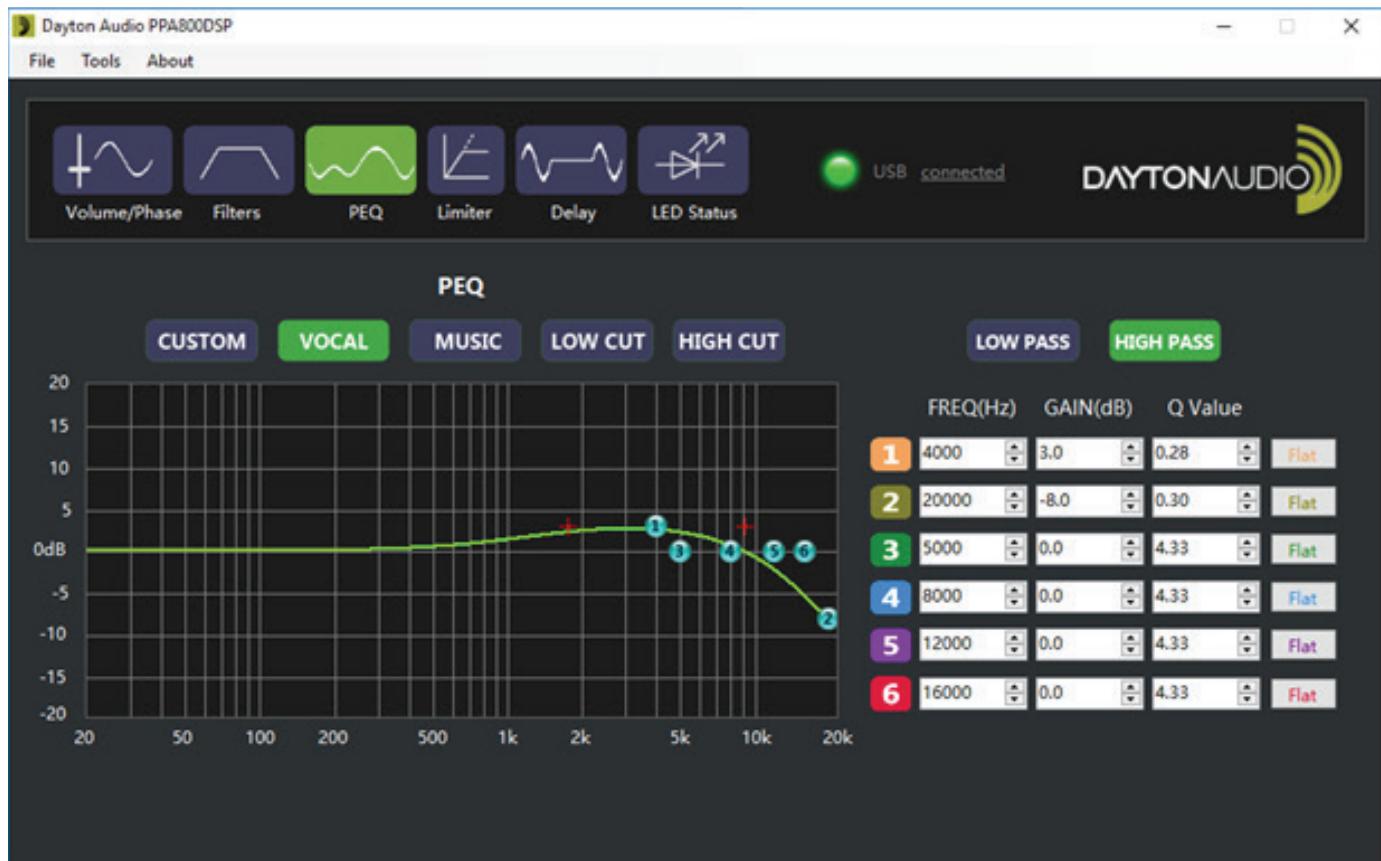
Default Preset Settings – MUSIC

Default Preset Settings – LOW CUT
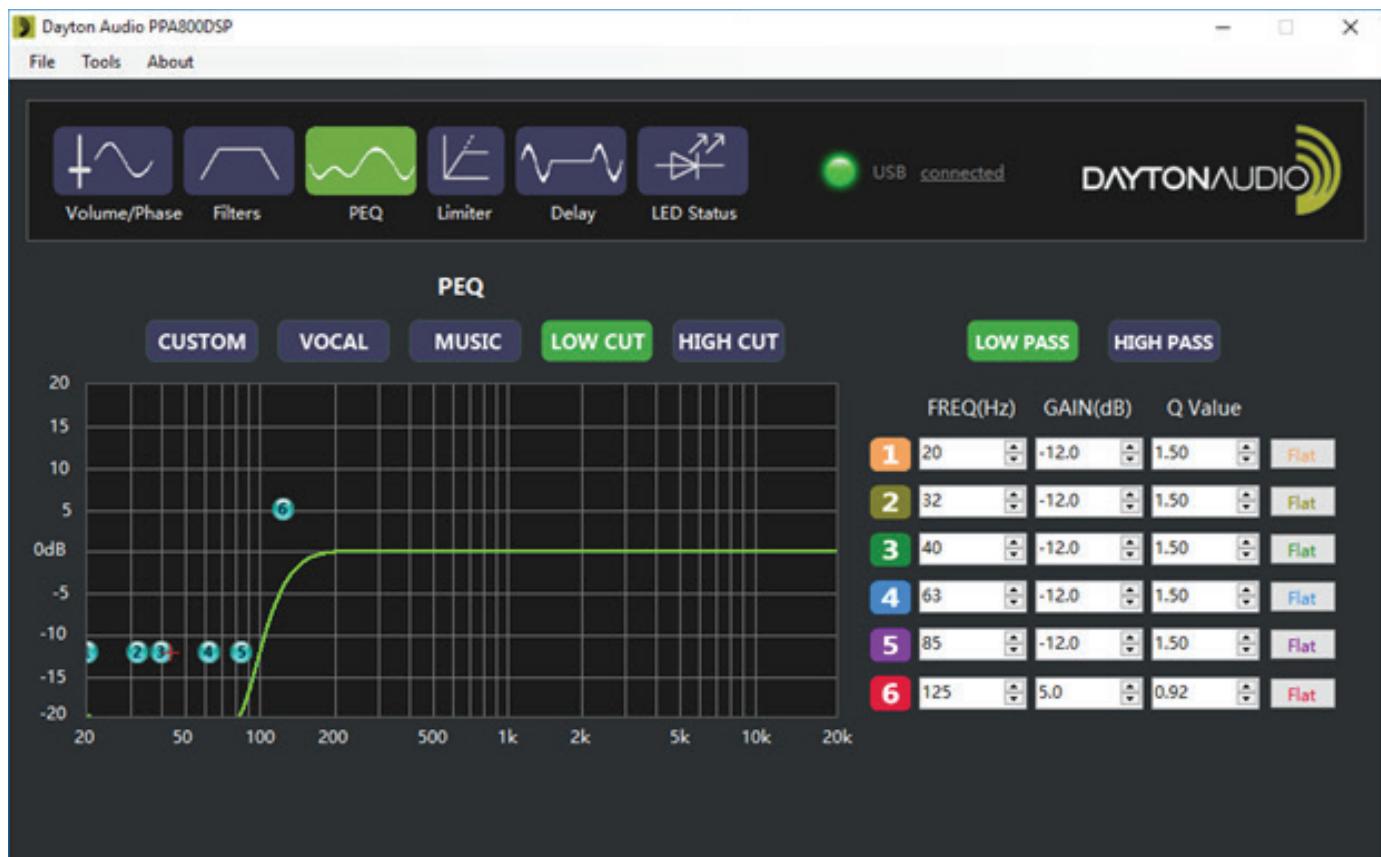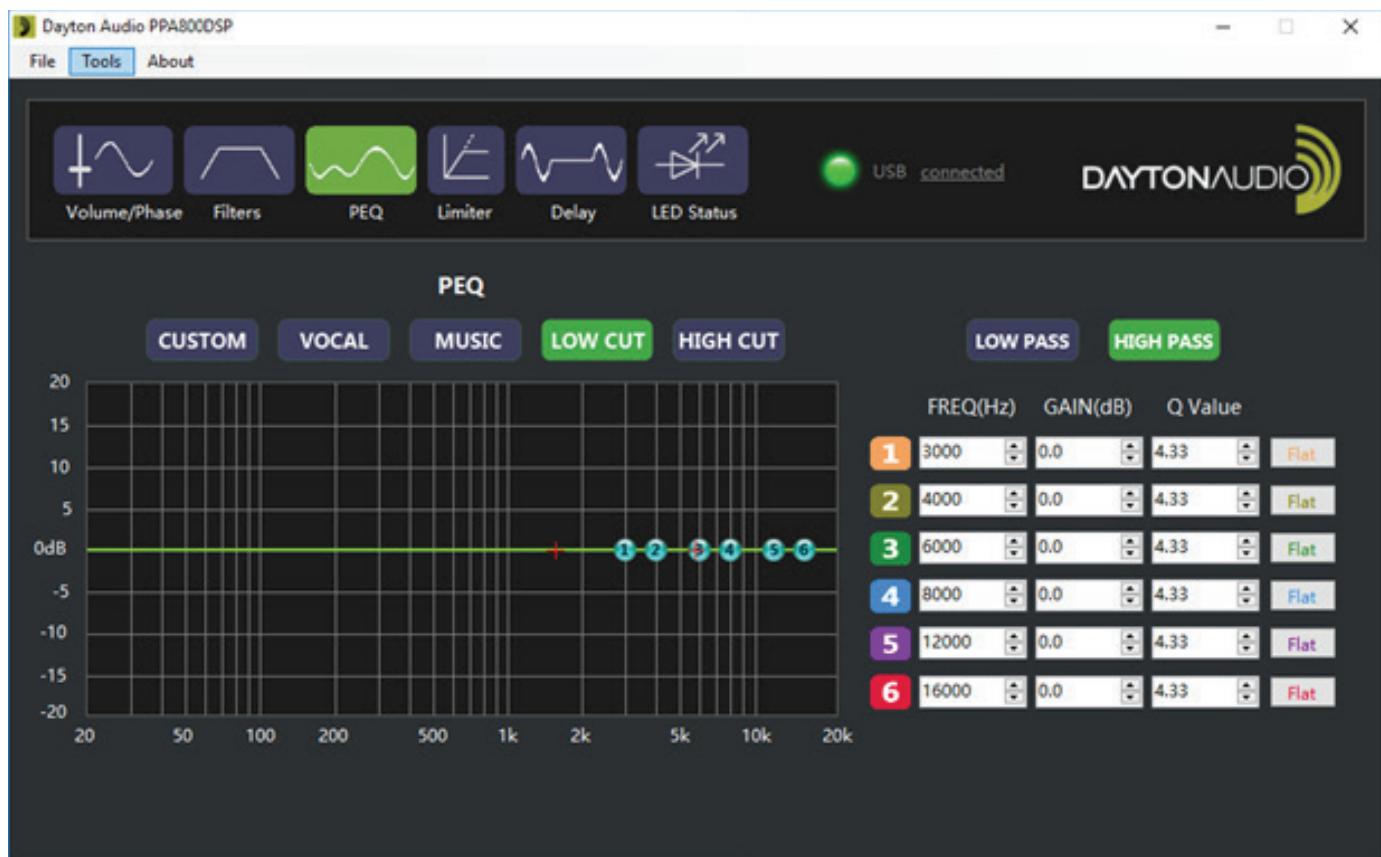
Default Preset Settings – HIGH CUT
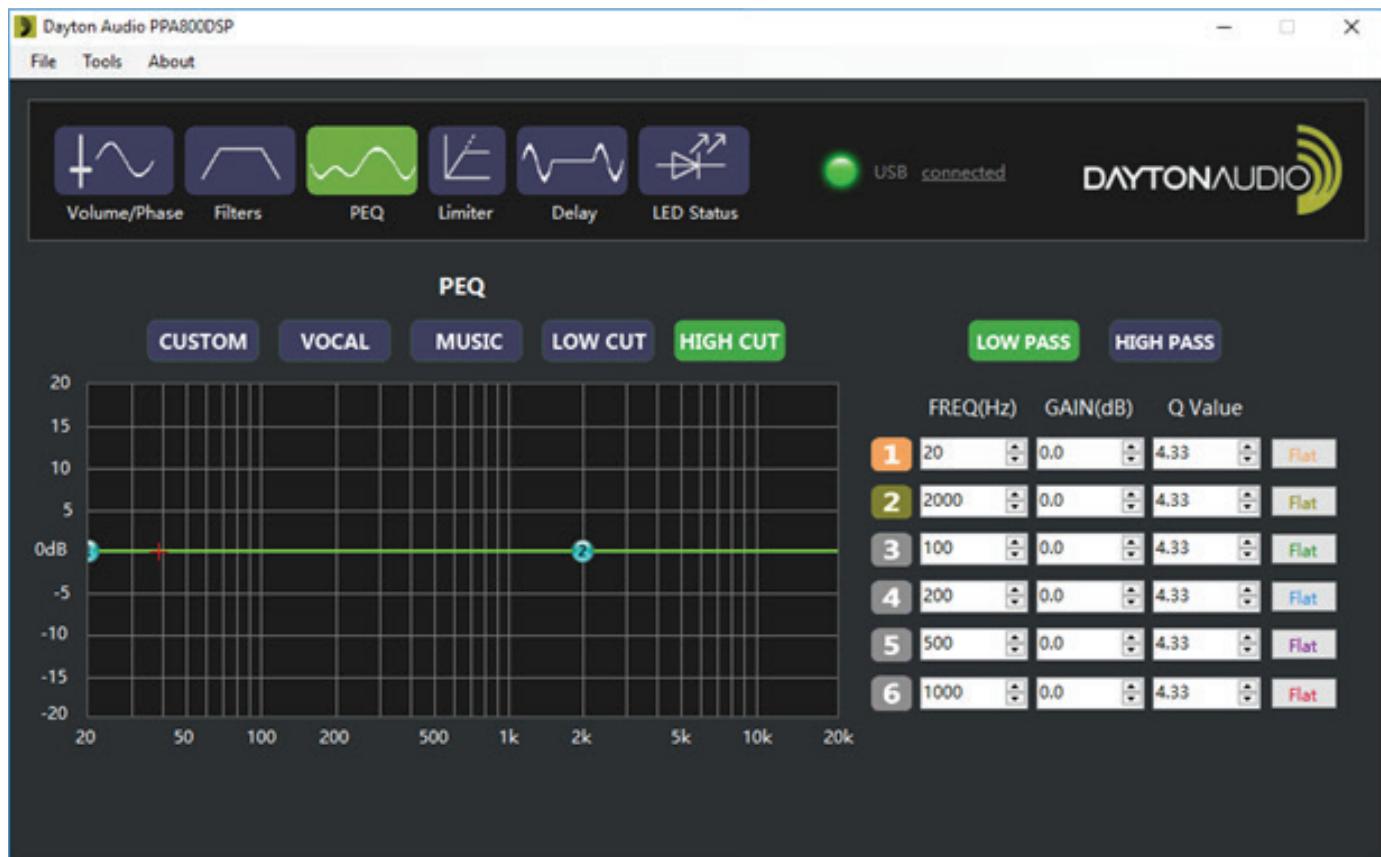
5-Year Limited Warranty
See daytonaudio.com for details

daytonaudio.com
tel + 937.743.8248
info@daytonaudio.com

705 Pleasant Valley Dr.
Springboro, OH 45066
USA