

1200W POWER AMPLIFIER with INTEGRATED DSP

Model: APA1200DSP User Manual



Safety



WARNING! TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION! TO REDUCE THE RISK OF SHOCK, DO NOT REMOVE THE COVER, NO USER SERVICABLE PARTS INSIDE. REFER SERVICE TO A DAYTON AUDIO AUTHORIZED DEALER.

IMPORTANT SAFETY INSTRUCTIONS

- Read and keep these instructions.
- Heed all warnings and follow all instructions contained within this manual.
- Do not use this unit near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. 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.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the unit.
- Only use attachments/accessories specified by the manufacturer.
- Unplug this unit during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the unit has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled, or objects have fallen into the unit, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Operate the unit only with the voltage specified on the rear. Fire and/or electric shock may result if a higher voltage is used.
- Do not modify, kink, or cut the power cord. Do not place the power cord in close proximity to heaters and do not place heavy objects on the power cord and/or the unit itself, doing so may result in fire or electrical shock.
- Do not touch the speaker terminals as electric shock may result.
- Ensure that the safety ground terminal is connected to a proper ground. Never connect the ground to a gas pipe, as a severe explosion and/or fire may result.
- Be sure the installation of this product is stable, avoid unlevel surfaces as the product may fall and cause injury, property damage, electrocution and/or fire.
- Note that when the unit is turned off, it is not completely disconnected from the AC power outlet. Do not open the cover.

REFER ALL SERVICE TO A QUALIFIED SERVICE TECHNICIAN

Sécurité



ATTENTION! POUR RÉDUIRE LE RISQUE D'INCENDIE OU DE CHOC ÉLECTRIQUE, N'EXPOSEZ PAS CET APPAREIL À LA PLUIE OU À L'HUMIDITÉ.

ATTENTION! POUR RÉDUIRE LE RISQUE DE CHOC ÉLECTRIQUE, NE RETIREZ PAS LE COUVERCLE, AUCUNE PIÈCE RÉPARABLE PAR L'UTILISATEUR NE SE TROUVE À L'INTÉRIEUR. ADRESSEZ-VOUS À UN REVENDEUR AGRÉÉ DAYTON AUDIO.

CONSIGNES DE SÉCURITÉ IMPORTANTES

- Lisez et conservez ces instructions.
- Tenez compte de tous les avertissements et suivez toutes les instructions contenues dans ce manuel.
- N'utilisez pas cet appareil à proximité de l'eau.
- Nettoyez-le uniquement avec un chiffon sec.
- N'obstruez pas les ouvertures de ventilation. Installez l'appareil conformément aux instructions du fabricant.
- Ne l'installez pas à proximité de sources de chaleur telles que radiateurs, bouches de chaleur, poêles ou autres appareils (y compris les amplificateurs) qui produisent de la chaleur.
- Ne pas contrecarrer l'objectif de sécurité de la fiche polarisée ou de la fiche de terre. Une fiche polarisée possède deux lames dont l'une est plus large que l'autre. Une prise de terre a deux lames et une troisième broche de mise à la terre. La lame large ou la troisième broche sont prévues pour votre sécurité. Si la fiche fournie ne s'adapte pas à votre prise de courant, consultez un électricien pour remplacer la prise obsolète.
- Protégez le cordon d'alimentation pour éviter qu'on marche dessus ou qu'il soit pincé, en particulier au niveau des fiches, des prises de courant et du point de sortie de l'appareil.
- N'utilisez que les accessoires spécifiés par le fabricant.
- Débranchez cet appareil pendant les orages ou lorsqu'il n'est pas utilisé pendant de longues périodes.
- Confiez toutes les opérations d'entretien à un personnel qualifié. L'entretien est nécessaire lorsque l'appareil a été endommagé de quelque manière que ce soit, par exemple lorsque le cordon d'alimentation ou la fiche est endommagé, qu'un liquide a été renversé ou que des objets sont tombés dans l'appareil, que l'appareil a été exposé à la pluie ou à l'humidité, qu'il ne fonctionne pas normalement ou qu'il est tombé.
- Ne faites fonctionner l'appareil qu'avec la tension indiquée à l'arrière. L'utilisation d'une tension plus élevée peut entraîner un incendie et/ou un choc électrique.
- Ne modifiez pas, ne pliez pas et ne coupez pas le cordon d'alimentation. Ne placez pas le cordon d'alimentation à proximité des appareils de chauffage et ne posez pas d'objets lourds sur le cordon d'alimentation et/ou sur l'appareil lui-même, car cela pourrait provoquer un incendie ou une électrocution.
- Ne touchez pas les bornes des haut-parleurs, car vous risqueriez de recevoir un choc électrique.
- Assurez-vous que la borne de terre de sécurité est connectée à une terre appropriée. Ne connectez jamais la terre à une conduite de gaz, car cela pourrait provoquer une explosion et/ou un incendie.
- Assurez-vous que l'installation de ce produit est stable, évitez les surfaces non planes car le produit peut tomber et causer des blessures, des dommages matériels, une électrocution et/ou un incendie.
- Notez que lorsque l'appareil est éteint, il n'est pas complètement déconnecté de la prise d'alimentation CA. N'ouvrez pas le couvercle.

CONFIER TOUTE INTERVENTION À UN TECHNICIEN DE SERVICE QUALIFIÉ

What is Included:

- APA1200DSP
- Power Cable
- User Manual
- Auto EQ Microphone

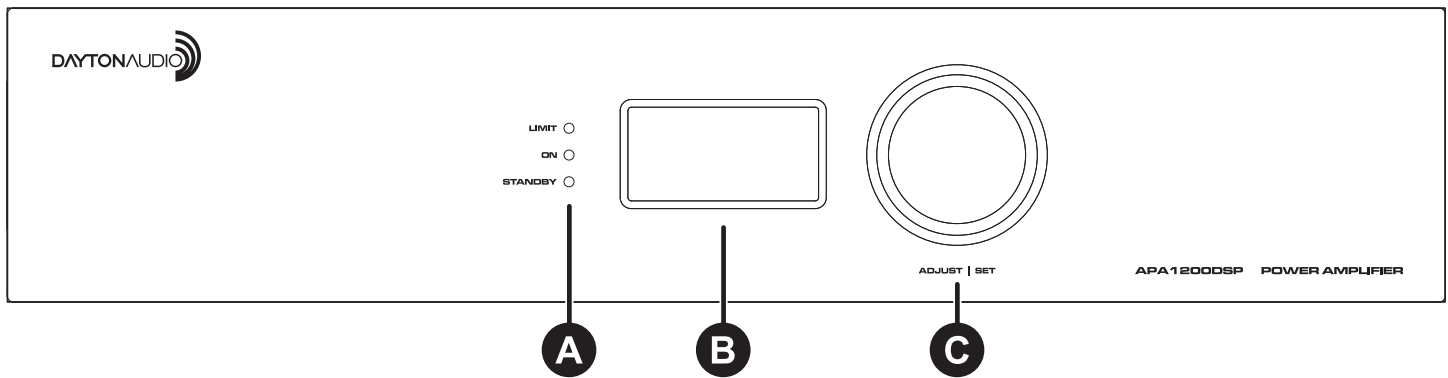
Features

- Networking capability for convenient control via any device with a web browser
- Automated Room EQ correction algorithm for connected subwoofers
- On-board control panel with LCD display and status LEDs
- Powerful DSP features configurable with a web-based GUI or right on the unit itself
 - Low Pass Filter (LPF)
 - High Pass Filter (HPF), usable as a subsonic filter
 - Parametric EQ (PEQ), up to 8 bands per channel
 - Phase Control
 - Line Output High Pass and Delay for mains integration with a connected subwoofer
 - Limiter
- Efficient Class D output topology
- Balanced and unbalanced line level inputs and outputs
- Digital COAX input
- Line Output with high pass filter and delay for connecting external amplifiers

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Front Panel



A. LEDs

1. **Limiter LED:** Lights red whenever the amplifier reaches the configurable voltage limit.

Limiter will also be activated (lights up) during the following conditions:

- I. Over load
- II. Over temperature
- III. Speaker short circuit

2. **On LED:** Lights green when the device is turned on and operating normally.

3. **Standby LED:** Lights red when the amplifier enters standby mode.

B. LCD Display: Displays status information and menus to allow complete control of the device with the control knob.

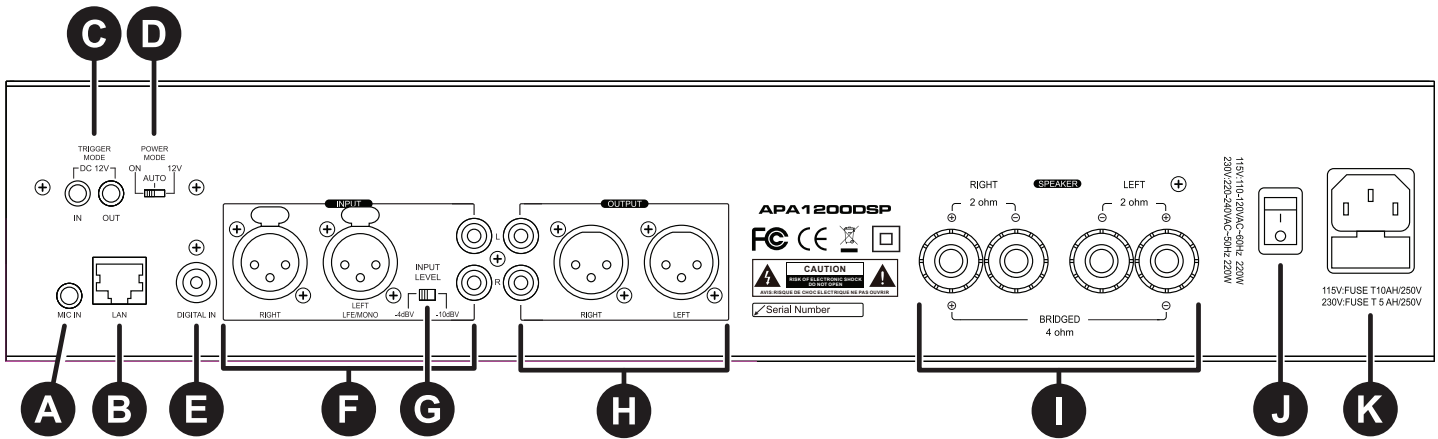
All parameters found in these menus can also be adjusted with the web GUI after making a network connection.

C. Adjustment/Set Control Knob:

Rotating the knob moves through the device's menu or adjusts the currently selected parameter up or down.

1. Pressing the dial once selects a given parameter or advances further into the menu (go forward).
2. Quickly pressing the dial twice returns to the previous page or previous level of the menu (go backward).
3. Long pressing the control knob can bring up extra functions, depending on the menu. For example, long pressing in some menus will allow you to link or unlink channels.

Rear Panel



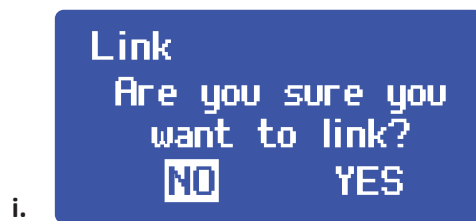
- A. **Mic In:** Microphone input for auto room EQ calibration (**Note:** Use the microphone that came with the device. The software is calibrated for the included mic, and results **WILL VARY** if a different mic is used.)
- B. **LAN:** Connect your APA1200DSP to a network (via a router or network switch) with a standard ethernet patch cable to enable remote control of all device settings via any web browser of a device on the same network.
- C. **DC12V Trigger:** 12VDC input to turn on/off the APA1200DSP with an external control device.
- D. **Power On Setting:** There are 3 possible modes for this setting.
 1. **ON:** The device will remain on at all times as long as the unit is connected to power and the power switch on the rear of the device is switched on.
 2. **Auto:** If the amplifier does not detect an analog input signal greater than the threshold selected in the power saving menu, it will automatically enter standby. If you want to wake up in Auto mode, you can input a music signal over the selected threshold or select the ON mode. NOTE: This mode should not be used if the digital coax connection is used, as the digital coax connection cannot trigger the device out of standby.
 3. **12V Trigger:** Will confirm that there is no audio signal and DC 12V before entering standby. If you want to wake up under 12V Trigger, you can input DC12V or select ON.
- E. **Digital Input:** Coax Digital Audio Input. (SPDIF)
- F. **Input:** Analog RCA x 2 or XLR x 2.
- G. **Input Attenuation Switch:** Adjust between -10dBV (900mV max input before clipping) and -4dBV (1.8Vrms before clipping)
- H. **Preamp Output:** Analog RCA x 2 or XLR x 2.
- I. **Speaker Output:** Binding post x 4.
2 Ohm Minimum for Stereo Configuration
4 Ohm Minimum for Bridged Configuration
- J. **Power Switch:** Turn On/Off the amplifier.
- K. **Power:** Connect the included power cord (IEC 60320-C13)

Navigating and Adjusting Parameters with the Onboard GUI

It is possible to adjust most parameters of the APA1200DSP on the unit itself via the display and control knob. For initial setup of the device, it is recommended to connect to the web-based GUI (see the next section), as the onboard GUI is better for making quick adjustments on the fly, rather than many adjustments at once. For more information about each menu option and parameter type, see the corresponding sections later in this guide.

Instructions:

1. **Rotating the dial** will move to the next menu option or increase/decrease a value depending on the current context of the menu. The currently selected parameter will be highlighted.
2. **Pressing the dial** once selects a given parameter or advances further into the menu (go forward).
3. **Quickly pressing the dial twice** returns to the previous page or previous level of the menu (go backward). For example, if you are in the PEQ menu, you will click the knob once to select a parameter such as frequency. You can then rotate the dial to change this frequency. When you are done, press the dial twice to go back, allowing you to select a different parameter to change.
4. **Long pressing the control knob** in the menus of volume, LPF, PEQ, HPF, Phase Degree and limiter will allow you to 'link' the A and B channels together, which means that all parameters within the menu will affect both channels. Long pressing again will allow you to 'unlink' the channels and create individual settings for each channel.



Onboard GUI Menu Screens

Below is each possible menu screen using the APA1200DSP's onboard menu system. The leftmost column are 'main menu' options, and the following columns are found by pressing the dial while the main menu item is selected. Quickly press the dial twice to go back.



Volume

i D

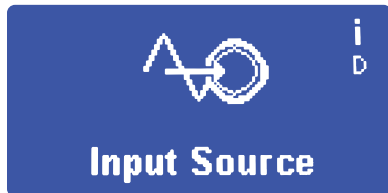


Adjust Volume

A

B -99 0dB

-19dB



Input Source

i D



Input Source

Digital 





LPF

i D



LPF

A OFF

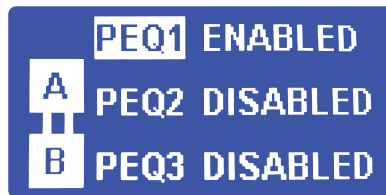
B FREQ: 20Hz

SLOPE: -12



PEQ

i D



PEQ1 ENABLED

A PEQ2 DISABLED

B PEQ3 DISABLED



PEQ1 ON

FREQ: 1.0kHz

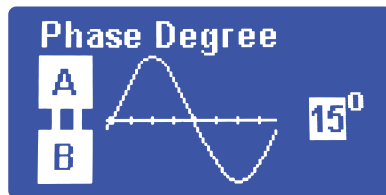
GAIN: 0.0dB

Q: 0.7

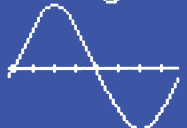


Phase Degree

i D



Phase Degree

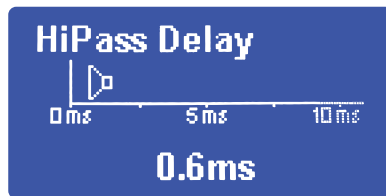
A  15°

B

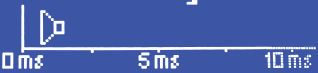


HiPass Delay

i D



HiPass Delay



0ms 5ms 10ms

0.6ms



PREOUT HPF

i D



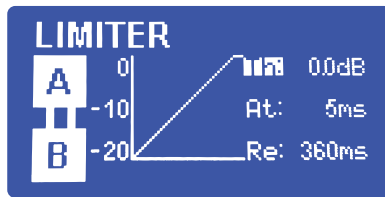
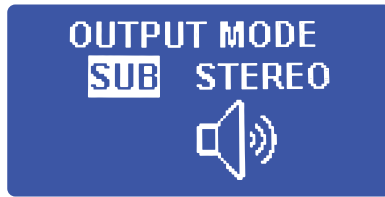
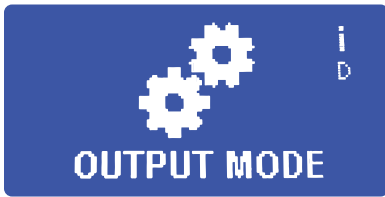
PREOUT HPF

A ON

B FREQ: 31Hz

SLOPE: -12

Onboard GUI Menu Screens



Network Connection and Accessing the Web Based GUI

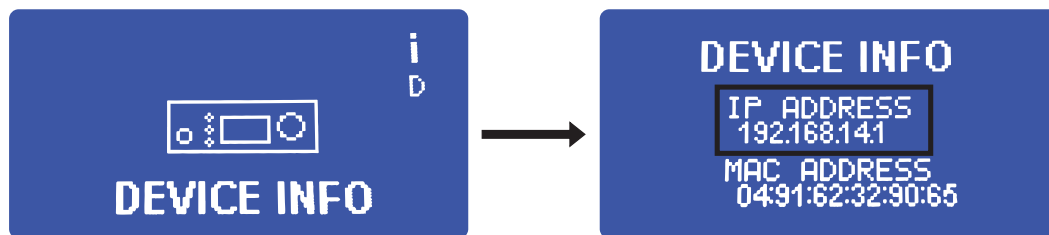
The web-based GUI will allow control of all functions of the amplifier through the web browser of any device on the same network (cell phone, laptop, tablet, etc).

Steps:

1. Connect the APA1200DSP to a router or network switch via a standard ethernet patch cable. Plug one end of the patch cable into your router/switch, and plug the other end into the LAN port on the back of the APA1200DSP (The APA1200DSP cannot be attached to your network via Wi-Fi, however Wi-Fi devices, such as a laptop, can wirelessly access the APA1200DSP's web GUI). **Note:** The APA1200DSP will work without an external internet connection, meaning the network needs to be established, but it does not require connection to a service provider.
2. Once the device is connected to the network via ethernet, the web interface can be reached using any device with a web browser on the same network as the APA1200DSP (laptop, cell phone, tablet, desktop, etc). Enter <http://APA1200DSP/> into the address bar of your browser to connect to the browser GUI. **Note:** If multiple APA1200DSP units are on your network, this link cannot be used, and you must follow the next step to find the unique IP address of each device.



3. The browser GUI can also be accessed by directly entering the IP address of your APA1200DSP into your web browser. This IP address can be found by entering the device info screen using the built-in display as highlighted below. Enter the IP address into the address bar of your web browser.

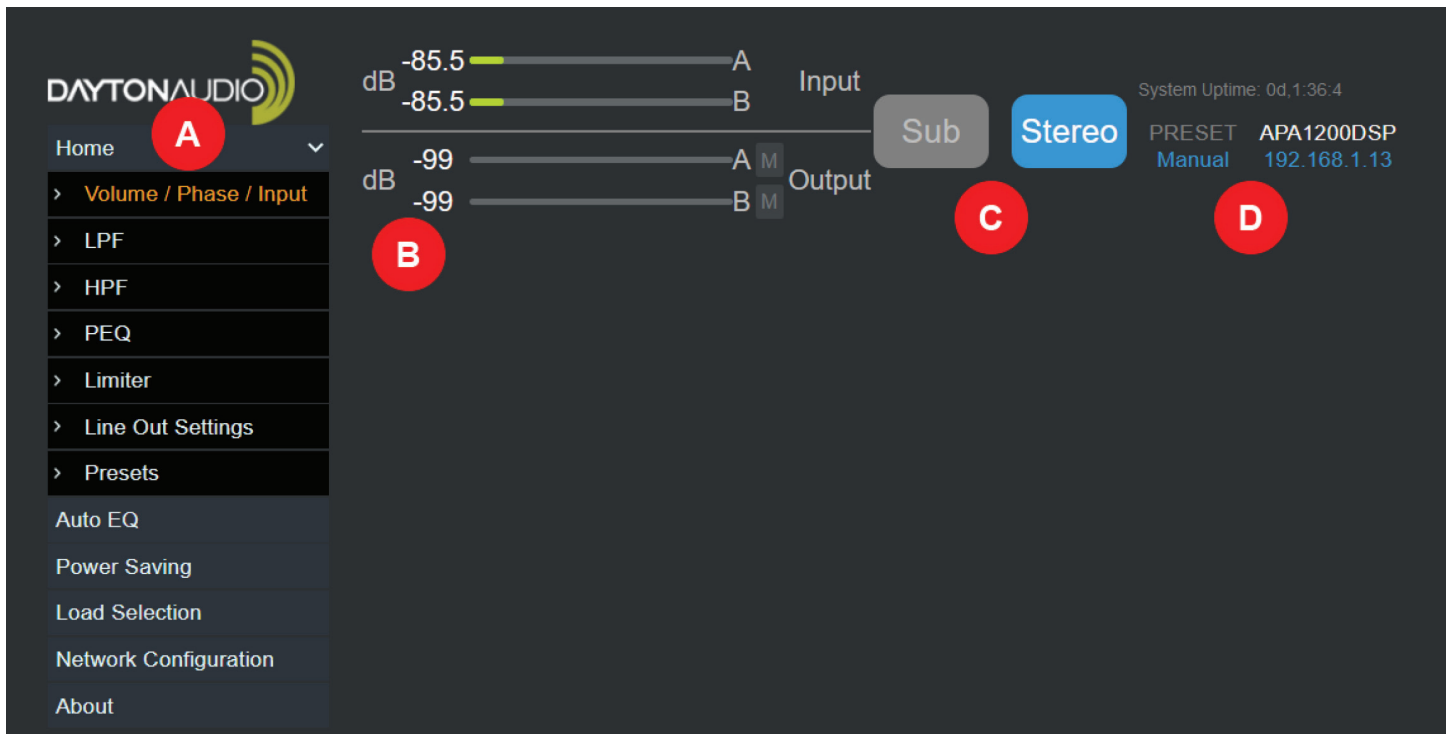


Network Troubleshooting

- A. If using the link <http://APA1200DSP/> and you cannot make a connection, try following step 3 above to find the IP address of your device, and connect to your device by entering the IP address into your web browser.
- B. Make sure that you are using a device that is on the same network as your APA1200DSP to access the interface. The device you are using for access can be connected either through Wi-Fi, like a laptop, or directly to the network with a patch cable like you might do on a desktop PC. In some situations, especially in businesses, there might be multiple Wi-Fi networks in the building, and the one you are connecting to might not be the same actual network as the ethernet port you plugged your APA1200DSP to.
- C. Try a different ethernet patch cable. Make sure your APA1200DSP is powered on.
- D. Try resetting your router.
- E. If your browser is connecting to the web GUI but you are experiencing a delay or the interface is very slow, see the following steps.
 1. Disconnect any other web browser from the APA1200DSP's web interface. Only connect one browser at a time to your APA1200DSP for optimal performance.
 2. If using a wireless device (like a laptop or cell phone) to access the GUI access the APA1200DSP's interface, make sure that the connection is stable and strong.
 3. Try restarting the device. Try using the "global reset" option in the presets menu (if you have presets you want to save, save the preset to your PC, because presets stored on the APA1200DSP will be reset after pressing "global reset")

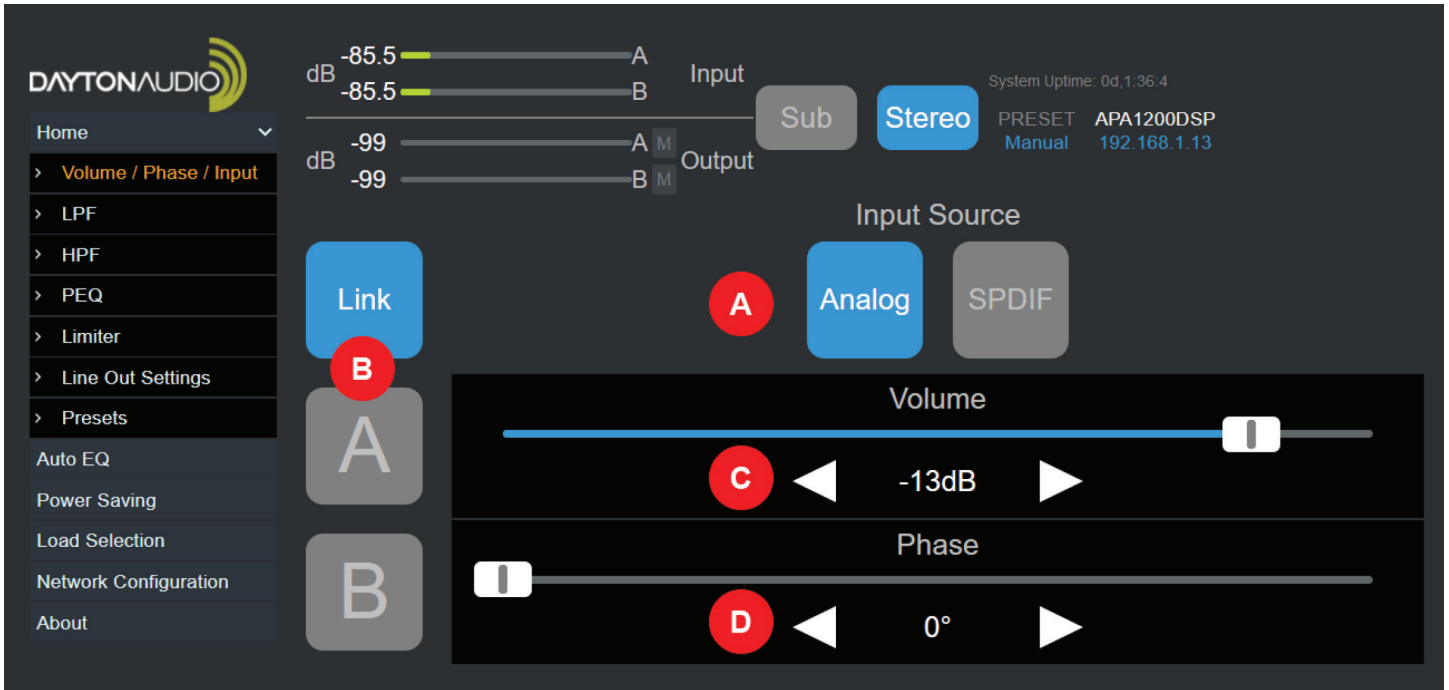
Web GUI Overview

These GUI elements will always be present while using the APA1200DSP's web interface. Enter different menus by clicking menu items on the left side of your screen.



- A. Menu** – Displays all menu options available on the APA1200DSP. Click on the text of each menu item to enter that menu. The “Home” section of the menu can be contracted or expanded by clicking on it.
- B. Level Meter** - Displays input and output levels in dB. If you are not getting any output from your connected speaker, but you see that there is output from the level meter, check the connection from the amp to your speaker.
 1. The “M” buttons next to the output label can be used to mute the output of your APA1200DSP.
- C. Output Mode** – Set your device to either “Sub” or “Stereo” mode.
 1. **Sub** – This mode should be used when a subwoofer is attached to the APA1200DSP in bridged mode. This mode allows the Auto EQ function to be used.
 2. **Stereo** -This mode should be used for stereo configurations, or any time a speaker is not connected to the APA1200DSP in bridged mode. Auto EQ mode is disabled in this mode.
- D. System Information** – Displays useful information such as the system uptime, current preset, and IP address of the APA1200DSP.

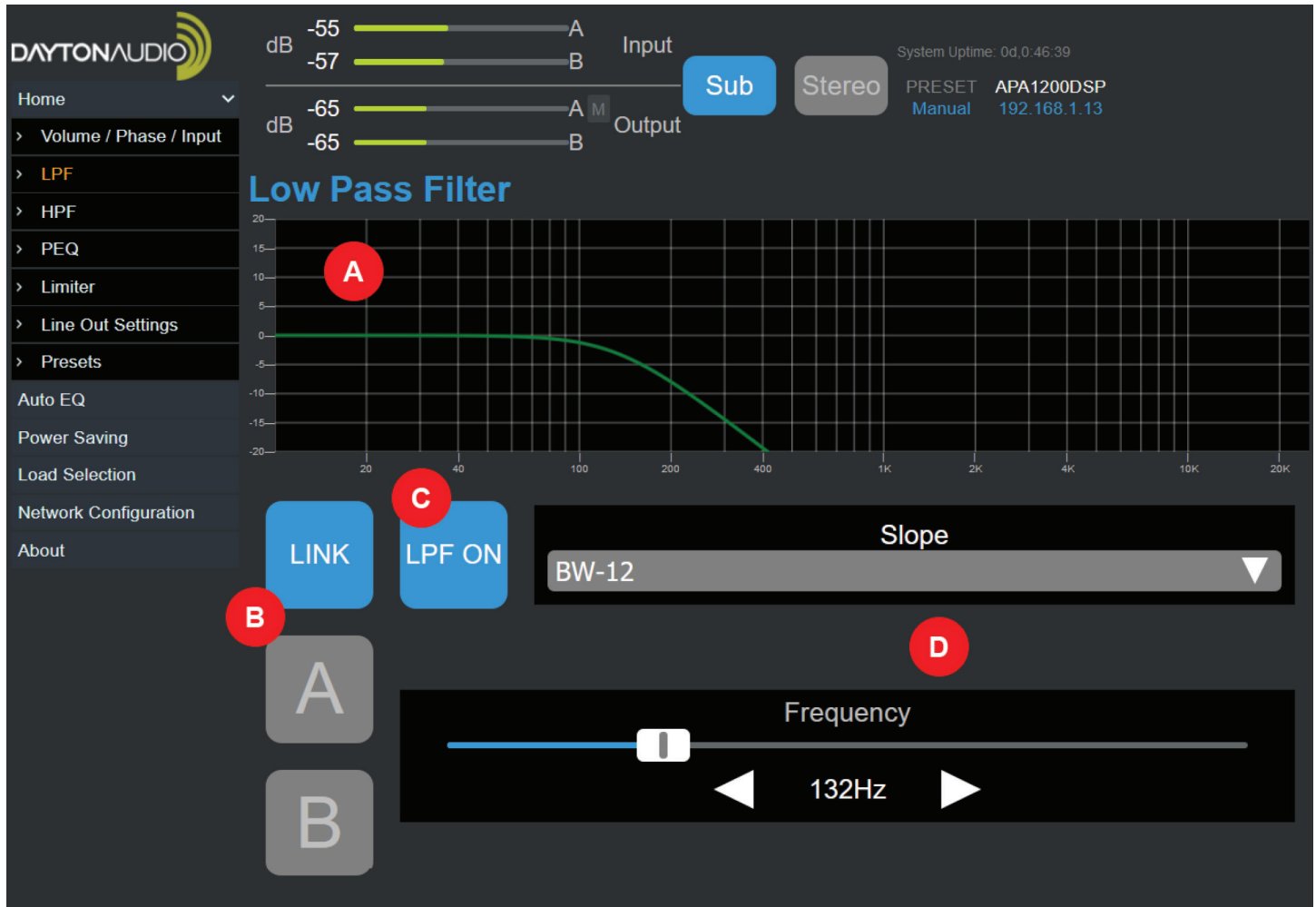
Volume / Phase / Input



- A. Input Source** – Switch the input source between analog and SPDIF input.
- B. Channel Mode** - Change which channel the settings are to be applied. Link mode will apply the same settings to both channel, but you can also set individual settings for each channel if the APA1200DSP is used in stereo mode.
- C. Volume** – Drag the slider to increase or decrease the amplifier’s output volume. The arrow buttons can also be pressed for granular volume control. The range is -99dB to 0dB.
- D. Phase** – Drag the slider to increase or decrease the amplifier’s phase. The arrow buttons can also be pressed for granular control (increment or decrement by 5°). The range of the slider is 0° to 180°.

LPF Menu (Low Pass Filter)

LPF stands for “Low Pass Filter”. This is the type of filter that is used to prevent a subwoofer from playing high frequencies, but this is not the only use of the LPF. For example, if I set a low pass filter at 100Hz, frequencies lower than 100Hz will “pass”, but frequencies greater than 100Hz will be attenuated by a specified slope. LPFs are essential for subwoofers, because it allows the subwoofer to only play the low frequencies of your audio source.

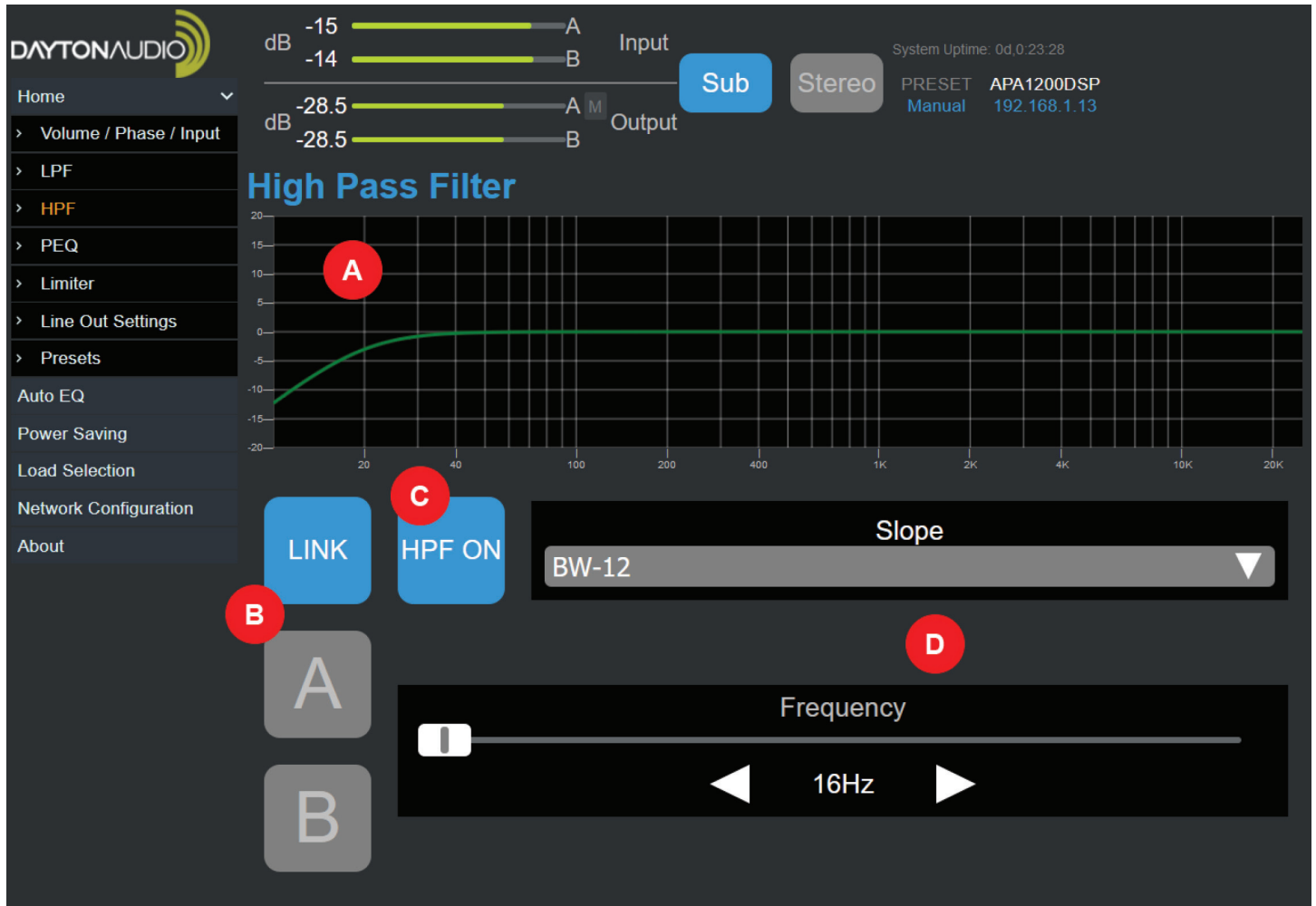


- A. Graph** – Shows a graphical representation of the applied low pass filter.
- B. Channel Mode** - Change which channel the filter is to be applied to. Link mode will apply the same filter to both, but you can also set individual filters for each channel (A and or B) if the APA1200DSP is used in stereo mode.
- C. Enable / Disable the LPF**
- D. Filter Settings**
 - 1. **Slope** – Options: 6dB, 12dB, 24dB, 36dB
 - 2. **Frequency** - Range: 20Hz – 20,000Hz

HPF Menu (High Pass Filter)

Subsonic Filter

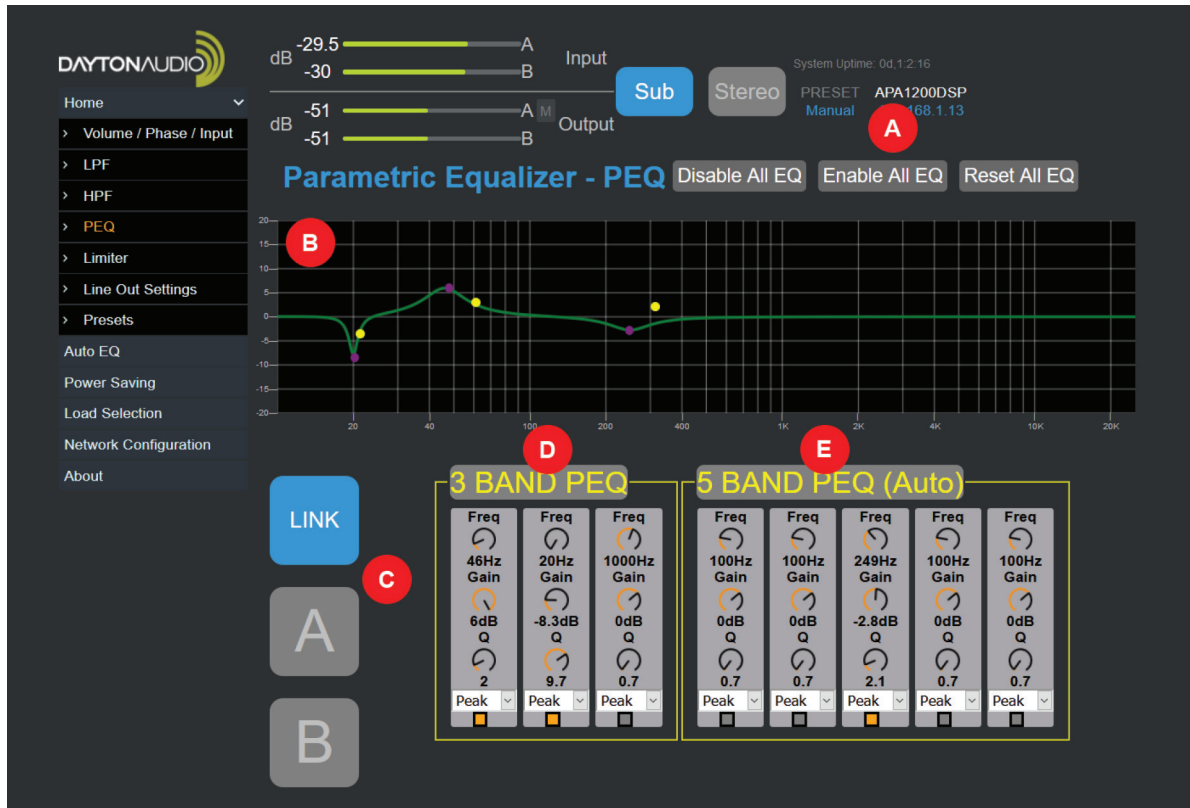
HPF stands for “High Pass Filter”. This type of filter will cut low frequencies out of an audio signal, allowing frequencies higher than the selected frequency to ‘pass’. This filter can also be used as a “Subsonic Filter”. This type of filter is a high pass filter set to filter out very low frequencies, and it eases the load on a speaker system by cutting out frequencies from the signal that the system cannot play/cannot play well. This can have numerous advantages in power handling and even clarity of audio, depending on the system.



- A. **Graph** – Shows a graphical representation of the applied high pass filter.
- B. **Channel Mode** - Change which channel the filter is to be applied to. Link mode will apply the same filter to both, but you can also set individual filters for each channel (A and or B) if the APA1200DSP is used in stereo mode.
- C. **Enable / Disable the LPF**
- D. **Filter Settings**
 1. **Slope** – Options: 6dB, 12dB, 24dB, 36dB
 2. **Frequency** - Range: 16Hz – 20,000Hz

PEQ Menu (Parametric Equalizer)

The parametric EQ (PEQ) menu allows for up to 8 bands of custom equalization, and also allows customization of the EQ generated from the "AUTO EQ" function of the APA1200DSP. All filters are implemented as infinite impulse response or IIR filters, which is standard for most PEQ interfaces.



A. EQ Control Buttons

1. **Disable All EQ** – Turns OFF all EQ bands. Does not reset values. Useful for doing before and after comparisons with EQ.
2. **Enable All EQ** – Turns ON all EQ bands. Does not change values. Useful for doing before and after comparisons with EQ.
3. **Reset All EQ** – Resets all EQ values to default (flat). Does not change enabled/disabled status. There will be a slight delay.

B. Graph - The graph will show the effects of all enabled EQ bands. Each enabled EQ band will have its own corresponding purple and yellow dots on the graph for easy control.

1. **Purple Dot** – Drag the dot to change the frequency and gain values of each enabled EQ band
2. **Yellow Dot** – Drag the yellow dot to change the Q value of each enabled EQ band. Moving the yellow dot away from the corresponding purple dot will reduce the Q value, and moving the yellow dot towards the purple dot will increase the Q value. (Larger Q values will affect a smaller range of frequencies, smaller Q values will affect a larger range of frequencies)

C. Channel Mode - Change which channel the filter is to be applied to. Link mode will apply the same filter to both, but you can also set individual filters for each channel (A and or B) if the APA1200DSP is used in stereo mode.

D. See next page

E. See next page

PEQ Filters Configuration

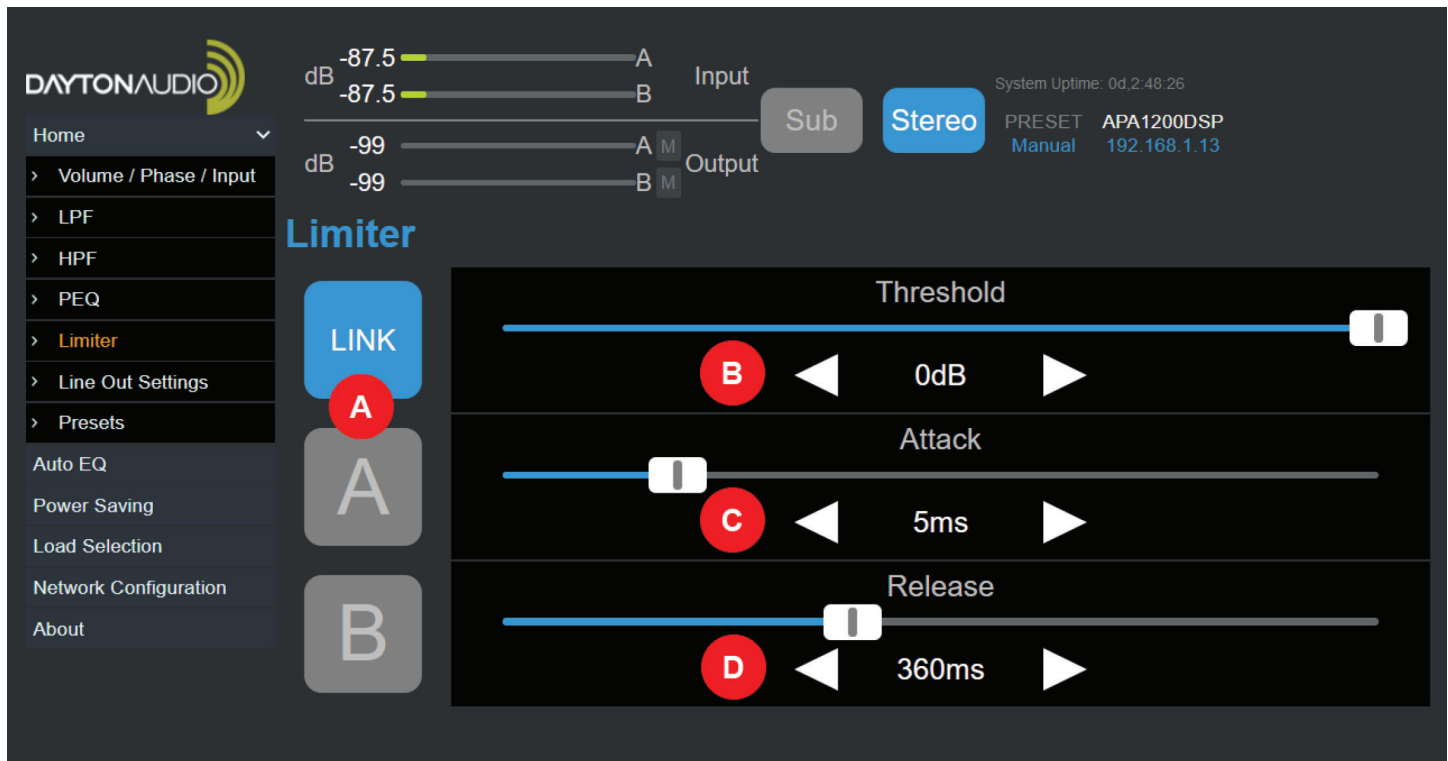


The 5 Band PEQ will be automatically setup by the AUTO EQ mode of this amplifier, but values can be changed at any time. The 3 Band PEQ will not be affected by AUTO EQ. Click any number in this menu to type a specific value.

- 1. Freq** – Sets the frequency of each EQ band
 - Range: 20Hz to 20,000Hz
 - Controllable by dragging the purple dot of each EQ band horizontally.
- 2. Gain** – Sets the gain of each EQ band.
 - Range: -12dB to +6dB
 - Controllable by dragging the purple dot of each EQ band vertically.
- 3. Q** – Sets the Q value of each EQ band. This will affect the range of frequencies the EQ band will affect.
 - Range: 0.4 to 14
 - Lower values will affect a larger range of frequencies. Higher values will affect a narrower range of frequencies.
 - Controllable by dragging the yellow dot horizontally for each corresponding EQ band
- 4. Type** – Type is locked to PEAK for the 3 band PEQ. The 5-Band PEQ has 5 options for filter type
 - Peak
 - Treble Shelf
 - Bass Shelf
 - Notch
 - LPF
 - HPF
- 5. Enable** – The box at the bottom of each band enables or disables each EQ band. It will glow orange when enabled, or grey when it is disabled

Limiter Menu

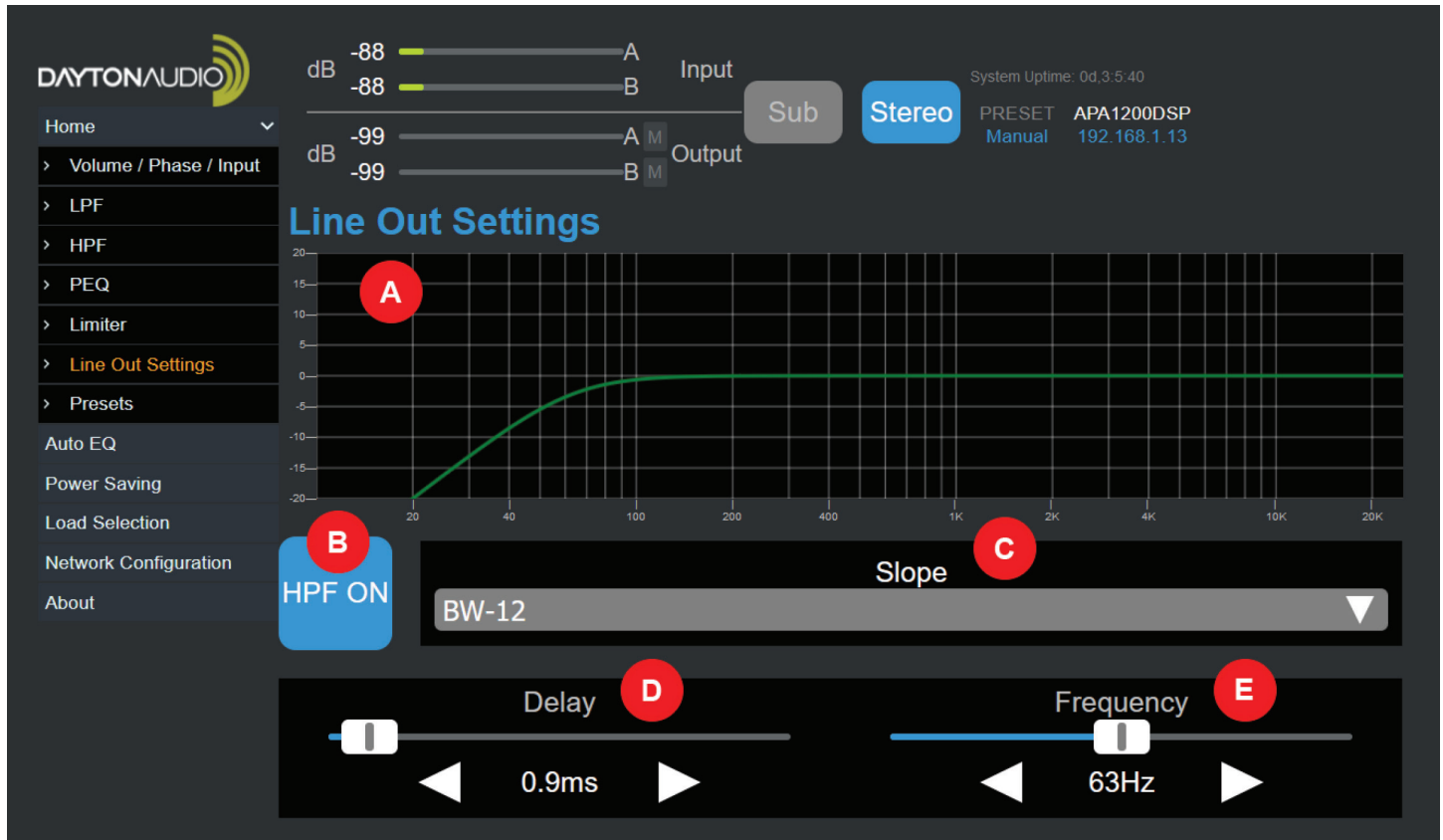
The limiter is a tool that will allow input signals below the given threshold to pass through the amplifier unaffected but will attenuate signals if they are higher than the threshold. The limiter only responds to actual clipping, and automatically compensates for load and voltage variations. This tool can be particularly useful for protecting drivers. The limiter LED on the front of the device will illuminate when limiting is actively occurring.



- A. Channel Mode** - Change which channel the limiter is to be applied. Link mode will apply the same limiting to both, but you can also set individual limit for each channel (A and or B) if the APA1200DSP is used in stereo mode.
- B. Threshold** – Set the threshold of the limiter. Signals below this threshold will pass through unaffected, but signals above this threshold will be limited. 0dB effectively means the limiter is OFF.
 - 1. **Range:** -99dB to 0dB
- C. Attack** – Determines how quickly limiting is applied to the input signal. A lower value means a faster attack, and the limiter reacts quickly to a signal that has peaked above the threshold value.
 - 1. **Range:** 1ms to 100ms
- D. Release** – Determines how quickly the limiter stops affecting the signal. The lower the value, the quicker the limiter will stop reacting to a signal that peaked above the selected threshold.
 - 1. **Range:** 90ms to 3000ms

Line Out Settings

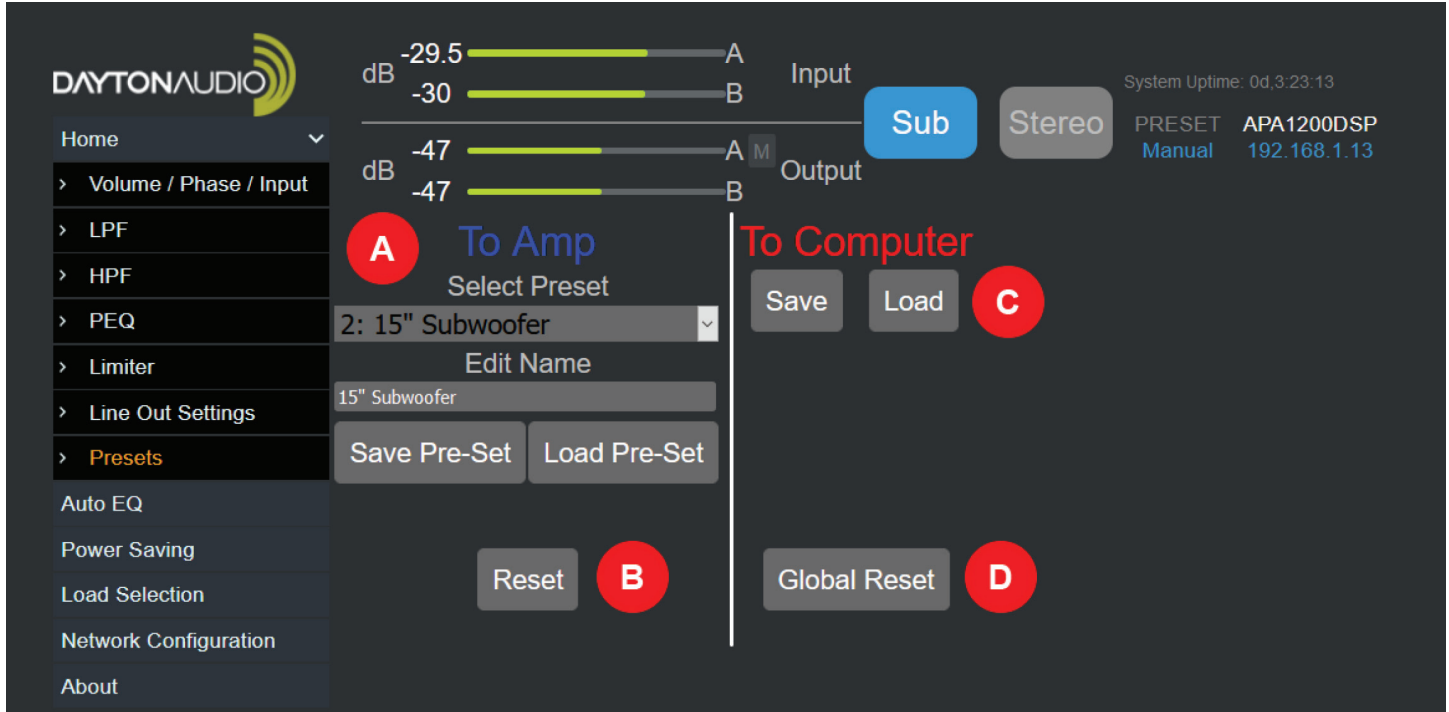
This page allows you to adjust various settings that affect the line output passthrough option on the APA1200DSP. This menu is particularly useful if you are using the APA1200DSP as a subwoofer amplifier and would like to high pass your main speakers to prevent interaction between the bass from your mains and the bass from your subwoofer. Doing this will also ensure a more accurate simulated result when using the AUTO EQ function of this device.



- A. **Graph** – Shows a graphical representation of the line output. If you have enabled the high pass filter (HPF), you will see it represented in this graph.
- B. **HPF Enable** – Turns the high pass filter for the line out on or off.
- C. **HPF Slope** – Changes the slope of the high pass filter.
 - 1. **Options:** 6dB, 12dB, 24dB, 36dB
- D. **Delay** – Adds an optional delay to your line output. This can be useful for time aligning your subwoofer and mains.
 - 1. **Range:** 0ms to 10ms
- E. **Frequency** – Range: 31Hz – 125Hz

Preset Menu

Presets are particularly useful for quickly changing many settings on the fly for different use cases, or while prototyping EQ and filter settings. Presets can either be saved to the amplifier itself, or to the computer that the web GUI is running on. This menu also lets you reset to default values. Note that presets will not affect or save the settings of input type (analog or coax), power saving settings, or load selection.



- A. To Amp Preset Options** – These presets will be stored on the APA1200DSP unit itself. The unit can store up to 20 unique presets with customizable names.
 1. Dropdown Menu – Select your desired preset or preset slot from this dropdown menu. If loading or saving a preset, this selection will be the slot saved to or loaded from.
 2. Edit Name Field – Enter your desired name for the preset here. This is the name that will be saved when “Save Pre-Set” is selected.
 3. Save Pre-Set Button – This button will save all current settings and parameters to a preset that can be loaded at any time. The preset will save into the currently selected preset slot (it will overwrite the preset stored in this slot).
 4. Load Pre-Set Button – This button will load all of the settings and parameters that were originally saved into your selected preset. It will overwrite any of your current settings.
- B. Reset** – This button will reset the currently selected preset. It will also reset all your active DSP settings (LPF, HPF, PEQ, Limiter, Line Out Settings).
- C. To Computer Preset Options** – These presets will be downloaded to whichever device you are using to connect to the APA1200DSP’s web interface. After pressing save, the GUI will prompt you to give your file a name and to choose between .txt or .csv file types (either is OK).
 1. Save Button – This button will save the current settings on the APA1200DSP into a file that can be stored on the computer.
 2. Load Button – This button will allow you to load a preset from your computer that was previously created with the save button next to it.
- D. Global Reset** – This button will reset the entire device to factory defaults, removing all presets and other settings. The interface will reboot a few moments after this button is pressed.

Auto EQ Function

The APA1200DSP offers a powerful low frequency auto EQ process for subwoofers connected in SUB (bridged) mode. By taking 5 measurements throughout a room or around a listening position, the software will gain an understanding of the combined response of the subwoofer within your room. With this understanding, the device will generate 5 bands of EQ to try to generate a significantly flatter bass response throughout the room or listening position.

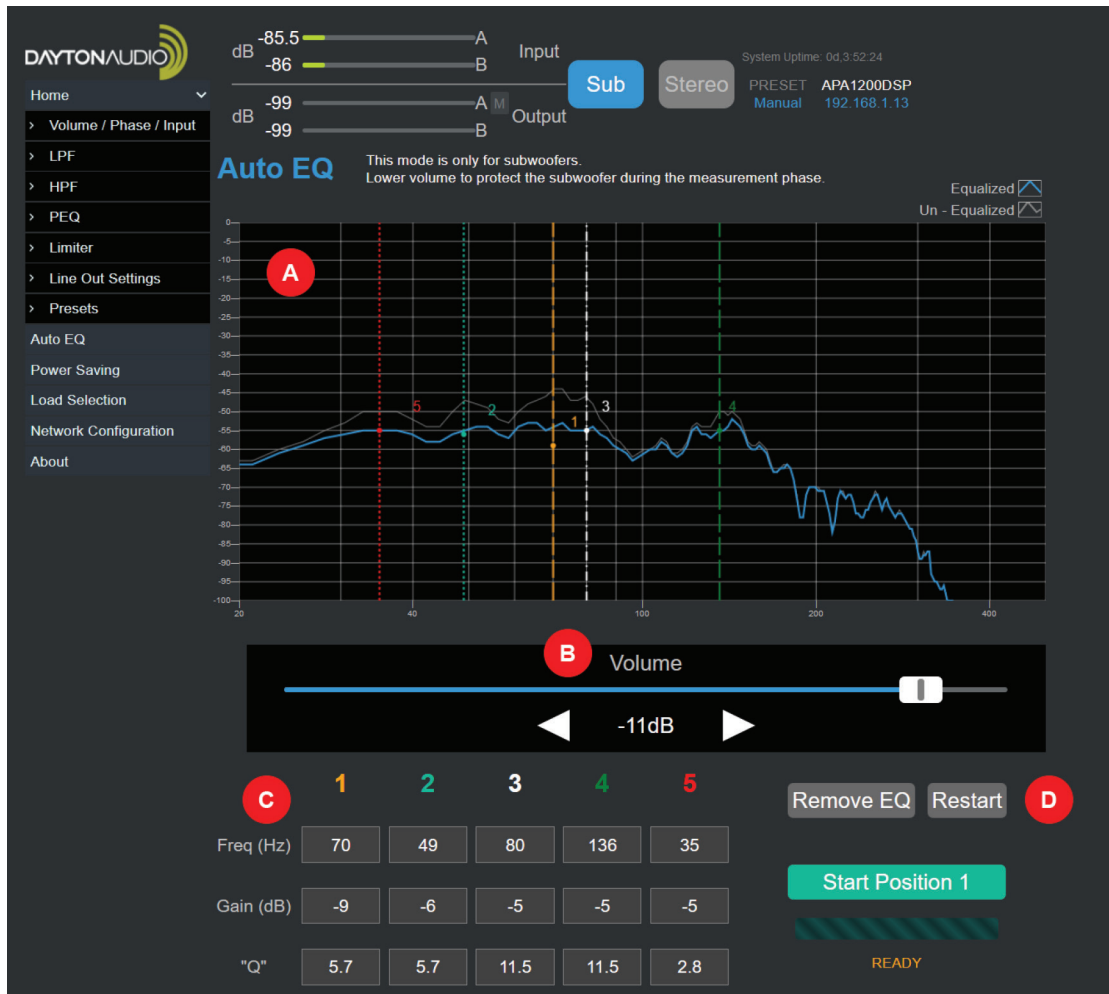
You will be asked to place the microphone in 5 different locations during this process. The locations you choose are up to you and what you are trying to achieve with the correction. If you would like the bass response to be even throughout the entire room, choose 5 locations spread across the room to get an average response for the room. If you would like the bass response to be as best as it can be in a single listening position, move the microphone for each measurement, but keep it close to the listening position. (this will usually have negative impact on the subwoofer's sound in the rest of the room but can have great results in a single listening position).

Following the auto EQ process, 5 bands of EQ will be applied to the connected speaker (this correction does NOT affect the line out frequency response). These 5 bands of EQ will be modifiable via the "PEQ" menu option. You will see the "5 Band EQ" will match the results of your auto EQ and allow you to further modify the correction to your liking.

Before you start

1. Set your desired high pass and low pass filters for your subwoofer. These high pass and low pass filters will affect your measurements. For example, if you intend on using a subsonic filter (HPF) for your subwoofer, you can set that before taking measurements, or choose to do the measurements without the HPF enabled.
2. Note that all PEQ will be disabled during the measurement process, and any values in the 5 Band PEQ will be reset.
3. **REDUCE YOUR OUTPUT VOLUME USING THE PROVIDED SLIDER.** Even though your subwoofer might not be overloaded or too loud while playing music, the test signals used for measurements will likely be much louder than your input source. To ensure the protection of your subwoofer, reduce the volume significantly before taking your first measurement. You can then restart the measurement process with a higher volume if the volume was too low.
4. Use only the microphone provided in the box with the APA1200DSP. While alternative microphones might function with the device, the auto EQ process was calibrated specifically with the style of microphone that came with your device, and results will vary if using alternative mic.

Auto EQ Menu



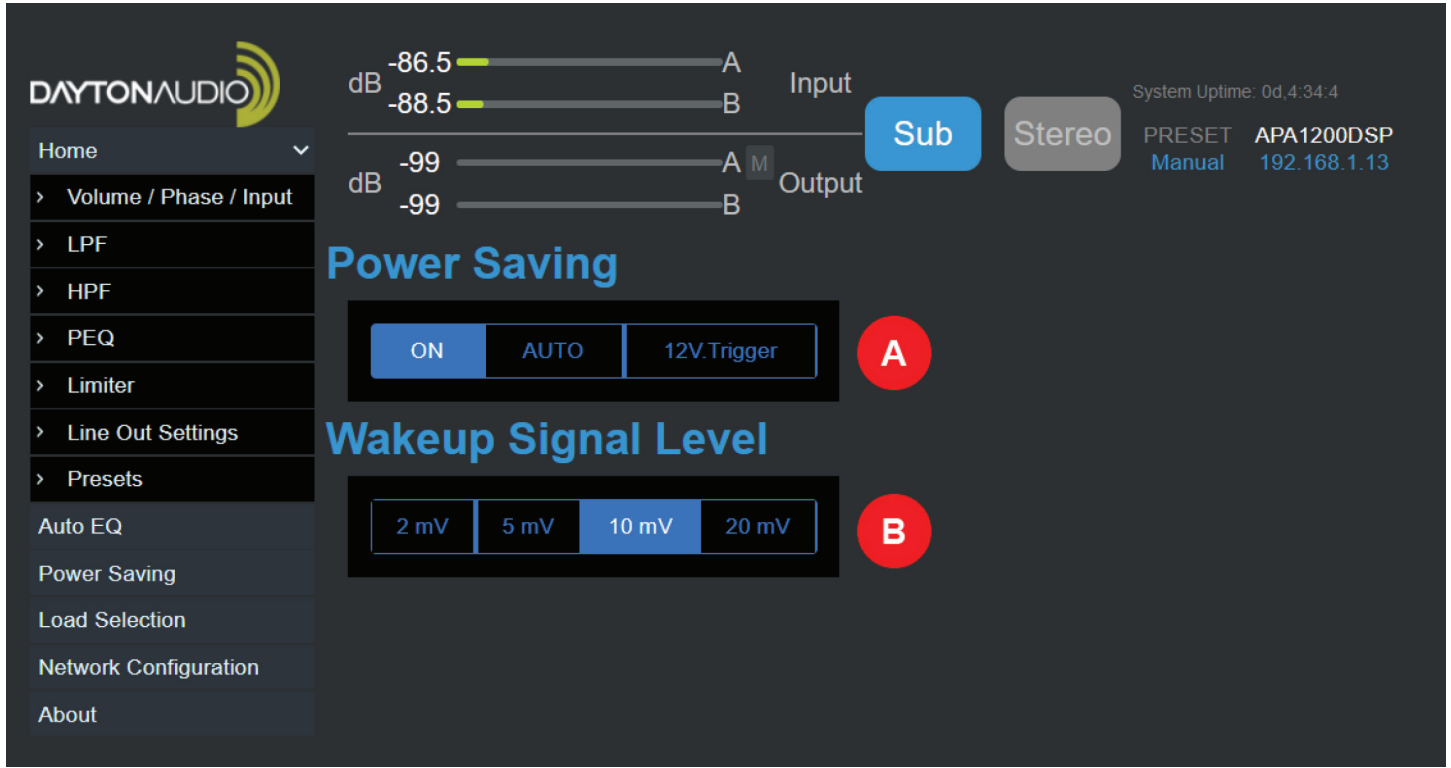
- A. Graph** – Once the measurement process has been completed, this graph will display the response as measured (grey line) and the simulated response with EQ applied (blue line). The locations of each EQ band can also be seen labeled with a colored number and colored dashed lines.
- 1. Dropdown Menu** – Select your desired preset or preset slot from this dropdown menu. If loading or saving a preset, this selection will be the slot saved to or loaded from.
- B. Volume Slider** – This is the same master volume slider that can be found in the Volume/Phase/Input menu. It has been duplicated here to allow the volume to be quickly reduced before taking measurements.
- C. EQ Results** – The calculated results of the auto EQ process can be found here. Each number represents a band of EQ, and the frequency, gain and Q of each band can be seen below the colored number of the band. These results can also be found in the PEQ menu, where they can be further customized.
- D. Buttons for auto EQ**
- 1. Remove EQ** – This button will remove the results of a previous auto EQ from this page. It will also disable but not reset the values of all bands in the “5 Band PEQ” in the PEQ menu.
 - 2. Restart** – This button will restart the auto EQ process. After a moment, the green button will change to “Start Position 1”, no matter how far along in the process you are.
 - 3. Start Position X** – Press this button to start measurements at each position. Once the button is pressed for the first time, all values from the 5 Band PEQ will be reset.

Auto EQ Troubleshooting

- A.** An error message will appear if the volume is too low. Fix this by –
1. Make sure that the provided microphone is securely plugged into the rear of the APA1200DSP, and that the microphone is securely attached to the extension cable.
 2. Check the microphone and microphone cable for damage.
 3. Increasing the volume using the provided slider
 4. If you do not hear the test signal after pressing “start position 1”, re-check your connection between the subwoofer and the APA1200DSP. Make sure that the subwoofer is connected in bridge mode and the UI is set to “SUB”. In rare cases, power cycling the APA1200DSP by flipping the power switch off and then back on after a few seconds might help.
- B.** The correction is not satisfactory or does not sound right.
1. Make sure you are using the microphone that was included with the APA1200DSP and it is free of obstruction or damage.
 2. If you do not have your mains (full range speakers) high passed (prevent them from playing their own bass), the bass coming from your mains and from your subwoofer could combine in an undesirable way. The auto EQ algorithm cannot account for the bass that is coming from your mains.
 3. Try taking measurements at a higher volume or lower volume. You might be overdriving your subwoofer if the volume is too loud, or under-driving the subwoofer, which could result in misrepresentative measurements (especially in a larger room).
 4. Take your measurements at different positions. If you took your measurements clustered together, try taking them over a larger area. If you used a large area to begin with, try taking measurements closer to a desired listening position instead.
 5. Make sure that you do not have other EQ or filter settings enabled that negatively affect the sound of your subwoofer. Although EQ for subwoofers is very powerful, some issues cannot be corrected with EQ. You might need to physically move your subwoofer, upgrade the subwoofer, or modify your room physically to achieve the results you want.
 6. Try modifying the delay function in the GUI of the APA1200DSP. This can have great results in the combination of sound of your main speakers and your subwoofer by acoustically aligning them.
- C.** Although room correction is powerful and can help to smoothen poor bass acoustics in a room, it cannot fix all problems, and cannot make a subwoofer better than it is (but it can help maximize its potential!)

Power Saving Page

The APA1200DSP offers 3 modes for power saving, switchable on the back of the device. See below for further description of each mode. The wake up signal level threshold can also be adjusted.



- A. Power Saving** – This is READ ONLY. Represents the state of the “Auto” switch on the back of the device. There are 3 options for this toggle switch.
1. ON – If the APA1200DSP is connected to power and the power switch is ON, the device will always remain on with this setting. It will not enter standby. This setting must be used if a digital COAX input is your source.
 2. Auto - If the amplifier does not detect an analog audio signal above the selected wakeup signal level voltage for more than 20 minutes, it will automatically enter standby. If you want to wake up in Auto mode, you can input an audio signal over the selected wakeup signal level voltage OR change the switch to ON.
 3. 12V Trigger - If the amplifier does not detect an analog audio signal above a 1mVrms for more than 20 minutes **AND** does not detect a 12V DC signal through the input trigger jack, the device will enter standby. The device will only wake up when a 12V DC is detected on the input trigger jack.
- A. Wakeup Signal Level** – Sets the threshold voltage required to wake the device when the power saving mode is set to “auto”.

Load Selection

When in stereo mode, use this menu to tell the APA1200DSP if you are using 2 Ohm or 4 Ohm speakers. This helps to properly maximize the power output. If using speakers that are greater than 4 Ohm, select 4 Ohm. Both options will be greyed out when in SUB mode, as bridged configurations only allow 4 Ohm minimum.

The screenshot displays the Dayton Audio web interface. On the left is a navigation menu with the following items: Home, Volume / Phase / Input, LPF, HPF, PEQ, Limiter, Line Out Settings, Presets, Auto EQ, Power Saving, Load Selection, Network Configuration, and About. The main content area shows the 'Load Selection' menu, which includes two options: '2 Ohm' and '4 Ohm'. The '4 Ohm' option is currently selected and highlighted in blue. Above this menu, there are volume sliders for Input and Output channels (A and B) with levels at -86.5 dB and -88.5 dB respectively. There are also 'Sub' and 'Stereo' mode buttons, with 'Stereo' being active. System information at the top right includes 'System Uptime: 0d,4:42:3', 'PRESET: APA1200DSP', and 'Manual: 192.168.1.13'.

Network Configuration Page

Displays network information. Do not disable DHCP unless you are familiar with networking and know what you are doing. If an IP address is not provided by the network, the default IP is 192.168.14.1. To find your device's IP address without using this menu, use the onboard screen and dial to navigate to the "device information" screen.

DAYTONAUDIO

Home

- > Volume / Phase / Input
- > LPF
- > HPF
- > PEQ
- > Limiter
- > Line Out Settings
- > Presets
- Auto EQ
- Power Saving
- Load Selection
- Network Configuration
- About

dB -87.5 A Input

dB -86.5 B

Sub Stereo

System Uptime: 0d, 1:53:0

PRESET 1: Default APA1200DSP 192.168.1.13

Network Configuration

MAC Address: 04 91 62 32 90 65

Host Name: APA1200DSP

Enable DHCP

IP Address: 192 168 1 13

Gateway: 192 168 1 1

Subnet Mask: 255 255 255 0

Primary DNS: 192 168 1 1

Secondary DNS: 0 0 0 0

Restart Interface

About Page

Displays model number and firmware version.

DAYTONAUDIO

Home

- > Volume / Phase / Input
- > LPF
- > HPF
- > PEQ
- > Limiter
- > Line Out Settings
- > Presets
- Auto EQ
- Power Saving
- Load Selection
- Network Configuration
- About

dB -87.5 A Input

dB -85.5 B

Sub Stereo

System Uptime: 0d, 1:58:33

PRESET 1: Default APA1200DSP 192.168.1.13

About

Unit Model Number: APA1200DSP

Firmware Version: V1.2

Specifications

Input Sensitivity Voltage:	0.316 VRMS @ -10 dBV switch 0.631 VRMS @ -4 dBV switch
Max Input Level Voltage:	1.8 VRMS
Frequency Response:	20Hz to 20kHz
Frequency Deviation (20-20kHz):	3 dB
RMS Output Power, Stereo:	560 W x 2
RMS Output Power, Bridged:	1150 W
SNR, A-weighted:	>96 dB
THD+N @ Rated Power:	0.74%
Auto-on Sensitivity:	10 mVRMS
Power Consumption:	Standby: <2 W Idle: 17.5 W Max: 1600 W
Weight:	16.2 lbs.
Dimensions:	17" W x 15" D x 3.75" H

Troubleshooting

Q: I have connected the APA1200DSP to my network using an ethernet patch cable, but I cannot connect my web browser to the device's browser-based GUI.

A: See page 8 for a dedicated troubleshooting section for networking issues. Make sure to follow all directions in that section for setup.

Q: I cannot go back when using the dial and on device display.

A: A single click of the button navigates forward through the menus, but a double click of the button navigates back through the menus.

Q: After switching to stereo mode from sub mode (or vice versa), I am not getting the appropriate output from my APA1200DSP.

A: It is recommended to restart your APA1200DSP after making this change, this should fix your problem if your wiring is correct.

Q: I cannot use auto EQ!

A: The device must be in SUB mode for auto EQ to work. Auto EQ does not work in stereo mode by design.

Q: My device goes to sleep even though there is music playing.

A: Change the AUTO switch to "on" on the back on the device. A digital coax connection will not keep the device from entering standby.

Q: The volume is much lower than I expect from my speakers or subwoofer

A:

1. If you have just changed the mode from "stereo" to "sub" or vice versa, restart your APA1200DSP.
2. If you have wired your speakers in stereo but you are set to "sub" mode, the speakers will be playing out of phase with each other, which will not sound right and will reduce your bass output in most cases. Make sure you are set to stereo mode if connected in stereo, and sub mode if connected in bridge mode.

Make sure that your high pass and low pass filters are set appropriately. For example, if you are using the APA1200DSP as a subwoofer amplifier, a low pass filter set at a low frequency like 25Hz could cut out most of the desired output. If unsure, try pressing the reset button in the presets menu to remove all DSP.

Q: The line output is not playing full range audio / I don't have any bass from my main speakers.

A: The APA1200DSP has "line out" settings allowing for a high pass filter to be applied to the line output. It will not be enabled by default, but make sure it is turned off if you are having this problem.

Q: My device is entering standby even though there is audio input playing into the device.

A:

1. The standby feature does not work with digital auto through the COAX port. If using the COAX port, you must turn standby off by setting the 'AUTO' switch on the back of your device to "ON" mode.
2. If using analog input and your device is still going into standby, try to increase the level on the source device, and also try using a lower number for your "wake-up signal level" setting in the power saving menu.
3. Make sure that your input source is not sending a high-passed signal into your APA1200DSP. If you must use a high-passed input, it is recommended to disable the standby functionality of your device, because high-passed signals can make auto-on features not work correctly.

Q: Do I need internet access to use the APA1200DSP's web interface?

A: Internet access is not required for this device. For example, you could connect the APA1200DSP into a router that is not connected to the internet, and then connect to the Wi-Fi broadcasted from the router with a phone or laptop and still connect to the APA1200DSP's interface by entering the IP address into your web browser.

5-Year Limited Warranty
See daytonaudio.com for details



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