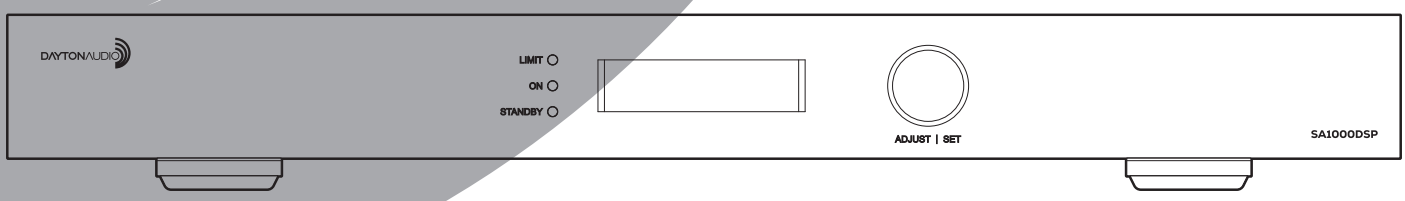
SA1000DSP

1000W Subwoofer Amplifier
with Integrated DSP
Product 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 themanufacturer.
- 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 ÉLEC- TRIQUE, N'EXPO- SEZ 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'UTILISA- TEUR NE SE TROUVE À L'IN- TÉRIEUR. 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 sécu- rité. 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'alimenta- tion ou la fiche est en dommagé, qu'un liquide a été renversé ou que des objets sont tombés dans l'appar- eil, 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

Welcome

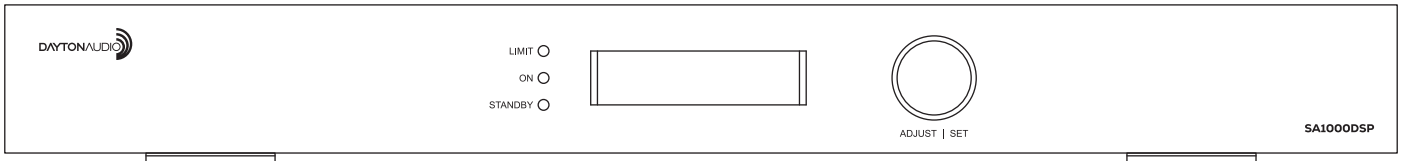
Thank you for choosing the Dayton Audio SA1000DSP Subwoofer Amplifier. Designed to deliver powerful, precise low-frequency performance, the SA1000DSP combines a high-power amplifier with advanced digital signal processing to provide exceptional control over your subwoofer system.

Whether you're building a dedicated home theater, enhancing a two-channel audio system, or designing a custom low-frequency solution, the SA1000DSP offers the flexibility needed to optimize performance for virtually any application. Through the integrated DSP controls, you can fine-tune crossover settings, equalization, delay, limiting, and other parameters to achieve seamless integration with your speakers and listening environment.

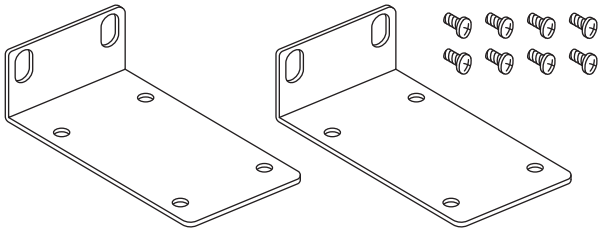
This manual will guide you through the installation, operation, and configuration of the SA1000DSP. Please read this manual carefully before use to ensure safe operation and to get the best possible performance from your system.

Contents

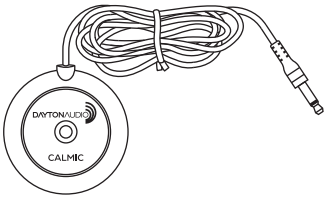
What's in The Box



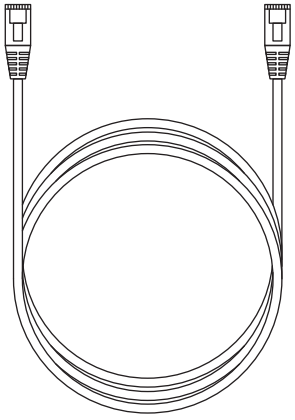
SA1000DSP



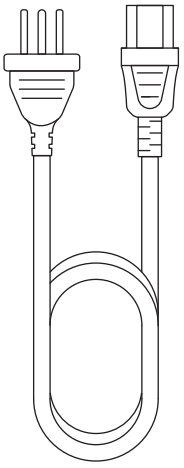
Rack Mount Kit



Calibration Microphone (CALMIC)



Ethernet Cable



AC Power Cable

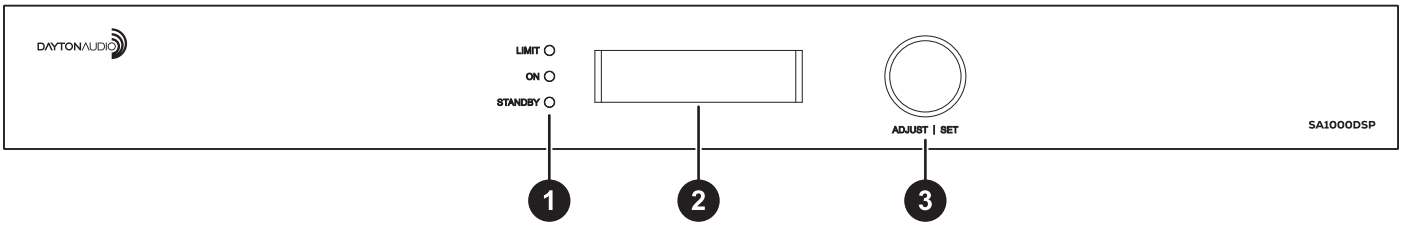
Unpacking

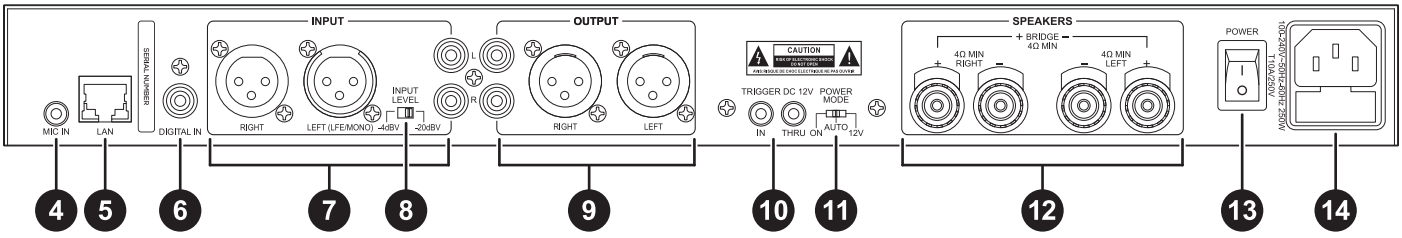
Carefully remove the SA1000DSP and all included accessories from the packaging. Inspect each item for any visible damage that may have occurred during shipping. If any damage is found, notify the shipping carrier promptly.

If the product shows signs of shipping damage, retain all packaging materials for inspection and do not install the unit until the issue has been resolved.

It is recommended to keep the original packaging and packing materials for future transport or storage. Using the original packaging helps ensure the unit remains protected during handling.

Panels and Controls





1. **STATUS LEDs**
   - **Limit** Illuminates when the limiter is actively reducing output level. This LED may also illuminate during protection events such as overload, over-temperature operation, or output faults.
   - **On** Illuminates when the amplifier is powered on and operating normally.
   - **Standby** Illuminates when the amplifier has entered standby mode.

2. **LCD DISPLAY**

3. **ADJUST/ SET CONTROL KNOB (pg. 9)**

4. **CALIBRATION MICROPHONE INPUT**
   Connect the included calibration microphone when using the Auto EQ feature (pg. 17)

5. **ETHERNET LAN PORT**
   Connect the SA1000DSP to a network using a standard Ethernet cable. Network connectivity allows access to the browser-based control interface from any device on the same network. (pg. 9)

6. **DIGITAL AUDIO INPUT (S/PDIF)**

7. **ANALOG AUDIO INPUTS**
   Balanced XLR and unbalanced RCA line-level inputs.

8. **INPUT LEVEL SWITCH (pg. 6)**

9. **LINE OUTPUT (pg. 6)**

10. **12V TRIGGER CONNECTIONS (pg. 7)**

11. **ON MODE SELECTION (pg. 7)**

12. **SPEAKER OUTPUT (pg. 5)**
    Using insulated two-conductor wire to connect to speakers. The polarity, positive (+), and negative (-) for all speaker and amplifier connections must be consistent so all speakers are in phase.

13. **POWER SWITCH**
    Turns the device on and off

14. **AC POWER INPUT**

Installing the Amplifier

CAUTION: Disconnect the SA1000DSP from any power source before beginning installation.

The SA1000DSP can be installed in any standard 19" rack enclosure or on a stable surface or shelf. For rack mount installation, please use the included rack mounting kit.

Proper Cooling

The SA1000DSP relies on adequate airflow for reliable operation. Maintain a minimum of 1.5" (38 mm) of clearance above and on each side of the amplifier.

When rack mounting, Dayton Audio recommends leaving one open rack space above the amplifier to improve airflow. Do not cover this space with blank panels.

Making Connections

Connecting to Mains Power

The SA1000DSP has a built-in universal power supply and is capable of accepting power in any country. Connect the included power cable to the AC input and to mains power.

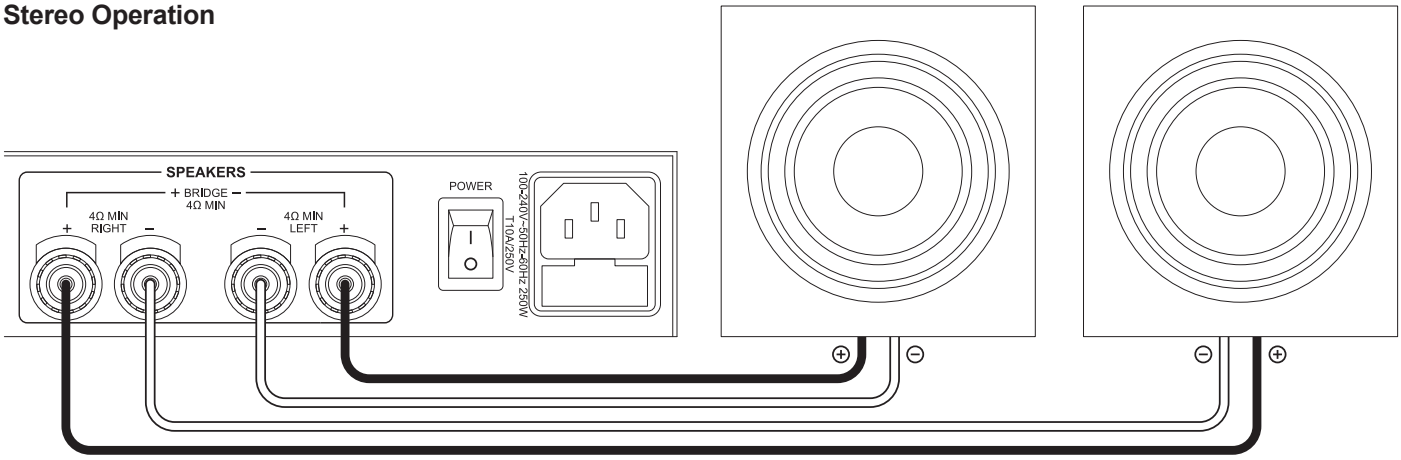
After all connections have been completed, connect the supplied power cord and move the rear power switch to the ON position.

For systems containing multiple amplifiers or powered speakers, it is recommended that source equipment be powered on first and amplifiers powered on last. When shutting down the system, turn amplifiers off first.

Connecting Outputs

The SA1000DSP can operate in either Stereo or Bridged mode. Stereo mode allows independent amplification of two channels, while Bridged mode combines both channels into a single high-power output. Select the appropriate wiring method for the intended application before powering on the amplifier.

Stereo Operation

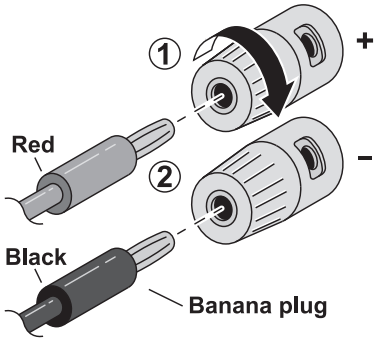


The SA1000DSP can power speakers with a minimum impedance of 4Ω. Using high-quality two-conductor speaker wire, connect the speakers to the binding posts on the rear of the unit.

Connect speaker terminals marked “L-” and “L+” to the corresponding “-” and “+” terminals on the left speakers. Repeat the same process for the right channel.

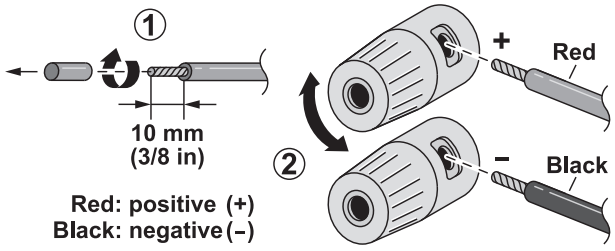
Connecting Banana Plug Cables

1. Tighten the knob.
2. Insert the banana plug terminated cable into the end of the corresponding terminal.

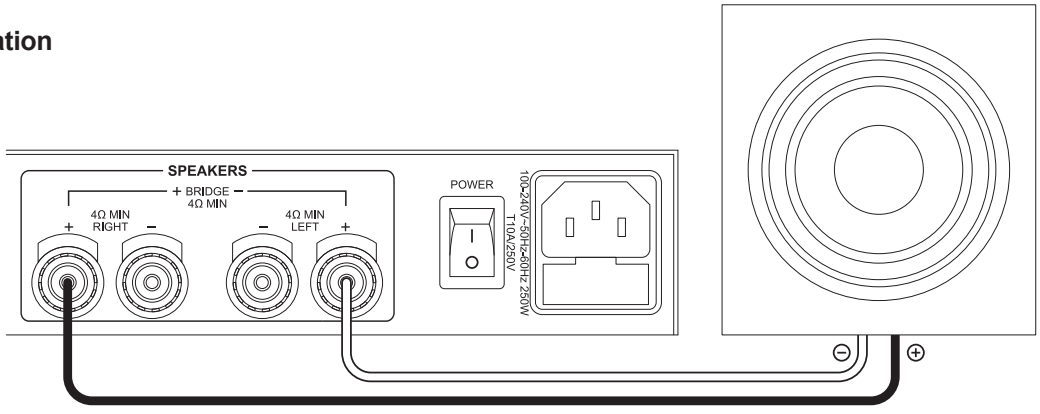


Connecting Speaker Wires

1. Strip about 3/8" of insulation from the end of each speaker wire and twist the bare wires of the cable together.
2. Unscrew the knob before inserting the bare wire into the hole in the side of each terminal before tightening the knob to secure the wire.



Bridged Operation



In bridged mode, the SA1000DSP can power a speaker with a minimum impedance of 4Ω. Using high-quality two-conductor speaker wire, connect a speaker to the bridged output binding posts on the rear of the unit. Observe the proper polarity of the bridged outputs.

Connecting Inputs

The SA1000DSP accepts balanced (XLR), unbalanced (RCA), and digital S/PDIF audio signals. The active input source is selected through the DSP interface and can be switched between Analog and S/PDIF inputs at any time. (pg. 11)

Analog Inputs

Balanced XLR and unbalanced RCA inputs are provided for connection to AV receivers, preamplifiers, processors, mixers, and other line-level audio sources. For best performance, use high-quality cables and avoid routing audio cables alongside AC power cables whenever possible.

Both balanced and unbalanced inputs may be connected simultaneously; however, only one source should be used at a time to prevent unintended signal summing or clipping.

For mono applications, use the left input channel.

Digital Input

A coaxial S/PDIF digital input is provided for connection to compatible digital audio sources.

The active input source is selected through the SA1000DSP DSP interface and can be changed at any time through the front panel menu system or web-based GUI.

Input Level Switch

The input level switch adjusts the amplifier's input sensitivity to match the output level of the connected source device. Select the setting that provides adequate output level while maintaining proper headroom and minimizing clipping.

Line Output

The SA1000DSP includes stereo line-level outputs for connection to additional amplifiers, powered speakers, or other audio equipment. These outputs allow the amplifier to serve as part of a larger audio system while maintaining centralized DSP control.

In a typical subwoofer installation, the line outputs can be used to feed an external amplifier powering the main loudspeakers. When used in this configuration, the SA1000DSP can apply optional high-pass filtering and delay to the line outputs, allowing the main speakers and subwoofer system to be integrated more effectively.

High-pass filtering removes low-frequency content from the signal sent to the main speakers, reducing overlap between the subwoofer and the main speakers while improving overall system performance. Delay can be applied to help align the acoustic arrival time of the main speakers and subwoofer at the listening position.

Line output processing is configured through the SA1000DSP DSP interface and is discussed in greater detail in the Web GUI section of this manual. (pg. 16)

The line outputs remain active regardless of whether the amplifier is operating in Stereo or Bridged mode.

Power Modes

The SA1000DSP provides three operating modes that determine how the amplifier powers on and enters standby. The desired mode can be selected using the rear panel ON MODE switch.

ON

In ON mode, the amplifier remains powered whenever the rear power switch is turned on and AC power is connected.

This mode is recommended when the amplifier is controlled by an external power management system or when continuous operation is desired.

AUTO

AUTO mode allows the amplifier to enter standby when no audio signal is detected for an extended period of time. When an audio signal is detected again, the amplifier automatically returns to normal operation.

The standby indicator on the front panel illuminates when the amplifier has entered standby mode.

AUTO mode provides convenient day-to-day operation while minimizing power consumption when the system is not in use.

When AUTO mode is selected, the wakeup signal threshold can be adjusted through the web interface to optimize sensitivity for the connected system (pg. 19)

12V Trigger

12V Trigger mode allows the amplifier to be controlled by an external device such as an AV receiver, preamplifier, processor, or automation system.

When a 12V DC signal is present at the 12V Trigger Input, the amplifier powers on automatically. When the trigger signal is removed, the amplifier enters standby.

This mode is recommended for systems where multiple devices need to power on and off together.

12V Trigger Connections

The SA1000DSP uses standard 3.5 mm mono trigger connections. When connecting compatible equipment, use a 3.5 mm mono cable between the trigger output of the controlling device and the 12V Trigger Input of the SA1000DSP.

The 12V Trigger Output mirrors the signal received at the 12V Trigger Input, allowing additional compatible equipment to be triggered from the same control signal.

Protection Features

The SA1000DSP incorporates multiple protection systems designed to maintain reliable operation while protecting both the amplifier and connected loudspeakers from potentially damaging operating conditions.

These protection systems continuously monitor amplifier operation and function automatically without user intervention.

Limiting

The SA1000DSP includes a built-in limiter that helps prevent excessive output levels. When the amplifier output reaches the configured limiter threshold, gain is automatically reduced to prevent further increases in output power.

The **LIMIT** indicator on the front panel illuminates whenever limiting is active.

Proper limiter settings can help reduce the likelihood of amplifier clipping, excessive loudspeaker excursion, and thermal stress on connected loudspeakers. Detailed information about configuring the limiter, including Threshold, Attack, and Release settings, is provided in the Limiter section of this manual (pg. 15).

Automatic Protection

In addition to the user-adjustable limiter, the SA1000DSP includes internal protection systems that monitor amplifier operating conditions.

During severe overload conditions or other abnormal operating states, the amplifier may temporarily reduce output power to maintain safe operation. When this occurs, audio output may decrease temporarily and the **LIMIT** indicator may illuminate.

This behavior is normal and indicates that the protection system is actively preventing damage to the amplifier and connected loudspeakers.

Once operating conditions return to a safe range, full output capability is automatically restored.

Because the protection system operates independently of the user-adjustable limiter, output reduction may still occur even when limiter settings have been configured. For information about adjusting limiter behavior, refer to the **Limiter** section of this manual (pg. 16).

Preventing Protection Events

Frequent activation of the limiter or protection system may indicate that the amplifier is being driven beyond its intended operating range. To minimize protection events:

- Reduce the input signal level from the source device.
- Lower the amplifier volume setting.
- Adjust limiter settings as appropriate for the connected loudspeaker system (pg. 15).
- Confirm that connected loudspeakers meet the minimum impedance requirements specified for the amplifier.
- Ensure adequate airflow around the amplifier and do not block ventilation openings.

Under normal operating conditions, occasional **LIMIT** indicator activity is expected during high-output playback. Continuous **LIMIT** indicator activity or repeated output reduction indicates that playback levels should be reduced or limiter settings should be reviewed.

Navigating Settings

The SA1000DSP can be configured using either the front panel controls or the web-based interface. While all major functions are accessible from the front panel, the web interface is recommended for initial setup and advanced DSP configuration.

Control Knob Operation

The front panel display and adjustment knob provide access to amplifier settings, presets, network information, and DSP controls.

- Rotate the adjustment knob to navigate through menu items or change values.
- Press the knob once to select a menu item or confirm a setting.
- Press the knob twice quickly to return to the previous menu.
- Press and hold the knob to access additional functions when available.

Changes made through the front panel are automatically synchronized with the web interface.

Network Control

The SA1000DSP includes a built-in web interface that provides complete access to amplifier and DSP settings from any device connected to the same network. The interface can be accessed from a computer, tablet, or smartphone using a standard web browser.

An active internet connection is not required. The amplifier and control device only need to be connected to the same local network.

Connecting to the Network

1. Connect the Ethernet LAN port on the SA1000DSP to a router or network switch using the included Ethernet cable.
2. Power on the amplifier and allow it to complete startup.
3. The SA1000DSP will automatically obtain network settings and connect to the network..

Accessing the Web Interface

1. Open a web browser on a device connected to the same network as the SA1000DSP.
2. Enter the following address into the browser address bar:

   http://SA1000DSP

3. The SA1000DSP web interface will open, providing access to all amplifier, DSP, Auto EQ, preset, and system settings.

If multiple SA1000DSP amplifiers are connected to the same network, connect using the amplifier's IP address instead of the device name.

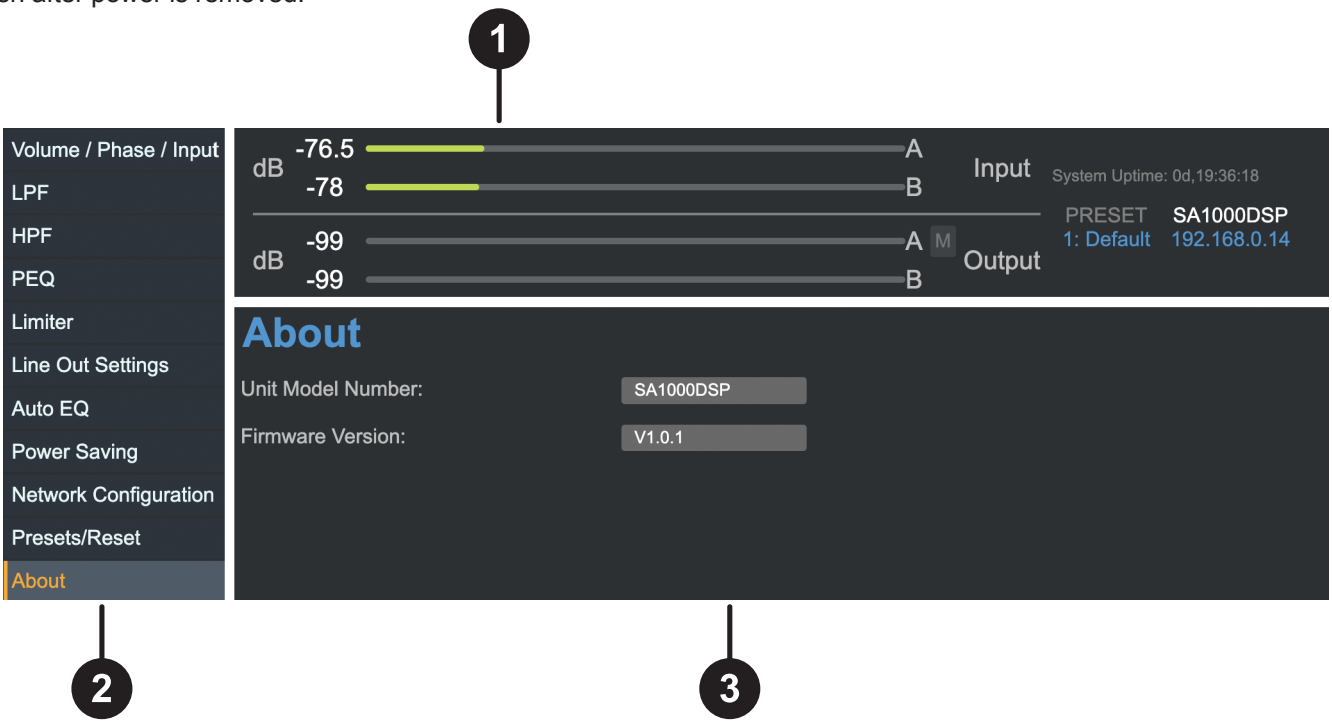
The IP address can be viewed from the Device Information screen on the amplifier's front panel display.

Once connected, the web interface provides access to all amplifier, DSP, Auto EQ, preset, and system configuration functions.

Web Interface

The SA1000DSP includes a browser-based interface that provides complete access to amplifier, DSP, Auto EQ, preset, and network configuration settings. The interface can be accessed from any device connected to the same network as the amplifier using a standard web browser.

Changes made through the web interface are applied immediately and stored within the amplifier. Settings remain saved even after power is removed.



1. System Status

The System Status area provides real-time information about the amplifier and current operating conditions. Input and output level meters allow signal activity to be monitored while adjustments are being made. Additional information, including the active preset, amplifier IP address, and system uptime is displayed for quick reference.

The System Status area remains visible throughout the web interface, allowing important operating information to be monitored regardless of which configuration page is currently selected.

2. Navigation Menu

The Navigation Menu provides access to all amplifier and DSP configuration pages. Selecting an item from the menu opens the corresponding page, where settings can be viewed and adjusted.

Available pages include:

- Volume / Phase / Input
- Low Pass Filter (LPF)
- High Pass Filter (HPF)
- Parametric Equalizer (PEQ)
- Limiter
- Line Out Settings
- Auto EQ
- Power Saving
- Network Configuration
- Presets / Reset
- About

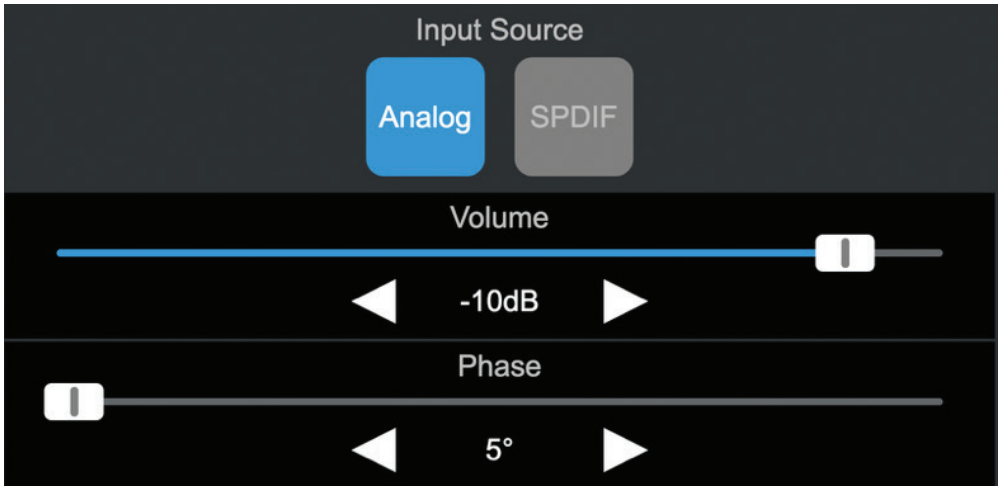
3. About Page

The About page is displayed when first connecting to the amplifier and provides basic device information including the model number and currently installed firmware version.

This information may be useful when performing firmware updates, configuring multiple amplifiers, or contacting Dayton Audio technical support.

Volume, Phase, and Input

The Volume, Phase, and Input page provides access to the most commonly adjusted controls within the SA1000DSP. These settings determine the active audio source, overall amplifier output level, and phase relationship between the amplifier and connected loudspeakers.



Input Source

The SA1000DSP can receive audio from either the analog inputs or the digital S/PDIF input. The desired source is selected by pressing the corresponding input button.

Analog selects the rear panel RCA and XLR analog inputs.

S/PDIF selects the rear panel coaxial digital audio input.

Only one input source can be active at a time. The selected input remains active until a different source is selected.

Volume

The Volume control adjusts the overall output level of the amplifier. Output level can be adjusted using the slider control or the increment and decrement buttons.

The current volume setting is displayed in decibels (dB). Changes are applied immediately and are retained when the amplifier is powered off.

When configuring a new system, Dayton Audio recommends beginning with a lower volume setting and increasing the level gradually during system setup.

Phase

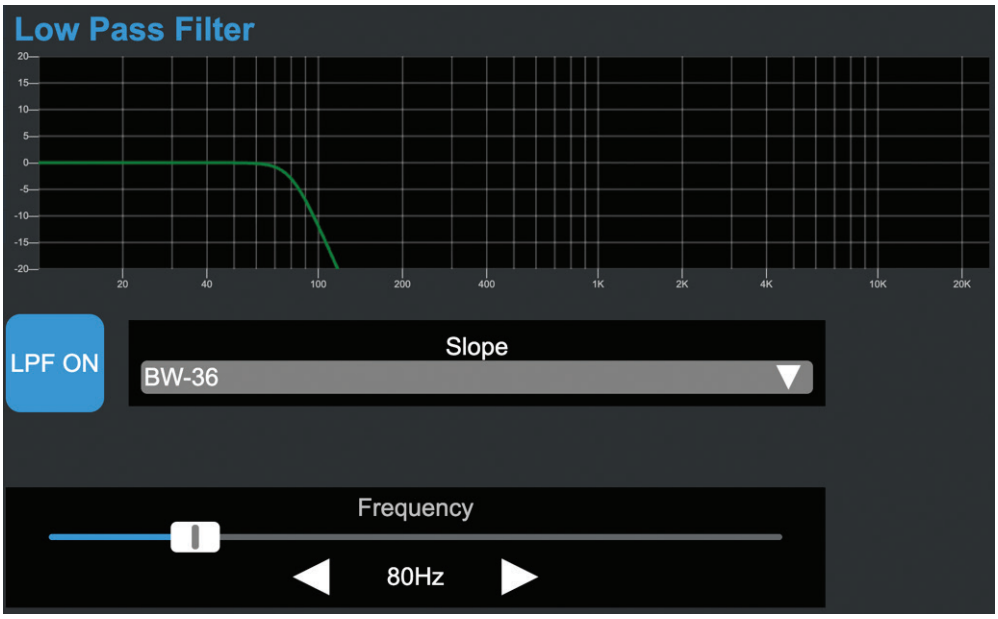
The Phase control adjusts the phase relationship between the amplifier output and the connected loudspeaker system. Phase adjustment can be used to improve integration between a subwoofer and the main speakers, particularly near the crossover frequency.

Phase can be adjusted from 0° to 180° using the slider control or the increment and decrement buttons. The optimal setting will vary depending on speaker placement, crossover settings, and room acoustics.

Low Pass filter (LPF)

The Low Pass Filter (LPF) limits the highest frequencies reproduced by the connected subwoofer. Frequencies below the selected crossover frequency are passed to the amplifier output, while frequencies above the crossover frequency are progressively attenuated.

The LPF is commonly used to integrate a subwoofer with main speakers by preventing the subwoofer from reproducing frequencies intended for the rest of the audio system.



Enable / Disable

The LPF can be enabled or disabled using the LPF ON button.

When enabled, the selected crossover frequency and filter slope are applied to the amplifier output.

When disabled, the amplifier operates without low-pass filtering.

Frequency

The crossover frequency determines the point at which the filter begins attenuating higher frequencies.

Lower crossover frequencies limit the subwoofer to deeper bass reproduction, while higher crossover frequencies allow the subwoofer to reproduce a broader range of low-frequency content.

The crossover frequency can be adjusted using the slider control or the increment and decrement buttons.

Slope

The slope setting determines how quickly frequencies above the crossover frequency are attenuated.

Steeper slopes provide greater separation between the subwoofer and the main speakers, while gentler slopes create a more gradual transition between frequency ranges.

Multiple filter types and slope options are available to accommodate a wide variety of loudspeaker and system configurations.

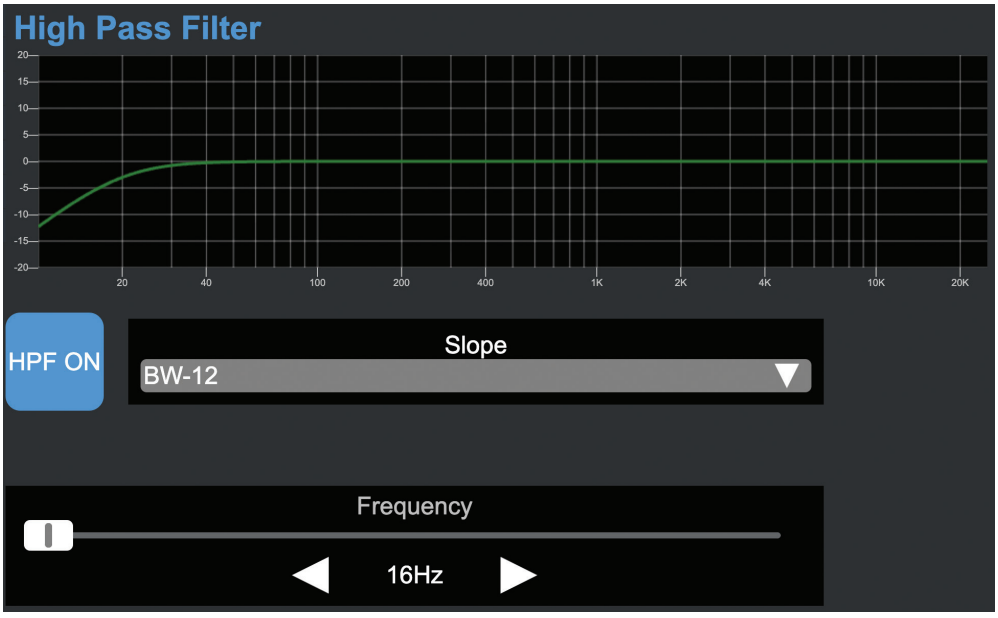
Response Graph

The response graph provides a visual representation of the active low-pass filter settings. Changes to the crossover frequency and slope are displayed in real time, allowing the effect of each adjustment to be immediately observed.

High Pass Filter (HPF)

The High Pass Filter (HPF) limits the lowest frequencies reproduced by the connected loudspeaker system. Frequencies above the selected crossover frequency are passed to the amplifier output, while frequencies below the crossover frequency are progressively attenuated.

In subwoofer applications, the HPF is commonly used as a subsonic filter to reduce excessive driver excursion caused by frequencies below the usable operating range of the enclosure. Proper HPF settings can improve system reliability while maintaining low-frequency performance.



Enable / Disable

The HPF can be enabled or disabled using the HPF ON button.

When enabled, the selected crossover frequency and filter slope are applied to the amplifier output.

When disabled, the amplifier operates without high-pass filtering.

Frequency

The crossover frequency determines the point at which the filter begins attenuating lower frequencies.

Higher crossover frequencies provide greater protection from low-frequency content, while lower crossover frequencies allow more bass energy to reach the connected loudspeaker.

The crossover frequency can be adjusted using the slider control or the increment and decrement buttons.

Slope

The slope setting determines how quickly frequencies below the crossover frequency are attenuated.

Steeper slopes provide greater reduction of unwanted low-frequency content, while gentler slopes create a more gradual transition between frequency ranges.

Multiple filter types and slope options are available to accommodate a wide variety of loudspeaker and system configurations.

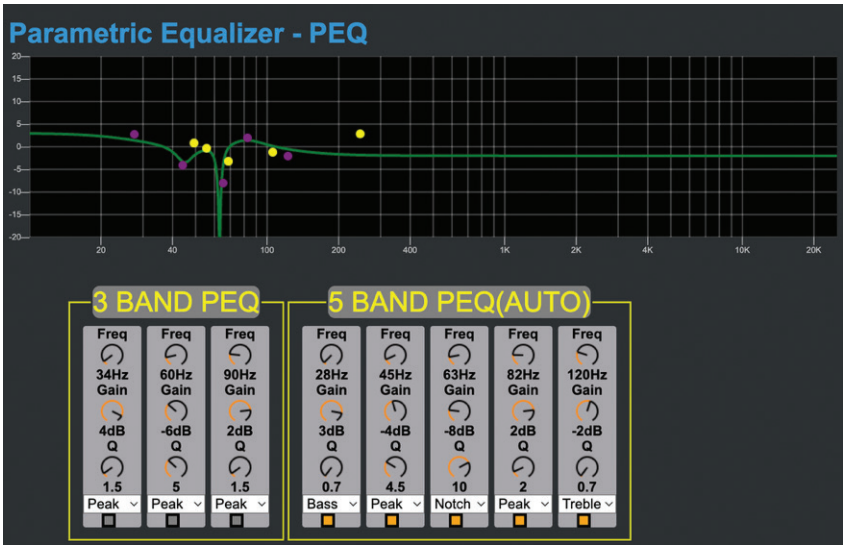
Response Graph

The response graph provides a visual representation of the active high-pass filter settings. Changes to the crossover frequency and slope are displayed in real time, allowing the effect of each adjustment to be immediately observed.

Parametric Equalizer (PEQ)

The Parametric Equalizer (PEQ) provides advanced control over the frequency response of the SA1000DSP. PEQ filters can be used to compensate for room acoustics, reduce unwanted resonances, smooth frequency response, or tailor the sound of a system to personal preference.

The SA1000DSP provides two independent groups of equalization filters. The 3-Band PEQ section is intended for manual adjustments, while the 5-Band PEQ (Auto) section is used by the Auto EQ system and can also be adjusted manually if desired.



Frequency

The Frequency control determines the center frequency affected by the selected filter. Lower frequencies affect deep bass and sub-bass content, while higher frequencies affect upper bass and low midrange frequencies.

Gain

The Gain control determines the amount of boost or attenuation applied at the selected frequency. Positive values increase output at the selected frequency, while negative values reduce output.

Q

The Q control determines the bandwidth of the filter. Lower Q values affect a wider range of frequencies and are often used for broad tonal adjustments. Higher Q values affect a narrower range of frequencies and are commonly used to address specific room resonances or response irregularities.

Filter Type

Multiple filter types are available to accommodate different equalization requirements.

Peak filters boost or attenuate a specific frequency range around a selected center frequency.
Bass and **Treble** filters provide shelving equalization that affects frequencies below or above the selected frequency.
Notch filters provide narrow-band attenuation and are commonly used to reduce specific resonances.
LPF and **HPF** filters may also be applied within the PEQ section when additional filtering is required.

Response Graph

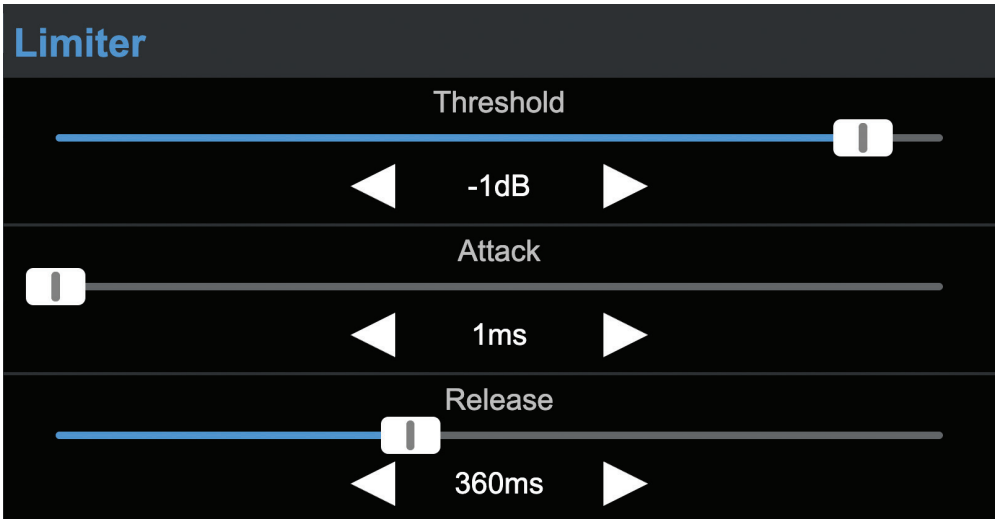
The response graph provides a visual representation of all active PEQ filters. As filter settings are adjusted, the graph updates automatically to display the resulting frequency response.

This allows equalization changes to be evaluated visually before listening tests are performed.

Limiter

The limiter protects the amplifier and connected loudspeaker from excessive signal levels by automatically reducing output when the selected threshold is exceeded.

Proper limiter settings can help prevent amplifier clipping, excessive driver excursion, and potential loudspeaker damage while maintaining consistent system performance.



Threshold

The Threshold setting determines the maximum output level before limiting begins.

Signals below the threshold pass through unaffected. When the signal level exceeds the threshold, the limiter automatically reduces gain to prevent further increases in output level.

Lower threshold settings provide greater protection, while higher threshold settings allow increased output before limiting occurs.

Attack

The Attack setting determines how quickly the limiter responds when the threshold is exceeded.

Faster attack times provide maximum protection against sudden signal peaks, while slower attack times allow more transient energy to pass before limiting is applied.

Release

The Release setting determines how quickly the limiter returns to normal operation after the signal level falls below the threshold.

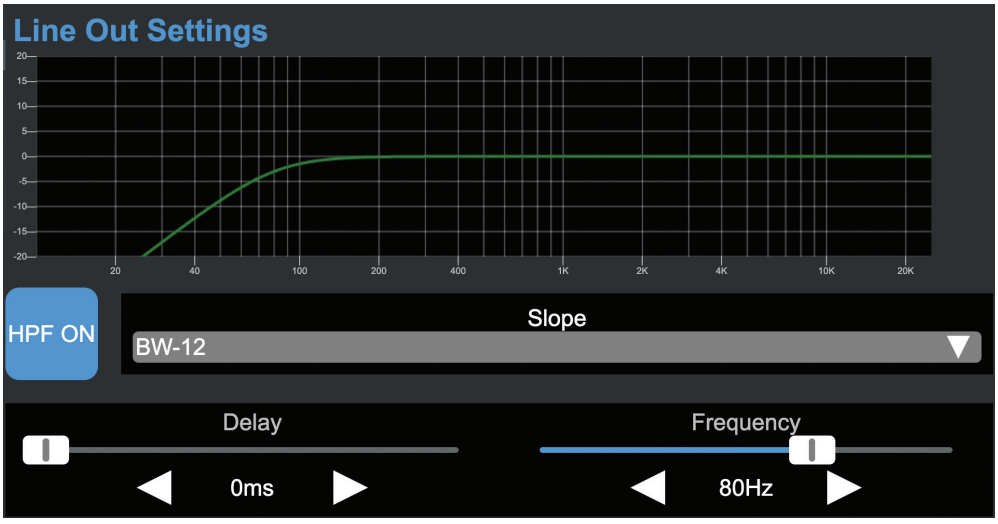
Shorter release times restore full output more quickly, while longer release times provide smoother operation and reduce the likelihood of audible level fluctuations.

Limiter settings should be adjusted based on the power handling capabilities of the connected loudspeaker and the intended application.

Line Output

The SA1000DSP includes a DSP-processed line-level output that can be used to feed an external amplifier, powered speakers, or additional audio equipment.

The Line Out Settings page allows independent processing of the line output signal, making it possible to integrate main speakers and subwoofers within a single system. High-pass filtering and delay can be applied directly to the line output without affecting the amplifier output.



High Pass Filter

The High Pass Filter (HPF) removes low-frequency content from the line output signal.

When used with external amplifiers or powered speakers, the HPF can reduce overlap between the main speakers and subwoofer while improving overall system integration. Frequencies below the selected crossover frequency are progressively attenuated before reaching the line output.

The filter can be enabled or disabled using the HPF ON button.

Frequency

The crossover frequency determines the point at which the high-pass filter begins attenuating lower frequencies.

The selected frequency should be chosen based on the capabilities of the connected loudspeakers and the desired crossover point within the system.

Slope

The slope setting determines how quickly frequencies below the crossover frequency are attenuated.

Steeper slopes provide greater separation between the subwoofer and main speakers, while gentler slopes provide a more gradual transition between frequency ranges.

Multiple filter types and slope options are available to accommodate a wide variety of loudspeaker and system configurations.

Delay

The Delay control allows timing adjustments to be applied to the line output signal.

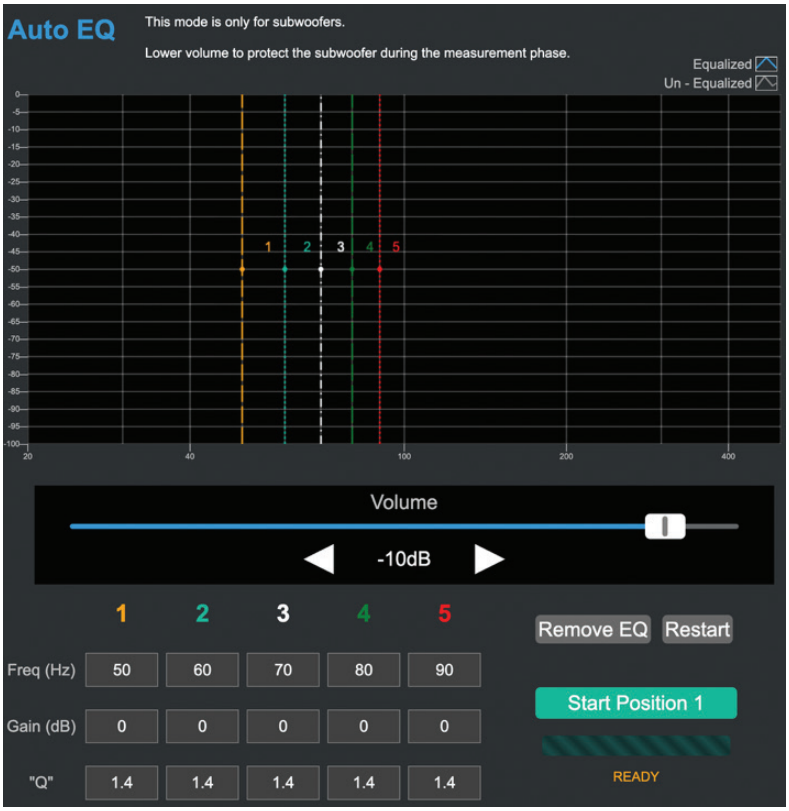
Delay can be used to improve alignment between the subwoofer and connected main speakers by compensating for differences in speaker placement and acoustic arrival time.

The response graph provides a visual representation of the active line output filter settings and updates automatically as adjustments are made.

Auto EQ

The Auto EQ feature automatically analyzes the in-room response of a connected subwoofer and generates equalization filters to improve low-frequency performance.

Using the included calibration microphone, the SA1000DSP measures the acoustic response of the subwoofer at multiple listening positions and automatically creates corrective filters that are applied through the DSP. Auto EQ is intended for subwoofer applications only.



Before Starting

Before beginning the Auto EQ process, position the calibration microphone at the primary listening location and connect it to the microphone input.

To prevent excessive output during the measurement process, Dayton Audio recommends reducing the amplifier volume before starting a measurement.

Background noise should be minimized whenever possible to ensure accurate results.

Measurement Process

Auto EQ uses five measurement positions to analyze the listening area.

Begin by placing the microphone at the primary listening position and pressing **Start Position 1**. Once the measurement is complete, move the microphone to the next listening position and continue through all remaining measurement locations.

For best results, measurement positions should be distributed throughout the primary listening area rather than concentrated in a single location.

Equalization Filters

Upon completion of the measurement process, the SA1000DSP automatically generates a set of equalization filters based on the measured response.

The generated filter frequencies, gain values, and Q settings are displayed on the Auto EQ page and may be reviewed or adjusted manually if desired.

Response Graph

The response graph displays both the measured response and the equalized response, allowing the effectiveness of the generated filters to be evaluated visually.

Remove EQ and Restart

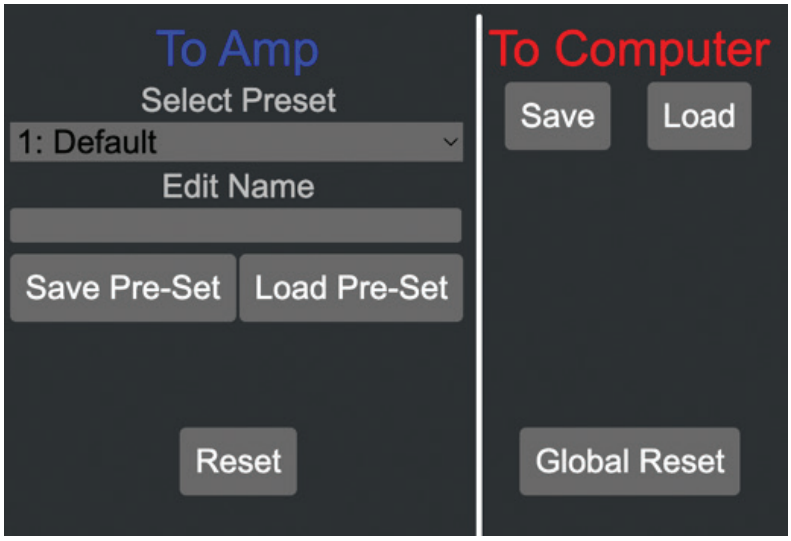
Selecting **Remove EQ** clears all Auto EQ filters and returns the Auto EQ section to its default state.

Selecting **Restart** clears the current measurement data and begins a new Auto EQ measurement session.

Presets

The Presets and Reset page provides tools for storing, recalling, importing, and exporting amplifier configurations.

Presets allow frequently used settings to be saved and recalled without manually reconfiguring the amplifier. All DSP, crossover, equalization, limiter, and system settings are stored within a preset.



Presets

The SA1000DSP can store up to 20 presets internally.

To save a preset, select the desired preset location, enter a name if desired, and select **Save Preset**. The current amplifier configuration will be stored to the selected preset location.

To recall a previously saved preset, select the desired preset and choose **Load Preset**. The stored configuration will immediately be applied to the amplifier.

Presets can be used to store different system configurations, listening preferences, or loudspeaker tuning profiles for quick recall.

Preset Import and Export

Preset files can be saved to a computer for backup, duplication, or transfer between compatible amplifiers.

Selecting **Save** exports the current amplifier configuration to a file on the connected computer.

Selecting **Load** imports a previously saved configuration file and applies the stored settings to the amplifier.

Reset

The **Reset** button restores the currently selected preset to its default settings.

Only the selected preset is affected.

Global Reset

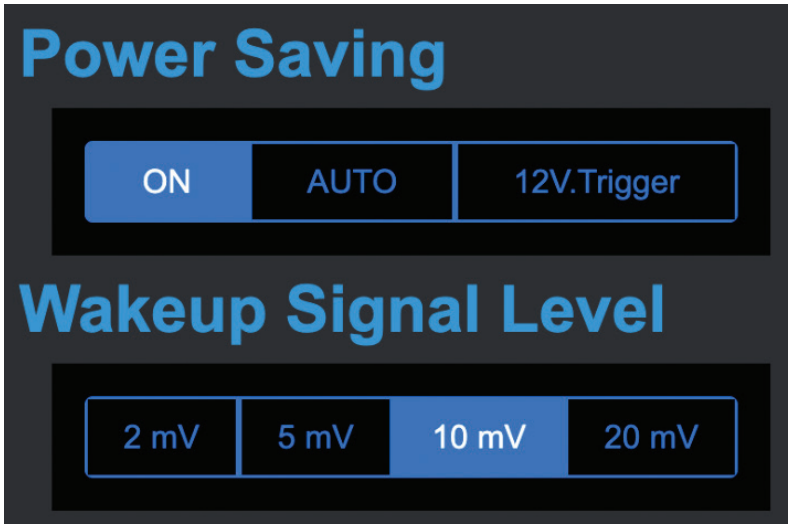
The **Global Reset** button restores all amplifier settings and presets to their factory default values.

Use this function with caution, as all user-created presets and configuration settings will be permanently removed.

Power Saving

The amplifier operating mode is selected using the **rear panel ON MODE switch**.

The Power Saving page displays the currently selected operating mode but does not allow the operating mode to be changed remotely.



Three operating modes are available:

ON

The amplifier remains powered whenever AC power is connected and the rear panel power switch is turned on.

AUTO

The amplifier automatically enters standby after an extended period without an audio signal. When a signal exceeding the selected wakeup threshold is detected, the amplifier automatically returns to normal operation.

12V Trigger

The amplifier is controlled by an external device connected to the rear panel 12V Trigger Input. The amplifier powers on when a valid trigger signal is present and enters standby when the trigger signal is removed.

Wakeup Signal Level

When the rear panel ON MODE switch is set to AUTO, the Wakeup Signal Level determines the minimum input signal required to wake the amplifier from standby.

This setting can be adjusted through the web interface without changing the rear panel operating mode.

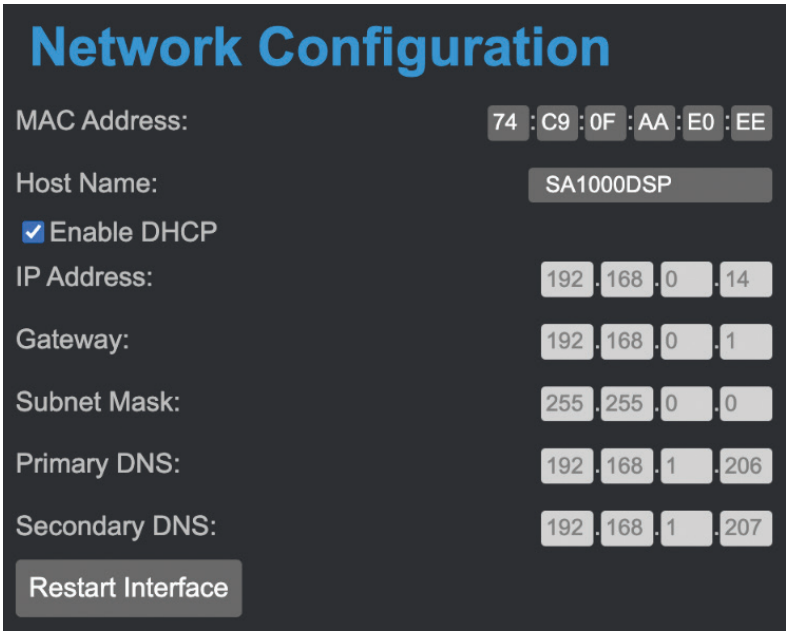
Lower settings provide greater sensitivity and allow the amplifier to respond to smaller input signals. Higher settings may help prevent unintended wakeups in systems with elevated background noise or signal interference.

The wakeup threshold can be configured to **2 mV, 5 mV, 10 mV, or 20 mV**.

Network Configuration

The Network Configuration page provides access to the amplifier's network settings and status information.

By default, the SA1000DSP automatically obtains network settings using DHCP and no additional configuration is required. Advanced users may optionally configure static network settings when required by the installation.



MAC Address

The MAC Address is a unique hardware identifier assigned to the amplifier's network interface. This address is used by network equipment to identify the device on the network.

Host Name

The Host Name identifies the amplifier on the local network and may be used when connecting to the web interface from a browser.

When multiple amplifiers are installed on the same network, assigning unique host names can simplify device identification and management.

DHCP

When **Enable DHCP** is selected, the amplifier automatically obtains its network settings from the network router or DHCP server. DHCP is recommended for most installations.

Static Network Configuration

When DHCP is disabled, network settings must be entered manually.

The following settings are available:

- IP Address
- Gateway
- Subnet Mask
- Primary DNS
- Secondary DNS

These settings should only be modified by users familiar with network configuration requirements.

Restart Interface

Selecting **Restart Interface** restarts the network interface and applies any changes made to the network configuration. The web interface connection may be temporarily interrupted while the network interface is restarting.

Troubleshooting

Problem	Possible Cause	Recommended Action
Amplifier will not power on	Rear panel power switch is OFF	Move the rear panel power switch to the ON position.
	AC power not connected	Verify the power cord is fully seated and connected to a functioning AC outlet.
No sound from speakers	Incorrect input source selected	Verify that the desired Analog or S/PDIF input is selected.
	Source device not producing audio	Confirm the source device is powered on and operating correctly.
	Speaker wiring disconnected	Inspect all speaker connections and verify proper polarity.
No audio from S/PDIF input	Incorrect input source selected	Select S/PDIF from the Volume / Phase / Input page.
	Source device not outputting PCM audio	Verify the source device is configured for PCM output.
Unable to access web interface	Amplifier not connected to network	Verify the Ethernet cable is connected and network equipment is powered on.
	Control device on different network	Ensure the amplifier and control device are connected to the same local network.
	Incorrect IP address	Verify the amplifier IP address shown on the display or About page.
	DHCP unavailable on network	Verify network DHCP services are operating correctly or configure a static IP address.
Amplifier does not wake from AUTO mode	Wakeup threshold set too high	Lower the Wakeup Signal Level setting.
	Source output level too low	Increase the source device output level.
Amplifier remains awake in AUTO mode	Wakeup threshold set too low	Increase the Wakeup Signal Level setting.
Amplifier does not respond to 12V Trigger	No trigger voltage present	Confirm the source device is providing a valid 12V trigger signal.
	Trigger cable disconnected	Verify the trigger cable is securely connected.
Auto EQ measurement fails	Calibration microphone not connected	Verify the calibration microphone is connected correctly.
	Excessive background noise	Reduce ambient noise and repeat the measurement process.
Auto EQ results appear inconsistent	Measurement positions clustered together	Repeat Auto EQ using measurement positions distributed throughout the listening area.
Distorted audio	Input signal clipping	Reduce the output level of the source device.
	Excessive PEQ boost applied	Review PEQ settings and reduce excessive gain values.
LIMIT indicator activates frequently	Output level exceeds limiter threshold	Reduce volume or adjust limiter settings.
Preset changes not recalled as expected	Preset was not saved	Save the preset before loading another preset or powering off the amplifier.
No audio from line output	Line Out Settings configured incorrectly	Verify HPF, delay, and other Line Out settings.
Loudspeaker protection activates	Speaker load exceeds system capability	Verify loudspeaker impedance and power handling.

Specifications

Channels	2
Output Power (WPC) 8Ω	159W
Output Power (WPC) 4Ω	300W
Output Power (Bridged) 8Ω	600W
Output Power (Bridged) 4Ω	1,000W
Amplification	Class D
THD+N @ Rated Power	0.35%
SNR, A-Weighted	96 dB
Frequency Response (+/- 0.5 dB)	10 - 200 Hz
Input Sensitivity -10 VRMS (RCA)	631 mV
Input Sensitivity -4 VRMS (RCA)	315 mV
Channel Separation	-60 dB
Minimum Speaker Impedance	
Stereo	4 Ohm
Bridged	4 Ohm

Inputs and Control

Analog Inputs	RCA, XLR
Digital Input	S/PDIF
Line Level Outputs	RCA, XLR
Amplifier Outputs	Threaded lug/banana jack
Auto On Voltage	10 mVRMS
12V Trigger	3.5mm Input and Output

General

Power Requirements	100-240 VAC / 50-60 Hz
Internal Fuse Rating	10A 250V
Max Power Consumption	1,260W
Standby Power Consumption	1W
Power Modes	ON, AUTO, 12V Trigger
Dimensions (each) **W x D x H**	17 x 9-1/4 x 2 in. (483 x 232 x 53 mm)
Weight (each)	7.11 lbs. (3.224 kg.)

5-Year Limited Warranty
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