



IPR™ 1600/3000/4500/6000 Power Amplifiers

Operating Manual





Intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



Intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

CAUTION: Risk of electrical shock — DO NOT OPEN!

CAUTION: To reduce the risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

WARNING: To prevent electrical shock or fire hazard, this apparatus should not be exposed to rain or moisture, and objects filled with liquids, such as vases, should not be placed on this apparatus. Before using this apparatus, read the operating guide for further warnings.



Este símbolo tiene el propósito, de alertar al usuario de la presencia de “(voltaje) peligroso” sin aislamiento dentro de la caja del producto y que puede tener una magnitud suficiente como para constituir riesgo de descarga eléctrica.



Este símbolo tiene el propósito de alertar al usuario de la presencia de instrucciones importantes sobre la operación y mantenimiento en la información que viene con el producto.

PRECAUCION: Riesgo de descarga eléctrica ¡NO ABRIR!

PRECAUCION: Para disminuir el riesgo de descarga eléctrica, no abra la cubierta. No hay piezas útiles dentro. Deje todo mantenimiento en manos del personal técnico cualificado.

ADVERTENCIA: Para prevenir choque eléctrico o riesgo de incendios, este aparato no se debe exponer a la lluvia o a la humedad. Los objetos llenos de líquidos, como los floreros, no se deben colocar encima de este aparato. Antes de usar este aparato, lea la guía de funcionamiento para otras advertencias.



Ce symbole est utilisé dans ce manuel pour indiquer à l'utilisateur la présence d'une tension dangereuse pouvant être d'amplitude suffisante pour constituer un risque de choc électrique.



Ce symbole est utilisé dans ce manuel pour indiquer à l'utilisateur qu'il ou qu'elle trouvera d'importantes instructions concernant l'utilisation et l'entretien de l'appareil dans le paragraphe signalé.

ATTENTION: Risques de choc électrique — NE PAS OUVRIR!

ATTENTION: Afin de réduire le risque de choc électrique, ne pas enlever le couvercle. Il ne se trouve à l'intérieur aucune pièce pouvant être réparée par l'utilisateur. Confiez l'entretien et la réparation de l'appareil à un réparateur Peavey agréé.

AVIS: Dans le but de réduire les risques d'incendie ou de décharge électrique, cet appareil ne doit pas être exposé à la pluie ou à l'humidité et aucun objet rempli de liquide, tel qu'un vase, ne doit être posé sur celui-ci. Avant d'utiliser de cet appareil, lisez attentivement le guide fonctionnant pour avertissements supplémentaires.



Dieses Symbol soll den Anwender vor unisolierten gefährlichen Spannungen innerhalb des Gehäuses warnen, die von Ausreichender Stärke sind, um einen elektrischen Schlag verursachen zu können.



Dieses Symbol soll den Benutzer auf wichtige Instruktionen in der Bedienungsanleitung aufmerksam machen, die Handhabung und Wartung des Produkts betreffen.

VORSICHT: Risiko — Elektrischer Schlag! Nicht öffnen!


VORSICHT: Um das Risiko eines elektrischen Schlages zu vermeiden, nicht die Abdeckung entfernen. Es befinden sich keine Teile darin, die vom Anwender repariert werden könnten. Reparaturen nur von qualifiziertem Fachpersonal durchführen lassen.

WARNUNG: Um elektrischen Schlag oder Brandgefahr zu verhindern, sollte dieser Apparat nicht Regen oder Feuchtigkeit ausgesetzt werden und Gegenstände mit Flüssigkeiten gefüllt, wie Vasen, nicht auf diesen Apparat gesetzt werden. Bevor dieser Apparat verwendet wird, lesen Sie bitte den Funktionsführer für weitere Warnungen.

IMPORTANT SAFETY INSTRUCTIONS

WARNING: When using electrical products, basic cautions should always be followed, including the following:



1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of 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 plug. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point they exit from the apparatus.
11. Only use attachments/accessories provided by the manufacturer.
12. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13.  Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Never break off the ground pin. Write for our free booklet "Shock Hazard and Grounding." Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
16. If this product is to be mounted in an equipment rack, rear support should be provided.
17. Note for UK only: If the colors of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows:
 - a) The wire that is colored green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, colored green or colored green and yellow.
 - b) The wire that is colored blue must be connected to the terminal that is marked with the letter N or the color black.
 - c) The wire that is colored brown must be connected to the terminal that is marked with the letter L or the color red.
18. This electrical apparatus should not be exposed to dripping or splashing and care should be taken not to place objects containing liquids, such as vases, upon the apparatus.
19. Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures:

Duration Per Day In Hours	Sound Level dBA, Slow Response
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 or less	115

According to OSHA, any exposure in excess of the above permissible limits could result in some hearing loss. Earplugs or protectors to the ear canals or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss, if exposure is in excess of the limits as set forth above. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels such as this amplification system be protected by hearing protectors while this unit is in operation.

SAVE THESE INSTRUCTIONS!

IPR™ 1600/3000/4500/6000 Power Amplifier

Congratulations on your purchase of an IPR power amplifier, designed for years of reliable, flawless operation under rigorous use. The groundbreaking IPR series utilizes an advanced design that allows Peavey engineers to dramatically reduce weight while increasing output power, reliability and thermal efficiency. IPR Series amplifiers are designed with a resonant switch-mode power supply and a high-speed class D topology that yields the highest audio resolution and efficiency available. This revolutionary amplifier offers the sonic superiority and unsurpassed reliability for which Peavey is famous, in an extremely efficient and lightweight design. Advanced technology and extensive protection circuitry allow operation with greater efficiency into difficult loads and power conditions. The DDT™ (Distortion Detection Technique) circuitry ensures trouble-free operation into loads as low as 2 ohms. DDT protects drivers and ensures that sonic integrity is maintained, even in extreme overload conditions. The IPR's high-efficiency design allows the amplifier to operate at very low temperatures, and does not require massive heat sinks to cool. For your safety, read the important precautions section, as well as input, output and power connection instructions.

Although the IPR amplifier is simple to operate and housed in an ultra-strong, ultra-lightweight chassis, improper use can be dangerous. This amplifier is very highpowered and can put out high voltages and sizable currents at frequencies up to 30 kHz. Always use safe operating techniques when operating this amplifier.

Before you send signal through your amplifier, it is very important to ensure that the product has the proper AC line voltage supplied. You can find the proper voltage for your amp printed next to the IEC line (power) cord on the rear panel of the unit. Each product feature is numbered. Refer to the front-panel diagram in this manual to locate the particular features next to its number.



Please read this guide carefully to ensure your personal safety as well as the safety of your amplifier.

AC POWER SWITCH

Features:

- 2 channel independent, fourth-order Linkwitz-Riley crossovers
- DDT protection
- Revolutionary IPR class D topology
- Detented input controls
- Combination XLR 1/4" inputs
- 4 pole twist lock output connectors
- Ultra-light weight
- Individual signal pass 1/4" jacks on each channel
- LED illuminated
- Standby, LED power present indication



VENTILATION: For proper ventilation, allow 12" clearance from nearest combustible surface.

Make sure that vents are not blocked and air can flow freely through the unit.



WARNING: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Front Panel



1 This button triggers the relay that provides power to the amplifier. This unique power switch will glow blue (along with the Peavey logo) in standby mode, indicating AC power has been connected to the amplifier but the amplifier has not yet been turned on.

2 INDICATORS

The IPR™ amplifiers feature five front-panel LED indicators per channel: ACTIVE, SIGNAL, DDT™, TEMP and DC. These LED indicators inform the user of each channel's operating status and warn of possible abnormal conditions.

3 ACTIVE LED

The Active LED indicates that its channel's output relay is closed and the channel is operational. It lights under normal operation and remains on, even when the channel is in DDT gain reduction. These protection features leave the output relay closed. If the Active LED goes off, there is no signal at the output connectors.

4 SIGNAL LED

This LED lights when its channel produces an output signal of about 4 volts RMS or more (0.1 volt or more at the input, with 0 dB attenuation and standard x40 voltage gain). This signal indicates whether a signal is reaching and being amplified by the amplifier.

5 DDT™ (DISTORTION DETECTION TECHNIQUE) LED

A channel's DDT LED will light at the onset of clipping. If the LEDs are flashing quickly and intermittently, the channel is just at the clip threshold. A steady, bright glow means the amp is clip limiting, or reducing gain to prevent severely clipped waveforms from reaching the loudspeakers. See the Distortion Detection Technique section for more information. During initial power-up the DDT LED will light to indicate that the RAMPUP™ gain reduction circuitry is activated. This prevents sudden signal bursts when the speaker relays are closed.

6 TEMP LED

In the unlikely event of an unstable thermal condition, amplifier protection will be activated and will shut down the offending channel. The Temp LED will remain illuminated until safe operating temperatures have returned.

7 DC LED

In the event of abnormal operating conditions, the IPR has built-in amplifier protection. Under conditions that would normally damage the power amplifier, the DC LED will illuminate and the channel will automatically attempt to restart to correct the condition. If the amplifier does not return to normal operating status, contact your local authorized service center.

8 INPUT ATTENUATORS

Whenever possible, set the attenuators fully clockwise to maintain optimum system headroom. The input attenuator controls, located at the front panel (one for channel A, one for channel B), adjust gain for their respective amplifier channels in all modes. See the specifications at the end of this manual for standard voltage gain and input sensitivity information.



9 AC POWER INLET:

This is the receptacle for an IEC line cord, which provides AC power to the unit. Connect the line cord to this connector to provide power to the unit. Damage to the equipment may result if improper line voltage is used. (See line voltage marking on unit).

Never break off the ground pin on any equipment. It is provided for your safety. If the outlet used does not have a ground pin, a suitable grounding adapter should be used and the third wire should be grounded properly. To prevent the risk of shock or fire hazard, always make sure that the amplifier and all associated equipment is properly grounded.

NOTE: FOR U.K. ONLY

As the colors of the wires in the mains lead of this apparatus may not correspond with the colored markings identifying the terminals in your plug, proceed as follows: (1) The wire which is colored green and yellow must be connected to the terminal which is marked by the letter E, or by the Earth symbol, or colored green or green and yellow. (2) The wire which is colored blue must be connected to the terminal which is marked with the letter N, or the color black. (3) The wire which is colored brown must be connected to the terminal which is marked with the letter L, or the color red.

10 CHANNEL MODE SWITCH

HIGH PASS

This position is used to activate the HIGH PASS filter for the corresponding channel. This Linkwitz -Riley filter will limit the frequencies sent to the associated amplifier channel to those frequencies above 100 Hz. In situations where separate subwoofer cabinets are being used, this position would indicate connecting the mid-high frequency speaker cabinet to the channel associated with the HIGH PASS switch.

FULL RANGE

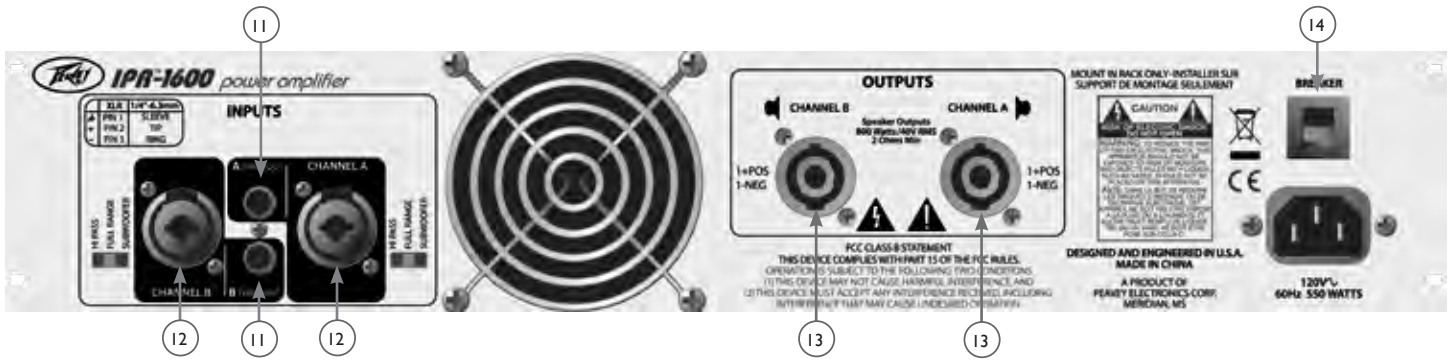
As the name implies, the Full Range position on this switch allows all frequencies to pass to the amplifier. Normally used when connecting a full range speaker enclosure to the amplifier's output.

SUBWOOFER

This position is used to activate the LOW PASS filter for the corresponding channel. This Linkwitz-Riley filter will limit the frequencies sent to the associated amplifier channel to those frequencies below 100 Hz. In situations where separate subwoofer cabinets are being used, this position would indicate connecting the subwoofer speaker cabinet to the channel associated with the Subwoofer switch.



Rear Panel



11 THRU/OUT JACKS

This 1/4" jack supplies parallel output signals from the associated channel for patching to this amplifier and/or additional power amplifier inputs. The Thru/Out jack is affected by the position of the associated Channel Mode switch. This 1/4" jack also provides an unbalanced (tip/sleeve) output to be patched with single-conductor shielded cables.

12 CONNECTING INPUTS

Input connections are made via the 3-pin XLR (pin 2+) or 6.3 mm plug combination connectors on the rear panel of the amplifier. The inputs are actively balanced. The input overload point is high enough to accept the maximum output level of virtually any signal source.

13 CONNECTING OUTPUTS

All models have one combination 4 pole twist lock output connector per channel. While a 1/4" speaker cable may be connected to this output, the 4 pole twist lock output connection is the preferred method.

14 CIRCUIT BREAKER

In the unlikely event of operating conditions that may potentially damage the amplifier, the circuit breaker may trip. After inspecting the cables and connections, the amplifier can be reset. If the circuit breaker trips a second time, contact the local Peavey authorized service center.

IPR™ 1600/3000/4500/6000 DSP Power Amplifier

As the name implies, the IPR 1600, 3000, 4500, and 6000 DSP all include advanced digital signal processing. The DSP was designed to be incredibly effective, yet extremely easy to use. Using unique and revolutionary advanced bass enhancement processes, the IPR DSP amplifiers dramatically improve the perceived level of bass in any system, using a fraction of the power that would be required with any other power amp.

Before you send signal through your amplifier, it is very important to ensure that the product has the proper AC line voltage supplied. You can find the proper voltage for your amp printed next to the IEC line (power) cord on the rear panel of the unit. Each product feature is numbered. Refer to the front panel diagram in this manual to locate the particular features next to its number.



Please read this guide carefully to ensure your personal safety as well as the safety of your amplifier.

IPR DSP Features:

- DDT™ protection
- Revolutionary IPR class D topology
- Detented input controls
- Combination XLR 1/4" inputs
- Combination 1/4" or 1/4" 4 pole twist lock output connector
- Light weight
- Individual signal pass-thru 1/4" jacks on each channel
- LED illuminated
- DSP-based Loudspeaker Management System
- 120 ms of delay per channel
- 4 bands of parametric equalization per channel
- Security lock
- Adjustable fourth-order Linkwitz-Riley Crossover
- Adjustable fourth-order high-pass filter each channel
- Setup wizard
- MAXX Bass®
- Horn EQ each channel
- Blue, backlit LCD screen



WARNING: PLEASE REVIEW YOUR DSP SETTINGS BEFORE SENDING SIGNAL TO THE AMPLIFIER. INCORRECT SETTINGS CAN POTENTIALLY DAMAGE SPEAKER ENCLOSURES. We have made every attempt to ensure the Setup Wizard will help correctly configure the DSP; however, incorrect settings at any point of the setup process can damage your speaker enclosures. If you have any questions, please do not hesitate to call our customer service line.



VENTILATION: For proper ventilation, allow 12" clearance from nearest combustible surface. Make sure that vents are not blocked and air can flow freely through the unit.



WARNING: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Getting Started with DSP

To navigate through the menus on the LCD screen, simply use the push-button navigation encoder located to the right of the LCD screen.

The quickest and easiest way to configure any IPR™ DSP model is to use the Setup Wizard. After switching the unit on, the IPR DSP will display the Setup Wizard entry screen for 6 seconds (Fig. 1). Turn the encoder to "Yes" and depress to enter the Setup Wizard. If no input is received after six seconds, the screen will advance to the main operating menu.



Fig. 1

SETUP WIZARD (Fig. 2)

If there are currently stored manual settings in the DSP, the LCD screen will read "CLEAR MANUAL EQ SETTINGS?" This warning indicates there have been changes made to the DSP in manual mode and continuing through the Setup Wizard will erase the previously stored settings. To continue through the wizard, select "YES." Selecting "NO" will leave the Setup Wizard and advance to the main operating menu.



Fig. 2

Speaker Selection

The first screen in the Setup Wizard allows the user to select the speaker associated with each channel of the amplifier. Rotate the navigation encoder and press to select the speaker for each channel. By selecting the speaker associated with each channel, the IPR DSP can make certain assumptions and create optimal settings for most circumstances with very little input from the user. The IPR DSP includes a library of Peavey speakers, as well as some generic selections for non-Peavey speakers. (Fig. 3)



Fig. 3

After selecting speakers for each channel, if a subwoofer has not been selected, the user will be prompted with, "DOES THE SYSTEM HAVE A SUBWOOFER?" If "Yes" is selected, the amplifier will assume it is part of a two-way system with another amplifier operating the subwoofer. The IPR DSP will then assign a 100 Hz crossover to each channel, allowing only those frequencies above 100 Hz to pass to the speaker cabinets attached to the amplifier. If a subwoofer was selected during the setup process, the amplifier will automatically assign the appropriate crossover to each channel.



Fig. 4

NOTE: In the Setup Wizard the crossover is automatically set at 100 Hz. Enter Manual mode to adjust crossover frequency. (Fig. 4)

Setup Wizard Input Mode Select:

The IPR™ DSP has the capability of routing the signal coming into channel A to channel B for Mono operation. In the event the user selects a mid-high cabinet for one channel and a subwoofer for the other channel, the IPR DSP will make the assumption the amplifier is being used in Mono and will route the signal coming into channel A to channel B, as well.

Otherwise, the user will be prompted to select the Input mode of operation. Mono, as described above, will send the signal coming from input A to both the A and B amplifiers. (Fig. 5). In other words, both channels will receive the signal coming from channel A. In Stereo mode, each channel will receive an independent input. Amplifier A will use input A and amplifier B will get signal from Input B (Fig. 6).

Keep in mind the A and B 1/4" thru outputs are connected in parallel with the A and B input connectors, respectively. This is extremely helpful when running multiple amplifiers. To preserve the balanced input when using the thru output, use a TRS (Stereo) 1/4" cable.

Any of these settings can be changed in Manual mode.



Fig. 5



Fig. 6

SETUP WIZARD EQ

EQ (or equalization) is designed to either make corrections to the audio signal based on frequency anomalies in a particular room, or to color the audio signal to adjust for a specific application. Many of these application-style EQs color the signal path to represent the EQ curve that would be typically associated with a style of music or a specific application (such as speech). After speaker cabinet selection, the IPR™ DSP will ask the user if EQ is required (Fig. 7). If “Yes” is selected the user will be able to scroll through several pre-designed EQ curves that will give the user the general characteristics associated with one of the following selections (Fig. 8):

- Rock
- Dance
- Thump
- DJ
- Contemporary Worship
- Speech

Setup Wizard Remote Speaker Delay

Delay is often required for systems with remote speakers. Occasionally remote speakers are required for larger audiences. These speakers can provide additional coverage in areas the main PA speakers do not adequately cover. Unless the remote speakers are delayed properly the audience will notice a time difference between the primary source (main PA) and remote speaker. This time difference will be perceived as an echo and will cause an undesirable listening environment. The IPR DSP amplifiers offer up to 120 mS of delay per channel, enough to position the remote speakers up to 136 ft from the primary PA speakers (Fig. 9).

When the amplifier is configured to drive a Mono, two-way speaker system, the delay adjustment changes both channels simultaneously. Once in the delay screen, turn the navigation encoder to increase or decrease the amount of delay. The screen displays the delay in milliseconds, feet and meters (Fig. 10).



Fig. 7



Fig. 8



Fig. 9



Fig. 10

Setup Wizard Lock Settings:

The IPR™ DSP allows the user to safely lock the settings of the amplifier after they have been configured. This feature can be extremely useful when using the IPR DSP in an installation environment, preventing unwanted changes to the settings that can potentially damage the speakers. The user can choose whether to disable the security lock, lock all of the settings, or ALL of the settings EXCEPT the volume controls (input attenuators) (Fig.11). If the security lock is engaged, users will be prompted to enter the security code before being able to edit any of the DSP settings. Once the correct access code has been entered, the control screen will remain unlocked until the user either completes the Setup Wizard or returns to the main menu (Fig.12). Please contact Customer Service if the lock code is forgotten or misplaced.

NOTE: The IPR DSP input attenuators are actually encoders, unlike the non-DSP version of the IPR, and are controlled by DSP.



Fig. 11



Fig. 12

Main Menu



Fig. 13

Scroll through menu using navigation encoder



Main Menu Settings

The Main Menu is divided into six sections, accessible by scrolling right or left through the Main Menu options using the navigation encoder (Fig. 13). Each menu item displays its current status. Press the encoder over the selection to edit.

MODE



The IPR™ DSP has the capability of routing the signal coming into input A to both amplifiers A and B for Mono operation (Fig. 14).

In Mono mode, both channels will receive the signal coming in from channel A. In Stereo mode, each channel will receive and independent input. Amplifier A will use input A, and amplifier B will use input B (Fig. 15).

Keep in mind the 1/4" thru outputs can be used to route their respective input signals to other to other amplifiers. This is extremely helpful when in sound systems with amplifiers.

To preserve the balanced input when using the thru output, use a TRS (stereo) 1/4" cable to route the "thru" signal to another balanced input.

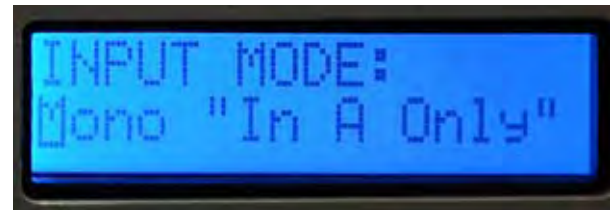


Fig. 14

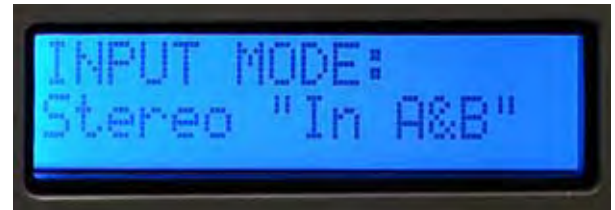


Fig. 15

Volume

Volume:

The Main Menu displays the current settings for the volume controls (0 being maximum) (Fig. 16)

NOTE: The volume controls are really input attenuators and are controlled by DSP.

Whenever possible, set the attenuators to maximum (0) to maintain optimum system headroom. The input attenuator controls, located on the front panel (one for channel A, one for channel B), adjust gain for their respective amplifier channels in all modes. See the specifications at the end of this manual for standard voltage gain and input sensitivity information.



Fig. 16

Crossover

Crossover

The Main Menu displays the status of the crossover associated with each channel, either OFF, HI or LOW. In the case of this illustration, channel A indicates high frequencies are passing onto amplifier A. Channel B indicates low frequencies are passing onto amplifier B (Fig. 17).



Fig. 17

To adjust the crossover, press the navigation encoder while the cursor is highlighting "XVR."

NOTE: INCORRECT CROSSOVER SETTINGS MAY DAMAGE YOUR SPEAKERS! Use speaker manufacturer's recommended settings to avoid potential damage.

Crossover Edit mode allows the user to remove, add or adjust the crossover point. Select the desired crossover frequency and press the navigation encoder (Fig. 18). To turn OFF the crossover function, lower the crossover frequency until "None - Full Range" appears on the screen.



Fig. 18

Once the crossover frequency has been selected, set the frequency range that channels A and B each receive. Press the navigation encoder to select and advance (Fig. 19). These screens will not appear if the crossover is turned off.



Fig. 19

The next menu allows the selection of a high-pass filter for each channel. This filter reduces unwanted, potentially energy-robbing low-end frequencies from entering the system (Fig. 20). Setting an appropriate high-pass filter frequency also helps protect the loudspeaker from damage and adjusts the frequency range of the Maxx bass processor.



Fig. 20

EQ

The EQ section of the Main Menu indicates whether the EQ is active on each channel. Pressing the navigation encoder when the cursor highlights “EQ” will enter EQ Edit mode. Each channel has 4 parametric EQs, horn equalization and enhanced bass processing (Fig. 21).

After entering Edit mode, the user will be able to activate or deactivate the EQ on each channel. Press the navigation encoder to move the cursor from EQ to channel A, then select ON or BYPASS. Repeat for channel B (Fig. 22).

Turn the navigation encoder to the right to navigate to the BASS ENHANCEMENT SCREEN. Press and select to adjust the amount of BASS ENHANCEMENT (Fig. 23).

MaxxBass® uses psycho-acoustics to calculate precise harmonics that are related to the fundamental tones of sound. The harmonics are generated mostly from low-bass that is below the high-pass filter setting. When these harmonics are combined, it creates the effect of lower, deeper frequencies.

- Extends perceived bass response by up to 1.5 octaves
- Preserves the dynamic range and character of the original bass



Fig. 21



Fig. 22



Fig. 23

Parametric EQ

Parametric equalizers allow precise control of the amplitude, center frequency and bandwidth of these bell response filters.

Each channel of the amplifier has four bands of parametric EQ. These EQs can be used to compensate for peaks and dips in the frequency response of certain speakers, eliminate feedback, and reduce or enhance any area of the frequency spectrum. The attached frequency diagram will help identify the frequencies that may need to be adjusted.

Each parametric EQ has three adjustable parameters:

Amplitude: the level of increase or decrease in decibels (cut or boost up to 15 dB)

Frequency: the center frequency of the bandwidth being adjusted.

Bandwidth: the width of the frequency band being adjusted. The bandwidth control is adjustable from a narrow $3/10$ of an octave for precise filtering to a wide 2 octaves for broad control.

To adjust each EQ simply scroll to the desired EQ and press the navigation encoder to adjust each parameter (Fig. 24). Repeat for each of the four EQs on channel A and B.

HORN EQ

The horn equalization in the IPR™ DSP provides a gentle, rising high-frequency boost to compensate for the roll-off inherent to most high frequency horns. Adjust the frequency and level to achieve the desired response. (Fig. 25)



Fig. 24



Fig. 25

Delay

Delay:

The Delay screen on the Main Menu indicates how much delay is present on each channel in milliseconds. To enter Delay Edit mode, highlight “DLY” with the cursor and press the navigation encoder (Fig. 26).

Delay is often required for systems with remote speakers. Occasionally remote speakers are required for larger audiences. These speakers can provide additional coverage in areas that the main PA speakers are not adequate. Unless the remote speakers are delayed properly, the audience will notice a time difference between the primary source (main PA) and remote speaker. This time difference will be perceived as an echo and will cause an undesirable listening environment. The IPR™ DSP amplifiers offer up to 120 mS of delay per channel, enough to position the remote speakers up to 136 ft from the primary PA speakers.

Once in the delay screen, turn the navigation encoder to increase or decrease the amount of delay. The screen displays the delay in milliseconds, feet and meters.

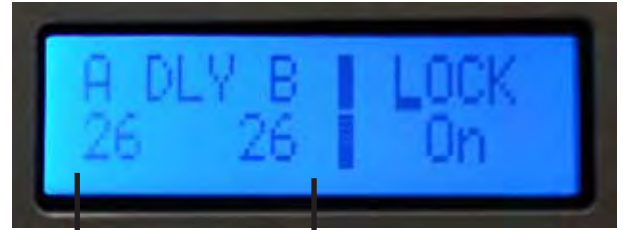


Fig. 26

Lock Settings

Lock Settings:

The IPR™ DSP allows the user to safely lock the settings of the amplifier (Fig. 27). This feature can be extremely useful when using the IPR DSP in an installation environment, preventing unwanted persons from changing the settings and potentially damaging the speakers. The user can choose to disable the security lock, lock ALL DSP settings, or lock ALL of the settings EXCEPT the volume controls (input attenuators). If the security lock is engaged, users will be prompted to enter the security code before being able to edit any of the DSP settings. The control screen will automatically relock when the user returns to the main menu. Please contact Customer Service if the lock code is forgotten or misplaced.

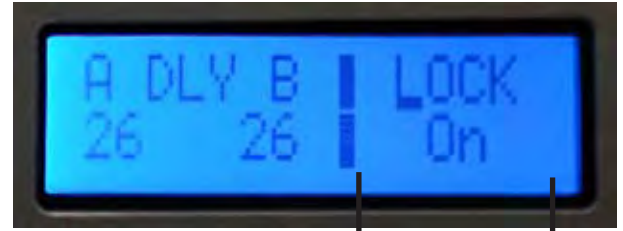


Fig. 27

After selecting the type of lock, set a four-digit security code to engage the security feature. It is always best to record the access code in a safe place for future reference.

AUTOMATIC STORAGE OF DSP SETTINGS

When using the Setup Wizard, audio processing is not changed and the settings are not stored until setup is complete. None of the Wizard settings will be stored if the amplifier is turned off before completing the Wizard setup. The amplifier will return to previous settings when next powered on.

When manually editing DSP parameters, the DSP processing will reflect changes as they are made. Changes are then automatically stored by returning to the Main Menu. Turning off the power before returning to the Main Menu will erase the changes made and return to the previous settings.

IPR™ 1600 Specification Sheet

Rated Power (2 x 2 ohms)	- 800 watts per channel @ 1 kHz at <0.1% T.H.D. both channels driven.
Rated Power (2 x 4 ohms)	- 530 watts per channel @ 1 kHz at <0.1% T.H.D. both channels driven.
Rated Power (2 x 8 ohms)	- 300 watts per channel @ 1 kHz at <0.1% T.H.D. both channels driven.
Rated Power (1 x 2 ohms)	- 1000 watts @ 1 kHz at <0.1% T.H.D.
Rated Power (1 x 4 ohms)	- 600 watts @ 1 kHz at <0.1% T.H.D.
Rated Power (1 x 8 ohms)	- 320 watts @ 1 kHz at <0.1% T.H.D.
Minimum Load Impedance	- 2 ohms
Maximum RMS Voltage Swing	- 55 volts
Frequency Response	- 10 Hz - 50 kHz; +0, -3 dB at 1 watt
T.H.D. (2 x 2 ohms)	- <0.1% @ 600 watts per channel from 20 Hz to 1.5 kHz, decreasing to 500 watts at 20 kHz at <0.25%
T.H.D. (2 x 4 ohms)	- <0.1% @ 470 watts per channel from 20 Hz to 20 kHz
T.H.D. (2 x 8 ohms)	- <0.1% @ 250 watts per channel from 20 Hz to 20 kHz
Input CMRR	- > - 60 dB @ 1 kHz
Voltage Gain	- x 60 (+35 dB)
Crossover	- 100 Hz switchable 2nd order High pass and 3rd order Low Pass per channel
Crosstalk	- > -70 dB @ 1 kHz at 100 watts power @ 4 ohms
Hum and Noise	- > -105 dB, "A" weighted referenced to rated power @ 4 ohms
Damping Factor (8 ohms)	- > 170:1 @ 20 Hz - 1 kHz at 8 ohms
Phase Response	- +9 to - 86 degrees from 20 Hz to 20kHz
Slew Rate:	- > 12V/us
Input Sensitivity	- .775 volts +/- 3% for 1 kHz 4 ohm rated power, .68 volts +/- 3% for 1 kHz. 2 ohm rated power
Input Impedance	- 15k ohms, balanced and 7.5k ohms unbalanced.
Current Draw @ 1/8 power	- 550 watts @ 2 ohms, 390 watts @ 4 ohms, 250 watts @ 8 ohms
Current Draw @ 1/3 power	- 1,160 watts @ 2 ohms, 810 watts @ 4 ohms, 460 watts @ 8 ohms
Cooling	- Temperature dependent variable speed 80 mm DC fan
Controls	- 2 front panel attenuators, crossover select switch for H.P.F, Normal and L.P.F.
Indicator LEDs	- 2 DDT (clip limiting), 2 Signal presence, 2 Active status, 2 Temp and 2 DC protect
Protection	- Thermal, DC, subsonic, incorrect loads, under and over voltage
Connectors	- Inputs: Dual Combi 1/4" XLR, Outputs: Dual 1/4" signal patch, dual Speakon connectors
Construction	- 0.062" thick aluminum
Dimensions	- 3.5"x19" x 10.5" behind front panel + 0.6" for handle
Dimensions Packed	- 4.72" x20.8" x 12.44" (120mm x 530mm x 316mm)
Net Weight*	- 3.23 kg (7.125 lbs.)
Gross Weight	- 4.31 kg (9.5 lbs.)
Warranty	- 5 years

Rated power readings made with BW: <10 Hz to 22 kHz. All power measurements made at 120 VAC and 240VAC.

2 ohm power is time limited by circuit breaker.

*Net Weight does not include power cord.

PEAVEY ELECTRONICS CORPORATION LIMITED WARRANTY

EFFECTIVE DATE: SEPTEMBER 5, 2007

What This Warranty Covers

Your Peavey Warranty covers defects in material and workmanship in Peavey products purchased and serviced in the U.S.A. and Canada.

What This Warranty Does Not Cover

The Warranty does not cover: (1) damage caused by accident, misuse, abuse, improper installation or operation, rental, product modification or neglect; (2) damage occurring during shipment; (3) damage caused by repair or service performed by persons not authorized by Peavey; (4) products on which the serial number has been altered, defaced or removed; (5) products not purchased from an Authorized Peavey Dealer.

Who This Warranty Protects

This Warranty protects only the original retail purchaser of the product.

How Long This Warranty Lasts

The Warranty begins on the date of purchase by the original retail purchaser. The duration of the Warranty is as follows:

Product Category	Duration
Guitars/Basses, Amplifiers, Pre-Amplifiers, Mixers, Electronic Crossovers and Equalizers	2 years (+ 3 years)*
Drums	2 years (+ 1 year)*
Enclosures	2 years (+ 3 years)*
Digital Effect Devices	1 year (+ 1 year)*
Microphones	2 years
Speaker Components (incl. speakers, baskets, drivers, diaphragm replacement kits and passive crossovers)	1 year
Tubes and Meters	90 days
Cables	Limited Lifetime

[*Denotes additional warranty period applicable if optional Warranty Registration Card is completed and returned to Peavey by original retail purchaser within 90 days of purchase.]

What Peavey Will Do

We will repair or replace (at Peavey's discretion) products covered by warranty at no charge for labor or materials. If the product or component must be shipped to Peavey for warranty service, the consumer must pay initial shipping charges. If the repairs are covered by warranty, Peavey will pay the return shipping charges.

How To Get Warranty Service

(1) Take the defective item and your sales receipt or other proof of date of purchase to your Authorized Peavey Dealer or Authorized Peavey Service Center.

OR

(2) Ship the defective item, prepaid, to Peavey Electronics Corporation, International Service Center, 412 Highway 11 & 80 East, Meridian, MS 39301. Include a detailed description of the problem, together with a copy of your sales receipt or other proof of date of purchase as evidence of warranty coverage. Also provide a complete return address.

Limitation of Implied Warranties

ANY IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE LENGTH OF THIS WARRANTY.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Exclusions of Damages

PEAVEY'S LIABILITY FOR ANY DEFECTIVE PRODUCT IS LIMITED TO THE REPAIR OR REPLACEMENT OF THE PRODUCT, AT PEAVEY'S OPTION. IF WE ELECT TO REPLACE THE PRODUCT, THE REPLACEMENT MAY BE A RECONDITIONED UNIT. PEAVEY SHALL NOT BE LIABLE FOR DAMAGES BASED ON INCONVENIENCE, LOSS OF USE, LOST PROFITS, LOST SAVINGS, DAMAGE TO ANY OTHER EQUIPMENT OR OTHER ITEMS AT THE SITE OF USE, OR ANY OTHER DAMAGES WHETHER INCIDENTAL, CONSEQUENTIAL OR OTHERWISE, EVEN IF PEAVEY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

If you have any questions about this warranty or service received or if you need assistance in locating an Authorized Service Center, please contact the Peavey International Service Center at (601) 483-5365

FEATURES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.



Logo referenced in Directive 2002/96/EC Annex IV (OJ(L)37/38, 13.02.03 and defined in EN 50419: 2005
The bar is the symbol for marking of new waste and is applied only to equipment manufactured after 13 August 2005



Features and specifications subject to change without notice.

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