HeadRoom
Right Between Your Ears

Desktop Portable Amp

headphone amplifier
Owner's Manual

Congratulations on your new Desktop Portable Amp. The amp you hold in your hands is the latest in a thirteen year long quest to build the world's finest portable headphone amp. It's equally comfortable in your big rig at home or on the tray table in front of you at 30,000 feet; it will take a signal from a $10,000 cd player or iPod, drive your high quality headphones with authority, and coat the inside of your head with the vivid colors of your favorite music. Add the DAC option and you'll be able to feed you amp from any source with either Toslink (optical) or coax digital output, or from a computer's USB connection. There aren't many portables around these days that have digital outs, but most of today's portable DVD players play CDs and have digital outs that operate under battery power. You'll be amazed at the quality of play by all the great musicians that show up in your head. And if you haven't tried playing movies with WinDVD with Dolby Headphone plug-in on your laptop through a good digital amp, and boy, are you in for a real treat. Oh, and don't forget to check out the Desktop Portable DVD Bag on our web site. It will conveniently carry the amp, battery pack, and portable DVD or other player of choice.

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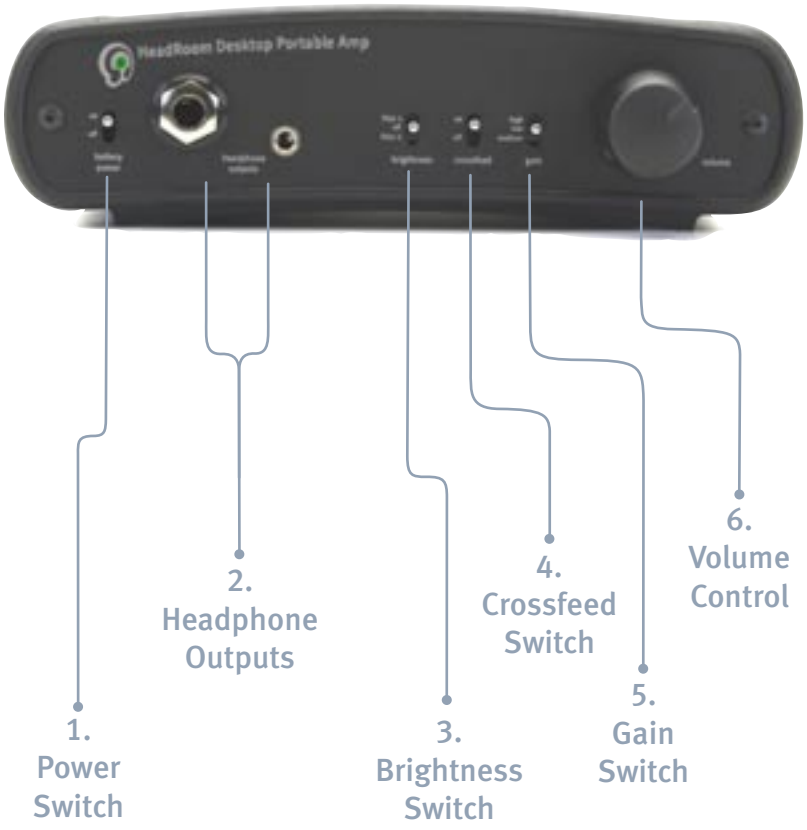
Bozeman, MT 59715
www.headphone.com

The Desktop Portable Amp Front Panel



Front Panel Description

1. Power Switch When using the battery pack the power switch will turn your Desktop Amp on. The green LED will illuminute in the center of the HeadRoom logo in the upper left hand corner of the amp. When using the +/-15v supply the amp is always on.

2. Headphone Ouputs The headphone out is where you plug in your headphones. The Desktop Amp is equipped with a 1/4" jack as well as an 1/8" jack, to accomodate various types of headphones.

3. Brightness Switch The Brightness Switch is used to compensate for the warming action of the processor. In the center position there is no filter in the circuit; generally this is preferred. But if the processor is causing too much bass or blurring of the central image, a mild high frequence boost filter can be turned on. The "filter 1" setting accentuates the highs at about 3 kHz; with the "filter 2" setting the filter starts an octave earlier and catches some of the upper mids. Basically, set it to whatever sounds best to you.

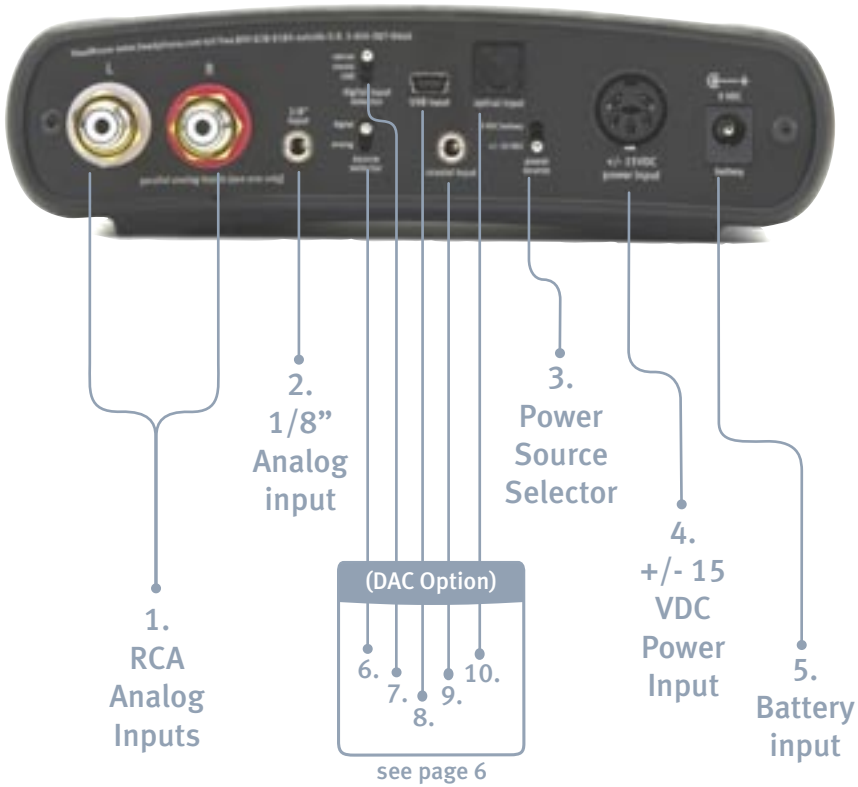
4. Crossfeed Switch This switch engages the crossfeed circuit. Audio imaging on headphones is often not very good; typically the image is a blob on the left, a blob on the right, and a blob in the middle. The HeadRoom crossfeed provides the natural acoustic cross-feed normally heard at the left and right ear as heard from the left and right speaker. Adding back the normally occurring cross-feed signal gives your brain enough information to build the stable and natural audio image needed to have a quality listening experience.

See pg. 7 for more info on the HeadRoom crossfeed.

5. Gain Switch The 3-position Gain Switch accomodates various headphones' power needs. For instance, the Low Gain setting would be used for in-ear monitors, allowing a larger range on the volume control pot. Experiementing with your headphones and the gain switch may help you to determine which setting you prefer. If have any questions regarding your headphones, feel free to call and ask us.

6. Volume Control You never know where the volume control should be set as different headphones often have widely different impedances and efficiencies, so use your ears to choose your listening level, not the level on the dial. (We recommend you choose a moderate level so as not to blow out your ears.) You also need to turn the amp OFF or ALL THE WAY DOWN before plugging in or unplugging your headphones to avoid a potential short-circuiting of the amp. As you turn the volume control knob clockwise, the volume increases.

The Desktop Portable Amp Rear Panel



see page 6

Desktop Amp Rear Panel

Rear Panel Description

1. RCA Analog Inputs There is one set of RCA inputs on the back of the Desktop Portable Amp. The analog inputs are where you will plug in your non-digital source, such as a stationary or portable CD player. If your player has an 1/8" line out plug, you will use a portable cable (mini-RCA); if it has an RCA out (left and right) then you will use a link interconnect (RCA -RCA). See the 'cables' area in our website to purchase some of these cables.

2. 1/8" Analog Input The 1/8" input is a typical line input connector. You can connect your analog source by using a mini-mini cable from the line out (or headphone jack) of your source into this connector.

3. Power Source Selector To the right is the power source switch, which allows you to select battery power or external power to run your Desktop Portable Amp. The amp will run on either four D-cell batteries or an external power supply. We offer two power supplies: the less expensive version, lovingly known as "brick", power supply comes with the amp, the more expensive Desktop Power Supply will give you cleaner juice, and therefore cleaner, more dynamic sound.

4. +/- 15VDC Power Input Plug in your power supply here. The 'brick' power supply included with the Desktop amp, as well as the Desktop Power Supply, will use this connector. See pg 9 for more info on the Power Supply.

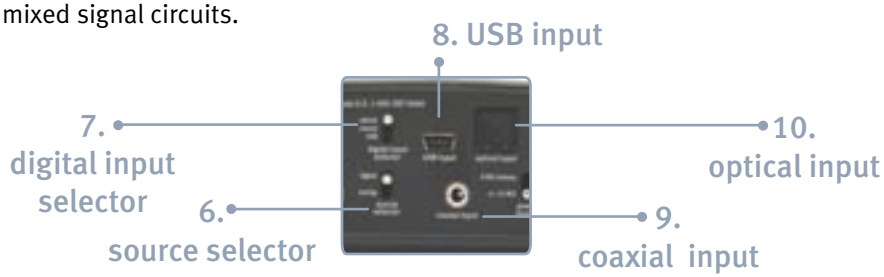
5. Battery Input Connect the battery pack included with your Desktop Portable Amp here. The red battery pack included with the unit takes 4 D-cell batteries and provides about 20 hours of play time, with the basic Desktop Portable. Upgrading the module or adding the DAC reduces playtime.

The Digital-Analog Convertor Option

When purchasing the Desktop Portable Amp, you have the option of including a DAC. If you did not purchase the DAC option with your amp initially, you can have this upgrade performed at a later date.

The Desktop DAC is a clean, well-balanced, and natural sounding converter. It uses the Cirrus Logic's flagship CS4398 24bit/192kHz, 120dB dynamic range digital to analog converter. Coupled with extensive power supply isolation and regulation this DAC will take virtually any digital source and turn it into a quality listening experience.

The Desktop DAC board uses the well regarded Burr-Brown 134 in single packages; only metal thin film resistors and polyphenylenesulfide (poly film) capacitors are used anywhere near the audio circuits. Three low-noise, ultra-low dropout power supply regulators isolate the various digital, analog, and mixed signal circuits.



6. Source Selector When using the DAC, you will need to choose whether you are using a digital input or an analog input. The source selector switch allows you to have both digital and analog sources connected at the same time, and you may change between the two with a simple flip of this switch.

7. Digital Input Selector When using the DAC, the digital input selector allows you to choose which digital input you would like to listen to.

8. USB Input The USB input gets its signal from a computer: laptop or desktop; PC, Mac, or Unix.

9. Coaxial input The coaxial input is your typical coaxial connector. We recommend using a 75 ohm digital cable when using the coaxial input.

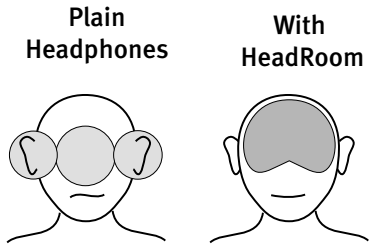
10. Optical Input The optical input is your typical Toslink connector. You get this input signal from the optical output of your player. Not so many portable audio players have optical outputs anymore (call or check our web site for recommendations), but many portable DVD players and some hard disk drive players do. Of course, you can get this signal from many pieces of home equipment.

What is the HeadRoom Crossfeed?

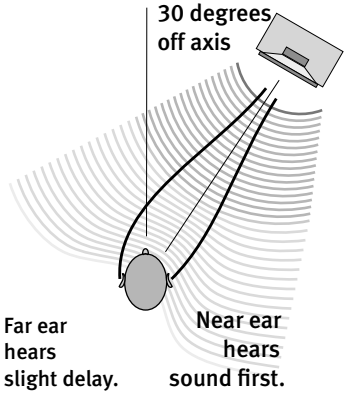
Imagine you are listening to a pair of speakers. If you turn off the left speaker, both ears hear the sound from the right speaker. But because the left ear is slight farther away than the right ear, it hears the speaker's sound slightly after the right ear; about 300 microSeconds. This time difference is called the "inter-aural time difference" and it is the main thing your brain listens for in order to tell where to place sound left-to-right.

But in headphones if you turn off the left channel, only the right ear hears the sound. In headphones, if there is any sound that is only in the left channel, or only in the right channel, then only that ear hears the sound. This is not natural, and you brain becomes fatigued trying to figure out where sound is coming from when only one ear is hearing it. This tends to create an audio image that is a blob on the left, blob on the right and a blob in the middle.

HeadRoom amplifiers cure the problem by allowing you to cross-feed a little of the left and right channels across to each other through a short time delay using the processor switch. The usefulness of the circuit varies depending on what type of recording you are listening to; mono and binaural recordings need no processor at all. Old studio recordings that have instruments panned hard left or right, benefit greatly from the processor. Live and classical recordings miked from a distance benefit somewhat less, and can often be listened to without the processor quite comfortably.



The crossfeed switch in HeadRoom amplifiers allow you to cross-feed a little of the left and right channels across to eachother through a short time delay.



How to Connect Your Desktop Portable Amp

To an Analog Source

You will need a portable cable or RCA interconnect to connect your analog source to the Desktop Portable Amp. Plug the RCA inputs into the back of the Desktop Portable Amp with the other end connected to the line output of your analog source (or a headphone jack if there is no line out available.) Don't forget to select the appropriate input with the Source Selector Switch.

Portable CD Player

Shown to the left is a portable CD player, using the line out of the CD player to the analog input of the Desktop Portable Amp.

To a Digital Source (DAC Option)

Your digital source will have either the USB, coaxial, or optical outputs. Plug the appropriate cable into the corresponding digital input on the back of the Desktop Portable Amp. Be sure to select 'digital' on the Source Selector Switch, and the correct digital input with the Digital Input Selector Switch.

Portable DVD Player

The DVD player shown above uses the optical input on the back of the Desktop Portable Amp.

Most new hard-drive MP3 players on the market no longer have digital outputs, but many existing HD players do. This iRiver player below uses an optical line-out, into the optical input of the Desktop DAC.

Hard-Drive MP3 Player

To the Desktop Power Supply

The Desktop Power Supply is a power supply upgrade available for purchase on our website. To connect the Desktop Power Supply, you will need a power cable with 6 pin terminations on either side. Connect the 5VDC power input on the Desktop Portable Amp to the one of the power inputs on the back of the Desktop Power Supply. To learn more about the Desktop Power Supply, see our section on upgrades on the following page.

Desktop Power Supply

Electronics Module; Power Supply Upgrade

Desktop Electronics Module

This little green module contains all the electronics for a Desktop Headphone Amp. There are two 4-layer circuit boards (one each for the left and right channel) that are connected with a series of header pins used to solder the module to the main circuit board. This module is designed to sound great but must provide at least 20 hours of play time on four D-cells in the Desktop Portable Amp. It uses Burr-Brown (Okay, now TI) 2134 op-amps for the internal input buffer, crossfeed, summer, and power amp voltage gain stage. The output current amplifier is our version of the highly regarded Diamond Buffer discrete transistor design by Walt Jung. Resistors are 1% metal thin film, and caps in the signal chain are polyphenylenesulfide (poly film); these are MUCH higher quality parts than you'd ever find in a typical consumer electronics product. The Desktop portable can be upgraded to the Home module, but it will cut battery very significantly and we don't recommend it.

Desktop Power Supply Upgrade

All our amps come with a surprisingly good, but still inexpensive, power supply. Any audiophile will tell you that the power supply is as, or almost as important as the audio electronics themselves. This is true. While we think the other upgrades available for the amps may be slightly more important, the Desktop Supply will get every last drop of performance out of the amp you buy.Maximum current output before a potential loss in audio quality is 500 mA. For the best performance, we recommend one dedicated DPS for each headphone amp.

1. Ground Lift The Ground Lift seperates the audio signal ground from the power supply ground. Usually, you will want the Ground Lift Switch to be set to 'normal', but if you hear a slight buzzing noise in your system, then turn the Ground Lift Switch to 'float'.

2. Power Entry Module The Power Entry Module is where the Power Supply is plugged into the wall. The power entry module can also be easily changed into other common international voltages. Using a coin or screw driver, open the module on the right side, and turn the voltage indicator around to read the appropriate voltage for your region. The red window box on the power entry module indicates the current voltage setting of your amplifier. You can easily switch the voltage between 115 VAC and 230 VAC by carefully opening the power receptacle window housing, then simply slide out the receptacle and reinsert it facing the opposite way until the desired voltage clearly shows through the power module window box. The whole process should take less than a minute!

3. Power Outputs There are 6 power outputs on the Desktop Power Supply, and is appropriate for use with any of the HeadRoom Desktop or Micro Lines of amps and DACs.

30 Day Guaranty & Warranty Info

HeadRoom 30 Day Guaranty

Unless specifically stated otherwise, all HeadRoom purchases come with a 30-day satisfaction guaranty in order to give you the opportunity to evaluate your purchases. We're happy to provide you with the opportunity to refund or exchange your product, but to keep costs down we do have a few conditions. Products must be returned to us within 30 days of the date you receive the product. So make sure you try your purchase out right away! Products must be in "as-new" condition. This means that they're in pristine cosmetic condition, functioning perfectly, and include ALL materials (plastic bags, warranty cards, tie wraps, etc). In other words, please send products back exactly as you received them. If a product is returned within the 30-day return period, but is not in "as-new" condition, we will charge you a 15% restocking fee plus any labor and materials required to return the product to "as-new" condition. Sorry, but after your 30 day trial, products are no longer exchangeable or refundable.

If you're having trouble with a headphone amp or system, please contact us first to troubleshoot the problem. You can email Sales, (sales@headphone.com) or call 800.828.8184. If we can fix it while you've still got the product, everyone's happy!

Desktop Portable Amp Warranty

The HeadRoom Desktop Portable Amp is warrantied for two years. If anytime within the first two years of your purchase you have a problem with your amp, you can return it for repairs under the terms of our warranty.

HeadRoom is the only authorized service center for HeadRoom products, either in or out of warranty. If a unit is under warranty, there is no cost for the repair labor, parts, or shipping from HeadRoom back to you (i.e., You're responsible for paying the shipping charges to get the product to us).

Out of Warranty Repairs

Non warranty repairs are assessed at an hourly rate of $50 per hour plus parts, and are only conducted on HeadRoom products. If the cost of the repair is over $100, we will call you with an estimate. If you have an older HeadRoom amp that is out of production, we may not be able to repair the amp, however please contact us and we will let you know if we are able to. When we receive the equipment, we will initiate repairs and upgrades within 1-2 weeks and return the unit to you. The customer pays for shipping to HeadRoom and we pay for return shipping. Please refer servicing to HeadRoom factory authorized personnel as HeadRoom is the only authorized service center for HeadRoom products, either in or out of warranty. Tampering by persons other than HeadRoom factory authorized personnel is discouraged and will void your warranty. HeadRoom will not accept warranty claims for damage resulting from accident, misuse, neglect, abuse or failure to follow instructions of operation.

Exchanges & Returns

Equipment Exchanges

If you would like to exchange your purchase for another item, you have two options. You can simply purchase the item you want, and send the item you don't want back for refund within 30 days of the original purchase (don't forget to fill out the back of the Return & Exchange card and include it with your return). We will refund your credit card after we receive the item. Or, you can send your product back as an exchange, and indicate the product you would like on the Return card. We will adjust your credit card accordingly and ship you the new item. Replacement products are shipped to you as soon as possible, typically within 3-5 days provided the replacement item is in stock.

Defective Equipment Exchanges

In the uncommon event of receiving a defective product, contact us and we will ship out a replacement product to you at no cost as soon as possible, typically within 3-5 days provided the replacement item is in stock. You will receive the replacement item along with a return shipping label and a card to include with the defective item to return to HeadRoom. Important: Fill in your name and original invoice number of your order on the card and return the item to HeadRoom within 2 weeks. If we have not received the product after 2 weeks (allowing shipping time) we will charge your credit card the amount of the defective item. Please understand that we enforce this policy as an incentive for customers to get defective equipment back to us as soon as possible.

Shipping Products back to HeadRoom

Please ship products back in the original shipping box (or another that is comparable); please don't send headphones back in JUST the headphone box, as it's a sure bet that they will no longer be in "as-new" condition when we receive them! We HIGHLY recommend that you ship returns using an insured and "signature required" delivery method—we can't be responsible for lost or damaged packages. Finally, don't forget to include the completed Return & Exchange card and WRITE YOUR NAME on the outside of the box!

Return Products to:
HeadRoom
Attn: Returns
2020 Gilkerson Drive
Bozeman, MT 59715

Contact Us:
www.headphone.com
Toll Free: 800-828-8184
Phone: 406-587-9466
Fax: 406-586-9484

HeadRoom
Right Between Your Ears

A Word About Your Hearing

People have a natural tendency to listen to music at much louder levels with headphones than they would with speakers. To avoid permanent hearing damage, it's important to be careful not to listen at extremely loud levels (or to listen for too long at moderately loud levels). Because HeadRoom amps need to be able to drive even the most inefficient dynamic headphones to satisfactory listening levels, they are also able to drive headphones of average or higher efficiencies to extremely high levels. As a result, even though the volume control on your HeadRoom amp may appear to be set to a low level, you may not be listening at a safe level. Generally speaking, when listening to headphones you should only turn up the volume to the point at which the sound isn't too quiet.

As a general rule, sound pressure levels under 80 decibels will not damage hearing, even if experienced continually. On the other hand, anything over 100 decibels may cause permanent damage very quickly. Sustained exposure to sound pressure levels anywhere in between can also be damaging —the louder the sound, the shorter the time required to cause permanent damage. Just to drive this message home, here's a bit of information about hearing damage. The most common type of damage caused by prolonged or excessively loud sound is called tinnitus. It manifests itself as a sustained buzzing and/or ringing in the ears, and can become a permanent condition.

If you find that your ears are ringing or that there is a sensation of pressure or fatigue, your body is trying to tell you that your ears need a break. Give them a rest for a few days (or until they feel fresh). If you ignore these symptoms, you're risking permanent hearing damage.

In addition, don't fool yourself into thinking that you either have full-blown tinnitus or you don't have it at all—there are different degrees of hearing damage. For example, you might have a mild case where you only notice ringing in your ears in the quiet of your bedroom at night. However, once you have a slight case of tinnitus, your ears are much more susceptible to further damage. So if you do experience mild symptoms, it's important to be much more careful about your exposure to loud sounds.

Sorry to sound so sobering, but a lifetime of musical enjoyment requires ears in tiptop shape. Now that we've told you to be careful, don't blame us if you blow it. If you have any more questions about hearing damage, call a doctor.

Contacting HeadRoom

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