

HeadRoom believes that the high-end of pure audio resolution now exists on properly-amplified reference headphones. Our new Home Amp becomes your very refined route to personal sonic bliss. A lively, open soundstage, punchy response and expressive dynamics are the hallmarks of the HeadRoom Home amp. By employing only top audiophile-grade electronic components and maintaining an intense commitment to quality design, we have built a seriously sweet spot of impossibly transparent and detailed sound that creates a deeply emotional listening experience. Pull up your favorite easy chair and immerse yourself in the most perfect music this side of live performance. The Home Amp delivers it right between your ears.

> Toll Free: Phone: Fax:

800-828-8184 406-587-9466 406-587-9484 2020 Gilkerson Drive Bozeman, MT 59715 www.headphone.com

The Home Amp



Front Panel Descriptions

1. Headphone Ouputs The headphone out is where you plug in your headphones. The Desktop Amp is equipped with two 1/4" jacks.

2. Rear Output Switch If you want to use your Home amp as a pre-amplifier, a set of RCA connectors on the rear faceplate act as analog outputs for hooking up a power amplifier or powered speakers.

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 experi-

ence. See page 6 to learn more about HeadRoom's 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 As you turn the volume control knob clockwise, the volume increases. 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.

The Home Amp Rear Panel



1. Analog Inputs Two sets of RCA connectors allow for independent connectivity of two separate non-digital (analog) sources like a CD player, tape deck or pre-amp into the Home amp.

2. Analog Input Selector You may want to plug more than one analog source into your Desktop Amp. Whether you are using one input or both, you will need to indicate which analog inputs you want to listen to by choosing either '1' or '2' with the analog input selector.

3. Rear Output This set of RCA connectors is for pre-amp applications. You can send a signal either to powered speakers or directly to a power amplifier unit.

4. Ground Lift: Use this handy two-position switch to cancel out electrical hum interference coming from ungrounded or noisy outlets. For most applications, the switch should be set to "normal." If you are hearing some buzzing, try moving the ground lift to "float".

5. Power Entry Module: Plug in your AC power cord here. The "zero" position indicates off while the "one" means the unit is on and ready to go. 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!

The Digital-Analog Convertor Option

When purchasing the Home 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 Home DAC starts to become a very serious digital to analog converter: not only does it use the flagship Cirrus Logic CS4398 DAC, it also uses the spendy---but oh so sweet sounding---Burr-Brown OPA627 op-amps in class "A" bias as the output devices. The result is the kind of liquid clarity found in multi-thousand dollar high-end CD players.

To go along with the previously mentioned class "A" biased OPA627s, only metal thin film resistors and polyphenylenesulfide (poly film) capacitors are used in the audio circuits. Three low-noise, ultra-low dropout power supply regulators isolate the various digital, analog, and mixed signal circuits. This DAC is also available in a balanced version for the Home Balanced Amp with two complete converter sections, one for the normal and one for the inverted audio signal.



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

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. 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.

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.



Filter/Brightness Switch

The filter/brightness switch is used to compensate for the slight warming action of the crossfeed circuit. In the center position, there is no filter present in the circuit. This is generally the preferred setting. But if you feel that the crossfeed is causing too much bass response in the source material or a faint blurring of the central soundstage image, a mild high frequency boost can be turned on. The "filter 1" setting accentu-



stepped attenuator

ates the highs at around 3kHz; with the "filter 2" setting, the filter starts an octave earlier and catches some of the upper mids while providing an additional boost in the amplitude of the frequency range. The best setting is whatever sounds good to you!

Volume Control Upgrades

The Home amp comes standard with an extremely good quality Nobel volume potentiometer that is continuously variable. The upgraded volume pot option is the Stepped Attenuator.



multi-pole switch is a shunt-design attenuator which greatly minimizes the number of contacts the signal has to pass through during this final output stage before it gets to your headphones. The shunt stepped attenuator has the voltage divided between a single fixed resistor on the circuit board and the resistor selected by the stepped attenuator. The parts we use to hand-build this pot include the well-regarded Elma Type 04 24-position switch for which we manufacture our own Electroless Nickel / Immersion Gold (ENIG) switch contact circuit boards. This is just a fancy way of saying that these boards are highly corrosion resistant and have a very heavy gold plating -- significantly heavier than normal circuit board gold coatings. This is important to the increased lifetime of the switch. You can choose the stepped attenuator option upon intial purchase of you Home amp or have it upgraded at a later date. Visit our webiste or call us at 800-828-8184 for more details.

Electronics Module Info & Upgrades

The Home Module

This little blue module contains all the electronics for a Home 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 without going up the ridiculously steep part of the diminishing returns curve. It uses OPA2134 op-amps for the internal input buffer, crossfeed, summer, and power amp volt-



Home Module

age gain stage. The output current amplifier is our version of the highly regarded Diamond Buffer discrete transistor design by Walt Jung. All these active circuits are forced in to class "A" bias with constant current sources. Resistors are 1% metal thin film, and caps in the signal chain are polyphenylenesulfide (poly film). The sound of this module is not only well balanced and punchy, it's also liquid and integrated. This is a sweet listen. The Home Amp and Home Balanced Amp can be upgraded with Max modules. This is a tricky maneuver and must be executed with exceeding care. Only those with the trickest of gear should bother as these babies are pricy almost beyond reason; every one else should just enjoy the lovely sound of getting it right between your ears in a less spendy module. But the Max Modules are the real deal, and easily let you tell the difference between a \$3000 and \$12000 CD player.

The Max Module Upgrade

This little gold and black module is the real deal. Tiny chips that cost \$15 bucks apiece, 0.1% metal film resistors, and polyphenvlenesulfide (poly film) caps are silver soldered to 2 oz. gold coated copper traces which blur in a glittering haze over black solder masked four layer circuit board. Speaking of circuit board, this is the first time we have increased the sized of our module



Max Module

circuit board. Fear not, for it is still pin for pin compatible with older Home and Max units. But the circuit boards must be mounted on edge for better heat dissipation. The Max Module uses what many audiophiles insist is the best audio op-amp made, the OPA627, 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. All active stages are forced heavily into class-A bias with coinstant current sources. Writing this copy we realized the benefit statement of the Max module is the features statement. The quality of the entire build of this module is out of this world, and when coupled with the finest of headphones and the finest of front ends, the results are transcendent bliss.

Hooking Up Your Home Amp

It is a good idea to turn your units off while connecting equipment.

ALWAYS turn your units off with the volume all the way down before plugging and unplugging your headphones from the jacks.

... Using the Digital-to-Analog Converter Option

USB Input

1. Select 'digital' on the digital/analog selector switch on the back of the unit

2. Select 'USB' on the digital selector switch on the back of the unit

3. plug your USB cable into the back of the amplifier

4. plug the other end of your USB cable into any USB jack on your computer or player.

Optical Input

1. Select 'digital' on the digital/analog selector switch on the back of the unit

2. Select 'optical' on the digital selector switch on the back of the unit

3. plug your optical cable into the back of the amplifier.

4. plug the other end of your optical cable into the optical output of your player.

Coaxial Input

1. Select 'digital' on the digital/analog selector switch on the back of the unit 2. Select 'coaxial' on the digital selector switch

on the back of the unit

3. plug your coaxial able into the back of the amplifier.

4. plug the other end of your coaxial cable into the coaxial output of your player.

... Using the Analog Connections

Analog Input

You will need an RCA cable with right and left terminations on both ends.

1. Select 'analog' on the digital/analog selector switch on the back of the unit 3. plug your RCA cables into the back of the am-

plifier using analog input set '1' or '2'.

4. Select the corresponding set number of the analog input select switch

5. plug the other end of your RCA cable into the analog output of your CD player.





Amplifier DAC, USB

Computer, USB



Amplifier DAC.

optical input



CD player, optical output



amplifier DAC, coaxial input

RCA analog

inputs

CD player, coaxial output



CD player, analog outputs



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:

Contact Us:

HeadRoom Attn: Returns 2020 Gilkerson Drive Bozeman, MT 59715 www.headphone.com Toll Free: 800-828-8184 Phone: 406-587-9466 Fax: 406-586-9484

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!

Home Amp Warranty:

The Home Amp is warrantied for two years. If anytime within the first two years of your purchase you have a problem with your Home Amp, you can return it for repairs under the terms of our Warranty. Visit our website for details about warranting your Home Amp, or give us a call at 800.828.8184, and we will trouble shoot the problem, and if necessary authorize a repair.

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

If you have an older HeadRoom amp that is out of warranty, call us at 800.828.8184 ext.104 to speak with our Service Department to troubleshoot the problem.

The cost of repairing your out-of-warranty HeadRoom amp is a \$50 repair fee, plus parts and shipping costs. Additional costs will include replacement parts along with any additional labor beyond your first hour (the good news is that most repairs can be normally performed within one hour.) If the cost of your repair exceeds \$100, we will call or email you first with an estimate and we will then request your approval for work to continue.

Email us at service@headphone.com for more information. If you have an older HeadRoom amp BEFORE model year 2001-2002, it's imperative that you contact our Service Department first to confirm the amp can be repaired. 11

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

Toll Free: Phone: Fax:

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